1MB1 / 1MB5 explosion-proof motors
Orientation

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, in mining or for mills (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-protected equipment is designed such that an explosion can be prevented when it is used properly.

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

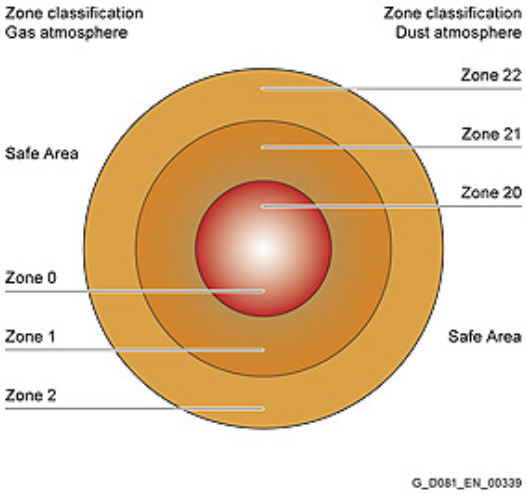
The local conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types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

Zone classification

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.

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	–	A zone in which there is an explosive gas atmosphere **constantly, over a long period or frequently**.	Low-voltage motors not permitted	1	Ga
1	–	A zone in which it is expected, in normal operation, that an explosive gas atmosphere will occur **occasionally.**	Ex eb (in the past Ex e) Ex db eb Ex db	2	Gb
2	–	A zone in which it is expected, in normal operation, that an explosive gas atmosphere will occur only **rarely** and then only **briefly**.	Ex ec (in the past Ex na)	3	Gc
–	20	A zone in which there is an explosive dust atmosphere comprising dust-air mixtures that occur **constantly, over a long period or frequently**.	Low-voltage motors not permitted	1	Da
–	21	A zone in which it is expected that an explosive dust atmosphere comprising a dust-air mixture will occur **occasionally** during normal operation.	Ex tb	2	Db
–	22	A zone in which it is expected, in normal operation, that an explosive atmosphere in the form of a cloud of combustible dust in the air will only occur **rarely** and then, only **briefly**.	Ex tc 3)	3	Dc

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

2) Motors that 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) Motors are not approved for operation in environments containing conductive dusts.

Overview

Types of protection

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

For motors in type of protection "Flameproof enclosure", it is ensured that any explosion will be restricted to within the motor. The enclosure must resist the pressure of the explosion and also prevent ignition from the internal to the external atmospheres. Motors in type of protection "Flameproof enclosure Ex db" are used in a potentially explosive atmosphere, whereby this atmosphere can achieve a level that poses a risk. These motors are assigned to device group II – category 2G (corresponding to Zone 1). They ensure a high degree of safety.

To define the risk posed by a potentially explosive gas, the minimum ignition temperature of a dust cloud is required as well as details of the possibility of a flame exiting through a narrow slit in the motor enclosure. This is achieved by classification in explosion groups IIA, IIB and IIC, whereby IIC represents the highest requirements (see the table "Assignment of combustible gases and vapors").

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

The motor series in types "Flameproof enclosure" already described can also be designed for dust explosion protection. Atmospheres with potentially explosive dust are classified as frequently occurring (Zone 21) and rarely occurring (Zone 22). Further classification differentiates between conductive and non-conductive dust. In general, motors of the 1PS and 1MD5 series can be used in Zone 21 for non-conductive and conductive dust and in Zone 22 for non-conductive dust. The motors are marked in accordance with EN 60079-0 and EN 60079-31 with II 2D Ex tb IIIC T130 °C Db (Zone 21, conductive dust). The installed terminal boxes are marked and certified in accordance with the dust and gas explosion protection class.

Suitability of the motors is confirmed for Zone 21 with an EU type-examination certificate and for Zone 22 with an EU Declaration of Conformity.

Motors with dual labeling for gas and dust may only be used in applications in which gas and dust occur simultaneously after prior examination of the properties of the hybrid mixtures by the user.

Changes to the Ex marking

In accordance with the latest edition of the standards for "Flameproof enclosure" and "Increased safety" types of protection, there is a change to the device marking. The type of protection "Non-sparking" Ex nA acc. to IEC/EN 60079-15 has been integrated into the latest edition of the standard for "Increased safety" according to IEC/EN 60079-7 as Ex ec. This has the following effect on the Ex marking:

- Increased safety for Zone 1 and Zone 2 (previously Ex e):
  II 2G Ex eb IIC T3 Gb
- Increased safety for Zone 2 (previously Ex nA):
  II 3G Ex ec IIC T3 Gc
- Flameproof enclosure for Zone 1 and Zone 2 (previously Ex d):
  II 2G Ex db IIC T4 Gb

There are no changes for the user other than the device marking.

Overview of standards for explosion protection

The explosion-proof three-phase motors comply with the European standards. The European standards are recognized by all member states of CENELEC (European Committee for Electrotechnical Standardization). The national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, Portugal, and United Kingdom (UK) are affiliated to CENELEC.

Equipment	European standard
General provisions	EN 60079-0
Flameproof enclosures	EN 60079-1
Increased safety	EN 60079-7
Classification of zones (gases, vapors and mist)	EN 60079-10-1
Classification of zones (dust)	EN 60079-10-2
Intrinsic safety	EN 60079-11
Electrical equipment in explosive atmospheres (gases, vapors and mist)	EN 60079-14
Type of protection "n" (Zone 2)	EN 60079-15
Maintenance of Ex equipment	EN 60079-17
Intrinsically safe electrical systems	EN 60079-25
Equipment "Dust" (dust explosion protection by enclosure)	EN 60079-31
Equipment "Dust"	EN 50281-2-1
Equipment "Dust"	EN 61241-2-2
Basic concepts and methodology	EN 1127-1

Explosion protection directive 2014/34/EU

Explosion protection has been fully harmonized by directive 2014/34/EU in Germany and in the other member states of the European Union. The requirements of the new law came into force on July 1, 2003. Since then only those devices and protection systems that comply with directive 2014/34/EU are permitted to be marketed.

Directive 2014/34/EU and directive 1999/92/EC specify that only specific electrical equipment and devices are permitted to be used in the zones. The devices are assigned to device groups and categories.

Use of electrical equipment in accordance with EN 60079-14

Electrical equipment used in potentially explosive workshops and storage areas must comply with EN 60079-14/
VDE 0165-1 "Electrical installations in explosive atmospheres". All other general regulations issued by the responsible supervisory authorities and the Employer's Liability Insurance Association or any specifically issued for individual case are also applicable.

A plant subject to inspection is not permitted to be commissioned initially or following a significant modification until the plant has been inspected by an approved testing agency for correctness of assembly, installation, site conditions and safe operation taking into account the intended mode of operation. Devices compliant with directive 2014/34/EU are permitted to be commissioned in accordance with the responsible supervisory authority. (cf. German Health and Safety at Work Regulations (BetrSichV), Section 3, § 14)

Overview

Device marking

The device group and category are specified in the device marking.

The device marking is specified as follows:

e.g. Ⓔx II 2G Ex db IIC T4 Gb

- CE conformity mark, CE stands for "Communautés Européennes" (European Community)

The manufacturer declares by means of CE marking that the relevant product has been manufactured in accordance with all applicable regulations and requirements of directive 2014/34/EU and the product has been subjected to the relevant conformity evaluation process.

- 0158 identification number of the monitoring body
- Marking for prevention of explosions in accordance with Directive 2014/34/EU

Example "Flameproof enclosure":	**CE**	**0158**	Ⓔx	**II**	**2**	**G**	**Ex**	**db**	**IIC**	**T4**	**Gb**
CE marking											
Number of the certifying "notified" body (0158 = EXAM)											
Explosion protection marking											
Device group: I = underground mines II = all other areas											
Category: 2 (Zone 1/21) 3 (Zone 2/22)											
Explosive atmosphere G = gas D = dust											
Explosion protected equipment											
Type of protection Ex db, db eb, eb, ec, tb or tc (db eb = motor enclosure Ex db with Ex eb terminal box)											
Explosion group and explosion subgroup II=Gas (IIA, IIB or IIC) III=Dust (IIIA, IIIB or IIIC) See table "Examples of the assignment of combustible gases and vapors"											
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 level, Da = Very high protection level, Gb = High protection level, Db = High protection level, Gc = Increased protection level, Dc = Increased protection level											

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

Temperature classes and groups

Combustible gases and vapors are divided into temperature classes according to their ignitability and into groups according to their spark ignition capacity. The marking of a three-phase motor with the codes for the type of protection, group and temperature class specifies that it can be used without danger in hazardous areas depending on the zone classification. The numerical sequence of the codes for the group and temperature class has been selected so that motors that satisfy the requirements for a certain group and temperature class also satisfy the requirements for lower groups and classes.

Temperature classes

Temperature class of electrical equipment	Maximum surface temperature of electrical equipment	Ignition temperature of gases or vapors
T1	450°C	> 450°C
T2	300°C	> 300°C
T3	200°C	> 200°C
T4	135°C	> 135°C
T5	100°C	> 100°C
T6	85°C	> 85°C

Overview

Examples of the assignment of combustible gases and vapors

Group	Temperature classes											
	T1		T2		T3		T4		T5		T6	
	Material designation	Ignition temperature °C	Material designation	Ignition temperature °C	Material designation	Ignition temperature °C	Material designation	Ignition temperature °C	Material designation	Ignition temperature °C	Material designation	Ignition temperature °C
IIA [1]	Acetone	540	i-amyl acetate	380	Benzine		Acetaldehyde	140				
	Ethane	515	n-butane	365	Gasoline	[2]						
	Ethyl acetate	460	n-butyl alcohol	340	Special benzine	[2]						
	Ethyl chloride	510	Cyclohexanone	430	Diesel fuel	[2]						
	Ammonia	630	1.2-dichloroethane	440	Heating oils	[2]						
	Benzene	555	Acetic acid anhydride	330	n-hexane	240						
	Acetic acid	485										
	Carbon monoxide	605										
	Methane	595										
	Methanol	455										
	Methyl chloride	625										
	Naphthalene	520										
	Phenol	595										
	Propane	470										
	Toluene	535										
IIB [1]	Town gas (illuminating gas)	560	Ethyl alcohol	425	Hydrogen sulfide	270	Ethyl ether	180				
			Ethylene	425								
			Ethylene oxide	440								
IIC [1]	Hydrogen	560	Acetylene	305							Carbon disulfide	95

1) Subgroups IIA, IIB, IIC should be specified for the Ex ec (nA) and Ex de types of protection described in this list in accordance with EN 60079-0.

2) The ignition temperature depends on the composition, and lies between 220 and 300 °C, over 300 °C in special cases.

Electrical design

The insulation system of SIMOTICS XP 1MB.55 motors is suitable for line voltages up to 690 V. The connection system (terminal box, terminals) is also designed for this rated voltage.
The explosion-proof motors are equipped with 6 terminals. They can thus be operated in star or delta. If a version with dual voltage e.g. 400VΔ /690VY is selected, the rated data of both voltage levels is stamped on the rating plate.
SIMOTICS XP 1MB.55 motors are manufactured with an insulation system having a thermal class of 155 °C. Utilization at rated operation corresponds to thermal
Class 130 °C.

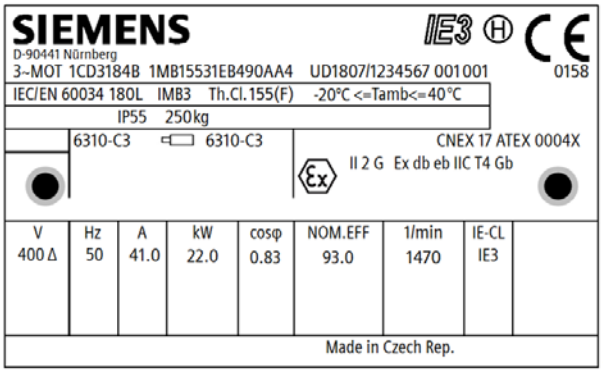
Operation with a converter
The general use of high-quality insulation systems enables converter operation. When operated with a converter, the motor with explosion protection must be fitted with PTC thermistors. These are installed in the stator winding and, in combination with a certified trip unit (EU type examination certificate), they perform sole motor protection in the case of converter operation. Motor circuit breakers are not required.
The permissible speed and torque range is stamped on an additional rating plate.
These rated operating points stamped on the additional plate apply for both constant torque drives and fluid-flow machines with a square-law load torque. For constant torque drives, the resulting thermal motor torques in the positioning range must be taken into account.

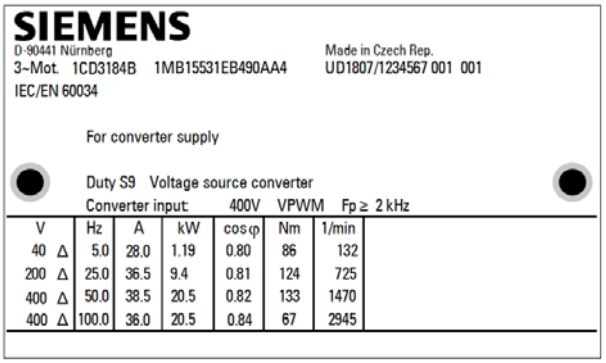
Voltage tolerances
The motors are suitable for operation with voltage and frequency tolerances according to EN 60034-1.
In addition, tests are to be performed to ensure that the permissible temperature limits for the outer surface of the explosion-proof enclosure according to EN 60079-1 are not exceeded during continuous operations at the voltage limits (± 10%).
The 1MB.55 motors in this catalog are certified for T4. The maximum permitted surface temperature is 135 °C.

Example of a motor ID:
Motor rating plate with line operating data and additional plate with data when operated with a converter:

Flameproof enclosure Ex db eb (Zone 1) for operation by converter:

1MB1553-1EB29-0AB4-Z
M4A+B43
For motors with type of protection Ex d, an assignment to particular converter types is not necessary.





To ensure unambiguous order handling for the voltage, each approved voltage code/voltage order code is assigned only "one" voltage/frequency.

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 at the 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**

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}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	L_{pfA}, 50 Hz 2)	L_{WA}, 50 Hz 2)	Cast-iron series 1MB1553/1MB5553– *IE3 version in accordance with IEC 60034-30-1* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
*** Cooling: Self-ventilated (IC411) * Efficiency: IE3 High Efficiency * Insulation: Thermal class 155 (temperature class F), utilization in accordance with thermal class 130 (temperature class B)**																	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz																	
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 M**	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(s)
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 add. charge	**2**	**7**		–
50 Hz	500 VΔ			Without add. charge	**4**	**0**		–
Further voltages				For price information, code numbers, order codes and descriptions, see from page 9	**9**	**0**		. . .
Types of construction				Version				Order code(s)
Without flange	IM B3 1)			**Standard**			**A**	–
With flange	IM B5 1)			With add. charge			**F**	–
With standard flange	IM B14 1)			With add. charge			**K**	–
Further types of construction				For price information, code letters and descriptions, see from page 10			■	. . .
Motor protection				Version				Order code(s)
Without				**Standard**			**A**	–
PTC thermistor with 3 temperature sensors				With add. charge			**B**	–
Further motor protection				For price information, code letters, and descriptions, see from page 11			■	. . .
Terminal box position				Version				Order code(s)
Terminal box at top				**Standard**			**4**	–
Further terminal box positions				For price information, code numbers, and descriptions, see from page 12				
Special versions								Order code(s)
Options				For price information, order codes, and descriptions, see from page 13	**1MB.553-. . . .**	■-■■■■	**-Z**	. . .+. . .+. . .+. . .

1) Types of construction 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. As standard, the basic type of construction IM B3, IM B5 or IM B14 is stamped on the rating plate.
2) Noise values for line operation under load, tolerance +3dB(A)

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}, 50 Hz	I_{LR}/I_{rated}, 50 Hz	T_B/T_{rated}, 50 Hz	L_{pfA}, 50 Hz 2)	L_{WA}, 50 Hz 2)	Cast-iron series 1MB1553/1MB5553– *IE3 version in accordance with IEC 60034-30-1* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
*** Cooling: Self-ventilated (IC411) * Efficiency: IE3 High Efficiency * Insulation: Thermal class 155 (temperature class F), utilization in accordance with thermal class 130 (temperature class B)**																	
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz																	
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	57	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	57	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	58	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	58	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	60	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	60	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	62	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	62	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	60	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	65	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	65	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	67	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	67	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	68	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	68	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	67	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 M**	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(s)
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 add. charge	2	7		–
50 Hz	500 VΔ			Without add. charge	4	0		–
Further voltages				For price information, code numbers, order codes and descriptions, see from page 9	9	0		. . .
Types of construction				Version				Order code(s)
Without flange	IM B3 1)			**Standard**			A	–
With flange	IM B5 1)			With add. charge			F	–
With standard flange	IM B14 1)			With add. charge			K	–
Further types of construction				For price information, code letters and descriptions, see from page 10			■	. . .
Motor protection				Version				Order code(s)
Without				**Standard**			A	–
PTC thermistor with 3 temperature sensors				With add. charge			B	–
Further motor protection				For price information, code letters, and descriptions, see from page 11			■	. . .
Terminal box position				Version				Order code(s)
Terminal box at top				**Standard**			4	–
Further terminal box positions				For price information, code numbers, and descriptions, see from page 12				
Special versions								Order code(s)
Options				For price information, order codes, and descriptions, see from page 13	**1MB.553-. . . .**	■-■■■■	-Z	. . .+. . .+. . .+. . .

1) Types of construction 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. As standard, the basic type of construction IM B3, IM B5 or IM B14 is stamped on the rating plate.
2) Noise values for line operation under load, tolerance +3dB(A)

Selection and ordering data

Operating values at rated power

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	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	L_{pfA}, 50 Hz 2)	L_{WA}, 50 Hz 2)	Cast-iron series 1MB1553/1MB5553– *IE3 version in accordance with IEC 60034-30-1* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²
* Cooling: Self-ventilated (IC411) * Efficiency: IE3 High Efficiency * Insulation: Thermal class 155 (temperature class F), utilization in accordance with thermal class 130 (temperature class B)																	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz																	
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 M	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	0,0,37
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 M	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
360	360	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(s)
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 add. charge	2	7	–
50 Hz	500 VΔ			Without add. charge	4	0	–
Further voltages				For price information, code numbers, order codes and descriptions, see from page 9	9	0	. . .

Types of construction		Version			Order code(s)
Without flange	IM B3 [1]	**Standard**	A		–
With flange	IM B5 [1]	With add. charge	F		–
With standard flange	IM B14 [1]	With add. charge	K		–
Further types of construction		For price information, code letters and descriptions, see from page 10	■		. . .

Motor protection	Version			Order code(s)
Without	**Standard**	A		–
PTC thermistor with 3 temperature sensors	With add. charge	B		–
Further motor protection	For price information, code letters, and descriptions, see from page 11	■		. . .

Terminal box position	Version			Order code(s)
Terminal box at top	**Standard**	4		–
Further terminal box positions	For price information, code numbers, and descriptions, see from page 12			

Special versions				Order code(s)
Options	For price information, order codes, and descriptions, see from page 13	**1MB.553-. . . .**	■-■■■■	-Z . . .+. . .+. . .+. . .

1) Types of construction 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. As standard, the basic type of construction IM B3, IM B5 or IM B14 is stamped on the rating plate.
2) Noise values for line operation under load, tolerance +3dB(A)

Selection and ordering data

Operating values at rated power

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	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	L_{pfA}, 50 Hz 2)	L_{WA}, 50 Hz 2)	Cast-iron series 1MB1553/1MB5553– *IE3 version in accordance with IEC 60034-30-1* Article No.	$m_{IM\ B3}$	J
kW	kW	FS	rpm	Nm	%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm^2
* Cooling: Self-ventilated (IC411) * Efficiency: IE3 High Efficiency * Insulation: Thermal class 155 (temperature class F), utilization in accordance with thermal class 130 (temperature class B)																	
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz																	
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 M	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(s)
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 add. charge	2	7			–
50 Hz	500 VΔ			Without add. charge	4	0			–
Further voltages				For price information, code numbers, order codes and descriptions, see from page 9	9	0			. . .
Types of construction				Version					Order code(s)
Without flange	IM B3 1)			**Standard**			A		–
With flange	IM B5 1)			With add. charge			F		–
With standard flange	IM B14 1)			With add. charge			K		–
Further types of construction				For price information, code letters and descriptions, see from page 10			■		. . .
Motor protection				Version					Order code(s)
Without				**Standard**				A	–
PTC thermistor with 3 temperature sensors				With add. charge				B	–
Further motor protection				For price information, code letters, and descriptions, see from page 11				■	. . .
Terminal box position				Version					Order code(s)
Terminal box at top				**Standard**					4 –
Further terminal box positions				For price information, code numbers, and descriptions, see from page 12					
Special versions									Order code(s)
Options				For price information, order codes, and descriptions, see from page 13	1MB.553-				■-■■■■-Z . . .+. . .+. . .+. . .

1) Types of construction 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. As standard, the basic type of construction IM B3, IM B5 or IM B14 is stamped on the rating plate.
2) Noise values for line operation under load, tolerance +3dB(A)

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Voltages	Voltage code 12th and 13th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Optional design													
			Motor version	Motor type (cast-iron)	Framesize													
			Ex d (Zone 1) IE3 Premium Efficiency	1MB1553 1MB5553														
			Motor version	Motor type	71	80	90	100	112	132	160	180	200	225	250	280	315	355
Voltages at 50 Hz or 60 Hz																		
50 Hz 230 VΔ/400 VY 60 Hz 460 VY	22	-	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	-	-
50 Hz 400 VΔ/690 VY 60 Hz 460 VΔ	34	-	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘
50 Hz 500 VY	27	-	All		○	○	○	○	○	○	○	○	○	○	○	○	-	-
50 Hz 500 VΔ	40	-	All		-	-	-	○	○	○	○	○	○	○	○	○	○	○
50 Hz 220 VΔ/380 VY 60 Hz 440 VY	21	-	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
50 Hz 380 VΔ/660 VY 60 Hz 440 VΔ	33	-	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
50 Hz 240 VΔ / 415 VY 60 Hz 480 VY	23	-	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
50 Hz 415 VΔ 60 Hz 480 VΔ	35	-	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
50 Hz 400VY	90	M4A	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
50 Hz 400VΔ	90	M4B	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
50 Hz 230VΔ	01	-	All		○	○	○	○	○	○	○	○	○	○	○	○	-	-
50 Hz 400 VY [5]	02	-	All		○	○	○	○	○	○	○	○	○	○	○	○	-	-
50 Hz 400 VΔ [6]	04	-	All		○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz and required output at 60 Hz																		
220 VΔ/380 VY; 50-Hz-output [1]	90	M2A	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
380 VΔ/660 VY; 50-Hz-output [1]	90	M2B	All		-	-	-	√	√	√	√	√	√	√	√	√	√	√
440 VY; 50-Hz-output [1]	90	M2C	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
440 VΔ; 50-Hz-output [1]	90	M2D	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
460 VY; 50-Hz-output [1]	90	M2E	All		√	√	√	√	√	√	√	√	√	√	√	√	-	-
460 VΔ; 50-Hz-output [1]	90	M2F	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
575 VY; 50-Hz-output [1]	90	M2G	All		-	-	-	√	√	√	√	√	√	√	√	√	-	-
575 VD; 50-Hz-output [1]	90	M2H	All		-	-	-	√	√	√	√	√	√	√	√	√	√	√
Non-standard voltage and/or frequencies																		
Non-standard winding [2]	90	M1Y • and identification code	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Reduced starting current 700% without positive tolerance, 50Hz; 55°C; IE3 (observe de-rating) [3]	short code	SM_700%_ KT55	O.R.		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Reduced starting current 600% without positive tolerance; 50Hz; +55°C; IE2 (observe de-rating) [3]	short code	SM_600%_ KT55	O.R.		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Converter operation																		
Version for converter operation with operating data for voltage source converter. [4]		B43	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Version for converter operation with voltage source converter with operation data utilsation thermal class F [4]		B44	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√

◘ Standard version
○ Without additional charge
– Not possible
√ optional with additional charge

1) Rated output 60Hz according selection and ordering table of basic motor
2) 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.
3) Rated output, electrical data and delivery time on request
4) Data VSD operation see separate tables of operation data; winding monitoring and protection by PTC mandatory
In combination with single voltage e.g.: M4A
Frame size 280 and greater including insulated bearing NDE
5) Delta connection is not possible.
6) Star connection is not possible.

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Types of construction	Type of construction code 14th position of the Order No.	Motor category		Options														
		Motor version	**Motor type (cast-iron)**	**Framesize**														
				71	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**
		Ex d (Zone 1) IE2 High Efficiency IE3 Premium Efficiency	1MB1553 1MB5553	71	80	90	100	112	132	160	180	200	225	250	280	315	355
Without flange																		
IM B3	A	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘
IM B6 [3]	T	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	–
IM B7 [3]	U	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	–
IM B8	V	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	–	–	–
IM V6 [1] [3]	D	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	–
IM V5 with protective cover [1] [3]	C +H00	All		√	√	√	√	√	√	√	√	√	√	√	√	√	–
With flange	acc. to DIN EN 50347			**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**	**FF740 A 800**
IM B5 [3]	F	All		√	√	√	√	√	√	√	√	√	√	√	√	√	–
IM V1 with protective cover [1] [2]	G +H00	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
IM V3 [1]	H	All		√	√	√	√	√	√	√	√	√	√	√	√	√	–
IM B35	J	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
IM V15 [1] [2]	W	All		√	√	√	√	√	√	√	√	√	√	√	√	√	–
With standard flange	acc. to DIN EN 50347			**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	All		√	√	√	√	√	√	√	–	–	–	–	–	–	–
IM V19 [1]	L	All		√	√	√	√	√	√	√	–	–	–	–	–	–	–
IM V18 with protective cover [1] [2]	M +H00	All		√	√	√	√	√	√	√	–	–	–	–	–	–	–
IM B34	N	All		√	√	√	√	√	√	√	–	–	–	–	–	–	–

◘ Standard version
○ Without additional charge
– Not possible
√ optional with additional charge

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 "Second shaft extension" option (order code L05) is not possible.

3) In FS 315 horizontal mounted only 315S/M possible

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Motor protection	Motor protection code 15th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Optional design													
			Motor version	Motor type (cast-iron)	Frame size													
			Ex d (Zone 1) IE3 Premium Efficiency	1MB1553 1MB5553	71	80	90	100	112	132	160	180	200	225	250	280	315	355
			Motor version	Motor type														
Motor protection (winding protection)																		
Without motor protection	**A**	-	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1]	**B**	-	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1][2]	**C**	-	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Installation of 3 PT100 resistance thermometers in stator winding [2]	**H**	Q60	All		–	–	–	√	√	√	√	√	√	√	√	√	√	√
Installation of 6 PT100 resistance thermometers in stator winding [2][3]	**J**	Q61	All		–	–	–	–	–	–	–	√	√	√	√	√	√	√
Installation of 1 PT1000 resistance thermometers in stator winding	**K**	Q35	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Installation of 2 PT1000 resistance thermometers in stator winding [2]	**L**	Q36	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Installation of 3 PT100 resistance thermometers in stator winding, 3-wire connection terminal box [2][3]	**Q**	Q63	All		–	–	–	–	–	–	√	√	√	√	√	√	√	√
Installation of 6 PT100 resistance thermometers in stator winding, 3-wire connection from terminal box [2][3]	**R**	Q64	All		–	–	–	–	–	–	–	√	√	√	√	√	√	√

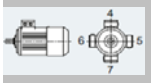
◘ Standard version
○ Without additional charge
– Not possible
√ optional with additional charge

1) In case converter driven motor, winding monitoring by PTC mandatory
2) Maximal possible terminals for monitoring and heating according terminal box concept
3) Auxiliary terminal box Ex e recommended; box Ex e: R62 or R63; Ex d: R49

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Connection box position	Connection box position code 16th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Options													
			Motor version	Motor type	Framesize													
			Ex d (Zone 1) IE3 Premium Efficiency	1MB1553 1MB5553	71	80	90	100	112	132	160	180	200	225	250	280	315	355
			Motor version	Motor type	71	80	90	100	112	132	160	180	200	225	250	280	315	355
Connection box position																		
Connection box top[1]	**4**	-	All		□	□	□	□	□	□	□	□	□	□	□	□	□	□
Connection box on RHS [1]	**5**	-	All		-	-	-	-	-	√	√	√	√	√	√	√	√	√
Connection box on LHS [1]	**6**	-	All		-	-	-	-	-	√	√	√	√	√	√	√	-	-
Connection box bottom[2]	**7**	-	All		-	-	-	√	√	√	√	-	-	-	-	-	-	-

□	Standard version
○	Without additional charge
–	Not possible
√	optional with additional charge

Standard cable entry RHS seen from shaft end (details see catalogue)

1) For types of construction with feet, casted feet are standard, if terminal box on top. Scewed-on feet are standard, if terminal box LHS/RHS.

2) Generally not possible for motors with feet.

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Special versions	MLFB or Additional identification code -Z with order code and plain text if required	Motor category		Options													
		Motor version	Motor type (cast-iron)	Frame size 71	80	90	100	112	132	160	180	200	225	250	280	315	355
		Ex d (Zone 1) IE3 Premium Efficiency	1MB1553 1MB5553														
		Motor version	Motor type	71	80	90	100	112	132	160	180	200	225	250	280	315	355
Design for Zones 1, 21, and 22 according to ATEX																	
VIK version [23]	C02	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Motor protection (bearing protection)																	
Installation of 2 PT100 resistance thermometers in basic circuit for rolling-contact bearings [1]	Q72	All		–	–	–	–	–	–	√	√	√	√	√	√	√	√
Installation of 2 PT100 resistance thermometers in 3-wire circuit for rolling-contact bearings [1]	Q78	All		–	–	–	–	–	–	√	√	√	√	√	√	√	√
Installation of 2 PT100 double resistance thermometers in 3-wire circuit for rolling contact bearings [1]	Q79	All		–	–	–	–	–	–	–	–	–	–	√	√	√	√
Motor connection and connection box for explosion-proof versions																	
External grounding	Standard	All		◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘
2nd External grounding	H70	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rotation of the connection box through 90°, entry from DE	R10	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rotation of the connection box through 90°, entry from NDE	R11	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rotation of the connection box through 180°	R12	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Cable gland, max. configuration, Ex - certified [22]	R18	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Next larger connection box	R50	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Enlarged connection system for main terminal box [22]	R54	All		√	√	√	√	√	√	√	√	√	–	–	–	–	–
Auxiliary connection box cast-iron (small) for monitoring	R62	All		–	–	–	√	√	√	√	√	√	√	√	√	√	√
Cast iron auxiliary terminal box (large) - Ex e	R63	All		–	–	–	–	–	–	–	–	–	–	√	√	√	√
2 small cast iron terminal boxes - Ex eb	R67	All		–	–	–	–	–	√	√	√	√	√	√	√	√	√
cable entry threads different to standard	Y61 • and customer specifications	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Windings and insulation for explosion-proof versions																	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	N05	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	N06	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	N07	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	N08	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Increased air humidity/temperature with 30 to 60 g water per m³ of air	N30	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Increased air humidity/temperature with 60 to 100 g water per m³ of air [27]	N31	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output … KT… °C or AH … m above sea level	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Coolant temperature –40°C	D03	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Colors and paint finish																	
Standard finish in RAL 7030 stone grey	Standard	All	Standard version for 1MB15	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘	◘
Unpainted (only cast-iron parts primed)	S00	All		○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	S01	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Special finish	S02	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Sea-air proof special finish	S03	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Off-shore special finish	S04	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Internal coating (inner motors parts)	S05	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Customised coating system NORSOK M-501 system 1B (S14)	on request	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Customised coating system NORSOK M-501 system 2B (S15)	on request	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Customised layer thickness [3]	on request	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Top Layer Polyurethane [18]	S06	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalogue D 81.1 · Part 1)	Y53 • and standard finish RAL ….	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" (see Catalogue D 81.1 · Part 1)	Y56 • and special finish RAL ….	All		√	√	√	√	√	√	√	√	√	√	√	√	√	√

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb

Selection and ordering data

Special versions	MLFB or Additional identification code -Z with order code and plain text if required	Motor category		Options													
		Motor version	Motor type (cast-iron)	Frame size													
		Ex d (Zone 1) IE3 Premium Efficiency	1MB1553 1MB5553	71	80	90	100	112	132	160	180	200	225	250	280	315	355
		Motor version	Motor type	71	80	90	100	112	132	160	180	200	225	250	280	315	355
Mechanical design and degrees of protection																	
Protective Cover [4]	H00	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rust-resistant screws (externally)	H07	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Outer screws, bolts and not painted materials in stainless steel (V4A) [5]	H06	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IP65 degree of protection [26]	H20	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IP56 degree of protection	H22	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar Not possible for type of construction IM V3	H23	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Designs in accordance with standards and specifications for explosion-proof versions																	
IECEx-certificate	D37	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Design IIC with marking IIB	B31	All	All	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Bearings and lubrication																	
Regreasing device with lubrication nipple M10x1 according to DIN 71412-A	L19	All	All	–	–	–	–	–	–	√	√	√	√	√	O	O	O
Located bearing DE	L20	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Located bearing NDE	L21	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Bearing design for increased cantilever forces [24]	L22	All	All	–	–	–	–	–	–	√	√	√	√	√	√	√	√
Regreasing device	L23	All	All	–	–	–	–	–	–	√	√	√	√	√	□	□	□
Measuring nipple for SPM shock pulse measurement for bearing inspection	Q01	All	All	–	–	–	√	√	√	√	√	√	√	√	√	√	√
Insulated bearing on NDE	L51	All	All	–	–	–	–	–	–	√	√	√	√	√	√	√	√
Balance and vibration quantity																	
Vibration quantity level A	Standard	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	L00	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Half-key balancing	Standard	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Shaft and rotor																	
Shaft extension with standard dimensions, without feather keyway	L04	All	All	–	–	–	√	√	√	√	√	√	√	√	√	√	√
Second standard shaft extension	L05	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L07	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Heating and ventilation for explosion-proof versions																	
Metal fan cover	Standard	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Metal external fan [11]	F76	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Anti-condensation heating for 230 V [1][12]	Q02	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Anti-condensation heating for 115 V [1][12]	Q03	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Anti-condensation heating for 220 V [1][12]	Q04	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rating plate and extra rating plates																	
Second rating plate, loose	M10	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rating plate, stainless steel	M11	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Extra rating plate with identification codes	Y82 • and identification code	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Packaging, safety notes, documentation and test certificates for explosion-proof versions																	
Printed German/English Operating Instructions enclosed [13]	Standard	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Acceptance test certificate 3.1 in accordance with EN 10204 [14]	B02	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Printed German/English Operating Instructions enclosed	B04	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Type test with heat run for vertical motors, without acceptance [15]	B80	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Type test with heat run for vertical motors, with acceptance [16]	B81	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Type test with heat run for horizontal motors, without acceptance [15]	B82	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Type test with heat run for horizontal motors, with acceptance [16]	B83	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Routine Test witnessed	B65	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
noise test no load, including noise analyses, without acceptance [15]	B71	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
noise test no load, including noise analyses, with acceptance [16]	B72	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Wire-lattice pallet	B99	All	All	O	O	O	O	O	O	O	-	-	–	–	–	–	
Connected in star for dispatch	M01	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Connected in delta for dispatch	M02	All	All	√	√	√	√	√	√	√	√	√	□	□	□	□	□
Extension of liability of defects of 12 to 24 months	Q80	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Extension of liability of defects of 24 to 36 months	Q82	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Documentation package: standard [17]	B90	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Documentation package: advanced [17]	B91	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Documentation package, project [17]	B92	All	All	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Selection and ordering data

- ◘ Standard version
- ○ Without additional charge
- – Not possible
- √ optional with additional charge

1) Maximal possible number of terminals for auxiliaries see terminal box concept
3) In combination with S03, S04, NORSOK 1B und NORSOK 2B
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 device and selected option L19, L23, Q01 in stainless steel (V4A)
6) Included in B32.
8) 4 screws with locking nut in motor feet for adjusting feet mounted motors
11) Fan material: Aluminium (frame size 180 - 355: Steel); If painting system layer thickness 90µm or more metal fan is painted
12) Standard connection in main terminal box
13) The operating instructions are available in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300
14) The delivery time for the factory test certificate may differ from the delivery time for the motor.
15) About 20 days longer delivery time
16) About 25 longer delivery time respective agreed acceptance test date
17) Content of documentation according table in catalogue D81.1
18) Not in combination with order code S00, S01 and S02. Other colours Y53 and Y56 on request.
23) In case of harsh environmental conditions painting system S03 or better recommended
24) Only possilbe in combination with re-greasing device; Option L19 or L23
25) Cable glands (R18) in Ex e design
26) FS315 only in combination with R50; FS250+FS280 not in combination with R50
27) painting quality C2 or better (e.g.Option S02, S03, S04)

Overview

Typical voltage stress of motors for converter operation

General information

All the data listed in the catalog 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. 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:

- Ûphase-phase: ≤ 1500 V (3000 V peak-peak values (Vpk/pk))
- Ûphase-ground: ≤ 1100 V (2200 V peak-peak values (Vpk/pk))

The following generally applies to Siemens converters (SINAMICS):

- U_{line}: = 500 V ± 10 % (BLM = Basic Line Module; DFE = Direct Front End)
- U_{line}: ≤ 460 V ± 10 % (ALM = Active Line Module; AFE = Active Front End); Udc <720 V
- U_{line}: = 690 V ± 10 % (only permissible with SINAMICS G180, that has a reinforced du/dt filter (standard option G180: L10).

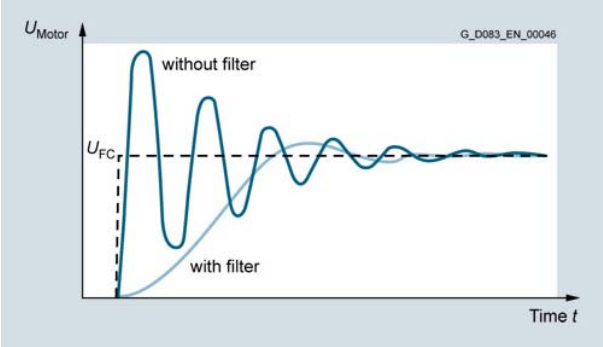
Engineering information for converter operation

Permissible voltage stress

More stress is placed on the insulation of the motor winding with converter operation than with line operation. The voltage stress also depends on the type of inverter used.

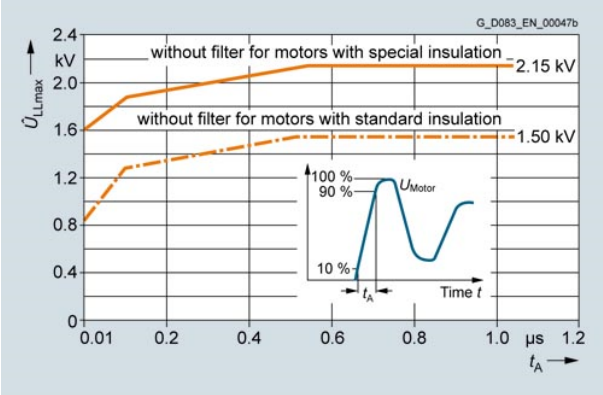
Voltage stress on a converter with pulse width modulation (PWM)

The PWM converter subjects the motor windings to wear and tear mainly by quickly applying voltage pulses. Each switching process of the converter releases a voltage wave onto the motor supply cable that can result in excessive motor voltages due to reflection (see diagram).



Typical characteristic of the converter voltage UFC and motor voltage U_{Motor} on the PWM converter (converter with and without output filter)

The maximum voltage is influenced by the rise time of the pulses and by the length of cable used between motor and converter. A dv/dt output filter at the converter can reduce the maximum motor voltage to uncritical values.



Permissible voltage stress for motors with the standard insulation system ($\hat{U}_{LLmax}$ = maximum value of the phase-phase voltage). Operating 1MB155/1MB555 motors with Siemens G180, G150, G130, G120 PM230, G120 PM240x, S150 and S120 converters is possible in the standard version with a supply voltage up to 500 V with a typical cable length up to 150 m. For all other converter types or converters from other manufacturers operation is possible in strict compliance with the specifications for use in hazardous zones.

Motor operation on a converter

In specific applications, e.g. with very long motor cables, if a sine-wave filter is being used, or for converter types that cannot reach the full rated voltage at rated frequency for design reasons, there is a voltage drop at the motor terminals at rated voltage. To prevent the motors from overheating inadmissibly under this operating condition, a reduced motor power may occur at the maximum admissible current. For example, when using sine-wave filters and the consequential reduction of the motor voltage by 10 to 15 %, the admissible power ratings for converter operation must be similarly reduced by 10 to 15 %. Operation below the rated frequency is remain possible without reducing the motor torque.

Overview

Individually checking a variable speed drive (VSD) Systems (IC411 self-ventilated motors) with configuration characteristics for converter operation - 1MB155/1MB555 motors

Limits for example control ranges are listed in the power tables on the following pages. For individual drive checks, the following configuration characteristics apply to frame sizes 71 to 355.

For driven machine power or torque less than or equal to rated data, operation up to f_{max} in accordance with the power tables is possible. This applies to configurations with any load torques and control ranges.

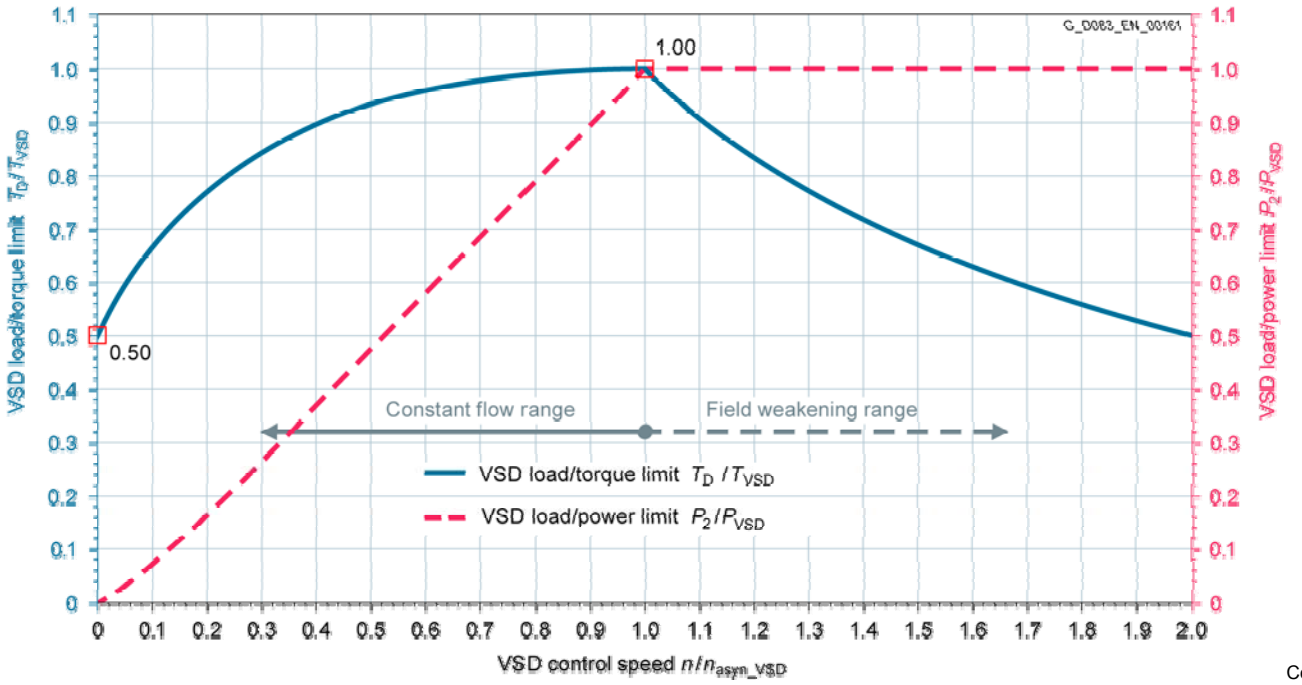
The maximum admissible speed in field weakening can be calculated with fmax · 120 divided by the number of motor poles.

Checking the feasibility of the required operating point

To do this, (derived from reference point A)

- divide the required load power P2 by the VSD power PVSD
- divide the required control speed n by the VSD asynchronous speed n_{asyn_VSD}
- divide the required load torque MD by the VSD torque M_{VSD}.

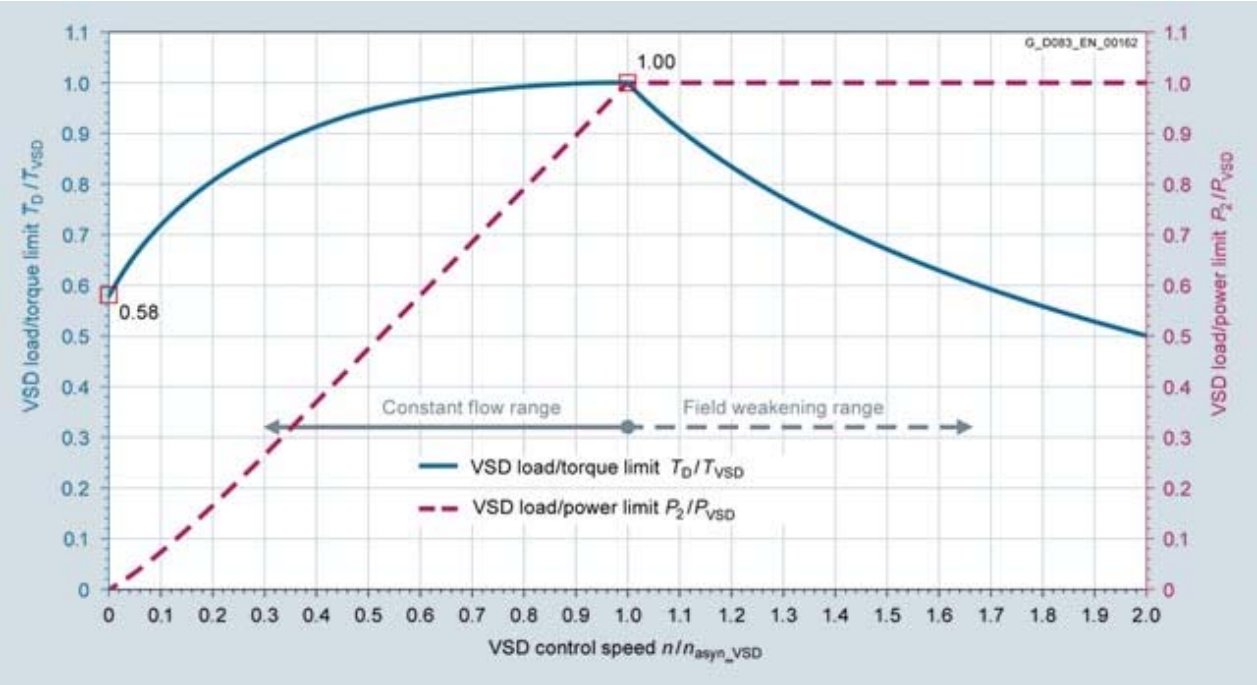
Based on these calculated values, check in the subsequent diagrams whether the required operating point lies below the VSD load-torque limit MD/MVSD and the VSD load-power limit P2/PVSD.



Conf

Configuration characteristics for frame sizes 71 to 200

Overview



Configuration characteristics for frame sizes 225 to 355

~~A_{MP}: Reference point for general dimensioning~~
~~A_P: typical load point for applications with square-law load torque, e.g. fans and pumps~~
~~B_M / C_M: typical load point for applications with constant load torque, e.g. hoisting gear, conveyor belts etc.~~
~~D_{MP}: typical load point for applications with increased speed /frequency (point varies depending on the motor type, see the following tables)~~

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Operation on PWM converter

Overview

SIMOTICS XP 1MB.553 motors – output tables for converter operation – Option B43 with utilisation 130°C (B)

2-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0,37	**1MB1553-0CA2**	0,77	0,72	215	0,89	1,07	1370	0,92	0,34	0,73	1,15	2860	100	0,71	0,34	0,57	5720
0,55	**1MB1553-0CA3**	1,07	1,07	215	1,25	1,59	1370	1,29	0,51	0,73	1,71	2860	100	1,03	0,51	0,85	5720
0,75	**1MB1553-0DA2**	1,05	1,47	215	1,39	2,17	1370	1,47	0,70	0,85	2,33	2860	100	1,36	0,70	1,17	5720
1,1	**1MB1553-0DA3**	1,58	2,15	230	2,00	3,15	1400	2,15	1,02	0,84	3,38	2895	100	1,93	1,02	1,68	5785
1,5	**1MB1553-0EA0**	2,10	2,94	245	2,70	4,27	1420	2,80	1,39	0,84	4,56	2915	100	2,55	1,39	2,28	5835
2,2	**1MB1553-0EA4**	2,85	4,31	245	3,75	6,3	1420	3,95	2,05	0,87	6,7	2915	100	3,65	2,05	3,36	5835
3	**1MB1553-1AA4**	3,75	5,9	250	5,00	8,5	1430	5,3	2,80	0,87	9,1	2925	100	5,0	2,80	4,57	5850
4	**1MB1553-1BA2**	4,80	7,8	270	6,5	11,2	1455	6,9	3,70	0,89	12,0	2955	100	6,6	3,70	6,0	5905
5,5	**1MB1553-1CA0**	6,8	10,8	270	8,8	15,5	1455	9,3	5,1	0,89	16,5	2955	90	8,7	5,1	9,2	5315
7,5	**1MB1553-1CA1**	8,4	14,7	270	11,5	21,1	1455	12,2	7,0	0,92	22,5	2955	90	11,9	7,0	12,6	5315
11	**1MB1553-1DA2**	13,4	21,6	275	17,7	30,9	1460	18,7	10,2	0,86	33,0	2960	80	17,9	10,2	20,6	4735
15	**1MB1553-1DA3**	18,4	29,4	275	24,0	42,0	1465	25,5	13,9	0,86	44,9	2965	80	24,0	13,9	28,0	4740
18,5	**1MB1553-1DA4**	21,0	36,3	275	28,5	51,9	1460	30,0	17,2	0,89	55,4	2960	80	29,0	17,2	34,7	4735
22	**1MB1553-1EA2**	25,0	43,2	270	34,0	61,8	1455	36,0	20,5	0,89	66,0	2955	76	35,0	20,5	43,6	4490
30	**1MB1553-2AA4**	35,5	58,9	275	47,0	84,2	1460	50,0	28,0	0,86	89,9	2960	75	48,5	28,0	60,3	4435
37	**1MB1553-2AA5**	42,0	72,6	275	57	104	1460	60	34,5	0,88	111	2960	75	59	34,5	74,2	4435
45	**1MB1553-2BA2**	53	95,0	275	69	127	1465	72	42,0	0,89	135	2965	75	71	42,0	90,2	4445
55	**1MB1553-2CA2**	66	116	284	84	154	1480	88	51	0,89	164	2975	65	87	51	126	3870
75	**1MB1553-2DA0**	89	158	284	114	211	1480	120	70	0,89	223	2975	60	119	70	187	3570
90	**1MB1553-2DA2**	104	190	284	134	253	1480	142	83	0,9	268	2975	60	139	83	222	3570
110	**1MB5553-3AA0**	124	232	288	161	308	1484	171	102	0,91	327	2984	60	169	102	272	3580
132	**1MB5553-3AA2**	148	279	288	193	370	1486	205	122	0,91	392	2984	60	200	122	325	3582
160	**1MB5553-3AA4**	178	338	288	235	448	1484	245	148	0,91	475	2982	60	245	148	395	3580
200	**1MB5553-3AA5**	220	422	286	290	561	1482	305	185	0,92	594	2980	60	300	185	494	3575
250	**1MB5553-3AA6**	280	528	288	365	700	1484	385	230	0,91	742	2984	60	380	230	614	3580
315	**1MB5553-3BA2**	360	665	291	465	881	1488	490	290	0,9	934	2988	60	485	290	773	3584
355	**1MB5553-3BA3**	385	749	284	510	996	1480	540	330	0,92	1056	2980	60	540	330	882	3575
400	**1MB5553-3BA4**	455	844	291	600	1119	1488	630	370	0,89	1186	2988	60	620	370	986	3584
460	**1MB5553-3BA5**	540	971	293	690	1286	1491	730	425	0,89	1362	2991	60	710	425	1131	3588

4-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0,25	**1MB1553-0CB2**	0,57	0,97	90	0,64	1,47	660	0,66	0,23	0,69	1,59	1405	100	0,49	0,23	0,78	2805
0,37	**1MB1553-0CB3**	0,81	1,44	100	0,92	2,16	670	0,95	0,34	0,67	2,32	1415	100	0,73	0,34	1,15	2835
0,55	**1MB1553-0DB2**	0,98	2,15	115	1,16	3,16	700	1,21	0,51	0,76	3,38	1445	100	0,99	0,51	1,69	2890
0,75	**1MB1553-0DB3**	1,35	2,94	120	1,61	4,28	705	1,67	0,70	0,73	4,58	1455	100	1,40	0,70	2,30	2905
1,1	**1MB1553-0EB0**	1,82	4,30	115	2,20	6,3	700	2,30	1,02	0,76	6,8	1445	100	1,96	1,02	3,37	2890
1,5	**1MB1553-0EB4**	2,35	5,9	115	2,90	8,6	700	3,00	1,39	0,78	9,2	1450	100	2,60	1,39	4,58	2900
2,2	**1MB1553-1AB4**	3,05	8,6	130	3,95	12,4	720	4,15	2,05	0,82	13,3	1470	100	3,85	2,05	6,7	2935
3	**1MB1553-1AB5**	4,30	11,8	125	5,4	17,0	715	5,6	2,80	0,81	18,2	1465	100	5,0	2,80	9,1	2925
4	**1MB1553-1BB2**	5,5	15,7	125	7,1	22,7	715	7,5	3,70	0,81	24,3	1465	100	6,9	3,70	12,1	2925
5,5	**1MB1553-1CB0**	7,4	21,6	132	9,6	31,0	725	10,2	5,1	0,81	33,1	1470	100	9,4	5,1	16,5	2945
7,5	**1MB1553-1CB2**	9,6	29,4	130	12,7	42,4	720	13,4	7,0	0,83	45,3	1470	100	12,6	7,0	22,8	2935
11	**1MB1553-1DB2**	14,4	43,2	134	18,5	61,8	730	19,5	10,2	0,83	66,0	1475	100	17,8	10,2	33,0	2955
15	**1MB1553-1DB4**	20,0	58,9	134	25,5	84,3	730	27,0	13,9	0,81	90,0	1475	100	24,5	13,9	44,9	2955
18,5	**1MB1553-1EB2**	24,5	72,6	132	31,5	104	725	33,0	17,2	0,81	111	1470	100	30,5	17,2	55,8	2945
22	**1MB1553-1EB4**	28,0	86,3	132	36,5	124	725	38,5	20,5	0,82	132	1470	100	36,0	20,5	66,5	2945
30	**1MB1553-2AB5**	37,0	118	132	49,0	169	725	52	28,0	0,83	181	1470	100	49,0	28,0	90,8	2945
37	**1MB1553-2BB0**	46,5	156	136	59	209	730	62	34,5	0,85	222	1480	87	59	34,5	128	2575
45	**1MB1553-2BB2**	57	190	136	71	254	730	75	42,0	0,85	270	1480	87	72	42,0	156	2575
55	**1MB1553-2CB2**	68	232	138	86	310	734	90	51	0,86	329	1484	80	87	51	205	2375
75	**1MB1553-2DB0**	93	317	140	118	422	736	124	70	0,86	447	1486	75	120	70	300	2230
90	**1MB1553-2DB2**	111	380	140	140	506	736	147	83	0,86	536	1486	75	140	83	356	2230
110	**1MB5553-3AB0**	135	464	143	173	617	741	183	102	0,85	654	1491	65	179	102	503	1938
132	**1MB5553-3AB2**	159	557	143	205	740	741	215	122	0,86	784	1491	65	210	122	601	1938
160	**1MB5553-3AB4**	198	675	143	250	897	741	265	148	0,85	951	1491	65	260	148	729	1938
200	**1MB5553-3AB5**	245	844	143	310	1121	741	325	185	0,86	1188	1491	65	320	185	912	1938
250	**1MB5553-3AB6**	300	1055	143	385	1402	741	405	230	0,87	1485	1491	65	390	230	1133	1938
315	**1MB5553-3BB2**	395	1330	143	490	1766	741	520	290	0,85	1871	1491	60	500	290	1548	1788
355	**1MB5553-3BB3**	425	1499	143	540	1990	741	570	330	0,88	2109	1491	60	560	330	1762	1788
400	**1MB5553-3BB4**	485	1688	144	610	2241	742	650	370	0,87	2375	1492	60	630	370	1974	1790
460	**1MB5553-3BB5**	580	1942	145	730	2576	743	760	425	0,84	2729	1493	60	740	425	2266	1791

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Operation on PWM converter

Overview

6-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0,18	**1MB1553-0CC2**	0,49	1,04	40	0,55	1,66	400	0,57	0,17	0,66	1,80	895	95	0,44	0,17	0,96	1695
0,25	**1MB1553-0CC3**	0,65	1,45	40	0,72	2,31	400	0,74	0,23	0,66	2,50	895	100	0,53	0,23	1,23	1785
0,37	**1MB1553-0DC2**	0,92	2,17	65	1,03	3,24	450	1,06	0,34	0,63	3,48	945	100	0,80	0,34	1,72	1890
0,55	**1MB1553-0DC3**	1,32	3,22	65	1,46	4,84	445	1,49	0,51	0,64	5,2	940	100	1,07	0,51	2,59	1880
0,75	**1MB1553-0EC0**	1,61	4,39	70	1,83	6,5	450	1,89	0,70	0,67	7,0	950	100	1,46	0,70	3,52	1900
1,1	**1MB1553-1AC3**	2,10	6,5	84	2,50	9,3	480	2,65	1,02	0,7	10,0	975	100	2,25	1,02	4,99	1955
1,5	**1MB1553-1BC1**	2,60	8,8	84	3,15	12,7	480	3,30	1,39	0,74	13,6	975	100	2,80	1,39	6,8	1955
2,2	**1MB1553-1CC1**	3,60	12,9	88	4,50	18,6	482	4,70	2,05	0,75	19,9	982	90	4,20	2,05	11,1	1765
3	**1MB1553-1CC0**	4,90	17,6	88	6,0	25,4	482	6,3	2,80	0,74	27,1	982	90	5,6	2,80	15,1	1765
4	**1MB1553-1CC2**	6,4	23,5	84	7,9	34,0	480	8,3	3,70	0,75	36,3	975	90	7,4	3,70	20,1	1760
5,5	**1MB1553-1CC3**	8,7	32,3	84	10,8	46,7	480	11,3	5,1	0,75	49,9	975	90	10,0	5,1	27,7	1760
7,5	**1MB1553-1DC2**	11,1	44,1	88	14,3	63,4	482	15,1	7,0	0,75	67,7	982	95	13,9	7,0	35,8	1865
11	**1MB1553-1DC4**	15,9	64,7	84	20,5	93,4	480	21,5	10,2	0,76	99,9	975	99	19,7	10,2	50,4	1935
15	**1MB1553-1EC4**	20,5	88,2	84	26,5	127	480	28,0	13,9	0,79	136	975	100	25,5	13,9	67,9	1955
18,5	**1MB1553-2AC4**	25,5	109	86	33,0	157	480	34,5	17,2	0,78	167	980	85	32,5	17,2	98,6	1665
22	**1MB1553-2AC5**	29,5	129	86	39,0	186	480	41,0	20,5	0,78	199	980	85	38,5	20,5	118	1665
30	**1MB1553-2BC2**	40,0	190	88	50	255	484	53	28,0	0,82	270	984	87	50,0	28,0	156	1710
37	**1MB1553-2CC2**	47,0	234	90	60	314	486	63	34,5	0,85	333	986	80	61	34,5	209	1580
45	**1MB1553-2DC0**	58	285	92	73	380	490	76	42,0	0,84	403	988	75	74	42,0	270	1484
55	**1MB1553-2DC2**	69	348	92	88	465	490	93	51	0,85	493	988	75	90	51	328	1484
75	**1MB5553-3AC0**	103	475	95	128	632	493	134	70	0,79	669	993	65	130	70	518	1290
90	**1MB5553-3AC2**	118	570	95	149	758	493	156	83	0,82	803	993	65	151	83	614	1290
110	**1MB5553-3AC4**	143	697	95	179	926	493	188	102	0,82	982	993	65	183	102	755	1290
132	**1MB5553-3AC5**	171	836	95	215	1111	493	225	122	0,82	1178	993	65	220	122	903	1290
160	**1MB5553-3AC6**	210	1013	95	265	1347	493	275	148	0,81	1428	993	65	265	148	1095	1290
200	**1MB5553-3AC7**	270	1267	95	335	1684	493	350	186	0,8	1785	993	65	340	186	1376	1290
250	**1MB5553-3BC2**	315	1583	95	400	2103	494	420	230	0,84	2229	994	60	410	230	1842	1192
315	**1MB5553-3BC5**	385	1995	95	490	2650	494	520	290	0,86	2808	994	60	500	290	2323	1192
355	**1MB5553-3BC6**	465	2248	96	570	2984	495	600	330	0,83	3161	994	60	580	330	2641	1193
380	**1MB5553-3BC7**	490	2406	96	610	3194	495	640	350	0,83	3384	994	60	620	350	2801	1193

8-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0.09	**1MB1553-0CD2**	0,38	0,69	25	0,43	1,13	290	0,45	0,08	0,62	1,23	655	78	0,35	0,08	0,75	1025
0.12	**1MB1553-0CD3**	0,46	0,93	25	0,51	1,48	300	0,53	0,11	0,61	1,61	665	83	0,40	0,11	0,95	1105
0.18	**1MB1553-0DD2**	0,74	1,41	55	0,82	2,08	345	0,84	0,17	0,48	2,23	720	100	0,62	0,17	1,13	1435
0.25	**1MB1553-0DD3**	0,81	1,94	40	0,93	2,98	325	0,95	0,23	0,54	3,21	695	87	0,75	0,23	1,82	1210
0.37	**1MB1553-0ED0**	1,13	2,88	45	1,30	4,35	330	1,35	0,34	0,53	4,68	705	94	1,06	0,34	2,46	1320
0.55	**1MB1553-0ED4**	1,79	4,30	55	1,98	6,4	345	2,05	0,51	0,51	6,8	720	100	1,48	0,51	3,39	1435
0.75	**1MB1553-1AD4**	1,54	5,8	45	1,88	8,8	330	1,96	0,70	0,68	9,5	705	90	1,70	0,70	5,3	1265
1.1	**1MB1553-1AD5**	2,15	8,6	50	2,65	12,9	335	2,75	1,02	0,69	13,8	710	95	2,35	1,02	7,2	1345
1.5	**1MB1553-1BD2**	2,95	11,7	58	3,55	17,2	350	3,70	1,39	0,68	18,4	720	100	3,10	1,39	9,2	1445
2.2	**1MB1553-1CD0**	3,75	17,2	58	4,80	25,3	350	5,0	2,05	0,72	27,0	720	100	4,50	2,05	13,6	1445
3	**1MB1553-1CD2**	5,1	23,5	60	6,3	34,2	355	6,6	2,80	0,72	36,6	725	100	5,9	2,80	18,4	1455
4	**1MB1553-1DD2**	6,3	31,3	62	8,2	45,5	356	8,7	3,70	0,74	48,6	730	99	8,0	3,70	24,5	1445
5.5	**1MB1553-1DD3**	8,9	43,1	64	11,2	62,2	360	11,8	5,1	0,73	66,5	734	100	10,5	5,1	33,2	1465
7.5	**1MB1553-1DD4**	12,4	58,8	66	15,2	84,6	362	15,9	7,0	0,73	90,3	736	100	14,0	7,0	45,4	1470
11	**1MB1553-1ED4**	16,8	86,1	60	21,5	126	355	23,0	10,2	0,74	134	725	100	21,0	10,2	67,0	1455
15	**1MB1553-2AD5**	24,5	118	64	30,0	170	358	31,5	13,9	0,72	182	732	100	27,5	13,9	90,7	1465
18.5	**1MB1553-2BD0**	30,5	156	65	35,0	210	362	36,5	17,2	0,76	223	736	87	31,0	17,2	128	1280
22	**1MB1553-2BD2**	34,5	186	65	41,0	250	362	42,5	20,5	0,76	265	736	87	38,0	20,5	153	1280
30	**1MB1553-2CD2**	43,5	254	65	53	340	362	56	28,0	0,79	361	736	80	52	28,0	227	1180
37	**1MB1553-2DD0**	52	313	68	65	417	366	68	34,5	0,79	443	741	75	65	34,5	297	1112
45	**1MB1553-2DD2**	64	380	68	79	508	366	83	42,0	0,79	538	741	75	78	42,0	361	1112
55	**1MB5553-3AD0**	76	464	70	95	618	369	99	51	0,8	655	744	65	96	51	504	967
75	**1MB5553-3AD2**	106	633	70	129	844	368	135	70	0,8	895	743	65	130	70	692	965
90	**1MB5553-3AD4**	123	760	70	152	1013	368	159	83	0,81	1074	743	65	152	83	821	965
110	**1MB5553-3AD5**	148	929	70	183	1238	368	192	102	0,81	1312	743	65	185	102	1009	965
132	**1MB5553-3AD6**	179	1115	70	220	1486	368	230	122	0,81	1575	743	65	225	122	1207	965
160	**1MB5553-3AD7**	220	1351	69	275	1803	367	290	148	0,78	1911	742	65	280	148	1466	964
200	**1MB5553-3BD0**	255	1688	72	320	2243	371	335	185	0,84	2376	745	60	330	185	1975	894
250	**1MB5553-3BD1**	345	2111	72	425	2803	371	445	230	0,79	2971	745	60	435	230	2456	894
315	**1MB5553-3BD2**	445	2659	72	540	3532	371	570	290	0,79	3743	745	60	540	290	3096	894

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SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Operation on PWM converter

Overview

SIMOTICS XP 1MB.553 motors – output tables for converter operation - Option B44 with utilisation 155°C (F)

2-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0.37	**1MB1553-0CA2**	0,79	0,8	205	0,93	1,19	1355	0,97	0,38	0,77	1,28	2845	100	0,78	0,38	0,64	5690
0.55	**1MB1553-0CA3**	1,11	1,19	205	1,31	1,77	1355	1,36	0,57	0,77	1,90	2845	100	1,13	0,57	0,96	5690
0.75	**1MB1553-0DA2**	1,12	1,62	205	1,51	2,41	1355	1,60	0,77	0,86	2,59	2845	100	1,49	0,77	1,29	5690
1.1	**1MB1553-0DA3**	1,68	2,38	225	2,20	3,50	1390	2,30	1,13	0,85	3,75	2880	100	2,10	1,13	1,87	5765
1.5	**1MB1553-0EA0**	2,25	3,25	240	2,90	4,74	1415	3,05	1,54	0,86	5,1	2905	100	2,80	1,54	2,53	5815
2.2	**1MB1553-0EA4**	3,05	4,77	240	4,05	6,9	1415	4,30	2,25	0,88	7,4	2905	100	4,00	2,25	3,70	5815
3	**1MB1553-1AA4**	4,00	6,5	245	5,5	9,4	1425	5,8	3,10	0,88	10,1	2920	100	5,6	3,10	5,1	5835
4	**1MB1553-1BA2**	5,2	8,7	265	7,1	12,5	1450	7,6	4,10	0,89	13,3	2950	100	7,3	4,10	6,6	5895
5.5	**1MB1553-1CA0**	7,3	12,0	265	9,6	17,2	1450	10,1	5,7	0,9	18,3	2950	90	9,6	5,7	10,3	5305
7.5	**1MB1553-1CA1**	9,2	16,3	265	12,6	23,4	1450	13,4	7,7	0,92	25,0	2950	90	13,1	7,7	13,9	5305
11	**1MB1553-1DA2**	14,4	23,9	270	19,4	34,3	1455	20,5	11,3	0,87	36,6	2955	80	19,7	11,3	22,8	4725
15	**1MB1553-1DA3**	19,8	32,7	275	26,5	46,7	1460	28,0	15,4	0,87	49,8	2960	80	26,5	15,4	31,1	4735
18.5	**1MB1553-1DA4**	23,0	40,3	270	31,0	57,7	1455	33,0	19,0	0,9	61,6	2955	80	32,0	19,0	38,4	4725
22	**1MB1553-1EA2**	27,0	47,9	265	37,0	68,7	1450	39,5	22,5	0,89	73,4	2950	76	38,5	22,5	47,9	4480
30	**1MB1553-2AA4**	38,5	65,3	270	52	93,5	1455	55	31,0	0,87	99,9	2955	75	53	31,0	66,8	4430
37	**1MB1553-2AA5**	45,5	80,5	270	63	115	1455	67	38,0	0,88	123	2955	75	65	38,0	81,9	4430
45	**1MB1553-2BA2**	58	105	270	76	141	1460	80	46,5	0,89	150	2960	75	79	46,5	100	4440
55	**1MB1553-2CA2**	72	129	282	92	172	1475	97	57	0,89	182	2975	65	96	57	141	3865
75	**1MB1553-2DA0**	97	176	282	125	234	1475	132	77	0,89	248	2975	60	130	77	206	3570
90	**1MB1553-2DA2**	114	211	282	148	281	1475	156	93	0,9	298	2975	60	155	93	249	3570
110	**1MB5553-3AA0**	137	258	286	178	342	1482	189	113	0,91	363	2982	60	187	113	302	3580
132	**1MB5553-3AA2**	163	309	288	215	411	1484	225	136	0,91	435	2982	60	225	136	363	3580
160	**1MB5553-3AA4**	197	375	286	260	498	1482	275	165	0,91	528	2980	60	270	165	441	3575
200	**1MB5553-3AA5**	240	469	284	320	623	1480	335	205	0,92	660	2980	60	335	205	548	3575
250	**1MB5553-3AA6**	280	528	288	365	700	1484	385	230	0,91	742	2984	60	380	230	614	3580
315	**1MB5553-3BA2**	360	665	291	465	881	1488	490	290	0,9	934	2988	60	485	290	773	3584
355	**1MB5553-3BA3**	385	749	284	510	996	1480	540	330	0,92	1056	2980	60	540	330	882	3575
400	**1MB5553-3BA4**	455	844	291	600	1119	1488	630	370	0,89	1186	2988	60	620	370	986	3584
460	**1MB5553-3BA5**	540	971	293	690	1286	1491	730	425	0,89	1362	2991	60	710	425	1131	3588

4-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0.25	**1MB1553-0CB2**	0,58	1,07	85	0,67	1,64	650	0,69	0,26	0,73	1,76	1390	97	0,55	0,26	0,92	2700
0.37	**1MB1553-0CB3**	0,83	1,59	95	0,97	2,40	665	1,00	0,38	0,71	2,58	1405	100	0,80	0,38	1,29	2815
0.55	**1MB1553-0DB2**	1,02	2,38	110	1,23	3,51	690	1,28	0,57	0,79	3,76	1440	100	1,08	0,57	1,89	2875
0.75	**1MB1553-0DB3**	1,41	3,25	115	1,71	4,75	700	1,78	0,77	0,76	5,1	1450	100	1,52	0,77	2,54	2895
1.1	**1MB1553-0EB0**	1,90	4,76	110	2,35	7,0	690	2,45	1,13	0,78	7,5	1440	100	2,15	1,13	3,75	2875
1.5	**1MB1553-0EB4**	2,45	6,5	115	3,10	9,5	695	3,25	1,54	0,81	10,2	1445	100	2,85	1,54	5,1	2885
2.2	**1MB1553-1AB4**	3,25	9,6	125	4,30	13,8	715	4,50	2,25	0,83	14,8	1465	100	4,20	2,25	7,3	2930
3	**1MB1553-1AB5**	4,55	13,0	125	5,8	18,9	710	6,1	3,10	0,84	20,2	1460	100	5,5	3,10	10,1	2920
4	**1MB1553-1BB2**	5,9	17,4	125	7,7	25,2	710	8,1	4,10	0,82	26,9	1460	100	7,6	4,10	13,4	2920
5.5	**1MB1553-1CB0**	7,9	23,9	130	10,5	34,4	720	11,1	5,7	0,82	36,8	1470	100	10,5	5,7	18,5	2940
7.5	**1MB1553-1CB2**	10,3	32,6	125	13,8	47,1	715	14,6	7,7	0,84	50,4	1465	100	13,8	7,7	25,1	2930
11	**1MB1553-1DB2**	15,4	47,9	134	20,0	68,7	725	21,0	11,3	0,84	73,4	1475	100	19,6	11,3	36,6	2950
15	**1MB1553-1DB4**	21,5	65,3	134	28,0	93,7	725	29,5	15,4	0,83	100	1475	100	27,0	15,4	49,9	2950
18.5	**1MB1553-1EB2**	26,0	80,4	130	34,0	116	720	36,0	19,0	0,82	124	1470	100	33,5	19,0	61,8	2940
22	**1MB1553-1EB4**	30,0	95,6	130	40,0	138	720	42,0	22,5	0,83	147	1470	100	39,5	22,5	73,1	2940
30	**1MB1553-2AB5**	40,0	130	130	53	188	720	57	31,0	0,84	201	1470	100	54	31,0	101	2940
37	**1MB1553-2BB0**	51	173	134	64	232	730	68	38,0	0,86	246	1475	87	65	38,0	141	2570
45	**1MB1553-2BB2**	61	211	134	78	282	730	82	46,5	0,86	299	1475	87	79	46,5	173	2570
55	**1MB1553-2CB2**	74	258	136	94	344	732	99	57	0,87	365	1482	80	96	57	230	2370
75	**1MB1553-2DB0**	101	352	140	129	469	736	136	77	0,86	497	1484	75	132	77	330	2225
90	**1MB1553-2DB2**	121	422	140	153	562	736	161	93	0,87	596	1484	75	156	93	399	2225
110	**1MB5553-3AB0**	148	516	143	191	685	740	200	113	0,85	726	1490	65	198	113	557	1936
132	**1MB5553-3AB2**	175	619	143	225	822	740	240	136	0,86	871	1490	65	235	136	671	1936
160	**1MB5553-3AB4**	215	750	143	275	997	740	290	165	0,85	1056	1490	65	285	165	814	1936
200	**1MB5553-3AB5**	265	937	143	340	1246	740	360	205	0,86	1320	1490	65	350	205	1011	1936
250	**1MB5553-3AB6**	300	1055	143	385	1402	741	405	230	0,87	1485	1491	65	390	230	1133	1938
315	**1MB5553-3BB2**	395	1330	143	490	1766	741	520	290	0,85	1871	1491	60	500	290	1548	1788
355	**1MB5553-3BB3**	425	1499	143	540	1990	741	570	330	0,88	2109	1491	60	560	330	1762	1788
400	**1MB5553-3BB4**	485	1688	144	610	2241	742	650	370	0,87	2375	1492	60	630	370	1974	1790
460	**1MB5553-3BB5**	580	1942	145	730	2576	743	760	425	0,84	2729	1493	60	740	425	2266	1791

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Operation on PWM converter

Overview

6-pole motors

Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0.18	**1MB1553-0CC2**	0,50	1,14	35	0,58	1,84	390	0,60	0,18	0,7	2,00	880	85	0,47	0,18	1,15	1500
0.25	**1MB1553-0CC3**	0,66	1,58	35	0,75	2,56	390	0,77	0,26	0,7	2,78	880	97	0,58	0,26	1,45	1710
0.37	**1MB1553-0DC2**	0,94	2,39	60	1,08	3,60	445	1,12	0,38	0,67	3,87	940	100	0,87	0,38	1,93	1875
0.55	**1MB1553-0DC3**	1,34	3,54	60	1,51	5,4	440	1,55	0,57	0,68	5,8	935	100	1,16	0,57	2,92	1865
0.75	**1MB1553-0EC0**	1,58	4,84	65	1,91	7,3	445	2,00	0,77	0,71	7,8	945	97	1,68	0,77	4,02	1830
1.1	**1MB1553-1AC3**	2,20	7,2	84	2,70	10,4	475	2,80	1,13	0,71	11,1	975	100	2,45	1,13	5,5	1950
1.5	**1MB1553-1BC1**	2,75	9,8	84	3,35	14,2	475	3,50	1,54	0,76	15,1	975	100	3,05	1,54	7,5	1950
2.2	**1MB1553-1CC1**	3,80	14,3	86	4,80	20,7	480	5,1	2,25	0,77	22,1	980	83	4,65	2,25	13,2	1625
3	**1MB1553-1CC0**	5,2	19,6	86	6,5	28,2	480	6,8	3,10	0,77	30,1	980	83	6,2	3,10	18,2	1625
4	**1MB1553-1CC2**	6,7	26,1	84	8,5	37,7	475	8,9	4,10	0,76	40,4	975	83	8,2	4,10	24,2	1615
5.5	**1MB1553-1CC3**	9,2	35,8	84	11,6	51,9	475	12,1	5,7	0,76	55,5	975	85	11,1	5,7	32,9	1655
7.5	**1MB1553-1DC2**	11,9	48,9	86	15,5	70,5	480	16,4	7,7	0,76	75,3	980	85	15,3	7,7	44,2	1665
11	**1MB1553-1DC4**	16,9	71,6	84	22,0	104	475	23,5	11,3	0,77	111	975	89	22,0	11,3	62,2	1735
15	**1MB1553-1EC4**	22,0	97,7	84	29,0	142	475	30,5	15,4	0,8	151	975	100	28,0	15,4	75,5	1950
18.5	**1MB1553-2AC4**	27,0	121	86	36,0	174	480	38,0	19,0	0,79	186	975	80	35,5	19,0	116	1565
22	**1MB1553-2AC5**	32,0	143	86	42,5	207	480	44,5	22,5	0,79	221	975	80	42,5	22,5	137	1565
30	**1MB1553-2BC2**	43,5	211	86	55	283	482	58	31,0	0,83	300	982	87	55	31,0	173	1710
37	**1MB1553-2CC2**	51	260	90	66	348	486	69	38,0	0,85	369	984	80	67	38,0	230	1575
45	**1MB1553-2DC0**	63	316	91	80	422	488	84	46,5	0,85	448	988	75	81	46,5	300	1482
55	**1MB1553-2DC2**	76	387	91	97	516	488	102	57	0,85	548	988	75	99	57	367	1482
75	**1MB5553-3AC0**	111	527	94	140	702	492	147	77	0,8	744	992	65	142	77	570	1290
90	**1MB5553-3AC2**	128	633	94	163	842	492	171	93	0,82	892	992	65	168	93	689	1290
110	**1MB5553-3AC4**	155	773	94	196	1029	492	205	113	0,83	1091	992	65	200	113	837	1290
132	**1MB5553-3AC5**	186	928	94	235	1235	492	245	136	0,83	1309	992	65	240	136	1007	1290
160	**1MB5553-3AC6**	225	1125	94	285	1497	492	300	165	0,82	1586	992	65	295	165	1222	1290
200	**1MB5553-3AC7**	270	1267	95	335	1684	493	350	186	0,8	1785	993	65	340	186	1376	1290
250	**1MB5553-3BC2**	315	1583	95	400	2103	494	420	230	0,84	2229	994	60	410	230	1842	1192
315	**1MB5553-3BC5**	385	1995	95	490	2650	494	520	290	0,86	2808	994	60	500	290	2323	1192
355	**1MB5553-3BC6**	465	2248	96	570	2984	495	600	330	0,83	3161	994	60	580	330	2641	1193
400	**1MB5553-3BC7**	490	2406	96	610	3194	495	640	350	0,83	3384	994	60	620	350	2801	1193

8-pole motors

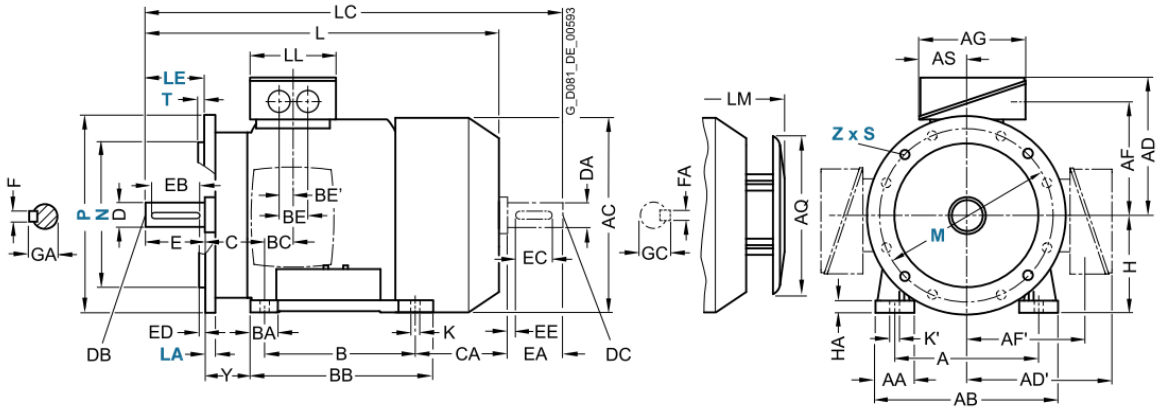
Rated power	Article number	Reference point C			Reference point B			Reference point A					Reference point D				
		5 Hz 40 V			25 Hz 200 V			50 Hz 400 V					Maximum frequency 400 V				
		I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	M_{VSD}	n_{asyn_VSD}	I_{VSD}	P_{VSD}		M_{VSD}	n_{asyn_VSD}	f_{max}	I_{VSD}	P_{VSD}	M_{VSD}	n_{asyn_VSD}
		I (A)	M (Nm)	n (rpm)	I (A)	M (Nm)	n (rpm)	I (A)	P (kW)	cos φ	M (Nm)	n (rpm)	f_{max}	I (A)	P (kW)	M (Nm)	n (rpm)
0.09	**1MB1553-0CD2**	0,38	0,75	20	0,45	1,25	280	0,47	0,09	0,66	1,36	645	70	0,39	0,09	0,95	905
0.12	**1MB1553-0CD3**	0,46	1,01	25	0,53	1,64	290	0,55	0,12	0,64	1,79	655	74	0,45	0,12	1,18	975
0.18	**1MB1553-0DD2**	0,76	1,55	50	0,85	2,31	340	0,88	0,19	0,52	2,48	715	96	0,68	0,19	1,32	1370
0.25	**1MB1553-0DD3**	0,83	2,14	40	0,97	3,30	320	1,00	0,26	0,58	3,56	690	78	0,84	0,26	2,31	1075
0.37	**1MB1553-0ED0**	1,16	3,17	45	1,37	4,83	325	1,42	0,38	0,56	5,2	700	85	1,18	0,38	3,06	1185
0.55	**1MB1553-0ED4**	1,83	4,75	50	2,05	7,1	340	2,10	0,57	0,52	7,6	715	100	1,60	0,57	3,81	1425
0.75	**1MB1553-1AD4**	1,60	6,4	45	2,00	9,8	325	2,10	0,77	0,71	10,5	700	81	1,87	0,77	6,5	1130
1.1	**1MB1553-1AD5**	2,25	9,5	45	2,80	14,3	330	2,95	1,13	0,72	15,3	705	85	2,60	1,13	9,0	1195
1.5	**1MB1553-1BD2**	3,05	13,0	56	3,80	19,1	345	3,95	1,54	0,71	20,5	720	100	3,40	1,54	10,2	1440
2.2	**1MB1553-1CD0**	4,00	19,0	56	5,2	28,0	345	5,4	2,25	0,73	30,1	720	100	4,90	2,25	14,9	1440
3	**1MB1553-1CD2**	5,3	26,0	58	6,8	38,0	350	7,2	3,10	0,75	40,7	725	100	6,5	3,10	20,4	1450
4	**1MB1553-1DD2**	6,8	34,7	60	9,0	50,5	355	9,5	4,10	0,74	54,0	725	89	8,9	4,10	30,2	1295
5.5	**1MB1553-1DD3**	9,5	47,8	64	12,1	69,1	358	12,7	5,7	0,74	73,9	732	97	11,7	5,7	38,4	1420
7.5	**1MB1553-1DD4**	13,0	65,2	64	16,3	93,9	360	17,1	7,7	0,74	100	734	100	15,2	7,7	50,1	1470
11	**1MB1553-1ED4**	17,9	95,3	58	23,5	139	350	25,0	11,3	0,74	149	725	97	23,0	11,3	76,8	1405
15	**1MB1553-2AD5**	26,0	130	62	32,0	189	356	34,0	15,4	0,74	202	730	100	30,0	15,4	101	1460
18.5	**1MB1553-2BD0**	31,5	173	64	37,5	233	360	39,0	19,0	0,79	248	734	87	34,0	19,0	142	1280
22	**1MB1553-2BD2**	36,5	206	64	44,0	277	360	45,5	22,5	0,78	294	734	87	41,0	22,5	168	1280
30	**1MB1553-2CD2**	46,5	281	64	58	378	360	61	31,0	0,8	401	734	80	57	31,0	252	1175
37	**1MB1553-2DD0**	56	347	68	71	464	365	74	38,0	0,8	492	740	75	71	38,0	327	1110
45	**1MB1553-2DD2**	69	422	68	86	564	365	90	46,5	0,8	598	740	75	86	46,5	400	1110
55	**1MB5553-3AD0**	82	516	70	103	687	368	109	57	0,81	728	743	65	106	57	564	966
75	**1MB5553-3AD2**	113	703	69	140	938	367	147	77	0,81	994	742	65	141	77	763	964
90	**1MB5553-3AD4**	132	844	69	166	1125	367	174	93	0,82	1193	742	65	169	93	921	964
110	**1MB5553-3AD5**	160	1031	69	200	1375	367	210	113	0,82	1458	742	65	200	113	1119	964
132	**1MB5553-3AD6**	192	1237	69	240	1650	367	255	136	0,82	1750	742	65	245	136	1347	964
160	**1MB5553-3AD7**	220	1351	69	275	1803	367	290	148	0,78	1911	742	65	280	148	1466	964
200	**1MB5553-3BD0**	255	1688	72	320	2243	371	335	185	0,84	2376	745	60	330	185	1975	894
250	**1MB5553-3BD1**	345	2111	72	425	2803	371	445	230	0,79	2971	745	60	435	230	2456	894
315	**1MB5553-3BD2**	445	2659	72	540	3532	371	570	290	0,79	3743	745	60	540	290	3096	894

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Dimensions and mechanical data

Dimensional drawings

Type of construction IM B3 / IM B35



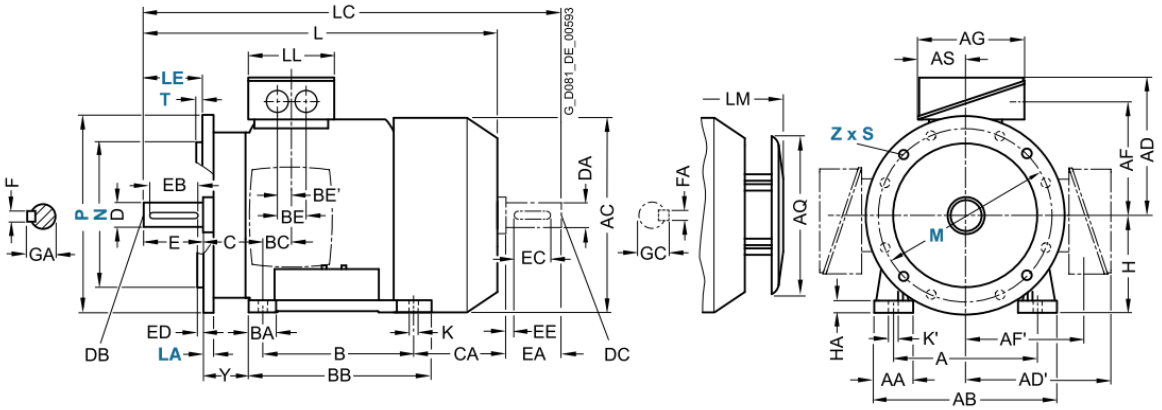
Frame-size	Article number: 1MB.553	Number of poles	Dimension to IEC A	AA	AB	AC	AD	AG	AS	B	BA	BB	BC	C	H	HA	K	L
	SIMOTICS XP																	
71M		2 ..8	112	25	140	138	240	162	80	90	30	125	76	45	71	10	7	349
80 M		2 ..8	125	35	160	157	249	162	80	100	33	130	75,5	50	80	13	10	374
90 L		2 ..8	140	40	180	174	261	162	80	125	41	155	80	56	90	13	10	450
100 L		2 ..8	160	40	205	198	259	163	81	140	50	170	92	63	100	18	13	544
112 M		2 ..8	190	45	240	222	279	163	81	140	50	170	92	70	112	18	13	520
132 S		2 ..8	216	50	260	262	293	163	81	178	58	235	101	89	132	18	13	571
132 M	1CB2, 1CC3	4 ..6																626
	1CC2	6																571
160 M		2 ..8	254	60	310	314	351	190	92	210	61	307	163	108	160	20	15	786
160 L		2 ..8								254								
180 M		2 ..8	279	70	349	353	387	189	91	241	100	359	184	121	180	19	15	838
180 L		4 ..8								279								
200 L		2 ..8	318	80	400	392	447	265	112	305	120	425	217	133	200	25	19	899
225 S		2	356	90	446	439	466	266	112	286	115	438	221	149	225	25,5	19	974
		4 ..8																1004
225 M		2								311								974
		4 ..8																1004
250 M		2	406	100	505	487	502	319	145	349	123	420	188	168	250	35	24	1014
		4 ..8																
280 S		2	457	110	570	540	524	319	145	368	173	520	252	190	280	40	24	1024
		4 ..8																
280 M		2								419								
		4 ..8																
315 S/M	3AA0	2	508	120	610	622	603	538	167	406	140	602	169	216	315	50	28	1189
	3AB0, 3AC0 3AC2, 3AD0 3AD2, 3AD4	4 ..8																1219
315 S/M	3AA2, 3AA4	2																1279
	3AB2, 3AB4 3AC4, 3AD5	4 ..8										692						1309
315 M/L	3AA5	2								457		762						1349
	3AB5, 3AC5 3AD6	4 ..8																1379
315 L	3AA6	2								508		842	254					1429
	3AB6, 3AC6 3AC7, 3AD7	4 ..8																1459
355 S/M	3BA2	2	610	150	780	700	710	624	175	500	187	893	230	254	355	50	35	1479
	3BB2, 3BB3	4 ..8																1509
355M/L	3BB4, 3BC1 3BD0	4 ..8								560		968						1584
355 L	3BA3, 3BA4 3BA5,	2								630		1078						1664
	3BB5, 3BC2, 3BC3, 3BC4, 3BD1, 3BD2	4 ..8																1694

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Dimensions and mechanical data

Dimensional drawings

Type of construction IM B5. IM V1. IM B14. IM V18



Frame-size	Article number: 1MB.553	Number of poles	Dimension to IEC LC	LM	LL	Y	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
71B		2 ..8	395	381	134	35	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 B		2 ..8	434	410	134	37,5	19	M6	40	32	4	6	21,5	19	M6	40	32	4	6	21,5
90 L		2 ..8	510	486	134	41	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21,5
100 L		2 ..8	619	584	134	48	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M		2 ..8	600	560	134	55	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S		2 ..8	661	631	134	64	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	1CB2, 1CC3	4	716	686																
	1CC2	6	661	631																
160 M		2 ..8	931	846	165	87,5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L		2 ..8																		
180 M		2 ..8	993	928	165	97	48	M16	110	100	5	14	51,5	48	M16	110	100	5	14	51,5
180 L		2 ..8																		
200 L		2 ..8	1069	989	197	101	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S		2			197	117	55	M20	110	100	5	16	59	48	M20	110	100	5	14	51,5
		4 ..8					60		140	125	10	18	64	55					16	59
225 M		2					55		110	100	5	16	59	48					14	51,5
		4 ..8					60		140	125	10	18	64	55					16	59
250 M		2			233	133	60	M20	140	125	10	18	64	60	M20	110	100	5	16	59
		4 ..8					65						69	60		140	125	10	18	64
280 S		2			233	140	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4 ..8					75					20	79,5	65						69
280 M		2					65					18	69	60						64
		4 ..8					75					20	79,5	65						69
315 S/M	3AA0	2	1399	1295	327	146	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	3AB0, 3AC0 3AC2, 3AD0 3AD2, 3AD4	4 ..8	1429	1325			80		170	140	25	22	85	70					20	74,5
315 S/M	3AA2, 3AA4	2	1489	1385			65		140	125	10	18	69	60		140	125	10	18	64
	3AB2, 3AB4 3AC4, 3AD5	4 ..8	1519	1415			80		170	140	25	22	85	70					20	74,5
315 M/L	3AA5	2	1559	1455			65		140	125	10	18	69	60		140	125	10	18	64
	3AB5, 3AC5 3AD6	4 ..8	1589	1485			80		170	140	25	22	85	70					20	74,5
315 L	3AA6	2	1639	1535			65		140	125	10	18	69	60					18	64
	3AB6, 3AC6 3AC7, 3AD7	4 ..8	1669	1565			80		170	140	25	22	85	70					20	74,5
355 S/M	3BA2	2	1699	1619	497	139	75	M24	140	125	10	20	79,5	60	M20	140	125	10	18	64
	3BB2, 3BB3	4 ..8	1759	1649			95		170	140	25	25	100	80		170	140	25	22	85
355M/L	3BB4, 3BC1 3BD0	4 ..8	1834	1724			95		170	140	25	25	100	80		170	140	25	22	85
355 L	3BA3, 3BA4 3BA5	2	1884	1804			75		140	125	10	20	79,5	60		140	125	10	18	64
	3BB5, 3BC2 3BC3, 3BC4 3BD1, 3BD2	4 ..8	1944	1834			95		170	140	25	25	100	80		170	140	25	22	85

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Dimensions and mechanical data

Technical specifications

Terminal box concept:

Degree of protection: IP55
Type of protection: Ex e IIC. according to EN 60079-0/EN 60079-1/EN 60079-7
Enclosure material: cast iron

Frame size	Standard terminal box Ex e				Auxiliary terminal box Ex e					
	Connecting studs	Conductor cross-section max. mm²	Additional terminals in the main terminal box Number x cross-section. max.	Entry thread	Option R62	Additional terminals (R62) max.	Option R63	Additional terminals (R63) max.	Option R67	Additional terminals (R67) max.
SIMOTICS XP 1MB155 / 1MB555										
71	6xM4	4	8	1xM25x1.5 1xM16x1.5	No	-	No	-	No	-
80										
90										
100	6xM4	4		2xM32x1.5						
112										
132	6xM4	6								
160	6xM5	16	11	2xM40x1.5	Yes	12			Yes	12
180										
200	6xM6	35	22	2xM50x1.5						
225	6xM8	2.5 - 50	24							
250	6xM10	10-95		2xM63x1.5			Yes	25		
280										
315	6xM12	16-185	30							
355	6xM16	50 - 300	40	2xM80x2.0						
355	6xM20			4xM80x2.0						

Frame size	Enlarged terminal box – option R50				Auxiliary terminal box Ex e					
	Connecting studs	Conductor cross-section max. mm²	Additional terminals in the main terminal box Number x cross-section. max.[1)]	Entry thread	Option R62	Additional terminals (R62) max.	Option R63	Additional terminals (R63) max.	Option R67	Additional terminals (R67) max.
SIMOTICS XP 1MB155 / 1MB555										
71	6xM4	4	8	1xM25x1.5 1xM16x1.5	No	-	No	-	No	-
80										
90										
100			17	2xM32x1.5	Yes	12			Yes	12
112										
132		6								
160	6xM5	16	22	2xM40x1.5						
180	6xM6	35	20							
200	6xM8	50	18	2xM50x1.5						
225	6xM10	120	24							
250	6xM12	185	30	2xM63x1.5			Yes	25		
280										
315	6xM16	300	40							
355	6xM16 (M20)			2xM80x2.0						
355				4xM80x2.0						

Additional terminals: Version for voltages up to 400V; max. 440V

Additional terminals: Maximum cable cross-section 2.5mm²

SIMOTICS XP 1MB1 / 1MB5 explosion-proof motors

Motors with type of protection Ex db; Ex db eb
Dimensions and mechanical data

Technical specifications

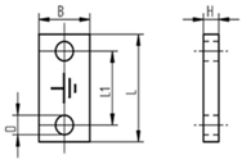
Frame size	Enlarged terminal box – option R54				Auxiliary terminal box Ex e					
	Connecting studs	Conductor cross-section max. mm²	Additional terminals in the main terminal box Number x cross-section. max.[1]	Entry thread	Option R62	Additional terminals (R62) max.	Option R63	Additional terminals (R63) max.	Option R67	Additional terminals (R67) max.
SIMOTICS XP 1MB155 / 1MB555										
71	6xM5	16	11	2xM40x1.5	Yes	12	No	-	Yes	12
80										
90										
100	6xM5									
112										
132	6xM6	35	20	2xM50x1.5						
160	6xM8	50	18							
180										
200	6xM10	120	24	2xM63x1.5			Yes	25		

Additional terminals: Version for voltages up to 400V; max. 440V

Additional terminals: Maximum cable cross-section 2.5mm²

Max. number of auxiliary terminal boxes			
	Frame size	Option	Quantity.
Standard	71-132	-	-
	160-200	R62 or R67	max. 2 auxiliary terminal boxes
	225-355	R62 + R63 or R67	max. 2 auxiliary terminal boxes
R50	71-90	-	
	100-200	R62 or R67	max. 2 auxiliary terminal boxes
	225-355	R62 + R63 or R67	max. 2 auxiliary terminal boxes
R54	71-132	R62 or R67	max. 2 auxiliary terminal boxes
	160-200	R62 + R63 or R67	max. 2 auxiliary terminal boxes

Grounding design at the motor housing:

Frame size	Grounding stud		Version Ground connection						Conductor cross-section
	Quantity	Size		B [mm]	H [mm]	L [mm]	L1 [mm]	D [mm]	[mm²]
71 – 112	1	M5	Direct / cable lug	M5 screw					10 / 2*)
132 – 160	2	M6	Direct	20 (16)	5 (6)	30	18	7	0…35
180 – 225	2	M8	Direct	20	5	46	31	9	0…75
250 – 280	2	M8	Direct	20	5	46	31	9	0…75
315 – 355	2	M12	Direct	30	8	80	54	13	0…120

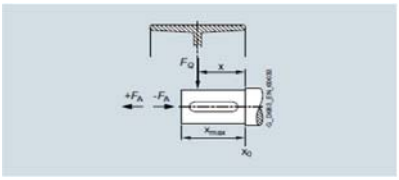
1*) Not included in the scope of supply
2*) Maximum conductor cross-section depending on the cable lug used

Technical specifications

Standard bearing

Selection of roller bearings

Frame size	No. of poles	Drive end (DE) bearings		Non-drive end (NDE) bearings	
		Type of construction IM B3, IM B5	Type of construction IM V1, IM V6	Type of construction IM B3, IM B5	Type of construction IM V1, IM V6
71	All	6202-2Z C3	6202-2Z C3	6202-2Z C3	6202-2Z C3
80	All	6204-2Z C3	6204-2Z C3	6204-2Z C3	6204-2Z C3
90	All	6205-2Z C3	6205-2Z C3	6205-2Z C3	6205-2Z C3
100	All	6306-2Z C3	6306-2Z C3	6306-2Z C3	6306-2Z C3
112	All	6306-2Z C3	6306-2Z C3	6306-2Z C3	6306-2Z C3
132	All	6308-2Z C3	6308-2Z C3	6308-2Z C3	6308-2Z C3
160	All	6309 C3	6309 C3	6309 C3	6309 C3
180	All	6310 C3	6310 C3	6310 C3	6310 C3
200	All	6312 C3	6312 C3	6312 C3	6312 C3
225	All	6313 C3	6313 C3	6313 C3	6313 C3
250	All	6315 C3	6315 C3	6315 C3	6315 C3
280	2	6315 C3	6315 C3	6315 C3	6315 C3
280	≥ 4	6317 C3	6317 C3	6317 C3	6317 C3
315	2	6316 C3	6319 C3	6316 C3	6319 C3
315	≥ 4	6319 C3	6319 C3	6319 C3	6319 C3
355	2	6317 C4	6320 C4	6317 C4	6320 C4
355	≥ 4	6320 C4	6320 C4	6320 C4	6320 C4



Admissible cantilever radial force F_Q
Valid are: x_0 values for x = 0, $x_{0.5}$ for x = 0.5 x l and x_{max} values for x = l (l = shaft extension

Frame size	at x_0 at speed				at $x_{0.5}$ at speed				at x_{max} at speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
71	0.36	0.41	0.49	0.53	0.34	0.38	0.39	0.39	0.30	0.30	0.30	0.30
80	0.57	0.70	0.80	0.81	0.53	0.57	0.58	0.56	0.42	0.43	0.43	0.42
90	0.52	0.66	0.85	0.94	0.48	0.66	0.69	0.70	0.44	0.49	0.51	0.52
100	1.34	1.62	1.69	1.55	1.11	1.11	1.12	1.03	0.83	0.82	0.83	0.76
112	1.30	1.63	1.80	1.82	1.15	1.30	1.19	1.20	0.86	0.97	0.88	0.89
132	1.98	2.46	2.81	3.05	1.79	1.83	1.88	2.00	1.42	1.29	1.33	1.42
160	2.77	3.43	3.70	4.30	2.51	2.85	3.29	2.57	1.95	1.94	2.23	1.75
180	3.07	3.78	4.38	4.86	2.80	3.44	3.99	4.43	2.57	2.88	2.94	3.70
200	3.96	5.01	5.63	6.19	3.64	4.61	5.17	5.69	3.36	4.26	4.39	5.25
225	4.50	5.59	6.26	7.23	4.17	5.09	5.69	6.58	3.89	4.66	5.22	4.77
250	5.43	6.72	7.65	8.72	4.93	6.10	6.95	7.92	4.51	5.58	6.36	6.25
280	4.69	7.43	8.94	8.86	4.33	6.58	8.24	8.17	4.00	6.33	7.07	6.79
315 S/M	5.48	8.30	9.28	9.21	5.21	7.36	6.91	5.70	4.97	5.53	4.78	4.12
315 L	4.05	5.35	6.83	8.60	3.80	4.92	5.80	5.35	3.58	4.03	4.21	3.88
355	3.90	3.93	Values on request		3.70	3.57	Values on request		3.52	2.61	Values on request	

Technical specifications

Standard bearing

Admissible axial force												
Frame size	Horizontal shaft				Horizontal shaft - Shaft extension at top Mounting types IM V3, IM V6, IM V14, IM V19, IM V36							
	Axial force				Force acting upwords				Force acting downwords			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
71	0.21	0.31	0.41	0.48	0.22	0.34	0.44	0.51	0.51	0.60	0.70	0.78
80	0.32	0.50	0.64	0.73	0.35	0.54	0.69	0.78	0.83	1.00	1.13	1.22
90	0.33	0.52	0.69	0.79	0.38	0.59	0.76	0.86	0.86	1.05	1.21	1.31
100	0.89	1.25	1.62	1.92	1.00	1.38	1.74	2.02	1.66	2.01	2.40	2.70
112	0.88	1.30	1.62	1.88	0.98	1.43	1.76	2.03	1.68	2.07	2.38	2.62
132	1.31	1.88	2.34	3.72	1.48	2.10	2.58	2.97	2.41	2.93	3.37	3.74
160	2.01	2.81	3.32	3.90	2.31	3.17	3.82	4.32	2.81	3.56	3.93	4.59
180	2.24	3.08	3.78	4.37	2.62	3.58	4.31	5.01	2.98	3.70	4.37	4.85
200	2.76	3.89	4.70	5.43	3.38	4.54	5.46	6.30	3.85	4.94	5.65	6.26
225	3.12	4.35	5.24	6.24	3.95	5.43	6.46	7.28	4.24	5.23	5.97	7.15
250	3.79	5.29	6.43	7.58	4.82	6.61	7.84	8.83	5.14	6.35	7.40	8.71
280	3.67	5.84	7.30	7.27	5.21	7.98	9.21	9.18	4.51	6.51	8.19	8.16
315 S/M	4.13	7.00	7.73	8.74	7.26	10.35	11.85	13.06	4.70	7.65	8.29	9.50
315 L	4.03	6.07	7.34	8.29	8.45	10.93	13.04	14.12	4.77	6.09	6.88	7.74
355	4.98	7.67	Values on request		12.60	15.17	Values on request		5.16	6.21	Values on request	

Admissible axial force												
Frame size	Horizontal shaft				Vertical shaft - Shaft extension at bottom Mounting types IM V1, IM V5, IM V10, IM V15, IM V18							
	Axial force				Force acting upwords				Force acting downwords			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
71	0.53	0.63	0.73	0.81	0.55	0.66	0.76	0.84	0.19	0.28	0.38	0.45
80	0.86	1.04	1.18	1.27	0.89	1.08	1.23	1.32	0.29	0.46	0.59	0.68
90	0.92	1.12	1.28	1.38	0.98	1.18	1.35	1.45	0.27	0.45	0.61	0.72
100	1.78	2.14	2.51	2.80	1.89	2.27	2.63	2.91	0.77	1.12	1.51	1.81
112	1.77	2.19	2.51	2.77	1.86	2.32	2.64	2.92	0.79	1.18	1.49	1.73
132	2.58	3.15	3.61	3.99	2.75	3.37	3.85	4.24	1.14	1.66	2.10	2.47
160	3.12	3.92	4.43	5.01	3.42	4.27	4.92	5.43	1.71	2.46	2.82	3.48
180	3.36	4.20	4.90	5.49	3.74	4.70	5.43	6.13	1.86	2.58	3.25	3.73
200	4.46	5.59	6.40	7.13	5.08	6.25	7.16	8.01	2.14	3.24	3.94	4.56
225	5.07	6.30	7.19	8.19	5.90	7.38	8.41	9.23	2.29	3.28	4.02	5.20
250	6.17	7.67	8.81	9.96	7.20	8.99	10.22	11.21	2.76	3.97	5.02	6.33
280	6.05	8.64	10.10	10.07	7.59	10.78	12.01	11.98	2.13	3.71	5.39	5.36
315 S/M	6.73	10.18	10.91	11.92	9.86	13.53	15.03	16.24	2.10	4.47	5.11	6.32
315 L	6.63	9.25	10.52	11.47	11.05	14.11	16.22	17.30	2.17	2.91	3.70	4.56
355	7.78	11.15	Values on request		15.40	18.65	Values on request		2.36	2.73	Values on request	

Technical specifications

Standard bearing

Admissible axial force												
Frame size	Horizontal shaft				Vertical shaft - Shaft extension at top Mounting types IM V3, IM V6, IM V14, IM V19, IM V36							
	Axial force				Force acting upwords				Force acting downwords			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
71	0.03	0.10	0.15	0.19	0.05	0.13	0.18	0.23	0.34	0.40	0.45	0.49
80	0.05	0.15	0.22	0.27	0.08	0.19	0.27	0.32	0.55	0.65	0.72	0.76
90	0.08	0.16	0.24	0.30	0.14	0.23	0.32	0.36	0.61	0.68	0.76	0.82
100	0.26	0.48	0.74	1.16	0.37	0.60	0.86	1.27	1.03	1.24	1.51	1.94
112	0.26	0.51	0.67	0.90	0.35	0.63	0.81	1.05	1.05	1.27	1.43	1.64
132	0.38	0.69	0.93	1.13	0.55	0.91	1.17	1.38	1.48	1.74	1.96	2.15
160	0.78	1.21	1.57	1.79	1.08	1.57	2.02	2.21	1.58	1.96	2.13	2.48
180	0.90	1.35	1.70	2.02	1.28	1.85	2.23	2.66	1.64	1.97	2.29	2.50
200	1.04	1.63	2.06	2.43	1.66	2.28	2.82	3.30	2.13	2.68	3.01	3.26
225	1.19	1.86	2.35	2.77	2.02	2.94	3.57	3.81	2.31	2.74	3.08	3.68
250	1.43	2.25	2.84	3.35	2.46	3.57	4.25	4.60	2.78	3.31	3.81	4.48
280	1.65	2.55	3.02	3.22	3.19	4.69	5.13	5.13	2.49	3.22	4.11	4.11
315 S/M	1.73	3.02	3.49	3.55	5.56	6.38	7.31	7.34	3.00	3.68	3.78	3.78
315 L	1.73	2.77	3.49	3.98	6.68	8.52	9.94	10.16	3.00	3.68	3.78	3.78
355	2.73	4.29	Values on request		10.84	13.44	Values on request		3.40	4.48	Values on request	

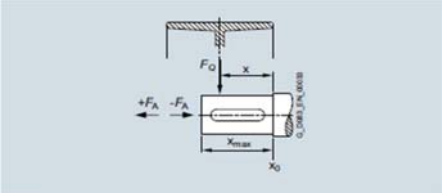
Admissible axial force												
Frame size	Horizontal shaft				Vertical shaft - Shaft extension at bottom Mounting types IM V1, IM V5, IM V10, IM V15, IM V18							
	Axial force				Force acting upwords				Force acting downwords			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
71	0.36	0.43	0.48	0.52	0.38	0.46	0.51	0.55	0.02	0.07	0.12	0.16
80	0.59	0.69	0.76	0.81	0.62	0.73	0.81	0.86	0.01	0.11	0.18	0.22
90	0.67	0.75	0.84	0.89	0.73	0.82	0.91	0.96	0.02	0.09	0.17	0.23
100	1.15	1.36	1.63	2.05	1.26	1.49	1.74	2.16	0.14	0.35	0.63	1.06
112	1.14	1.40	1.56	1.79	1.24	1.52	1.69	1.94	0.16	0.38	0.54	0.75
132	1.65	1.96	2.20	2.40	1.82	2.18	2.44	2.65	0.21	0.47	0.69	0.88
160	1.89	2.32	2.63	2.90	2.19	2.67	3.12	3.32	0.48	0.86	1.02	1.37
180	2.02	2.47	2.82	3.14	2.40	2.97	3.35	3.78	0.52	0.85	1.17	1.38
200	2.74	3.33	3.76	4.13	3.36	3.99	4.52	5.01	0.42	0.98	1.30	1.56
225	3.14	3.81	4.30	4.72	3.97	4.89	5.52	5.76	0.36	0.79	1.13	1.73
250	3.81	4.63	5.22	5.73	4.84	5.95	6.63	6.98	0.40	0.93	1.43	2.10
280	4.03	5.35	6.02	6.02	5.57	7.49	7.93	7.93	0.11	0.42	1.31	1.31
315 S/M	4.33	6.20	6.67	6.73	8.16	9.56	10.52	10.52	0.40	0.50	0.60	0.60
315 L	4.33	5.95	6.67	7.16	9.28	11.70	13.12	13.34	0.40	0.50	0.60	0.60
355	5.53	7.77	Values on request		13.64	16.92	Values on request		0.40	1.00	Values on request	

Technical specifications

Reinforced bearing

Selection of roller bearings

Frame size	No. of poles	Drive end (DE) bearings		Non-drive end (NDE) bearings	
		Type of construction IM B3, IM B5	Type of construction IM V1, IM V6	Type of construction IM B3, IM B5	Type of construction IM V1, IM V6
160	All	NU309	NU309	NU309	NU309
180	All	NU310	NU310	NU310	NU310
200	All	NU312	NU312	NU312	NU312
225	All	NU313	NU313	NU313	NU313
250	All	NU315	NU315	NU315	NU315
280	2	NU315	NU315	NU315	NU315
280	≥ 4	NU317	NU317	NU317	NU317
315	2	NU316	NU316	NU316	NU316
315	≥ 4	NU319	NU319	NU319	NU319
355	2	NU317	NU317	NU317	NU317
355	≥ 4	NU320	NU320	NU320	NU320



Admissible cantilever radial force F_Q
Valid are: x_0 values for x = 0, $x_{0.5}$ for x = 0.5 x l and x_{max} values for x = l (l = shaft extension

Frame size	at x_0				at $x_{0.5}$				at x_{max}			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
160	5.38	5.34	6.15	4.82	2.87	2.85	3.29	2.57	1.95	1.94	2.23	1.75
180	8.15	8.10	7.93	9.95	4.37	4.34	4.44	5.57	2.98	2.96	3.03	3.81
200	11.03	11.41	11.01	13.45	6.14	6.35	6.13	7.49	4.24	4.39	4.23	5.18
225	14.99	14.64	16.11	14.01	8.53	6.73	8.20	7.13	5.94	4.98	5.48	4.77
250	18.19	19.21	18.71	17.34	9.95	10.51	10.24	9.49	6.83	7.22	7.03	6.51
280	16.48	18.07	16.80	16.14	9.64	10.48	9.74	9.35	6.71	7.27	6.75	6.49
315 S/M	21.25	12.97	12.10	10.59	12.93	6.87	6.45	5.97	9.27	4.98	4.81	4.17
315 L	15.96	10.30	10.74	9.92	9.82	5.56	5.80	5.35	7.13	4.03	4.21	3.88
355	18.70	Values on request			11.40	Values on request			8.20	Values on request		

Additional axial force (reinforced bearing)

Frame size	Horizontal shaft				Vertical shaft							
	Axial force				Force acting upwords				Force acting downwords			
	at speed				at speed				at speed			
	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm	3000 rpm	1500 rpm	1000 rpm	750 rpm
	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]	[KN]
160	2.09	2.81	2.23	3.84	2.39	3.17	3.73	4.26	1.79	2.46	2.73	3.42
180	2.40	3.26	3.88	4.41	2.78	3.76	4.41	5.05	2.02	2.76	3.35	3.77
200	3.53	4.72	5.60	6.33	4.15	5.37	6.36	7.20	2.91	4.07	4.84	5.46
225	3.40	4.66	5.47	7.15	4.23	5.74	6.69	8.19	2.57	3.59	4.25	6.11
250	4.50	6.09	7.29	8.51	5.53	7.41	8.70	9.76	3.47	4.77	5.88	7.26
280	3.98	6.43	7.77	8.83	5.52	8.57	9.68	10.74	2.44	4.30	5.86	6.92
315 S/M	3.77	7.19	8.61	9.71	6.35	10.13	11.98	13.08	1.19	4.25	5.24	6.34
315 L	4.11	7.16	8.40	9.35	7.25	11.17	13.07	14.13	0.97	3.15	3.73	4.57
355	5.39	Values on request			10.51	Values on request			0.27	Values on request		