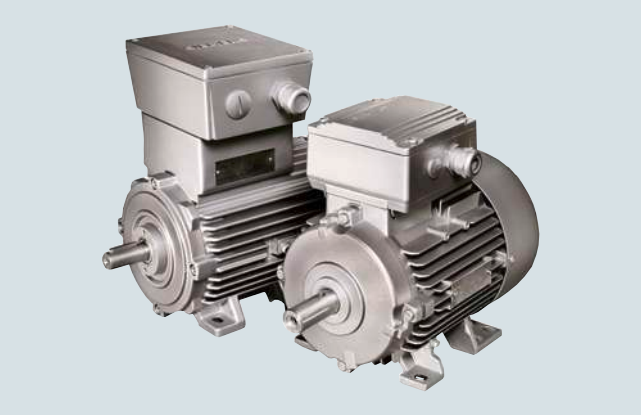
Overview



In many industrial and public sectors, explosion protection or explosion hazards are ever-present, e.g. in the chemicals industry, in refineries, on drilling platforms, at gas stations, in feed manufacturing and in sewage treatment plants.

The risk of explosion is always present when gases, fumes, mist or dust are mixed with oxygen in the air in an explosive ratio close to sources of ignition that are able to release the so-called minimum ignition energy.

In the chemical and petrochemical industries in particular, when crude oil and natural gas are transported, or in mining, milling (e.g. grain and granular solids), this can result in serious injury to persons and damage to equipment.

To ensure maximum safety in these areas, legislators in most countries have implemented appropriate stipulations in the form of laws and regulations based on national and international standards.

Explosion-proof equipment is designed such that an explosion can be prevented when it is used properly.

The explosion-proof equipment can be designed in accordance with various types of protection.

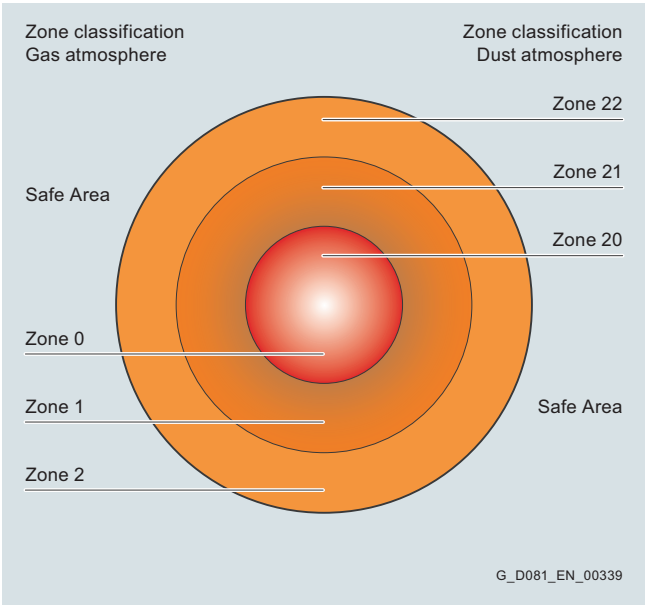
The local conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types of protection and therefore into possible equipment (product) types.

Classification of zones

Areas subject to explosion hazard are divided into zones. Division into zones depends on the chronological and geographical probability of the presence of a hazardous, potentially explosive atmosphere. Information and specifications for classification of the zones are laid down in the following standards:

- IEC/EN 60079-10-1 for gas atmospheres
- IEC/EN 60079-10-2 for dust atmospheres

Further, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent a surrounding explosive atmosphere from being ignited.

Note:
According to the standard IEC/EN 60079-7:2015, the previous designations of the types of protection Ex e and Ex nA have been changed to **Ex eb** and **Ex ec** respectively. The expiration date of the previous designations was July 31, 2018.

Zone		Zone definition acc. to			
Gas 1) 2)	Dust 1) 2)	IEC/EN 60079-10-1 for gas atmospheres IEC/EN 60079-10-2 for dust atmospheres	Assigned types of protection	Category according to 2014/34/EU	Equipment protection level acc. to IEC/EN 60079-0
0	–	An area in which there is an explosive gas atmosphere **constantly**, **over a long period** or **frequently**.	Low voltage motors not permitted	1	Ga
1	–	An area in which it is expected that an explosive gas atmosphere will occur **occasionally** during normal operation.	Ex db eb, Ex db	2	Gb
2	–	An area in which it is expected that an explosive gas atmosphere will occur only **rarely** and then only **briefly** during normal operation.	Ex ec	3	Gc
–	20	An area in which there is an explosive gas atmosphere comprising a dust-air mixture **constantly**, **over a long period** or **frequently**.	Low voltage motors not permitted	1	Da
–	21	An area in which it is expected that an explosive gas atmosphere comprising a dust-air mixture will occur **occasionally** during normal operation.	Ex tb	2	Db
–	22	An area in which it is expected that an explosive gas atmosphere in the form of a cloud of flammable dust in air will occur only **rarely** and then only **briefly** during normal operation.	Ex tc 3)	3	Dc

1) Motors of
- Zone 1 can also be used in Zone 2
- Zone 21 can also be used in Zone 22

2) Motors which are certified for gas or dust protection must not be used in hybrid mixtures! Hybrid mixtures:
When explosive gas and dust atmospheres occur simultaneously.

3) Ex tc motors are not approved for operation in environments containing conductive dust.

Overview (continued)

Types of protection

Type of protection "Increased safety" **Ex eb** acc. to IEC/EN 60079-7

Additional measures are taken to prevent the possibility of high temperatures and to prevent sparks or arcs from occurring on the inside and on external components of the motor.

Type of protection "Flameproof enclosure" **Ex db** acc. to IEC/EN 60079-1

The components that can ignite an explosive atmosphere are located in a housing that is not damaged by an internal explosion and flameproof joints prevent flames from escaping to the explosive atmosphere on the outside.

The motors in series 1MB1, 1MB5, 1MD5 and 1PS5 are designed with "Explosion-proof housing" **Ex db** – see also Catalog D 83.1.

Type of protection "Non-sparking" **Ex ec** acc. to IEC/EN 60079-7

Type of protection **Ex ec** ensures that a motor in normal operation as well as when operated under deviating conditions as specified in the standard is not able to ignite a surrounding explosive gas atmosphere.

1MB103, 1MB153 and 1MB163 motors are available in the **Ex ec** version.

Certification

IEC motors for use in hazardous zones are certified according to the EU Directive 2014/34/EU (ATEX) and are marked according to the following schematic:

Example "Non-sparking":	**CE**	**0158**	**⟨Ex⟩**	**II**	**3**	**G**	**Ex**	**ec**	**IIC**	**T3**	**Gc**
CE marking											
Number of the certifying "notified" body (0158 = EXAM)											
Explosion protection marking											
Equipment group: I = Underground II = All other areas											
Category: 2 (Zone 1/21) 3 (Zone 2/22)											
Ex atmosphere G = Gas D = Dust											
Explosion protected equipment											
Type of protection ec, db, eb or tc (de = Ex d motor housing with Ex eb terminal box)											
Explosion group and explosion subgroup II = Gas (IIA, IIB or IIC) III = Dust (IIIA, IIIB or IIIC)											
Temperature class with max. surface temperature T1 = 450 °C T4 = 135 °C T2 = 300 °C T5 = 100 °C T3 = 200 °C T6 = 85 °C											
Equipment protection level (G = Gas; D = Dust): Ga = Very high protection, Da = Very high protection, Gb = High protection, Db = High protection, Gc = Increased protection, Dc = Increased protection											

Additional information on the subject of explosion protection, types of protection and zones is provided in the Siemens brochure "*Explosion Protection*".

Type of protection "Dust explosion protection" **Ex tb, Ex tc** acc. to IEC/EN 60079-31

This type of protection applies for electrical equipment protected using a housing and with limited surface temperature for use in areas in which combustible dust can occur in concentration levels that could cause a fire or an explosion.

The following motor series are available with type of protection Ex tb or Ex tc:

- 1MB101, 1MB151 and 1MB161 in version **Ex tb**
- 1MB102, 1MB152 and 1MB162 in version **Ex tc**

Explosion-proof motors for converter operation

Basically, explosion-proof motors (except for Ex eb) can be fed from converters. Particular attention must be paid to the interaction between the motor and converter system, especially with regard to the following aspects:

- The harmonic content of the supply voltage raises the motor temperature, so the motor power must be reduced
- Less cooling of the motor at speeds below the rated speed
- Voltage stress on the motor winding
- Bearing currents

Overview (continued)

Overview of SIMOTICS XP 1MB1, 1MB5 explosion-proof motors

The table below contains a complete overview of our products, their types of protection and the assignment of motor types to categories. It is important to note that depending on whether the motor is used for converter operation or line operation, different order codes are required for unique selection of the required product.

Sector	Category	Zone	Frequency of occurrence of the Ex atmosphere	Type of protection	Temperature class	Equipment protection level	Degree of protection	Motor type and if applicable order code	Operation	Order code	Utilization according to temperature class	Standard
Gases and vapors (G)	1G	0	constantly or long-term	Not admissible with low-voltage motors								
	2G	1	occasionally	Ex db eb IIC [1] (explosion-proof enclosure)	T1 – T4	Gb	IP55	1MB1.5, 1MB5.5	Line	–	130 (B)	IEC/EN 60079-0 IEC/EN 60079-1 IEC/EN 60079-7
									Converter	**B43 B44**	155 (F)	
				Ex eb IIC [1] (increased safety)	T1 – T3			1MB1.4, 1MB5.5	Line	–	130 (B)/ 155 (F) [2]	IEC/EN 60079-0 IEC/EN 60079-7
	3G	2	rarely or briefly	Ex ec IIC [1] (non-sparking)		Gc		1MB103, 1MB153, 1MB163	Line	–	130 (B)	
									Converter	**B40 B41**		
Dust (D)	1D	20	constantly or long-term	Not admissible with low-voltage motors								
	2D	21	occasionally	Ex tb IIIC [1]: conductive and non-conductive dust	Max. housing temperature T 120 °C [4]	Db	IP65	1MB101/2, 1MB151/2, 1MB161/2	Line	–	130 (B)	IEC/EN 60079-0 IEC/EN 60079-31
									Converter	**B40 B41**		
	3D	22	rarely or briefly	Ex tc IIIB [1]: non-conductive dust		Dc	IP55					
Gases and vapors (G) and dusts (D) [3]	2G 2D	1 or 21	occasionally	Ex db eb IIC [1] (explosion-proof enclosure)/ Ex tb IIIC [1]: conductive and non-conductive dust	T1 – T4/ Max. housing temperature T 135 °C	Gb Db	IP65	1MB1.5 +B32, 1MB5.5 +B32	Line	–	130 (B)	IEC/EN 60079-0 IEC/EN 60079-1 IEC/EN 60079-31
									Converter	**B43 B44**	155 (F)	
	3G 3D	2 or 22	rarely or briefly	Ex ec IIC [1] (non-sparking)/ Ex tc IIIB: non-conductive dust	T1 – T3/ Max. housing temperature T 120 °C [4]	Gc Dc	IP55	1MB103 +B30 1MB153 +B30 1MB163 +B30	Line	–	130 (B)	IEC/EN 60079-0 IEC/EN 60079-15 IEC/EN 60079-31
									Converter	**B40 B41**		

5

[1] Highest explosion group IIC includes IIB and IIA. IIIA stands for lint, IIIB for non-conductive dust and IIIC for conductive dust. 1MB155, 1MB555 motors optionally with Ex d terminal box.

[2] See EU type-examination certificate.

[3] The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

[4] For 1MB1
IE1: T140 °C
IE2: T120 °C (except T130 °C for 1MB1.11-1AD5, 1MB1.11-3AD6, 1MB1.21-1AD5 and 1MB1.21-3AD6)
IE3: T120 °C

Benefits

The explosion-proof motors from Siemens offer the user numerous advantages:

- The motors are designed in accordance with Directive 2014/34/EU. As product supplier, Siemens accepts responsibility for compliance with the applicable product standards for the selected equipment.
- By using this product, the plant operating company satisfies Directive 1999/92/EC in accordance with Appendix II B (ATEX 137 previously ATEX 118a). The plant manufacturer or plant operating company is responsible for correct selection and proper usage of the equipment.
- Comprehensive series of Ex motors for protection against gas and dust.
- Individual versions of motors are possible thanks to the numerous catalog options.
- Further special versions are possible on request.
- Factory certificates 2.1 are available for a defined spectrum of Siemens motors/converters.
- The Operating Instructions are available in all 23 official EU languages as well as Russian and Chinese.

For applications in harsh environments: SIMOTICS XP motors with a cast-iron housing

The right motor for various challenges

The following motor series are available with cast-iron housings for applications in harsh, hazardous environments:

- Basic Line: Rugged, reliable motors for machine construction
- Performance Line: Motors for the process industry with reinforced bearings and a more rugged coating – for requirements that extend beyond the Basic Line

Comparison: Basic Line versus Performance Line

Function	**Basic Line – 1MB15**	**Performance Line – 1MB16**
Bearing size	62, 63 from frame size 280 upward	63
Relubrication	Optional, standard from frame size 280 upwards	Standard from frame size 160 upwards, optional for frame sizes 100 to 132
Paint system	Standard paint finish, corrosion class C2	Special coating, corrosion class C3
Drainage	Drain plug from frame size 100 upwards	Drain plug from frame size 100 upwards
Rating plate made of stainless steel	Standard from frame size 225 upwards, optional for frame sizes 71 to 200	Standard from frame size 100 upwards
Motor protection	Optional	PTC
Fan cover	Steel	Steel
Warranty	12 months	36 months

Application

The explosion-proof motors are used in the following sectors to prevent explosion hazards that result in serious injury to persons and severe damage to equipment.

- Chemical and petrochemical industry
- Production of mineral oil and gas
- Gas works
- Gas supply companies
- Petrol stations
- Coking plants
- Mills (e.g. grain, solids)
- Sewage treatment plants
- Wood processing (e.g. sawdust, tree resin)
- Other industries subject to explosion hazards

Technical specifications

General information

Ex motors are suitable for operation in electrical power systems with a voltage tolerance of ±10 %.

Ex motors in vertical type of construction with shaft extension pointing down must have a protective cover.

Operating Instructions are supplied as standard with explosion-proof motors in English and German. Translations are also available in all the other official EU languages as well as in Russian, Turkish, and Chinese online and on DVD.

For all explosion-proof motors, designs according to UL and CSA are not possible.

Motor connection

Certified metric cable glands/sealing plugs are included in the scope of supply of 1MB1 motors.

The certificates for the motors for hazardous areas are stored with the documentation in the DT Configurator.

Certified motor protection switches/tripping units must always be used for motor protection, see Catalog IC 10.

Type of protection Ex tb IIIC and Ex tc IIIB for use in Zones 21 and 22

The distinction between Zones 21 and 22 is as follows:

- EC/EN 60079-31 [1] for Zone 21
  - Version for Zone 21 [2], as well as Zone 22 for conductive dust (IP65) and line operation (1MB101, 1MB151, 1MB161)
- Ex tc IIIB acc. to IEC/EN 60079-31 [1] for Zone 22
  - Version for Zone 22 for non-conductive dust (IP55) and line operation (1MB102, 1MB152, 1MB162)

The 1MB1 motors are modified for this purpose for use in zones subject to dust explosion hazards. The surface temperature is ≤ 120 °C for rated operation [3].

An external grounding terminal, a metal fan cover, and a metal external fan are fitted to the motors.

Pole-changing versions are not possible for Zone 21 – they are possible for Zone 22 on request.

Certification:

- Zone 21: EU type-examination certificate (ATEX) and EU Declaration of Conformity
- Zone 22: EU type-examination certificate and EU Declaration of Conformity

Identification on the rating plate:

- Zone 21: Ⓔx II 2D Ex tb IIIC T120 °C Db [3]
- Zone 22: Ⓔx II 3D Ex tc IIIB T120 °C Dc [3]

Ambient temperature

- Standard: –20 to +40 °C
- Optional: –40 to +40 °C (order code **D03**)
- Optional: –20 to +60 °C (order codes **N05**, **N06**, **N07**, **N08**)

From 40 °C, the power is reduced.
Other temperatures are available on request.

Type of protection Ex ec for use in Zone 2

- Standard version for paint film thicknesses < 200 µm Ex ec IIC T3 Gc. For further information about paint and paint film thicknesses, see Chapter 1, from Page 1/14 onwards.
- Optional version for paint film thicknesses > 200 µm to < 2 mm Ex ec IIB T3 Gc (order code **B31**). For further information about paint and paint film thicknesses, see Chapter 1, from Page 1/14 onwards.

1MB1 motors are modified for this purpose in the "non-sparking" version and are suitable for use in hazardous areas of Zone 2 for temperature classes T1 to T3. The maximum surface temperature that can occur during operation must lie below the limit temperature of the respective temperature class. The ventilation system must be in accordance with IEC/EN 60079-0. The motors are equipped with an external grounding terminal. The terminal box is similar to the Ex eb design.

Please inquire in the case of:

- Utilization according to temperature class 155 (F)
- For pole-changing versions

For motors in the "non-sparking" version, a type-examination certificate is available from a recognized testing authority.

Ambient temperature

- Standard: –20 to +40 °C
- Optional: –40 to +40 °C (order code **D03**)
- Optional: –20 to +60 °C (order codes **N05**, **N06**, **N07**, **N08**)

From 40 °C, the power is reduced.
Other temperatures are available on request.

The rating plate or the additional rating plate contains the text:

Ⓔx II 3G Ex ec IIC T3 Gc
and number of the "type test certificate"

Type of protection Ex ec/Ex tc for use in Zone 2/22 [4]

The motors must be ordered with:

- Version additionally for dust Ex tc – Zone 22 – order code **B30** [4]

The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

Zone 2/22: Ⓔx II 3G Ex ec IIC T3 Gc
Ⓔx II 3D Ex tc IIIB T120 °C Dc [3]

Zone 1 with type of protection Ex db IIC explosion-proof enclosure "d"

See also Catalog D 83.1.

[1] Zone 21 only up to frame size 315 L.

[2] Zone 21 includes conductive and non-conductive dust.

[3] IE1: T140 °C
IE2: T120 °C (except T130 °C for 1MB1.11-1AD5, 1MB1.11-3AD6, 1MB1.21-1AD5 and 1MB1.21-3AD6)
IE3: T120 °C

[4] The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

Technical specifications (continued)

Converter operation

General information

All the data listed in Catalog D 81.1 is applicable for a 50 Hz line supply. During converter operation, the reduced torques for constant torque and drives for fans, pumps and compressors must be observed due to the harmonic content of the supply. This data is available in the "Drive Technology Configurator" (DT Configurator) (www.siemens.com/dt-configurator). Higher noise levels must be expected than for 50 Hz line operation for motors operating with converters due to the harmonic content of the supply.

Maximum voltage load on the motor winding in converter operation:

Frame sizes: 71 to 315:

- $\hat{U}_{\text{phase-to-phase}}$: ≤ 1500 V (3000 V peak-peak values ($V_{pk/pk}$))
- $\hat{U}_{\text{phase-to-ground}}$: ≤ 1100 V (2200 V peak-peak values ($V_{pk/pk}$))

The following generally applies to Siemens converters (SINAMICS):

- U_{line}: = 480 V ±10 % (BLM = Basic Line Module; DFE = Direct Front End)
- U_{line}: ≤ 480 V ±10 % (ALM = Active Line Module; AFE = Active Front End); U_{dc} < 720 V
- U_{line}: = 690 V ±10 % (only permissible with SINAMICS G180 that has a reinforced dv/dt filter (standard option G180: **L10**).

Further configuration notes are documented in the factory certificate 2.1 and in the EU type-examination certificates.

Order handling for 1MB1 motors for converter operation

PTC thermistor

For converter operation, Ex motors must always be monitored using PTC thermistors. The motors must therefore be ordered with the 15th position of the Article No.

- **B** – PTC thermistor for tripping – or alternatively
- **C** – PTC thermistor for alarm and tripping.

General information regarding the PTC thermistors:

- **B** in 15th position of the Article No.:
  The motors are equipped with 3 PTC thermistors for tripping in the motor winding.
- **C** in 15th position of the Article No.:
  The motors are equipped with 3 PTC thermistors for alarm and 3 PTC thermistors for tripping in the motor winding.

Certified tripping units are required for this purpose, see Catalog IC 10.

Selection of the frequency converters

The SINAMICS frequency converters are categorized into 2 product groups (order code **B40** and **B41**). Each product group is a data record with motor operating data each assigned to one frequency converter. The converter type is stamped on the rating plate. Alternative, approved SINAMICS converters can be selected, by adding the order code **Y68**.

Product group 1 (basic version):

Order code **B40** – version for converter operation in basic version with operating data SINAMICS G120 with PM240-2

Product group 1 (alternative SINAMICS converter):

Order codes **B40** + **Y68**

Operating data such as the **B40** order code with alternative SINAMICS converter on the rating plate:

- **Y68** with plain text (C-text) G120 with PM230
- **Y68** with plain text (C-text) G120 with PM240
- **Y68** with plain text (C-text) G120C
- **Y68** with plain text (C-text) G120P with PM230
- **Y68** with plain text (C-text) G120P with PM240-2
- **Y68** with plain text (C-text) G120P with PM240P-2
- **Y68** with plain text (C-text) G120P with PM330
- **Y68** with plain text (C-text) G130
- **Y68** with plain text (C-text) G150
- **Y68** with plain text (C-text) G180
- **Y68** with plain text (C-text) S120 (BLM/SLM)
- **Y68** with plain text (C-text) V20

Product group 2 (basic version):

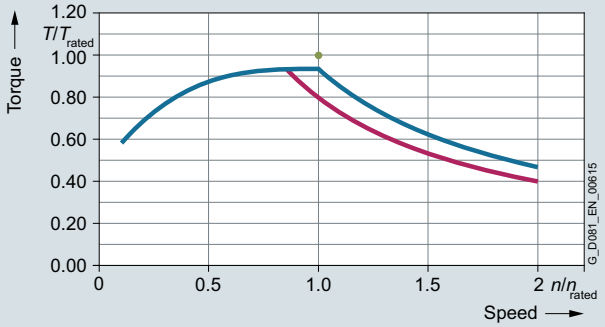
Order code **B41** – version for converter operation in basic version with operating data SINAMICS S150.

Product group 2 (alternative SINAMICS converter):

Order codes **B41** + **Y68**

Operating data such as the **B41** order code with alternative SINAMICS converter on the rating plate:

- **Y68** with plain text (C-text) S120 (ALM)



1MB1 motors, line (DOL) operation

1MB1 motors, converter operation on SINAMICS frequency converters, product group 1 (order code **B40**)

1MB1 motors, converter operation on SINAMICS frequency converters, product group 2 (order code **B41**)

Insulated bearings

Frame sizes 225 and 250: For converter operation it is recommended that an "insulated bearing cartridge NDE" – order code **L51** be used.
Frame sizes 280 and 315: When ordering with the order codes **B40**/**B41**, the "insulated bearing cartridge NDE" is included as standard.

Rating plate

The operating data for line operation is specified on the rating plate – on an additional rating plate, 4 rated operating points are possible in the following variants, according to the selected product:

Possible variants	Rated operating points in Hz				Additional identification code voltage code 12th and 13th position of the Article No. and order code
50 Hz field weakening range	5	25	50	f_{max}	50 Hz voltage: e.g. "**90**" and **M4A**
60 Hz field weakening range	6	30	60	f_{max}	60 Hz voltage: e.g. "**90**" and **M1E**
87 Hz characteristic	5	25	87	f_{max}	87 Hz at 400 VΔ: "**90**" and **M3A**

f_{max} see page 5/9.

Technical specifications (continued)

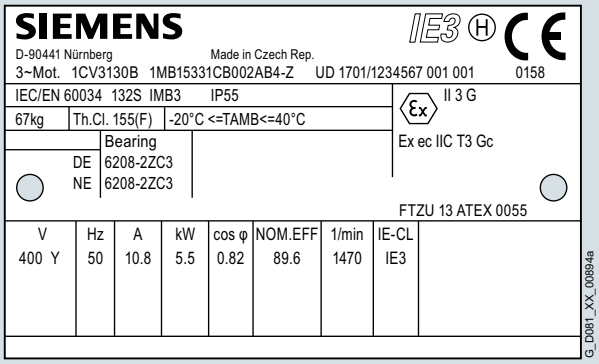
These rated operating points on the additional plate apply for both constant torque drives and pump/fan/compressor drives. For a constant torque drive, the resulting thermal motor torques in the positioning range must be taken into account.

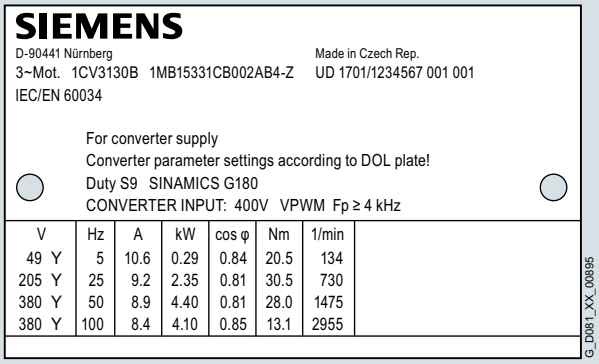
Example motor ID:

Motor rating plate with line operation data and additional plate with converter operation data:

Non-sparking motor Ex ec (Zone 2) for operation on SINAMICS G180:

1MB15331CB090AB4-Z
M4A+B40+Y68
Plain text Y68: SINAMICS G180





For all motors, an additional rating plate complete with the operating data for the motor on the converter is fitted.

The converter type and the associated operating data are on the rating plate.

The reasons for stamping the converter type on the additional rating plate are the different control levels for the converter output voltage, pulse frequency, output frequency, harmonic content and the associated derating for the motor.

For compliance with the permissible temperature class 130 (B), derating is necessary in the case of converter operation. The reduction in torque depends on the choice of converter type. The data can be viewed in the "Drive Technology Configurator" (DT Configurator) and used as the basis for configuration.

The factory certificate 2.1 for the specified converters is stored with the documentation for low-voltage motors in the "Drive Technology Configurator" (DT Configurator).

To ensure unambiguous order handling for the voltage, each approved voltage code/voltage order code is assigned only "one" voltage/frequency, as seen below:

Voltage code 12th and 13th position of the Article No.	Order code	Line frequency	Line voltage
27	–	50 Hz	500 VY, 50 Hz power
40	–	50 Hz	500 VΔ, 50 Hz power
90	**M4A**	50 Hz	400 VY, 50 Hz power
90	**M4B**	50 Hz	400 VΔ, 50 Hz power
90	**M2C**	60 Hz	440 VY, 50 Hz power
90	**M1C**	60 Hz	440 VY, 60 Hz power
90	**M2D**	60 Hz	440 VΔ, 50 Hz power
90	**M1D**	60 Hz	440 VΔ, 60 Hz power
90	**M2E**	60 Hz	460 VY, 50 Hz power
90	**M1E**	60 Hz	460 VY, 60 Hz power
90	**M2F**	60 Hz	460 VΔ, 50 Hz power
90	**M1F**	60 Hz	460 VΔ, 60 Hz power
90	**M2G**	60 Hz	575 VY, 50 Hz power
90	**M1G**	60 Hz	575 VY, 60 Hz power
90	**M2H**	60 Hz	575 VΔ, 50 Hz power
90	**M1H**	60 Hz	575 VΔ, 60 Hz power
90	**M2K**	60 Hz	480 VY; 50 Hz power
90	**M1K**	60 Hz	480 VY; 60 Hz power
90	**M2L**	60 Hz	480 VΔ, 50 Hz power
90	**M1L**	60 Hz	480 VΔ, 60 Hz power
90	**M1Y** (non-standard winding)	50 or 60 Hz	Plain text (max. 460 VY, 50 or 60 Hz)
90	**M3A** [3]	50 Hz	At 87 Hz, 400 VΔ: (4-pole to 8-pole)

Converter operation specially for motors in type of protection "Ex ec" (Zone 2) and VIK-Ex ec version

IEC/EN 60079-15 specifies that the motor and converter must be tested as a unit (individual test). The individual test is available for motors of "n" type of protection on the specified converters SINAMICS G, SINAMICS S and SINAMICS V20. For details, see factory certificate 2.1.

Individual testing can be performed for non-Siemens converters on request (additional charge). The customer may be required to supply the external converter for individual tests.

The test will cost more when using non-Siemens converters (especially on commissioning). Commissioning personnel must be provided by the customer for setup and operation during the test, if required.

Converter operation specially for motors in type of protection "Ex tb" (Zone 21) and "Ex tc" (Zone 22) [1]

The drive system comprising motors protected against dust explosions operating on SINAMICS G, SINAMICS S and SINAMICS V20 converters has been tested. For details, see factory certificate 2.1. Please inquire about operation with non-Siemens converters.

Converter operation specially for motors in type of protection "Ex ec/Ex tc" (Zone 2/22) [2]

For the 1MB1.3 Ex ec motors, the order code **B30** version (IP55) for Zones 2 and 22 must also be specified in the case of non-conductive dust. Factory certificate 2.1 analogous to that for Zones 2, 21 and 22. Please inquire about non-Siemens converters.

1) Zone 21 includes conductive and non-conductive dust.

2) The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

3) The motor contains winding version 50 Hz 230 VΔ.

Technical specifications (continued)

Mechanical limit speeds of the SIMOTICS XP 1MB15, 1MB16 Ex ec, Ex tb and Ex tc explosion-proof motors

Motor frame size	Motor type	2-pole [1] n_{max} rpm	f_{max} Hz	4-pole n_{max} rpm	f_{max} Hz	6-pole n_{max} rpm	f_{max} Hz	8-pole n_{max} rpm	f_{max} Hz
1MB15, 1MB16									
71 M	1MB15	6000	100	3000	100	2000	100	1500	100
80 M	1MB15	6000	100	3000	100	2000	100	1500	100
90 L	1MB15	6000	100	3000	100	2000	100	1500	100
100 L	1MB10, 1MB15, 1MB16	5100	85	3000	100	2000	100	1500	100
112 M	1MB10, 1MB15, 1MB16	5100	85	3000	100	2000	100	1500	100
132 S/M	1MB10, 1MB15, 1MB16	3800	63.3	3000	100	2000	100	1500	100
160 M/L	1MB10, 1MB15, 1MB16	4500	75	3000	100	2000	100	1500	100
180 M/L	1MB15, 1MB16	4500	75	3000	100	2000	100	1500	100
200 L	1MB15, 1MB16	4500	75	3000	100	2000	100	1500	100
225 S/M	1MB15, 1MB16	3600	60	3000	100	2000	100	1500	100
250 M	1MB15, 1MB16	3600	60	3000	100	2000	100	1500	100
280 S/M	1MB15, 1MB16	3600	60	3000	100	2000	100	1500	100
315 S/M/L	1MB15, 1MB16	– [2]	– [2]	2600	87	2000	100	1500	100

Special technology

"Special technology" comprises technology that is compatible with explosion-proof motors.

Explosion-proof motors can be implemented in a broader range of applications when explosion-proof rotary pulse encoders or explosion-proof separately driven fans are mounted.

The use of a separately driven fan is recommended to increase motor utilization at low speeds and to limit noise generation at speeds significantly higher than the synchronous speed.

Both are normally only appropriate with converter-fed operation.

For explosion-proof motor versions with explosion-proof rotary pulse encoders or explosion-proof separately driven fans, see the tables below.

The following explosion-proof motor versions are available with explosion-proof rotary pulse encoders:

Type of protection	Motor type + order code	Frame size	Order code for explosion-proof rotary pulse encoder
Ex tb (Zone 21)	1MB101… 1MB151… 1MB161…	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	**G30**: Mounting of LL 841 (HTL); 1024 explosion-proof rotary pulse encoder
Ex tc (Zone 22)	1MB102… 1MB152… 1MB162…	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	
Ex ec (Zone 2)	1MB103… 1MB153… 1MB163…	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	
Ex ec or Ex tc (Zone 2/22)	1MB103… + B30 1MB153… + B30 1MB163… + B30	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	

Note:
The maximum speed of the rotary pulse encoder is limited to n_{max} = 4200 rpm.

The following explosion-proof motor versions are available with explosion-proof separately driven fans:

Type of protection	Motor type + order code	Frame size	Order code for explosion-proof separately driven fan
Ex tb (Zone 21)	1MB151… 1MB161…	225 S ... 315 L 225 S ... 315 L	**F70**: "Mounted separately driven fan".
Ex tc (Zone 22)	1MB102… 1MB152… 1MB162…	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	**F70**: "Mounted separately driven fan".
Ex ec (Zone 2)	1MB103… 1MB153… 1MB163…	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	**F70**: "Mounted separately driven fan".
Ex ec or Ex tc (Zone 2/22)	1MB103… + B30 1MB153… + B30 1MB163… + B30	100 L ... 160 L 100 L ... 315 L 100 L ... 315 L	On request

Notes:

- The motor operating data with the explosion-proof separately driven fan is available in the "Drive Technology Configurator" (DT Configurator).
- Alternatively, explosion-proof separately driven fans can also be used in line operation for special applications.

[1] For continuous operation in the range f_{max} (n_{max}), an inquiry is required.

[2] For frame size 315, converter operation is not permissible with 2 poles.

Technical specifications (continued)

Explosion-proof rotary pulse encoder

The rotary pulse encoder can only be mounted on a standard non-drive end (NDE), i.e. a second shaft extension cannot be supplied.

By virtue of its design, the explosion-proof rotary pulse encoder does not have insulated bearings (please inquire).

The type of protection of the rotary pulse encoder must be observed. The relevant data are stamped on the rating plate of the rotary pulse encoder.

Attaching an explosion-proof rotary pulse encoder increases the length of the motor by Δl.
For an explanation of the additional dimensions and weights, see "Dimensions and weights of explosion-proof rotary pulse encoders".

LL 841 910 013 rotary pulse encoder (HTL version)

This encoder has a rugged construction and is therefore also suitable for difficult operating conditions. It is resistant to shock and vibration.

The LL 841 910 013 explosion-proof rotary pulse encoder is supplied with the already mounted ADS diagnostic system for early detection of errors in the encoder.
Order code **G30**

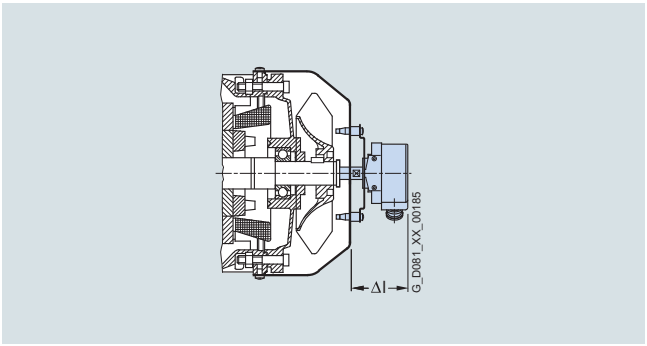
Technical specifications for LL 841 910 013 (HTL version)

Supply voltage U_B	**+9 ... +30 V**
Current input without load	max. 80 mA
Admissible load current per output	40 mA
Pulses per revolution	1024
Outputs	6 short-circuit proof square-wave pulses A, A', B, B', 0, 0', high current HTL Floating switching output for ADS signal
Pulse offset between the two outputs	90° ±2 5° el.
Output amplitude	$U_{High} > U_B$ - 4 V $U_{Low} < 2.5$ V
Mark space ratio	1:1 ±10 %
Maximum frequency	100 kHz with 350 m cable length
Maximum speed	4200 rpm (the maximum permissible speed must be observed during the configuration)
Temperature range	–40 ... +70 °C
Degree of protection	IP65
Maximum adm. radial cantilever force	150 N
Maximum adm. axial force	100 N
Connection system	Terminal strips in encoder/ cable connection M20 x 1.5 radial (screw terminals)
Weight, approx.	1.7 kg

Manufacturer:
Leine und Linde AG
Olivehällsvägen 8
64542 Strängnäs, Sweden
Phone: +46 152 265 00
Fax: +46 152 265 05

www.leinelinde.com
Email: info@leinelinde.de

Dimensions and weights of the explosion-proof rotary pulse encoders



Explosion-proof rotary pulse encoder (on cover), order code **G30**

1MB10, 1MB15, 1MB16 motors		
Frame size	Δl	Weight approx.
	mm	kg
100	110	2
112	110	2
132	110	2
160	110	2
180	110	2
200	110	2
225	100	3
250	100	3
280	100	3
315	100	3

A protective cover of non-corrosive sheet steel is available for the explosion-proof rotary pulse encoders from the "special technology".
For motors in the shaft heights

- 100 to 200: a protective cover is always provided
- 225 to 315: Order code **G43** – "Mechanical protection for encoder" (protective cover analogous to order code **H00**)

The length of the motor is also increased in the case of the following shaft heights:

- 100 to 200 by up to 146 mm
- 225 to 315 by up to 25 mm

Technical specifications (continued)

Explosion-proof separately driven fan

The use of a separately driven fan is recommended to increase motor utilization at low speeds or to limit noise generation at speeds significantly higher than the synchronous speed. Both of these results can only be achieved with converter operation. Please inquire about traction and vibratory operation.

In the case of explosion-proof motors, the explosion-proof separately driven fan is available already mounted.
Order code **F70**

Notes:

- The order code **F70** applies to all types of protection because the type of protection is already defined by the article number of the motor. Order code **F70** determines the additional charge for the separately driven fan in the assigned type of protection.
- The motor operating data with the explosion-proof separately driven fan is available in the "Drive Technology Configurator" (DT Configurator).

The supply voltage for the explosion-proof motors with separately driven fan is specified as follows:

Type 2CW2 has a wide-range voltage winding
(see page 5/12 "Technical specifications of separately driven fans for 1MB1 explosion-proof motors (frame sizes 100 to 200) in the Ex tc (Zone 22) and Ex ec (Zone 2) versions").
These explosion-proof motors with separately driven fan up to frame size 200 have a rated voltage (rated voltage range) with tolerances according to IEC/EN 60034-1, range A.

A rating plate with the operating data is fitted to each explosion-proof motor with separately driven fan.

The type of protection of the explosion-proof motor with separately driven fan corresponds to that of the associated explosion-proof basic motor. Please note the direction of rotation of the separately driven fan (axial-flow fan) when connecting it.

Please inquire regarding coolant temperatures outside the range –20 to +40 °C.

The Ex ec/Ex tc motor with separately driven fan has the degree of protection IP55 as standard; Ex tb: IP65 (higher degrees of protection with Ex ec are available on request).

Motors with a separately driven fan must be equipped with a PTC thermistor as motor protection (15th position of the Article No.): In the event of a fault in the forced ventilation, the PTC thermistor must reliably trip the 1MB1 explosion-proof motor.

For assignments and article numbers, see the tables "Technical specifications of separately driven fans for explosion-proof motors 1MB1…" on the following pages. A rating plate listing all the important data is fitted to the separately driven fan. Please inquire in the case of supply voltages outside of the rated voltage range. Please note the direction of rotation of the separately driven fan (axial-flow fan) when connecting it. The permissible coolant temperatures are CT_{min} –20 °C and CT_{max} +40 °C. Lower coolant temperatures are available on request.

When the separately driven fan is mounted, the length of the motor increases by ΔI. For an explanation of the additional dimensions and weights, see "Dimensions and weights of explosion-proof separately driven fans".

Technical specifications (continued)

Technical specifications of separately driven fans for 1MB1 explosion-proof motors (frame sizes 100 to 200) in the Ex tc (Zone 22) and Ex ec (Zone 2) versions

Technical specifications of separately driven fans (according to tolerances of EN 60034-1)

Frame size	Rated voltage range	Frequency	Power consumption	Rated current
	V	Hz	kW	A
100	1 AC 220 ... 277	50	0.066	0.28
	3 AC 200 ... 303 Δ	50	0.091	0.37
	3 AC 346 ... 525 Y	50	0.091	0.22
	1 AC 220 ... 277	60	0.075	0.30
	3 AC 220 ... 332 Δ	60	0.087	0.31
	3 AC 380 ... 575 Y	60	0.087	0.18
112	1 AC 220 ... 277	50	0.071	0.28
	3 AC 200 ... 303 Δ	50	0.097	0.35
	3 AC 346 ... 525 Y	50	0.097	0.20
	1 AC 220 ... 277	60	0.094	0.37
	3 AC 220 ... 332 Δ	60	0.103	0.31
	3 AC 380 ... 575 Y	60	0.103	0.18
132	1 AC 230 ... 277	50	0.098	0.40
	3 AC 200 ... 303 Δ	50	0.124	0.58
	3 AC 346 ... 525 Y	50	0.124	0.33
	1 AC 230 ... 277	60	0.149	0.57
	3 AC 220 ... 332 Δ	60	0.148	0.44
	3 AC 380 ... 575 Y	60	0.148	0.25
160 ... 200	1 AC 230 ... 277	50	0.253	0.97
	3 AC 200 ... 303 Δ	50	0.247	0.87
	3 AC 346 ... 525 Y	50	0.247	0.50
	3 AC 220 ... 332 Δ	60	0.360	0.93
	3 AC 380 ... 575 Y	60	0.360	0.56

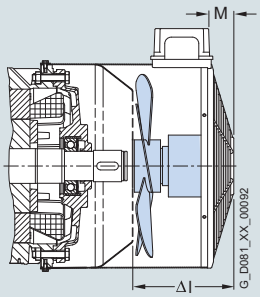
Technical specifications of separately driven fans for 1MB1 explosion-proof motors (frame sizes 225 to 315) in the Ex tb (Zone 21), Ex tc (Zone 22) and Ex ec (Zone 2) versions

Frame size	Designation on rating plate of separately driven fan	Rated voltage range	Frequency	Rated speed	Power consumption	Rated current for rated voltage
		V	Hz	rpm	kW	A
225 M ... 280 M	1LA7073-2AA62-Z	3 AC 230 Δ	50	2800	0.550	1.36
		3 AC 400 Y	50	2800	0.550	0.79
		3 AC 460 Y	60	3400	0.630	1.32
315 – 2-pole	1LA9073-2LA92-Z	3 AC 230 Δ	50	2780	0.700	1.73
		3 AC 400 Y	50	2780	0.700	1.00
		3 AC 460 Y	60	3385	0.700	1.64
315 – 4-, 6-, 8-pole	1LA7073-2AA62-Z	3 AC 230 Δ	50	2800	0.550	1.36
		3 AC 400 Y	50	2800	0.550	0.79
		3 AC 460 Y	60	3400	0.630	1.32

Technical specifications (continued)

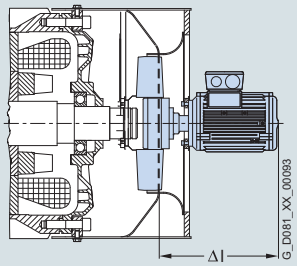
Dimensions and weights of the explosion-proof separately driven fans (order code **F70**)

1MB102, 1MB152, 1MB162, 1MB103, 1MB153, 1MB163
Frame sizes 100 to 200
Explosion-proof separately driven fans
Ex tc, Ex ec



Frame size	Type of protection/motor type Ex tc (Zone 22)/1MB102, 1MB152, 1MB162 Ex ec (Zone 2)/1MB103, 1MB153, 1MB163 ΔI	Weight approx.
	mm	kg
100	141	4
112	158	4.5
132	177	5.5
160	227	7
180	269	10
200	272	11

1MB151, 1MB161, 1MB152, 1MB162, 1MB153, 1MB163
Frame sizes 225 to 315
Explosion-proof separately driven fans
Ex tb, Ex tc, Ex ec



Frame size	Type of protection/motor type Ex tb (Zone 21)/1MB151, 1MB161 Ex tc (Zone 22)/1MB152, 1MB162 Ex ec (Zone 2)/1MB153, 1MB163 ΔI	Weight approx.
	mm	kg
225	267	24.5
250	272	27.5
280	270	30.5
315	280	38.5

5

Technical specifications (continued)

VIK version

VIK = Verband der Industriellen Energie- und Kraftwirtschaft e.V. (German Association of the Energy and Power Supply Industry)

- **VIK standard version** –
  1LE1 + order code **C02**
  "VIK" identification on rating plate.
  ➔ Product range in Catalog Section 2.
- **VIK-Ex ec version for line operation** –
  1MB1.3 + order code **C02**
  "VIK" and "Ex ec IIC T3 Gc" marking on the rating plate according to Directive 2014/34/EU (ATEX).
  ➔ Product range in this Catalog Section.
- **VIK Ex ec version for converter operation** –
  1MB1.3 + order code **C02**+**B40**/**B41**+...
  "VIK" and "Ex ec IIC T3 Gc" markings on the rating plate and motor operating data for converter operation on the additional rating plate according to Directive 2014/34/EU (ATEX).

Both versions include technology for Zone 2 with type of protection Ex ec IIC T3 Gc. Motors up to frame size 355 can be supplied in accordance with the technical requirements of the VIK recommendation.

Minimum efficiency class:

- VIK standard version:
  IE3 from 0.75 kW in accordance with legal requirements.
- VIK-Ex ec version:
  As a minimum, IE3 according to the VIK recommendation issued in January 2018.

Notes:
- 8-pole motors or all motors < 0.75 kW are still possible as these motors are outside the power range specified for IE stamping.
- Motors in VIK standard version (1LE1) with mountings (brake, rotary pulse encoder and separately driven fan) are not compatible with Zone 2. Versions for Zone 21/22 are not possible.

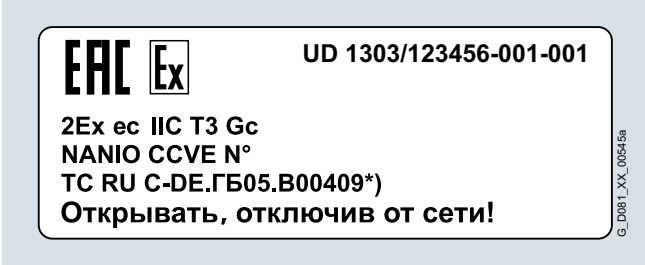
Ex certification EAC for the Eurasian customs union (Russia, Belarus, and Kazakhstan, Armenia, Kyrgyzstan)

EAC = Eurasian Conformity

For the import and commissioning of explosion-proof motors in the Eurasian customs union, approval is required from a named Russian testing authority.

"Ex certificate EAC for the Eurasian customs union"
Order code **D35**

When motors are ordered with order code **D35**, they are fitted with an additional rating plate displaying the logo "EAC Ex" and the Russian Ex marking.



Example: Additional rating plate

The "EAC Ex" logo can also be found on the package label. The motor must have an "EAC Ex certificate", although the certificate does not generally have to be shipped with the motor. The customs authorities use the motor article number to check the motor certification.
A copy of the EAC Ex certificate must be in the customer's possession before the motor is commissioned.
The certificates are available from the SIOS (Siemens Industry Online Support) portal
https://support.industry.siemens.com/cs/ww/en/
as well as the "Drive Technology Configurator" (DT Configurator)
www.siemens.com/dt-configurator.

Coolant temperature

Coolant temperature –40 to +40 °C for explosion-proof motor

For all 1MB10 motors, frame sizes 100 to 160 and 1MB15/6, frame sizes 100 to 315 in explosion protection types Ex ec or Ex t (Zone 21/22), the operating ambient temperature range can be optionally increased to –40 °C. Extensive technical measures are necessary in this case.

Order code **D03**

Order code **D03** is not possible in combination with order code **H02** "Vibration-proof version".

Selection and ordering data

The article number consists of a combination of digits and letters and is divided into three hyphenated blocks to provide a better overview, e.g.:
1MB1511-1DB22-2AB4-Z
R10

The first block (positions 1 to 7) identifies the motor type. The second block (positions 8 to 12) defines the motor frame size and length, the number of poles and in some cases the frequency/voltage. In the third block (positions 13 to 16), the frequency/voltage, type of construction and further design features are encoded.

For deviations in the second and third block from the catalog codes either **Z** or **90** should be used as appropriate.

Ordering data:

- Complete Article No. and order code(s) or plain text
- If a quotation has been requested, please specify the quotation number in addition to the Article No.
- When ordering a complete motor as a spare part, please specify the works serial No. for the previously supplied motor as well as the Article No.

Structure of the Article No.:			Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	
1st to 4th position: Digit, letter, letter, digit	Explosion-proof – Self-ventilated by fan mounted on and driven by rotor			**1** **1**	**M** **M**	**B** **B**	**1** **5**															
5th position: Digit	Aluminum housing							**0**														
	Cast-iron housing Basic Line							**5**														
	Cast-iron housing Performance Line							**6**														
6th to 7th position: 2 digits	Ex tb IIIC (Ex-Zone 21)	Motors with IE2 High Efficiency							**1**	**1**												
		Motors with IE1 Standard Efficiency							**1**	**2**												
		Motors with IE3 Premium Efficiency							**1**	**3**												
	Ex tc IIIB (Ex Zone 22)	Motors with IE2 High Efficiency							**2**	**1**												
		Motors with IE1 Standard Efficiency							**2**	**2**												
		Motors with IE3 Premium Efficiency							**2**	**3**												
	Ex ec IIC T3 (Ex Zone 2)	Motors with IE2 High Efficiency							**3**	**1**												
		Motors with IE1 Standard Efficiency							**3**	**2**												
		Motors with IE3 Premium Efficiency							**3**	**3**												
	Ex eb IIC T3 (Ex Zone 1)	Motors with IE3 Premium Efficiency							**4**	**3**												
	Ex db, Ex db ed IIC T4 (Ex Zone 1)	Motors with IE3 Premium Efficiency							**5**	**3**												
8th, 9th and 11th position: Digit, letter, digit	**Motor frame size** (frame size as a combination of shaft height and overall length, encoded)											**0** ... **3**	**A** ... **E**		**0** ... **6**							
10th position: Letter	**No. of poles** A: 2-pole, B: 4-pole, C: 6-pole, D: 8-pole													**A** ... **D**								
12th and 13th position: 2 digits	**Voltage, circuit and frequency** (encoded with two digits, 9-0 requires order code M.. (e.g. M1Y))															**0** ... **9**		**0** ... **8**				
14th position: Letter	**Type of construction** (encoded with A ... V)																		**A** ... **V**			
15th position: Letter	**Motor protection** (encoded with A ... J)																			**A** ... **J**		
16th position: Digit	**Terminal box position** 4: Terminal box top, 5: Terminal box right, 6: Terminal box left, 7: Terminal box bottom																				**4** ... **7**	
	Special order versions: encoded – additional order code required not encoded – additional plain text required																					- **Z**

Ordering example

Selection criteria	Requirement	Structure of the Article No.
Motor type 1MB1	Self-ventilated motor with explosion protection with type of protection Ex tb IIIC (Ex Zone 21), cast-iron version, with IE2 High Efficiency, IP55 degree of protection	1MB1511-■■■■■-■■■■
Motor frame size/No. of poles/Speed	160 M/4-pole/1500 rpm	1MB1511-1DB2■-■■■■
Rated power	11 kW	
Voltage and frequency	230 VΔ/400 VY, 50 Hz	1MB1511-1DB22-2■■■
Type of construction with special version	IM B3	1MB1511-1DB22-2A■■
Motor protection	Motor protection with PTC thermistor with 3 embedded temperature sensors for tripping	1MB1511-1DB22-2AB■
Terminal box position	Terminal box at top	1MB1511-1DB22-2AB4
Special version	Rotation of the terminal box through 90°, entry from DE	1MB1511-1DB22-2AB4-Z R10

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Aluminum series 1MB1 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz 1)																		
0.75	**0.86**	**80 M**	2850	2.5		80.7	82.2	81.9	0.86	1.56	2.6	6.2	3	60	71	**1MB10■3-0DA2■-■■■■**	11	0.0011
1.1	**1.27**	**80 M**	2885	3.6		82.7	83.9	83.1	0.85	2.25	3	7.1	3.3	60	71	**1MB10■3-0DA3■-■■■■**	12	0.0013
1.5	**1.75**	**90 S**	2910	4.9		84.2	84.6	83.2	0.86	3	2.7	8.1	4.2	65	77	**1MB10■3-0EA0■-■■■■**	15	0.0021
2.2	**2.55**	**90 L**	2910	7.2		85.9	86.8	86.1	0.88	4.2	2.6	8.3	4	65	77	**1MB10■3-0EA4■-■■■■**	19	0.0031
3	**3.45**	**100 L**	2920	9.8		87.1	87.9	87.5	0.88	5.6	3.2	8.1	4.6	67	79	**1MB10■3-1AA4■-■■■■**	26	0.0054
4	**4.55**	**112 M**	2950	13		88.1	88.7	88.2	0.89	7.4	2.5	8.7	4	69	81	**1MB10■3-1BA2■-■■■■**	34	0.012
5.5	**6.3**	**132 S**	2950	18		89.2	90.1	89.7	0.9	9.9	1.9	7.3	3.7	68	80	**1MB10■3-1CA0■-■■■■**	43	0.024
7.5	**8.6**	**132 S**	2950	24		90.1	90.9	90.7	0.92	13.1	2.1	8.3	4	68	80	**1MB10■3-1CA1■-■■■■**	57	0.031
11	**12.6**	**160 M**	2955	36		91.2	91.3	90.2	0.87	20	2.5	7.6	3.8	70	82	**1MB10■3-1DA2■-■■■■**	75	0.053
15	**17.3**	**160 M**	2960	48		91.9	91.9	91	0.87	27	2.8	8.8	4.3	70	82	**1MB10■3-1DA3■-■■■■**	84	0.061
18.5	**21.3**	**160 L**	2955	60		92.4	92.8	92.3	0.9	32	2.8	8.3	3.9	70	82	**1MB10■3-1DA4■-■■■■**	94	0.068
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz 1)																		
0.55	**0.63**	**80 M**	1440	3.6		80.8	81.1	79.3	0.78	1.26	2.1	5.9	3.1	53	64	**1MB10■3-0DB2■-■■■■**	11	0.0021
0.75	**0.86**	**80 M**	1450	4.9		82.5	82.3	79.9	0.75	1.75	2.7	7.1	3.9	53	64	**1MB10■3-0DB3■-■■■■**	14	0.0029
1.1	**1.27**	**90 S**	1440	7.3		84.1	84.7	83.4	0.78	2.4	2.9	6.9	3.6	56	68	**1MB10■3-0EB0■-■■■■**	16	0.0036
1.5	**1.75**	**90 L**	1445	9.9		85.3	86	85.2	0.8	3.15	2.9	7.3	3.5	60	68	**1MB10■3-0EB4■-■■■■**	19	0.0049
2.2	**2.55**	**100 L**	1465	14.3		86.7	87	85.9	0.83	4.4	3.2	8.4	4.4	60	72	**1MB10■3-1AB4■-■■■■**	30	0.014
3	**3.45**	**100 L**	1460	19.6		87.7	88.5	87.9	0.83	5.9	2.5	8.3	3.9	60	72	**1MB10■3-1AB5■-■■■■**	30	0.014
4	**4.55**	**112 M**	1460	26		88.6	89.2	88.6	0.82	7.9	2.4	7.1	3.7	58	70	**1MB10■3-1BB2■-■■■■**	34	0.017
5.5	**6.3**	**132 S**	1470	36		89.6	90	89.4	0.82	10.8	2.9	8.6	3.7	64	76	**1MB10■3-1CB0■-■■■■**	64	0.046
7.5	**8.6**	**132 M**	1465	49		90.4	91.1	90.8	0.84	14.3	2.6	8.2	3.7	64	76	**1MB10■3-1CB2■-■■■■**	64	0.046
11	**12.6**	**160 M**	1475	71		91.4	91.8	91.2	0.84	20.5	2.6	7.6	3.4	65	77	**1MB10■3-1DB2■-■■■■**	83	0.083
15	**17.3**	**160 L**	1475	97		92.1	92.3	91.5	0.82	28.5	2.5	8.5	3.8	65	77	**1MB10■3-1DB4■-■■■■**	100	0.099
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																		
0.37	**0.43**	**80 M**	940	3.8		73.5	73.1	69.4	0.66	1.1	2.3	4.2	2.7	42	53	**1MB10■3-0DC2■-■■■■**	12	0.0025
0.55	**0.63**	**80 M**	935	5.6		77.2	77	73.9	0.67	1.53	2.5	4.5	2.8	42	53	**1MB10■3-0DC3■-■■■■**	14	0.0031
0.75	**0.86**	**90 S**	945	7.6		78.9	80	78.8	0.7	1.96	2.2	4.6	2.6	43	55	**1MB10■3-0EC0■-■■■■**	16	0.004
1.1	**1.27**	**90 L**	950	11	IE1	81	81.4	79.3	0.66	2.95	2.8	5	3	57	65	**1MB10■3-0EC4■-■■■■**	19	0.0052
1.5	**1.75**	**100 L**	970	14.8	IE2	82.5	83.1	81.5	0.73	3.6	1.9	5.2	2.8	59	71	**1MB10■3-1AC4■-■■■■**	30	0.014
2.2	**2.55**	**112 M**	970	22	IE2	84.3	85	83.9	0.75	5	2.2	5.6	2.8	65	74	**1MB10■3-1BC2■-■■■■**	39	0.014
3	**3.45**	**132 S**	975	29		85.6	86.1	84.9	0.73	6.9	2.3	6.6	3.2	58	66	**1MB10■3-1CC0■-■■■■**	42	0.034
4	**4.55**	**132 M**	975	39		86.8	87.1	86.2	0.73	9.1	2.2	6.2	3	67	75	**1MB10■3-1CC2■-■■■■**	46	0.039
5.5	**6.3**	**132 M**	975	54		88.0	88.3	87.2	0.72	12.5	2.7	6.8	3.4	64	72	**1MB10■3-1CC3■-■■■■**	58	0.05
7.5	**8.6**	**160 M**	985	73		89.1	89.5	88.6	0.81	15	2.3	7.9	3.2	71	79	**1MB10■3-1DC2■-■■■■**	95	0.132
11	**12.6**	**160 L**	980	107		90.3	90.8	90.2	0.80	22	2.9	6.8	2.8	66	74	**1MB10■3-1DC4■-■■■■**	106	0.164

Zones

Zone		Article No. position
Zone 21	(occasionally conductive and non-conductive dust) Ex tb IIIC	1
Zone 22	(rarely conductive or temporarily non-conductive dust) Ex tc IIIB	2
Zone 2	(rarely explosive or temporarily explosive gases) Ex ec IIC	3

Voltages

		Version	Article No. positions	Order code
50 Hz 230 VΔ/400 VY	60 Hz 1) 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 1) 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages 1) and more information, see from page 5/38			9 0	. . .

Types of construction

		Version	Article No. position	Order code
Without flange	IM B3 2)	**Standard**	A	–
With flange	IM B5 2)	With additional charge	F	–
With flange	IM B14 2)	With additional charge	K	–
For other types of construction and more information, see from page 5/42			■	. . .

Motor protection

	Version	Article No. position
Without	**Standard**	A
3 temperature sensors (frame sizes 80, 90 or 100 to 200)	With additional charge	B
For other motor protection and more information, see from page 5/50		■

Terminal box position

	Version	Article No. position
Terminal box at top	**Standard**	4
For other terminal box positions and more information, see from page 5/54		■

Special versions — Order code(s)

For options, see from page 5/58 — **1MB10■3-. . . . ■-■■■■-Z . . .+. . .+. . .+. . .**

For footnotes, see page 5/27

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.3 – *Basic Line* 1MB16.3 – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz [1]																		
0.37	**0.43**	**71 M**	2850	1.2		73.8	73.3	69.7	0.76	0.95	3.5	5.8	3.5	52	63	**1MB1 5■3-0CA2■-■■■■**	13	0.00045
0.55	**0.63**	**71 M**	2860	1.8		77.8	77.5	74.5	0.76	1.34	3.7	6.1	3.7	57	68	**1MB1 5■3-0CA3■-■■■■**	14.5	0.00056
0.75	**0.88**	**80 M**	2850	2.5		80.7	82.2	81.9	0.86	1.56	2.6	6.2	3	60	71	**1MB1 5■3-0DA2■-■■■■**	18	0.0011
1.1	**1.27**	**80 M**	2885	3.6		82.7	83.9	83.1	0.85	2.25	3	7.1	3.3	60	71	**1MB1 5■3-0DA3■-■■■■**	21	0.0013
1.5	**1.75**	**90 S**	2910	4.9		84.2	84.6	83.2	0.86	3	2.7	8.1	4.2	65	77	**1MB1 5■3-0EA0■-■■■■**	25.5	0.0021
2.2	**2.55**	**90 L**	2910	7.2		85.9	86.8	86.1	0.88	4.2	2.6	8.3	4	65	77	**1MB1 5■3-0EA4■-■■■■**	32	0.0031
3	**3.45**	**100 L**	2920	9.8		87.1	87.9	87.5	0.88	5.6	3.2	8.1	4.6	67	79	**1MB1■■3-1AA4■-■■■■**	36	0.0054
4	**4.55**	**112 M**	2950	13		88.1	88.7	88.2	0.89	7.4	2.5	8.7	4	69	81	**1MB1■■3-1BA2■-■■■■**	45	0.012
5.5	**6.3**	**132 S**	2950	18		89.2	90.1	89.7	0.9	9.9	1.9	7.3	3.7	68	80	**1MB1■■3-1CA0■-■■■■**	58	0.024
7.5	**8.6**	**132 S**	2950	24		90.1	90.9	90.7	0.92	13.1	2.1	8.3	4	68	80	**1MB1■■3-1CA1■-■■■■**	73	0.031
11	**12.6**	**160 M**	2955	36		91.2	91.3	90.2	0.87	20	2.5	7.6	3.8	70	82	**1MB1■■3-1DA2■-■■■■**	100	0.053
15	**17.3**	**160 M**	2960	48		91.9	91.9	91	0.87	27	2.8	8.8	4.3	70	82	**1MB1■■3-1DA3■-■■■■**	110	0.061
18.5	**21.3**	**160 L**	2955	60		92.4	92.8	92.3	0.9	32	2.8	8.3	3.9	70	82	**1MB1■■3-1DA4■-■■■■**	127	0.068
22	**24.5**	**180 M**	2950	71		92.7	93	92.4	0.89	38.5	2.3	7.5	3.5	67	80	**1MB1■■3-1EA2■-■■■■**	160	0.08
30	**33.5**	**200 L**	2955	97		93.3	93.6	93.3	0.87	53	2.5	7	3.3	67	80	**1MB1■■3-2AA4■-■■■■**	225	0.134
37	**41.5**	**200 L**	2955	120		93.7	93.9	93.5	0.88	65	2.5	7.1	3.2	67	80	**1MB1■■3-2AA5■-■■■■**	250	0.158
45	**51**	**225 M**	2960	145		94	94.5	94.4	0.89	78	2.4	6.9	3.3	73	87	**1MB1■■3-2BA2■-■■■■**	315	0.26
55	**62**	**250 M**	2975	177		94.3	94.5	93.9	0.89	95	2.3	6.7	3.1	73	87	**1MB1■■3-2CA2■-■■■■**	385	0.46
75	**84**	**280 S**	2975	241	IE2	94.7	94.8	94.1	0.89	128	2.4	6.8	3	74	88	**1MB1■■3-2DA0■-■■■■**	510	0.77
90	**101**	**280 M**	2975	289	IE2	95	95.1	94.6	0.9	152	2.4	7.2	3.1	74	88	**1MB1■■3-2DA2■-■■■■**	590	0.94
110	**123**	**315 S**	2982	352		95.2	95.4	94.9	0.91	183	2.4	7.1	3.1	75	89	**1MB1■■3-3AA0■-■■■■**	750	1.4
132	**148**	**315 M**	2982	423		95.4	95.5	95.2	0.91	220	2.5	7.2	3.1	75	89	**1MB1■■3-3AA2■-■■■■**	880	1.6
160	**180**	**315 L**	2982	512	IE2	95.6	95.7	95.2	0.92	265	2.8	7.8	3.3	77	91	**1MB1■■3-3AA4■-■■■■**	980	1.9
200	**224**	**315 L**	2982	640		95.8	95.9	95.5	0.92	330	2.5	7.2	3	77	91	**1MB1■■3-3AA5■-■■■■**	1150	2.3

				Code	Order code
Basic Line				5	
Performance Line				6	
Zones					
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC				1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB				2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC				3	
Voltages [3]			Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY		**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ		**Standard**	3 4	–
50 Hz 500 VY			Without additional charge	2 7	–
50 Hz 500 VΔ			Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39				9 0	. . .
Types of construction			Version		Order code
Without flange	IM B3 [2]		**Standard**	A	–
With flange	IM B5 [2]		With additional charge	F	–
With flange	IM B14 [2]		With additional charge	K	–
For other types of construction and more information, see from page 5/44				■	. . .
Motor protection		Line	Version		
Without		Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors		**Basic Line**	With additional charge	B	
		Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51				■	
Terminal box position			Version		
Terminal box at top			**Standard**	4	
For other terminal box positions and more information, see from page 5/55				■	
Special versions					Order code(s)
For options, see from page 5/62				1MB1■■3- . . . . ■-■■■■	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.3 – *Basic Line*, 1MB16.3 – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz [1]																		
0.25	**0.29**	**71 M**	1395	1.7		73.5	73.6	70.4	0.72	0.68	2.5	4.2	2.6	44	55	**1MB1 5■3-0CB2■-■■■■**	13	0.00095
0.37	**0.43**	**71 M**	1410	2.6		77.3	76.8	73.2	0.7	0.99	3.1	4.8	3.1	56	67	**1MB1 5■3-0CB3■-■■■■**	16	0.0014
0.55	**0.63**	**80 M**	1440	3.6		80.8	81.1	79.3	0.78	1.26	2.1	5.9	3.1	53	64	**1MB1 5■3-0DB2■-■■■■**	18.5	0.0021
0.75	**0.88**	**80 M**	1450	4.9		82.5	82.3	79.9	0.75	1.75	2.7	7.1	3.9	53	64	**1MB1 5■3-0DB3■-■■■■**	22.5	0.0029
1.1	**1.27**	**90 S**	1440	7.3		84.1	84.7	83.4	0.78	2.4	2.9	6.9	3.6	56	68	**1MB1 5■3-0EB0■-■■■■**	25	0.0036
1.5	**1.75**	**90 L**	1445	9.9		85.3	86	85.2	0.8	3.15	2.9	7.3	3.5	60	68	**1MB1 5■3-0EB4■-■■■■**	31	0.0049
2.2	**2.55**	**100 L**	1465	14.3		86.7	87	85.9	0.83	4.4	3.2	8.4	4.4	60	72	**1MB1■■3-1AB4■-■■■■**	40	0.014
3	**3.45**	**100 L**	1460	19.6		87.7	88.5	87.9	0.83	5.9	2.5	8.3	3.9	60	72	**1MB1■■3-1AB5■-■■■■**	40	0.014
4	**4.55**	**112 M**	1460	26		88.6	89.2	88.6	0.82	7.9	2.4	7.1	3.7	58	70	**1MB1■■3-1BB2■-■■■■**	46	0.017
5.5	**6.3**	**132 S**	1470	36		89.6	90	89.4	0.82	10.8	2.9	8.6	3.7	64	76	**1MB1■■3-1CB0■-■■■■**	74	0.046
7.5	**8.6**	**132 M**	1465	49		90.4	91.1	90.8	0.84	14.3	2.6	8.2	3.7	64	76	**1MB1■■3-1CB2■-■■■■**	80	0.046
11	**12.6**	**160 M**	1475	71		91.4	91.8	91.2	0.84	20.5	2.6	7.6	3.4	65	77	**1MB1■■3-1DB2■-■■■■**	109	0.083
15	**17.3**	**160 L**	1475	97		92.1	92.3	91.5	0.82	28.5	2.5	8.5	3.8	65	77	**1MB1■■3-1DB4■-■■■■**	127	0.099
18.5	**21.3**	**180 M**	1470	120		92.6	93.1	93	0.82	35	2.5	7.2	3.3	66	73	**1MB1■■3-1EB2■-■■■■**	165	0.13
22	**25.3**	**180 L**	1470	143		93	93.6	93.6	0.83	41	2.3	6.8	3.3	68	75	**1MB1■■3-1EB4■-■■■■**	170	0.14
30	**34.5**	**200 L**	1470	195	IE2	93.6	94.2	94.2	0.84	55	2.6	7.3	3.1	65	72	**1MB1■■3-2AB5■-■■■■**	240	0.22
37	**42.5**	**225 S**	1478	239	IE2	93.9	94.5	94.4	0.86	66	2.5	6.4	2.7	65	78	**1MB1■■3-2BB0■-■■■■**	285	0.42
45	**52**	**225 M**	1478	291	IE2	94.2	94.9	95	0.86	80	2.6	6.6	2.6	66	79	**1MB1■■3-2BB2■-■■■■**	340	0.52
55	**63**	**250 M**	1482	354	IE2	94.6	95.1	95	0.87	96	2.5	6.8	2.9	66	79	**1MB1■■3-2CB2■-■■■■**	420	0.85
75	**86**	**280 S**	1485	482	IE2	95	95.3	95	0.86	133	2.5	6.9	3	69	83	**1MB1■■3-2DB0■-■■■■**	570	1.4
90	**104**	**280 M**	1485	579	IE2	95.2	95.5	95.3	0.87	157	2.6	7.2	3	70	84	**1MB1■■3-2DB2■-■■■■**	670	1.7
110	**127**	**315 S**	1488	706		95.4	95.8	95.5	0.87	191	2.6	6.8	2.9	70	84	**1MB1■■3-3AB0■-■■■■**	760	2.2
132	**152**	**315 M**	1490	846		95.6	95.9	95.9	0.87	230	2.8	7.3	3	73	87	**1MB1■■3-3AB2■-■■■■**	960	2.9
160	**184**	**315 L**	1490	1025		95.8	96.1	96.1	0.87	275	2.9	7.3	3.1	73	87	**1MB1■■3-3AB4■-■■■■**	990	3.1
200	**230**	**315 L**	1488	1284	IE2	96	96.3	96.1	0.88	340	3.2	7.4	3	73	87	**1MB1■■3-3AB5■-■■■■**	1190	3.7

Option		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages [3]		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2]	**Standard**	A	–
With flange	IM B5 [2]	With additional charge	F	–
With flange	IM B14 [2]	With additional charge	K	–
For other types of construction and more information, see from page 5/44			■	. . .
Motor protection		Version		
Without	Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors	**Basic Line**	With additional charge	B	
	Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/55			■	
Special versions				Order code(s)
For options, see from page 5/62			**1MB1■■3- . . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

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For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series **1MB15.3** – *Basic Line* **1MB16.3** – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz [1]																		
0.18	0.21	71 M	885	1.9		63.9	64.6	60.8	0.69	0.59	2.3	2.8	2.3	39	50	1MB1 5■3-0CC2■-■■■■	12.5	0.001
0.25	0.29	71 M	900	2.7		68.6	69.5	66.2	0.69	0.76	2.6	3.2	2.6	46	57	1MB1 5■3-0CC3■-■■■■	15.5	0.0015
0.37	0.43	80 M	940	3.8		73.5	73.1	69.4	0.66	1.1	2.3	4.2	2.7	42	53	1MB1 5■3-0DC2■-■■■■	18.5	0.0025
0.55	0.63	80 M	935	5.6		77.2	77	73.9	0.67	1.53	2.5	4.5	2.8	42	53	1MB1 5■3-0DC3■-■■■■	22.5	0.0031
0.75	0.88	90 S	945	7.6		78.9	80	78.8	0.7	1.96	2.2	4.6	2.6	43	55	1MB1 5■3-0EC0■-■■■■	26.5	0.004
1.1	1.27	90 L	950	11	IE1	81	81.4	79.3	0.66	2.95	2.8	5	3	57	65	1MB1 5■3-0EC4■-■■■■	32	0.0052
1.5	1.75	100 L	970	14.8	IE2	82.5	83.1	81.5	0.73	3.6	1.9	5.2	2.8	59	71	1MB1■■3-1AC4■-■■■■	36	0.011
2.2	2.55	112 M	970	22	IE2	84.3	85	83.9	0.75	5	2.2	5.6	2.8	65	74	1MB1■■3-1BC2■-■■■■	53	0.017
3	3.45	132 S	975	29		85.6	86.1	84.9	0.73	6.9	2.3	6.6	3.2	58	66	1MB1■■3-1CC0■-■■■■	60	0.034
4	4.55	132 M	975	39		86.8	87.1	86.2	0.73	9.1	2.2	6.2	3	67	75	1MB1■■3-1CC2■-■■■■	64	0.039
5.5	6.3	132 M	975	54		88.0	88.3	87.2	0.72	12.5	2.7	6.8	3.4	64	72	1MB1■■3-1CC3■-■■■■	76	0.05
7.5	8.6	160 M	985	73		89.1	89.5	88.6	0.81	15	2.3	7.9	3.2	71	79	1MB1■■3-1DC2■-■■■■	124	0.132
11	12.6	160 L	980	107		90.3	90.8	90.2	0.80	22	2.9	6.8	2.8	66	74	1MB1■■3-1DC4■-■■■■	138	0.164
15	18	180 L	975	147	IE2	91.2	91.9	91.9	0.8	29.5	2.3	5.9	2.8	61	68	1MB1■■3-1EC4■-■■■■	180	0.19
18.5	22	200 L	978	181	IE2	91.7	92.5	92.5	0.79	37	2.5	5.6	2.6	64	71	1MB1■■3-2AC4■-■■■■	215	0.28
22	26.5	200 L	978	215	IE2	92.2	93.1	93.2	0.79	43.5	2.5	5.6	2.6	61	68	1MB1■■3-2AC5■-■■■■	230	0.32
30	36	225 M	982	292	IE2	92.9	93.6	93.5	0.83	56	2.6	6.6	3	64	77	1MB1■■3-2BC2■-■■■■	325	0.67
37	44.5	250 M	985	359	IE2	93.3	94	94	0.85	67	2.7	7	2.9	62	75	1MB1■■3-2CC2■-■■■■	405	1
45	54	280 S	988	435	IE2	93.7	94.3	94.2	0.85	82	3	6.8	2.8	60	74	1MB1■■3-2DC0■-■■■■	510	1.4
55	66	280 M	988	532	IE2	94.1	94.5	94.4	0.85	99	3.3	7.2	3	65	79	1MB1■■3-2DC2■-■■■■	560	1.64
75	90	315 S	990	723		94.6	94.9	94.4	0.84	136	2.6	7.5	3.1	63	78	1MB1■■3-3AC0■-■■■■	750	2.6
90	108	315 M	991	867	IE2	94.9	95.2	94.9	0.85	161	2.5	6.7	2.8	63	78	1MB1■■3-3AC2■-■■■■	890	3.1
110	132	315 L	991	1060	IE2	95.1	95.5	95.3	0.84	199	2.8	7.2	3	63	78	1MB1■■3-3AC4■-■■■■	990	3.9
132	158	315 L	992	1271	IE2	95.4	95.7	95.4	0.82	245	3.3	8	3.3	66	81	1MB1■■3-3AC5■-■■■■	1130	4.48
160	192	315 L	992	1540	IE2	95.6	95.8	95.5	0.82	295	3.5	8.5	3.6	66	81	1MB1■■3-3AC6■-■■■■	1260	5.41

Basic Line				5	
Performance Line				6	
Zones					
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC				1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB				2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC				3	
Voltages [3]		Version			Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2	2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3	4	–
50 Hz 500 VY		Without additional charge	2	7	–
50 Hz 500 VΔ		Without additional charge	4	0	–
For other voltages [1] and more information, see from page 5/39			9	0	. . .
Types of construction		Version			Order code
Without flange	IM B3 [2]	**Standard**		A	–
With flange	IM B5 [2]	With additional charge		F	–
With flange	IM B14 [2]	With additional charge		K	–
For other types of construction and more information, see from page 5/44				■	. . .

Motor protection	Line	Version		
Without	Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors	**Basic Line**	With additional charge	B	
	Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/55			■	
Special versions				Order code(s)
For options, see from page 5/62			1MB1■■3- . . . . ■-■■■■	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Aluminum series 1MB1 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz [1]																		
0.75	**0.86**	**80 M**	2805	2.6		77.4	80	80.1	0.84	1.67	1.9	4.9	2.3	60	71	**1MB10■1-0DA2■-■■■■**	9	0.0008
1.1	**1.27**	**80 M**	2835	3.7		79.6	81.3	80.9	0.83	2.4	2.7	6	3.1	60	71	**1MB10■1-0DA3■-■■■■**	11	0.0011
1.5	**1.75**	**90 S**	2885	4.9		81.3	81.7	79.8	0.84	3.15	2.7	6.9	3.6	65	77	**1MB10■1-0EA0■-■■■■**	13	0.0017
2.2	**2.55**	**90 L**	2890	7.3		83.2	83.7	82	0.85	4.5	2.5	7.1	3.7	65	77	**1MB10■1-0EA4■-■■■■**	15	0.0021
3	**3.45**	**100 L**	2905	9.9		84.6	85.5	84.6	0.84	6.1	2.3	7	3.3	67	79	**1MB10■1-1AA4■-■■■■**	21	0.0044
4	**4.55**	**112 M**	2945	13		85.8	86.2	85.1	0.85	7.9	2.1	8	3.6	69	81	**1MB10■1-1BA2■-■■■■**	27	0.0092
5.5	**6.3**	**132 S**	2950	18		87	88	87.6	0.87	10.5	1.8	6.6	2.9	68	80	**1MB10■1-1CA0■-■■■■**	39	0.02
7.5	**8.6**	**132 S**	2950	24		88.1	88.5	87.6	0.87	14.1	2.2	7.5	3.1	68	80	**1MB10■1-1CA1■-■■■■**	43	0.024
11	**12.6**	**160 M**	2955	36		89.4	89.3	88	0.87	20.5	2.1	7.4	3.2	70	82	**1MB10■1-1DA2■-■■■■**	67	0.045
15	**17.3**	**160 M**	2955	48		90.3	90.7	90	0.88	27	2.4	7.6	3.4	70	82	**1MB10■1-1DA3■-■■■■**	75	0.053
18.5	**21.3**	**160 L**	2955	60		90.9	91.3	90.6	0.88	33.5	2.9	7.9	3.6	70	82	**1MB10■1-1DA4■-■■■■**	84	0.061
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz [1]																		
0.55	**0.63**	**80 M**	1440	3.6		77.1	76.8	73.7	0.74	1.39	2.2	5.3	3.1	53	64	**1MB10■1-0DB2■-■■■■**	10	0.0017
0.75	**0.86**	**80 M**	1440	5		79.6	79.9	77.5	0.76	1.79	2.2	5.6	3.1	53	64	**1MB10■1-0DB3■-■■■■**	11	0.0021
1.1	**1.27**	**90 S**	1425	7.4		81.4	81.8	80	0.78	2.5	2.3	5.6	2.9	56	68	**1MB10■1-0EB0■-■■■■**	13	0.0028
1.5	**1.75**	**90 L**	1435	10		82.8	83.5	82.2	0.79	3.3	2.6	6.4	3.4	56	68	**1MB10■1-0EB4■-■■■■**	16	0.0036
2.2	**2.55**	**100 L**	1455	14		84.3	85.1	84.2	0.81	4.65	2.1	6.9	3.3	60	72	**1MB10■1-1AB4■-■■■■**	21	0.0086
3	**3.45**	**100 L**	1455	20		85.5	86.4	85.6	0.82	6.2	2	6.9	3.1	60	72	**1MB10■1-1AB5■-■■■■**	25	0.011
4	**4.55**	**112 M**	1460	26		86.6	87.3	86.4	0.81	8.2	2.5	7.1	3.2	58	70	**1MB10■1-1BB2■-■■■■**	29	0.014
5.5	**6.3**	**132 S**	1465	36		87.7	88.4	87.6	0.8	11.3	2.3	6.9	2.9	64	76	**1MB10■1-1CB0■-■■■■**	42	0.027
7.5	**8.6**	**132 M**	1465	49		88.7	89.8	89.8	0.83	14.7	2.3	6.9	2.9	64	76	**1MB10■1-1CB2■-■■■■**	49	0.034
11	**12.6**	**160 M**	1470	71		89.8	91	90.9	0.85	21	2.1	6.7	2.8	65	77	**1MB10■1-1DB2■-■■■■**	71	0.065
15	**17.3**	**160 L**	1475	97		90.6	91.2	90.8	0.85	28	2.3	7.3	3	65	77	**1MB10■1-1DB4■-■■■■**	83	0.083

		Version	Code	Order code
Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/38			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2]	**Standard**	A	–
With flange	IM B5 [2]	With additional charge	F	–
With flange	IM B14 [2]	With additional charge	K	–
For other types of construction and more information, see from page 5/42			■	. . .
Motor protection		Version		
Without		**Standard**	A	
3 temperature sensors (frame sizes 80, 90 or 100 to 200)		With additional charge	B	
For other motor protection and more information, see from page 5/50			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/54			■	
Special versions				Order code(s)
For options, see from page 5/58			**1MB10■1- . . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Aluminum series 1MB1 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																		
0.37	**0.43**	**80 M**	925	3.8		67.6	67.9	64.4	0.69	1.14	2.1	4	2.4	42	53	**1MB10■1-0DC2■-■■■■**	9	0.0017
0.55	**0.63**	**80 M**	935	5.6		73.1	73.8	70.8	0.66	1.65	2.5	4.4	2.9	42	53	**1MB10■1-0DC3■-■■■■**	12	0.0025
0.75	**0.86**	**90 S**	935	7.7		75.9	76.8	74.5	0.7	2.05	2	4.1	2.5	43	55	**1MB10■1-0EC0■-■■■■**	13	0.003
1.1	**1.27**	**90 L**	935	11	IE1	78.1	79.3	77.7	0.7	2.9	2.2	4.4	2.6	43	55	**1MB10■1-0EC4■-■■■■**	16	0.004
1.5	**1.75**	**100 L**	970	15		79.8	80.5	79	0.73	3.7	2	5.4	2.8	59	71	**1MB10■1-1AC4■-■■■■**	25	0.011
2.2	**2.55**	**112 M**	965	22		81.8	82.7	81.7	0.75	5.2	2	5	2.8	62	74	**1MB10■1-1BC2■-■■■■**	29	0.014
3	**3.45**	**132 S**	970	30		83.3	83.4	81	0.72	7.2	1.6	5	2.5	63	75	**1MB10■1-1CC0■-■■■■**	38	0.024
4	**4.55**	**132 M**	970	39		84.6	85.5	84.3	0.75	9.1	1.6	5	2.3	63	75	**1MB10■1-1CC2■-■■■■**	43	0.029
5.5	**6.3**	**132 M**	970	54		86	87.1	86.4	0.76	12.1	1.9	5.6	2.6	63	75	**1MB10■1-1CC3■-■■■■**	52	0.037
7.5	**8.6**	**160 M**	975	73		87.2	87.9	87.2	0.74	16.8	1.9	4.7	2.2	67	79	**1MB10■1-1DC2■-■■■■**	77	0.075
11	**12.6**	**160 L**	975	108		88.7	89.7	89.3	0.76	23.5	1.9	4.8	2.2	67	79	**1MB10■1-1DC4■-■■■■**	93	0.098
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz 1)																		
0.75	**0.86**	**100 L**	705	10		66.2	65.7	61.6	0.61	2.7	1.5	3.2	2.1	60	72	**1MB10■1-1AD4■-■■■■**	21	0.0086
1.1	**1.27**	**100 L**	695	15		70.8	72.3	69.6	0.65	3.45	1.4	3.2	1.9	60	72	**1MB10■1-1AD5■-■■■■**	25	0.011
1.5	**1.75**	**112 M**	725	20		74.1	73.9	71.2	0.63	4.65	1.6	4	2.4	63	75	**1MB10■1-1BD2■-■■■■**	34	0.017
2.2	**2.55**	**132 S**	725	29		77.6	78.2	76.6	0.62	6.6	1.4	3.5	2	63	75	**1MB10■1-1CD0■-■■■■**	46	0.034
3	**3.45**	**132 M**	720	40	IE1	80	80.7	79.2	0.62	8.7	1.4	3.7	2	63	75	**1MB10■1-1CD2■-■■■■**	52	0.037
4	**4.55**	**160 M**	730	52		81.9	82.6	81.4	0.67	10.5	1.6	3.7	1.9	63	75	**1MB10■1-1DD2■-■■■■**	69	0.065
5.5	**6.3**	**160 M**	730	72		83.8	84.2	83	0.67	14.1	1.7	3.9	2	63	75	**1MB10■1-1DD3■-■■■■**	82	0.083
7.5	**8.6**	**160 L**	725	99		85.3	86.4	86	0.7	18.1	1.6	3.8	1.9	63	75	**1MB10■1-1DD4■-■■■■**	94	0.098

		Version	Code	Order code
Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 1) 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 1) 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages 1) and more information, see from page 5/38			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 2)	**Standard**	A	–
With flange	IM B5 2)	With additional charge	F	–
With flange	IM B14 2)	With additional charge	K	–
For other types of construction and more information, see from page 5/42			■	. . .
Motor protection		Version		
Without		**Standard**	A	
3 temperature sensors (frame sizes 80, 90 or 100 to 200)		With additional charge	B	
For other motor protection and more information, see from page 5/50			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/54			■	
Special versions				Order code(s)
For options, see from page 5/58			**1MB10■1- . . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.1 – *Basic Line* 1MB16.1 – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz [1]																		
0.37	**0.43**	**71 M**	2770	1.3		69.5	70.5	67.9	0.81	0.95	2.5	4.1	2.5	58	63	**1MB1 5■1-0CA2■-■■■■**	11.5	0.00035
0.55	**0.63**	**71 M**	2780	1.9		74.1	75.2	72.9	0.8	1.34	2.6	4.6	2.6	58	63	**1MB1 5■1-0CA3■-■■■■**	13	0.00045
0.75	**0.86**	**80 M**	2805	2.6		77.4	80	80.1	0.84	1.67	1.9	4.9	2.3	60	71	**1MB1 5■1-0DA2■-■■■■**	16	0.0008
1.1	**1.27**	**80 M**	2835	3.7		79.6	81.3	80.9	0.83	2.4	2.7	6	3.1	60	71	**1MB1 5■1-0DA3■-■■■■**	18	0.0011
1.5	**1.75**	**90 S**	2885	4.9		81.3	81.7	79.8	0.84	3.15	2.7	6.9	3.6	65	77	**1MB1 5■1-0EA0■-■■■■**	23	0.0017
2.2	**2.55**	**90 L**	2890	7.3		83.2	83.7	82	0.85	4.5	2.5	7.1	3.7	65	77	**1MB1 5■1-0EA4■-■■■■**	25.5	0.0021
3	**3.45**	**100 L**	2905	9.9		84.6	85.5	84.6	0.84	6.1	2.3	7	3.3	67	79	**1MB1 ■■1-1AA4■-■■■■**	32	0.0044
4	**4.55**	**112 M**	2945	13		85.8	86.2	85.1	0.85	7.9	2.1	8	3.6	69	81	**1MB1 ■■1-1BA2■-■■■■**	39	0.0092
5.5	**6.3**	**132 S**	2950	18		87	88	87.6	0.87	10.5	1.8	6.6	2.9	68	80	**1MB1 ■■1-1CA0■-■■■■**	57	0.02
7.5	**8.6**	**132 S**	2950	24		88.1	88.5	87.6	0.87	14.1	2.2	7.5	3.1	68	80	**1MB1 ■■1-1CA1■-■■■■**	61	0.024
11	**12.6**	**160 M**	2955	36		89.4	89.3	88	0.87	20.5	2.1	7.4	3.2	70	82	**1MB1 ■■1-1DA2■-■■■■**	96	0.045
15	**17.3**	**160 M**	2955	48		90.3	90.7	90	0.88	27	2.4	7.6	3.4	70	82	**1MB1 ■■1-1DA3■-■■■■**	104	0.053
18.5	**21.3**	**160 L**	2955	60		90.9	91.3	90.6	0.88	33.5	2.9	7.9	3.6	70	82	**1MB1 ■■1-1DA4■-■■■■**	113	0.061
22	**24.5**	**180 M**	2940	71		91.3	91.6	90.9	0.87	40	2.7	7.4	3.6	77	84	**1MB1 ■■1-1EA2■-■■■■**	145	0.069
30	**33.5**	**200 L**	2960	97		92	92.1	91.5	0.87	54	2.5	6.9	3.3	78	85	**1MB1 ■■1-2AA4■-■■■■**	200	0.13
37	**41.5**	**200 L**	2960	119		92.5	92.7	92.1	0.88	66	2.7	7.4	3.5	78	85	**1MB1 ■■1-2AA5■-■■■■**	225	0.15
45	**51**	**225 M**	2965	145		92.9	93.1	92.5	0.88	79	2.7	7.8	3.7	76	89	**1MB1 ■■1-2BA2■-■■■■**	295	0.23
55	**62**	**250 M**	2970	177		93.2	93.3	92.4	0.88	97	2.3	6.8	3.1	76	89	**1MB1 ■■1-2CA2■-■■■■**	360	0.4
75	**84**	**280 S**	2978	240		93.8	93.6	92.4	0.86	134	2.5	7.2	3.2	76	89	**1MB1 ■■1-2DA0■-■■■■**	490	0.71
90	**101**	**280 M**	2975	289		94.1	94.2	93.5	0.88	157	2.5	7.1	3.1	76	89	**1MB1 ■■1-2DA2■-■■■■**	530	0.83
110	**123**	**315 S**	2982	352		94.3	94.2	93.3	0.9	187	2.4	7.3	3	77	91	**1MB1 ■■1-3AA0■-■■■■**	720	1.3
132	**148**	**315 M**	2982	423		94.6	94.7	94.1	0.91	220	2.4	7.2	3.1	77	91	**1MB1 ■■1-3AA2■-■■■■**	880	1.6
160	**180**	**315 L**	2982	512		94.8	94.9	94.3	0.92	265	2.3	7	3.1	80	95	**1MB1 ■■1-3AA4■-■■■■**	930	1.8
200	**224**	**315 L**	2982	640		95	95.2	94.8	0.92	330	2.5	7.3	3	80	95	**1MB1 ■■1-3AA5■-■■■■**	1130	2.2

				Article No. position	Order code
Basic Line				5	
Performance Line				6	
Zones					
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC				1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB				2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC				3	
Voltages [3]			Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY		**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ		**Standard**	3 4	–
50 Hz 500 VY			Without additional charge	2 7	–
50 Hz 500 VΔ			Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39				9 0	. . .
Types of construction			Version		Order code
Without flange	IM B3 [2]		**Standard**	A	–
With flange	IM B5 [2]		With additional charge	F	–
With flange	IM B14 [2]		With additional charge	K	–
For other types of construction and more information, see from page 5/44				■	. . .
Motor protection		Line	Version		
Without		Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors		**Basic Line**	With additional charge	B	
		Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51				■	
Terminal box position			Version		
Terminal box at top			**Standard**	4	
For other terminal box positions and more information, see from page 5/55				■	
Special versions					Order code(s)
For options, see from page 5/62				**1MB1■■1- . . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

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Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.1 – *Basic Line*, 1MB16.1 – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz [1]																		
0.25	**0.29**	**71 M**	1395	1.7		68.5	68.4	64.2	0.69	0.76	2.4	3.7	2.5	50	61	**1MB1 5■1-0CB2■-■■■■**	12	0.00076
0.37	**0.43**	**71 M**	1380	2.6		72.7	73.2	69.9	0.72	1.02	2.3	3.8	2.4	50	61	**1MB1 5■1-0CB3■-■■■■**	13	0.00095
0.55	**0.63**	**80 M**	1440	3.6		77.1	76.8	73.7	0.74	1.39	2.2	5.3	3.1	53	64	**1MB1 5■1-0DB2■-■■■■**	17	0.0017
0.75	**0.86**	**80 M**	1440	5		79.6	79.9	77.5	0.76	1.79	2.2	5.6	3.1	53	64	**1MB1 5■1-0DB3■-■■■■**	18.5	0.0021
1.1	**1.27**	**90 S**	1425	7.4		81.4	81.8	80	0.78	2.5	2.3	5.6	2.9	56	68	**1MB1 5■1-0EB0■-■■■■**	23	0.0028
1.5	**1.75**	**90 L**	1435	10		82.8	83.5	82.2	0.79	3.3	2.6	6.4	3.4	56	68	**1MB1 5■1-0EB4■-■■■■**	25	0.0036
2.2	**2.55**	**100 L**	1455	14		84.3	85.1	84.2	0.81	4.65	2.1	6.9	3.3	60	72	**1MB1 ■■1-1AB4■-■■■■**	32	0.0086
3	**3.45**	**100 L**	1455	20		85.5	86.4	85.6	0.82	6.2	2	6.9	3.1	60	72	**1MB1 ■■1-1AB5■-■■■■**	37	0.011
4	**4.55**	**112 M**	1460	26		86.6	87.3	86.4	0.81	8.2	2.5	7.1	3.2	58	70	**1MB1 ■■1-1BB2■-■■■■**	46	0.014
5.5	**6.3**	**132 S**	1465	36		87.7	88.4	87.6	0.8	11.3	2.3	6.9	2.9	64	76	**1MB1 ■■1-1CB0■-■■■■**	61	0.027
7.5	**8.6**	**132 M**	1465	49		88.7	89.8	89.8	0.83	14.7	2.3	6.9	2.9	64	76	**1MB1 ■■1-1CB2■-■■■■**	75	0.034
11	**12.6**	**160 M**	1470	71		89.8	91	90.9	0.85	21	2.1	6.7	2.8	65	77	**1MB1 ■■1-1DB2■-■■■■**	96	0.065
15	**17.3**	**160 L**	1475	97		90.6	91.2	90.8	0.85	28	2.3	7.3	3	65	77	**1MB1 ■■1-1DB4■-■■■■**	104	0.083
18.5	**21.3**	**180 M**	1465	121		91.2	92	91.9	0.84	35	2.5	7.2	3.4	61	74	**1MB1 ■■1-1EB2■-■■■■**	160	0.12
22	**25.3**	**180 L**	1465	143		91.6	92.2	91.9	0.84	41.5	2.6	7.3	3.5	69	76	**1MB1 ■■1-1EB4■-■■■■**	170	0.13
30	**34.5**	**200 L**	1470	195		92.3	92.8	92.5	0.84	56	2.5	6.7	3.7	70	77	**1MB1 ■■1-2AB5■-■■■■**	230	0.2
37	**42.5**	**225 S**	1470	240		92.7	93.5	93.5	0.88	65	2.3	6.6	2.9	66	79	**1MB1 ■■1-2BB0■-■■■■**	280	0.42
45	**52**	**225 M**	1475	291		93.1	93.8	93.7	0.87	80	2.5	6.9	3.1	66	79	**1MB1 ■■1-2BB2■-■■■■**	305	0.46
55	**63**	**250 M**	1480	355		93.5	93.9	93.5	0.85	100	2.7	6.8	3	66	79	**1MB1 ■■1-2CB2■-■■■■**	385	0.75
75	**86**	**280 S**	1485	482		94	94.2	93.8	0.87	132	2.5	6.8	3	71	85	**1MB1 ■■1-2DB0■-■■■■**	550	1.3
90	**104**	**280 M**	1486	578		94.2	94.3	93.6	0.87	159	2.6	7.3	3.1	71	85	**1MB1 ■■1-2DB2■-■■■■**	570	1.4
110	**127**	**315 S**	1490	705		94.5	94.6	94	0.86	195	2.7	7.4	3	72	86	**1MB1 ■■1-3AB0■-■■■■**	740	2
132	**152**	**315 M**	1490	846		94.7	94.9	94.6	0.87	230	2.7	7.1	2.9	75	89	**1MB1 ■■1-3AB2■-■■■■**	870	2.3
160	**184**	**315 L**	1490	1025		94.9	95	94.5	0.87	280	2.8	7.2	3.1	76	91	**1MB1 ■■1-3AB4■-■■■■**	940	2.8
200	**230**	**315 L**	1490	1282		95.1	95.3	94.7	0.87	350	3.1	7.5	3.2	77	92	**1MB1 ■■1-3AB5■-■■■■**	1140	3.5

Option		Line	Version	Code in Article No.	Order code
Basic Line				5	
Performance Line				6	
Zones					
Zone 21	(occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22	(rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2	(rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages [3]			Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY		**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ		**Standard**	3 4	–
50 Hz 500 VY			Without additional charge	2 7	–
50 Hz 500 VΔ			Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39				9 0	. . .
Types of construction			Version		Order code
Without flange	IM B3 [2]		**Standard**	A	–
With flange	IM B5 [2]		With additional charge	F	–
With flange	IM B14 [2]		With additional charge	K	–
For other types of construction and more information, see from page 5/44				■	. . .
Motor protection		Line	Version		
Without		Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors		**Basic Line**	With additional charge	B	
		Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51				■	
Terminal box position			Version		
Terminal box at top			**Standard**	4	
For other terminal box positions and more information, see from page 5/55				■	
Special versions					Order code(s)
For options, see from page 5/62				1MB1■■1- . . . . ■-■■■■	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.1 – *Basic Line* 1MB16.1 – *Performance Line* Article No.	$m_{IM B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz [1]																		
0.18	**0.21**	**71 M**	875	2		56.6	56.9	52.7	0.68	0.68	2.2	2.5	2.3	46	57	**1MB1 5■1-0CC2■-■■■■**	11.5	0.0008
0.25	**0.29**	**71 M**	870	2.7		61.6	62.7	59.2	0.7	0.84	2.3	2.6	2.3	46	57	**1MB1 5■1-0CC3■-■■■■**	12.5	0.0010
0.37	**0.43**	**80 M**	925	3.8		67.6	67.9	64.4	0.69	1.14	2.1	4	2.4	42	53	**1MB1 5■1-0DC2■-■■■■**	16.5	0.0017
0.55	**0.63**	**80 M**	935	5.6		73.1	73.8	70.8	0.66	1.65	2.5	4.4	2.9	42	53	**1MB1 5■1-0DC3■-■■■■**	18.5	0.0025
0.75	**0.86**	**90 S**	935	7.7		75.9	76.8	74.5	0.7	2.05	2	4.1	2.5	43	55	**1MB1 5■1-0EC0■-■■■■**	23	0.003
1.1	**1.27**	**90 L**	935	11	IE1	78.1	79.3	77.7	0.7	2.9	2.2	4.4	2.6	43	55	**1MB1 5■1-0EC4■-■■■■**	26.5	0.004
1.5	**1.75**	**100 L**	970	15		79.8	80.5	79	0.73	3.7	2	5.4	2.8	59	71	**1MB1■■1-1AC4■-■■■■**	36	0.011
2.2	**2.55**	**112 M**	965	22		81.8	82.7	81.7	0.75	5.2	2	5	2.8	62	74	**1MB1■■1-1BC2■-■■■■**	41	0.014
3	**3.45**	**132 S**	970	30		83.3	83.4	81	0.72	7.2	1.6	5	2.5	63	75	**1MB1■■1-1CC0■-■■■■**	56	0.024
4	**4.55**	**132 M**	970	39		84.6	85.5	84.3	0.75	9.1	1.6	5	2.3	63	75	**1MB1■■1-1CC2■-■■■■**	61	0.029
5.5	**6.3**	**132 M**	970	54		86	87.1	86.4	0.76	12.1	1.9	5.6	2.6	63	75	**1MB1■■1-1CC3■-■■■■**	70	0.037
7.5	**8.6**	**160 M**	975	73		87.2	87.9	87.2	0.74	16.8	1.9	4.7	2.2	67	79	**1MB1■■1-1DC2■-■■■■**	106	0.075
11	**12.6**	**160 L**	975	108		88.7	89.7	89.3	0.76	23.5	1.9	4.8	2.2	67	79	**1MB1■■1-1DC4■-■■■■**	122	0.098
15	**18**	**180 L**	975	147		89.7	90.1	89.5	0.78	31	2.5	6	3.1	57	70	**1MB1■■1-1EC4■-■■■■**	155	0.17
18.5	**22**	**200 L**	978	181	IE1	90.4	91.3	91.2	0.82	36	2.4	5.8	2.6	63	76	**1MB1■■1-2AC4■-■■■■**	200	0.25
22	**26.5**	**200 L**	978	215	IE1	90.9	91.7	91.4	0.82	42.5	2.5	6.2	2.6	63	76	**1MB1■■1-2AC5■-■■■■**	220	0.3
30	**36**	**225 M**	980	292	IE1	91.7	92.5	92.3	0.83	57	2.5	5.6	2.7	65	78	**1MB1■■1-2BC2■-■■■■**	300	0.58
37	**44.5**	**250 M**	982	360	IE1	92.2	93.1	93.1	0.83	70	2.8	6	2.5	62	77	**1MB1■■1-2CC2■-■■■■**	370	0.86
45	**54**	**280 S**	985	436	IE1	92.7	93.4	93.2	0.84	83	2.7	6.3	2.6	65	79	**1MB1■■1-2DC0■-■■■■**	460	1.1
55	**66**	**280 M**	985	533	IE1	93.1	93.9	94	0.86	99	2.5	6.4	2.6	65	79	**1MB1■■1-2DC2■-■■■■**	510	1.4
75	**90**	**315 S**	988	725	IE1	93.7	94	93.6	0.84	138	2.5	6.7	2.8	65	79	**1MB1■■1-3AC0■-■■■■**	660	2.1
90	**108**	**315 M**	988	870	IE1	94	94.3	93.6	0.84	165	2.6	6.9	2.8	65	79	**1MB1■■1-3AC2■-■■■■**	730	2.5
110	**132**	**315 L**	988	1063	IE1	94.3	94.6	94.5	0.86	196	2.7	7	2.8	68	82	**1MB1■■1-3AC4■-■■■■**	940	3.6
132	**158**	**315 L**	988	1276		94.6	94.9	94.7	0.86	235	3	7.5	2.9	69	84	**1MB1■■1-3AC5■-■■■■**	990	4.0
160	**192**	**315 L**	988	1546		94.8	94.7	94.4	0.86	285	3.1	7.7	3.3	69	84	**1MB1■■1-3AC6■-■■■■**	1160	4.7

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages [3]		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2]	**Standard**	A	–
With flange	IM B5 [2]	With additional charge	F	–
With flange	IM B14 [2]	With additional charge	K	–
For other types of construction and more information, see from page 5/44			■	. . .
Motor protection	Line	Version		
Without	Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors	**Basic Line**	With additional charge	B	
	Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/55			■	
Special versions				Order code(s)
For options, see from page 5/62			**1MB1■■1- . . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	Different IE class 60 Hz/P60	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1MB15.1 – *Basic Line* 1MB16.1 – *Performance Line* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE2 High Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz [1]																		
0.09	**0.11**	**71 M**	630	1.4	[4]	40.1	40.6	35.8	0.67	0.50	1.7	1.6	1.7	59	63	**1MB1 5■1-0CD2■-■■■■**	11.5	0.00077
0.12	**0.14**	**71 M**	640	1.8		40.1	39.6	34.7	0.66	0.65	1.8	1.8	1.8	48	59	**1MB1 5■1-0CD3■-■■■■**	12.5	0.00100
0.18	**0.21**	**80 M**	690	2.5		45.9	43.6	37.8	0.60	0.93	1.7	2.2	2.1	51	62	**1MB1 5■1-0DD2■-■■■■**	16.5	0.00175
0.25	**0.29**	**80 M**	705	3.4		50.6	48.1	41.9	0.55	1.30	2.0	2.5	2.5	51	62	**1MB1 5■1-0DD3■-■■■■**	18.5	0.00246
0.37	**0.43**	**90 S**	675	5.2		56.1	55.6	49.6	0.71	1.34	1.4	2.6	1.7	53	65	**1MB1 5■1-0ED0■-■■■■**	20	0.00225
0.55	**0.63**	**90 L**	665	7.9		61.7	63.4	59.8	0.74	1.74	1.5	2.7	1.7	53	65	**1MB1 5■1-0ED4■-■■■■**	21.5	0.00305
0.75	**0.86**	**100 L**	705	10		66.2	65.7	61.6	0.61	2.7	1.5	3.2	2.1	60	72	**1MB1■■1-1AD4■-■■■■**	32	0.0086
1.1	**1.27**	**100 L**	695	15		70.8	72.3	69.6	0.65	3.45	1.4	3.2	1.9	60	72	**1MB1■■1-1AD5■-■■■■**	36	0.011
1.5	**1.75**	**112 M**	725	20		74.1	73.9	71.2	0.63	4.65	1.6	4	2.4	63	72	**1MB1■■1-1BD2■-■■■■**	53	0.017
2.2	**2.55**	**132 S**	725	29		77.6	78.2	76.6	0.62	6.6	1.4	3.5	2	63	75	**1MB1■■1-1CD0■-■■■■**	64	0.034
3	**3.45**	**132 M**	720	40	IE1	80	80.7	79.2	0.62	8.7	1.4	3.7	2	63	75	**1MB1■■1-1CD2■-■■■■**	67	0.037
4	**4.55**	**160 M**	730	52		81.9	82.6	81.4	0.67	10.5	1.6	3.7	1.9	63	75	**1MB1■■1-1DD2■-■■■■**	98	0.065
5.5	**6.3**	**160 M**	730	72		83.8	84.2	83	0.67	14.1	1.7	3.9	2	63	75	**1MB1■■1-1DD3■-■■■■**	111	0.083
7.5	**8.6**	**160 L**	725	99		85.3	86.4	86	0.7	18.1	1.6	3.8	1.9	63	75	**1MB1■■1-1DD4■-■■■■**	123	0.098
11	**13.2**	**180 L**	720	146	IE1	86.9	88	87.6	0.7	26	2.3	4.9	2.6	72	75	**1MB1■■1-1ED4■-■■■■**	155	0.195
15	**18**	**200 L**	718	199		88	89.5	89.9	0.76	32.5	2.4	5.4	2.8	58	80	**1MB1■■1-2AD5■-■■■■**	220	0.344
18.5	**22**	**225 S**	730	242	IE1	89	89.9	89.5	0.78	38.5	2.2	5.4	2.7	59	72	**1MB1■■1-2BD0■-■■■■**	250	0.43
22	**26.5**	**225 M**	730	288		90.3	91.3	91.1	0.8	44	2.3	5.5	2.7	58	71	**1MB1■■1-2BD2■-■■■■**	270	0.5
30	**36**	**250 M**	732	391		91.3	92.2	92	0.8	59	2.4	5.6	2.7	60	73	**1MB1■■1-2CD2■-■■■■**	370	0.86
37	**44.5**	**280 S**	736	480		91.9	92.5	92.1	0.78	75	2.3	5.4	2.4	63	77	**1MB1■■1-2DD0■-■■■■**	460	1.1
45	**54**	**280 M**	738	582		92.4	92.8	92.4	0.79	89	2.5	5.7	2.5	66	80	**1MB1■■1-2DD2■-■■■■**	510	1.4
55	**66**	**315 S**	740	710		92.9	93.3	92.9	0.8	107	2.2	5.8	2.6	69	83	**1MB1■■1-3AD0■-■■■■**	640	2
75	**90**	**315 M**	738	970		93.5	94.4	94.5	0.81	143	2.3	5.9	2.7	69	84	**1MB1■■1-3AD2■-■■■■**	720	2.5
90	**108**	**315 L**	740	1161		93.5	94.3	94.4	0.83	167	2.2	5.8	2.5	69	84	**1MB1■■1-3AD4■-■■■■**	860	3.1
110	**132**	**315 L**	740	1419		94.2	95	95.1	0.82	205	2.7	6.7	2.9	74	88	**1MB1■■1-3AD5■-■■■■**	980	3.9
132	**158**	**315 L**	740	1703		94.4	94.8	94.4	0.81	250	2.9	7.2	3.3	76	90	**1MB1■■1-3AD6■-■■■■**	1070	4.5

			Code	Order code
Basic Line			5	
Performance Line			6	
Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages [3]		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/39			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2]	**Standard**	A	–
With flange	IM B5 [2]	With additional charge	F	–
With flange	IM B14 [2]	With additional charge	K	–
For other types of construction and more information, see from page 5/44			■	. . .
Motor protection	Line	Version		
Without	Only possible for **Basic Line**	**Standard**	A	
PTC thermistor with 3 temperature sensors	**Basic Line**	With additional charge	B	
	Performance Line	**Standard**	B	
For other motor protection and more information, see from page 5/51			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/55			■	
Special versions				Order code(s)
For options, see from page 5/62			**1MB1■■1-. . . . ■-■■■■**	-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Aluminum series 1MB1 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE1 Standard Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz [1)]																	
3	**3.45**	**100 L**	2835	10	81.5	83.2	82.8	0.87	6.1	3.2	6.4	3.5	67	79	**1MB10■2-1AA4■-■■■■**	20	0.0034
4	**4.55**	**112 M**	2935	13	83.1	83	80.8	0.85	8.2	3.3	8.3	4.2	69	81	**1MB10■2-1BA2■-■■■■**	25	0.0067
5.5	**6.3**	**132 S**	2910	18	84.7	85.9	85.7	0.88	10.7	1.8	5.7	2.6	68	80	**1MB10■2-1CA0■-■■■■**	35	0.013
7.5	**8.6**	**132 S**	2925	24	86	86.7	86.1	0.88	14.3	2.2	6.8	3.1	68	80	**1MB10■2-1CA1■-■■■■**	40	0.016
11	**12.6**	**160 M**	2925	36	87.6	88	87.1	0.86	21	2	5.7	2.7	70	82	**1MB10■2-1DA2■-■■■■**	60	0.03
15	**17.3**	**160 M**	2935	49	88.7	88.9	87.7	0.85	28.5	2.4	6.8	3.2	70	82	**1MB10■2-1DA3■-■■■■**	68	0.036
18.5	**21.3**	**160 L**	2935	60	89.3	89.7	89.3	0.87	34.5	2.7	7.6	3.4	70	82	**1MB10■2-1DA4■-■■■■**	78	0.044
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz [1)]																	
2.2	**2.55**	**100 L**	1425	15	79.7	80.3	78.1	0.81	4.9	2.3	5.1	2.7	60	72	**1MB10■2-1AB4■-■■■■**	18	0.0059
3	**3.45**	**100 L**	1425	20	81.5	82.6	81.5	0.85	6.3	2.4	5.4	2.6	60	72	**1MB10■2-1AB5■-■■■■**	22	0.0078
4	**4.55**	**112 M**	1435	27	83.1	84.3	83.7	0.83	8.4	2.5	6.1	2.9	58	70	**1MB10■2-1BB2■-■■■■**	27	0.010
5.5	**6.3**	**132 S**	1450	36	84.7	85.3	84.2	0.82	11.4	2.3	5.7	2.7	64	76	**1MB10■2-1CB0■-■■■■**	38	0.019
7.5	**8.6**	**132 M**	1450	49	86	86.5	85.4	0.82	15.4	2.6	6.6	3.1	64	76	**1MB10■2-1CB2■-■■■■**	44	0.024
11	**12.6**	**160 M**	1460	72	87.6	87.9	86.7	0.81	22.5	2.7	6.9	3.3	65	77	**1MB10■2-1DB2■-■■■■**	62	0.044
15	**17.3**	**160 L**	1460	98	88.7	89.1	88	0.82	30	3	7.5	3.6	65	77	**1MB10■2-1DB4■-■■■■**	73	0.056

			Article No. position	Order code
Zones				
Zone 21	(occasionally conductive and non-conductive dust) Ex tb IIIC		1	
Zone 22	(rarely conductive or temporarily non-conductive dust) Ex tc IIIB		2	
Zone 2	(rarely explosive or temporarily explosive gases) Ex ec IIC		3	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1)] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1)] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1)] and more information, see from page 5/38			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2)]	**Standard**	A	–
With flange	IM B5 [2)]	With additional charge	F	–
With flange	IM B14 [2)]	With additional charge	K	–
For other types of construction and more information, see from page 5/42			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/50			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/54			■	
Special versions				Order code(s)
For options, see from page 5/58			**1MB10■2- . . . . ■-■■■■-Z**	. . .+. . .+. . .+. . .

For footnotes, see page 5/27

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Aluminum series 1MB1 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)		kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE1 Standard Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz [1]																	
1.5	1.75	100 L	940	15	75.2	75.6	72.3	0.74	3.9	2	4	2.2	59	71	1MB10■2-1AC4■-■■■■	19	0.0065
2.2	2.55	112 M	940	22	77.7	78.5	76.3	0.72	5.7	2.6	4.6	2.7	57	69	1MB10■2-1BC2■-■■■■	25	0.0092
3	3.45	132 S	955	30	79.7	79.9	77.1	0.74	7.3	2	4.6	2.6	63	75	1MB10■2-1CC0■-■■■■	34	0.017
4	4.55	132 M	955	40	81.4	82.6	81.9	0.76	9.3	2.3	5.2	2.6	63	75	1MB10■2-1CC2■-■■■■	39	0.021
5.5	6.3	132 M	955	55	83.1	84	83	0.75	12.7	2.7	5.7	3	63	75	1MB10■2-1CC3■-■■■■	48	0.027
7.5	8.6	160 M	970	74	84.7	84.8	83.2	0.73	17.5	2.1	5.5	2.9	67	79	1MB10■2-1DC2■-■■■■	72	0.056
11	12.6	160 L	965	109	86.4	86.8	85.9	0.77	24	1.9	5.9	2.7	67	79	1MB10■2-1DC4■-■■■■	92	0.078
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz [1]																	
0.75	0.86	100 L	705	10	61.2	58.1	50.5	0.62	2.85	1.9	3	2.2	60	72	1MB10■2-1AD4■-■■■■	17	0.0056
1.1	1.27	100 L	690	15	66.5	66	61.8	0.61	3.9	2	3.2	2.3	60	72	1MB10■2-1AD5■-■■■■	22	0.0078
1.5	1.75	112 M	700	20	70.2	71.1	68.7	0.66	4.65	1.9	3.5	2.1	63	75	1MB10■2-1BD2■-■■■■	29	0.0094
2.2	2.55	132 S	715	29	74.2	74.1	71.4	0.66	6.5	1.7	3.9	2.4	63	75	1MB10■2-1CD0■-■■■■	37	0.019
3	3.45	132 M	715	40	77	77.4	75.2	0.68	8.3	1.8	3.9	2.2	63	75	1MB10■2-1CD2■-■■■■	44	0.024
4	4.55	160 M	720	53	79.2	79.3	76.3	0.67	10.9	1.6	4.1	2.3	63	75	1MB10■2-1DD2■-■■■■	60	0.044
5.5	6.3	160 M	720	73	81.4	81.9	80.3	0.68	14.3	1.6	4	2.2	63	75	1MB10■2-1DD3■-■■■■	72	0.056
7.5	8.6	160 L	715	100	83.1	83.7	82.4	0.69	18.9	1.7	3.8	2.2	63	75	1MB10■2-1DD4■-■■■■	91	0.077

Zones				
Zone 21 (occasionally conductive and non-conductive dust) Ex tb IIIC			1	
Zone 22 (rarely conductive or temporarily non-conductive dust) Ex tc IIIB			2	
Zone 2 (rarely explosive or temporarily explosive gases) Ex ec IIC			3	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz [1] 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz [1] 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages [1] and more information, see from page 5/38			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2]	**Standard**	A	–
With flange	IM B5 [2]	With additional charge	F	–
With flange	IM B14 [2]	With additional charge	K	–
For other types of construction and more information, see from page 5/42			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/50			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/54			■	
Special versions				Order code(s)
For options, see from page 5/58			1MB10■2-. . . . ■-■■■■	-Z . . .+. . .+. . .+. . .

[1] Operating values at rated power for 60 Hz are stored in the Drive Technology Configurator (DT Configurator; see Appendix, "Tools and engineering").

[2] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (**H03**) or stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. For orders with condensation drainage holes (**H03**), the type must be specified.

[3] Parallel supply lines are required in the case of connection to ≤ 240 V. For frame size 315 with connection to ≤ 240 V, due to the high current, a drilled, removable entry plate (order code **R52**) or a larger terminal box (order code **R50**) can be used. Order codes **R52** and **R50** alter the motor dimensions.

[4] No IE class for 50 and 60 Hz because the motor is outside the validity for the efficiency classes according to IEC 60034-30-1:2014.

Selection and ordering data

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz [1]	L_{WA}, 50 Hz [1]	Cast-iron series: 1MB1543 – *Basic Line*, 1MB5543 – *Basic Line*, 1MB1643 – *Performance Line*, 1MB5643 – *Performance Line*; Article No.	$m_{IM\ B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲ New	kg	kgm^2
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz, temperature classes T1 to T3																			
0.37	**T1, T2, T3**	**71 M**	2775	1.3	73.8	74.4	72.4	0.83	0.91	2.7	5	2.7	42	37	63	70[2]	▲ **1MB1 5 43-0CA2 ■-■■■■**	13	0.00045
0.55	**T1, T2, T3**	**71 M**	2845	1.8	77.8	77	73.8	0.76	1.33	3.9	6.7	3.8	25	22	63	70[2]	▲ **1MB1 5 43-0CA3 ■-■■■■**	15	0.00056
0.75	**T1, T2, T3**	**80 M**	2840	2.5	80.7	81.7	80.8	0.86	1.7	2.6	5.7	2.8	22	19	64	71[2]	▲ **1MB1 5 43-0DA2 ■-■■■■**	18	0.0011
1.1	**T1, T2, T3**	**80 M**	2845	3.7	82.7	83.7	82.7	0.85	2.4	3.1	6.7	3.2	22	14	65	73[2]	▲ **1MB1 5 43-0DA3 ■-■■■■**	21	0.0013
1.3	**T1, T2, T3**	**90 S**	2900	4.3	83.5	84.2	83	0.89	2.7	2.7	7.4	3.4	9	8	68	75	▲ **1MB1 5 43-0EA0 ■-■■■■**	26	0.0021
1.85	**T1, T2, T3**	**90 L**	2890	6.1	85.1	86	85.9	0.92	3.7	2.7	7.8	3.2	8	7	68	75	▲ **1MB1 5 43-0EA4 ■-■■■■**	32	0.0031
2.5	**T1, T2, T3**	**100 L**	2895	8.2	86.4	87.5	86.9	0.92	4.9	2.7	7.7	3.3	10	9	68	75	▲ **1MB1 ■43-1AA4 ■-■■■■**	37	0.0054
3.3	**T1, T2, T3**	**112 M**	2940	10.7	87.4	87.6	87.3	0.92	6.5	1.9	7.3	2.9	10	9	70	77	▲ **1MB1 ■43-1BA2 ■-■■■■**	43	0.012
4.6	**T1, T2, T3**	**132 S**	2950	15	88.6	89.8	90.1	0.91	8.7	1.7	7.5	3.1	16	13	72	79	▲ **1MB1 ■43-1CA0 ■-■■■■**	61	0.024
5.5	**T3**	**132 S**	2950	18	89.2	90.3	90.4	0.93	10.2	1.9	7.7	3	16	14	72	79	▲ **1MB1 ■43-1CA1 ■-■■■■**	75	0.031
7.5	**T3**	**160 M**	2955	24	90.1	90.2	88.6	0.9	13.7	2.3	8.2	3.2	37	21	78	85[2]	▲ **1MB1 ■43-1DA2 ■-■■■■**	100	0.053
10	**T3**	**160 M**	2955	32.5	90.9	91.1	90.6	0.91	18	2.3	8	3.1	29	15	78	85[2]	▲ **1MB1 ■43-1DA3 ■-■■■■**	110	0.061
12.5	**T3**	**160 M**	2945	40.5	91.5	91.9	91.7	0.92	22.5	2.2	7.6	2.8	26	13	78	85[2]	▲ **1MB1 ■43-1DA4 ■-■■■■**	125	0.068
15	**T3**	**180 M**	2955	48.5	91.9	92.3	91.2	0.89	27.5	2.6	8.3	3.6	21	8	74	81	▲ **1MB1 ■43-1EA2 ■-■■■■**	165	0.08
20	**T3**	**200 L**	2970	64	92.5	92.7	91.7	0.84	38	1.9	7	3.1	42	7[3]	76	83	▲ **1MB1 ■43-2AA4 ■-■■■■**	220	0.12
24	**T3**	**200 L**	2970	77	92.9	93.1	92.8	0.86	44.5	2	7.1	3	39	11	75	82	▲ **1MB1 ■43-2AA5 ■-■■■■**	245	0.15
28	**T3**	**225 M**	2960	90	93.2	93.7	93.5	0.9	52	2.4	5.9	2.6	30	11	76	90	▲ **1MB1 ■43-2BA2 ■-■■■■**	330	0.266
36	**T3**	**250 M**	2975	116	93.7	93.8	93.1	0.91	65	2.4	6.2	2.7	35	17	75	88	▲ **1MB1 ■43-2CA2 ■-■■■■**	420	0.466
47	**T3**	**280 S**	2975	151	94.1	94.2	93.5	0.9	84	2.7	6.4	2.6	21	9	75	89	▲ **1MB1 ■43-2DA0 ■-■■■■**	530	0.826
58	**T3**	**280 M**	2975	186	94.4	94.5	94	0.91	103	2.6	6.5	2.6	20	8	75	89	▲ **1MB1 ■43-2DA2 ■-■■■■**	620	0.934
68	**T3**	**315 S**	2982	220	94.6	94.6	93.8	0.92	119	2.2	6.6	2.8	33	15	75	89	▲ **1MB5 ■43-3AA0 ■-■■■■**	950	1.67
80	**T3**	**315 M**	2982	255	94.8	94.9	94.3	0.93	140	2.2	6.4	2.6	28	15	75	89	▲ **1MB5 ■43-3AA2 ■-■■■■**	1020	1.95
100	**T3**	**315 L**	2982	320	95.1	95.1	94.6	0.93	172	2.4	6.7	2.7	23	10	75	89	▲ **1MB5 ■43-3AA4 ■-■■■■**	1190	2.32
125	**T3**	**315 L**	2980	400	95.3	95.4	94.9	0.92	215	2.3	6.6	2.7	19	10	76	91	▲ **1MB5 ■43-3AA5 ■-■■■■**	1210	2.34

Option		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [4]	**Standard**	A	–
With flange	IM B5 [4]	With additional charge	F	–
With flange	IM B14 [4]	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB ■■43- . . . . ■-■■■■**	**-Z . . .+. . .+. . .**

[1] Noise values for line operation under load, tolerance +3 dB(A).

[2] These sound power levels are above the set value from the VIK recommendation in the "standard" version. This difference must be agreed between the manufacturer and the operator.

[3] The t_E time T3 of 1MB1543-2AA4 at 7 s is below the set value of 7.8 s from the VIK recommendation. This difference must be agreed between the manufacturer and the operator.

[4] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz [1]	L_{WA}, 50 Hz [1]	Cast-iron series: 1MB1543 – *Basic Line*, 1MB1643 – *Performance Line*; Article No.	$m_{IM B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲ New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz, temperature classes T1 and T2 with second rating plate (T1/T2 and T3)																			
6.5[2]	**T1, T2**	**132 S**	2930	21	87.6	88.8	90.1	0.93	12.2	1.6	6.5	2.5	13	–	72	79	▲ **1MB1■43-1CA1■-■■■■**	75	0.031
9.5	**T1, T2**	**160 M**	2935	31	90.8	91.4	91.6	0.91	17.4	1.8	6.4	2.5	32	–	78	85[3]	▲ **1MB1■43-1DA2■-■■■■**	100	0.053
13[2]	**T1, T2**	**160 M**	2925	42.5	89.9	90.9	91.4	0.92	23.5	1.8	6.1	2.4	22	–	78	85[3]	▲ **1MB1■43-1DA3■-■■■■**	110	0.061
16[2]	**T1, T2**	**160 L**	2910	53	90.5	91.9	92.4	0.92	29.5	1.7	5.8	2.2	17	–	78	85[3]	▲ **1MB1■43-1DA4■-■■■■**	125	0.068
19	**T1, T2**	**180 M**	2935	62	92.4	93.1	92.9	0.91	34.5	2.0	6.6	2.8	16	–	74	81	▲ **1MB1■43-1EA2■-■■■■**	165	0.08
25	**T1, T2**	**200 L**	2955	81	93.0	93.7	94.0	0.86	46.5	1.5	5.7	2.5	21	–	76	83	▲ **1MB1■43-2AA4■-■■■■**	220	0.12
31	**T1, T2**	**200 L**	2950	100	93.4	93.9	94.2	0.88	57	1.5	5.4	2.3	23	–	75	82	▲ **1MB1■43-2AA5■-■■■■**	245	0.15

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [4]	**Standard**	A	–
With flange	IM B5 [4]	With additional charge	F	–
With flange	IM B14 [4]	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB1■43-. . . . ■-■■■■**	-Z . . .+. . .+. . .

[1] Noise values for line operation under load, tolerance +3 dB(A).

[2] Only complies with efficiency classification IE2.

[3] These sound power levels are above the set value from the VIK recommendation in the "standard" version. This difference must be agreed between the manufacturer and the operator.

[4] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)		Cast-iron series: 1MB1543 – *Basic Line*, 1MB5543 – *Basic Line*, 1MB1643 – *Performance Line*, 1MB5643 – *Performance Line*; Article No.	$m_{IM B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲	New	kg	kgm^2
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
4-pole: 1500 rpm at 50 Hz, temperature classes T1 to T3																				
0.25	**T1, T2, T3**	**71 M**	1385	1.72	73.5	72.7	68.3	0.72	0.75	2.4	4.1	2.6	73	65	59	66 3)	▲	**1MB1 5 43-0CB2 ■-■■■■**	13	0.00095
0.37	**T1, T2, T3**	**71 M**	1400	2.5	77.3	76.7	73	0.7	1.02	3.3	4.9	3.1	66	59	56	63 3)	▲	**1MB1 5 43-0CB3 ■-■■■■**	16	0.0014
0.55	**T1, T2, T3**	**80 M**	1435	3.7	80.8	80.7	77.7	0.77	1.37	2.2	5.4	2.8	34	30	57	64 3)	▲	**1MB1 5 43-0DB2 ■-■■■■**	18	0.0021
0.75	**T1, T2, T3**	**80 M**	1440	4.95	82.5	82.6	80.8	0.76	1.8	2.7	6.4	3.2	28	25	60	67 3)	▲	**1MB1 5 43-0DB3 ■-■■■■**	22	0.0029
1	**T1, T2, T3**	**90 S**	1435	6.7	83.7	84.3	82.8	0.78	2.3	3	6.7	3.4	35	31	57	64 3)	▲	**1MB1 5 43-0EB0 ■-■■■■**	25	0.0036
1.35	**T1, T2, T3**	**90 L**	1440	9	84.9	85.1	83.7	0.78	3.05	3	7	3.6	30	27	62	69 3)	▲	**1MB1 5 43-0EB4 ■-■■■■**	31	0.0049
2	**T1, T2, T3**	**100 L**	1455	13.1	86.3	86.7	86	0.85	4	2.4	7.7	3.3	28	25	61	68	▲	**1MB1 ■43-1AB4 ■-■■■■**	40	0.014
2.5	**T1, T2, T3**	**100 L**	1455	16	87.1	88.1	87.6	0.85	5.1	2.4	7.9	3.2	18	16	63	70 3)	▲	**1MB1 ■43-1AB5 ■-■■■■**	40	0.014
3.6	**T1, T2, T3**	**112 M**	1460	24	88.3	88.8	88	0.83	7.3	2.2	8	3.4	14	13	59	66	▲	**1MB1 ■43-1BB2 ■-■■■■**	43	0.017
5	**T1, T2, T3**	**132 S**	1470	32	89.3	90.1	89.8	0.84	9.8	2.1	7.5	3	27	23	62	69	▲	**1MB1 ■43-1CB0 ■-■■■■**	67	0.034
6.8	**T1, T2, T3**	**132 M**	1470	44	90.2	90.7	90.4	0.84	13.4	2.2	7.7	3.1	26	23	66	73	▲	**1MB1 ■43-1CB2 ■-■■■■**	82	0.046
10	**T1, T2, T3**	**160 M**	1475	65	91.2	91.6	90.9	0.84	19.6	1.7	6.6	2.8	28	21	66	73	▲	**1MB1 ■43-1DB2 ■-■■■■**	110	0.083
13.5	**T1, T2, T3**	**160 M**	1475	87	91.9	92.1	91.4	0.84	26.5	2.7	7.4	3.1	23	11	66	73	▲	**1MB1 ■43-1DB4 ■-■■■■**	130	0.099
15	**T3**	**180 M**	1470	97	92.1	92.5	92.5	0.82	30	2.4	7.6	3.4	22	8	67	74	▲	**1MB1 ■43-1EB2 ■-■■■■**	165	0.13
17.5	**T3**	**180 L**	1470	114	92.5	93	93	0.83	34.5	2.3	7.5	3.3	23	7 2)	69	76	▲	**1MB1 ■43-1EB4 ■-■■■■**	180	0.14
24	**T3**	**200 L**	1475	155	93.1	93.4	93	0.84	46.5	2.4	7.6	3.3	20	6 2)	65	72	▲	**1MB1 ■43-2AB5 ■-■■■■**	240	0.22
30	**T3**	**225 S**	1485	193	93.6	93.7	93.1	0.84	57	3	7.3	3.1	32	13	66	79	▲	**1MB1 ■43-2BB0 ■-■■■■**	300	0.417
36	**T3**	**225 M**	1482	230	93.9	94.3	94.2	0.85	67	3	7.1	2.9	31	11	66	79	▲	**1MB1 ■43-2BB2 ■-■■■■**	370	0.545
44	**T3**	**250 M**	1486	285	94.2	94.5	94.2	0.86	80	3.1	7.6	3.1	37	18	69	83	▲	**1MB1 ■43-2CB2 ■-■■■■**	480	0.975
58	**T3**	**280 S**	1488	370	94.6	94.8	94.3	0.87	106	2.8	7.2	3	45	20	68	82	▲	**1MB1 ■43-2DB0 ■-■■■■**	680	1.7
70	**T3**	**280 M**	1490	450	94.9	95.1	94.9	0.86	129	3.1	7.6	2.9	29	13	69	83	▲	**1MB1 ■43-2DB2 ■-■■■■**	670	1.61
84	**T3**	**315 S**	1492	540	95.1	95.1	94.6	0.85	156	2.2	7.1	2.8	22	9	69	84	▲	**1MB5 ■43-3AB0 ■-■■■■**	900	2.38
100	**T3**	**315 M**	1491	640	95.3	95.4	94.9	0.86	184	2.2	7	2.7	33	16	70	85	▲	**1MB5 ■43-3AB2 ■-■■■■**	980	2.88
115	**T3**	**315 L**	1492	740	95.5	95.5	95	0.85	215	2.5	7.1	3	35	15	72	86	▲	**1MB5 ■43-3AB4 ■-■■■■**	1110	3.18
135	**T3**	**315 L**	1492	860	95.7	95.8	95.3	0.85	250	2.4	7.1	2.9	22	9	70	85	▲	**1MB5 ■43-3AB5 ■-■■■■**	1190	3.67

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 4)	**Standard**	A	–
With flange	IM B5 4)	With additional charge	F	–
With flange	IM B14 4)	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB . ■43- . . . . ■-■■■■**	-Z . . .+. . .+. . .

1) Noise values for line operation under load, tolerance +3dB(A).

2) The tE time T3 of
- 1MB1543-1EB4 at 7 s falls below the set value of 7.2 s from the VIK recommendation
- 1MB1543-2AB5 at 6 s falls below the set value of 7.1 s from the VIK recommendation.

These differences must be agreed between the manufacturer and the operator.

3) These sound power levels are above the set value from the VIK recommendation in the "standard" version. This difference must be agreed between the manufacturer and the operator.

4) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz [1)]	L_{WA}, 50 Hz [1)]	Cast-iron series: 1MB1543 – *Basic Line*, 1MB5543 – *Basic Line*, 1MB1643 – *Performance Line*, 1MB5643 – *Performance Line*; Article No.	$m_{IM\ B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲ New	kg	kgm^2
• **Cooling: self-ventilated (IC 411)** • **Efficiency according to IEC 60034-30: IE3 Premium Efficiency** • **Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)**																			
4-pole: 1500 rpm at 50 Hz, temperature classes T1 and T2 with second rating plate (T1/T2 and T3)																			
17	**T1, T2**	**180 M**	1465	111	92.4	93.3	93.4	0.83	33.5	2.1	6.9	2.9	19	–	67	74	▲ **1MB1■43-1EB2■-■■■■**	165	0.13
20	**T1, T2**	**180 L**	1465	130	92.8	93.9	94.2	0.84	39.0	2	6.6	2.9	18	–	71	78	▲ **1MB1■43-1EB4■-■■■■**	180	0.14
27	**T1, T2**	**200 L**	1470	175	93.4	94.0	94.1	0.85	52	2.1	6.9	2.9	16	–	66	73	▲ **1MB1■43-2AB5■-■■■■**	240	0.22
33	**T1, T2**	**225 S**	1482	215	93.6	93.9	93.5	0.85	62	2.7	6.7	2.8	30	–	65	79	▲ **1MB1■43-2BB0■-■■■■**	300	0.417
40	**T1, T2**	**225 M**	1480	260	94.1	94.7	94.8	0.86	75	2.7	6.3	2.6	27	–	66	79	▲ **1MB1■43-2BB2■-■■■■**	370	0.545
50	**T1, T2**	**250 M**	1485	320	94.4	94.9	94.9	0.87	91	2.7	6.7	2.7	35	–	70	84	▲ **1MB1■43-2CB2■-■■■■**	480	0.975
68	**T1, T2**	**280 S**	1485	435	94.9	95.3	95.2	0.88	124	2.4	6.1	2.6	40	–	69	83	▲ **1MB1■43-2DB0■-■■■■**	680	1.7
80	**T1, T2**	**280 M**	1490	510	95.1	95.6	95.6	0.87	146	2.7	6.7	2.5	23	–	69	83	▲ **1MB1■43-2DB2■-■■■■**	670	1.61
100	**T1, T2**	**315 S**	1490	640	95.3	95.6	95.4	0.86	185	1.8	6	2.3	19	–	71	85	▲ **1MB5■43-3AB0■-■■■■**	900	2.38
120	**T1, T2**	**315 M**	1488	770	95.5	95.8	95.7	0.86	220	1.8	5.8	2.2	28	–	76	91	▲ **1MB5■43-3AB2■-■■■■**	980	2.88
135	**T1, T2**	**315 L**	1490	870	95.7	96	95.8	0.86	250	2.1	6.1	2.5	23	–	74	89	▲ **1MB5■43-3AB4■-■■■■**	1110	3.18
165	**T1, T2**	**315 L**	1488	1060	95.8	96.1	96.0	0.86	305	2	5.8	2.3	17	–	72	87	▲ **1MB5■43-3AB5■-■■■■**	1190	3.67

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 [2)]	**Standard**	A	–
With flange	IM B5 [2)]	With additional charge	F	–
With flange	IM B14 [2)]	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB . ■43- . . . . ■-■■■■**	-Z . . .+. . .+. . .

1) Noise values for line operation under load, tolerance +3 dB(A).

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)	Cast-iron series 1MB1543 – *Basic Line* 1MB5543 – *Basic Line* 1MB1643 – *Performance Line* 1MB5643 – *Performance Line* Article No.	$m_{IM B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲ New	kg	kgm²
• **Cooling: self-ventilated (IC 411)** • **Efficiency according to IEC 60034-30: IE3 Premium Efficiency** • **Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)**																			
6-pole: 1000 rpm at 50 Hz, temperature classes T1 to T3																			
0.25	**T1, T2, T3**	**71 M**	875	2.75	68.6	69.8	67.9	0.72	0.72	2.4	3.4	2.4	500	233	58	65 2)	▲ **1MB1 5 43-0CC3 ■-■■■■**	16	0.00015
0.37	**T1, T2, T3**	**80 M**	935	3.8	73.5	72.6	68	0.64	1.16	2.3	4.2	2.7	73	65	55	62 2)	▲ **1MB1 5 43-0DC2 ■-■■■■**	19	0.00025
0.55	**T1, T2, T3**	**80 M**	925	5.7	77.2	77.1	74.3	0.65	1.65	2.6	4.4	2.9	94	82	60	67 2)	▲ **1MB1 5 43-0DC3 ■-■■■■**	22	0.0031
0.65	**T1, T2, T3**	**90 S**	940	6.6	78.3	79.3	77.8	0.7	1.8	1.8	4.2	2.4	87	77	61	68 2)	▲ **1MB1 5 43-0EC0 ■-■■■■**	26	0.004
0.95	**T1, T2, T3**	**90 L**	935	9.7	80.2	81.3	79.9	0.71	2.5	2.2	4.7	2.5	64	56	60	67 2)	▲ **1MB1 5 43-0EC4 ■-■■■■**	31	0.0048
1.3	**T1, T2, T3**	**100 L**	955	13	81.8	82.5	80.5	0.71	3.4	2.5	5.3	2.8	63	55	58	65	▲ **1MB1 ■43-1AC4 ■-■■■■**	36	0.011
1.9	**T1, T2, T3**	**112 M**	960	18.9	83.6	84.5	83.7	0.74	4.5	2.6	6.6	3.2	45	40	60	67	▲ **1MB1 ■43-1BC2 ■-■■■■**	46	0.017
2.6	**T1, T2, T3**	**132 S**	980	25.5	85	85.8	85.3	0.75	5.8	2.1	6.5	2.8	54	48	63	70	▲ **1MB1 ■43-1CC0 ■-■■■■**	70	0.029
3.5	**T1, T2, T3**	**132 M**	975	34.5	86.3	87.4	87.3	0.76	7.8	1.8	5.8	2.5	31	27	68	75	▲ **1MB1 ■43-1CC2 ■-■■■■**	70	0.037
4.8	**T1, T2, T3**	**132 M**	975	47	87.5	88.4	88.3	0.76	10.5	2.1	6.2	2.7	34	30	69	76	▲ **1MB1 ■43-1CC3 ■-■■■■**	82	0.046
6.6	**T1, T2, T3**	**160 M**	980	64	88.6	88.7	87.8	0.8	13.8	2.4	6.8	2.8	37	33	67	74	▲ **1MB1 ■43-1DC2 ■-■■■■**	120	0.098
9.7	**T1, T2, T3**	**160 L**	980	95	89.9	90	89	0.79	20.5	2.7	7.1	2.9	22	19	70	77	▲ **1MB1 ■43-1DC4 ■-■■■■**	145	0.12
13.2	**T1, T2, T3**	**180 L**	975	129	90.8	91.4	91.6	0.77	28	2.1	6.2	2.8	38	17	66	73	▲ **1MB1 ■43-1EC4 ■-■■■■**	180	0.19
16.5	**T1, T2, T3**	**200 L**	975	162	91.4	92.3	92.5	0.8	34.5	2	5.4	2.3	52	12	60	67	▲ **1MB1 ■43-2AC4 ■-■■■■**	215	0.28
20	**T1, T2, T3**	**200 L**	985	194	91.9	92.1	91.3	0.79	43	1.7	6.5	3	40	16	69	76	▲ **1MB1 ■43-2AC5 ■-■■■■**	265	0.33
27	**T1, T2, T3**	**225 M**	985	220	92.7	93.2	93.1	0.82	52	2.8	6.9	3.1	61	24	64	77	▲ **1MB1 ■43-2BC2 ■-■■■■**	390	0.845
33	**T1, T2, T3**	**250 M**	985	265	93.1	93.9	94	0.85	63	2.4	6.3	2.6	61	22	65	78	▲ **1MB1 ■43-2CC2 ■-■■■■**	480	1.27
40	**T1, T2, T3**	**280 S**	988	320	93.5	94.1	94	0.86	75	2.8	6.3	2.5	47	13	66	80	▲ **1MB1 ■43-2DC0 ■-■■■■**	570	1.64
46	**T3**	**280 M**	990	370	93.8	94.2	94.1	0.84	87	3.4	7.5	3	28	13	63	77	▲ **1MB1 ■43-2DC2 ■-■■■■**	570	1.64
64	**T3**	**315 S**	992	510	94.4	94.6	94.1	0.86	118	2.4	7.5	3.3	32	15	65	79	▲ **1MB5 ■43-3AC0 ■-■■■■**	870	3.25
76	**T3**	**315 M**	992	610	94.6	94.9	94.6	0.87	139	2.3	7.4	3.2	28	11	65	79	▲ **1MB5 ■43-3AC2 ■-■■■■**	900	3.54
92	**T3**	**315 L**	991	740	94.9	95.2	95.1	0.88	167	2.3	6.9	3	37	13	69	83	▲ **1MB5 ■43-3AC4 ■-■■■■**	1090	4.52
110	**T3**	**315 L**	992	880	95.1	95.3	95.1	0.87	198	2.5	7.6	3.3	26	9	71	86	▲ **1MB5 ■43-3AC5 ■-■■■■**	1170	5.16
125	**T3**	**315 L**	992	1000	95.3	95.5	95.1	0.85	230	2.4	6.7	2.7	28	9	70	84	▲ **1MB5 ■43-3AC6 ■-■■■■**	1180	4.89

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 3)	**Standard**	A	–
With flange	IM B5 3)	With additional charge	F	–
With flange	IM B14 3)	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB . ■43- . . . . ■-■■■■**	**-Z . . .+. . .+. . .**

1) Noise values for line operation under load, tolerance +3 dB(A).

2) These sound power levels are above the set value from the VIK recommendation in the "standard" version. This difference must be agreed between the manufacturer and the operator.

3) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data (continued)

P_{rated}, 50 Hz	Temperature class	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	t_E, 50Hz, T1/T2	t_E, 50Hz, T3	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)		Cast-iron series 1MB1543 – *Basic Line* 1MB5543 – *Basic Line* 1MB1643 – *Performance Line* 1MB5643 – *Performance Line* Article No.	$m_{IM B3}$	J
kW		FS	rpm	Nm	%	%	%		A						dB(A)	dB(A)	▲	New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
6-pole: 1000 rpm at 50 Hz, temperature classes T1 and T2 with second rating plate (T1/T2 and T3)																				
50	**T1, T2**	**280 M**	988	485	93.9	94.5	94.5	0.85	94	3.1	6.9	2.8	27	–	63	77	▲	**1MB1 ■43-2DC2 ■-■■■■**	570	1.64
68	**T1, T2**	**315 S**	991	660	94.5	94.7	94.4	0.87	125	2.3	7	3.1	31	–	66	80	▲	**1MB5 ■43-3AC0 ■-■■■■**	870	3.25
82	**T1, T2**	**315 M**	991	790	94.7	95.1	94.9	0.88	149	2.2	6.9	3	25	–	65	79	▲	**1MB5 ■43-3AC2 ■-■■■■**	900	3.54
98	**T1, T2**	**315 L**	990	950	95	95.4	95.4	0.88	179	2.2	6.5	2.8	34	–	69	84	▲	**1MB5 ■43-3AC4 ■-■■■■**	1090	4.52
120	**T1, T2**	**315 L**	991	1160	95.2	95.6	95.5	0.88	218	2.3	6.9	3.1	23	–	71	86	▲	**1MB5 ■43-3AC5 ■-■■■■**	1170	5.16
135	**T1, T2**	**315 L**	991	1300	95.4	95.7	95.5	0.85	250	2.2	6.2	2.5	24	–	70	85	▲	**1MB5 ■43-3AC6 ■-■■■■**	1180	4.89

		Version	Article No. position	Order code
Basic Line			5	
Performance Line			6	
Voltages		Version		Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2 2	–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3 4	–
50 Hz 500 VY		Without additional charge	2 7	–
50 Hz 500 VΔ		Without additional charge	4 0	–
For other voltages and more information, see from page 5/40			9 0	. . .
Types of construction		Version		Order code
Without flange	IM B3 2)	**Standard**	A	–
With flange	IM B5 2)	With additional charge	F	–
With flange	IM B14 2)	With additional charge	K	–
For other types of construction and more information, see from page 5/46			■	. . .
Motor protection		Version		
Without		**Standard**	A	
PTC thermistor with 3 temperature sensors		With additional charge	B	
For other motor protection and more information, see from page 5/52			■	
Terminal box position		Version		
Terminal box at top		**Standard**	4	
For other terminal box positions and more information, see from page 5/56			■	
Special versions				Order code(s)
For options, see from page 5/67			**1MB . ■43- . . . . ■-■■■■**	-Z . . .+. . .+. . .

1) Noise values for line operation under load, tolerance +3 dB(A).

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)	Cast-iron series 1MB1553/1MB5553 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz 1)																	
0.37	0.37	71 M	2850	1.2	73.8	73.3	69.7	0.76	0.95	3.5	5.8	3.5	57	64	▲ 1MB1553-0CA2 ■-■■■■	24	0.00045
0.55	0.55	71 M	2850	1.8	77.8	77.5	74.5	0.76	1.34	3.7	6.1	3.7	57	68	▲ 1MB1553-0CA3 ■-■■■■	25	0.00056
0.75	0.75	80 M	2850	2.5	80.7	82.2	81.9	0.86	1.56	2.6	6.2	3	58	69	▲ 1MB1553-0DA2 ■-■■■■	30	0.0011
1.1	1.1	80 M	2885	3.6	82.7	83.9	83.1	0.85	2.25	3	7.1	3.3	58	78	▲ 1MB1553-0DA3 ■-■■■■	32	0.0013
1.5	1.5	90 S	2910	4.9	84.2	84.6	83.2	0.86	3	2.7	8.1	4.2	60	71	▲ 1MB1553-0EA0 ■-■■■■	41	0.0021
2.2	2.2	90 L	2910	7.2	85.9	86.8	86.1	0.88	4.2	2.6	8.3	4	60	73	▲ 1MB1553-0EA4 ■-■■■■	45	0.0031
3	3	100 L	2920	9.8	87.1	87.9	87.5	0.88	5.6	3.2	8.1	4.6	65	82	▲ 1MB1553-1AA4 ■-■■■■	64	0.0054
4	4	112 M	2950	13	88.1	88.7	88.2	0.89	7.4	2.5	8.7	4	65	77	▲ 1MB1553-1BA2 ■-■■■■	74	0.012
5.5	5.5	132 S	2950	18	89.2	90.1	89.7	0.9	9.9	1.9	7.3	3.7	68	80	▲ 1MB1553-1CA0 ■-■■■■	95	0.024
7.5	7.5	132 S	2950	24	90.1	90.9	90.7	0.92	13.1	2.1	8.3	4	68	78	▲ 1MB1553-1CA1 ■-■■■■	106	0.031
11	11	160 M	2955	36	91.2	91.3	90.2	0.87	20	2.5	7.6	3.8	68	80	▲ 1MB1553-1DA2 ■-■■■■	169	0.053
15	15	160 M	2960	48	91.9	91.9	91	0.87	27	2.8	8.8	4.3	70	82	▲ 1MB1553-1DA3 ■-■■■■	179	0.061
18.5	18.5	160 L	2955	60	92.4	92.8	92.3	0.9	32	2.8	8.3	3.9	70	84	▲ 1MB1553-1DA4 ■-■■■■	190	0.068
22	22	180 M	2950	71	92.7	93	92.4	0.89	38.5	2.3	7.5	3.5	70	80	▲ 1MB1553-1EA2 ■-■■■■	238	0.08
30	30	200 L	2955	97	93.3	93.6	93.3	0.87	53	2.5	7	3.3	69	81	▲ 1MB1553-2AA4 ■-■■■■	324	0.134
37	37	200 L	2955	120	93.7	93.9	93.5	0.88	65	2.5	7.1	3.2	69	82	▲ 1MB1553-2AA5 ■-■■■■	348	0.158
45	45	225 M	2960	145	94	94.5	94.4	0.89	78	2.4	6.9	3.3	73	87	▲ 1MB1553-2BA2 ■-■■■■	447	0.26
55	55	250 M	2975	177	94.3	94.5	93.9	0.89	95	2.3	6.7	3.1	73	87	▲ 1MB1553-2CA2 ■-■■■■	532	0.46
75	75	280 S	2975	241	94.7	94.8	94.2	0.89	128	2.5	7.3	2.7	78	92	▲ 1MB1553-2DA0 ■-■■■■	729	0.77
90	90	280 M	2975	289	95	95.2	94.8	0.9	152	2.4	7.5	3.1	79	93	▲ 1MB1553-2DA2 ■-■■■■	763	0.926
110	110	315 S	2982	352	95.2	95.3	94.7	0.91	183	2.3	7.2	3.2	80	94	▲ 1MB5553-3AA0 ■-■■■■	1100	1.76
132	132	315 M	2984	422	95.4	95.4	94.7	0.91	220	1.9	7.5	2.5	80	94	▲ 1MB5553-3AA2 ■-■■■■	1230	1.99
160	160	315 L	2980	513	95.6	95.7	95.3	0.91	265	1.8	6.9	2.3	80	94	▲ 1MB5553-3AA4 ■-■■■■	1300	2.29
200	200	315 L	2980	641	95.8	96	95.7	0.92	330	1.9	6.9	2.4	80	94	▲ 1MB5553-3AA5 ■-■■■■	1430	2.65
250	250	315 L	2982	801	95.8	95.9	95.6	0.91	415	2.8	7.2	3	80	94	▲ 1MB5553-3AA6 ■-■■■■	1590	2.82
315	315	355 M	2986	1007	95.8	95.9	95.4	0.9	530	2.1	7.8	2.8	83	98	▲ 1MB5553-3BA2 ■-■■■■	2130	4.31
355	355	355 M	2975	1139	95.8	96.1	96	0.92	580	2.4	6.6	2.5	83	98	▲ 1MB5553-3BA3 ■-■■■■	2340	5.8
400	400	355 L	2986	1279	95.8	96	95.7	0.89	680	2.3	7.6	2.9	83	98	▲ 1MB5553-3BA4 ■-■■■■	2610	5.9
460	460	355 L	2990	1469	95.8	95.8	95.3	0.89	780	2.8	9	3.5	83	98	▲ 1MB5553-3BA5 ■-■■■■	2620	5.9

Voltages		Version					Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2	2			–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3	4			–
50 Hz 500 VY		Without additional charge	2	7			–
50 Hz 500 VΔ		Without additional charge	4	0			–
For other voltages and more information, see from page 5/41			9	0			. . .
Types of construction		Version					Order code
Without flange	IM B3 2)	**Standard**			A		–
With flange	IM B5 2)	With additional charge			F		–
With flange	IM B14 2)	With additional charge			K		–
For other types of construction and more information, see from page 5/48					■		. . .
Motor protection		Version					
Without		**Standard**				A	
PTC thermistor with 3 temperature sensors		With additional charge				B	
For other motor protection and more information, see from page 5/53						■	
Terminal box position		Version					
Terminal box at top		**Standard**				4	
For other terminal box positions and more information, see from page 5/57						■	
Special versions							Order code(s)
For options, see from page 5/71							1MB.553- . . . . ■-■■■■-Z . . .+. . .+. . .+. . .

For footnotes, see page 5/37

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)	Cast-iron series 1MB1553/1MB5553 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz 1)																	
0.25	0.25	71 M	1395	1.7	73.5	73.7	70.4	0.72	0.68	2.5	4.2	2.6	64	64	▲ 1MB1553-0CB2 ■-■■■■	25	0.00095
0.37	0.37	71 M	1410	2.5	77.3	76.8	73.2	0.70	0.99	3.1	4.8	3.1	70	70	▲ 1MB1553-0CB3 ■-■■■■	27	0.0014
0.55	0.55	80 M	1440	3.6	80.8	81.1	79.3	0.78	1.26	2.1	5.9	3.1	69	69	▲ 1MB1553-0DB2 ■-■■■■	30	0.0021
0.75	0.75	80 M	1450	4.9	82.5	82.3	79.9	0.75	1.75	2.7	7.1	3.9	70	70	▲ 1MB1553-0DB3 ■-■■■■	33	0.0029
1.1	1.1	90 S	1440	7.3	84.1	84.7	83.4	0.78	2.4	2.9	6.9	3.6	72	72	▲ 1MB1553-0EB0 ■-■■■■	42	0.0036
1.5	1.5	90 L	1445	10	85.3	85.9	84.9	0.80	3.15	2.7	7.2	3.6	63	63	▲ 1MB1553-0EB4 ■-■■■■	45	0.0049
2.2	2.2	100 L	1465	14	86.7	87.0	85.9	0.83	4.4	3.2	8.4	4.4	77	77	▲ 1MB1553-1AB4 ■-■■■■	67	0.014
3	3	100 M	1460	20	87.7	88.5	87.9	0.83	5.9	2.5	8.3	3.9	69	69	▲ 1MB1553-1AB5 ■-■■■■	68	0.014
4	4	112 S	1460	26	88.6	89.2	88.6	0.82	7.9	2.4	7.1	3.7	69	69	▲ 1MB1553-1BB2 ■-■■■■	76	0.017
5.5	5.5	132 S	1470	36	89.6	90.0	89.4	0.82	10.8	2.9	8.6	3.7	80	80	▲ 1MB1553-1CB0 ■-■■■■	109	0.034
7.5	7.5	132 M	1465	49	90.4	91.1	90.8	0.84	14.3	2.6	8.2	3.7	76	76	▲ 1MB1553-1CB2 ■-■■■■	120	0.046
11	11	160 M	1475	71	91.4	91.8	91.2	0.84	20.5	2.6	7.6	3.4	81	81	▲ 1MB1553-1DB2 ■-■■■■	179	0.071
15	15	160 L	1475	97	92.1	92.3	91.5	0.82	28.5	2.5	8.5	3.8	71	71	▲ 1MB1553-1DB4 ■-■■■■	191	0.085
18.5	18.5	180 M	1470	120	92.6	93.1	93.0	0.82	35	2.5	7.2	3.3	82	82	▲ 1MB1553-1EB2 ■-■■■■	240	0.13
22	22	180 L	1470	143	93.0	93.6	93.6	0.83	41	2.3	6.8	3.3	76	76	▲ 1MB1553-1EB4 ■-■■■■	249	0.14
30	30	200 L	1470	195	93.6	94.2	94.2	0.84	55	2.6	7.3	3.1	75	75	▲ 1MB1553-2AB5 ■-■■■■	346	0.24
37	37	225 S	1480	239	93.9	94.5	94.4	0.86	66	2.5	6.4	2.7	63	77	▲ 1MB1553-2BB0 ■-■■■■	456	0.467
45	45	225 M	1475	291	94.2	94.7	94.6	0.86	80	2.6	6.4	2.7	64	78	▲ 1MB1553-2BB2 ■-■■■■	466	0.52
55	55	250 M	1482	354	94.6	95.1	95	0.87	96	2.5	6.8	2.9	66	79	▲ 1MB1553-2CB2 ■-■■■■	563	0.85
75	75	280 S	1486	482	95	95.3	95	0.86	133	2.5	6.9	3	72	86	▲ 1MB1553-2DB0 ■-■■■■	782	1.4
90	90	280 M	1485	579	95.2	95.5	95.3	0.87	157	2.6	7.2	3	70	84	▲ 1MB1553-2DB2 ■-■■■■	818	1.7
110	110	315 S	1490	705	95.4	95.7	95.4	0.85	196	2.4	6.6	2.6	75	91	▲ 1MB5553-3AB0 ■-■■■■	1150	2.48
132	132	315 M	1490	846	95.6	95.9	95.7	0.86	230	2.1	7	2.7	75	91	▲ 1MB5553-3AB2 ■-■■■■	1270	2.79
160	160	315 L	1491	1025	95.8	96	95.6	0.85	285	2.3	7.5	3	75	91	▲ 1MB5553-3AB4 ■-■■■■	1330	3.17
200	200	315 L	1490	1282	96	96.4	96.3	0.86	350	2.3	7.6	2.8	75	91	▲ 1MB5553-3AB5 ■-■■■■	1480	3.79
250	250	315 L	1490	1602	96	96.2	95.9	0.87	430	2.1	7.2	2.8	75	91	▲ 1MB5553-3AB6 ■-■■■■	1660	4.55
315	315	355 M	1491	2017	96	96.2	95.8	0.86	550	2.3	8	2.9	81	95	▲ 1MB5553-3BB2 ■-■■■■	2140	5.6
355	355	355 M	1491	2274	96	96.1	95.8	0.88	610	2.2	7.5	3.1	81	95	▲ 1MB5553-3BB3 ■-■■■■	2240	6.36
400	400	355 L	1491	2562	96	96.1	95.9	0.87	690	2.1	7.3	3	80	95	▲ 1MB5553-3BB4 ■-■■■■	2420	7.06
460	460	355 L	1492	2944	96	96.2	96	0.85	810	3.1	8.4	3.3	80	96	▲ 1MB5553-3BB5 ■-■■■■	2720	8.5

Voltages		Version					Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2	2			–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3	4			–
50 Hz 500 VY		Without additional charge	2	7			–
50 Hz 500 VΔ		Without additional charge	4	0			–
For other voltages and more information, see from page 5/41			9	0			. . .
Types of construction		Version					Order code
Without flange	IM B3 2)	**Standard**			A		–
With flange	IM B5 2)	With additional charge			F		–
With flange	IM B14 2)	With additional charge			K		–
For other types of construction and more information, see from page 5/48					■		. . .
Motor protection		Version					
Without		**Standard**				A	
PTC thermistor with 3 temperature sensors		With additional charge				B	
For other motor protection and more information, see from page 5/53						■	
Terminal box position		Version					
Terminal box at top		**Standard**					4
For other terminal box positions and more information, see from page 5/57							■
Special versions							Order code(s)
For options, see from page 5/71			1MB.553-	■-■■■■	-Z		. . .+. . .+. . .+. . .

For footnotes, see page 5/37

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rated}$, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)	Cast-iron series 1MB1553/1MB5553 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																	
0.18	0.18	71 M	885	1.94	63.9	64.6	60.8	0.69	0.59	2.3	2.8	2.3	39	68	▲ 1MB1553-0CC2 ■-■■■■	24	0.001
0.25	0.25	71 M	885	2.70	68.6	69.5	66.2	0.69	0.76	2.6	3.2	2.6	39	50	▲ 1MB1553-0CC3 ■-■■■■	26	0.0015
0.37	0.37	80 M	940	3.76	73.1	69.4	69.4	0.66	1.10	2.3	4.2	2.7	46	57	▲ 1MB1553-0DC2 ■-■■■■	31	0.0025
0.55	0.55	80 M	935	5.60	77.2	77.0	73.9	0.67	1.53	2.5	4.5	2.8	42	68	▲ 1MB1553-0DC3 ■-■■■■	34	0.0031
0.75	0.75	90 S	945	7.60	78.9	80.0	78.8	0.70	1.96	2.2	4.6	2.6	42	66	▲ 1MB1553-0EC0 ■-■■■■	43	0.004
1.1	1.1	100 L	965	10.9	81	81.1	79.4	0.74	2.65	2.6	7.2	3.7	62	69	▲ 1MB1553-1AC3 ■-■■■■	67	0.014
1.5	1.5	112 L	975	14.7	82.5	82.5	81.0	0.70	3.75	3.7	7.9	4.1	57	64	▲ 1MB1553-1BC1 ■-■■■■	75	0.017
2.2	2.2	132 S	975	29.4	85.6	86.6	86.3	0.75	6.7	2.4	7.3	3.5	59	66	▲ 1MB1553-1CC1 ■-■■■■	96	0.037
3	3	132 S	975	21.5	84.3	85.2	84.7	0.74	5.1	2.5	7.3	3.6	59	66	▲ 1MB1553-1CC0 ■-■■■■	96	0.037
4	4	132 M	970	39.3	86.8	87.9	87.7	0.76	8.8	2.4	7	3.4	59	66	▲ 1MB1553-1CC2 ■-■■■■	101	0.037
5.5	5.5	132 M	975	54	88	88.8	88.4	0.77	11.7	2.5	7.4	3.6	59	66	▲ 1MB1553-1CC3 ■-■■■■	115	0.046
7.5	7.5	160 M	982	73	89.1	89.7	89.2	0.81	15	2.9	7.2	3	62	69	▲ 1MB1553-1DC2 ■-■■■■	184	0.098
11	11	160 L	982	107	90.3	90.7	89.9	0.81	21.5	3.1	7.6	3.2	62	69	▲ 1MB1553-1DC4 ■-■■■■	200	0.12
15	15	180 L	975	147	91.2	91.9	91.9	0.80	29.5	2.3	5.9	2.8	67	68	▲ 1MB1553-1EC4 ■-■■■■	236	0.19
18.5	18.5	200 L	978	181	91.7	92.5	92.5	0.79	37.0	2.5	5.6	2.6	61	71	▲ 1MB1553-2AC4 ■-■■■■	325	0.28
22	22	200 L	978	215	92.2	93.1	93.2	0.79	43.5	2.5	5.6	2.6	64	72	▲ 1MB1553-2AC5 ■-■■■■	339	0.32
30	30	225 M	982	292	92.9	93.6	93.5	0.83	56	2.6	6.6	3	64	77	▲ 1MB1553-2BC2 ■-■■■■	458	0.67
37	37	250 M	986	358	93.3	93.9	93.8	0.84	68	2.7	7.2	2.9	58	72	▲ 1MB1553-2CC2 ■-■■■■	533	1.01
45	45	280 S	988	435	93.7	94.4	94.3	0.85	82	3	6.8	2.8	60	75	▲ 1MB1553-2DC0 ■-■■■■	729	1.4
55	55	280 M	988	532	94.1	94.6	94.4	0.85	99	3.2	7.2	3	60	74	▲ 1MB1553-2DC2 ■-■■■■	748	1.6
75	75	315 S	992	722	94.6	94.8	94.2	0.8	143	2.4	7.6	2.9	68	83	▲ 1MB5553-3AC0 ■-■■■■	1070	2.98
90	90	315 M	992	866	94.9	95.2	94.8	0.82	167	2.5	7.7	2.9	68	83	▲ 1MB5553-3AC2 ■-■■■■	1130	3.54
110	110	315 L	992	1059	95.1	95.4	95.1	0.83	200	2.4	7.7	2.8	68	83	▲ 1MB5553-3AC4 ■-■■■■	1270	4.25
132	132	315 L	992	1271	95.4	95.7	95.5	0.83	240	2.5	7.8	2.9	68	83	▲ 1MB5553-3AC5 ■-■■■■	1380	4.89
160	160	315 L	992	1540	95.6	96	96.1	0.82	295	2.5	7.3	2.8	68	83	▲ 1MB5553-3AC6 ■-■■■■	1520	5.7
200	200	315 L	992	1925	95.8	96	95.8	0.81	370	2.8	7	3	68	83	▲ 1MB5553-3AC7 ■-■■■■	1670	6.39
250	250	355 S	993	2404	95.8	96.2	96.1	0.84	450	2.5	8	3.1	75	90	▲ 1MB5553-3BC1 ■-■■■■	2340	11.3
315	315	355 M	992	3032	95.8	96.3	96.4	0.86	550	2.4	6.8	2.8	75	90	▲ 1MB5553-3BC2 ■-■■■■	2630	13.8
355	355	355 M	993	3414	95.8	95.9	95.6	0.84	640	2.6	7.4	3.2	76	91	▲ 1MB5553-3BC3 ■-■■■■	2650	13.8
380	380	355 L	993	3654	95.8	96.1	95.9	0.84	680	2.7	7.7	2.9	75	90	▲ 1MB5553-3BC4 ■-■■■■	2650	13.5

Voltages		Version				Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2	2		–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3	4		–
50 Hz 500 VY		Without additional charge	2	7		–
50 Hz 500 VΔ		Without additional charge	4	0		–
For other voltages and more information, see from page 5/41			9	0		. . .
Types of construction		Version				Order code
Without flange	IM B3 2)	**Standard**			A	–
With flange	IM B5 2)	With additional charge			F	–
With flange	IM B14 2)	With additional charge			K	–
For other types of construction and more information, see from page 5/48					■	. . .
Motor protection		Version				
Without		**Standard**			A	
PTC thermistor with 3 temperature sensors		With additional charge			B	
For other motor protection and more information, see from page 5/53					■	
Terminal box position		Version				
Terminal box at top		**Standard**			4	
For other terminal box positions and more information, see from page 5/57					■	
Special versions						Order code(s)
For options, see from page 5/71			1MB.553-	■-■■■■	-Z	. . .+. . .+. . .+. . .

For footnotes, see page 5/37

Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	$\cos\varphi_{rate}$ d,50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz 1)	L_{WA}, 50 Hz 1)	Cast-iron series 1MB1553/1MB5553 Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
• Cooling: self-ventilated (IC 411) • Efficiency according to IEC 60034-30: IE3 Premium Efficiency • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																	
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz 1)																	
0.09	0.09	71 M	650	1.3	44.1	42.8	37.3	0.64	0.81	1.9	2.2	1.9	58	61	▲ 1MB1553-0CD2 ■-■■■■	25	
0.12	0.12	71 M	660	1.7	50.7	49.9	44.8	0.63	0.95	2.1	2.5	2.1	58	61	▲ 1MB1553-0CD3 ■-■■■■	27	
0.18	0.18	80 M	715	2.4	58.7	54.8	47.3	0.51	1.51	1.9	2.9	2.6	59	65	▲ 1MB1553-0DD2 ■-■■■■	30	
0.25	0.25	80 M	695	3.4	64.1	62.7	57.8	0.57	1.72	1.8	2.9	2.1	59	65	▲ 1MB1553-0DD3 ■-■■■■	33	
0.37	0.37	90 S	710	5	69.3	68.3	63.7	0.55	2.45	1.6	3.2	2.3	60	73	▲ 1MB1553-0ED0 ■-■■■■	43	
0.55	0.55	90 L	715	7.3	73	71.2	66.5	0.52	3.65	2.3	3.6	2.7	60	73	▲ 1MB1553-0ED4 ■-■■■■	44	
0.75	0.75	100 L	700	10.2	75	77.3	76.2	0.70	2.05	1.7	4	2.2	60	67	▲ 1MB1553-1AD4 ■-■■■■	59	
1.1	1.1	100 L	710	14.9	77.7	79.4	78.2	0.70	2.9	1.9	4.8	2.5	60	67	▲ 1MB1553-1AD5 ■-■■■■	64	
1.5	1.5	112 M	720	19.9	79.7	80.3	78.6	0.70	3.9	2.1	5	2.8	60	70	▲ 1MB1553-1BD2 ■-■■■■	74	
2.2	2.2	132 S	720	29.1	81.9	83.4	82.9	0.73	5.3	2.1	6.1	2.7	62	76	▲ 1MB1553-1CD0 ■-■■■■	96	
3	3	132 M	725	39.5	83.5	84.4	83.6	0.74	7	2.4	6.4	2.9	62	76	▲ 1MB1553-1CD2 ■-■■■■	104	
4	4	160 M	728	52	84.5	86.0	86.2	0.74	9.2	1.9	5.4	2.4	61	68	▲ 1MB1553-1DD2 ■-■■■■	157	
5.5	5.5	160 M	732	72	86.2	87.3	86.6	0.74	12.5	2.1	5.9	2.6	61	68	▲ 1MB1553-1DD3 ■-■■■■	169	
7.5	7.5	160 L	735	98	87.3	87.9	87.0	0.77	16.1	1.8	6.3	2.7	61	68	▲ 1MB1553-1DD4 ■-■■■■	183	
11	11	180 L	725	145	88.6	89.7	89.6	0.74	24	2.1	5.1	2.4	67	82	▲ 1MB1553-1ED4 ■-■■■■	259	
15	15	200 L	730	196	89.6	90.1	89.4	0.73	33.5	3	6.8	3.7	65	70	▲ 1MB1553-2AD5 ■-■■■■	357	
18.5	18.5	225 S	732	241	90.1	90.6	90	0.75	39.5	2.5	5.9	3	56	70	▲ 1MB1553-2BD0 ■-■■■■	417	0.5
22	22	225 M	732	287	90.6	91.4	91.2	0.77	45.5	2.6	5.9	2.9	56	70	▲ 1MB1553-2BD2 ■-■■■■	425	0.55
30	30	250 M	735	390	91.3	91.8	91.5	0.79	60	2.6	6.1	3	60	74	▲ 1MB1553-2CD2 ■-■■■■	512	0.86
37	37	280 S	736	480	91.8	92.5	92.4	0.78	75	2.3	5.4	2.4	63	77	▲ 1MB1553-2DD0 ■-■■■■	680	1.1
45	45	280 M	738	582	92.2	92.8	92.6	0.8	88	2.5	5.9	2.5	65	79	▲ 1MB1553-2DD2 ■-■■■■	743	1.6
55	55	315 S	744	706	92.5	92.8	92.4	0.81	106	2.4	6.4	2.6	67	82	▲ 1MB5553-3AD0 ■-■■■■	1020	3.14
75	75	315 M	743	964	93.1	93.5	93.2	0.81	144	2.5	6.3	2.6	67	82	▲ 1MB5553-3AD2 ■-■■■■	1090	3.14
90	90	315 L	742	1158	93.4	93.9	93.7	0.82	170	2.4	6.3	2.5	67	82	▲ 1MB5553-3AD4 ■-■■■■	1150	3.76
110	110	315 L	742	1416	94.7	95.1	94.9	0.82	205	2.6	6.6	2.7	67	82	▲ 1MB5553-3AD5 ■-■■■■	1290	4.48
132	132	315 L	741	1701	94	94.4	94.2	0.82	245	2.4	6	2.5	67	82	▲ 1MB5553-3AD6 ■-■■■■	1370	5.1
160	160	315 L	741	2062	94.3	94.7	94.7	0.79	310	2.4	6.2	2.4	67	82	▲ 1MB5553-3AD7 ■-■■■■	1650	6.78
200	200	355 M	744	2567	94.6	95	95	0.8	380	2.3	7.1	2.7	73	88	▲ 1MB5553-3BD0 ■-■■■■	2340	11.3
250	250	355 M	744	3209	94.6	95	95	0.8	475	2.4	7.2	2.9	73	88	▲ 1MB5553-3BD1 ■-■■■■	2600	13.8
315	315	355 L	744	4043	94.6	94.9	94.6	0.8	600	2.4	7	2.9	73	88	▲ 1MB5553-3BD2 ■-■■■■	2610	13.8

Voltages		Version				Order code
50 Hz 230 VΔ/400 VY	60 Hz 460 VY	**Standard**	2	2		–
50 Hz 400 VΔ/690 VY	60 Hz 460 VΔ	**Standard**	3	4		–
50 Hz 500 VY		Without additional charge	2	7		–
50 Hz 500 VΔ		Without additional charge	4	0		–
For other voltages and more information, see from page 5/41			9	0		. . .
Types of construction		Version				Order code
Without flange	IM B3 2)	**Standard**			A	–
With flange	IM B5 2)	With additional charge			F	–
With flange	IM B14 2)	With additional charge			K	–
For other types of construction and more information, see from page 5/48					■	. . .
Motor protection		Version				
Without		**Standard**				A
PTC thermistor with 3 temperature sensors		With additional charge				B
For other motor protection and more information, see from page 5/53						■
Terminal box position		Version				
Terminal box at top		**Standard**				4
For other terminal box positions and more information, see from page 5/57						■
Special versions						Order code(s)
For options, see from page 5/71			1MB.553-	■-■■■■	-Z	. . .+. . .+. . .+. . .

1) Noise values for line operation under load, tolerance +3 dB(A).

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate.

Selection and ordering data

Voltages	Article No. supplement: Voltage code 12th and 13th position of the Article No.		Article No. supplement: Additional identification code with order code and plain text if required	Frame size: 80	90	100	112	132	160	Motor version
				1MB10.3						IEC: Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2): IE3
				1MB10.1						IE2
						1MB10.2				IE1
1MB10- . . . . ■ - ■ . . .			Order code							
Voltage at 50 Hz or 60 Hz (50 Hz power)										
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	**2**	**2**	**–**	□	□	□	□	□	□	
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	**3**	**4**	**–**	□	□	□	□	□	□	
50 Hz 500 VY	**2**	**7**	**–**	○	○	○	○	○	○	
50 Hz 500 VΔ	**4**	**0**	**–**	–	–	○	○	○	○	
50 Hz 220 VΔ/380 VY, 60 Hz 440 VY	**2**	**1**	**–**	✓	✓	✓	✓	✓	✓	
50 Hz 380 VΔ/660 VY, 60 Hz 440 VΔ	**3**	**3**	**–**	✓	✓	✓	✓	✓	✓	
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY	**2**	**3**	**–**	✓	✓	✓	✓	✓	✓	
50 Hz 415 VΔ, 60 Hz 480 VΔ	**3**	**5**	**–**	✓	✓	✓	✓	✓	✓	
50 Hz 400 VY, 60 Hz 460 VY [1]	**0**	**2**	**–**	○	○	○	○	○	○	
50 Hz 400 VΔ, 60 Hz 460 VΔ [2]	**0**	**4**	**–**	○	○	○	○	○	○	
60 Hz 220 VΔ/380 VY	**1**	**7**	**–**	✓	✓	✓	✓	✓	✓	Not for: 1MB10.2
60 Hz 230 VΔ/400 VY	**1**	**8**	**–**	✓	✓	✓	✓	✓	✓	Not for: 1MB10.2
60 Hz 380 VΔ/660 VY	**3**	**0**	**–**	✓	✓	✓	✓	✓	✓	Not for: 1MB10.2
60 Hz 400 VΔ/690 VY	**3**	**1**	**–**	✓	✓	✓	✓	✓	✓	Not for: 1MB10.2
50 Hz 400 VY	**9**	**0**	**M4A**	○	○	○	○	○	○	
50 Hz 400 VΔ	**9**	**0**	**M4B**	○	○	○	○	○	○	
Voltage at 60 Hz (50 Hz power)										
220 VΔ/380 VY; 50 Hz power [3]	**9**	**0**	**M2A**	✓	✓	✓	✓	✓	✓	
220 VΔ/380 VY; 60 Hz power	**9**	**0**	**M1A**	✓	✓	✓	✓	✓	✓	
380 VΔ/660 VY; 50 Hz power [3]	**9**	**0**	**M2B**	✓	✓	✓	✓	✓	✓	
380 VΔ/660 VY; 60 Hz power	**9**	**0**	**M1B**	✓	✓	✓	✓	✓	✓	
440 VY; 50 Hz power [3]	**9**	**0**	**M2C**	✓	✓	✓	✓	✓	✓	
440 VY; 60 Hz power	**9**	**0**	**M1C**	✓	✓	✓	✓	✓	✓	
440 VΔ; 50 Hz power [3]	**9**	**0**	**M2D**	✓	✓	✓	✓	✓	✓	
440 VΔ; 60 Hz power	**9**	**0**	**M1D**	✓	✓	✓	✓	✓	✓	
460 VY; 50 Hz power [3]	**9**	**0**	**M2E**	✓	✓	✓	✓	✓	✓	
460 VY; 60 Hz power	**9**	**0**	**M1E**	○	○	○	○	○	○	
460 VΔ; 50 Hz power [3]	**9**	**0**	**M2F**	✓	✓	✓	✓	✓	✓	
460 VΔ; 60 Hz power	**9**	**0**	**M1F**	○	○	○	○	○	○	
575 VY; 50 Hz power [3]	**9**	**0**	**M2G**	✓	✓	✓	✓	✓	✓	
575 VY; 60 Hz power	**9**	**0**	**M1G**	✓	✓	✓	✓	✓	✓	
575 VΔ; 50 Hz power [3]	**9**	**0**	**M2H**	✓	✓	✓	✓	✓	✓	
575 VΔ; 60 Hz power	**9**	**0**	**M1H**	✓	✓	✓	✓	✓	✓	
400 VΔ/690 VY; 50 Hz power [3]	**9**	**0**	**M2J**	✓	✓	✓	✓	✓	✓	
400 VΔ/690 VY; 60 Hz power	**9**	**0**	**M1J**	✓	✓	✓	✓	✓	✓	
480 VY; 50 Hz power [3]	**9**	**0**	**M2K**	✓	✓	✓	✓	✓	✓	
480 VY; 60 Hz power	**9**	**0**	**M1K**	✓	✓	✓	✓	✓	✓	
480 VΔ; 50 Hz power [3]	**9**	**0**	**M2L**	✓	✓	✓	✓	✓	✓	
480 VΔ; 60 Hz power	**9**	**0**	**M1L**	✓	✓	✓	✓	✓	✓	
230 VΔ/400 VY; 50 Hz power [3]	**9**	**0**	**M2M**	✓	✓	✓	✓	✓	✓	
230 VΔ/400 VY; 60 Hz power	**9**	**0**	**M1M**	✓	✓	✓	✓	✓	✓	
Voltage at 87 Hz (87 Hz power)										
400 VΔ [5]	**9**	**0**	**M3A**	✓	✓	✓	✓	✓	✓	
Non-standard voltage and/or frequencies										
Non-standard winding [4]	**9**	**0**	**M1Y •** and customer specifications	✓	✓	✓	✓	✓	✓	

□ Standard version
○ Without additional charge
✓ With additional charge
– Not possible
• This order code only determines the price of the version – Additional plain text is required.

1) Delta connection is not possible.
2) Star connection is not possible.
3) A power of 3.7 kW is stamped on the rating plate for versions 1MB1...-1BA2, 1MB1...-1BB2, 1MB1...-1CC2 and 1MB1...-1DD2 at 60 Hz with 50 Hz power in accordance with the international efficiency classification to IEC 60034-30.
4) Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated power in kW.
5) Only possible for 4-pole, 6-pole and 8-pole motors and in combination with the order codes **B40** and **B41**. The operating data for converter operation is also provided in a table on the additional rating plate. The motor contains winding version 50 Hz 230 VΔ.

Selection and ordering data

Voltages	Article No. supplement: Voltage code 12th and 13th position of the Article No.		Additional identification code with order code and plain text if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version: IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3	IE2
				1MB15.3 Basic Line																
							1MB16.3 Performance Line													
				1MB15.1 Basic Line																
							1MB16.1 Performance Line													
1MB15 . . - . . . . ■ - ■ .																				
1MB16 . . - . . . . ■ - ■ .			Order code																	
Voltage at 50 Hz or 60 Hz																				
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	**2**	**2**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□				
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	**3**	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□				
50 Hz 400 VY, 60 Hz 460 VY [1]	**0**	**2**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	○				
50 Hz 400 VΔ, 60 Hz 460 VΔ [2]	**0**	**4**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	○				
50 Hz 500 VY	**2**	**7**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	○				
50 Hz 500 VΔ	**4**	**0**	**–**	–	–	–	○	○	○	○	○	○	○	○	○	○				
50 Hz 220 VΔ/380 VY, 60 Hz 440 VY	**2**	**1**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
50 Hz 380 VΔ/660 VY, 60 Hz 440 VΔ	**3**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY	**2**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
50 Hz 415 VΔ, 60 Hz 480 VΔ	**3**	**5**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
60 Hz 220 VΔ/380 VY	**1**	**7**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
60 Hz 230 VΔ/400 VY	**1**	**8**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
60 Hz 380 VΔ/660 VY	**3**	**0**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
60 Hz 400 VΔ/690 VY	**3**	**1**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
50 Hz 400 VY	**9**	**0**	**M4A**	○	○	○	○	○	○	○	○	○	○	○	○	○				
50 Hz 400 VΔ	**9**	**0**	**M4B**	○	○	○	○	○	○	○	○	○	○	○	○	○				
Voltage at 60 Hz and required power																				
220 VΔ/380 VY; 50 Hz power [3]	**9**	**0**	**M2A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
220 VΔ/380 VY; 60 Hz power	**9**	**0**	**M1A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 50 Hz power [3]	**9**	**0**	**M2B**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
380 VΔ/660 VY; 60 Hz power	**9**	**0**	**M1B**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 50 Hz power [3]	**9**	**0**	**M2C**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VY; 60 Hz power	**9**	**0**	**M1C**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VΔ; 50 Hz power [3]	**9**	**0**	**M2D**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
440 VΔ; 60 Hz power	**9**	**0**	**M1D**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
460 VY; 50 Hz power [3]	**9**	**0**	**M2E**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
460 VY; 60 Hz power	**9**	**0**	**M1E**	–	–	–	○	○	○	○	○	○	○	○	○	○				
460 VΔ; 50 Hz power [3]	**9**	**0**	**M2F**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
460 VΔ; 60 Hz power	**9**	**0**	**M1F**	–	–	–	○	○	○	○	○	○	○	○	○	○				
575 VY; 50 Hz power [3]	**9**	**0**	**M2G**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VY; 60 Hz power	**9**	**0**	**M1G**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 50 Hz power [3]	**9**	**0**	**M2H**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
575 VΔ; 60 Hz power	**9**	**0**	**M1H**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
400 VΔ/690 VY; 50 Hz power [3]	**9**	**0**	**M2J**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
400 VΔ/690 VY; 60 Hz power	**9**	**0**	**M1J**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
480 VY; 50 Hz power [3]	**9**	**0**	**M2K**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
480 VY; 60 Hz power	**9**	**0**	**M1K**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
480 VΔ; 50 Hz power [3]	**9**	**0**	**M2L**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
480 VΔ; 60 Hz power	**9**	**0**	**M1L**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
230 VΔ/400 VY; 50 Hz power [3]	**9**	**0**	**M2M**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
230 VΔ/400 VY; 60 Hz power	**9**	**0**	**M1M**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Voltage at 87 Hz (87 Hz power)																				
400 VΔ [5]	**9**	**0**	**M3A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Non-standard voltage and/or frequencies																				
Non-standard winding [4]	**9**	**0**	**M1Y** • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

□ Standard version
○ Without additional charge
✓ With additional charge
– Not possible
• This order code only determines the price of the version – Additional plain text is required.

1) Delta connection is not possible.

2) Star connection is not possible.

3) A power of 3.7 kW is stamped on the rating plate for versions 1MB1...-1BA2, 1MB1...-1BB2, 1MB1...-1CC2 and 1MB1...-1DD2 at 60 Hz with 50 Hz power in accordance with the international efficiency classification to IEC 60034-30.

4) Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside the range on request). Frequency, connection, for 60 Hz, additionally required rated power in kW.

5) Only possible for 4-pole, 6-pole and 8-pole motors and in combination with the order codes **B40** and **B41**. The operating data for converter operation is also provided in a table on the additional rating plate. The motor contains winding version 50 Hz 230 VΔ.

Selection and ordering data

Voltages	Article No. supplement: Voltage code 12th and 13th position of the Article No		Additional identification code with order code and plain text if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version: IEC	Ex eb (Zone 1)	IE3
				1MB1543 Basic Line															
							1MB1643 Performance Line												
															1MB5543 Basic Line				
															1MB5643 Performance Line				
1MB1543 - . . . . ■ - ■ .																			
1MB1643 - . . . . ■ - ■ .																			
1MB5543 - . . . . ■ - ■ .																			
1MB5643 - . . . . ■ - ■ .			Order code																
Voltage at 50 Hz or 60 Hz [3]																			
50 Hz 230 VΔ/400 VY	**2**	**2**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	–			
50 Hz 400 VΔ/690 VY	**3**	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□			
50 Hz 500 VY	**2**	**7**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	–			
50 Hz 500 VΔ [1]	**4**	**0**	**–**	–	–	–	○	○	○	○	○	○	○	○	○	○			
50 Hz 220 VΔ/380 VY	**2**	**1**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–			
50 Hz 230 VΔ	**0**	**1**	**–**	○	○	○	○	○	○	○	○	○	–	–	–	–			
50 Hz 380 VΔ/660 VY	**3**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
50 Hz 240 VΔ [1]	**2**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
50 Hz 415 VΔ	**3**	**5**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
50 Hz 400 VY	**9**	**0**	**M4A**	○	○	○	○	○	○	○	○	○	○	○	○	–			
50 Hz 400 VΔ	**9**	**0**	**M4B**	○	○	○	○	○	○	○	○	○	○	○	○	○			
Voltage at 60 Hz and required power																			
220 VΔ/380 VY; 50 Hz power	**9**	**0**	**M2A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–			
380 VΔ/660 VY; 50 Hz power [2]	**9**	**0**	**M2B**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
440 VY; 50 Hz power	**9**	**0**	**M2C**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
440 VΔ; 50 Hz power	**9**	**0**	**M2D**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
460 VY; 50 Hz power	**9**	**0**	**M2E**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
460 VΔ; 50 Hz power	**9**	**0**	**M2F**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
575 VY; 50 Hz power [2]	**9**	**0**	**M2G**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
575 VΔ; 50 Hz power	**9**	**0**	**M2H**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Non-standard voltage and/or frequencies																			
Non-standard winding [2]	**9**	**0**	**M1Y** • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

□ Standard version
○ Without additional charge
✓ With additional charge
– Not possible
• This order code only determines the price of the version – Additional plain text is required.

1) Special certification is required for 60 Hz.

2) Plain text must be specified in the order:
Voltage between 200 V and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated power in kW.

3) Motors in these frame sizes have a second rating plate (T1/T2 and T3) as standard.
The T3 power is stamped on the rating plate as standard if the following motors are selected with PTC thermistor (protection by PTC thermistor only) or voltage code "**90**":
- 2-pole motors: Frame sizes 132 to 160
- 4-pole motors: Frame size 180

Alternatively, with order code **B33**, the "T1/T2 power is stamped on the rating plate".
- 2-pole motors: Frame sizes 132 to 200
- 4-pole motors: Frame sizes 180 to 200

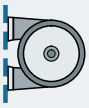
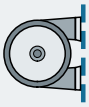
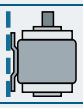
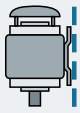
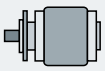
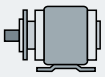
Selection and ordering data

Voltages	Article No. supplement: Voltage code 12th and 13th position of the Article No.		Additional identification code with order code and plain text if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version: IEC	Ex db, Ex db eb (Zone 1)	IE3
				1MB1553																
															1MB5553					
1MB.553 - . . . .■ - ■ .			Order code																	
Voltage at 50 Hz or 60 Hz																				
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	**2**	**2**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	–	–			
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	**3**	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
50 Hz 500 VY	**2**	**7**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	–	–			
50 Hz 500 VΔ	**4**	**0**	**–**	–	–	–	○	○	○	○	○	○	○	○	○	○	○			
50 Hz 220 VΔ/380 VY, 60 Hz 440 VY	**2**	**1**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
50 Hz 380 VΔ/660 VY, 60 Hz 440 VΔ	**3**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY	**2**	**3**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
50 Hz 415 VΔ, 60 Hz 480 VΔ	**3**	**5**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
50 Hz 400 VY	**9**	**0**	**M4A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
50 Hz 400 VΔ	**9**	**0**	**M4B**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
50 Hz 230 VΔ	**0**	**1**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	–	–			
50 Hz 400 VY [1]	**0**	**2**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	–	–			
50 Hz 400 VΔ [2]	**0**	**4**	**–**	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
Voltage at 60 Hz and required power																				
220 VΔ/380 VY; 50 Hz power [3]	**9**	**0**	**M2A**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
380 VΔ/660 VY; 50 Hz power [3]	**9**	**0**	**M2B**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
440 VY; 50 Hz power [3]	**9**	**0**	**M2C**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
440 VΔ; 50 Hz power [3]	**9**	**0**	**M2D**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
460 VY; 50 Hz power [3]	**9**	**0**	**M2E**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
460 VΔ; 50 Hz power [3]	**9**	**0**	**M2F**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
575 VY; 50 Hz power [3]	**9**	**0**	**M2G**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–			
575 VΔ; 50 Hz power [3]	**9**	**0**	**M2H**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Non-standard voltage and/or frequencies																				
Non-standard winding [4]	**9**	**0**	**M1Y** • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

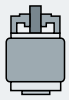
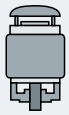
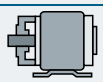
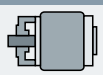
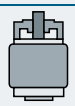
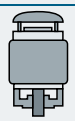
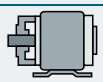
□ Standard version
○ Without additional charge
✓ With additional charge
– Not possible
• This order code only determines the price of the version – Additional plain text is required.

1) Delta connection is not possible.
2) Star connection is not possible.
3) Power at 60 Hz according to the specification in the selection and ordering data of the basic motor.
4) Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated power in kW.

Selection and ordering data

Types of construction		Article No. supplement: Type of construction code letter 14th position of the Article No.	Article No. supplement: For types of construction with order code(s) Article No. with additional identification code -Z	Frame size: 80	90	100	112	132	160	Motor version: IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	
				1MB10.3								
				1MB10.1								
						1MB10.2						
1MB10 . . - . . . . . - . ■ . . (-Z)			Order code									
Without flange												
IM B3		**A**	–	□	□	□	□	□	□			
IM B6 [1]		**T**	–	□	□	□	□	□	□			
IM B7 [1]		**U**	–	□	□	□	□	□	□			
IM B8 [1]		**V**	–	□	□	□	□	□	□			
IM V6 [1]		**D**	–	□	□	□	□	□	□			
IM V5 with protective cover [1] [2]		**C**	**H00**	✓	✓	✓	✓	✓	✓			
With flange		**Acc. to EN 50347 Acc. to DIN 42 948**		**FF165 A 200**	**FF165 A 200**	**FF215 A 250**	**FF215 A 250**	**FF265 A 300**	**FF300 A 350**			
IM B5		**F**	–	✓	✓	✓	✓	✓	✓			
IM V1 with protective cover [1] [2]		**G**	**H00**	✓	✓	✓	✓	✓	✓			
IM V3 [1]		**H**	–	✓	✓	✓	✓	✓	✓			
IM B35		**J**	–	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/43.

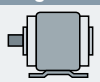
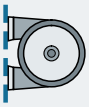
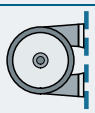
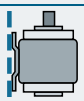
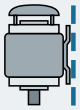
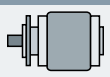
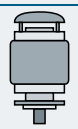
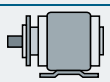
Types of construction		Article No. supplement		Frame size						Motor version		
		Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	**80**	**90**	**100**	**112**	**132**	**160**			
				1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
				1MB10.1								IE2
						1MB10.2						IE1
1MB10 . . - . . . . . - .		**■**	**. . (-Z)**	Order code								
With flange		**Acc. to EN 50347 Acc. to DIN 42 948**		**FT100 C 120**	**FT115 C 140**	**FT130 C 160**	**FT130 C 160**	**FT165 C 200**	**FT215 C 250**			
IM B14 [1]		**K**	**–**	✓	✓	✓	✓	✓	✓			
IM V19 [1]		**L**	**–**	✓	✓	✓	✓	✓	✓			
IM V18 with protective cover [1] [2]		**M**	**H00**	✓	✓	✓	✓	✓	✓			
IM B34		**N**	**–**	✓	✓	✓	✓	✓	✓			
With special flange next largest		**Acc. to EN 50347 Acc. to DIN 42 948**		**FT130 C 160**	**FT130 C 160**	**FT165 C 200**	**FT165 C 200**	**FT215 C 250**	**FT265 C 300**			
IM B14 [1]		**K**	**P01**	✓	✓	✓	✓	✓	–			
IM V19 [1]		**L**	**P01**	✓	✓	✓	✓	✓	–			
IM V18 with protective cover [1] [2]		**M**	**P01+H00**	✓	✓	✓	✓	✓	–			
IM B34		**N**	**P01**	✓	✓	✓	✓	✓	–			

□ Standard version
✓ With additional charge
– Not possible

[1] The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

[2] The "Standard cylindrical shaft extension (second shaft extension)" option (order code **L05**) is not possible.

Selection and ordering data

Types of construction	Article No. supplement		Frame size													Motor version		
	Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315 S/M**	**315 L**			
			1MB15.3 Basic Line														IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
						1MB16.3 Performance Line													
			1MB15.1 Basic Line																IE2
1MB15 . . - . . . . . - . ■ . . (-Z)																			
1MB16 . . - . . . . . - . ■ . . (-Z)		Order code				**1MB16.1 Performance Line**													
Without flange																			
IM B3 	**A**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B6 1) 	**T**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B7 1) 	**U**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B8 1) 	**V**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM V6 1) 	**D**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM V5 with protective cover 1) 2) 	**C**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
With flange	**Acc. to EN 50347 Acc. to DIN 42 948**		**FF130 A 160**	**FF165 A 200**	**FF165 A 200**	**FF215 A 250**	**FF215 A 250**	**FF265 A 300**	**FF300 A 350**	**FF300 A 350**	**FF350 A 400**	**FF400 A 450**	**FF500 A 550**	**FF500 A 550**	**FF600 A 660**	**FF600 A 660**			
IM B5 	**F**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
IM V1 with protective cover 1) 2) 	**G**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V3 1) 	**H**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
IM B35 1) 	**J**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

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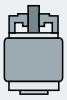
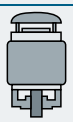
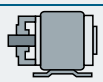
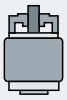
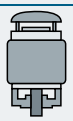
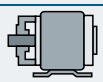
For legends and footnotes, see page 5/45.

Types of construction · Cast-iron series 1MB15 Basic Line, 1MB16 Performance Line

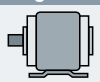
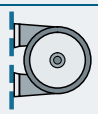
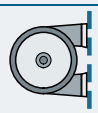
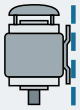
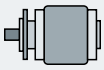
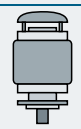
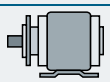
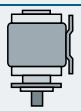
Types of construction	Article No. supplement: Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L	Motor version
			1MB15.3 Basic Line														IEC: Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2): IE3
						1MB16.3 Performance Line											
			1MB15.1 Basic Line														IE2
						1MB16.1 Performance Line											
1MB15 . . - . . . . . - . ■ . . (-Z)																	
1MB16 . . - . . . . . - . ■ . . (-Z)		Order code															
With flange	**Acc. to EN 50347 Acc. to DIN 42 948**		FT85 C 105	FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250	– –	– –	– –	– –	– –	– –	– –	– –	
IM B14 [1] 	**K**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	
IM V19 [1] 	**L**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	
IM V18 with protective cover [1] [2] 	**M**	**H00**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	
IM B34 	**N**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	
With special flange next largest	**Acc. to EN 50347 Acc. to DIN 42 948**		FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT165 C 200	FT215 C 250	– –	– –	– –	– –	– –	– –	– –	– –	– –	
IM B14 [1] 	**K**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	
IM V19 [1] 	**L**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	
IM V18 with protective cover [1] [2] 	**M**	**P01+ H00**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	
IM B34 	**N**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	

□ Standard version
✓ With additional charge
– Not possible

[1] The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

[2] The "Standard cylindrical shaft extension (second shaft extension)" option (order code **L05**) is not possible.

Selection and ordering data

Types of construction		Article No. supplement: Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L	Motor version: IEC	Ex eb (Zone 1)	IE3
				1MB1543 Basic Line																
							1MB1643 Performance Line													
																1MB5543 Basic Line				
																1MB5643 Performance Line				
1MB1543 - . . . . . - . ■ . . (-Z)																				
1MB1643 - . . . . . - . ■ . . (-Z)																				
1MB5543 - . . . . . - . ■ . . (-Z)																				
1MB5643 - . . . . . - . ■ . . (-Z)			Order code																	
Without flange																				
IM B3 2)		**A**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B6 1) 2)		**T**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B7 1) 2)		**U**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM B8 1) 2)		**V**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM V6 1) 2)		**D**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
IM V5 with protective cover 1) 2)		**C**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
With flange		**Acc. to EN 50347 Acc. to DIN 42 948**		FF130 A 160	FF165 A 200	FF165 A 200	FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	FF600 A 660			
IM B5 2)		**F**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
IM V1 with protective cover 1) 2) 3)		**G**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V3 1) 2)		**H**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–			
IM B35 1) 2)		**J**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V15 1) 2)		**W**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/47.

Types of construction · Cast-iron series 1MB1543, 1MB5543 Basic Line and 1MB1643, 1MB5643 Performance Line

Types of construction	Article No. supplement: Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L	Motor version: IEC	Ex eb (Zone 1)	IE3
			1MB1543 Basic Line																
						1MB1643 Performance Line													
															1MB5543 Basic Line				
															1MB5643 Performance Line				
1MB1543 - . . . . . - . ■ . . (-Z)																			
1MB1643 - . . . . . - . ■ . . (-Z)																			
1MB5543 - . . . . . - . ■ . . (-Z)																			
1MB5643 - . . . . . - . ■ . . (-Z)		Order code																	
With flange	**Acc. to EN 50347 Acc. to DIN 42 948**		FT85 C 105	FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250	– –	– –	– –	– –	– –	– –	– –			
IM B14 1) 2)	**K**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–			
IM V19 1) 2)	**L**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–			
IM V18 with protective cover 1) 2) 3)	**M**	**H00**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–			
IM B34 1) 2)	**N**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–			
With special flange next largest	**Acc. to EN 50347 Acc. to DIN 42 948**		FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT165 C 200	FT215 C 250	– –	– –	– –	– –	– –	– –	– –	– –			
IM B14 1) 2) 4)	**K**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–			
IM V19 1) 2) 4)	**L**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–			
IM V18 with protective cover 1) 2) 3) 4)	**M**	**P01+ H00**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–			
IM B34 1) 2) 4)	**N**	**P01**	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–			

□ Standard version
✓ With additional charge
– Not possible

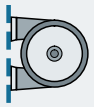
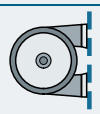
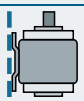
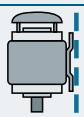
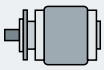
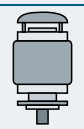
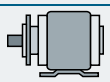
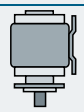
1) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

2) The type of construction is stamped on the rating plate. For orders with condensation drainage holes (order code **H03**), if mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

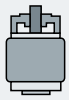
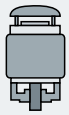
3) The "Standard cylindrical shaft extension (second shaft extension)" option (order code **L05**) is not possible.

4) With reference to standard EN 50347, flanges that are 2 steps larger are used with option P01 in the frame sizes 71 and 80.

Selection and ordering data

Types of construction		Article No. supplement		Frame size													Motor version	
		Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	71	80	90	100	112	132	160	180	200	225	250	280	315	355	
				1MB1553														IEC
														1MB5553				
1MB.553 - . . . . . - . ■ . . (-Z)			Order code															
Without flange																		
IM B3		**A**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
IM B6 [1]		**T**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	–	
IM B7 [1]		**U**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	–	
IM B8		**V**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	–	
IM V6 [1] [3]		**D**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	–	
IM V5 with protective cover [1] [3]		**C**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	
With flange		**Acc. to EN 50347 Acc. to DIN 42 948**		FF130 A 160	FF165 A 200	FF165 A 200	FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	FF600 A 660	
IM B5 [1]		**F**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	
IM V1 with protective cover [2] [3]		**G**	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IM V3 [3]		**H**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	
IM B35		**J**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IM V15 [2] [3]		**W**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	

For legends and footnotes, see page 5/49.

Types of construction	Article No. supplement		Frame size													Motor version		
	Type of construction code letter 14th position of the Article No.	For types of construction with order code(s) Article No. with additional identification code **-Z**	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**		
			1MB1553														IEC	Ex db, Ex db eb (Zone 1) IE3
													1MB5553					
1MB.553 - . . . . . - .	■ . . (-Z)	Order code																
With flange	**Acc. to EN 50347 Acc. to DIN 42 948**		FT85 C 105	FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250	– –	– –	– –	– –	– –	– –	– –		
IM B14 3) 	**K**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–		
IM V19 3) 	**L**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–		
IM V18 with protective cover 2) 3) 	**M**	**H00**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–		
IM B34 	**N**	**–**	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–		

□ Standard version
✓ With additional charge
– Not possible

1) Only possible for frame size 315 S/M (horizontal mounting).

2) The "Standard cylindrical shaft extension (second shaft extension)" option (order code **L05**) is not possible.

3) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

Selection and ordering data

Motor protection	Article No. supplement		Frame size						Motor version		
	Motor protection code letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	**80**	**90**	**100**	**112**	**132**	**160**			
			1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
			1MB10.1								IE2
					1MB10.2						IE1
1MB10 . . - . . . . . - . . ■ .		Order code									
Motor protection											
None (standard)	**A**	–	□	□	□	□	□	□			
3 PTC thermistors – for tripping (2 terminals) [1]	**B**	–	✓	✓	✓	✓	✓	✓			
6 PTC thermistors – for warning and tripping (4 terminals) [1]	**C**	–	✓	✓	✓	✓	✓	✓			
1 KTY84-130 temperature sensor (2 terminals) [1]	**F**	–	✓	✓	✓	✓	✓	✓			
2 KTY84-130 temperature sensors (4 terminals) [1]	**G**	–	✓	✓	✓	✓	✓	✓			
3 Pt100 resistance thermometers – 2-wire input (6 terminals) [1] [2]	**H**	–	–	–	✓	✓	✓	✓			
1 Pt1000 resistance thermometers (2 terminals) [1]	**K**	–	✓	✓	✓	✓	✓	✓			
2 Pt1000 resistance thermometers (4 terminals) [1]	**L**	–	✓	✓	✓	✓	✓	✓			

□ Standard version
✓ With additional charge
– Not possible

[1] Evaluation with associated tripping unit (see Catalog IC 10) is recommended. In converter operation, PTC thermistor motor protection is always required.

[2] In combination with the 15th position of the Article No. "**H**", the order codes **Q02** and **Q03** are not possible for frame sizes 100 to 160. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).

Selection and ordering data

Motor protection	Article No. supplement: Motor protection code letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version
			1MB15.3 Basic Line													IEC: Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2): IE3
						1MB16.3 Performance Line										
			1MB15.1 Basic Line													IE2
						1MB16.1 Performance Line										
1MB15 . . - . . . . . - . . ■ .																
1MB16 . . - . . . . . - . . ■ .		Order code														
Motor protection																
None (standard)	**A**	–	□	□	□	□	□	□	□	□	□	□	□	□	□	Only for: 1MB15.. Basic Line
3 PTC thermistors – for tripping (2 terminals) [1]	**B**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6 PTC thermistors - for warning and tripping (4 terminals) [2]	**C**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for: 1MB15.. Basic Line
			–	–	–	□	□	□	□	□	□	□	□	□	□	Only for: MB16.. Performance Line
1 KTY84-130 temperature sensor (2 terminals) [2]	**F**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2 KTY84-130 temperature sensor (4 terminals) [2]	**G**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3 Pt100 resistance thermometers – 2-wire input (6 terminals) [2] [3]	**H**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6 Pt100 resistance thermometers – 2-wire input (12 terminals) [2]	**J**	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	
1 Pt1000 resistance thermometer (2 terminals) [2]	**K**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2 Pt1000 resistance thermometers (4 terminals) [2]	**L**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

□ Standard version
✓ With additional charge
– Not possible

1) For the Performance Line, motor protection by means of PTC thermistors with 3 built-in temperature sensors for tripping (motor protection code letter B) is already included in the basic price. For the Performance Line, the option "without motor protection" (motor protection code letter A) is not possible.

2) Evaluation with associated tripping unit (see Catalog IC 10) is recommended. In converter operation, PTC thermistor motor protection is always required.

3) In combination with the 15th position of the Article No. "**H**", the order codes **Q02** and **Q03** are not possible for frame sizes 100 to 160. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).

Selection and ordering data

Motor protection	Article No. supplement: Motor protection code letter 15th position of the Article No.	Article No. supplement: Additional identification code with order code and plain text, if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version
			1MB1543 Basic Line													IEC Ex eb (Zone 1) IE3
						1MB1643 Performance Line										
														1MB5543 Basic Line		
														1MB5643 Performance Line		
1MB1543 - . . . . . - . .	■ .															
1MB1643 - . . . . . - . .	■ .															
1MB5543 - . . . . . - . .	■ .															
1MB5643 - . . . . . - . .	■ .	Order code														
Motor protection																
Without (standard) [1]	**A**	–	□	□	□	□	□	□	□	□	□	□	□	□	□	Only for: 1MB.5.. Basic Line
3 PTC thermistors – for tripping (2 terminals) [1] [2] [3]	**B**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for: 1MB.5.. Basic Line
			□	□	□	□	□	□	□	□	□	□	□	□	□	Only for: MB.6.. Performance Line
6 PTC thermistors – for warning and tripping (4 terminals) [2] [3]	**C**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

□ Standard version
✓ With additional charge

1) For the Performance Line, motor protection by means of PTC thermistors with 3 built-in temperature sensors for tripping (motor protection code letter B) is already included in the basic price. For the Performance Line, the option "without motor protection" (motor protection code letter A) is not possible.

2) Evaluation with associated tripping unit (see Catalog IC 10) is recommended.

3) Motors in these frame sizes have a second rating plate (T1/T2 and T3) as standard.
The T3 power is stamped on the rating plate as standard if the following motors are selected with PTC thermistor (protection by PTC thermistor only) or voltage code "**90**":
- 2-pole motors: Frame sizes 132 to 160
- 4-pole motors: Frame size 180

Alternatively, with order code **B33**, the "T1/T2 power is stamped on the rating plate".
- 2-pole motors: Frame sizes 132 to 200
- 4-pole motors: Frame sizes 180 to 200

Selection and ordering data

Motor protection	Article No. supplement: Motor protection code letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version: IEC	Ex db, Ex db eb (Zone 1)	IE3
			1MB1553																
													1MB5553						
1MB.553 - . . . . . - . . ■ .	■	Order code																	
Motor protection																			
None (standard)	**A**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
3 PTC thermistors – for tripping (2 terminals) [1]	**B**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
6 PTC thermistors – for warning and tripping (4 terminals) [1] [2]	**C**	**–**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
3 Pt100 resistance thermometers – 2-wire input (6 terminals) [2]	**H**	**Q60**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
6 Pt100 resistance thermometers – 2-wire input (12 terminals) [2] [3]	**J**	**Q61**	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓			
1 Pt1000 resistance thermometers (2 terminals) [1]	**K**	**Q35**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
2 Pt1000 resistance thermometers (4 terminals) [2]	**L**	**Q36**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
3 Pt100 resistance thermometers – 3-wire input (9 terminals) [2] [3]	**Q**	**Q63**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
6 Pt100 resistance thermometers – 3-wire input (18 terminals) [2] [3]	**R**	**Q64**	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓			

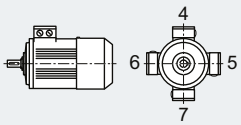
□ Standard version
✓ With additional charge
– Not possible

[1] Mandatory winding monitoring of the motors suitable for converter operation.

[2] Maximum number of terminals for accessories, see the terminal box concept.

[3] Auxiliary terminal box required; option in Ex eb with order code **R62** or **R63**

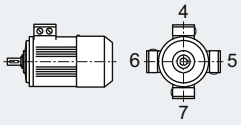
Selection and ordering data

Terminal box position	Article No. supplement		Frame size						Motor version		
	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	**80**	**90**	**100**	**112**	**132**	**160**			
			1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
			1MB10.1								IE2
					1MB10.2						IE1
1MB10 . . - . . . . . - . . . ■		Order code									
Terminal box position											
Terminal box top [1]	**4**	**–**	□	□	□	□	□	□			
Terminal box right-hand side [2]	**5**	**–**	✓	✓	✓	✓	✓	✓			
Terminal box left-hand side [2]	**6**	**–**	✓	✓	✓	✓	✓	✓			
Terminal box at bottom [2] [3]	**7**	**–**	–	–	✓	✓	✓	✓			

□ Standard version
✓ With additional charge

1) For types of construction with feet, cast feet are standard.
2) For foot-mounted designs, screwed-on feet are standard.
3) Not generally possible for motors with feet.

Selection and ordering data

Terminal box position	Article No. supplement		Frame size													Motor version		
	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**			
			1MB15.3 Basic Line													IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
						1MB16.3 Performance Line												
			1MB15.1 Basic Line															IE2
						1MB16.1 Performance Line												
1MB15 . . - . . . . . - . . . ■																		
1MB16 . . - . . . . . - . . . ■		Order code																
Terminal box position																		
Terminal box top [1]	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□			
Terminal box right-hand side [2]	**5**	**–**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Terminal box left-hand side [2]	**6**	**–**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Terminal box bottom [3]	**7**	**–**	–	–	–	✓	✓	✓	✓	–	–	–	–	–	–			

□ Standard version
✓ With additional charge
– Not possible

[1] For types of construction with feet, cast feet are standard.
[2] For foot-mounted designs, screwed-on feet are standard.
[3] Not generally possible for motors with feet.

Terminal box position · Cast-iron series 1MB1543, 1MB5543 Basic Line and 1MB1643, 1MB5643 Performance Line

Selection and ordering data

Terminal box position	Article No. supplement: Terminal box position code 16th position of the Article No.	Article No. supplement: Additional identification code with order code and plain text, if required	Frame size: 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version: IEC	Ex eb (Zone 1)	IE3
			1MB1543 Basic Line															
						1MB1643 Performance Line												
												1MB5543 Basic Line						
												1MB5643 Performance Line						
1MB15 . . - . . . . . - . . . ■																		
1MB16 . . - . . . . . - . . . ■																		
1MB55 . . - . . . . . - . . . ■																		
1MB56 . . - . . . . . - . . . ■		Order code																
Terminal box position																		
Terminal box base left with terminal box at the top	**0**	**–**	–	–	–	–	–	–	–	–	–	–	–	–	✓			
Terminal box base right with terminal box at the top	**1**	**–**	–	–	–	–	–	–	–	–	–	–	–	–	✓			
Terminal box base left with oblique terminal box 45°	**2**	**–**	–	–	–	–	–	–	–	–	–	–	–	–	○			
Terminal box base right with oblique terminal box 45°	**3**	**–**	–	–	–	–	–	–	–	–	–	–	–	–	□			
Terminal box top [1]	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	–			
Terminal box right-hand side [2]	**5**	**–**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Terminal box left-hand side [2]	**6**	**–**	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Terminal box at bottom [2] [3]	**7**	**–**	–	–	–	✓	✓	✓	✓	–	–	–	–	–	–			
Terminal box on left-hand side (base below)	**9**	**R5L**	–	–	–	–	–	–	–	–	–	–	–	–	✓			
Terminal box on right-hand side (base below)	**9**	**R6R**	–	–	–	–	–	–	–	–	–	–	–	–	✓			
Terminal box bottom left	**9**	**R7L**	–	–	–	–	–	–	–	–	–	–	–	–	✓			
Terminal box bottom right	**9**	**R7R**	–	–	–	–	–	–	–	–	–	–	–	–	✓			

□ Standard version
○ Without additional charge
✓ With additional charge
– Not possible

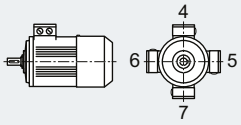
5

[1] For types of construction with feet, cast feet are standard. Screwed-on feet are available with order code **H01**.

[2] For foot-mounted designs, screwed-on feet are standard.

[3] Not generally possible for motors with feet.

Selection and ordering data

Terminal box position	Article No. supplement		Frame size														Motor version	
	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**		
			1MB1553														IEC	Ex db, Ex db eb (Zone 1) IE3
													1MB5553					
1MB.553 - . . . . . - . . . ■		Order code																
Terminal box position																		
Terminal box top [1]	**4**	**–**	□	□	□	□	□	□	□	□	□	□	□	□	□	□		
Terminal box right-hand side [1]	**5**	**–**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Terminal box left-hand side [1]	**6**	**–**	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	–	–		
Terminal box bottom [2]	**7**	**–**	–	–	–	✓	✓	✓	✓	–	–	–	–	–	–	–		

□ Standard version
✓ With additional charge
– Not possible

Standard version:
Cable entry from right, as seen looking onto the shaft, with terminal box position left, entry from below, on frame size 355 and with terminal box on the right-hand side, cable entry is from the NDE.

[1] For types of construction with feet, cast feet are standard.
[2] Not generally possible for motors with feet.

Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 80	90	100	112	132	160	Motor version		
		1MB10.3 / 1MB10.1						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3 / IE2 / IE1
				1MB10.2						
1MB10 . . - . . . . . - . . . . -Z	Order code									
Explosion-proof version										
Version additionally for dust Ex tc – Zone 22 [1) 14) 22)]	**B30**	✓	✓	✓	✓	✓	✓	Only for:	1MB103. – Ex ec (Zone 2)	
Version IIC with stamping of IIB [22)]	**B31**	○	○	○	○	○	○	Only for:	1MB103. – Ex ec (Zone 2)	
VIK version	**C02**	✓	✓	✓	✓	✓	✓	Only for:	1MB1033 – Ex ec IE3 (Zone 2)	
Version for converter operation										
Version for converter operation in basic version with operating data SINAMICS G120 with PM240-2. [15)]	**B40**	✓	✓	✓	✓	✓	✓			
Version for converter operation in basic version with operating data SINAMICS S150. [15)]	**B41**	✓	✓	✓	✓	✓	✓			
Operating data such as the **B40** order code with alternative SINAMICS converter on the rating plate • G120 with PM230 • G120 with PM240 • G120C • G120P with PM230 • G120P with PM240-2 • G120P with PM240P-2 • G120P with PM330 • G130, G150, G180 • S120 (BLM/SLM) • V20 Operating data such as order code **B41** with alternative SINAMICS converters on the rating plate • S120 (ALM)	**Y68 •** and converter type	○	○	○	○	○	○			
Motor protection										
1 Pt1000 resistance thermometer (2 terminals)	**Q35**	✓	✓	✓	✓	✓	✓			
2 Pt1000 resistance thermometers (4 terminals)	**Q36**	✓	✓	✓	✓	✓	✓			
Motor connection and terminal box										
External grounding		◘	◘	◘	◘	◘	◘			
Rotation of the terminal box through 90°, entry from DE	**R10**	○	○	○	○	○	○			
Rotation of the terminal box through 90°, entry from NDE	**R11**	○	○	○	○	○	○			
Rotation of the terminal box through 180°	**R12**	○	○	○	○	○	○			
Metal cable gland, maximum configuration	**R18**	✓	✓	✓	✓	✓	✓			
Larger terminal box	**R50**	◘	◘	–	–	–	–			
Windings and insulation										
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % [2)]	**N05**	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % [2)]	**N06**	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % [2)]	**N07**	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	**N08**	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30**	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m^3 of air	**N31**	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), with higher coolant temperature and/or installation altitude	**Y50 •** and spec. power, CT .. °C or IA .... m above sea level	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/61.

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 80	90	100	112	132	160	Motor version		
		1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
		1MB10.1								IE2
				1MB10.2						IE1
1MB10 . . - . . . . . - . . . . -Z	Order code									
Colors and paint finish										
Special paint finish in RAL 7030 stone gray		□	□	□	□	□	□			
Unpainted (only cast-iron parts primed)	**S00**	○	○	○	○	○	○			
Unpainted, only primed	**S01**	✓	✓	✓	✓	✓	✓			
Special paint finish C3	**S02**	✓	✓	✓	✓	✓	✓			
Special paint finish sea air resistant C4	**S03**	✓	✓	✓	✓	✓	✓			
Top coat polyurethane [12]	**S06**	✓	✓	✓	✓	✓	✓	Only for:	1MB103. – Ex ec (Zone 2)	
Paint finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5002, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog Section 1 "Introduction")	**Y53 •** and paint finish RAL ….	✓	✓	✓	✓	✓	✓			
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (see Catalog Section 1 "Introduction")	**Y56 •** and paint finish RAL ….	✓	✓	✓	✓	✓	✓			
Modular technology – Basic versions										
Mounting of separately driven fan [17]	**F70**	–	–	–	–	–	–	Only for:	1MB101. – Ex tb (Zone 21)	
		–	–	✓	✓	✓	✓	Only for:	1MB102. – Ex tc (Zone 22), 1MB103. – Ex ec (Zone 2)	
Special technology										
Mounting of LL 841 (HTL); 1024 I explosion-proof rotary pulse encoder [16]	**G30**	–	–	✓	✓	✓	✓			
Mechanical version and degrees of protection										
Low-noise version for 2-pole motors with clockwise direction of rotation	**F77**	–	–	–	–	✓	✓			
Low-noise version for 2-pole motors with counterclockwise direction of rotation	**F78**	–	–	–	–	✓	✓			
Mechanical protection for encoder	**G43**	□	□	□	□	□	□			
Protective cover	**H00**	✓	✓	✓	✓	✓	✓			
Screwed-on (instead of cast) feet	**H01**	✓	✓	✓	✓	✓	✓			
Vibration-proof version; vibration resistance to Class 3M4 according to IEC 60721-3-3:1994	**H02**	✓	✓	✓	✓	✓	✓			
Condensation drainage holes [6]	**H03**	✓	✓	✓	✓	✓	✓			
Rust-resistant screws (externally)	**H07**	✓	✓	✓	✓	✓	✓			
Degree of protection IP65 [4]	**H20**	✓	✓	✓	✓	✓	✓	Only for:	1MB103. – Ex ec (Zone 2)	
Degree of protection IP56 [5]	**H22**	✓	✓	✓	✓	✓	✓	Only for:	1MB103. – Ex ec (Zone 2)	
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar [3]	**H23**	✓	✓	✓	✓	✓	✓			
Coolant temperature and installation altitude										
Coolant temperature –40 °C to +40 °C [20]	**D03**	✓	✓	✓	✓	✓	✓			
Versions in accordance with standards and specifications										
Ex certification for China	**D32**	✓	✓	✓	✓	✓	✓			
China Energy Efficiency Label	**D34**	✓	✓	✓	✓	✓	✓			
EAC Ex certificate for the Eurasian customs union [18]	**D35**	✓	✓	✓	✓	✓	✓			
IEC Ex certification	**D37**	✓	✓	–	–	–	–	Only for:	1MB101. – Ex tb (Zone 21)	
		✓	✓	✓	✓	✓	✓	Only for:	1MB102. – Ex tc (Zone 22), 1MB103. – Ex ec (Zone 2)	

For legends and footnotes, see page 5/61.

Options · Aluminum series 1MB10

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 80	90	100	112	132	160	Motor version		
		1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
		1MB10.1								IE2
				1MB10.2						IE1
1MB10 . . - . . . . . - . . . . -Z	Order code									
Bearings and lubrication										
Located bearing DE	**L20**	✓	✓	✓	✓	✓	✓			
Located bearing NDE	**L21**	✓	✓	✓	✓	✓	□			
Bearing design for increased cantilever forces [13]	**L22**	–	–	✓	✓	✓	✓			
Regreasing device	**L23**	–	–	✓	✓	✓	✓			
Bearings reinforced at both ends for DE and NDE, bearing size 63	**L25**	–	–	✓	✓	✓	✓			
Bearing insulation NDE	**L51**	–	–	✓	✓	✓	✓			
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	–	–	✓	✓	✓	✓			
Balance and vibration severity										
Vibration severity grade A		□	□	□	□	□	□			
Vibration severity grade B [19]	**L00**	✓	✓	✓	✓	✓	✓			
Half-key balancing		□	□	□	□	□	□			
Balancing without feather key	**L01**	✓	✓	✓	✓	✓	✓			
Full-key balancing	**L02**	✓	✓	✓	✓	✓	✓			
Shaft and rotor										
Shaft extension with standard dimensions, without feather keyway	**L04**	–	–	✓	✓	✓	✓			
Standard, cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347	**L05**	✓	✓	✓	✓	✓	✓			
Standard shaft made of stainless steel (e.g. 1.4021)	**L06**	✓	✓	✓	✓	✓	✓			
Concentricity of shaft extension in accordance with IEC 60072-1 precision class	**L07**	✓	✓	✓	✓	✓	✓			
Concentricity of shaft extension, coaxiality, and linear movement in accordance with IEC 60072-1 precision class for flange-mounted motors	**L08**	✓	✓	✓	✓	✓	✓			
Non-standard cylindrical shaft extension DE [7]	**Y58 •** and customer specifications	✓	✓	✓	✓	✓	✓			
Non-standard cylindrical shaft extension NDE [7]	**Y59 •** and customer specifications	✓	✓	✓	✓	✓	✓			
Heating and ventilation										
Metal external fan [8]	**F76**	□	□	–	–	–	–	Only for:	1MB103. – Ex ec (Zone 2)	
		□	□	✓	✓	✓	✓	Only for:	1MB101. – Ex tb (Zone 21), 1MB102. – Ex tc (Zone 22)	
Anti-condensation heating for 230 V (2 terminals) [9]	**Q02**	✓	✓	✓	✓	✓	✓			
Anti-condensation heating for 115 V (2 terminals) [9]	**Q03**	✓	✓	✓	✓	✓	✓			
Rating plate and additional rating plates										
Second rating plate, loose	**M10**	✓	✓	✓	✓	✓	✓			
Rating plate, stainless steel	**M11**	✓	✓	✓	✓	✓	✓			
Additional rating plate with deviating rating plate data	**Y80 •** and customer specifications	✓	✓	✓	✓	✓	✓			
Additional rating plate with customer specifications	**Y82 •** and customer specifications	✓	✓	✓	✓	✓	✓			
Additional information on rating plate and on package label (max. 20 characters)	**Y84 •** and customer specifications	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/61.

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 80	90	100	112	132	160	Motor version		
		1MB10.3						IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
		1MB10.1								IE2
				1MB10.2						IE1
1MB10 . . - . . . . . - . . . . -Z	Order code									
Packaging, safety notes, documentation and test certificates										
Printed Operating Instructions in German/English and a DVD with all official EU languages as well as Norwegian, Russian, Turkish, and Chinese [11]		□	□	□	□	□	□			
Acceptance test certificate 3.1 according to EN 10204 [10]	**B02**	✓	✓	✓	✓	✓	✓			
Document – Electrical datasheet	**B60**	✓	✓	✓	✓	✓	✓			
Document – Order dimensional drawing	**B61**	✓	✓	✓	✓	✓	✓			
Type test with heat run for horizontal motors, with acceptance	**B83**	✓	✓	✓	✓	✓	✓			
"Basic" documentation package	**B90**	✓	✓	✓	✓	✓	✓			
"Advanced" documentation package	**B91**	✓	✓	✓	✓	✓	✓			
"Projects" documentation package	**B92**	✓	✓	✓	✓	✓	✓			
Wire-lattice pallet packaging	**B99**	○	○	○	○	○	○			
Connected in star for shipping	**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.
✓ With additional charge
– Not possible

1) Please inquire regarding combination with order codes **D03** and **C02**. Not possible in combination with order codes **H20** and **H22**.

2) There is no derating in combination with order codes **M2A**, **M2B**, **M2C**, **M2D**, **M2E**, **M2F**, **M2G**, **M2H**.

3) Not possible for type of construction IM V3.

4) For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.

5) Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).

6) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If the condensation drainage holes are required for motors of the IM B6, IM B7 or IM B8 type of construction (feet on side or top), the motors must be ordered in the respective type of construction and with order code **H03**, so that the condensation drainage holes will be placed in the correct position.

7) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer in accordance with the appropriate standard. 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 feather keys are supplied in every case. For order codes **Y58**, **Y59** and **L05** the following applies:
- Dimensions D and DA ≤ ball bearing inner diameter (see dimension tables for "Dimensions")
- Dimensions E and EA ≤ 2 × length E (standard) of the shaft extension
For an explanation of the order codes, see Catalog Section 1 "Introduction".

8) The metal external fan is not possible in combination with the low-noise version – order code **F77** or **F78**.

9) In combination with the 15th position of the article number "**H**", the order codes **Q02** and **Q03** are not possible for frame sizes 100 to 160. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).

10) The delivery time for the acceptance test certificate may differ from the delivery time for the motor.

11) The Operating Instructions are available in the Internet in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300.

12) Order code **S06** cannot be combined with order code **B30**.

13) A minimum cantilever force F_{min} of 0.5 · F_{max} is required for NU bearings (cylindrical roller bearings) in contrast to ball bearings. Cylindrical roller bearings are not suitable for coupling output or for brief periods of no-load operation without cantilever force.

14) The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

15) In combination with order codes **B40** and **B41**, "B" or "C" must be added to the 15th position of the Article No. . For compliance with the admissible temperature class 130 (B), derating is necessary in the case of converter operation in Zones 2, 21 and 22. The operating data for SINAMICS converters from Siemens are on the rating plate – the torque is reduced in contrast to line operation. The motor operating data for converter operation is available in the DTC selection and ordering tool (www.siemens.com/dt-configurator).
For converter operation, voltage codes/order codes are only admissible with one voltage only. When used in hazardous zones, the frequency converter must have a certified trip unit for motors of device category 1 (Zone 21). A certified trip unit is also recommended for motors of device category 3 (Zones 2 and 22). Alternatively, an external, certified trip unit can be used (see Catalog IC 10).

16) Can be combined with order codes **N30**, **N31**, **L51** and **F70** on request. Not admissible in combination with order code **L05**. Combination with protective cover as standard for frame sizes 100 to 200. Protective cover not possible for frame sizes 225 to 315.

17) In combination with order codes **N05**, **N06**, **N07**, **N08**, **N30**, **N31**, **D03**, **G30**, **C02**, **H20** and **H22** on request. Not admissible with order code **L05**. The type of protection of the separately driven fan must match that of the motor.

18) Not admissible in combination with anti-condensation heating (order code **Q02**/**Q03**). For this component, no TR CU certificate is available yet.

19) Vibration severity grade B not admissible in combination with converter operation (order code **B40**/**B41**).

20) Not possible in combination with order codes **Q02** or **Q03**.

21) Not possible in vertical version with downward shaft extension DE.

22) Permissible paint film thickness up to 2 mm.

Selection and ordering data

Special versions **1MB15 . . - . . . . . - . . . . -Z** **1MB16 . . - . . . . . - . . . . -Z**	Additional identification code **-Z** with order code and plain text if required Order code	Frame size 71 80 90 100 112 132 160 180 200 225 250 280 315 1MB15.3 Basic Line 1MB16.3 Performance Line 1MB15.1 Basic Line 1MB16.1 Performance Line	Motor version IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3 IE2
Explosion-proof version					
Version additionally for dust Ex tc – Zone 22 [1) 16)]	**B30**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Version IIC with stamping of IIB [24)]	**B31**	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Only for:	1MB1.3. – Ex ec (Zone 2)	
VIK version	**C02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB1.33 – Ex ec (Zone 2)	
Version for converter operation					
Version for converter operation in basic version with operating data SINAMICS G120 with PM240-2. [17) 20) 21) 22)]	**B40**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓[20) ✓[20)			
Version for converter operation in basic version with operating data SINAMICS S150. [17) 20) 21)]	**B41**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓[20) ✓[20)			
Operating data such as order code **B40** with alternative SINAMICS converters on the rating plate [20)] • G120 with PM230 • G120 with PM240 • G120C • G120P with PM230 • G120P with PM240-2 • G120P with PM240P-2 • G120P with PM330 • G130, G150, G180 • S120 (BLM/SLM) • V20 Operating data such as order code **B41** with alternative SINAMICS converters on the rating plate [20)] • S120 (ALM)	**Y68** • and converter type	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○			
Motor protection					
1 Pt1000 resistance thermometer (2 terminals)	**Q35**	– – – ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
2 Pt1000 resistance thermometers (4 terminals)	**Q36**	– – – ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
2 Pt100 screw-in thermometers in basic configuration for bearings (2 terminals) [2) 3)]	**Q72**	– – – – – – – ✓ ✓ ✓ ✓ ✓ ✓			
2 Pt100 screw-in thermometers in 3-wire input for bearing (6 terminals) [2) 3)]	**Q78**	– – – – – – – ✓ ✓ ✓ ✓ ✓ ✓			
2 Pt100 double screw-in thermometers in 3-wire input for bearing (12 terminals) [2) 3)]	**Q79**	– – – – – – – – – – – ✓ ✓			
Motor connection and terminal box					
External grounding		◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Rotation of the terminal box through 90°, entry from DE	**R10**	○ ○ ○ ○ ○ ○ ○ ✓ ✓ ✓ ✓ ✓ ✓			
Rotation of the terminal box through 90°, entry from NDE	**R11**	○ ○ ○ ○ ○ ○ ○ ✓ ✓ ✓ ✓ ✓ ✓			
Rotation of the terminal box through 180°	**R12**	○ ○ ○ ○ ○ ○ ○ ✓ ✓ ✓ ✓ ✓ ✓			
Stud terminal for cable connection, accessories pack (3 items)	**R17**	– – – – – – – – – – ✓ ✓ ✓	Only for:	1MB1.1. – Ex tb (Zone 21), 1MB1.2. – Ex tc (Zone 22)	
Metal cable gland, maximum configuration	**R18**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Saddle terminal for connection without cable lug, accessories pack	**R19**	– – – – – – – – – – ✓ ✓ ✓	Only for:	1MB1.1. – Ex tb (Zone 21), 1MB1.2. – Ex tc (Zone 22)	
		◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘	Only for:	1MB1.3. – Ex ec (Zone 2)	
Larger terminal box [15)]	**R50**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Cast-iron auxiliary terminal box (small)	**R62**	– – – – – – – ✓ ✓ ✓ ✓ ✓ ✓			

For legends and footnotes, see page 5/66.

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size													Motor version		
		71	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**			
		1MB15.3 Basic Line													IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3
					1MB16.3 Performance Line												
1MB15 . . - . . . . . - . . . . -Z		**1MB15.1 Basic Line**															IE2
1MB16 . . - . . . . . - . . . . -Z	Order code				**1MB16.1 Performance Line**												
Windings and insulation																	
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % [4]	**N05**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % [4]	**N06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % [4]	**N07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	**N08**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m^3 of air	**N31**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), with higher coolant temperature and/or installation altitude	**Y50 •** and spec. power, CT .. °C or IA .... m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Colors and paint finish																	
Standard paint finish C2 in RAL 7030 stone gray		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB15..	
Unpainted (only cast-iron parts primed)	**S00**	○	○	○	○	○	○	○	○	○	○	○	○	○			
Unpainted, only primed	**S01**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish C3	**S02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB15..	
		–	–	–	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB16..	
Special paint finish sea air resistant C4	**S03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish for use offshore C5	**S04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Top coat polyurethane [12]	**S06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Paint finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5002, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog Section 1 "Introduction")	**Y53 •** and paint finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB15..	
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (see Catalog Section 1 "Introduction")	**Y56 •** and paint finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Modular technology – Basic versions																	
Mounting of separately driven fan [19]	**F70**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	Only for:	1MB1.1. – Ex tb (Zone 21)	
		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB1.2. – Ex tc (Zone 22)	
		–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Special technology																	
Mounting of LL 841 (HTL); 1024 I explosion-proof rotary pulse encoder [18]	**G30**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/66.

Options · Cast-iron series 1MB15 Basic Line, 1MB16 Performance Line

Special versions **1MB15 . . - . . . . . - . . . . -Z** **1MB16 . . - . . . . . - . . . . -Z**	Additional identification code **-Z** with order code and plain text if required Order code	Frame size 71 80 90	100 112 132 160 180 200 225 250 280 315 1MB15.3 Basic Line 1MB16.3 Performance Line 1MB15.1 Basic Line 1MB16.1 Performance Line	Motor version IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3 IE2
Mechanical version and degrees of protection						
Low-noise version for 2-pole motors with clockwise direction of rotation	**F77**	– – –	– – ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Low-noise version for 2-pole motors with counterclockwise direction of rotation	**F78**	– – –	– – ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Mechanical protection for encoder	**G43**	– – –	◘ ◘ ◘ ◘ ◘ ◘ ✓ ✓ ✓ ✓			
Protective cover	**H00**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Screwed-on (instead of cast) feet	**H01**	– – –	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Vibration-proof version; vibration resistance to Class 3M4 according to IEC 60721-3-3:1994	**H02**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Condensation drainage holes [7]	**H03**	✓ ✓ ✓	◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Rust-resistant screws (externally)	**H07**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Degree of protection IP65 [5]	**H20**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Degree of protection IP56 [6]	**H22**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar Not possible for type of construction IM V3	**H23**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Coolant temperature and installation altitude						
Coolant temperature –40 °C to +40 °C [26]	**D03**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Versions in accordance with standards and specifications						
Ex certification for China	**D32**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB15..	
		– – –	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB16..	
China Energy Efficiency Label	**D34**	○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Only for:	1MB15..	
		– – –	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Only for:	1MB16..	
EAC Ex certificate for the Eurasian customs union [13]	**D35**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
IEC Ex certification	**D37**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Bearings and lubrication						
Regreasing device with M10 ×1 grease nipple according to DIN 71412-A	**L19**	– – –	– – – – ✓ ✓ ✓ ✓ ○ ○			
Located bearing DE	**L20**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Located bearing NDE	**L21**	✓ ✓ ✓	✓ ✓ ✓ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Bearing design for increased cantilever forces [14]	**L22**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Regreasing device	**L23**	– – –	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ◘ ◘	Only for:	1MB15..	
		– – –	✓ ✓ ✓ ◘ ◘ ◘ ◘ ◘ ◘ ◘	Only for:	1MB16..	
Bearings reinforced at both ends for DE and NDE, bearing size 63	**L25**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ◘ ◘	Only for:	1MB15..	
		– – –	◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘	Only for:	1MB16..	
Bearing insulation NDE [20]	**L51**	– – –	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓[20] ✓[20]			
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Balance and vibration severity						
Vibration severity grade A [21]		◘ ◘ ◘	◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Vibration severity grade B [21] [22] [23]	**L00**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Half-key balancing		◘ ◘ ◘	◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Balancing without feather key	**L01**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Full-key balancing	**L02**	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			

For legends and footnotes, see page 5/66.

Special versions **1MB15 . . - . . . . . - . . . . -Z** **1MB16 . . - . . . . . - . . . . -Z**	Additional identification code **-Z** with order code and plain text if required Order code	Frame size 71 80 90 100 112 132 160 180 200 225 250 280 315 1MB15.3 Basic Line 1MB16.3 Performance Line 1MB15.1 Basic Line 1MB16.1 Performance Line	Motor version IEC	Ex tb (Zone 21), Ex tc (Zone 22), Ex ec (Zone 2)	IE3 IE2
Shaft and rotor					
Shaft extension with standard dimensions, without feather keyway	**L04**	– – – ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Standard, cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347 [25]	**L05**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Standard shaft made of stainless steel (e.g. 1.4021)	**L06**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Concentricity of shaft extension in accordance with IEC 60072-1 precision class	**L07**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Concentricity of shaft extension, coaxiality, and linear movement in accordance with IEC 60072-1 precision class for flange-mounted motors	**L08**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Non-standard cylindrical shaft extension DE [8]	**Y58 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Non-standard cylindrical shaft extension NDE [8]	**Y59 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Heating and ventilation					
Metal external fan [9]	**F76**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Only for:	1MB1.3. – Ex ec (Zone 2)	
Anti-condensation heating for 230 V (2 terminals) [3]	**Q02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Anti-condensation heating for 115 V (2 terminals) [3]	**Q03**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Rating plate and additional rating plates					
Second rating plate, loose	**M10**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Rating plate, stainless steel	**M11**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ◘ ◘ ◘ ◘	Only for:	1MB15..	
		– – – ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘	Only for:	1MB16..	
Additional rating plate with deviating rating plate data	**Y80 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Additional rating plate with customer specifications	**Y82 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Additional information on rating plate and on package label (max. 20 characters)	**Y84 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Packaging, safety notes, documentation and test certificates					
Printed Operating Instructions in German/English and a DVD with all official EU languages as well as Norwegian, Russian, Turkish, and Chinese [11]		◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘ ◘			
Acceptance test certificate 3.1 according to EN 10204 [10]	**B02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Document – Electrical datasheet	**B60**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Document – Order dimensional drawing	**B61**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Type test with heat run for horizontal motors, with acceptance	**B83**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
"Basic" documentation package	**B90**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
"Advanced" documentation package	**B91**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
"Projects" documentation package	**B92**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Wire-lattice pallet packaging	**B99**	○ ○ ○ ○ ○ ○ ○ – – – – – –			
Connected in star for shipping	**M01**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓			
Connected in delta for dispatch	**M02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ◘ ◘ ◘ ◘			

For legends and footnotes, see page 5/66.

Options · Cast-iron series 1MB15 Basic Line, 1MB16 Performance Line

- ◘ Standard version
- ○ Without additional charge
- • This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- – Not possible

1) Please inquire regarding combination with order codes **D03** and **C02**. Not possible in combination with order codes **H20** and **H22**.

2) Evaluation with associated tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas.

3) In combination with the 15th position of the Article No. "**H**", the order codes **Q02** and **Q03** are not possible for frame sizes 100 to 160. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).

4) There is no derating in combination with order codes **M2A**, **M2B**, **M2C**, **M2D**, **M2E**, **M2F**, **M2G**, **M2H**.

5) Order code **H20** (IP65 degree of protection) can only be ordered for Zone 2.
For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.

6) Order code **H22** IP56 degree of protection is only possible for Zone 2. Degree of protection IP56 is not permissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).

7) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If the condensation drainage holes are required for motors of the IM B6, IM B7 or IM B8 type of construction (feet on side or top), the motors must be ordered in the respective type of construction and with order code **H03**, so that the condensation drainage holes will be placed in the correct position.

8) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer in accordance with the appropriate standard. 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 feather keys are supplied in every case.
For order codes **Y58**, **Y59** and **L05** the following applies:
- Dimensions D and DA ≤ ball bearing inner diameter (see dimension tables in "Dimensions")
- Dimensions E and EA ≤ 2 × length E (standard) of the shaft extension
For an explanation of the order codes, see Catalog Section 1 "Introduction".

9) The metal external fan is not possible in combination with the low-noise version – order code **F77** or **F78**.

10) The delivery time for the factory test certificate may differ from the delivery time for the motor.

11) The Operating Instructions are available in the Internet in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300.

12) Order code **S06** not possible in combination with order code **B30**.

13) Not admissible in combination with anti-condensation heating (order code **Q02**/**Q03**). For this component, no TR CU certificate is available yet.

14) A minimum cantilever force F_{min} of 0.5 · F_{max} is required for NU bearings (cylindrical roller bearings) in contrast to ball bearings. Cylindrical roller bearings are not suitable for coupling output or for brief periods of no-load operation without cantilever force.

15) A larger terminal box is the standard version in combination with the order code **Q02**, **Q03** and/or 15th position of the Article No. "**H**" for frame sizes 71 to 90.

16) The Ex motor is not admissible in an explosive atmosphere of dust and air (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

17) In combination with order codes **B40** and **B41**, "B" or "C" must be added to the 15th position of the Article No. . For compliance with the admissible temperature class 130 (B), derating is necessary in the case of converter operation in Zones 2, 21 and 22. The operating data for SINAMICS converters from Siemens are on the rating plate – the torque is reduced in contrast to line operation. The motor operating data for converter operation is available in the DTC selection and ordering tool (www.siemens.com/dt-configurator).
For converter operation, voltage codes/order codes are only admissible with one voltage only. When used in hazardous zones, the frequency converter must have a certified trip unit for motors of device category 1 (Zone 21). A certified trip unit is also recommended for motors of device category 3 (Zones 2 and 22). Alternatively, an external, certified trip unit can be used (see Catalog IC 10).

18) Can be combined with order codes **N30**, **N31**, **L51** and **F70** on request. Not admissible in combination with order code **L05**. Combination with protective cover as standard for FS 100 to 200. Protective cover not possible for FS 225 to 315.

19) In combination with order codes **N05**, **N06**, **N07**, **N08**, **N30**, **N31**, **D03**, **G30**, **C02**, **H20** and **H22** on request. Not admissible with order code **L05**. The type of protection of the separately driven fan must match that of the motor.

20) The frame sizes 280 and 315 in combination with order code **B40** or **B41** are equipped with "Bearing insulation NDE" as standard (order code **L51** is included in **B40**/**B41**).

21) Not admissible for frame size 315, 2-pole. An exception is elastic installation (please inquire).

22) Not admissible in combination with converter operation (order code **B40**, **B41**).

23) On request for 2-pole motors for line operation (concerns frame sizes 225 to 315).

24) Permissible paint film thickness up to 2 mm.

25) Not possible in vertical version with downward shaft extension DE.

26) Not possible in combination with order code **Q02** or **Q03**.

Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version IEC	Ex eb (Zone 1)	IE3
		1MB1543 Basic Line															
					1MB1643 Performance Line												
													1MB5543 Basic Line				
													1MB5643 Performance Line				
1MB1543 - . . . . . - . . . . -Z																	
1MB1643 - . . . . . - . . . . -Z																	
1MB5543 - . . . . . - . . . . -Z																	
1MB5643 - . . . . . - . . . . -Z	Order code																
Explosion-proof version																	
Version IIC with stamping of IIB [1]	**B31**	○	○	○	○	○	○	○	○	○	○	○	○	○			
Version additionally for dust Ex tb – Zone 21; IP65 [2]	**B32**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
T1/T2 on rating plate [3]	**B33**	–	–	–	–	–	○	○	○	○	–	–	–	–			
Motor protection																	
2 Pt100 screw-in thermometers in basic configuration for bearing (2 terminals) [4]	**Q72**	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓			
2 Pt100 screw-in thermometers in 3-wire input for bearing (6 terminals) [4]	**Q78**	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓			
2 Pt100 double screw-in thermometers in 3-wire input for bearing (12 terminals) [4]	**Q79**	–	–	–	–	–	–	–	–	–	–	–	✓	✓			
Motor connection and terminal box																	
External grounding		□	□	□	□	□	□	□	□	□	□	□	□	□			
Second external grounding	**H70**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of the terminal box through 90°, entry from DE	**R10**	○	○	○	○	○	○	○	✓	✓	✓	✓	✓	✓			
Rotation of the terminal box through 90°, entry from NDE	**R11**	○	○	○	○	○	○	○	✓	✓	✓	✓	✓	✓			
Rotation of the terminal box through 180°	**R12**	○	○	○	○	○	○	○	✓	✓	✓	✓	✓	✓			
Metal cable gland, maximum configuration	**R18**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Saddle terminal for connection without cable lug, accessories pack (6 items)	**R19**	–	–	–	–	–	–	–	–	–	□	□	□	□			
Larger terminal box	**R50**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Drilled removable entry plate	**R52**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓			
Undrilled removable entry plate	**R53**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓			
Cast-iron auxiliary terminal box (small)	**R62**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Cast-iron auxiliary terminal box (large)	**R63**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓			
2 small cast-iron auxiliary terminal boxes	**R67**	–	–	–	✓[22]	✓[22]	✓[22]	✓	✓	✓	✓	✓	✓	✓			
Windings and insulation																	
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % [5]	**N05**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % [5]	**N06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % [5]	**N07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % [5]	**N08**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m^3 of air	**N31**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/70.

Article No. supplements and special versions

SIMOTICS XP 1MB1, 1MB5 explosion-proof motors

Options · Cast-iron series 1MB1543, 1MB5543 Basic Line and 1MB1643, 1MB5643 Performance Line

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version IEC	Ex eb (Zone 1)	IE3
		1MB1543 Basic Line															
					1MB1643 Performance Line												
											1MB5543 Basic Line						
											1MB5643 Performance Line						
1MB1543 -.....-....-Z **1MB1643 -.....-....-Z** **1MB5543 -.....-....-Z** **1MB5643 -.....-....-Z**	Order code																
Colors and paint finish																	
Standard paint finish C2 in RAL 7030 stone gray		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB.5..	
Unpainted (only cast-iron parts primed)	**S00**	○	○	○	○	○	○	○	○	○	○	○	○	○			
Unpainted, only primed	**S01**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish C3	**S02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB.5..	
		–	–	–	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB.6..	
Special paint finish sea air resistant C4	**S03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish for use offshore C5	**S04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Internal coating	**S05**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Top coat polyurethane [6]	**S06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Paint finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5002, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog Section 1 "Introduction")	**Y53 •** and paint finish RAL ….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Only for:	1MB.5..	
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (see Catalog Section 1 "Introduction")	**Y56 •** and paint finish RAL ….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Mechanical version and degrees of protection																	
Low-noise version for 2-pole motors with clockwise direction of rotation [7] [19]	**F77**	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓			
Low-noise version for 2-pole motors with anti-clockwise direction of rotation [7] [19]	**F78**	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓			
Protective cover	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Screwed-on (instead of cast) feet	**H01**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Vibration-proof version; vibration resistance to Class 3M4 according to IEC 60721-3-3:1994	**H02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Condensation drainage holes [8]	**H03**	✓	✓	✓	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘			
Rust-resistant screws (externally)	**H07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Degree of protection IP65 [9]	**H20**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Degree of protection IP56 [9]	**H22**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar Not possible for type of construction IM V3	**H23**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Coolant temperature and installation altitude																	
Coolant temperature –40 °C to +40 °C [10]	**D03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Versions in accordance with standards and specifications																	
VIK version [19]	**C02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IEC Ex certification	**D37**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Bearings and lubrication																	
Regreasing device with M10 ×1 grease nipple according to DIN 71412-A	**L19**	–	–	–	–	–	–	–	✓	✓	✓	✓	○	○			
Located bearing DE	**L20**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Located bearing NDE	**L21**	✓	✓	✓	✓	✓	✓	◘	◘	◘	◘	◘	◘	◘			
Bearing design for increased cantilever forces [11]	**L22**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Regreasing device	**L23**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	◘	◘	Only for:	1MB.5..	
		–	–	–	✓	✓	✓	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB.6..	
Bearings reinforced at both ends for DE and NDE, bearing size 63	**L25**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	◘	◘	Only for:	1MB.5..	
		–	–	–	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	Only for:	1MB.6..	
Reinforced bearings at both DE and NDE, DE bearing for increased cantilever forces	**L28**	–	–	–	–	–	–	–	✓	✓	✓	✓	–	–			
Bearing insulation DE [23]	**L50**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓			
Bearing insulation NDE [23]	**L51**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓			
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/70.

Options · Cast-iron series 1MB1543, 1MB5543 Basic Line and 1MB1643, 1MB5643 Performance Line

Special versions **1MB1543 -.....-....-Z** **1MB1643 -.....-....-Z** **1MB5543 -.....-....-Z** **1MB5643 -.....-....-Z**	Additional identification code **-Z** with order code and plain text if required Order code	Frame size 71 80 90 100 112 132 160 180 200 225 250 280 315 1MB1543 Basic Line 1MB1643 Performance Line 1MB5543 Basic Line 1MB5643 Performance Line	Motor version IEC Ex eb (Zone 1) IE3
Balance and vibration severity			
Vibration severity grade A		□ □ □ □ □ □ □ □ □ □ □ □ □	
Vibration severity grade B	**L00**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Half-key balancing		□ □ □ □ □ □ □ □ □ □ □ □ □	
Balancing without feather key	**L01**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Full-key balancing	**L02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Shaft and rotor			
Shaft extension with standard dimensions, without feather keyway	**L04**	– – – ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Standard, cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347 [12]	**L05**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Standard shaft made of stainless steel (e.g. 1.4021)	**L06**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Concentricity of shaft extension in accordance with IEC 60072-1 precision class [13]	**L07**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Concentricity of shaft extension, coaxiality, and linear movement in accordance with IEC 60072-1 precision class for flange-mounted motors [13]	**L08**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Non-standard cylindrical shaft extension DE [14]	**Y58 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Non-standard cylindrical shaft extension NDE [14]	**Y59 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Heating and ventilation			
Sheet metal fan cover		□ □ □ □ □ □ □ □ □ □ □ □ □	
Metal external fan [15]	**F76**	□ □ □ □ □ □ □ □ □ □ □ □ □	
Anti-condensation heating for 230 V (2 terminals) [20]	**Q02**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Anti-condensation heating for 115 V (2 terminals) [20]	**Q03**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Rating plate and additional rating plates			
Second rating plate, loose	**M10**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Rating plate, stainless steel	**M11**	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ □ □ □ □	Only for: 1MB.5..
		– – – □ □ □ □ □ □ □ □ □ □	Only for: 1MB.6..
Additional rating plate with deviating rating plate data	**Y80 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Additional rating plate with customer specifications	**Y82 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Additional information on rating plate and on package label (max. 20 characters)	**Y84 •** and customer specifications	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	
Extension of the liability for defects			
Extension of the liability for defects by 12 months to a total of 24 months (2 years) from delivery [15]	**Q80**	– – – – – – – ✓ ✓ ✓ ✓ ✓ ✓	Only for: 1MB.5..
		– – – □ □ □ □ □ □ □ □ □ □	Only for: 1MB.6..
Extension of the liability for defects by 24 months to a total of 36 months (3 years) from delivery [16]	**Q82**	– – – – – – – ✓ ✓ ✓ ✓ ✓ ✓	Only for: 1MB.5..
		– – – □ □ □ □ □ □ □ □ □ □	Only for: 1MB.6..

For legends and footnotes, see page 5/70.

Article No. supplements and special versions
SIMOTICS XP 1MB1, 1MB5 explosion-proof motors

Options · Cast-iron series 1MB1543, 1MB5543 Basic Line and 1MB1643, 1MB5643 Performance Line

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	Motor version IEC	Ex eb (Zone 1)	IE3
		1MB1543 Basic Line															
					1MB1643 Performance Line												
											1MB5543 Basic Line						
														1MB5643 Performance Line			
1MB1543 -. . . . .-. . . . -Z																	
1MB1643 -. . . . .-. . . . -Z																	
1MB5543 -. . . . .-. . . . -Z																	
1MB5643 -. . . . .-. . . . -Z	Order code																
Packaging, safety notes, documentation and test certificates																	
Printed Operating Instructions in German/English and a DVD with all official EU languages as well as Norwegian, Russian, Turkish, and Chinese [17]		□	□	□	□	□	□	□	□	□	□	□	□	□			
Acceptance test certificate 3.1 acc. to EN 10204 [18]	**B02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Document – Electrical datasheet	**B60**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Document – Order dimensional drawing	**B61**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Standard test (routine test) with acceptance	**B65**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with heat run for horizontal motors, without acceptance	**B82**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with heat run for horizontal motors, with acceptance	**B83**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Basic" documentation package	**B90**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Advanced" documentation package	**B91**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Projects" documentation package	**B92**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Connected in star for shipping	**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.
✓ With additional charge
O. R. Possible on request
– Not possible

1) Permissible paint film thickness up to 2 mm.

2) Please inquire regarding combination with order codes **D03** and **C02**. Not possible in combination with order codes **H20** and **H22**.

3) Motors in these frame sizes have a second rating plate (T1/T2 and T3) as standard.
The T3 power is stamped on the rating plate as standard if the following motors are selected with PTC thermistor (protection by PTC thermistor only) or voltage code "**90**":
- 2-pole motors: Frame sizes 132 to 160
- 4-pole motors: Frame size 180
Alternatively, with order code **B33**, the "T1/T2 power is stamped on the rating plate".
- 2-pole motors: Frame sizes 132 to 200
- 4-pole motors: Frame sizes 180 to 200

4) Evaluation with associated tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas.

5) The maximum possible certified power will be supplied.
For motors with T1/T2, T3 power, T3 power is supplied.
The T1/T2 power must be ordered with the order code B33.

6) Order code **S06** cannot be combined with order code **B32**.

7) The motors are up to 80 mm longer than normal. A second shaft extension is not possible.

8) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.

9) Not possible in combination with version additionally for dust Ex tb – Zone 21; IP65 – order code **B32**. Degree of protection IP65 is prescribed for the version for Zone 21.

10) Not possible in combination with vibration-proof version, order code **H02**.

11) Not possible for 2-pole motors, frame size 315 L in vertical frame sizes; bearings for increased cantilever forces for vibration severity grade B are available on request for motors of frame size 225 M and above. Not possible for motors of frame size 225 M and above in combination with concentricity of shaft extension, coaxiality and linear movement according to DIN 42955 tolerance R for flange-mounting types.

12) For motors of frame size 180 M and above in vertical type of construction in version with second shaft extension on request. Not possible for low-noise version (2-pole) for frame sizes 132 S to 160 L. Version with protective cover not possible.

13) Can be combined with deep-groove bearings of series 60.., 62.. and 63… Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code **L22**).

14) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer in accordance with the appropriate standard. 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 feather keys are supplied in every case.
For order codes **Y58**, **Y59** and **L05** the following applies:
- Dimensions D and DA ≤ ball bearing inner diameter (see dimension tables in "Dimensions")
- Dimensions E and EA ≤ 2 × length E (standard) of the shaft extension
For an explanation of the order codes, see Catalog Section 1 "Introduction".

15) During a transition time, the metal outer fan will be standard without additional price. The metal external fan is not possible in combination with the low-noise version – order code **F77** or **F78**.

16) Wearing parts (bearings) are excluded from the warranty extension.

17) The Operating Instructions are available on the Internet in SIOS too: http://support.automation.siemens.com/WW/view/en/10803948/133300

18) The delivery time for the factory test certificate may differ from the delivery time for the motor.

19) The motors may exceed the noise levels defined by VIK.

20) For frame sizes 71 to 90 in combination with the order codes **Q02** and **Q03**, **R50** is the standard version (the additional price **R50** is already contained in **Q02** and **Q03**).

21) Not permissible for frame size 315, 2-pole, except for elastic installation.

22) For frame sizes 100 and 112, only permissible in combination with order code **R50**.

23) It is not permissible to combine order codes **L50** and **L51**.

Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version IEC	Ex db, Ex db eb (Zone 1) IE3
		1MB1553															
												1MB5553					
1MB.553 - . . . . . - . . . . -Z	Order code																
Explosion-proof version																	
Version IIC with stamping of IIB	**B31**	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Version additionally for dust Ex tb – Zone 21; IP65 [21) 26)]	**B32**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VIK version [18)]	**C02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Version for converter operation																	
Version for converter operation with power data on the PWM converter [6)]	**B43**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Version for converter operation with power data on the PWM converter, utilization in accordance with temperature class 155 (F) [6)]	**B44**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Motor protection																	
2 Pt100 screw-in thermometers in basic configuration for bearing (2 terminals) [1)]	**Q72**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓		
2 Pt100 screw-in thermometers in 3-wire input for bearing (6 terminals) [1)]	**Q78**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓		
2 Pt100 double screw-in thermometers in 3-wire input for bearing (12 terminals) [1)]	**Q79**	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓		
Motor connection and terminal box																	
External grounding		□	□	□	□	□	□	□	□	□	□	□	□	□	□		
Second external grounding	**H70**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rotation of the terminal box through 90°, entry from DE	**R10**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rotation of the terminal box through 90°, entry from NDE	**R11**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rotation of the terminal box through 180°	**R12**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Metal cable gland, maximum configuration	**R18**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Main terminal box in Ex db IIC [28)]	**R48**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Main terminal box in Ex db IIC [28)]	**R49**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓		
Larger terminal box [17)]	**R50**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–		
Enlarged connection system for main terminal box [17)]	**R54**	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–		
Cast-iron auxiliary terminal box (small)	**R62**	✓[24)]	✓[24)]	✓[24)]	✓[23)]	✓[23)]	✓[23)]	✓	✓	✓	✓	✓	✓	✓	✓		
Cast-iron auxiliary terminal box (large)	**R63**	–	–	–	–	–	–	–	–	✓[24)]	✓[23)]	✓	✓	✓	✓		
2 small cast-iron auxiliary terminal boxes	**R67**	✓[24)]	✓[24)]	✓[24)]	✓[23)]	✓[23)]	✓[23)]	✓	✓	✓	✓	✓	✓	✓	✓		
Non-standard threaded through hole (NPT or G thread)	**Y61 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Windings and insulation																	
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	**N05**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	**N06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	**N07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Temperature class 155 (F), utilized acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	**N08**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Increased air humidity/temperature with 60 to 100 g water per m^3 of air [22)]	**N31**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

For legends and footnotes, see page 5/75.

Article No. supplements and special versions

SIMOTICS XP 1MB1, 1MB5 explosion-proof motors

Options · Cast-iron series 1MB1553, 1MB5553

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version IEC	Ex db, Ex db eb (Zone 1)	IE3
		1MB1553																
												1MB5553						
1MB.553 - . . . . . - . . . . -Z	Order code																	
Windings and insulation (continued)																		
Temperature class 155 (F), utilized acc. to 130 (B), with higher coolant temperature and/or installation altitude	**Y50** • and spec. power, CT .. °C or IA …. m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Colors and paint finish																		
Standard paint finish C2 in RAL 7030 stone gray		□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Unpainted (only cast-iron parts primed)	**S00**	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
Unpainted, only primed	**S01**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish C3	**S02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish sea air resistant C4	**S03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint finish for use offshore C5	**S04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Internal coating	**S05**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Top coat polyurethane [16]	**S06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Paint finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5002, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog Section 1 "Introduction")	**Y53** • and paint finish RAL ….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (see Catalog Section 1 "Introduction")	**Y56** • and paint finish RAL ….	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Modular technology – Basic versions																		
Mounting of separately driven fan [27]	**F70**	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓			
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**	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–			
Special technology																		
Mounting of brake in Ex db version [29]	**F20**	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–			
Mounting of rotary pulse encoder in Ex db version – 1024 pulses/rev; 10-30V HTL	**G31**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Mechanical version and degrees of protection																		
Low-noise version for 2-pole motors with clockwise direction of rotation [27]	**F77**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
Low-noise version for 2-pole motors with anti-clockwise direction of rotation [27]	**F78**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
Protective cover [4]	**H00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Vibration-proof version; vibration resistance to Class 3M4 according to IEC 60721-3-3:1994	**H02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
External screws, bolts and unpainted materials made of stainless steel (V4A) [5]	**H06**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rust-resistant screws (externally)	**H07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IP65 degree of protection	**H20**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IP56 degree of protection	**H22**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar	**H23**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Adjustment screws for feet in horizontal installation [7]	**H30**	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓			
Coolant temperature and installation altitude																		
Coolant temperature –40 °C to +40 °C	**D03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/75.

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version IEC	Ex db, Ex db eb (Zone 1)	IE3
		1MB1553																
													1MB5553					
1MB.553 - . . . . . - . . . . -Z	Order code																	
Versions in accordance with standards and specifications																		
Ex certification for China [25]	**D32**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
China Energy Efficiency Label [25]	**D34**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
EAC Ex certificate for the Eurasian customs union [25]	**D35**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IEC Ex certification	**D37**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
MEPS Australia [25]	**D70**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Bearings and lubrication																		
Preparation for SPM measuring nipple – thread M8	**G50**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Regreasing device with M10 ×1 grease nipple acc. to DIN 71412-A	**L19**	–	–	–	–	–	–	–	✓	✓	✓	✓	○	○	○			
Located bearing DE	**L20**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Located bearing NDE	**L21**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Bearing design for increased cantilever forces [19]	**L22**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
Regreasing device	**L23**	–	–	–	–	–	–	✓	✓	✓	✓	✓	□	□	□			
Bearing insulation NDE [3]	**L51**	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓			
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Balance and vibration severity																		
Vibration severity grade A		□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Vibration severity grade B [2]	**L00**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Half-key balancing		□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Balancing without feather key	**L01**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Full-key balancing	**L02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Shaft and rotor																		
Shaft extension with standard dimensions, without feather keyway	**L04**	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Standard, cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347	**L05**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Concentricity of shaft extension in accordance with IEC 60072-1 precision class	**L07**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Concentricity of shaft extension, coaxiality, and linear movement in accordance with IEC 60072-1 precision class for flange-mounted motors	**L08**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Non-standard cylindrical shaft extension DE [8]	**Y58 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Non-standard cylindrical shaft extension NDE [8]	**Y59 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Heating and ventilation																		
Metal fan cover		□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Metal fan made of brass	**F68**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Metal external fan [9]	**F76**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Anti-condensation heating for 230 V (2 terminals) [1] [10]	**Q02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Anti-condensation heating for 115 V (2 terminals) [1] [10]	**Q03**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Anti-condensation heating for 220 V (2 terminals) [1] [10]	**Q04**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Separately driven fan with non-standard voltage and/or frequency	**Y81 •** and customer specifications	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see page 5/75.

Article No. supplements and special versions

SIMOTICS XP 1MB1, 1MB5 explosion-proof motors

Options · Cast-iron series 1MB1553, 1MB5553

Special versions	Additional identification code **-Z** with order code and plain text if required	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	355	Motor version IEC	Ex db, Ex db eb (Zone 1)	IE3
		1MB1553																
												1MB5553						
1MB.553 - . . . . . - . . . . -Z	Order code																	
Rating plate and additional rating plates																		
Second rating plate, loose	**M10**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rating plate, stainless steel	**M11**	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Additional rating plate with deviating rating plate data	**Y80 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Additional rating plate with customer specifications	**Y82 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Additional information on rating plate and on package label (max. 20 characters)	**Y84 •** and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Extension of the liability for defects																		
Extension of the liability for defects period by 12 months to a total of 24 months (2 years) from delivery	**Q80**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Extension of the liability for defects period by 24 months to a total of 36 months (3 years) from delivery	**Q82**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Packaging, safety notes, documentation and test certificates																		
Printed Operating Instructions in German/English and a DVD with all official EU languages as well as Norwegian, Russian, Turkish, and Chinese [11]		□	□	□	□	□	□	□	□	□	□	□	□	□	□			
Acceptance test certificate 3.1 acc. to EN 10204 [12]	**B02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Document – Electrical datasheet	**B60**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Document – Order dimensional drawing	**B61**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Standard test (routine test) with acceptance	**B65**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Noise measurement without load with octave band analysis, without acceptance [13]	**B71**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Noise measurement without load with octave band analysis, with acceptance [14]	**B72**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with heat run for vertical motors, without acceptance [13]	**B80**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with heat run for vertical motors, with acceptance [14]	**B81**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with heat run for horizontal motors, without acceptance [13]	**B82**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Type test with warm run for horizontal motors, with acceptance [14]	**B83**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Basic" documentation package [15]	**B90**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Advanced" documentation package [15]	**B91**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
"Projects" documentation package [15]	**B92**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Wire-lattice pallet packaging	**B99**	○	○	○	○	○	○	○	–	–	–	–	–	–	✓			
Connected in star for shipping	**M01**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Connected in delta for dispatch	**M02**	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□	□			

For legends and footnotes, see page 5/75.

◘ Standard version
○ Without additional charge
• This order code only determines the price of the version – Additional plain text is required.
✓ With additional charge
– Not possible

1) Maximum number of connections for accessories, see terminal box concept.

2) Not admissible in combination with converter operation (order codes **B43**, **B44**).

3) The frame sizes 280, 315, and 355 in combination with order code **B43** or **B44** are equipped with "Bearing insulation NDE" as standard (order code **L51** is included in B43/B44).

4) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

5) Rating plate, screws, grounding, and options with order codes **L19**, **L23**, **Q01** made of stainless steel (V4A).

6) Power data in converter operation according to the VSD rating lists. Winding monitoring with PTC thermistor mandatory.
- Only in combination with single voltages, e.g.: **M4A**.
- Frame size 280 and larger with insulated bearings on the fan side (NDE).

7) 4 adjustment screws with lock nut for types of construction with feet.

8) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer in accordance with the appropriate standard. 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 feather keys are supplied in every case.
For order codes **Y58**, **Y59** and **L05** the following applies:
- Dimensions D and DA ≤ ball bearing inner diameter (see dimension tables in "Dimensions")
- Dimensions E and EA ≤ 2 × length E (standard) of the shaft extension
For an explanation of the order codes, see Catalog Section 1 "Introduction".

9) The material of the fan is aluminum, for frames sizes 225 to 355 steel – metal fans are painted with paint systems with film thickness 90 µm or more.

10) Connection in the main terminal box in the standard version.

11) The Operating Instructions are available in the Internet in PDF format for all official EU languages.

12) The delivery time for the acceptance test certificate may differ from the delivery time for the motor.

13) The delivery time is then approx. 20 working days longer.

14) The delivery time is then approx. 25 working days longer or the confirmed acceptance date.

15) Version and content of the documentation, see Chapter 1.

16) Not in combination with order codes **S00**, **S01**, and **S02**. Other colors, order codes **Y53** and **Y56**, on request.

17) Not in combination with order codes **R48** and **R49**.

18) For installation in a hostile and corrosive environment, paint system with order code **S03** or better is recommended.

19) Only in combination with regreasing, order code **L19** or **L23**.

20) Cable glands in Ex e version.

21) Frame size 315 only in combination with order code **R50**, frame sizes 250 and 280 not in combination with order code **R50**.

22) Standard paint finish C2, we recommend C3 or better (e.g. order code **S02**, **S03**, **S04**).

23) Only possible in combination with order code **R50**.

24) Only possible in combination with order code **R54**.

25) Not possible in combination with **1MB..56** or **1MB..57**.

26) Only in combination with paint finish option, order code **S04**.

27) Not available in combination with order code **D03**.

28) Supplied without cable gland.

29) Select brake connection voltage separately, order codes **F10**, **F11**, or **F12** – note further details in Chapter 1 under "Modular technology", "Brakes".

Overview

Couplings for use in hazardous areas

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 flexible couplings, types N-EUPEX and RUPEX or torsionally rigid couplings, types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended. These coupling types are suitable for use in areas subject to explosion hazards and are offered with declaration of conformity and type test certificate according to Directive 2014/34/EU.

Available from:

Siemens contact partner – ordering from catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

Flender GmbH
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Phone +49 (2871) 922185
Fax +49 (2871) 922579

www.flender.com
Email: flender-kupplungen-2.pd.de@siemens.com

Taper pins according to DIN 258 with threaded ends and constant taper lengths

Taper pins are used for components that are repeatedly removed. The drilled hole is conically ground using a conical reamer until the pin can be pushed in by hand until the cone shoulder lies approx. 3 to 4 mm above the rim of the hole.

It can then be driven in using a hammer until it is correctly seated. The pin is removed from the drilled hole by screwing on the nut and tightening it.

Standardized taper pins are commercially available.

For instance, available from:

Otto Roth GmbH & Co. KG
Rutesheimer Strasse 22
70499 Stuttgart, Germany
Phone +49 711 1388-0
Fax +49 711 1388-233

www.ottoroth.de
Email: info@ottoroth.de

Foundation block according to DIN 799

The foundation blocks are inserted into the stone foundation and embedded in concrete. They are used for fixing machines of medium size, slide rails, pedestal bearings, base frames, etc. After the fixing bolts have been unscrewed, the machines can be shifted without them having to be lifted.

When the machine is initially installed, the foundation block that is bolted to the machine (without washers) and fitted with taper pins is not embedded with concrete until the machine has been fully aligned. In this case, the machine is positioned 2 to 3 mm lower. The difference in shaft height is compensated by inserting shims on final installation. The taper pins safeguard the exact position of the machine when it is repeatedly removed and replaced without the need for realignment.

Available from:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Phone +49 5241 7407-0
Fax +49 5241 7407-90

www.luetgert-antriebe.de
Email: info@luetgert-antriebe.de

Slide rails with fixing bolts and tensioning screws according to DIN 42923

Slide rails are used to tension the belt of a machine easily and conveniently when there is no belt-tensioning pulley. They are fixed to the base using stone bolts or foundation blocks.

The assignment of slide rails to motor size can be found in DIN 42923. For motors of frame sizes 355 to 450, there are no standardized slide rails (please inquire).

Available from:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Phone +49 5241 7407-0
Fax +49 5241 7407-90

www.luetgert-antriebe.de
Email: info@luetgert-antriebe.de

More information

Replacement motors and repair parts

- Commitment to provide replacement motors and repair parts following delivery of the motor:
  - For up to 3 years after the delivery of the original motor, in the event of total motor failure – with regard to the mounting dimensions and functions – Siemens will supply a comparable replacement motor (the type series may vary).
  - If a spare motor is supplied within the 3-year period, this does not mean that the warranty restarts.
  - Replacement motors delivered after the active production of the machine series are also identified as spare motors on the rating plate.
  - Spare parts are available only on request for these spare motors. Repair or replacement is not possible.
  - After a period of 3 years (after the delivery of the original motor), it is only possible to repair these motors (depending on the availability of the spare parts required).
  - For up to 5 years after the delivery of the original motor, spare parts will be available and for a further 5 years, Siemens will provide information about spare parts and will supply documents when required.
- When repair parts are ordered, the following details must be provided:
  - Designation and part number
  - Article No. and factory number of the motor.
- For bearing types, see Catalog Section 1 "Introduction".
- Repair parts are available for 1MB1 motors on request.
- For standard components, a commitment to supply repaired parts does not apply.
- Support hotline
  In Germany
  Phone +49 911 895 7 222

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

Notes on the dimensions

Overview

- Dimensional drawings according to EN 50347 and IEC 60072.
- Fits
  The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (EN 50347) are machined with the following fits:

Dimension designation	ISO fit DIN ISO 286-2	
D, DA	to 30	j6
	over 30 to 50	k6
	over 50	m6
N	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 dimension designations, the admissible deviations are given below:

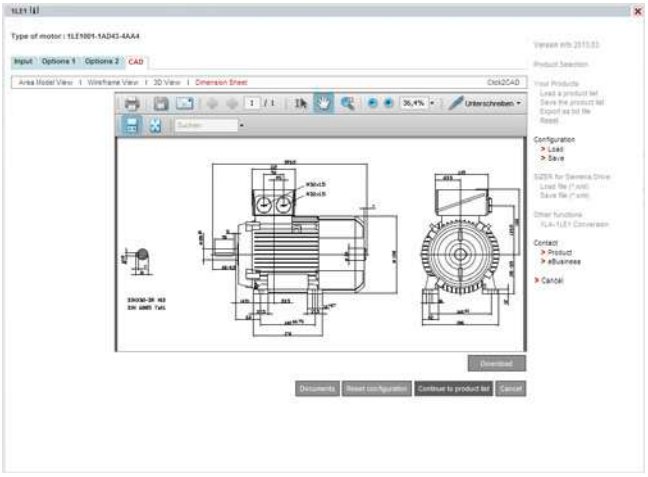
Dimension designation	Dimension	Admissible deviation
H	to 250	– 0.5
	over 250	– 1.0
E, EA		– 0.5

  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.

Dimension sheet generator (within the DT Configurator)

Overview

A dimensional drawing can be created in the "Drive Technology Configurator" (DT Conjfigurator) for every configurable motor. A dimensional drawing can be requested for every other motor.



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

These dimensional 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.

Online access in the Siemens Industry Mall

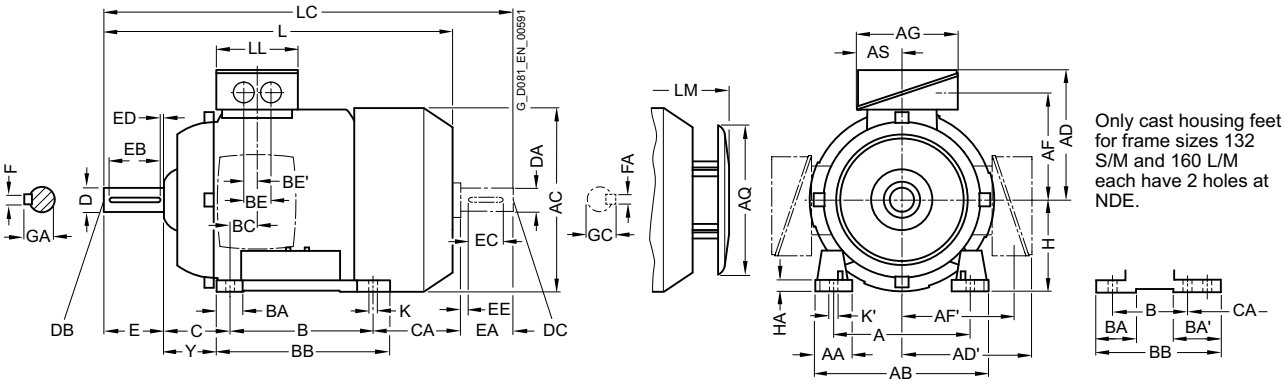
The DT Configurator is integrated into the Siemens Industry Mall and can be used on the Internet without installation.
German: www.siemens.de/dt-konfigurator
English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated into the Interactive Catalog CA 01 – the offline version of Siemens Industry Mall. The Catalog CA 01 can be downloaded at:
www.siemens.com/automation/ca01

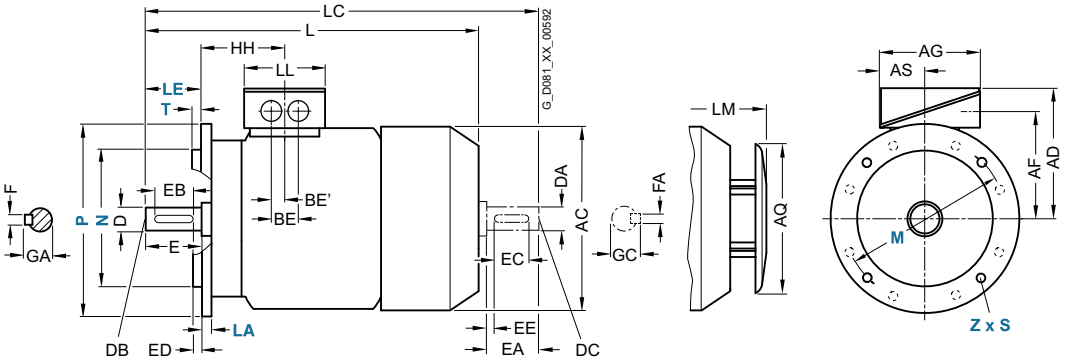
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



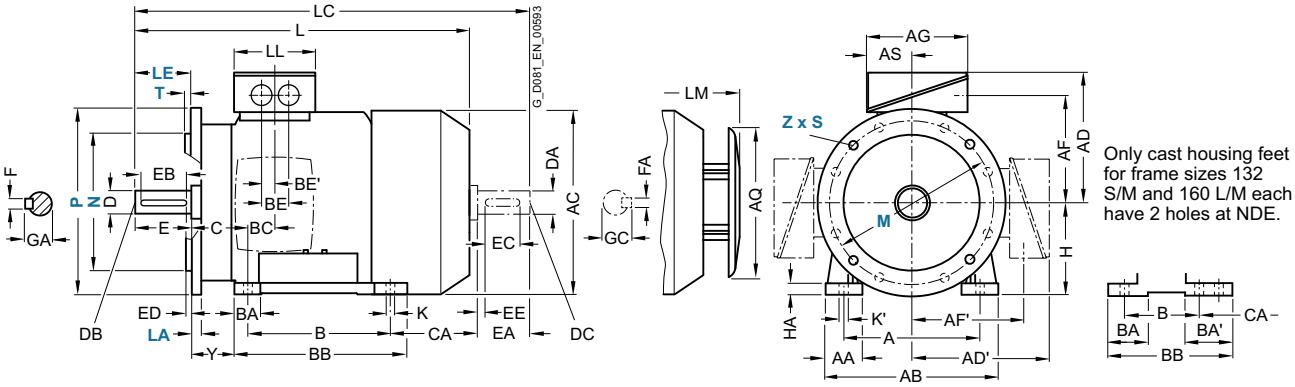
For motor			Dimension designation acc. to **IEC**																						
Frame size	Motor type 1MB10.3-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AQ	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA	**H**	HA	Y
80 M	0DA2, 0DB2, 0DC3	2, 4, 6	125	30.5	**150**	159	**121**	121	96.5	96.5	93	155	43	100	32	32	118	23	36	18	50	113	**80**	8	41
	0DA3, 0DB3, 0DC3																								
90 S	All	2, 4, 6	140	30.5	**165**	178	**126**	126	101.5	101.5	93	155	43	100	33	33	143	22.5	36	18	56	159	**90**	10	47
90 L	All	2, 4, 6	140	30.5	**165**	178	**126**	126	101.5	101.5	93	155	43	125	33	33	143	22.5	36	18	56	199	**90**	10	47
100 L	All	2, 4	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	All	2, 4	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 S	1CA0, 1CC0	2, 6	216	53	**256**	262	**202**	202	159.5	159.5	155	260	70.5	140	38	76	218	26.5	48	24	89	128.5	**132**	15	69
	1CA1, 1CB0	2, 4														38	180					178.5			
132 M	1CC2	6	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	**132**	15	69
	1CB2, 1CC3	4, 6														38						178.5			
160 M	All	2, 4, 6	254	60	**300**	314	**236.5**	236.5	190	190	175	260	77.5	210	44	89	300	47	57	28.5	108	148	**160**	18	85
160 L	All	2, 4, 6	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

[1] With screwed-on feet, dimension BA' is 43 mm.
[2] With screwed-on feet, dimension BB is 180 mm.
[3] With screwed-on feet, dimension BA' is 51 mm.
[4] With screwed-on feet, dimension BB is 256 mm.

Dimensional drawings (continued)

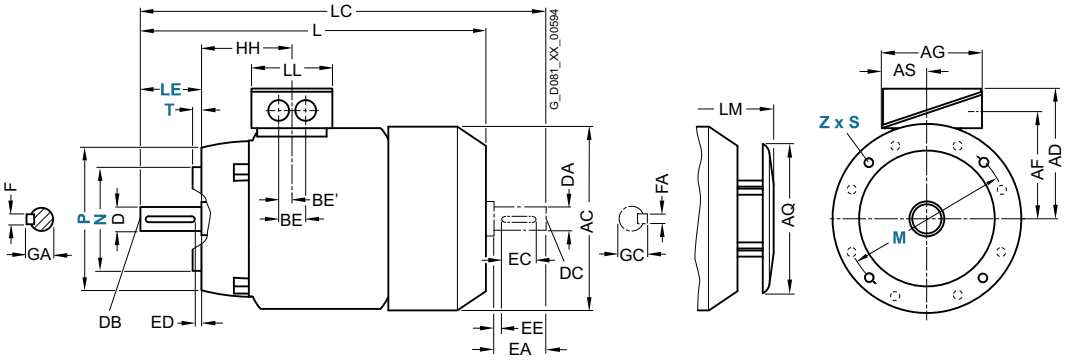
Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Type of construction IM B14

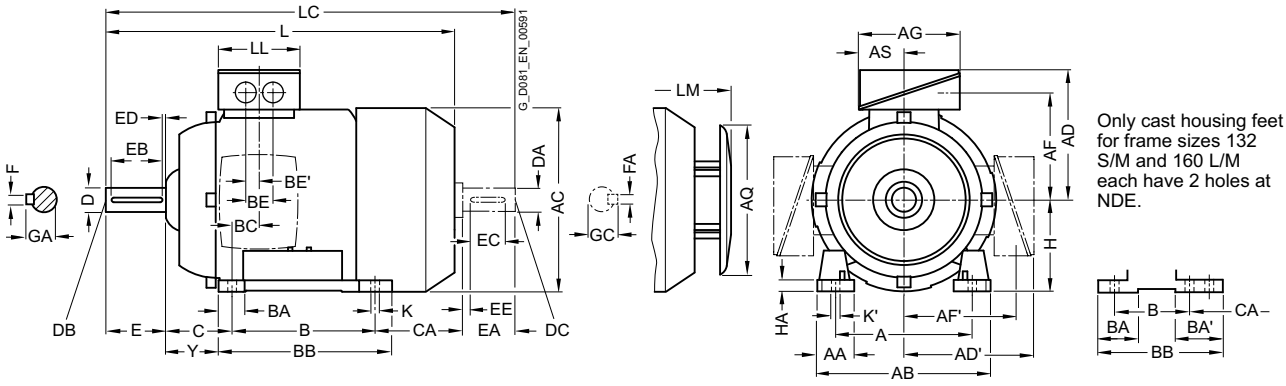
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**							DE shaft extension						NDE shaft extension							
Frame size	Motor type 1MB10.3-	No. of poles	HH	K	K'	**L**	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	0DA2, 0DB2, 0DC3	2, 4, 6	73	9.5	13.5	**292**	343	79	328	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
	0DA3, 0DB3, 0DC3					**327**																	
90 S	All	2, 4, 6	78.5	10	14	**347**	405	79	383	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
90 L	All	2, 4, 6	78.5	10	14	**387**	445	79	383	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	All	2, 4	100.5	12	16	**418**	489	112	463.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	All	2, 4	100.5	12	16	**401**	475	112	447	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1CA0, 1CC0	2, 6	115.5	12	16	**449.5**	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	1CA1, 1CB0	2, 4				**499.5**	585.5		550.5														
132 M	1CC2	6	115.5	12	16	**449.5**	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	1CB2, 1CC3	4, 6				**499.5**	585.5		550.5														
160 M	All	2, 4, 6	145	15	19	**586**	730	145	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	All	2, 4, 6	145	15	19	**646**	790	145	714	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

Dimensional drawings

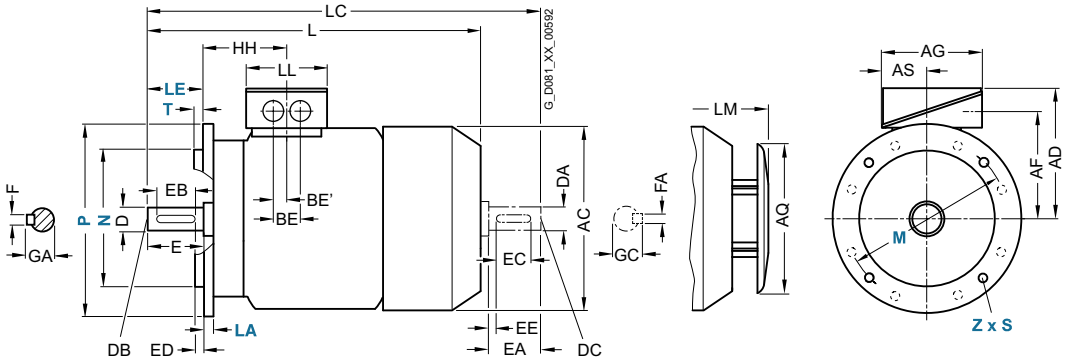
Type of construction IM B3



Only cast housing feet for frame sizes 132 S/M and 160 L/M each have 2 holes at NDE.

Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



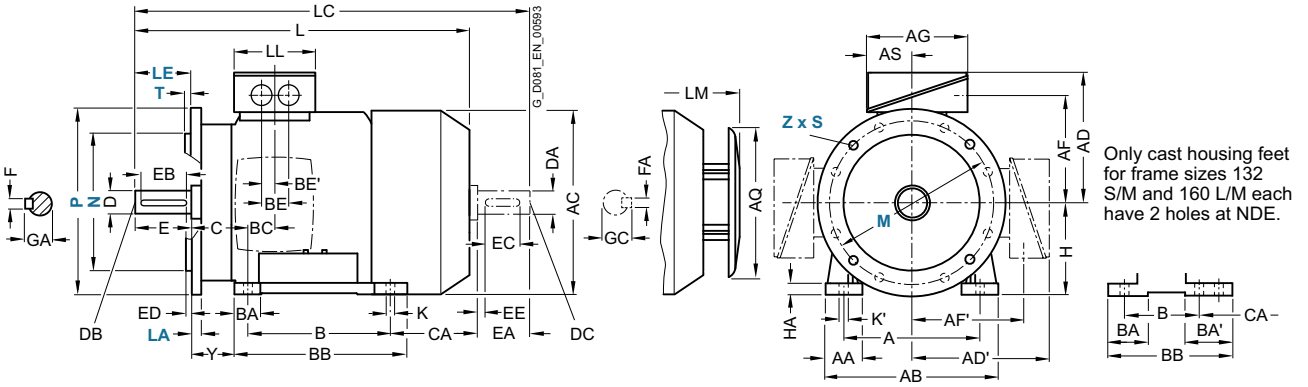
For motor			Dimension designation acc. to **IEC**																					
Frame size	Motor type 1MB10.1, 1MB10.2	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AQ	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA	**H**	HA	Y
80 M	1MB10.1	2, 4, 6	125	30.5	**150**	159	**149**	149	96.5	112.5	119.5	155	61.5	100	32	32	118	23	36	18	50	112.5	**80**	8	41
90 S	1MB10.1	2, 4, 6	140	30.5	**165**	178	**154**	154	101.5	117.5	119.5	155	62.5	100	33	54	143	22.5	36	18	56	159	**90**	10	47
90 L	1MB10.1	2, 4, 6	140	30.5	**165**	178	**154**	154	101.5	117.7	119.5	155	62.5	125	33	54	143	22.5	36	18	56	134	**90**	10	47
100 L	All	2, 4, 6, 8	160	42	**196**	198	**166**	166	125.5	125.5	135	195	63.5	140	37.5	37.5	176	33.5	50	25	63	141	**100**	12	45
112 M	All	2, 4, 6, 8	190	46	**226**	222	**177**	177	136.5	136.5	135	195	63.5	140	35.4	37.5	176	26	50	25	70	129.7	**112**	12	52
132 S	All	2, 4, 6, 8	216	53	**256**	262	**202**	202	159.5	159.5	155	260	70.5	140	38	76[1]	218[2]	26.5	48	24	89	128.5[3]	**132**	15	69
132 M	All	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[3]	**132**	15	69
160 M	All	2, 4, 6, 8	254	60	**300**	314	**236.5**	236.5	190	190	175	260	77.5	210	44	89[4]	300[5]	47	57	28.5	108	148[6]	**160**	18	85
160 L	All	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[6]	**160**	18	85

1) With screwed-on feet, dimension BA' is 38 mm.
2) With screwed-on feet, dimension BB is 180 mm.
3) With screwed-on feet, dimension CA is 166.5 mm.
4) With screwed-on feet, dimension BA' is 44 mm.
5) With screwed-on feet, dimension BB is 256 mm.
6) With screwed-on feet, dimension CA is 192 mm.

Dimensional drawings (continued)

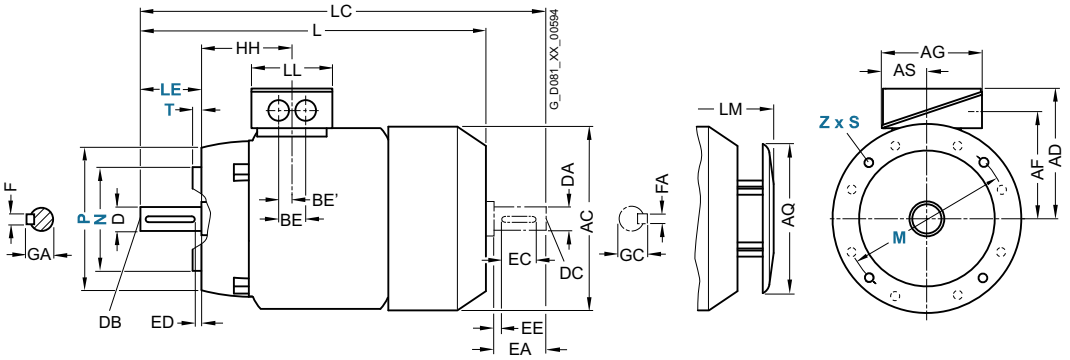
Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Type of construction IM B14

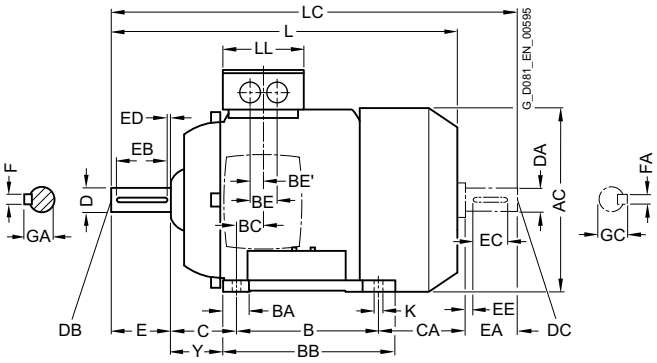
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)

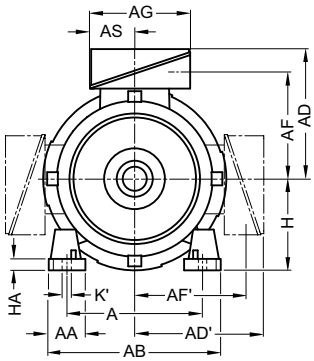


For motor			Dimension designation acc. to **IEC**							DE shaft extension							NDE shaft extension						
Frame size	Motor type 1MB10.1, 1MB10.2	No. of poles	HH	K	K'	**L**	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	1MB10.1	2, 4, 6	73	9.5	13.5	**253**	342.5	123	328	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S/L	1MB10.1	2, 4, 6	78.5	10	14	**294.5**	405	123	383	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
90 L	1MB10.1	2, 4, 6	78.5	10	14	**294.5**	405	123	383	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	All	2, 4, 6, 8	96.5	12	16	**388.5**	454	112	428.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	All	2, 4, 6, 8	96	12	16	**382**	450	112	422	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	All	2, 4, 6, 8	115.5	12	16	**456.5**	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	All	2, 4, 6, 8	115.5	12	16	**456.5**	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	All	2, 4, 6, 8	155	15	19	**594**	730	145	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	All	2, 4, 6, 8	155	15	19	**594**	730	145	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

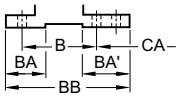
Dimensional drawings (continued)

Type of construction IM B3



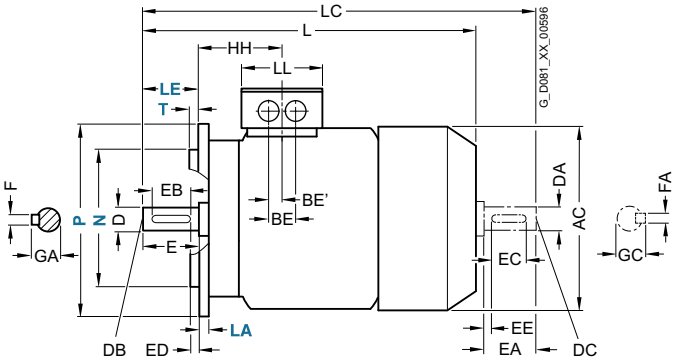


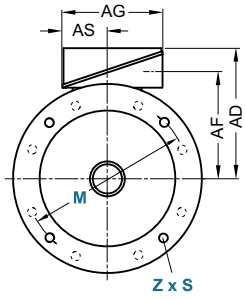
Only cast housing feet for frame sizes 132 S/M and 160 L/M each have 2 holes at NDE.



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)





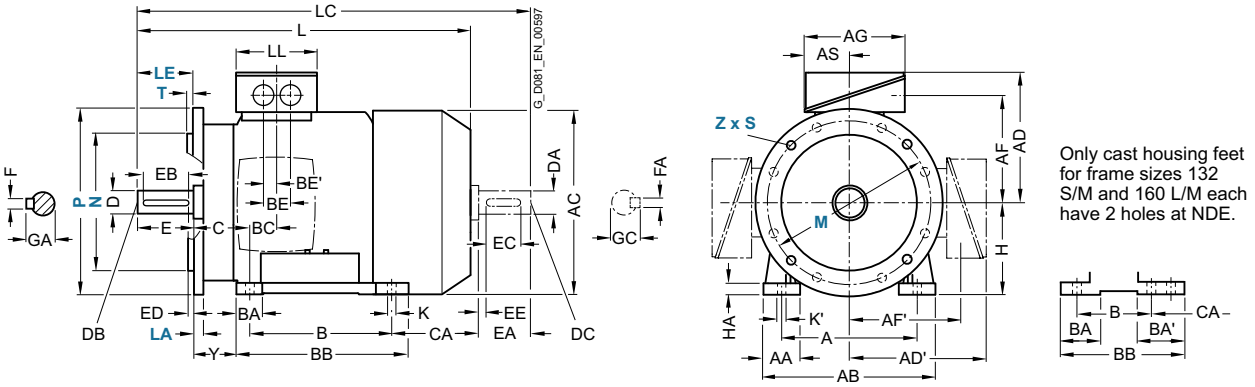
For motor			Dimension designation acc. to **IEC**																				
Frame size	Motor type 1MB15.3-, 1MB16.3-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA	**H**	HA	Y
71 M	0CA2, 0CB2, 0CC2	2, 4, 6	112	30.5	**132**	145	**149**	149	112	112	126	62	90	32	32	106	21	36	18	45	83	**71**	7	37
	0CA3, 0CB3, 0CC3																28							
80 M	0DA2, 0DB2, 0DC2	2, 4, 6	125	30.5	**150**	162	**159**	159	122	122	126	62	100	32	32	118	22.5	36	18	50	112.5	**80**	8	41
	0DA3, 0DB3, 0DC3																							
90 S	All	2, 4, 6	140	30.5	**165**	180	**164**	164	127	127	126	62	100	33	54	143	24.5	36	18	56	149	**90**	10	47
90 L	All	2, 4, 6	140	30.5	**165**	180	**164**	164	127	127	126	62	125	33	54	143	24.5	36	18	56	164	**90**	10	47
100 L	All	2, 4, 6	160	42	**196**	198	**193**	193	147	147	163	80.5	140	40	40	176	37.5	48	24	63	176	**100**	12	45
112 M	All	2, 4, 6	190	46	**226**	222	**195**	195	150	150	163	80.5	140	40	40	176	30	48	24	70	155	**112**	12	52
132 S	1CA0, 1CC0	2, 6	216	53	**256**	262	**214.5**	214.5	169	169	163	80.5	140	44	81[1]	218[2]	26.5	48	24	89	128.5	**132**	15	69
	1CA1, 1CB0	2, 4													–						178.5			
132 M	1CC2	6	216	53	**256**	262	**214.5**	214.5	169	169	163	80.5	178	44	81[1]	218	26.5	48	24	89	128.5	**132**	15	69
	1CB2, 1CC3	4, 6													–						178.5			
160 M	All	2, 4, 6	254	60	**300**	314	**261**	261	213	213	190	92	210	73	117[3]	300[4]	37	60	30	108	148	**160**	18	85
160 L	All	2, 4, 6	254	60	**300**	314	**261**	261	213	213	190	92	254	73	117[3]	300	37	60	30	108	208	**160**	18	85

[1] With screwed-on feet, dimension BA' is 43 mm.
[2] With screwed-on feet, dimension BB is 180 mm.
[3] With screwed-on feet, dimension BA' is 51 mm.
[4] With screwed-on feet, dimension BB is 256 mm.

Dimensional drawings (continued)

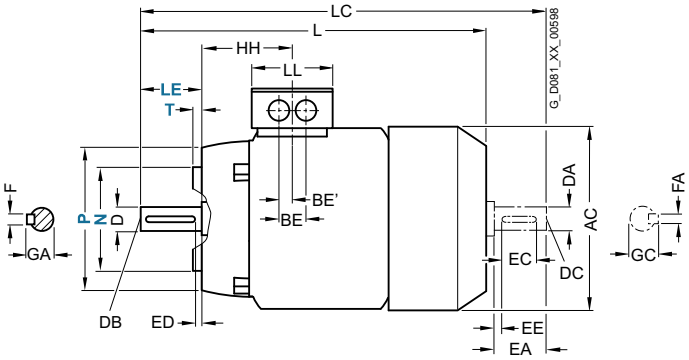
Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Type of construction IM B14

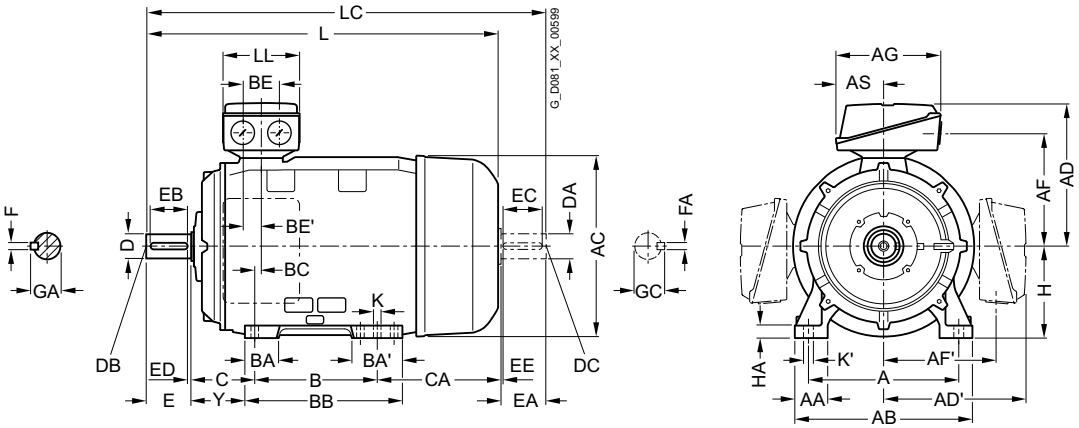
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension							
Frame size	Motor type 1MB15.3-, 1MB16.3-	No. of poles	HH	K	K'	**L**	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
71 M	0CA2, 0CB2, 0CC2	2, 4, 6	63	7.5	7.5	**240**	278	102	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
	0CA3, 0CB3, 0CC3		70			**280**	318															
80 M	0DA2, 0DB2, 0DC2	2, 4, 6	72.5	10	13.5	**292**	342.5	102	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
	0DA3, 0DB3 0DC3					**327**	377.5															
90 S	All	2, 4, 6	80.5	10	10	**347**	405	102	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27
90 L	All	2, 4, 6	80.5	10	10	**387**	445	102	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27
100 L	All	2, 4, 6	100.5	12	16	**418**	489	134	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	All	2, 4, 6	100.5	12	16	**402**	475	134	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1CA0, 1CC0	2, 6	115.5	12	16	**449.5**	536	134	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	1CA1, 1CB0	2, 4				**499.5**	586															
132 M	1CC2	6	115.5	12	16	**449.5**	536	134	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	1CB2, 1CC3	4, 6				**499.5**	586															
160 M	All	2, 4, 6	145	15	19	**586**	730	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	All	2, 4, 6	145	15	19	**646**	790	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

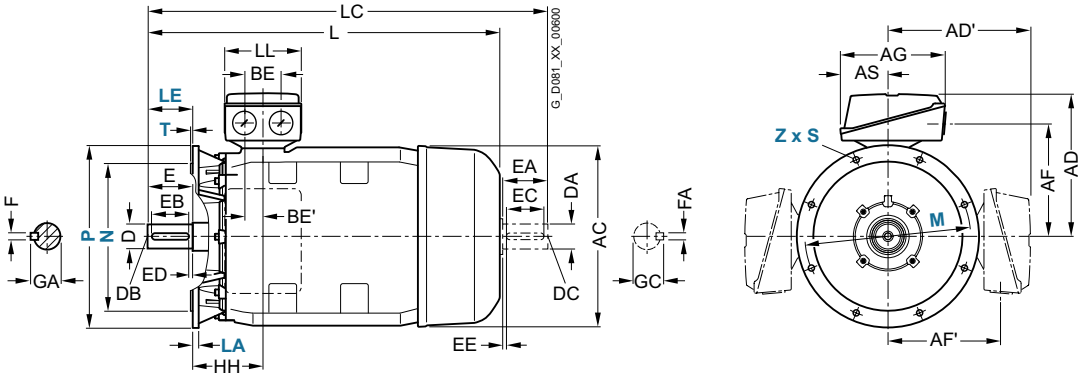
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)

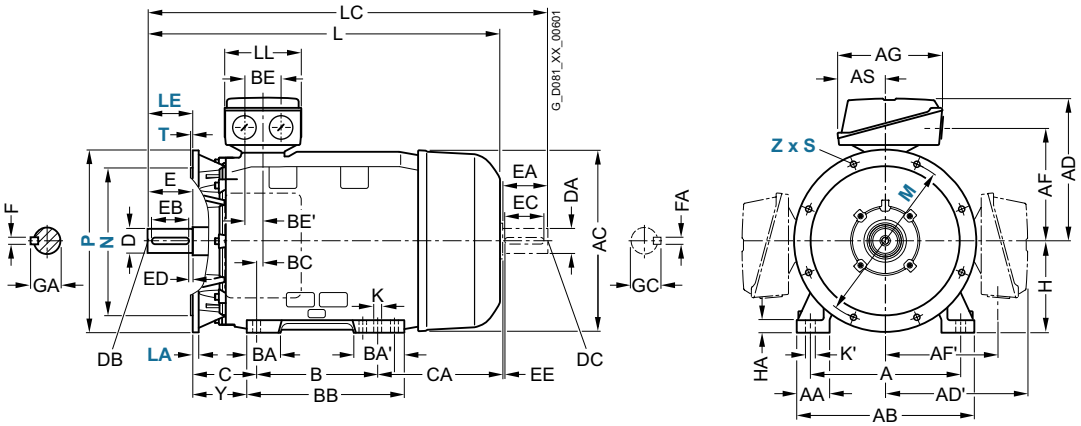


For motor			Dimension designation acc. to **IEC**																			
Frame size	Motor type 1MB15.3-, 1MB16.3-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AH	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA
180 M	1EA2	2	279	65	**339**	356	**286**	286	234	234	190	468	92	241	85	120	328	34	60	30	121	202
	1EB2	4																				
180 L	1EB4	4	279	65	**339**	356	**286**	286	234	234	190	468	92	279	85	120	328	34	60	30	121	202
	1EC4	6																				
200 L	2AA4, 2AC4	2, 6	318	60	**378**	396	**315**	315	259	259	266	533	112	305	104	104	355	31	85	42.5	133	177
	2AA5, 2AB5, 2AC5	2, 4, 6																				
225 S	2BB0	4	356	80	**436**	449	**338**	338	282	282	266	556	112	286	92	117	361	15	85	42.5	149	218
225 M	2BA2	2	356	80	**436**	449	**338**	338	282	282	266	556	112	311	92	117	361	15	85	42.5	149	253
	2BB2, 2BC2	4, 6																				
250 M	2CA2	2	406	100	**490**	497	**410**	410	322	322	319	620	145	349	102	102	409	24	110	55	168	230
	2CB2, 2CC2	4, 6																				
280 S	2DA0	2	457	100	**540**	551	**433**	433	345	345	319	672	145	368	101	152	479	20	110	55	190	267
	2DB0, 2DC0	4, 6																				
280 M	2DA2	2	457	100	**540**	551	**433**	433	345	345	319	672	145	419	101	152	479	20	110	55	190	326
	2DB2	4																				
	2DC2	6																				216
315 S	3AA0	2	508	120	**610**	616	**515**	515	404	404	374	780	164	406	113	170	527	22	110	55	216	295
	3AB0, 3AC0	4, 6																				
315 M	3AA2	2	508	120	**610**	616	**515**	515	404	404	374	780	164	457	113	170	578	22	110	55	216	409
	3AB2, 3AC2	4, 6																				
315 L	3AA4	2	508	120	**610**	616	**515**	515	404	404	374	780	164	508	113	170	578	22	110	55	216	358
	3AB4, 3AC4	4, 6																				
	3AA5	2													176	227	648					513
	3AB5, 3AC5, 3AC6	4, 6																				

Dimensional drawings (continued)

Type of construction IM B35

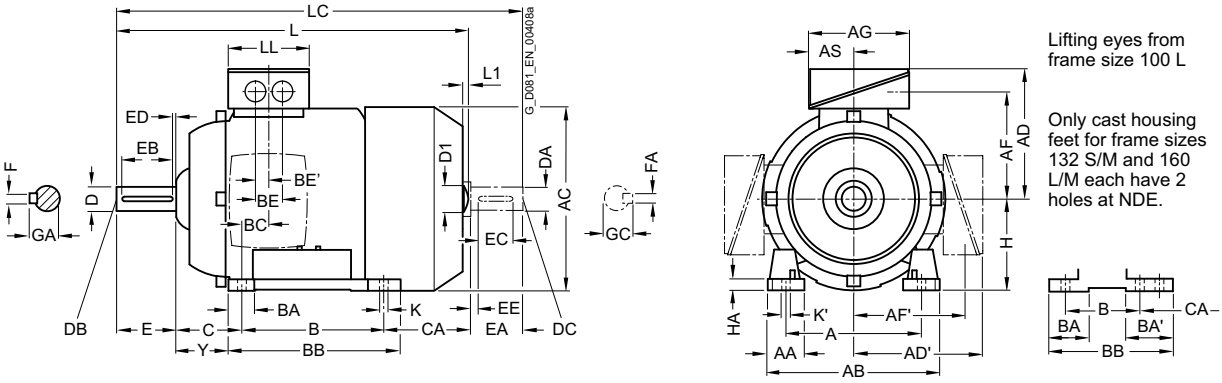
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**										DE shaft extension							NDE shaft extension						
Frame size	Motor type 1MB15.3-, 1MB16.3-	No. of poles	**H**	HA	Y	HH	K	K'	**L**	L'[1]	LC[2]	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1EA2	2	**180**	20	95	155	15	19	**698**	698	814	165	48	M16	110	100	5	14	52	48	M16	110	100	5	14	51.5
	1EB2	4							**668**	668	784														
180 L	1EB4	4	**180**	20	95	155	15	19	**698**	698	814	165	48	M16	110	100	5	14	52	48	M16	110	100	5	14	51.5
	1EC4	6							**668**	668	784														
200 L	2AA4, 2AC4	2, 6	**200**	25	108	164	19	25	**721**	755	835	197	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	2AA5, 2AB5, 2AC5	2, 4, 6							**746**	780	860														
225 S	2BB0	4	**225**	34	124	164	19	25	**788**	–	903	197	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	2BA2	2	**225**	34	124	164	19	25	**818**	852	933	197	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
	2BB2, 2BC2	4, 6							**848**	–	963		60		140	125	10	18	64	55	M20				16	59
250 M	2CA2	2	**250**	40	138	192	24	30	**887**	924	1002	233	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
	2CB2, 2CC2	4, 6								–	1032		65						69	60		140	125	10	18	64
280 S	2DA0	2	**280**	40	160	210	24	30	**960**	998	1105	233	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	2DB0, 2DC0	4, 6								–			75					20	79.5	65						69
280 M	2DA2	2	**280**	40	160	210	24	30	**1070**	1108	1105	233	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	2DB2	4								–	1215		75					20	79.5	65						69
	2DC2	6							**960**																	
315 S	3AA0	2	**315**	50	181	238	28	35	**1052**	1122	1197	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB0, 3AC0	4, 6							**1082**	–	1227		80		170	140	25	22	85	70					20	74.5
315 M	3AA2	2	**315**	50	181	238	28	35	**1217**	1287	1362	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB2, 3AC2	4, 6							**1247**	–	1392		80		170	140	25	22	85	70					20	74.5
315 L	3AA4	2	**315**	50	181	238	28	35	**1217**	1287	1362	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB4, 3AC4	4, 6							**1247**	–	1392		80		170	140	25	22	85	70					20	74.5
	3AA5	2			146				**1372**	1442	1517		65		140	125	10	18	69	60					18	64
	3AB5, 3AC5, 3AC6	4, 6							**1402**	–	1547		80		170	140	25	22	85	70					20	74.5

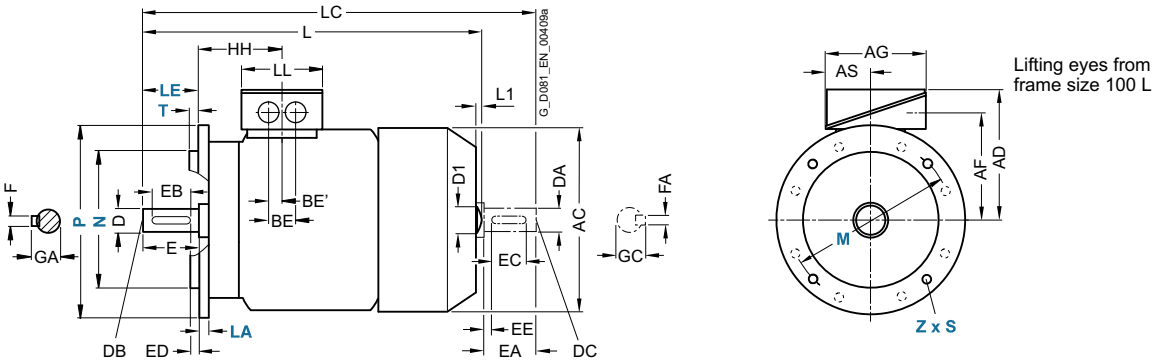
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



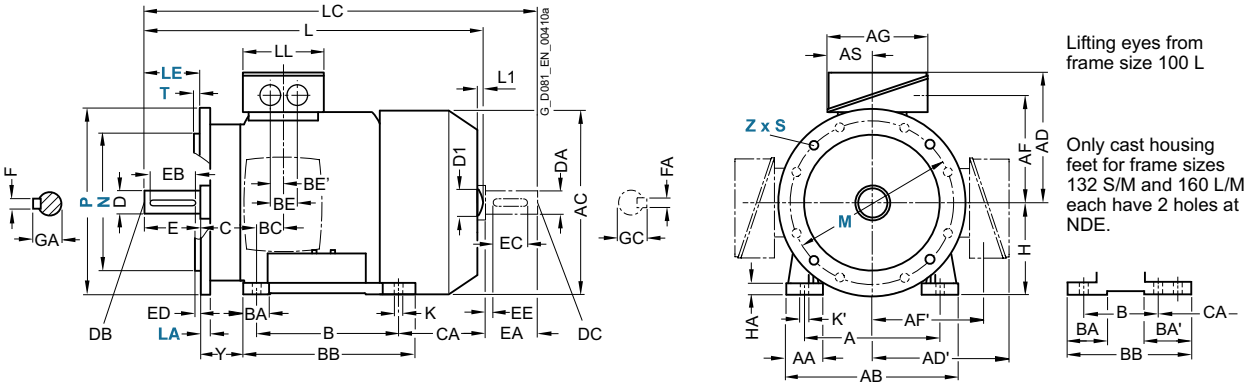
For motor			Dimension designation acc. to **IEC**																				
Frame size	Motor type 1MB1543- 1MB1643-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA	**H**	HA	Y
71 M	0C.2 0C.3	2, 4, 6	112	30.5	**132**	145	**173**	173	129	129	163	80.5	90	32	32	106	21	48	24	45	83	**71**	7	37
80 M	0D.2 0D.3	2, 4, 6	125	30.5	**150**	162	**183**	183	139	139	163	80.5	100	32	32	118	22.5	48	24	50	112.5	**80**	8	41
90 S	0E.0	2, 4, 6	140	30.5	**165**	180	**188**	188	144	144	163	80.5	100	33	54	143	24.5	48	24	56	159	**90**	11	47
90 L	0E.4	2, 4, 6	140	30.5	**165**	180	**188**	188	144	144	163	80.5	125	33	54	143	24.5	48	24	56	134	**90**	11	47
100 L	All	2, 4, 6	160	42	**196**	217	**193**	193	147	147	163	80.5	140	48	48	176	37.5	48	24	63	141	**100**	12	45
112 M	All	2, 4, 6	190	46	**226**	239	**195**	195	150	150	163	80.5	140	48	48	176	30	48	24	70	130	**112**	12	52
132 S	1CA0, 1CC0 1CA1, 1CB0	2, 6 2, 4	216	53	**256**	281	**214.5**	214.5	169	169	163	80.5	140	52	89[1]	218[2]	26.5	48	24	89	128.5 178.5	**132**	15	69
132 M	1CC2 1CB2, 1CC3	6 4, 6	216	53	**256**	281	**214.5**	214.5	169	169	163	80.5	178	52	89[1]	218	26.5	48	24	89	128.5 178.5	**132**	15	69
160 M	All	2, 4, 6	254	60	**300**	333.5	**261**	261	213	213	190	92	210	73	117[3]	300[4]	37	60	30	108	192	**160**	18	85
160 L	All	2, 4, 6	254	60	**300**	333.5	**261**	261	213	213	190	92	254	73	117[3]	300	37	60	30	108	208	**160**	18	85

[1] With screwed-on feet, dimension BA' is 43 mm.
[2] With screwed-on feet, dimension BB is 180 mm.
[3] With screwed-on feet, dimension BA' is 51 mm.
[4] With screwed-on feet, dimension BB is 256 mm.

Dimensional drawings (continued)

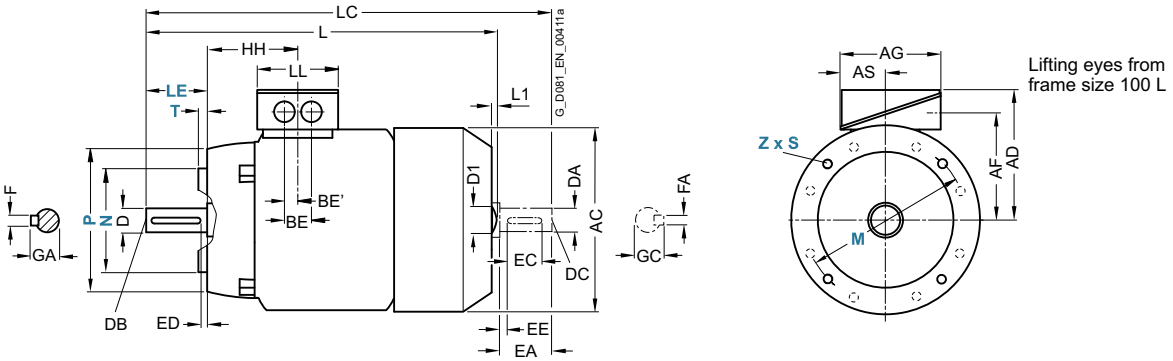
Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



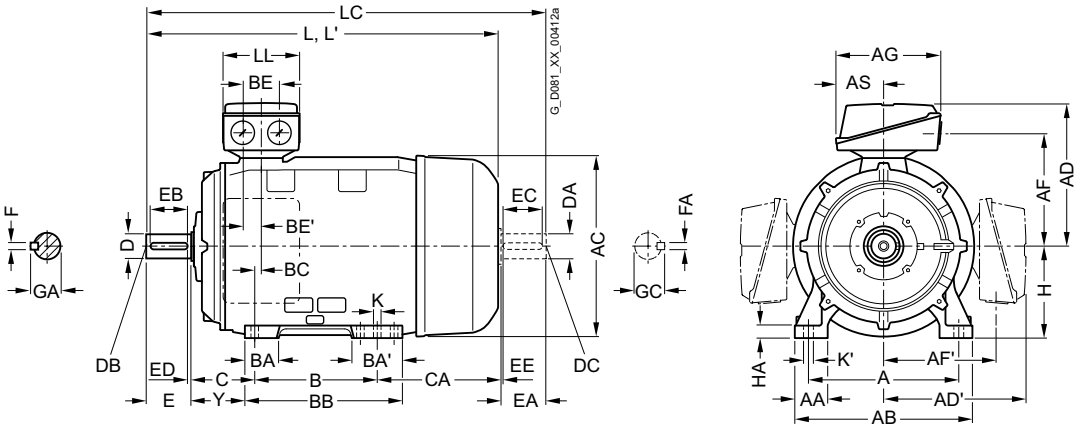
For motor			Dimension designation acc. to **IEC**								DE shaft extension						NDE shaft extension							
Frame size	Motor type 1MB1543- 1MB1643-	No. of poles	HH	K	K'	**L**[1]	L1	D1	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
71 M	0C.2 0C.3	2, 4, 6	64.5	7.5	7.5	**240** **280**	–	–	278	134	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	0D.2 0D.3	2, 4, 6	71.5	10	10	**292** **327**	–	–	318	134	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S	0E.0	2, 4, 6	79.5	10	10	**347**	–	–	343	134	24	M8	50	40	5	8	27	19	M6	50	40	5	8	21.5
90 L	0E.4	2, 4, 6	79.5	10	10	**387**	–	–	378	134	24	M8	50	40	5	8	27	19	M6	50	40	5	8	21.5
100 L	All	2, 4, 6	100.5	12	16	**425.5**	–	32	405	134	28	M10	M10	50	5	8	31	24	M8	M10	50	5	8	27
112 M	All	2, 4, 6	100.5	12	16	**408.5**	–	32	445	134	28	M10	60	50	5	8	31	24	M8	60	50	5	8	27
132 S	1CA0, 1CC0 1CA1, 1CB0	2, 6 2, 4	115.5	12	16	**458**	–	39	489	134	38	M12	80	70	5	10	41	28	M10	80	70	5	10	31
132 M	1CC2 1CB2, 1CC3	6 4, 6	115.5	12	16	**508**	–	39	342.5	134	38	M12	80	70	5	10	41	28	M10	80	70	5	10	31
160 M	All	2, 4, 6	145	14.5	18	**596**	–	45	475	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	All	2, 4, 6	145	14.5	18	**656**	–	45	535.5	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

[1] For 1MB1643 motors less dimension L1.

[2] Only for 1MB1543 motors.

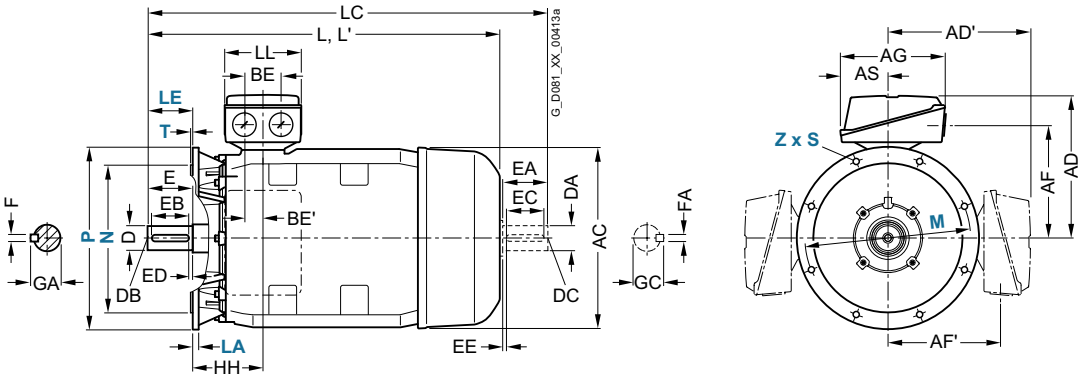
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)

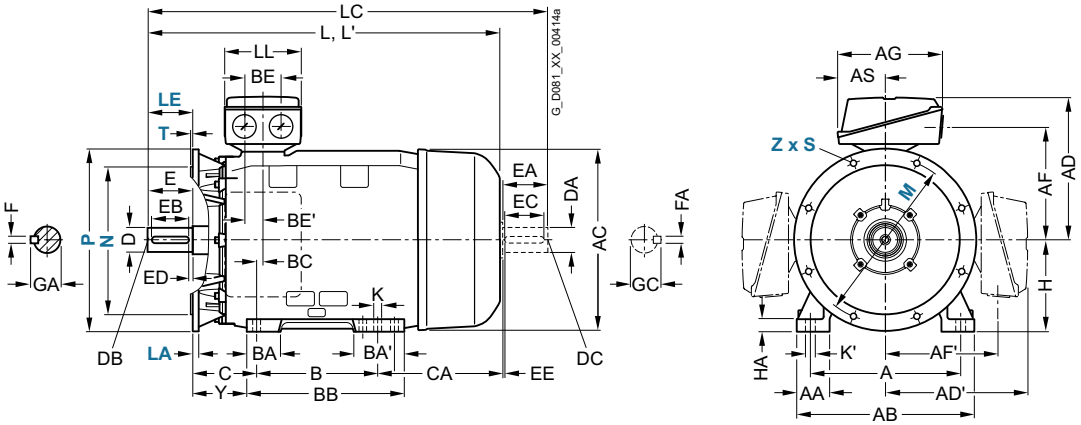


For motor			Dimension designation acc. to **IEC**																		
Frame size	Motor type 1MB1543- 1MB1643-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA
180 M/ 180 L	1EA2, 1EB4 1EB2, 1EC4	2, 4 4, 6	279	65	**339**	356	**286**	286	234	234	190	92	241	85	120	328	34				
200 L	2AA4, 2AC4 2AA5, 2AB5, 2AC5	2, 6 2, 4, 6	318	70	**378**	396	**315**	315	259	259	266	112	305	104	104	355	31				
225 S	2BB0	4	356	80	**436**	449	**338**	338	282	282	265	112	286	93	118	361	15				
225 M	2BA2 2BB2, 2BC2	2 4, 6											311								
250 M	2CA2 2CB2, 2CC2	2 4, 6	406	100	**490**	497	**410**	410	322	322	319	145	349	102	102	409	24				
280 S	2DA0 2DB0, 2DC0	2 4, 6	457	100	**540**	551	**433**	433	345	345	319	145	368	101	152	479	20				
280 M	2DA2 2DB2 2DC2	2 4 6											419								

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)

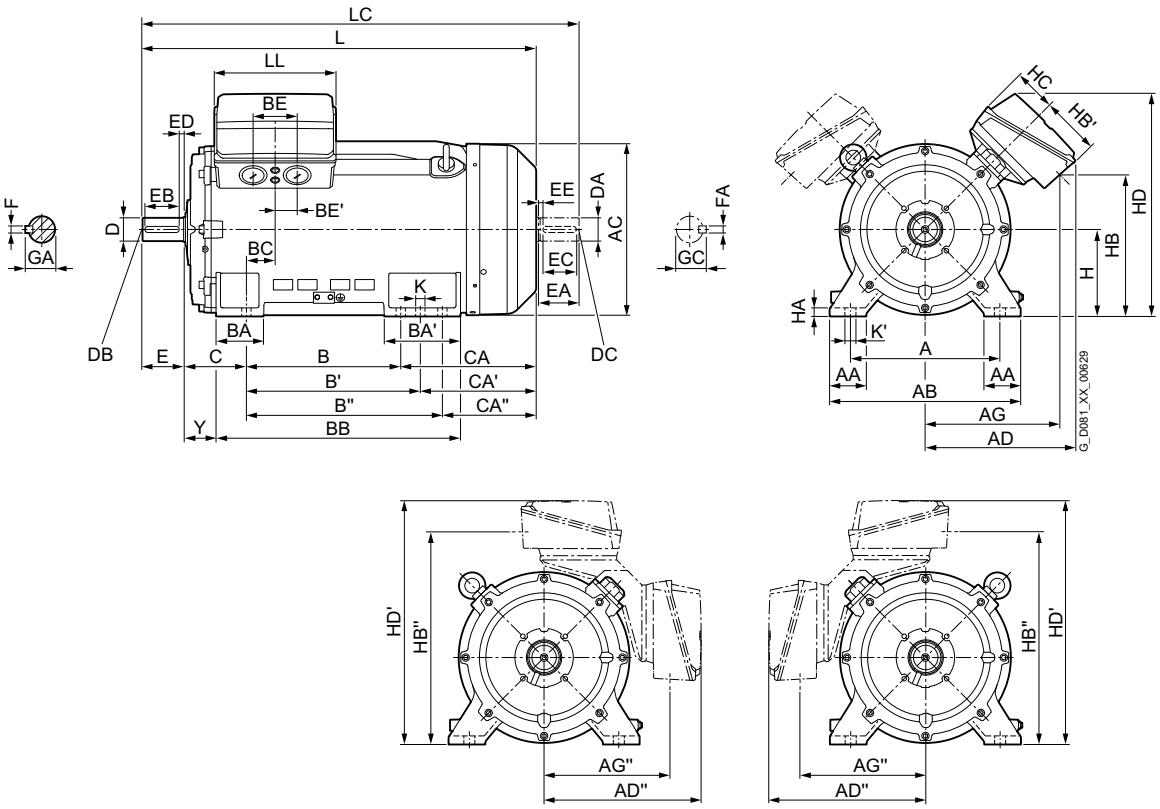


For motor			Dimension designation acc. to IEC									DE shaft extension							NDE shaft extension						
Frame size	Motor type 1MB1543- 1MB1643-	No. of poles	**H**	HA	Y	HH	K	K'	**L**	LC[1]	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M/ 180 L	1EA2, 1EB4 1EB2, 1EC4	2, 4	**180**	20	95	155	15	19	**698** **668**	814 784	164	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	2AA4, 2AC4 2AA5, 2AB5, 2AC5	2, 6 2, 4, 6	**200**	25	108	164	19	25	**721** **746**	835 860	197	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	2BB0	4	**225**	34	124	164	19	25	**788**	963	197	60	M20	140	125	10	18	64	55	M20	175	100	70	16	59
225 M	2BA2 2BB2, 2BC2	2 4, 6							**818** **928**	993 1103		55 60		110 140	100 125	5 10	16 18	59 64	48 55	M16 M20				14 16	51.5 59
250 M	2CA2 2CB2, 2CC2	2 4, 6	**250**	40	138	192	24	30	**887** **957**	1062 1162	233	60 65	M20	140	125	10	18	64 69	55 60	M20	175 205	100 125	70 75	16 18	59 64
280 S	2DA0 2DB0, 2DC0	2 4, 6	**280**	40	160	210	24	30	**960**	1170	233	65 75	M20	140	125	10	18 20	69 79.5	60 65	M20	210	125	80	18	64 69
280 M	2DA2 2DB2 2DC2	6 2 4							**1070** **960**	1280 1170		65 75					18 20	69 79.5	60 65						64 69

[1] In the low-noise version, a second shaft extension and/or mounted encoder is not possible.

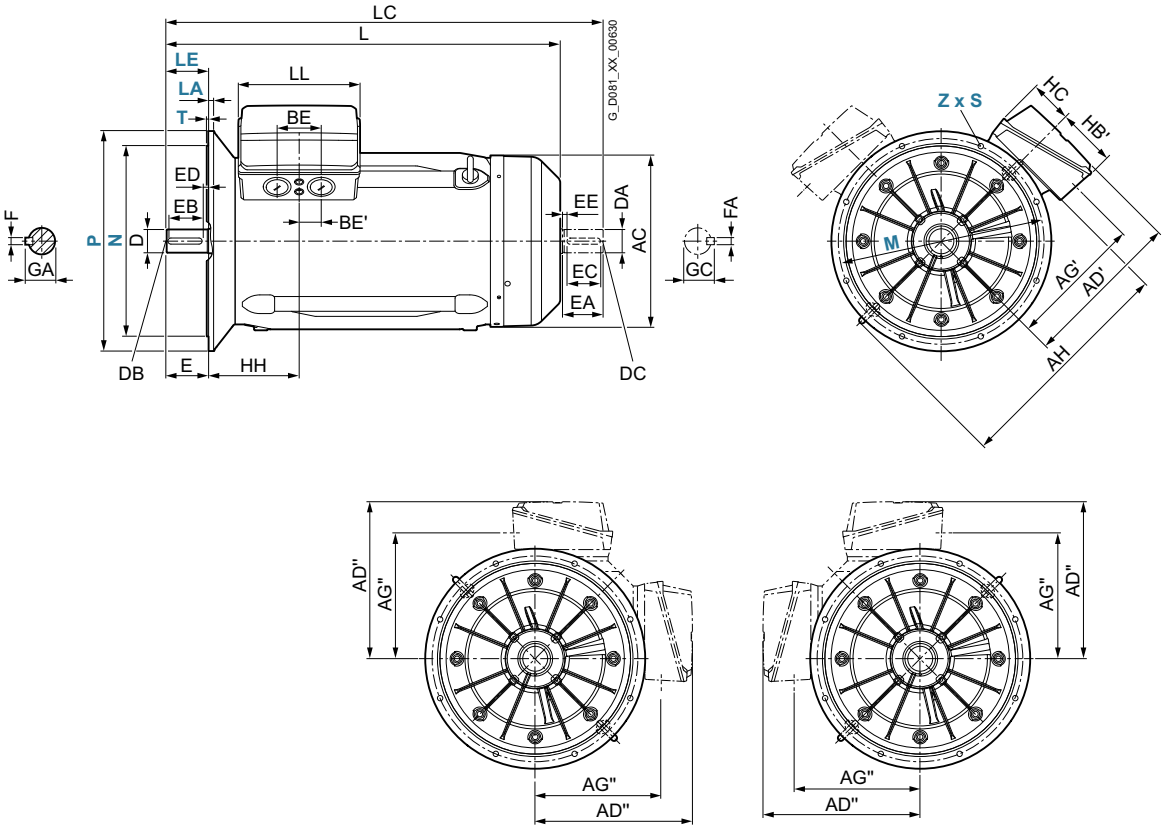
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

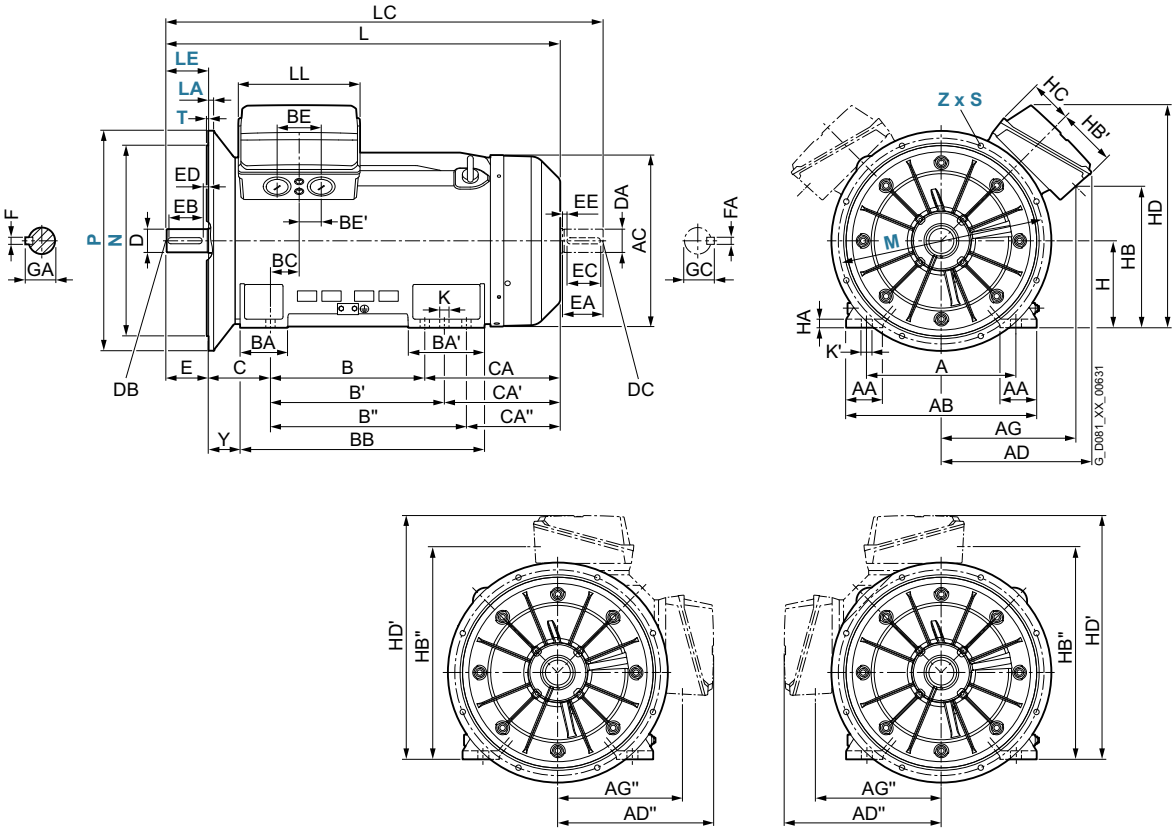
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



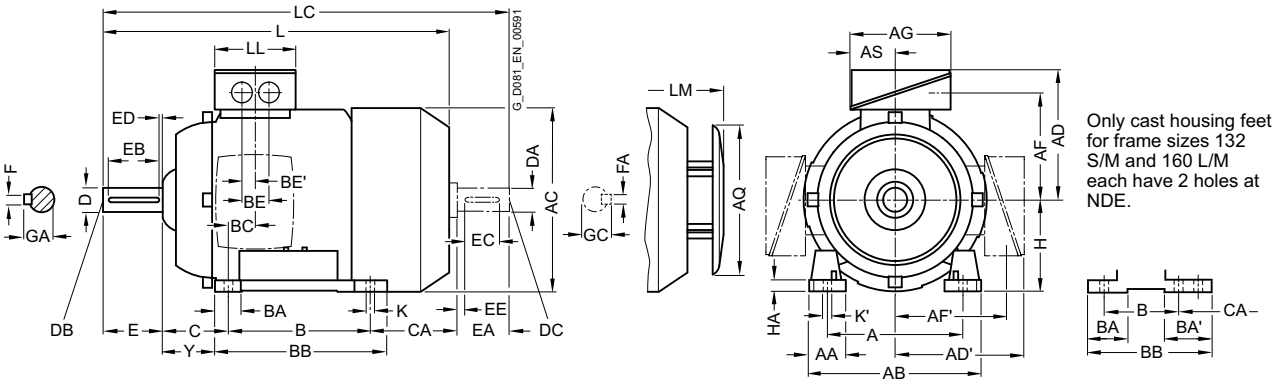
For motor			Dimension designation acc. to **IEC**																								
Frame size	Motor type 1MB5543 1MB5643	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AD''	AG	AG'	AG''	AH	B	B'	BA	BA'	BB	BC	BE	BE'	C	CA	CA'	**H**	HA	HB
315 S/M	3AA0, 3AA2 3AB0, 3AB2, 3AC0, 3AC2	2 4, 6	508	120	**610**	641	**543**	565	540	491	480	481	660	406	457	176 177	227 226	570	139	135	67.5	216	370	319	**315**	50	491
315 L	3AA4, 3AA5, 3AB4, 3AB5, 3AC4, 3AC5, 3AC6	2 4, 6	508	120	**610**	641	**543**	565	540	491	480	481	660	457	508	176	227	648	139	135	67.5	216	469	418	**315**	50	491

For motor			Dimension designation acc. to **IEC**											DE shaft extension								NDE shaft extension					
Frame size	Motor type 1MB5543 1MB5643	No. of poles	HB'	HB''	HC	HD	HD'	HH	Y	K	K'	**L**	LC[1)]	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
315 S/M	3AA0, 3AA2 3AB0, 3AB2, 3AC0, 3AC2	2 4, 6	225	796	167	800	880	355	146	28	35	**1132** **1162**	1277 1307	327	65 80	M20 M20	140 170	125 140	10 25	18 22	69 85	60 70	M20	140	125	80	18 20	64 74
315 L	3AA0, 3AA2 3AB4, 3AB5, 3AC4, 3AC5, 3AC6	2 4, 6	225	796	167	800	880	355	146	28	35	**1282** **1312**	1427 1457	327	65 80	M20	140	125	10	18	69	60	M20	140	125	80	18	64

[1)] In the low-noise version, a second shaft extension and/or mounted encoder is not possible.

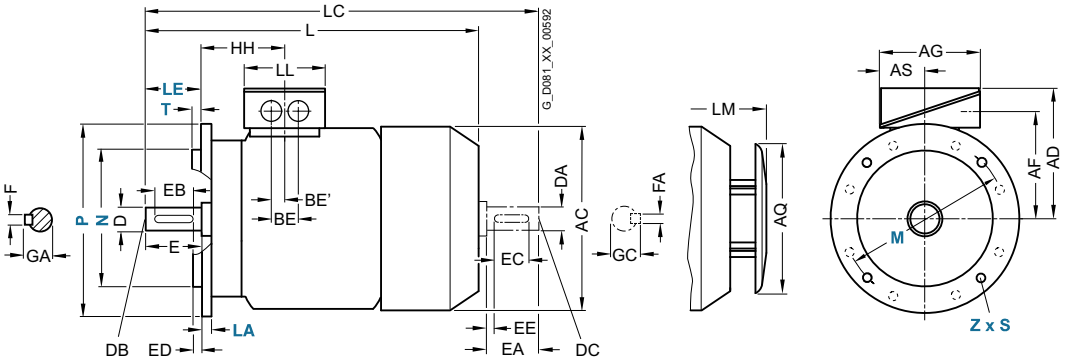
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



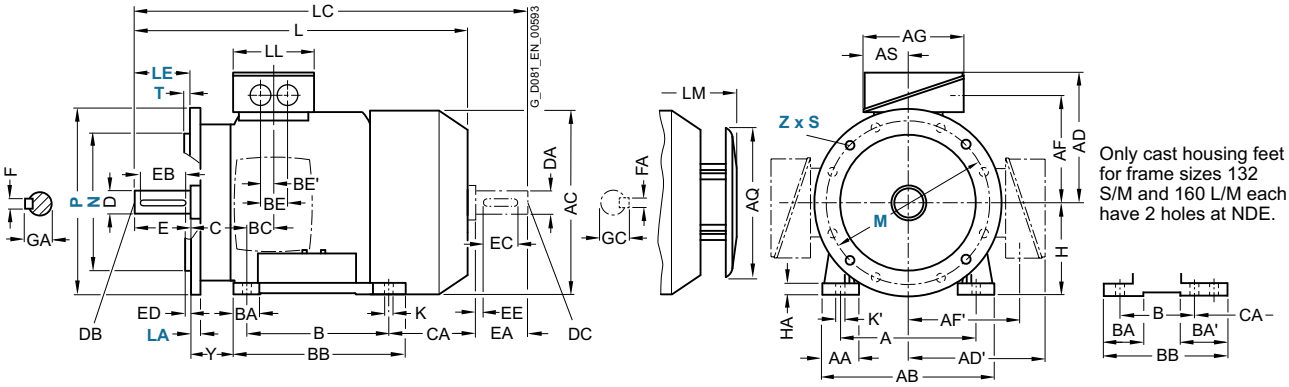
For motor			Dimension designation acc. to **IEC**																					
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA	**H**	HA	Y
71 M	0CA2, 0CB2, 0CC2, 0CD2	2, 4, 6, 8	112	30.5	**132**	145	**149**	149	112	112	126	62	90	32	32	106	21	36	18	45	83	**71**	7	37
	0CA3, 0CB3, 0CC3, 0CD3																28							
80 M	0DA2, 0DB2, 0DC2, 0DD2	2, 4, 6, 8	125	30.5	**150**	162	**159**	159	122	122	126	62	100	32	32	118	22.5	36	18	50	112.5	**80**	8	41
	0DA3, 0DB3, 0DC3, 0DD3																							
90 S	All	2, 4, 6, 8	140	30.5	**165**	180	**164**	164	127	127	126	62	100	33	54	143	24.5	36	18	56	149	**90**	10	47
90 L	All	2, 4, 6, 8	140	30.5	**165**	180	**164**	164	127	127	126	62	125	33	54	143	24.5	36	18	56	124	**90**	10	47
100 L	All	2, 4, 6, 8	160	42	**196**	198	**193**	193	147	147	163	80.5	140	40	40	176	37.5	48	24	63	141	**100**	12	45
112 M	1BA2, 1BB2, 1BC2	2, 4, 6	190	46	**226**	222	**195**	195	150	150	163	80.5	140	40	40	176	30	48	24	70	129.7	**112**	12	52
	1BD2	8																						
132 S	All	2, 4, 6, 8	216	53	**256**	262	**214.5**	214.5	169	169	163	80.5	140	44	81[1]	218[3]	26.5	48	24	89	167	**132**	15	69
132 M	All	2, 4, 6, 8	216	53	**256**	262	**214.5**	214.5	169	169	163	80.5	178	44	81[1]	218	26.5	48	24	89	129	**132**	15	69
160 M	All	2, 4, 6, 8	254	60	**300**	314	**265**	265	213	213	190	92	210	51	95[2]	300[4]	37	60	30	108	192	**160**	18	85
160 L	All	2, 4, 6, 8	254	60	**300**	314	**265**	265	213	213	190	92	254	51	95[2]	300	37	60	30	108	148	**160**	18	85

[1] With screwed-on feet, dimension BA' is 43 mm.
[2] With screwed-on feet, dimension BA' is 51 mm.
[3] With screwed-on feet, dimension BB is 180 mm.
[4] With screwed-on feet, dimension BB is 256 mm.

Dimensional drawings (continued)

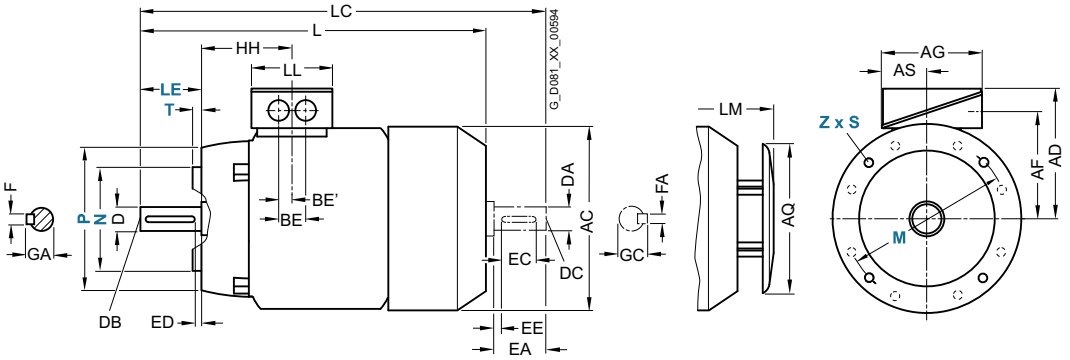
Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



Type of construction IM B14

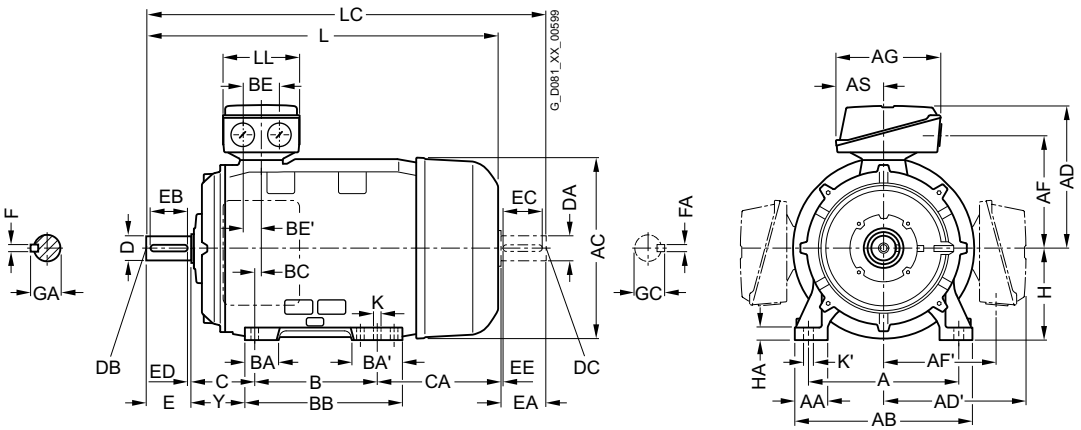
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension							
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	HH	K	K'	**L**	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
71 M	0CA2, 0CB2, 0CC2, 0CD2	2, 4, 6, 8	63	7	7	**240**	278	102	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
	0CA3, 0CB3, 0CC3, 0CD3		70			**280**	318															
80 M	0DA2, 0DB2, 0DC2, 0DD2	2, 4, 6, 8	72.5	10	13.5	**292**	342.5	102	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
	0DA3, 0DB3, 0DC3, 0DD3					**327**	377.5															
90 S	All	2, 4, 6, 8	80.5	10	10	**347**	405	102	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27
90 L	All	2, 4, 6, 8	80.5	10	10	**387**	445	102	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27
100 L	All	2, 4, 6, 8	100.5	12	16	**390.5**	454	134	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1BA2, 1BB2, 1BC2	2, 4, 6	100.5	12	16	**390.5**	450	134	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
	1BD2	8				**408.5**	475															
132 S	All	2, 4, 6, 8	115.5	12	16	**458**	536	134	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	All	2, 4, 6, 8	115.5	12	16	**458**	536	134	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	All	2, 4, 6, 8	145	15	19	**596**	730	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	All	2, 4, 6, 8	145	15	19	**596**	730	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

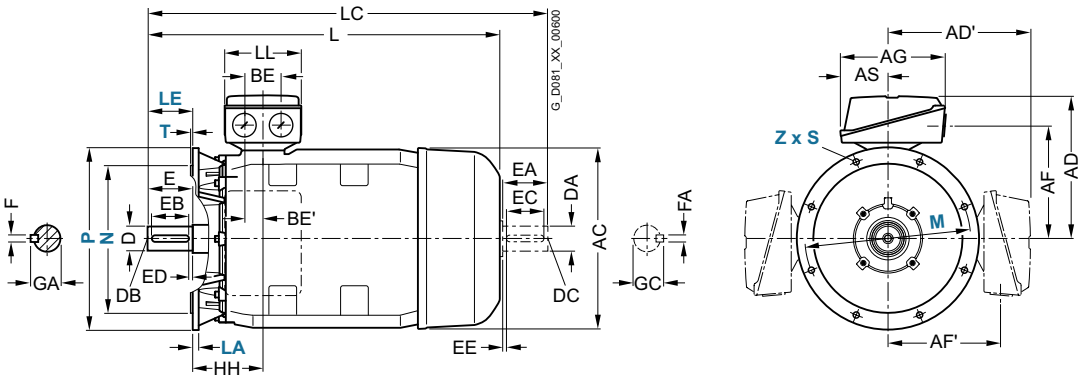
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)

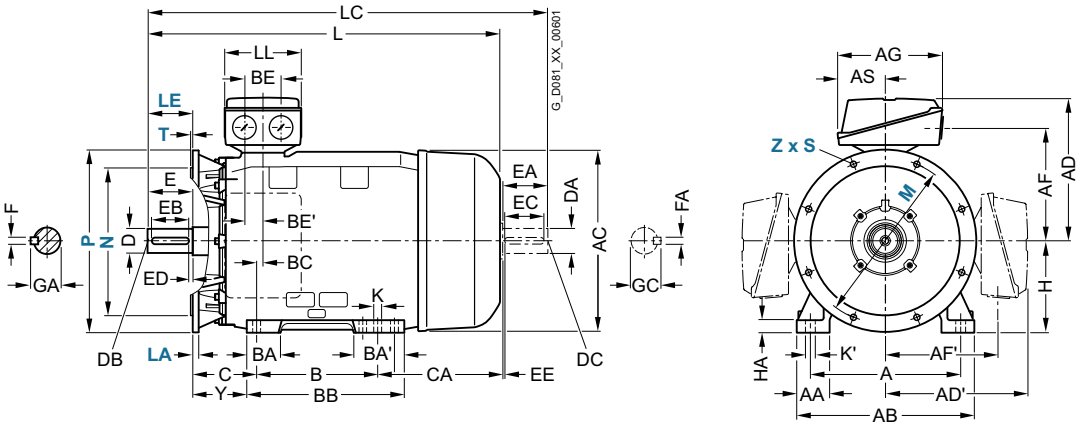


For motor			Dimension designation acc. to **IEC**																		
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AH	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA
180 M/ 180 L	1EA2, 1EB24	2, 4	279	65	**339**	356	**286**	286	234	234	190	468	92	241	85	120	328	34	60	30	121	202
	1EC4, 1ED4	6, 8												279								
	1EB4	4																				
200 L	All	2, 4, 6, 8	318	60	**378**	396	**315**	315	259	259	266	533	112	305	104	104	355	31	85	42.5	133	177
225 S/ 225 M	2BB0, 2BD0,	4, 8	356	80	**436**	449	**338**	338	282	282	266	556	112	311	92	117	361	15	85	42.5	149	253
	2BB2, 2BC2, 2BD2	4, 6, 8																				
	2BA2	2																				
250 M	2CA2	2	406	100	**490**	497	**410**	410	322	322	319	620	145	349	102	102	409	24	110	55	168	230
	2CB2, 2CC2, 2CD2	4, 6, 8																				

Dimensional drawings (continued)

Type of construction IM B35

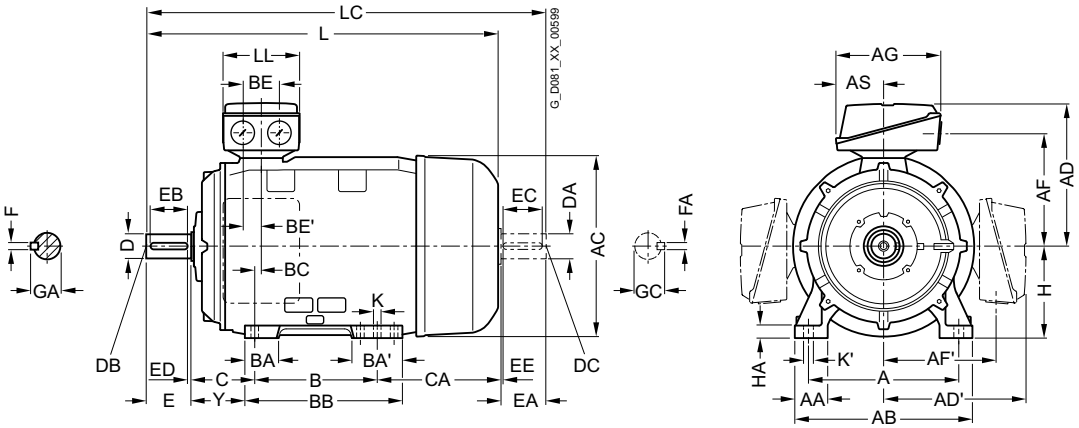
For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**									DE shaft extension							NDE shaft extension					
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	**H**	HA	Y	HH	K	K'	**L**	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M/ 180 L	1EA2, 1EB2	2, 4	**180**	20	95	155	15	19	**668**	784	165	48	M16	110	100	5	14	52	48	M16	110	100	5	14	51.5
	1EC4, 1ED4	6, 8																							
	1EB4	4							**698**	814															
200 L	All	2, 4, 6, 8	**200**	25	108	164	19	25	**721**	835	197	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S/ 225 M	2BB0, 2BD0,	4, 8	**225**	34	124	164	19	25	**788**	903	197	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
	2BB2, 2BC2, 2BD2	4, 6, 8							**848**	963															
	2BA2	2							**818**	933		55		110	100	5	16	59	48	M16			14	51.5	
250 M	2CA2	2	**250**	40	138	192	24	30	**887**	1002	233	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
	2CB2, 2CC2, 2CD2	4, 6, 8								1032		65						69	60		140	125	10	18	64

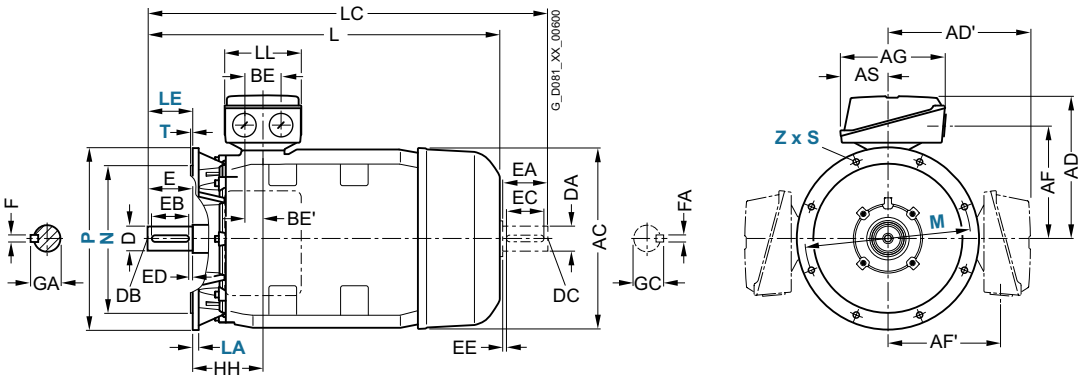
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



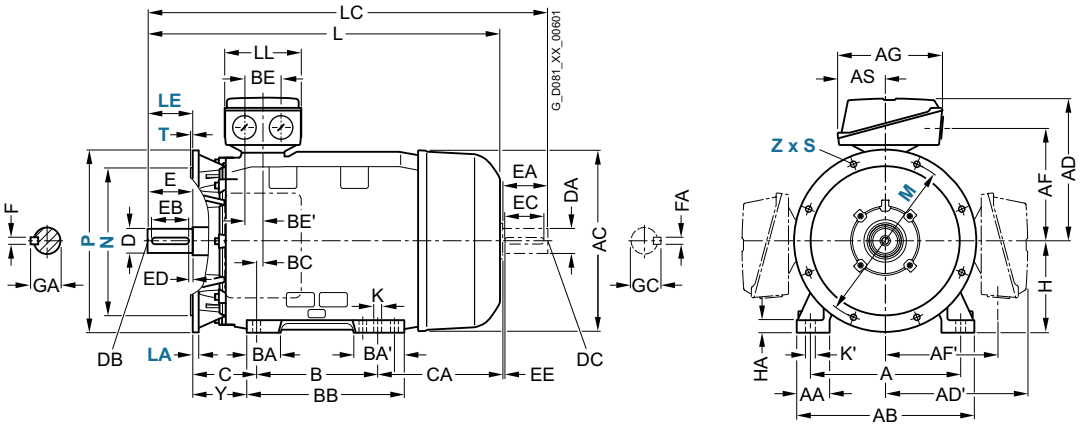
For motor			Dimension designation acc. to **IEC**																			
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	A	AA	**AB**	AC	**AD**	AD'	AF	AF'	AG	AH	AS	B	BA	BA'	BB	BC	BE	BE'	C	CA
280 S	2DA0	2	457	100	**540**	551	**433**	433	345	345	319	672	145	368	101	152	479	20	110	55	190	267
	2DB0, 2DC0, 2DD0	4, 6, 8																				
280 M	2DA2	2	457	100	**540**	551	**433**	433	345	345	319	672	145	419	101	152	479	20	110	55	190	216
	2DB2, 2DC2, 2DD2	4, 6, 8																				
315 S	3AA0	2	508	120	**610**	616	**515**	515	404	404	374	780	164	406	113	170	527	22	110	55	216	295
	3AB0, 3AC0, 3AD0	4, 6, 8																				
315 M	3AA2	2	508	120	**610**	616	**515**	515	404	404	374	780	164	457	113	170	578	22	110	55	216	409
	3AB2	4																				
	3AC2, 3AD2	6, 8															327					244
315 L	3AA4	2	508	120	**610**	616	**515**	515	404	404	374	780	164	508	113	170	578	22	110	55	216	358
	3AB4, 3AC4, 3AD4, 3AC5, 3AD5, 3AD6	4, 6, 8																				
	3AA5	2													176	227	648					513
	3AB5[1], 3AC6[1]	4, 6																				

[1] When ordering a terminal box positioned on the right-hand side or left-hand side, the feet are screwed on as standard. These screwed-on feet have 3 drill holes on the NDE with the respective dimension B 406, 457 and 508 mm; the dimension BB is 666 mm.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/46 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to **IEC**									DE shaft extension							NDE shaft extension						
Frame size	Motor type 1MB15.1-, 1MB16.1-	No. of poles	**H**	HA	Y	HH	K	K'	**L**	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
280 S	2DA0	2	**280**	40	160	210	24	30	**960**	1105	233	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	2DB0, 2DC0, 2DD0	4, 6, 8										75					20	79.5	65						69
280 M	2DA2	2	**280**	40	160	210	24	30	**960**	1105	233	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	2DB2, 2DC2, 2DD2	4, 6, 8										75					20	79.5	65						69
315 S	3AA0	2	**315**	50	181	238	28	35	**1052**	1197	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB0, 3AC0, 3AD0	4, 6, 8							**1082**	1227		80		170	140	25	22	85	70					20	74.5
315 M	3AA2	2	**315**	50	181	238	28	35	**1217**	1362	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB2	4							**1247**	1392		80		170	140	25	22	85	70					20	74.5
	3AC2, 3AD2	6, 8							**1082**	1227															
315 L	3AA4	2	**315**	50	181	238	28	35	**1217**	1362	299	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB4, 3AC4, 3AD4, 3AC5, 3AD5, 3AD6	4, 6, 8							**1247**	1392		80		170	140	25	22	85	70					20	74.5
	3AA5	2			146				**1372**	1517		65		140	125	10	18	69	60					18	64
	3AB5, 3AC6	4, 6							**1402**	1547		80		170	140	25	22	85	70					20	74.5