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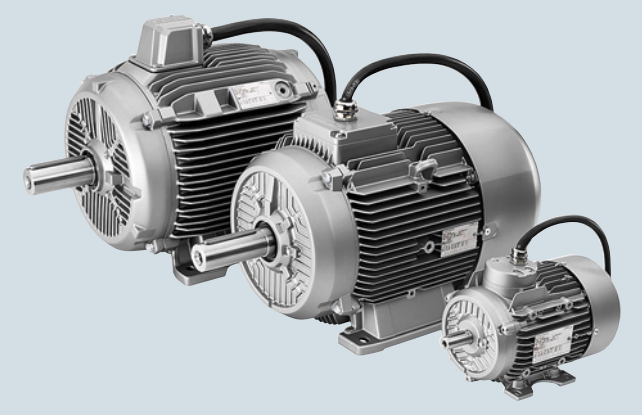
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Orientation

Overview



The low-voltage motors with squirrel-cage rotors in efficiency classes IE2 and IE3 for implementation in automatic smoke and heat extraction units to EN 12101-3 are mainly designed for driving smoke extraction fans. For this reason, they are known as smoke extraction motors. They are mainly used in buildings or structures in which smoke control is necessary due to their shape and arrangement.

Temperature/time classification according to EN 12101-3

- F200 corresponds to 200 °C for 120 min
- F300 corresponds to 300 °C for 60 min

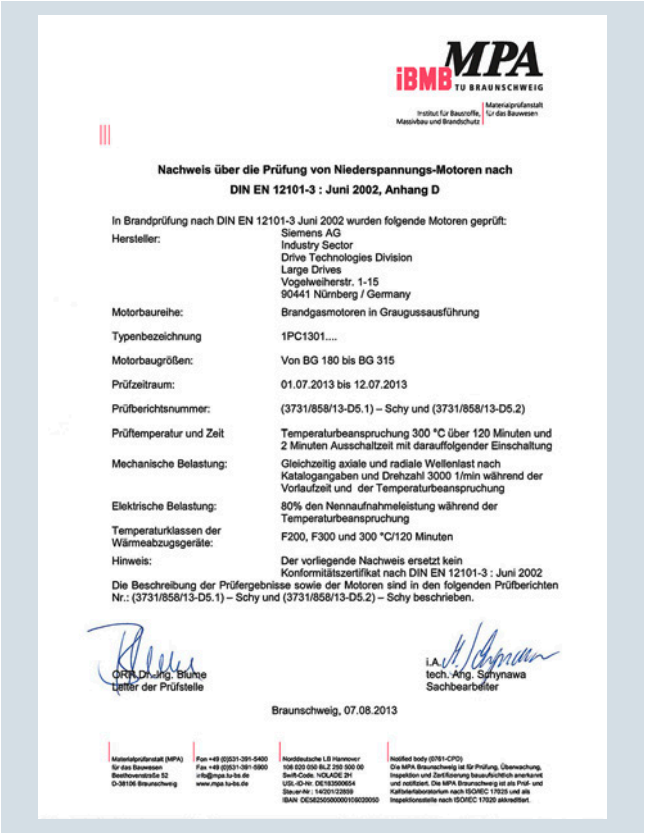
Testing and test certificates

The Siemens smoke extraction motors have been tested in accordance with EN 12101-3 by the Materialprüfanstalt Braunschweig (Material Test Institute, Brunswick, Germany) in the "Institute for Building materials, concrete construction and fire protection".

Test conditions for F200/F300:
- Temperature **300 °C**
- Time **120 min**

With a test time of 120 min, in contrast to the standard test time of 60 min, the Siemens F200/F300 smoke extraction motors offer a great deal more reliability.

The test certificates are available.



iBMB MPA TU BRAUNSCHWEIG

Nachweis über die Prüfung von Niederspannungs-Motoren nach
DIN EN 12101-3 : Juni 2002, Anhang D

In Brandprüfung nach DIN EN 12101-3 Juni 2002 wurden folgende Motoren geprüft:

Hersteller:	Siemens AG Industry Sector Drive Technologies Division Large Drives Vogelweiherstr. 1-15 90441 Nürnberg / Germany
Motorbaureihe:	Brandgasmotoren in Graugussausführung
Typenbezeichnung	1PC1301....
Motorbaugrößen:	Von BG 180 bis BG 315
Prüfzeitraum:	01.07.2013 bis 12.07.2013
Prüfberichtsnummer:	(3731/858/13-D5.1) – Schy und (3731/858/13-D5.2)
Prüftemperatur und Zeit	Temperaturbeanspruchung 300 °C über 120 Minuten und 2 Minuten Ausschaltzeit mit darauffolgender Einschaltung
Mechanische Belastung:	Gleichzeitig axiale und radiale Wellenlast nach Katalogangaben und Drehzahl 3000 1/min während der Vorlaufzeit und der Temperaturbeanspruchung
Elektrische Belastung:	80% den Nennaufnahmeleistung während der Temperaturbeanspruchung
Temperaturklassen der Wärmeabzugsgeräte:	F200, F300 und 300 °C/120 Minuten
Hinweis:	Der vorliegende Nachweis ersetzt kein Konformitätszertifikat nach DIN EN 12101-3 : Juni 2002

Die Beschreibung der Prüfergebnisse sowie der Motoren sind in den folgenden Prüfberichten Nr.: (3731/858/13-D5.1) – Schy und (3731/858/13-D5.2) – Schy beschrieben.

ORR Dr.-Ing. Blume
Leiter der Prüfstelle

i.A.
tech. Ang. Schynawa
Sachbearbeiter

Braunschweig, 07.08.2013

The motors are manufactured with aluminum or cast-iron housings depending on their frame sizes. The smoke extraction motors are based on the standard motors and comprise the following motor types:

Temperature/time classes F200 and F300

- **Self-ventilated motors** – Aluminum series 1PC1300, 1PC1303 and cast-iron series 1PC1301, 1PC1304 – version with integrated fan (metal)
- **Forced-air cooled motors** – Aluminum series 1PC1300, 1PC1303 and cast-iron series 1PC1301, 1PC1304 (in each case Article No. with **-Z** and order code **F90**) – version without integrated fan; located in the air flow of the driven fan

The resonance of mountings and reactions from driven machines can cause high levels of vibration in the overall equipment unit. This has a significant effect on the expected lifetime of the bearing.

These vibrations are evaluated during continuous operation in accordance with Zones A and B according to ISO 10816.

To ensure safe operation of fans under standardized test conditions of 300 °C for a duration of 2 hours, the following limit values for radial vibrations on the bearing plate must be maintained even under these conditions.

Maximum admissible vibration values under standardized test conditions at 300 °C for a duration of 2 h in the test laboratory.

Frame size	Vibration velocity mm/s
80 ... 112	15
132 ... 200	20
225 ... 315	25

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Benefits

The smoke extraction motors operate as so-called "dual-function motors":

- Normal operation (no instance of fire):
  Incoming/outgoing air flow
- Fault operation (in case of fire):
  - Removal of smoke from escape and access routes
  - Supporting fire fighting by creating a smoke-free zone
  - Protecting devices and equipment
  - Reducing the heat stress of components during a fire
  - Reducing secondary damage due to thermal byproducts and hot gases.

Admissible normal operating temperature:

–20 to 40 °C as standard

The smoke extraction motors offer the user a number of advantages:

- The assignment of standard powers is unchanged - this means that a larger construction size is not required for smoke extraction motors
- IE2 and IE3 efficiency grades comply with the European EUP Directive
- Smoke extraction motors are generally equipped with located bearings at the drive-end (DE) of the motor
- A fire event plate is screwed onto the motor
- Freely protruding cables are included in the scope of supply
- Radial-flow and axial-flow fan drive are possible
  - Self-ventilated 1PC1300 and 1PC1301 series motors with a metal fan impeller can be used as radial-flow fan drives
  - Forced-air cooled 1PC1300 and 1PC1301 series motors can be implemented as axial flow fan drives (in each case Article No. with **-Z** and order code **F90**) taking into account the required volumetric flow for motor cooling. In this case the driven fan performs the ventilation.

Application

The smoke extraction motors are designed for use in automatic smoke and heat extraction units to EN 12101-3. Typical application examples include:

- Tunnels
- Single and multi-storey shopping centers
- Industrial buildings and warehouses
- Building complexes and atriums
- Theaters
- Indoor car parks
- Staircases

Technical specifications

Standards and regulations

In addition to the relevant standards and regulations, EN 12101-3 applies for non-portable fire-fighting systems:

Systems for controlling smoke and heat flows, part 3, specifications for smoke and heat extraction units.

Voltage and frequency

Rated voltages according to IEC 60038

- 230 VΔ 50 Hz
- 400 VΔ 50 Hz and 400 VY 50 Hz
- 500 VΔ 50 Hz and 500 VY 50 Hz
- 690 VY 50 Hz

Non-standard voltages (voltage codes **9** in position 12 of Article No., **0** in position 13 of Article No. and order code **M1Y**) as well as 60 Hz on request for 4 to 6-pole machines. Converter operation is admissible up to a line voltage of $U_{rated} \leq 460$ V (see section "Insulation system").
Measures must be implemented in the plant by the system supplier for switchover to line operation in the event of a fire.

The following rating plates are available for the smoke extraction motors:

- Rating plate
  For the listed rated voltages with 50 Hz power data including information on bearing types and optional regreasing data
- Fire event plate
  Complete with number and year of issue of the European standard, temperature/time class and minimum duration of function.

All plates are resistant to corrosion. A second set of plates is included with the motor, loose.

Rated power, duty type, number of poles

The rated power applies for continuous duty (normal duty) according to IEC 60034-1, for a frequency of 50 Hz, ambient temperatures up to 40 °C and installation altitudes up to 1000 m above sea level.

Derating is necessary at higher coolant temperatures and installation altitudes (reduction factor k_{HT}), see table below.

Reduction factor k_{HT} for different installation altitudes and/or coolant temperatures

Reduction factor k_{HT}						
Installation altitude above **sea level**	Ambient temperature in °C					
m	< 30 °C	30 … 40 °C	45 °C	50 °C	55 °C	60 °C
1000	1.07	1.00	0.96	0.92	0.87	0.82
1500	1.04	0.97	0.93	0.89	0.84	0.79
2000	1.00	0.94	0.9	0.86	0.82	0.77
2500	0.96	0.90	0.86	0.83	0.78	0.74
3000	0.92	0.86	0.82	0.79	0.75	0.70
3500	0.88	0.82	0.79	0.75	0.71	0.67
4000	0.82	0.77	0.74	0.71	0.67	0.63

Coolant temperature and installation altitude are rounded to 5 °C and 500 m respectively

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Technical specifications (continued)

Operation in the event of a fire

In addition to normal duty, operation in the event of a fire as specified in EN 12101-3 is available.

At the end of the fire incident, the motor may be unfit for normal duty. **For this reason, regulations stipulate that the motor be replaced as a matter of course.**

In the event of a fire, any "thermal motor protection" must be deactivated.

Standard number of poles

2, 4 and 6
For more poles and pole-changing motors, please enquire.

Insulation system

The special insulation systems are adapted to the respective temperature/time classes.

The insulation of the smoke extraction motors is designed such that converter operation is permissible for line voltages ≤ 460 V for frame sizes 80 to 200 and ≤ 500 V for frame sizes 225 to 315.

The following limit values (voltage values are peak values) must be complied with in all operating states:

Frame sizes 80 to 200:
- $\hat{U}_{\text{phase-to-phase}} \leq 1500$ V
- $\hat{U}_{\text{phase-to-ground}} \leq 1100$ V

Frame sizes 225 to 315:
- $\hat{U}_{\text{phase-to-phase}} \leq 1600$ V
- $\hat{U}_{\text{phase-to-ground}} \leq 1400$ V

Voltage rise times of $t_s > 0.1$ µs.

In the event of a fault, the motors must be switched over from converter operation to line operation. If converter operation is also required in the event of a fire, this must be ensured through system testing and full acceptance testing by the fan manufacturer.

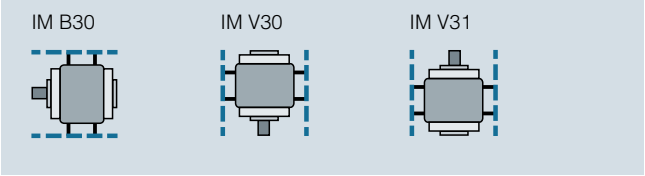
Drainage holes

Generally available; but closed if ordered according to IP55 degree of protection.

Bearing plates

All bearing plates of types of construction IM B3, IM B5 and IM B14 are cast iron.

For smoke extraction motors it is also possible to order on request the special types of construction IM B30 (horizontal type of construction) as well as IM V30 and IM V31 (both vertical types of construction) in accordance with EN 60034-7 (clamp mounting, pad mounting, shaft fan mounting).



On the motor side, either 3 or 4 radial mounting threads can be provided on the housing or the IM B3 bearing plates at DE and NDE. These can be used to fix the motor centrally inside a pipe or a fan unit.

Connection system

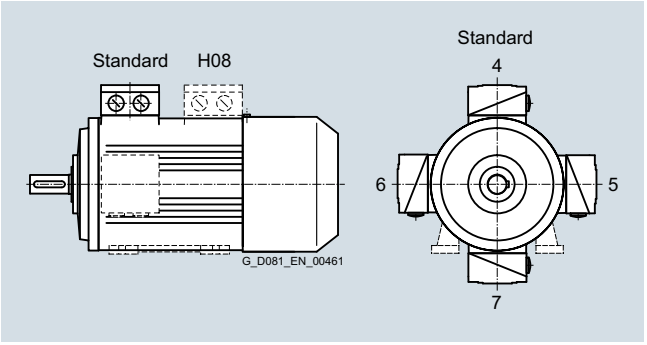
Protruding cable with casing, without terminal box with cover plate or "nozzle cap". The cable length, core ends and diameter depend on the frame size.

Frame size	Rated power	Number of cores	Cross-section	Length	Cable diameter ± 1 mm
	kW		mm^2	m	mm
80 … 112	0.37 … 4	7	1.5	1	12
132	3 … 7.5	7	1.5	1.5	12
160	7.5 … 18	7	4	1.5	16
180 … 200	15 … 37	7	10	1.5	25
225 … 280	30 … 55	7	10	2.5	25
280 … 315	75 … 90	2 × 4	16	2.5	24
315	110 … 132	2 × 4	3 × 35 + 25	2.5	33
315	160 … 200	2 × 4	3 × 50 + 25	2.5	38

Special versions of connecting cables are available on request.

Location of the terminal box base

Frame sizes 80 to 315:
- Top and at drive end (DE) as standard
  16th position of Article No. digit 4
- Terminal box base right
  16th position of Article No. digit 5
- Terminal box base left
  16th position of Article No. digit 6
- Terminal box base at bottom (not possible for IM B3)
  16th position of Article No. digit 7



Location of terminal box base with corresponding digits in the 16th position of Article No. 0° position of cable outlet

Optional: Terminal box base at NDE – Order code **H08**

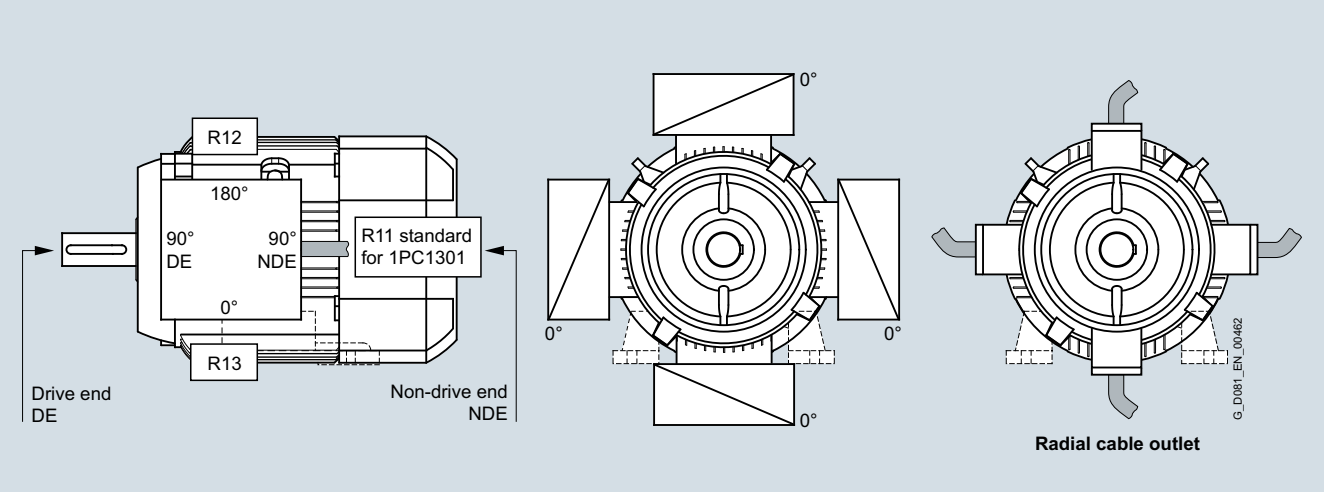
When the terminal box base is rotated to the non-drive end of the motor, it is important to note that dimensions "C" and "CA" will not comply with the values specified in EN 50347. Please request a dimension drawing.

Direction of cable outlet

- Frame sizes 80 to 160 (aluminum):
  Further routing of the connecting cable only in radial direction with respect to the position of the terminal box base.
- Frame sizes 180 to 315 (cast iron):
  Further routing of the connecting cable towards NDE
  Option **R11** with respect to the position of the terminal box base. Other options are also possible after **R12** or **R13**.
  R13 = Cable entry in 0° position as shown in diagram.

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Technical specifications (continued)



Location of the cable entries with corresponding order codes. The equipment is grounded with a protruding cable.

Bearings, grease

Special bearing systems are used.

Deep-groove bearings of series 60, 62 or 63 without play are used depending on the individual frame sizes.

The located bearing is generally at the drive-end (DE).

The nominal bearing lifetime $L_{10\,h}$ (fan drive) is at least 20000 hours at full rated load.

The motors of frame sizes 80 to 250 generally have bearings that are greased for life.

Paint finish

The motors are shipped as standard with a two-component paint finish (worldwide) in the color RAL 7030.

Required minimum cooling air flow in standard duty

Required cooling air flow for 1PC1300/1PC1303 motors			
Frame size	No. of poles		
	2 m^3/min	4 m^3/min	6 m^3/min
80	1.36	0.66	0.42
90	2.66	1.34	0.87
100	3.8	2.1	1.5
112	5.0	2.9	1.9
132	6.3	4.6	3.1
160	10.9	6.7	5

Required cooling air flow for 1PC1301/1PC1304 motors			
Frame size	No. of poles		
	2 m^3/min	4 m^3/min	6 m^3/min
180	12.4	7.8	5.2
200	14.3	10.6	7.9
225	21.5	18.5	15
250	30	20	20
280	26.5	32	24
315	40	40	30

In the motor version without an integrated fan (with order code **F90**), the motor is located in the airflow of the driven fan that must drive the minimum cooling airflow over the motor housing. The operating temperature of the motor can be reduced at higher air flow rates. The decisive factor for the effectiveness of the increased cooling airflow is the actual increase in the winding temperature during rated operation.

Permissible loading on the shaft extension

The values specified in the table "Admissible loading on shaft extension" are the tested and approved maximum values (test duration two hours, temperature in case of fire 300 °C).

In standard duty at coolant temperatures up to 40 °C, a bearing lifetime $L_{10\,h}$ > 20000 hours was achieved.

The values apply to all horizontal mounting positions and to all vertical mounting positions with shaft pointing downwards.

Please inquire in the case of:

- Higher force pairings
- Motors with more poles
- Vertical arrangement, depending on the rotor mass and mounting location (shaft pointing downwards or shaft pointing upwards) of the smoke extraction motor. If necessary, higher forces can be approved.

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Technical specifications (continued)

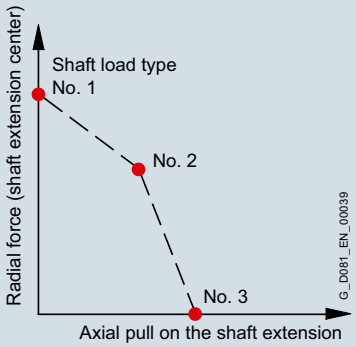
Admissible loading on the shaft extension in the event of fire

Frame size	Bearings DE	Type of loading on shaft No.		Horizontal shaft 2-pole F_R N	2-pole $F_{A\ tens}$ N	4-pole F_R N	4-pole $F_{A\ tens}$ N	6-pole F_R N	6-pole $F_{A\ tens}$ N	Shaft pointing vertically downwards 2-pole F_R N	2-pole $F_{A\ tens}$ N	4-pole F_R N	4-pole $F_{A\ tens}$ N	6-pole F_R N	6-pole $F_{A\ tens}$ N
80	6204	1	Radial force	400	0	490	0	540	0	360	0	450	0	540	0
		2	Radial force + axial tensile force	150	130	170	170	190	200	40	172	40	225	40	275
		3	Axial tensile force	0	215	0	265	0	320	0	197	0	250	0	300
90	6205	1	Radial force	650	0	730	0	795	0	590	0	730	0	795	0
		2	Radial force + axial tensile force	250	205	280	260	310	305	100	259	100	330	100	390
		3	Axial tensile force	0	343	0	415	0	480	0	310	0	384	0	450
100	6206	1	Radial force	890	0	1000	0	1080	0	820	0	1000	0	1080	0
		2	Radial force + axial tensile force	400	265	500	325	600	345	300	265	300	385	300	455
		3	Axial tensile force	0	490	0	600	0	675	0	432	0	540	0	625
112	6206	1	Radial force	870	0	980	0	1055	0	760	0	970	0	1055	0
		2	Radial force + axial tensile force	400	252	500	310	600	330	250	260	250	380	250	450
		3	Axial tensile force	0	478	0	595	0	675	0	403	0	510	0	590
132	6208	1	Radial force	1070	0	1415	0	1530	0	810	0	1060	0	1220	0
		2	Radial force + axial tensile force	450	315	550	450	650	480	250	300	250	520	250	585
		3	Axial tensile force	0	580	0	775	0	850	0	450	0	640	0	820
160	6209	1	Radial force	1440	0	1630	0	1760	0	1210	0	1580	0	1780	0
		2	Radial force + axial tensile force	700	450	800	570	900	650	500	335	500	525	500	665
		3	Axial tensile force	0	824	0	1015	0	1140	0	620	0	790	0	920
180	6210	1	Radial force	1540	0	1750	0	1900	0	1020	0	1400	0	1670	0
		2	Radial force + axial tensile force	770	430	900	545	1000	630	550	218	550	420	550	575
		3	Axial tensile force	0	815	0	1040	0	1183	0	453	0	733	0	875
200	6212	1	Radial force	2050	0	2380	0	2620	0	1450	0	1700	0	2090	0
		2	Radial force + axial tensile force	1200	770	1350	970	1500	1075	500	460	500	750	500	1600
		3	Axial tensile force	0	1350	0	1650	0	1875	0	720	0	1040	0	1905
225	6213	1	Radial force	2460	0	2720	0	2970	0	1910	0	2450	0	2900	0
		2	Radial force + axial tensile force	1370	900	1500	1095	1700	1200	500	660	500	1000	500	1250
		3	Axial tensile force	0	1560	0	1910	0	2170	0	920	0	1290	0	1520
250	6215	1	Radial force	2770	0	3230	0	3500	0	1490	0	2230	0	2700	0
		2	Radial force + axial tensile force	1400	840	1600	1095	1800	1340	500	460	500	815	500	1080
		3	Axial tensile force	0	1500	0	1865	0	2130	0	710	0	1090	0	1375
280	6315 (2-pole), 6317 (4, 6-pole)	1	Radial force	3180	0	5000	0	5500	0	3000	0	5600	0	6100	0
		2	Radial force + axial tensile force	1700	1820	2000	2000	2300	2200	600	1085	600	2300	600	2750
		3	Axial tensile force	0	2630	0	3050	0	3500	0	1380	0	2600	0	3100
315	6316 (2-pole), 6319 (4, 6-pole)	1	Radial force	3470	0	5300	0	5900	0	1000	0	3600	0	3850	0
		2	Radial force + axial tensile force	1750	2200	2000	2170	2300	2530	200	363	1000	1150	1000	1610
		3	Axial tensile force	0	3000	0	3080	0	3560	0	463	0	1690	0	2100

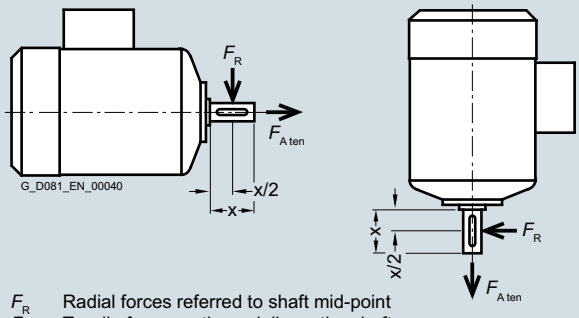
Note:

In the event of a fault (fire), the reduced loads given above must be observed and ensured by appropriate measures in the ventilation system.

Under normal operating conditions (CT 40 °C), the admissible loads specified in part 1 of the catalog under "Bearings and lubrication" must be complied with.



Load types



Forces on shaft extension

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Selection and ordering data

The article number consists of a combination of digits and letters and is divided into three hyphenated blocks to provide a better overview, e.g.:
1PC1301-1EB22-2FB4-Z
L22

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

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

Ordering data:

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

Structure of the Article No.:		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	
Positions 1 to 5: Digit, letter, letter, digit, digit	Self-ventilated smoke extraction motors with IE2 High Efficiency (for forced-air cooled version specify Article No. with -Z and order code F90)		**1**	**P**	**C**	**1**	**3**														
Positions 6 to 7: 2 digits	Aluminum housing, IE2, single-speed							**0**	**0**												
	Cast-iron housing, IE2, single-speed							**0**	**1**												
	Aluminum housing, IE3, single-speed							**0**	**3**												
	Cast-iron housing, IE3, single-speed							**0**	**4**												
Positions 8, 9 and 11: Digit, letter, digit	**Motor frame size** (frame size as a combination of shaft height and overall length, encoded)										**0** ... **3**	**A** ... **E**		**0** ... **6**							
Position 10: Letter	**No. of poles** A: 2-pole, B: 4-pole, C: 6-pole												**A** ... **C**								
Positions 12 and 13: 2 digits	**Voltage, circuit and frequency** (encoded with two digits, 9-0 requires order code M.. (e.g. M1Y))														**0** ... **9**		**0** ... **7**				
Position 14: Letter	**Type of construction** (encoded with A ... Z; Z requires order code P.. (e.g. P3A))																	**A** ... **Z**			
Position 15: Letter	**Motor protection** (encoded with A ... D)																		**A** ... **D**		
Position 16: Digit	**Terminal box position** 4: Terminal box top, 5: Terminal box right, 6: Terminal box left, 7: Terminal box below																			**4** ... **7**	
	Special order versions: encoded – additional order code required not encoded – additional plain text required																				**- Z**

Ordering example

Selection criteria	Requirement	Structure of the Article No.
Motor type 1PC1304	Self-ventilated smoke extraction motor, cast-iron version, with IE3 High Efficiency, degree of protection IP55	1PC1304-■■■■■-■■■■
Motor frame size/No. of poles/Speed	180 M/4-pole/1500 rpm	1PC1304-1EB2■-■■■■
Rated power	18.5 kW	
Voltage and frequency	230 VΔ/400 VY, 50 Hz	1PC1304-1EB22-2■■■
Type of construction with special version	IM B5	1PC1304-1EB22-2F■■
Motor protection	Motor protection with 3 PTC thermistors for disconnection (2 terminals)	1PC1304-1EB22-2FB■
Terminal box position	Terminal box at top	1PC1304-1EB22-2FB4
Special version	Bearing design for increased cantilever forces	1PC1304-1EB22-2FB4-Z L22

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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	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	**Aluminum series** **1PC1303** – *IE3 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	▲ New	kg	kgm²	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418)																			
• Efficiency: IE3 Premium Efficiency, service factor (SF) 1.15																			
• Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz																			
0.75	**–**	**80 M**	2850	2.5	IE3	80.7	82.2	81.9	0.86	1.56	2.6	6.2	3.0	60	71	▲ **1PC1303-0DA2■-■■■■**	11	0.0011	16
1.1	**–**	**80 M**	2885	3.6	IE3	82.7	83.9	83.1	0.85	2.25	3.0	7.1	3.3	60	71	▲ **1PC1303-0DA3■-■■■■**	12	0.0013	16
1.5	**–**	**90 S**	2910	4.9	IE3	84.2	84.6	83.2	0.86	3.00	2.7	8.1	4.2	65	77	▲ **1PC1303-0EA0■-■■■■**	15	0.0021	16
2.2	**–**	**90 L**	2910	7.2	IE3	85.9	86.8	86.1	0.88	4.20	2.6	8.3	4.0	65	77	▲ **1PC1303-0EA4■-■■■■**	19	0.0031	16
3	**–**	**100 L**	2920	9.8	IE3	87.1	88.0	87.5	0.88	5.60	2.8	8.0	4.3	67	79	▲ **1PC1303-1AA4■-■■■■**	26	0.0054	16
4	**–**	**112 M**	2945	13	IE3	88.1	89.1	88.7	0.90	7.30	1.8	8.2	3.5	69	81	▲ **1PC1303-1BA2■-■■■■**	34	0.012	16
5.5	**–**	**132 S**	2950	18	IE3	89.2	90.0	89.7	0.90	9.90	1.8	7.4	3.6	68	80	**1PC1303-1CA0■-■■■■**	43	0.024	16
7.5	**–**	**132 S**	2950	24	IE3	90.1	91.0	91.0	0.92	13.1	1.9	8.3	3.9	68	80	**1PC1303-1CA1■-■■■■**	57	0.031	16
11	**–**	**160 M**	2955	36	IE3	91.2	91.0	89.5	0.89	19.6	2.4	7.9	3.8	70	82	**1PC1303-1DA2■-■■■■**	75	0.053	16
15	**–**	**160 M**	2960	48	IE3	91.9	92.1	91.2	0.87	27.0	2.7	8.7	4.3	70	82	**1PC1303-1DA3■-■■■■**	84	0.061	16
18.5	**–**	**160 L**	2955	60	IE3	92.4	92.8	92.4	0.90	32.0	2.8	9.0	4.2	70	82	**1PC1303-1DA4■-■■■■**	94	0.068	16
4-pole: 1500 rpm at 50 Hz																			
0.55	**–**	**80 M**	1440	3.6	IE3	80.8	81.1	79.3	0.78	1.26	2.1	5.9	3.1	53	64	▲ **1PC1303-0DB2■-■■■■**	11	0.0021	16
0.75	**–**	**80 M**	1450	4.9	IE3	82.5	82.3	79.9	0.75	1.75	2.7	7.1	3.9	53	64	▲ **1PC1303-0DB3■-■■■■**	14	0.0029	16
1.1	**–**	**90 S**	1440	7.3	IE3	84.1	84.7	83.4	0.78	2.40	2.9	6.9	3.6	56	68	▲ **1PC1303-0EB0■-■■■■**	16	0.0036	16
1.5	**–**	**90 L**	1445	10	IE3	85.3	85.9	84.9	0.80	3.15	2.7	7.2	3.6	56	68	▲ **1PC1303-0EB4■-■■■■**	19	0.0049	16
2.2	**–**	**100 L**	1465	14	IE3	86.7	87.3	86.4	0.83	4.40	2.1	7.6	3.6	60	72	▲ **1PC1303-1AB4■-■■■■**	30	0.014	16
3	**–**	**100 L**	1460	20	IE3	87.7	88.4	88.2	0.83	5.90	2.3	7.3	3.7	60	72	▲ **1PC1303-1AB5■-■■■■**	30	0.014	16
4	**–**	**112 M**	1460	26	IE3	88.6	89.2	88.6	0.82	7.90	2.4	7.1	3.7	58	70	▲ **1PC1303-1BB2■-■■■■**	34	0.017	16
5.5	**–**	**132 S**	1470	36	IE3	89.6	90.1	89.5	0.84	10.5	2.1	7.2	3.4	64	76	**1PC1303-1CB0■-■■■■**	59	0.046	16
7.5	**–**	**132 M**	1470	49	IE3	90.4	91.1	90.8	0.84	14.3	2.4	7.4	3.5	64	76	**1PC1303-1CB2■-■■■■**	64	0.046	16
11	**–**	**160 M**	1475	71	IE3	91.4	91.9	91.4	0.84	20.5	2.2	6.9	3.2	65	77	**1PC1303-1DB2■-■■■■**	83	0.083	16
15	**–**	**160 L**	1475	97	IE3	92.1	92.3	91.5	0.82	28.5	2.5	8.5	3.8	65	77	**1PC1303-1DB4■-■■■■**	100	0.099	16

Voltages		**Motor protection**	No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 132 S to 160 L: Cover plate rotatable 4 x 90°										
50 Hz	230 VΔ/400 VY	Any	2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**Standard**	2	2		–
50 Hz	400 VΔ/690 VY	Any	2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**Standard**	3	4		–
50 Hz	500 VY	Any	2, 4	80 M ... 160 L	1PC1303-0D ... -1D	W/o add. charge	2	7		–
50 Hz	500 VΔ	Any	2, 4	80 M ... 160 L	1PC1303-0D ... -1D	W/o add. charge	4	0		–
Further voltages [1]		For price information, code numbers, order codes and descriptions, see page 5/14					9	0		. . .
Types of construction			No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]		2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**Standard**			A	–
With flange	IM B5 [2]		2, 4	80 M ... 160 L	1PC1303-0D ... -1D	With add. charge			F	–
With standard flange	IM B14 [2]		2, 4	80 M ... 160 L	1PC1303-0D ... -1D	With add. charge			K	–
Further types of construction		For price information, code letters and descriptions, see from page 5/15							■	. . .
Motor protection			No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 80 M to 160 L: Cover plate rotatable 4 x 90°										
Without			2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**Standard**			A	–
1 or 3 PTC thermistors – for disconnection (2 terminals)			2, 4	80 M ... 160 L	1PC1303-0D ... -1D	With add. charge			B	–
Further motor protection		For price information, code letters and descriptions, see page 5/18							■	. . .
Terminal box position			No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top			2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**Standard**			4	–
Further terminal box positions		For price information, code numbers and descriptions, see page 5/19								
Special versions			No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)			2, 4	80 M ... 160 L	1PC1303-0D ... -1D	**1PC1303-. . . . ■-■■■■-Z**				**F90 +. . .+. . .+. . .**
Options		For price information, order codes and descriptions, see from page 5/20				**1PC1303-. . . . ■-■■■■-Z**				**. . .+. . .+. . .+. . .**

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

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

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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	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	**Cast-iron series** **1PC1304** – *IE3 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm^2	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418) • Efficiency: IE3 Premium Efficiency, service factor (SF) 1.15 • Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz																			
22	**–**	**180 M**	2950	71	IE3	92.7	93.2	92.9	0.89	38.5	2.3	7.5	3.5	67	80	**1PC1304-1EA2■-■■■■**	169	0.08	16
30	**–**	**200 L**	2955	97	IE3	93.3	93.5	92.9	0.87	53.0	2.5	7.0	3.3	67	80	**1PC1304-2AA4■-■■■■**	222	0.13	16
37	**–**	**200 L**	2955	120	IE3	93.7	94.2	94.0	0.88	65.0	2.5	7.1	3.2	67	80	**1PC1304-2AA5■-■■■■**	245	0.16	16
45	**–**	**225 M**	2960	145	IE3	94.0	94.3	94.2	0.89	78.0	2.4	6.9	3.3	73	87	**1PC1304-2BA2■-■■■■**	315	0.26	16
55	**–**	**250 M**	2975	177	IE3	94.3	94.3	93.7	0.89	95.0	2.3	6.7	3.1	73	87	**1PC1304-2CA2■-■■■■**	385	0.46	13
75	**–**	**280 S**	2975	241	IE3	94.7	94.6	93.9	0.89	128	2.4	6.8	3.0	74	88	**1PC1304-2DA0■-■■■■**	510	0.77	13
90	**–**	**280 M**	2975	289	IE3	95.0	94.9	94.4	0.90	152	2.4	7.2	3.1	74	88	**1PC1304-2DA2■-■■■■**	590	0.94	13
110	**–**	**315 S**	2982	352	IE3	95.2	95.2	94.7	0.91	183	2.4	7.1	3.1	75	89	**1PC1304-3AA0■-■■■■**	750	1.4	13
132	**–**	**315 M**	2982	423	IE3	95.4	95.3	95.0	0.91	220	2.5	7.2	3.1	75	89	**1PC1304-3AA2■-■■■■**	880	1.6	13
160	**–**	**315 L**	2982	512	IE3	95.6	95.6	95.1	0.92	265	2.8	7.8	3.3	77	91	**1PC1304-3AA4■-■■■■**	980	1.9	13
200	**–**	**315 L**	2985	640	IE3	95.8	95.8	95.4	0.92	330	2.5	7.2	3.0	77	91	**1PC1304-3AA5■-■■■■**	1150	2.3	13
4-pole: 1500 rpm at 50 Hz																			
18.5	**–**	**180 M**	1470	120	IE3	92.6	93.1	92.9	0.82	35.0	2.5	7.2	3.3	66	73	**1PC1304-1EB2■-■■■■**	170	0.13	16
22	**–**	**180 L**	1470	143	IE3	93.0	93.7	93.6	0.83	41.0	2.3	6.8	3.3	68	75	**1PC1304-1EB4■-■■■■**	180	0.14	16
30	**–**	**200 L**	1470	195	IE3	93.6	94.0	93.7	0.84	55.0	2.6	7.3	3.1	65	72	**1PC1304-2AB5■-■■■■**	240	0.22	16
37	**–**	**225 S**	1478	239	IE3	93.9	94.0	93.9	0.86	66.0	2.5	6.4	2.7	65	78	**1PC1304-2BB0■-■■■■**	285	0.42	16
45	**–**	**225 M**	1478	291	IE3	94.2	94.5	94.7	0.86	80.0	2.6	6.4	2.7	65	78	**1PC1304-2BB2■-■■■■**	320	0.47	16
55	**–**	**250 M**	1482	354	IE3	94.6	94.9	94.8	0.87	96.0	2.5	6.8	2.9	66	79	**1PC1304-2CB2■-■■■■**	420	0.85	16
75	**–**	**280 S**	1485	482	IE3	95.0	95.0	94.7	0.86	133	2.5	6.9	3.0	69	83	**1PC1304-2DB0■-■■■■**	570	1.4	16
90	**–**	**280 M**	1485	579	IE3	95.2	95.1	94.9	0.87	157	2.6	7.2	3.0	70	84	**1PC1304-2DB2■-■■■■**	670	1.7	16
110	**–**	**315 S**	1488	706	IE3	95.4	95.5	95.2	0.87	191	2.6	6.8	2.9	70	84	**1PC1304-3AB0■-■■■■**	760	2.2	16
132	**–**	**315 M**	1490	846	IE3	95.6	95.7	95.7	0.87	230	2.8	7.3	3.0	73	87	**1PC1304-3AB2■-■■■■**	960	2.9	16
160	**–**	**315 L**	1490	1025	IE3	95.8	95.9	95.9	0.87	275	2.9	7.3	3.1	73	87	**1PC1304-3AB4■-■■■■**	990	3.1	16
200	**–**	**315 L**	1488	1284	IE3	96.0	96.1	95.9	0.88	340	3.2	7.4	3.0	73	87	**1PC1304-3AB5■-■■■■**	1190	3.7	16

Voltages		No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°									
50 Hz	230 VΔ/400 VY	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**Standard**	**2**	**2**		–
50 Hz	400 VΔ/690 VY	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**Standard**	**3**	**4**		–
50 Hz	500 VY	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	W/o add. charge	**2**	**7**		–
50 Hz	500 VΔ	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	W/o add. charge	**4**	**0**		–
Further voltages [1]	For price information, code numbers, order codes and descriptions, see page 5/14					**9**	**0**		. . .
Types of construction		No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**Standard**			**A**	–
With flange	IM B5 [2]	2, 4	180 M ... 315 L	1PC1304-1E ... -3A	With add. charge			**F**	–
Further types of construction	For price information, code letters and descriptions, see page 5/17							■	. . .
Motor protection		No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°									
Without		2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**Standard**			**A**	–
1 or 3 PTC thermistors – for disconnection (2 terminals)		2, 4	180 M ... 315 L	1PC1304-1E ... -3A	With add. charge			**B**	–
Further motor protection	For price information, code letters and descriptions, see page 5/18							■	. . .
Terminal box position		No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top		2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**Standard**				–
Further terminal box positions	For price information, code numbers and descriptions, see page 5/19							**4**	
Special versions		No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)		2, 4	180 M ... 315 L	1PC1304-1E ... -3A	**1PC1304-. . . . ■-■■■■-Z**				**F90** +. . .+. . .+. . .
Options	For price information, order codes and descriptions, see from page 5/22				**1PC1304-. . . . ■-■■■■-Z**				. . .+. . .+. . .+. . .

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

[2] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5) and from IM B5 (IM V3 and IM V1) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3 or IM B5 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

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Selection and ordering data

			Operating values at rated power													**Aluminum series**			
P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	**1PC1300** – *IE2 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418) • Efficiency: IE2 High Efficiency, service factor (SF) 1.15 • Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz																			
0.75	**–**	**80 M**	2805	2.6	IE2	77.4	80.0	80.1	0.84	1.67	1.9	4.9	2.3	60	71	**1PC1300-0DA2■-■■■■**	9	0.00080	16
1.1	**–**	**80 M**	2835	3.7	IE2	79.6	81.3	80.9	0.83	2.40	2.7	6.0	3.1	60	71	**1PC1300-0DA3■-■■■■**	11	0.0011	16
1.5	**–**	**90 S**	2885	5.0	IE2	81.3	81.7	79.7	0.84	3.15	2.7	6.9	3.6	65	77	**1PC1300-0EA0■-■■■■**	13	0.0017	16
2.2	**–**	**90 L**	2890	7.3	IE2	83.2	83.7	82.0	0.85	4.50	2.5	7.1	3.7	65	77	**1PC1300-0EA4■-■■■■**	15	0.0021	16
3	**–**	**100 L**	2905	9.9	IE2	84.6	85.5	84.6	0.84	6.10	2.3	7.0	3.3	67	79	**1PC1300-1AA4■-■■■■**	21	0.0044	16
4	**–**	**112 M**	2945	13	IE2	85.8	86.2	85.1	0.85	7.90	2.1	8.0	3.6	69	81	**1PC1300-1BA2■-■■■■**	27	0.0092	16
5.5	**–**	**132 S**	2950	18	IE2	87.0	88.0	87.6	0.87	10.5	1.8	6.6	2.9	68	80	**1PC1300-1CA0■-■■■■**	39	0.020	16
7.5	**–**	**132 S**	2950	24	IE2	88.1	88.5	87.6	0.87	14.1	1.8	6.7	2.9	68	80	**1PC1300-1CA1■-■■■■**	43	0.024	16
11	**–**	**160 M**	2955	36	IE2	89.4	89.3	88.0	0.87	20.5	2.1	7.4	3.2	70	82	**1PC1300-1DA2■-■■■■**	67	0.045	16
15	**–**	**160 M**	2955	48	IE2	90.3	90.7	90.0	0.88	27.0	2.4	7.6	3.4	70	82	**1PC1300-1DA3■-■■■■**	75	0.053	16
18.5	**–**	**160 L**	2955	60	IE2	90.9	91.2	90.6	0.88	33.5	2.9	7.9	3.6	70	82	**1PC1300-1DA4■-■■■■**	84	0.061	16
4-pole: 1500 rpm at 50 Hz																			
0.55	**–**	**80 M**	1440	3.6	–	77.1	76.8	73.7	0.74	1.39	2.2	5.3	3.1	53	64	**1PC1300-0DB2■-■■■■**	10	0.0017	16
0.75	**–**	**80 M**	1440	5.0	IE2	79.6	79.9	77.5	0.76	1.79	2.2	5.6	3.1	53	64	**1PC1300-0DB3■-■■■■**	11	0.0021	16
1.1	**–**	**90 S**	1425	7.4	IE2	81.4	81.8	80.0	0.78	2.50	2.3	5.6	2.9	56	68	**1PC1300-0EB0■-■■■■**	13	0.0028	16
1.5	**–**	**90 L**	1435	10	IE2	82.8	83.5	82.2	0.79	3.30	2.6	6.4	3.4	56	68	**1PC1300-0EB4■-■■■■**	16	0.0036	16
2.2	**–**	**100 L**	1455	14	IE2	84.3	85.1	84.2	0.81	4.65	2.1	6.9	3.3	60	72	**1PC1300-1AB4■-■■■■**	21	0.0086	16
3	**–**	**100 L**	1455	20	IE2	85.5	86.4	85.6	0.82	6.20	2.0	6.9	3.1	60	72	**1PC1300-1AB5■-■■■■**	25	0.011	16
4	**–**	**112 M**	1460	26	IE2	86.6	87.3	86.4	0.81	8.20	2.5	7.1	3.2	58	70	**1PC1300-1BB2■-■■■■**	29	0.014	16
5.5	**–**	**132 S**	1465	36	IE2	87.7	88.4	87.6	0.80	10.3	2.3	6.9	2.9	64	76	**1PC1300-1CB0■-■■■■**	42	0.027	16
7.5	**–**	**132 M**	1465	49	IE2	88.7	89.8	89.8	0.83	14.7	2.3	6.9	2.9	64	76	**1PC1300-1CB2■-■■■■**	49	0.034	16
11	**–**	**160 M**	1470	71	IE2	89.8	91.0	90.9	0.85	21.0	2.1	6.7	2.8	65	77	**1PC1300-1DB2■-■■■■**	71	0.065	16
15	**–**	**160 L**	1475	97	IE2	90.6	91.2	90.8	0.85	28.0	2.3	7.3	3.0	65	77	**1PC1300-1DB4■-■■■■**	83	0.083	16

Voltages		**Motor protection**	No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 80 M to 160 L: Cover plate rotatable 4 x 90°										
50 Hz	230 VΔ/400 VY	Any	2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**	**2**	**2**		–
50 Hz	400 VΔ/690 VY	Any	2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**	**3**	**4**		–
50 Hz	500 VY	Any	2, 4	80 M ... 160 L	1PC1300-0D ... -1D	W/o add. charge	**2**	**7**		–
50 Hz	500 VΔ	Any	2, 4	100 L ... 160 L	1PC1300-1A ... -1D	W/o add. charge	**4**	**0**		–
Further voltages [1]		For price information, code numbers, order codes and descriptions, see page 5/14					**9**	**0**		. . .
Types of construction			No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]		2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**			**A**	–
With flange	IM B5 [2]		2, 4	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**F**	–
With standard flange	IM B14 [2]		2, 4	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**K**	–
Further types of construction		For price information, code letters and descriptions, see from page 5/15							■	. . .
Motor protection			No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 80 M to 160 L: Cover plate rotatable 4 x 90°										
Without			2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**			**A**	–
1 or 3 PTC thermistors – for disconnection (2 terminals)			2, 4	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**B**	–
Further motor protection		For price information, code letters and descriptions, see page 5/18							■	. . .
Terminal box position			No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top			2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**			**4**	–
Further terminal box positions		For price information, code numbers and descriptions, see page 5/19								
Special versions			No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)			2, 4	80 M ... 160 L	1PC1300-0D ... -1D	**1PC1300- . . . . ■-■■■■**			**-Z**	**F90 +. . .+. . .+. . .**
Options		For price information, order codes and descriptions, see from page 5/20				**1PC1300- . . . . ■-■■■■**			**-Z**	**. . .+. . .+. . .+. . .**

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

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

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Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	**Aluminum series** **1PC1300** – *IE2 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	**kW**	**FS**	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm^2	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418)																			
• Efficiency: IE2 High Efficiency, service factor (SF) 1.15																			
• Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
6-pole: 1000 rpm at 50 Hz																			
0.37	**–**	**80 M**	925	3.8	–	67.6	67.9	64.4	0.69	1.14	2.1	4.0	2.4	42	53	**1PC1300-0DC2■-■■■■**	9	0.0017	16
0.55	**–**	**80 M**	935	5.6	IE2	73.1	73.8	70.8	0.66	1.65	2.5	4.4	2.9	42	53	**1PC1300-0DC3■-■■■■**	12	0.0025	16
0.75	**–**	**90 S**	935	7.7	IE2	75.9	77.5	76.4	0.73	1.95	1.7	4.0	2.2	43	55	**1PC1300-0EC0■-■■■■**	13	0.0030	16
1.1	**–**	**90 L**	935	11	IE2	78.1	79.3	77.7	0.70	2.90	2.2	4.4	2.6	43	55	**1PC1300-0EC4■-■■■■**	16	0.0040	16
1.5	**–**	**100 L**	970	15	IE2	79.8	80.5	79.0	0.73	3.70	2.0	5.4	2.8	59	71	**1PC1300-1AC4■-■■■■**	25	0.011	16
2.2	**–**	**112 M**	965	22	IE2	81.8	82.7	81.7	0.75	5.20	2.0	5.0	2.8	62	74	**1PC1300-1BC2■-■■■■**	29	0.014	16
3	**–**	**132 S**	970	30	IE2	83.3	83.4	81.0	0.72	7.20	1.6	5.0	2.5	63	75	**1PC1300-1CC0■-■■■■**	38	0.024	13
4	**–**	**132 M**	970	39	IE2	84.6	85.5	84.3	0.75	9.10	1.6	5.0	2.3	63	75	**1PC1300-1CC2■-■■■■**	43	0.029	13
5.5	**–**	**132 M**	970	54	IE2	86.0	87.1	86.4	0.76	12.1	1.9	5.6	2.6	63	75	**1PC1300-1CC3■-■■■■**	52	0.037	16
7.5	**–**	**160 M**	975	73	IE2	87.2	87.9	87.2	0.74	16.8	1.9	4.7	2.2	67	79	**1PC1300-1DC2■-■■■■**	77	0.075	16
11	**–**	**160 L**	975	108	IE2	88.7	89.7	89.3	0.76	23.5	1.9	4.8	2.2	67	79	**1PC1300-1DC4■-■■■■**	93	0.098	16

Voltages		No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 80 M to 160 L: Cover plate rotatable 4 x 90°									
50 Hz	230 VΔ/400 VY	6	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**	**2**	**2**		–
50 Hz	400 VΔ/690 VY	6	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**	**3**	**4**		–
50 Hz	500 VY	6	80 M ... 160 L	1PC1300-0D ... -1D	W/o add. charge	**2**	**7**		–
50 Hz	500 VΔ	6	100 L ... 160 L	1PC1300-1A ... -1D	W/o add. charge	**4**	**0**		–
Further voltages [1]	For price information, code numbers, order codes and descriptions, see page 5/14					**9**	**0**		. . .
Types of construction		No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]	6	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**			**A**	–
With flange	IM B5 [2]	6	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**F**	–
With standard flange	IM B14 [2]	6	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**K**	–
Further types of construction	For price information, code letters and descriptions, see from page 5/15							**■**	. . .
Motor protection		No. poles	Frame size	Motor type	Version				Order code(s)
Frame sizes 80 M to 160 L: Cover plate rotatable 4 x 90°									
Without		6	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**			**A**	–
1 or 3 PTC thermistors – for disconnection (2 terminals)		6	80 M ... 160 L	1PC1300-0D ... -1D	With add. charge			**B**	–
Further motor protection	For price information, code letters and descriptions, see page 5/18							**■**	. . .
Terminal box position		No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top		6	80 M ... 160 L	1PC1300-0D ... -1D	**Standard**				**4** –
Further terminal box positions	For price information, code numbers and descriptions, see page 5/19								
Special versions		No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)		6	80 M ... 160 L	1PC1300-0D ... -1D	**1PC1300- . . . . ■-■■■■ -Z**				**F90** +. . .+. . .+. . .
Options	For price information, order codes and descriptions, see from page 5/20				**1PC1300- . . . . ■-■■■■ -Z**				. . .+. . .+. . .+. . .

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

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

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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	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	Cast-iron series 1PC1301 – *IE2 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418) • Efficiency: IE2 High Efficiency, service factor (SF) 1.15 • Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz																			
22	**–**	**180 M**	2940	71	IE2	91.3	91.6	90.9	0.87	40.0	2.7	7.4	3.6	77	84	**1PC1301-1EA2■-■■■■**	145	0.069	16
30	**–**	**200 L**	2960	97	IE2	92.0	92.1	91.5	0.87	54.0	2.5	6.9	3.3	78	85	**1PC1301-2AA4■-■■■■**	200	0.13	16
37	**–**	**200 L**	2960	119	IE2	92.5	92.7	92.1	0.88	66.0	2.7	7.4	3.5	78	85	**1PC1301-2AA5■-■■■■**	225	0.15	16
45	**–**	**225 M**	2965	145	IE2	92.9	92.3	92.3	0.88	79.0	2.7	7.8	3.7	76	89	**1PC1301-2BA2■-■■■■**	295	0.23	16
55	**–**	**250 M**	2970	177	IE2	93.2	93.0	92.1	0.88	97.0	2.3	6.8	3.1	76	89	**1PC1301-2CA2■-■■■■**	360	0.40	13
75	**–**	**280 S**	2978	240	IE2	93.8	93.4	92.2	0.86	134	2.5	7.2	3.2	76	89	**1PC1301-2DA0■-■■■■**	490	0.71	13
90	**–**	**280 M**	2975	289	IE2	94.1	94.0	93.3	0.88	157	2.5	7.1	3.1	76	89	**1PC1301-2DA2■-■■■■**	530	0.83	13
110	**–**	**315 S**	2982	352	IE2	94.3	94.0	93.1	0.90	187	2.4	7.3	3.0	77	91	**1PC1301-3AA0■-■■■■**	720	1.3	13
132	**–**	**315 M**	2982	423	IE2	94.6	94.6	94.0	0.91	220	2.4	7.2	3.1	77	91	**1PC1301-3AA2■-■■■■**	880	1.6	13
160	**–**	**315 L**	2982	512	IE2	94.8	94.7	94.1	0.92	265	2.3	7.0	3.1	80	95	**1PC1301-3AA4■-■■■■**	930	1.8	13
200	**–**	**315 L**	2982	640	IE2	95.0	95.2	94.8	0.92	330	2.5	7.3	3.0	80	95	**1PC1301-3AA5■-■■■■**	1130	2.2	13
4-pole: 1500 rpm at 50 Hz																			
18.5	**–**	**180 M**	1465	121	IE2	91.2	92.0	91.9	0.84	35.0	2.5	7.2	3.4	61	74	**1PC1301-1EB2■-■■■■**	160	0.12	16
22	**–**	**180 L**	1465	143	IE2	91.6	92.2	91.9	0.84	41.5	2.6	7.3	3.5	69	76	**1PC1301-1EB4■-■■■■**	170	0.13	16
30	**–**	**200 L**	1470	195	IE2	92.3	92.8	92.5	0.84	56.0	2.5	6.7	3.3	70	77	**1PC1301-2AB5■-■■■■**	230	0.20	16
37	**–**	**225 S**	1470	240	IE2	92.7	93.0	93.0	0.88	65.0	2.3	6.6	2.9	66	79	**1PC1301-2BB0■-■■■■**	280	0.42	16
45	**–**	**225 M**	1475	291	IE2	93.1	93.4	93.3	0.87	80.0	2.5	6.9	3.1	66	79	**1PC1301-2BB2■-■■■■**	305	0.46	16
55	**–**	**250 M**	1480	355	IE2	93.5	93.5	93.1	0.85	100	2.7	6.8	3.0	66	79	**1PC1301-2CB2■-■■■■**	385	0.75	16
75	**–**	**280 S**	1485	482	IE2	94.0	93.9	93.5	0.87	132	2.5	6.8	3.0	71	85	**1PC1301-2DB0■-■■■■**	550	1.3	16
90	**–**	**280 M**	1485	579	IE2	94.2	94.1	93.8	0.87	159	2.6	7.3	3.1	71	85	**1PC1301-2DB2■-■■■■**	570	1.4	16
110	**–**	**315 S**	1490	705	IE2	94.5	94.3	94.2	0.86	195	2.7	7.4	3.0	72	86	**1PC1301-3AB0■-■■■■**	740	2.0	16
132	**–**	**315 M**	1490	846	IE2	94.7	94.6	94.5	0.87	230	2.7	7.1	2.9	75	89	**1PC1301-3AB2■-■■■■**	870	2.3	16
160	**–**	**315 L**	1490	1025	IE2	94.9	94.8	94.3	0.87	280	2.8	7.2	3.1	76	91	**1PC1301-3AB4■-■■■■**	940	2.8	16
200	**–**	**315 L**	1490	1282	IE2	95.1	94.6	94.0	0.87	350	3.1	7.5	3.2	77	92	**1PC1301-3AB5■-■■■■**	1140	3.5	16

Voltages		No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°									
50 Hz	230 VΔ/400 VY	2, 4	180 M ... 315 L	1PC1301-1E ... -3A	**Standard**	**2**	**2**		–
50 Hz	400 VΔ/690 VY	2, 4	180 M ... 315 L	1PC1301-1E ... -3A	**Standard**	**3**	**4**		–
50 Hz	500 VY	2, 4	180 M ... 315 L	1PC1301-1E ... -3A	W/o add. charge	**2**	**7**		–
50 Hz	500 VΔ	2, 4	180 M ... 315 L	1PC1301-1E ... -3A	W/o add. charge	**4**	**0**		–
Further voltages [1]	For price information, code numbers, order codes and descriptions, see page 5/14					**9**	**0**		. . .
Types of construction		No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]	2, 4	180 M ... 315 L	1PC1301-1E ... -3A	**Standard**			**A**	–
With flange	IM B5 [2]	2, 4	180 M ... 315 M	1PC1301-1E ... -3A	With add. charge			**F**	–
Further types of construction	For price information, code letters and descriptions, see page 5/17							■	. . .
Motor protection		No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°									
Without		2, 4	180 M ... 315 L	1PC1301-1E ... -3A	**Standard**			**A**	–
3 PTC thermistors – for disconnection (2 terminals)		2, 4	180 M ... 315 L	1PC1301-1E ... -3A	With add. charge			**B**	–
Further motor protection	For price information, code letters and descriptions, see page 5/18							■	. . .
Terminal box position		No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top		2, 4	180 M ... 315 L	1PC1301-1E ... -3A	**Standard**			**4**	–
Further terminal box positions	For price information, code numbers and descriptions, see page 5/19								
Special versions		No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)		2, 4	180 L ... 315 L	1PC1301-1E ... -3A	**1PC1301-. . . . ■-■■■■-Z**				**F90** +. . .+. . .+. . .
Options	For price information, order codes and descriptions, see from page 5/22				**1PC1301-. . . . ■-■■■■-Z**				. . .+. . .+. . .+. . .

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

[2] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5) and from IM B5 (IM V3 and IM V1) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3 or IM B5 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

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Selection and ordering data (continued)

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Operating values at rated power: n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{rated}, 50 Hz, 4/4	I_{rated}, 50 Hz, 400 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pfA}, 50 Hz	L_{WA}, 50 Hz	**Cast-iron series** **1PC1301** – *IE2 version in accordance with IEC 60034-30* Article No.	$m_{IM\ B3}$	J	Torque class
kW	**kW**	**FS**	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm²	CL
• Cooling: self-ventilated (IC411) or with order code F90 forced-air cooled without external fan and fan cover (IC418) • Efficiency: IE2 High Efficiency, service factor (SF) 1.15 • Insulation: Thermal class 180 (temperature class H), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
6-pole: 1000 rpm at 50 Hz																			
15	**–**	**180 L**	975	147	IE2	89.7	90.1	89.5	0.78	31.0	2.5	6.0	3.1	57	70	**1PC1301-1EC4■-■■■■**	155	0.17	16
18.5	**–**	**200 L**	978	181	IE2	90.4	91.3	91.2	0.82	36.0	2.4	5.8	2.6	63	76	**1PC1301-2AC4■-■■■■**	200	0.25	16
22	**–**	**200 L**	978	215	IE2	90.9	91.7	91.4	0.82	42.5	2.5	6.2	2.6	63	76	**1PC1301-2AC5■-■■■■**	220	0.30	16
30	**–**	**225 M**	980	292	IE2	91.7	92.1	91.9	0.83	57.0	2.5	5.6	2.7	65	78	**1PC1301-2BC2■-■■■■**	300	0.58	16
37	**–**	**250 M**	980	361	IE2	92.2	92.4	92.4	0.83	70.0	2.8	6.0	2.5	62	77	**1PC1301-2CC2■-■■■■**	370	0.86	16
45	**–**	**280 S**	982	438	IE2	92.7	92.9	92.7	0.84	83.0	2.7	6.3	2.6	65	79	**1PC1301-2DC0■-■■■■**	460	1.1	16
55	**–**	**280 M**	985	533	IE2	93.1	93.4	93.5	0.86	99.0	2.5	6.4	2.6	65	79	**1PC1301-2DC2■-■■■■**	510	1.4	16
75	**–**	**315 S**	988	725	IE2	93.7	93.5	93.1	0.84	138	2.5	6.7	2.8	65	79	**1PC1301-3AC0■-■■■■**	660	2.1	16
90	**–**	**315 M**	988	870	IE2	94.0	93.8	93.1	0.84	165	2.6	6.9	2.8	65	79	**1PC1301-3AC2■-■■■■**	730	2.5	16
110	**–**	**315 L**	988	1063	IE2	94.3	94.2	94.1	0.86	196	2.7	7.0	2.8	68	82	**1PC1301-3AC4■-■■■■**	940	3.6	16
132	**–**	**315 L**	988	1276	IE2	94.6	94.5	94.3	0.86	235	3.0	7.5	2.9	69	84	**1PC1301-3AC5■-■■■■**	990	4.0	16
160	**–**	**315 L**	988	1546	IE2	94.8	94.3	94.0	0.86	285	3.1	7.7	3.3	69	84	**1PC1301-3AC6■-■■■■**	1160	4.7	16

Voltages			No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°										
50 Hz	230 VΔ/400 VY		6	180 L ... 315 L	1PC1301-1E ... -3A	**Standard**	**2**	**2**		–
50 Hz	400 VΔ/690 VY		6	180 L ... 315 L	1PC1301-1E ... -3A	**Standard**	**3**	**4**		–
50 Hz	500 VY		6	180 L ... 315 L	1PC1301-1E ... -3A	W/o add. charge	**2**	**7**		–
50 Hz	500 VΔ		6	180 L ... 315 L	1PC1301-1E ... -3A	W/o add. charge	**4**	**0**		–
Further voltages [1]		For price information, code numbers, order codes and descriptions, see page 5/14					**9**	**0**		. . .
Types of construction			No. poles	Frame size	Motor type	Version				Order code(s)
Without flange	IM B3 [2]		6	180 L ... 315 L	1PC1301-1E ... -3A	**Standard**			**A**	–
With flange	IM B5 [2]		6	180 L ... 315 M	1PC1301-1E ... -3A	With add. charge			**F**	–
Further types of construction		For price information, code letters and descriptions, see page 5/17							**■**	. . .
Motor protection			No. poles	Frame size	Motor type	Version				Order code(s)
Cover plate rotatable 4 x 90°										
Without			6	180 L ... 315 L	1PC1301-1E ... -3A	**Standard**			**A**	–
3 PTC thermistors – for disconnection (2 terminals)			6	180 L ... 315 L	1PC1301-1E ... -3A	With add. charge			**B**	–
Further motor protection		For price information, code letters and descriptions, see page 5/18							**■**	. . .
Terminal box position			No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top			6	180 L ... 315 L	1PC1301-1E ... -3A	**Standard**			**4**	–
Further terminal box positions		For price information, code numbers and descriptions, see page 5/19								
Special versions			No. poles	Frame size	Motor type					Order code(s)
Forced-air cooled motors w/o ext. fan/fan cover (IC418)			6	180 L ... 315 L	1PC1301-1E ... -3A	**1PC1301-. . . . ■-■■■■-Z**				**F90** +. . .+. . .+. . .
Options		For price information, order codes and descriptions, see from page 5/22				**1PC1301-. . . . ■-■■■■-Z**				. . .+. . .+. . .+. . .

[1] Operating values at rated power for 60 Hz possible on request (for 4-pole and 6-pole).

[2] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5) and from IM B5 (IM V3 and IM V1) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3 or IM B5 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

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Article No. supplements and special versions · Voltages · Aluminum series 1PC1300, 1PC1303

Selection and ordering data

Voltages	Voltage code 12th and 13th position of the Article No.		Additional identification code with order code and plain text, if required	Motor category							
				Motor version	**Motor type (aluminum)**	**Motor type – frame size**					
						80	**90**	**100**	**112**	**132**	**160**
				IE2 High Efficiency	1PC1300	**1PC1300**					
				IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . ■ - ■ . . .				Motor version	Motor type	Frame size					
1PC1303 - . . . . ■ - ■ . . .			Order code			80	90	100	112	132	160
Voltage at 50 Hz or 60 Hz											
50 Hz 230 VΔ/400 VY	**2**	**2**	**–**	All	All	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY	**3**	**4**	**–**	All	All	□	□	□	□	□	□
50 Hz 500 VY	**2**	**7**	**–**	All	All	○	○	○	○	○	○
50 Hz 500 VΔ	**4**	**0**	**–**	All	All	–	–	○	○	○	○
Non-standard voltage and/or frequencies											
Non-standard winding [1]	**9**	**0**	**M1Y •** and customer specifications	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

□ Standard version
○ Without additional charge
• This order code only determines the price of the version – Additional plain text is required.
O. R. Possible on request
– Not possible

Article No. supplements and special versions · Voltages · Cast-iron series 1PC1301, 1PC1304

Selection and ordering data

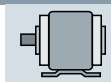
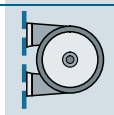
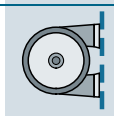
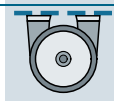
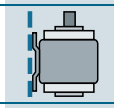
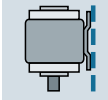
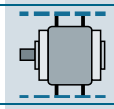
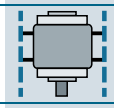
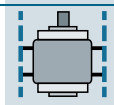
Voltages	Voltage code 12th and 13th position of the Article No.		Additional identification code with order code and plain text, if required	Motor category							
				Motor version	**Motor type (cast iron)**	**Motor type – frame size**					
						180	**200**	**225**	**250**	**280**	**315**
				IE2 High Efficiency	1PC1301	**1PC1301**					
				IE3 Premium Efficiency	1PC1304	**1PC1304**					
1PC1301 - . . . . ■ - ■ . . .				Motor version	Motor type	Frame size					
1PC1304 - . . . . ■ - ■ . . .			Order code			180	200	225	250	280	315
Voltage at 50 Hz or 60 Hz											
50 Hz 230 VΔ/400 VY	**2**	**2**	**–**	All	All	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY	**3**	**4**	**–**	All	All	□	□	□	□	□	□
50 Hz 500 VY	**2**	**7**	**–**	All	All	○	○	○	○	○	○
50 Hz 500 VΔ	**4**	**0**	**–**	All	All	○	○	○	○	○	○
Non-standard voltage and/or frequencies											
Non-standard winding [1]	**9**	**0**	**M1Y •** and customer specifications	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

□ Standard version
○ Without additional charge
• This order code only determines the price of the version – Additional plain text is required.
O. R. Possible on request

[1] Special voltages or 60 Hz on request.

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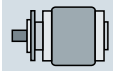
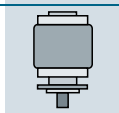
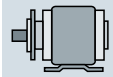
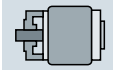
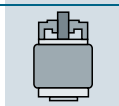
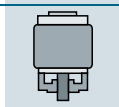
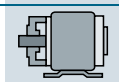
Selection and ordering data

Types of construction		Type of construction identification letter 14th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category							
				Motor version	**Motor type (aluminum)**	**Motor type – frame size**					
						80	**90**	**100**	**112**	**132**	**160**
				IE2 High Efficiency	1PC1300	**1PC1300**					
				IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . ■ . .				Motor version	Motor type	Frame size					
1PC1303 - . . . . . - . ■ . .			Order code			80	90	100	112	132	160
Without flange											
IM B3		**A**	**–**	All	All	□	□	□	□	□	□
IM B6		**T**	**–**	All	All	□	□	□	□	□	□
IM B7		**U**	**–**	All	All	□	□	□	□	□	□
IM B8		**V**	**–**	All	All	□	□	□	□	□	□
IM V6		**D**	**–**	All	All	□	□	□	□	□	□
IM V5 without protective cover		**C**	**–**	All	All	□	□	□	□	□	□
IM B30		**Z**	**P3A**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
IM V30		**Z**	**P3C**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
IM V31		**Z**	**P3D**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

For legend, see page 5/16.

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Article No. supplements and special versions · Types of construction · Aluminum series 1PC1300, 1PC1303

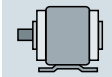
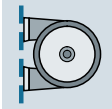
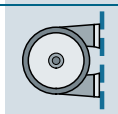
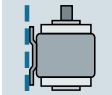
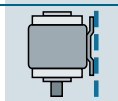
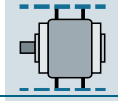
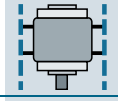
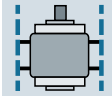
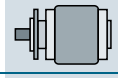
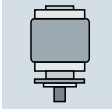
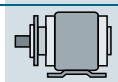
Types of construction		Type of construction identification letter 14th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category **Motor version**	**Motor type (aluminum)**	**Motor type – frame size** **80**	**90**	**100**	**112**	**132**	**160**
				IE2 High Efficiency	1PC1300	**1PC1300**					
				IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . ■ . .				Motor version	Motor type	Frame size					
1PC1303 - . . . . . - . ■ . .			Order code			80	90	100	112	132	160
With flange		**Acc. to EN 50347 Acc. to DIN 42948**				**FF165 A 200**	**FF165 A 200**	**FF215 A 250**	**FT215 A 250**	**FF265 A 300**	**FF300 A 350**
IM B5		**F**	–	All	All	✓	✓	✓	✓	✓	✓
IM V1 without protective cover		**G**	–	All	All	✓	✓	✓	✓	✓	✓
IM V3		**H**	–	All	All	✓	✓	✓	✓	✓	✓
IM B35		**J**	–	All	All	✓	✓	✓	✓	✓	✓
With standard flange		**Acc. to EN 50347 Acc. to DIN 42948**				**FT100 C 120**	**FT115 C 140**	**FT130 C 160**	**FT130 C 160**	**FT165 C 200**	**FT165 C 200**
IM B14		**K**	–	All	All	✓	✓	✓	✓	✓	✓
IM V19		**L**	–	All	All	✓	✓	✓	✓	✓	✓
IM V18 without protective cover		**M**	–	All	All	✓	✓	✓	✓	✓	✓
IM B34		**N**	–	All	All	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge
O. R. Possible on request

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Selection and ordering data

Types of construction		Type of construction letter 14th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category									
				Motor version	**Motor type (cast iron)**	**Motor type – frame size**							
						180	**200**	**225**	**250**	**280**	**315 S/M**	**315 L 2-pole**	**315 L 4, 6-pole**
				IE2 High Efficiency	1PC1301	**1PC1301**							
				IE3 Premium Efficiency	1PC1304	**1PC1304**							
				Motor version	Motor type	Frame size							
						180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4, 6-pole
1PC1301 - . . . . . - . ■ . . **1PC1304 - . . . . . - . ■ . .**			Order code										
Without flange													
IM B3		**A**	–	All	All	□	□	□	□	□	□	□	□
IM B6		**T**	–	All	All	□	□	□	□	□	□	□	□
IM B7		**U**	–	All	All	□	□	□	□	□	□	□	□
IM B8		**V**	–	All	All	□	□	□	□	□	□	□	□
IM V6		**D**	–	All	All	□	□	□	□	□	□	✓	□
IM V5 without protective cover		**C**	–	All	All	□	□	□	□	□	□	✓	□
IM B30		**Z**	**P3A**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
IM V30		**Z**	**P3C**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
IM V31		**Z**	**P3D**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
With flange		**Acc. to EN 50347 Acc. to DIN 42948**				**FF300 A 350**	**FF350 A 400**	**FF400 A 450**	**FF500 A 550**	**FF500 A 550**	**FF600 A 660**	**FF600 A 660**	**FF600 A 660**
IM B5		**F**	–	All	All	✓	✓	✓	✓	✓	✓	–	–
IM V1 without protective cover		**G**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
IM V3		**H**	–	All	All	✓	✓	✓	✓	✓	✓	–	–
IM B35		**J**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge
– Not possible
O. R. Possible on request

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Article No. supplements and special versions · Motor protection · Aluminum series 1PC1300, 1PC1303

Selection and ordering data

Motor protection	Motor protection letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category							
			Motor version	**Motor type (aluminum)**	**Motor type – frame size**					
					80	**90**	**100**	**112**	**132**	**160**
			IE2 High Efficiency	1PC1300	**1PC1300**					
			IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . . ■ .			Motor version	Motor type	Frame size					
1PC1303 - . . . . . - . . ■ .		Order code			80	90	100	112	132	160
Motor protection										
None (standard)	**A**	–	All	All	□	□	□	□	□	□
1 or 3 PTC thermistors – for disconnection (2 terminals)	**B**	–	All	All	✓	✓	✓	✓	✓	✓
2 or 6 PTC thermistors – for warning and disconnection (4 terminals)	**C**	–	All	All	✓	✓	✓	✓	✓	✓
1 KTY84-130 temperature sensor (2 terminals)	**F**	–	All	All	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge

Article No. supplements and special versions · Motor protection · Cast-iron series 1PC1301, 1PC1304

Selection and ordering data

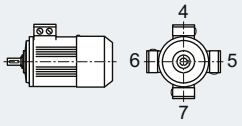
Motor protection	Motor protection letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category							
			Motor version	**Motor type (cast iron)**	**Motor type – frame size**					
					180	**200**	**225**	**250**	**280**	**315**
			IE2 High Efficiency	1PC1301	**1PC1301**					
			IE3 Premium Efficiency	1PC1304	**1PC1304**					
1PC1301 - . . . . . - . . ■ .			Motor version	Motor type	Frame size					
1PC1304 - . . . . . - . . ■ .		Order code			180	200	225	250	280	315
Motor protection										
None (standard)	**A**	–	All	All	□	□	□	□	□	□
1 or 3 PTC thermistors – for disconnection (2 terminals)	**B**	–	All	All	✓	✓	✓	✓	✓	✓
2 or 6 PTC thermistors – for warning and disconnection (4 terminals)	**C**	–	All	All	✓	✓	✓	✓	✓	✓
1 KTY84-130 temperature sensor (2 terminals)	**F**	–	All	All	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge

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Article No. supplements and special versions · Terminal box position · Aluminum series 1PC1300, 1PC1303

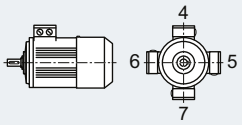
Selection and ordering data

Terminal box position	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category							
			**Motor version**	**Motor type (aluminum)**	**Motor type – frame size**					
					80	**90**	**100**	**112**	**132**	**160**
			IE2 High Efficiency	1PC1300	**1PC1300**					
			IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . . . ■			Motor version	Motor type	Frame size					
1PC1303 - . . . . . - . . . ■		Order code			80	90	100	112	132	160
Terminal box position [1]										
Terminal box at top	**4**	–	All	All	□	□	□	□	□	□
Terminal box on RHS	**5**	–	All	All	✓	✓	✓	✓	✓	✓
Terminal box on LHS	**6**	–	All	All	✓	✓	✓	✓	✓	✓
Terminal box at bottom [2]	**7**	–	All	All	–	–	✓	✓	✓	✓

□ Standard version
✓ With additional charge
– Not possible

Article No. supplements and special versions · Terminal box position · Cast-iron series 1PC1301, 1PC1304

Selection and ordering data

Terminal box position	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category							
			**Motor version**	**Motor type (cast iron)**	**Motor type – frame size**					
					180	**200**	**225**	**250**	**280**	**315**
			IE2 High Efficiency	1PC1301	**1PC1301**					
			IE3 Premium Efficiency	1PC1304	**1PC1304**					
1PC1301 - . . . . . - . . . ■			Motor version	Motor type	Frame size					
1PC1304 - . . . . . - . . . ■		Order code			180	200	225	250	280	315
Terminal box position [1]										
Terminal box at top	**4**	–	All	All	□	□	□	□	□	□
Terminal box on RHS	**5**	–	All	All	✓	✓	✓	✓	✓	✓
Terminal box on LHS	**6**	–	All	All	✓	✓	✓	✓	✓	✓
Terminal box at bottom [2]	**7**	–	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

□ Standard version
✓ With additional charge
O. R. Possible on request

[1] This refers to the position of the terminal box base on the housing.
[2] For motors without feet.

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Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category							
		Motor version	**Motor type (aluminum)**	**Motor type – frame size**					
				80	**90**	**100**	**112**	**132**	**160**
		IE2 High Efficiency	1PC1300	**1PC1300**					
		IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . . . . -Z		Motor version	Motor type	Frame size					
1PC1303 - . . . . . - . . . . -Z	Order code			80	90	100	112	132	160
Motor protection									
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	All	All	–	–	✓	✓	✓	✓
Prepared for mounting a SIPLUS CMS 1000 vibration sensor	**Q05**	All	All	–	–	✓	✓	✓	✓
Motor connection and terminal box									
External grounding	**H04**	All	All	✓	✓	✓	✓	✓	✓
Terminal box on NDE [1]	**H08**	All	All	✓	✓	✓	✓	✓	✓
Terminal box in position 180°; connection from right	**R12**	All	All	○	○	○	○	○	○
Terminal box in position 0°; connection from right	**R13**	All	All	○	○	○	○	○	○
One metal cable gland		All	All	◘	◘	◘	◘	◘	◘
Windings and insulation									
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30** *New!*	All	All	–	–	✓	✓	✓	✓
Colors and paint finish									
Standard paint finish in RAL 7030 stone gray		All	All	◘	◘	◘	◘	◘	◘
Unpainted (only cast-iron parts primed)	**S00**	All	All	○	○	○	○	○	○
Unpainted, only primed	**S01**	All	All	✓	✓	✓	✓	✓	✓
Special paint finish sea air resistant	**S03**	All	All	✓	✓	✓	✓	✓	✓
Top coat polyurethane [2]	**S06** *New!*	All	All	✓	✓	✓	✓	✓	✓
Paint 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 Catalog Section 1 "Introduction")	**Y53 •** *New!* and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (See Catalog Section 1 "Introduction")	**Y56 •** *New!* and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓
Mechanical version and degrees of protection									
Protective cover [3]	**H00**	All	All	✓	✓	✓	✓	✓	✓
Screwed-on (instead of cast) feet	**H01**	All	All	✓	✓	✓	✓	✓	✓
Condensation drainage holes		All	All	◘	◘	◘	◘	◘	◘
Rust-resistant screws (externally)	**H07**	All	All	–	–	✓	✓	✓	✓
IP65 degree of protection	**H20**	All	All	✓	✓	✓	✓	✓	✓
IP56 degree of protection	**H22**	All	All	✓	✓	✓	✓	✓	✓
Coolant temperature and installation altitude									
Coolant temperature –30 to +40 °C	**D04**	All	All	✓	✓	✓	✓	✓	✓
Versions in accordance with standards and specifications									
China Compulsory Certification	**D01** *New!*	All	All	✓	✓	–	–	–	–
Bearings and lubrication									
Bearing design for increased cantilever forces [8]	**L22**	All	All	–	–	–	–	✓	✓
Regreasing device	**L23**	All	All	–	–	✓	✓	✓	✓
Bearing insulation DE		All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Bearing insulation NDE		All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Balance and vibration quantity									
Vibration quantity level A		All	All	◘	◘	◘	◘	◘	◘
Vibration quantity level B	**L00**	All	All	✓	✓	✓	✓	✓	✓
Half-key balancing (standard)		All	All	◘	◘	◘	◘	◘	◘
Balancing without key, the feather key is supplied	**L01**	All	All	✓	✓	✓	✓	✓	✓
Full-key balancing	**L02**	All	All	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 5/21.

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Article No. supplements and special versions · Options · Aluminum series 1PC1300, 1PC1303

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category							
		Motor version	**Motor type (aluminum)**	**Motor type – frame size**					
				80	**90**	**100**	**112**	**132**	**160**
		IE2 High Efficiency	1PC1300	**1PC1300**					
		IE3 Premium Efficiency	1PC1303	**1PC1303**					
1PC1300 - . . . . . - . . . . -Z **1PC1303 - . . . . . - . . . . -Z**	Order code	Motor version	Motor type	Frame size 80	90	100	112	132	160
Shaft and rotor									
Shaft extension with standard dimensions, without feather keyway	**L04**	All	All	–	–	✓	✓	✓	✓
Standard cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347	**L05**	All	All	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	**L07**	All	All	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	**L08**	All	All	✓	✓	✓	✓	✓	✓
Non-standard shaft extension, DE [4]	**Y58** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Non-standard shaft extension, NDE [4]	**Y59** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Special shaft steel		All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Heating and ventilation									
Motors without external fan and without fan cover	**F90**	All	All	○	○	○	○	○	○
Rating plate and additional rating plates									
Additional rating plate for voltage tolerance [5]	**B07**	All	All	✓	✓	✓	✓	✓	✓
Second rating plate, loose	**M10**	All	All	✓	✓	✓	✓	✓	✓
Additional rating plate with deviating rating plate data	**Y80** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Additional rating plate with identification codes	**Y82** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	**Y84** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates									
Acceptance test certificate 3.1 according to EN 10204 [6]	**B02**	All	All	✓	✓	✓	✓	✓	✓
Printed German/English operating instructions enclosed [7]	**B04**	All	All	✓	✓	✓	✓	✓	✓
Standard test (routine test) with acceptance	**B65**	All	All	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	**B83**	All	All	✓	✓	✓	✓	✓	✓

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

1) Important: Dimensions "C" and "CA" deviate from the EN 50347 standard. Note dimensions according to dimensions sheet generator!

2) Order code **S06** cannot be combined with order code **S00** and **S01**. It can be combined with **Y53** and **Y56** on request.

3) Order code **H00** provides mechanical protection.

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

5) Can be ordered for 230 VΔ/400 VY or 400 VΔ/690 VY (voltage code "**22**" or "**34**").

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

7) The compact operating instructions are available in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300.

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

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Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category							
		Motor version	**Motor type (cast iron)**	**Motor type – frame size**					
				180	**200**	**225**	**250**	**280**	**315**
		IE2 High Efficiency	1PC1301	**1PC1301**					
		IE3 Premium Efficiency	1PC1304	**1PC1304**					
1PC1301 - . . . . . - . . . . -Z		Motor version	Motor type	Frame size					
1PC1304 - . . . . . - . . . . -Z	Order code			180	200	225	250	280	315
Motor protection									
Measuring nipple for SPM shock pulse measurement for bearing inspection	**Q01**	All	All	✓	✓	✓	✓	✓	✓
Prepared for mounting a SIPLUS CMS 1000 vibration sensor	**Q05**	All	All	✓	✓	✓	✓	✓	✓
Motor connection and terminal box									
External grounding		All	All	◘	◘	◘	◘	◘	◘
Terminal box on NDE [1]	**H08**	All	All	✓	✓	✓	✓	✓	✓
Terminal box in position 180°; connection from left	**R12**	All	All	○	○	○	○	○	○
Terminal box in position 0°; connection from right	**R13**	All	All	○	○	○	○	○	○
One metal cable gland		All	All	◘	◘	◘	◘	◘	◘
Windings and insulation									
Increased air humidity/temperature with 30 to 60 g water per m^3 of air	**N30** *New!*	All	All	✓	✓	✓	✓	✓	✓
Colors and paint finish									
Standard paint finish in RAL 7030 stone gray		All	All	◘	◘	◘	◘	◘	◘
Unpainted (only cast-iron parts primed)	**S00**	All	All	○	○	○	○	○	○
Unpainted, only primed	**S01**	All	All	✓	✓	✓	✓	✓	✓
Special paint finish	**S02** *New!*	All	All	✓	✓	✓	✓	✓	✓
Special paint finish sea air resistant	**S03**	All	All	✓	✓	✓	✓	✓	✓
Internal coating	**S05**	All	All	✓	✓	✓	✓	✓	✓
Top coat polyurethane [2]	S06 *New!*	All	All	✓	✓	✓	✓	✓	✓
Paint 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 Catalog Section 1 "Introduction")	**Y53 •** and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (See Catalog Section 1 "Introduction")	**Y56 •** *New!* and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓
Mechanical version and degrees of protection									
Screwed-on (instead of cast) feet	**H01**	All	All	✓	✓	✓	✓	✓	✓
Condensation drainage holes		All	All	◘	◘	◘	◘	◘	◘
Rust-resistant screws (externally)	**H07**	All	All	✓	✓	✓	✓	✓	✓
IP65 degree of protection	**H20**	All	All	✓	✓	✓	✓	✓	✓
IP56 degree of protection	**H22**	All	All	✓	✓	✓	✓	✓	✓
Coolant temperature and installation altitude									
Coolant temperature –30 to +40 °C	**D04**	All	All	✓	✓	✓	✓	✓	✓
Bearings and lubrication									
Regreasing device with M10X1 grease nipple according to DIN 71412-A	**L19**	All	All	✓	✓	✓	✓	○	○
Bearing design for increased cantilever forces [8]	**L22**	All	All	✓	✓	✓	✓	–	–
Regreasing device	**L23**	All	All	✓	✓	✓	✓	–	–
Bearing insulation DE		All	All	–	–	O. R.	O. R.	O. R.	O. R.
Bearing insulation NDE		All	All	–	–	O. R.	O. R.	O. R.	O. R.
Balance and vibration quantity									
Vibration quantity level A		All	All	◘	◘	◘	◘	◘	◘
Vibration quantity level B [3]	**L00**	All	All	✓	✓	✓	✓	✓	✓
Half-key balancing (standard)		All	All	◘	◘	◘	◘	◘	◘
Balancing without key, the feather key is supplied	**L01**	All	All	✓	✓	✓	✓	✓	✓
Full-key balancing	**L02**	All	All	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 5/23.

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Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category							
		Motor version	**Motor type (cast iron)**	**Motor type – frame size**					
				180	**200**	**225**	**250**	**280**	**315**
		IE2 High Efficiency	1PC1301	**1PC1301**					
		IE3 Premium Efficiency	1PC1304	**1PC1304**					
1PC1301 - . . . . . - . . . . -Z		Motor version	Motor type	Frame size					
1PC1304 - . . . . . - . . . . -Z	Order code			180	200	225	250	280	315
Shaft and rotor									
Shaft extension with standard dimensions, without feather keyway	**L04**	All	All	✓	✓	✓	✓	✓	✓
Standard cylindrical shaft extension (second shaft extension) NDE acc. to EN 50347	**L05**	All	All	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	**L07**	All	All	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	**L08**	All	All	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension, DE [4]	**Y58** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension, NDE [4]	**Y59** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Special shaft steel		All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Heating and ventilation									
Motors without external fan and without fan cover	**F90**	All	All	○	○	○	○	○	○
Rating plate and additional rating plates									
Additional rating plate for voltage tolerance [5]	**B07**	All	All	✓	✓	✓	✓	✓	✓
Second rating plate, loose	**M10** *New!*	All	All	✓	✓	✓	✓	✓	✓
Additional rating plate with deviating rating plate data	**Y80** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Additional rating plate with ordering data	**Y82** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters possible)	**Y84** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates									
Acceptance test certificate 3.1 according to EN 10204 [6]	**B02**	All	All	✓	✓	✓	✓	✓	✓
Printed German/English operating instructions enclosed [7]	**B04**	All	All	✓	✓	✓	✓	✓	✓
Standard test (routine test) with acceptance	**B65**	All	All	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	**B83**	All	All	✓	✓	✓	✓	✓	✓

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

1) Important: Dimensions "C" and "CA" deviate from the EN 50347 standard. Note dimensions according to dimensions sheet generator!

2) Order code **S06** can only be ordered in combination with **S03**, and cannot be combined with order code **S00**, **S01** and **S02**. It can be combined with **Y53** and **Y56** on request.

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

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

5) Can be ordered for 230 VΔ/400 VY or 400 VΔ/690 VY (voltage code "**22**" or "**34**").

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

7) The compact operating instructions are available in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300.

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

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Overview

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that flexible couplings, types N-EUPEX and RUPEX or torsionally rigid couplings, types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended.

Available from:

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

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Phone: +49 2871 922185
Fax: +49 2871 922579

www.siemens.com
Email: flendercouplings@siemens.com

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

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

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

Standardized taper pins are available from general engineering suppliers.

Available from:

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

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

Foundation block according to DIN 799

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

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

Available from:

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

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

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

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

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

Available from:

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

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

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More information

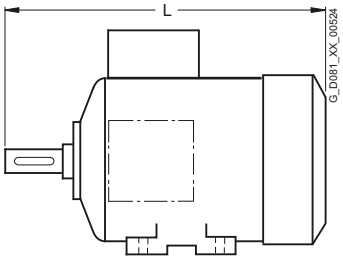
Spare motors and repair parts

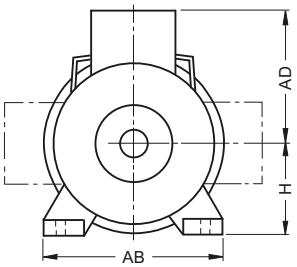
- Commitment to provide replacement motors and repair parts following delivery of the motor:
  - For up to 3 years after the delivery of the original motor, in the event of total motor failure – with regard to the mounting dimensions and functions – Siemens will supply a comparable replacement motor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

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

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Overview





Frame size	Type	Dimensions L	AD	H	AB
80 M	Aluminum series 1PC1300, 1PC1303				
	self-ventilated	292	98.5	80	150
	forced-air cooled	253			
90 S/ 90 L	Aluminum series 1PC1300, 1PC1303				
	self-ventilated	347	103.5	90	165
	forced-air cooled	295			
100 L	Aluminum series 1PC1300, 1PC1303				
	self-ventilated	395.5	118	100	196
	forced-air cooled	221.5			
112 M	Aluminum series 1PC1300, 1PC1303				
	self-ventilated	389	129	112	226
	forced-air cooled	311			
132 S/ 132 M	Aluminum series				
	self-ventilated 1PC1300, 1PC1303-1CA0	465	149	132	256
	self-ventilated 1PC1303-1CA1, -1CB0	515			
	forced-air cooled 1PC1300, 1PC1303-1CA0	380.5			
	forced-air cooled 1PC1303-1CA1, -1CB0	430.5			
160 M	Aluminum series 1PC1300, 1PC1303				
	self-ventilated	604	172	160	300
	forced-air cooled	510	175.5		
160 L	Aluminum series				
	self-ventilated 1PC1300	604	172	160	300
	self-ventilated 1PC1303-1DA4, -1DB4	664			
	forced-air cooled 1PC1300	510	175.5		
	self-ventilated 1PC1303-1DA4, -1DB4	570			
180 M/ 180 L	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-1EA2, -1EB2, -1EC4	668	242.5	180	339
	1PC1301/1PC1304-1EB4	698			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-1EA2, -1EB2, -1EC4	562	244	180	339
	1PC1301/1PC1304-1EB4	592			
200 L	Cast-iron series, self-ventilated				
	1PC1301-2AA4, -2AA5, -2AB5, -2AC4, -2AC5/1PC1304-2AA4	721	306	200	378
	1PC1304-2AA5, -2AB5	746			
	Cast-iron series, forced-air cooled				
	1PC1301-2AA4, -2AA5, -2AB5, -2AC4, -2AC5/1PC1304-2AA4	617	307	200	378
	1PC1304-2AA5, -2AB5	642			
225 S/ 225 M	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-2BB0	788	329	225	436
	1PC1301/1PC1304-2BA2	818			
	1PC1301-2BB2, -2BC2/1PC1304-2BB2	848			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-2BB0	610	329	225	436
	1PC1301/1PC1304-2BA2	700			
	1PC1301/1PC1304-2CA2, -2CB2, -2CC2	730			

Frame size	Type	Dimensions L	AD	H	AB
250 M	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-2CA2, -2CB2, -2CC2	887	398	250	490
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-2CA2, -2CB2, -2CC2	764	375	250	490
280 S/ 280 M	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-2DA0, -2DB0, -2DC0	960	421	280	540
	1PC1304-2DA2, -2DB2	1070			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-2DA0, -2DB0, -2DC0	830	398	280	540
	1PC1304-2DA2, -2DB2	940			
315 S	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-3AA0	1052	455	315	610
	1PC1301-3AB0, -3AC0, 1PC1304-3AB0	1082			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-3AA0	905	455	315	610
	1PC1301-3AB0, -3AC0/ 1PC1304-3AB0	935			
315 M	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-3AA2	1217	455	315	610
	1PC1301/1PC1304-3AB2	1247			
	1PC1301-3AC2	1082			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-3AA2	1070	455	315	610
	1PC1301/1PC1304-3AB2	1100			
	1PC1301-3AC2	935			
315 L	Cast-iron series, self-ventilated				
	1PC1301/1PC1304-3AA4	1217	455	315	610
	1PC1301/1PC1304-3AB4/ 1PC1301-3AC4, -3AC5	1247			
	1PC1301/1PC1304-3AA5	1372			
	1PC1301/1PC1304-3AB5, 1PC1301-3AC6	1402			
	Cast-iron series, forced-air cooled				
	1PC1301/1PC1304-3AA4	1070	455	315	610
	1PC1301/1PC1304-3AB4, 1PC1301-3AC4, -3AC5	1100			
	1PC1301/1PC1304-3AA5	1225			
	1PC1301/1PC1304-3AB5, 1PC1301-3AC6	1255			

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Overview (continued)

Notes on the dimensions

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

Dimension designation	ISO fit ISO 286-2	
D, DA	to 30 over 30 to 50 over 50	j6 k6 m6
N	to 250 over 250	j6 h6
F, FA		h9
K		H17
S	flange (FF)	H17

  The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

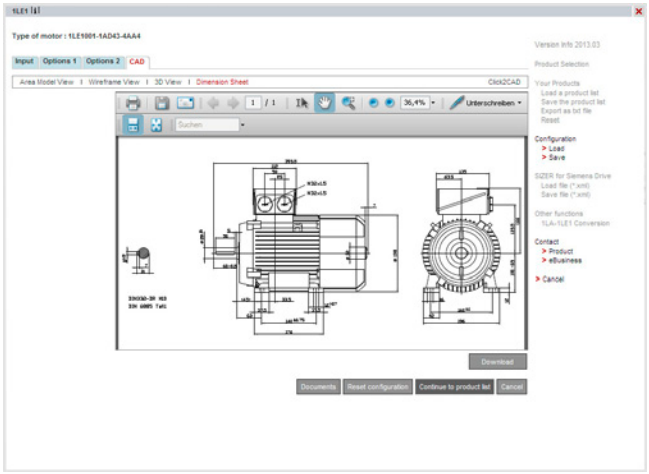
- Dimension tolerances
  For the following dimensions, the permissible deviations are given below:

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

  Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.
- All dimensions are specified in mm.

Dimension sheet generator
(part of the DT Configurator)

A dimensional drawing can be created in the DT Configurator for every configurable motor. A dimensional drawing can be requested for every other motor.



When a complete Article No. is entered with or without order codes, a dimensional drawing can be called up under the "Documentation" tab.
These dimensional drawings can be presented in different views and sections and printed.
The corresponding dimension sheets can be exported, saved and processed further in DXF format (interchange/import format for CAD systems) or as bitmap graphics.

Online access in the Siemens Industry Mall

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

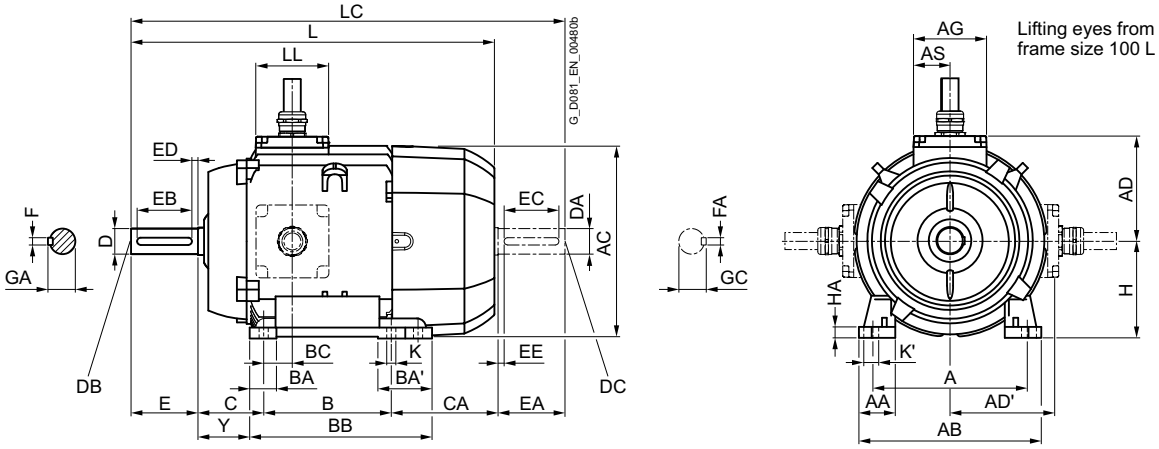
Offline access in the Interactive Catalog CA 01

The DT Configurator is also part of the Interactive Catalog CA 01 on DVD – the offline version of Siemens Industry Mall. CA 01 can be ordered from the relevant Siemens sales office or via the Internet: www.siemens.com/automation/CA01

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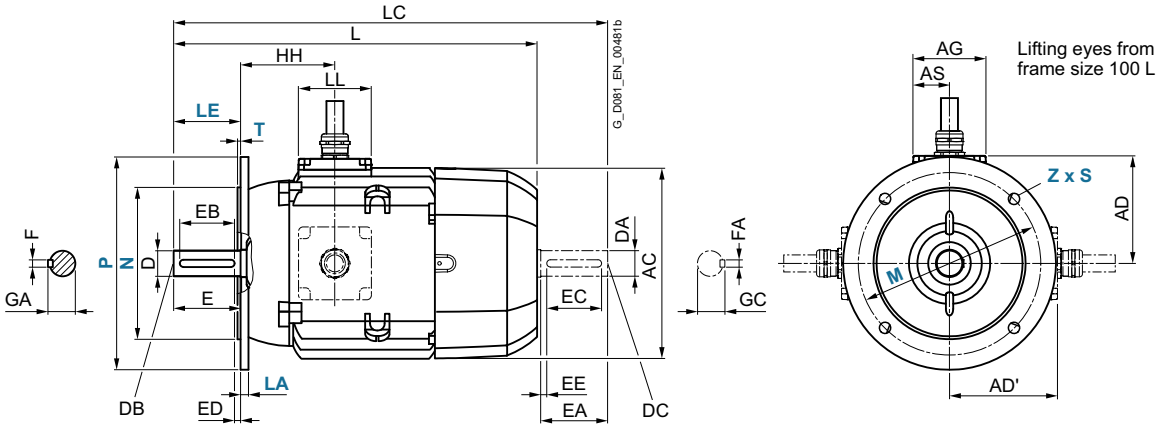
Dimensional drawings

Type of construction IM B3



Type of construction IM B5

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor				Dimension designation acc. to **IEC**																
Frame size	Type		No. of poles	A	AA	AB	AC	AD	AD'	AG	AS	B	BA	BA'	BB	BC	C	CA	H	HA	Y
80 M	1PC1300 1PC1303	All	2, 4, 6	125	30.5	150	159	98.5	98.5	37.5	75	100	32	32	118	23	50	113	80	8	41
90 S 90 L	1PC1300 1PC1303	All	2, 4, 6 2, 4, 6	140	30.5	165	178	103.5	103.5	37.5	75	100 125	33	54	143	22.5	56	159 134	90	10	47
100 L	1PC1300 1PC1303	All	2, 4, 6	160	42	196	198	115	115	47.5	95	140	37.5	37.5	176	33.5	63	141	100	12	45
112 M	1PC1300 1PC1303	All	2, 4, 6	190	46	226	222	126	126	47.5	95	140	37.5	37.5	176	26	70	130	112	12	52
132 S	1PC1300 1PC1303	All 1CA0 1CA1, 1CB0	2, 4, 6 2, 4	216	53	256	262	146	146	55	110	140	38	76 76 [1]	218 218 [2]	26.5	89	167 128.5 [3] 178.5	132	15	69
132 M	1PC1300 1PC1303	All 1CB2	2, 4, 6 2, 4	216	53	256	262	146	146	55	110	178	38	76	218	26.5	89	129 178.5	132	15	69
160 M	1PC1300 1PC1303	All 1DA2, 1DA3, 1DB2	2, 4, 6 2, 4	254	60	300	314	172	172	60	120	210	44	89 89 [4]	300 300 [5]	47	108	192 148 [6]	160	18	85
160 L	1PC1300 1PC1303	All 1DA4, 1DB4	2, 4, 6 2, 4	254	60	300	314	172	172	60	120	254	44	89 –	300	47	108	148 208	160	18	85

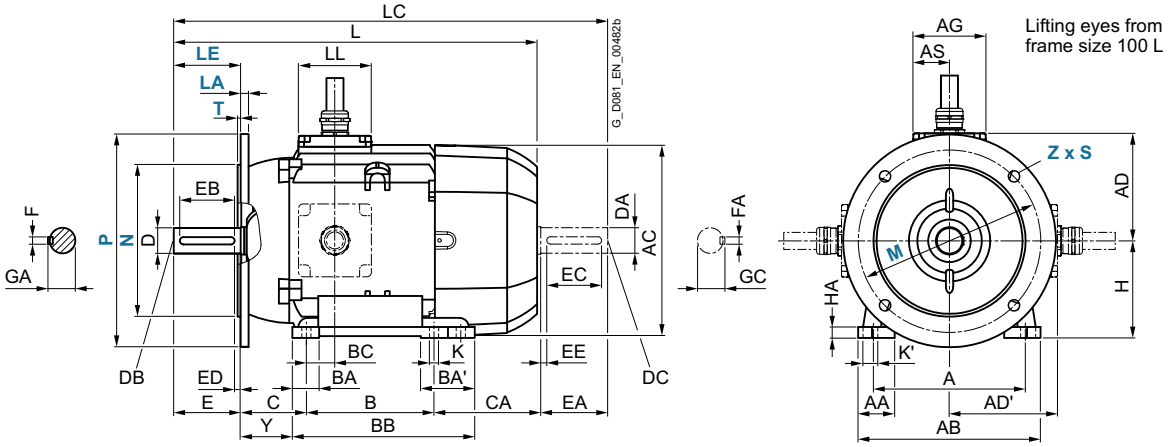
[1] With screwed-on feet, dimension BA' is 38 mm.
[2] With screwed-on feet, dimension BB is 180 mm.
[3] With screwed-on feet, dimension CA is 166.5 mm.
[4] With screwed-on feet, dimension BA' is 44 mm.
[5] With screwed-on feet, dimension BB is 256 mm.
[6] With screwed-on feet, dimension CA is 192 mm.

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Dimensional drawings (continued)

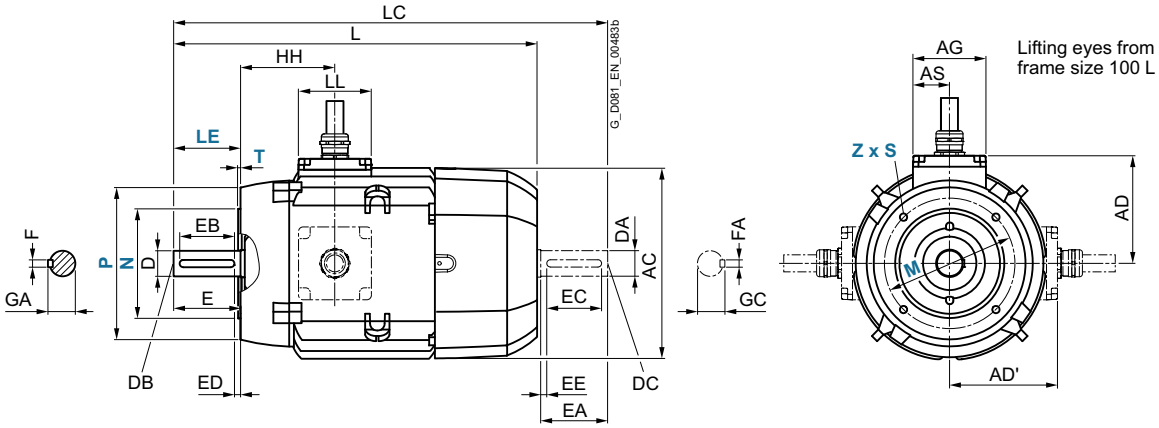
Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)

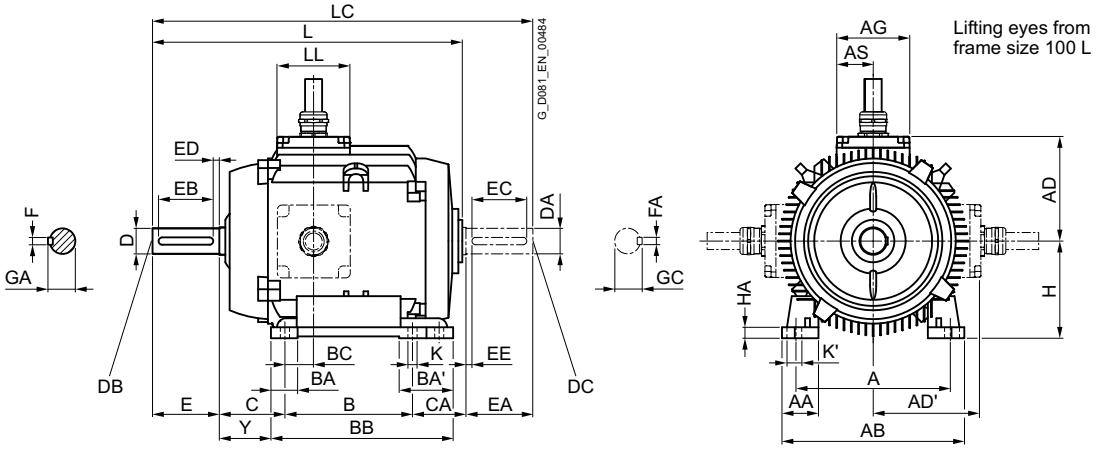


For motor				Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension						
Frame size	Type		No. of poles	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	1PC1300 1PC1303	All	2, 4, 6	73	9.5	13.5	292	343	75	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1PC1300 1PC1303	All	2, 4, 6 2, 4, 6	78.5	10	14	347	405	75	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1PC1300 1PC1303	All	2, 4, 6	96.5	12	16	395.5	454	95	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1PC1300 1PC1303	All	2, 4, 6	96	12	16	389	450	95	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1PC1300 1PC1303	All 1CA0 1CA1, 1CB0	2, 4, 6 2, 4	115.5	12	16	465 515	535.5 585.5	110	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	1PC1300 1PC1303	All 1CB2	2, 4, 6 2, 4	115.5	12	16	465 515	535.5 585.5	110	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	1PC1300 1PC1303	All 1DA2, 1DA3, 1DB2	2, 4, 6 2, 4	155	15	19	604	730	120	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1PC1300 1PC1303	All 1DA4, 1DB4	2, 4, 6 2, 4	155	15	19	604 664	730 739	120	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

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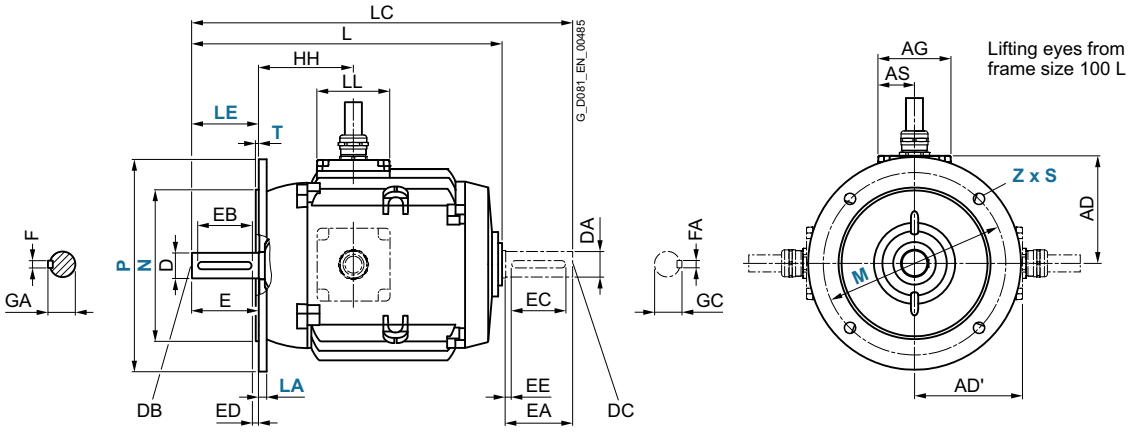
Dimensional drawings

Type of construction IM B3



Type of construction IM B5

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor				Dimension designation acc. to **IEC**															
Frame size	Type		No. of poles	A	AA	AB	AD	AD'	AG	AS	B	BA	BA'	BB	BC	C	CA	H	HA	Y
80 M	1PC1300 1PC1303	All	2, 4, 6	125	30.5	150	98.5	98.5	75	37.5	100	32	32	118	23	50	70	80	8	41
90 S 90 L	1PC1300 1PC1303	All	2, 4, 6 2, 4, 6	140	30.5	165	103.5	103.5	75	37.5	100 125	33	54	143	22.5	56	103 78	90	10	47
100 L	1PC1300 1PC1303	All	2, 4, 6	160	42	196	118	118	95	47.5	140	37.5	37.5	176	33.5	63	63	100	12	45
112 M	1PC1300 1PC1303	All	2, 4, 6	190	46	226	129	129	95	47.5	140	37.5	37.5	176	26	70	45	112	12	52
132 S	1PC1300 1PC1303	All 1CA0 1CA1, 1CB0	2, 4, 6 2, 4	216	53	256	149	149	110	55	140	38	76 76 [1] –	218 218 [2]	26.5	89	77 –	132	15	69
132 M	1PC1300 1PC1303	All 1CB2	2, 4, 6 2, 4	216	53	256	149	149	110	55	140 178	3	76 –	218	26.5	89	39 –	132	15	69
160 M	1PC1300 1PC1303	All 1DA2, 1DA3, 1DB2	2, 4, 6 2, 4	254	60	300	175.5	175.5	120	60	210	44	89 89 [3]	300 300 [4]	47	108	92	160	18	85
160 L	1PC1300 1PC1303	All 1DA4, 1DB4	2, 4, 6 2, 4	254	60	300	175.5	175.5	120	60	254	44	89	300	47	108	48	160	18	85

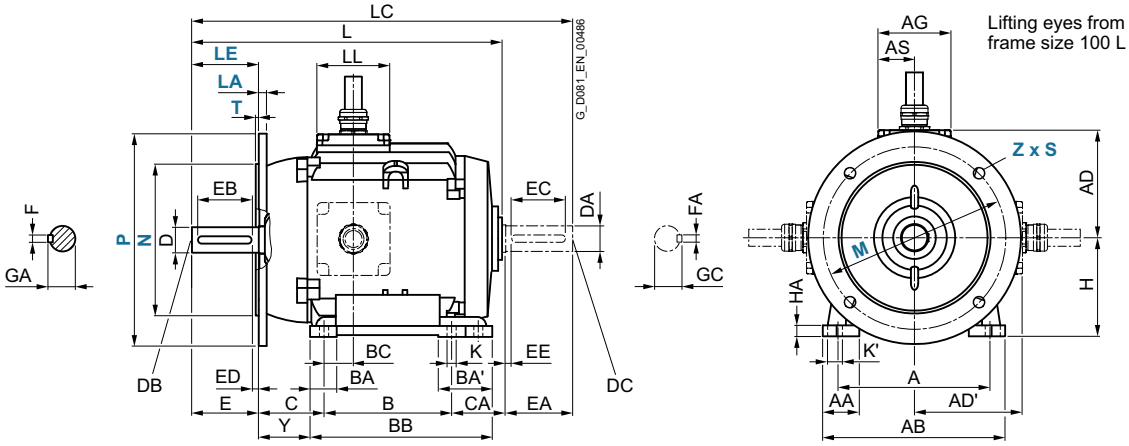
[1] With screwed-on feet, dimension BA' is 38 mm.
[2] With screwed-on feet, dimension BB is 180 mm.
[3] With screwed-on feet, dimension BA' is 44 mm.
[4] With screwed-on feet, dimension BB is 256 mm.

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Dimensional drawings (continued)

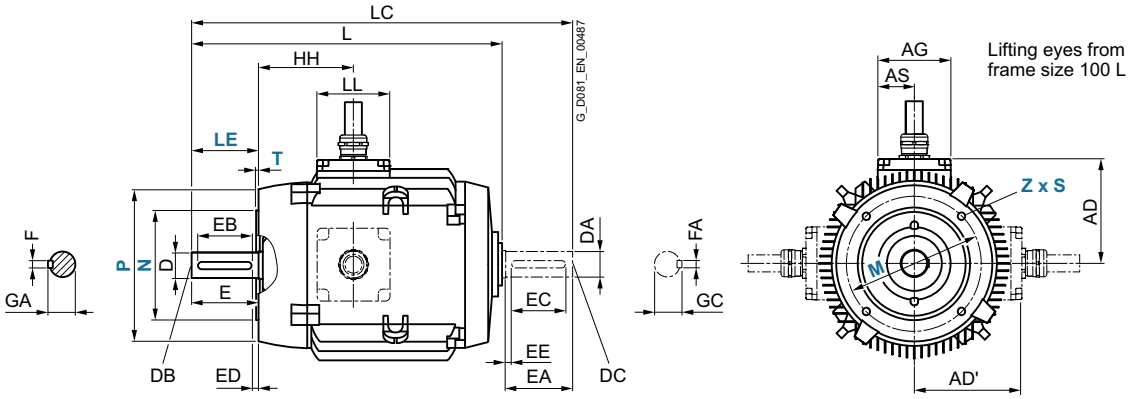
Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



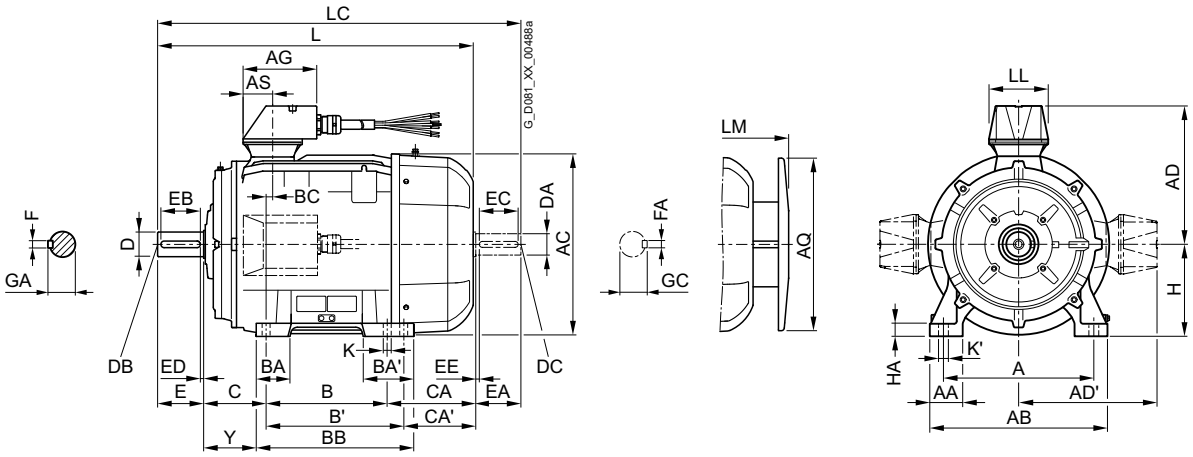
For motor				Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension						
Frame size	Type		No. of poles	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	1PC1300 1PC1303	All	2, 4, 6	73	9.5	13.5	253	300	75	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1PC1300 1PC1303	All	2, 4, 6 2, 4, 6	78.5	10	14	295	349	75	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1PC1300 1PC1303	All	2, 4, 6	96.5	12	16	321.5	376	95	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1PC1300 1PC1303	All	2, 4, 6	96	12	16	311	365	95	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1PC1300 1PC1303	All 1CA0 1CA1, 1CB0	2, 4, 6 2, 4	115.5	12	16	380.5 430.5	446 496	110	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	1PC1300 1PC1303	All 1CB2	2, 4, 6 2, 4	115.5	12	16	380.5 430.5	446 496	110	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	1PC1300 1PC1303	All 1DA2, 1DA3, 1DB2	2, 4, 6 2, 4	155	15	19	510	630	120	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1PC1300 1PC1303	All 1DA4, 1DB4	2, 4, 6 2, 4	155	15	1	510 570	630 690	120	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

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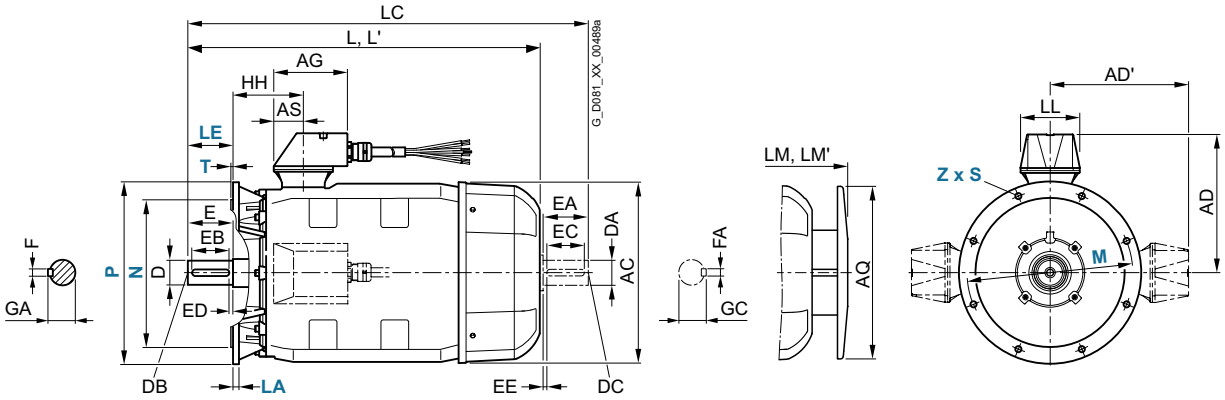
Dimensional drawings

Type of construction IM B3



Type of construction IM B5

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



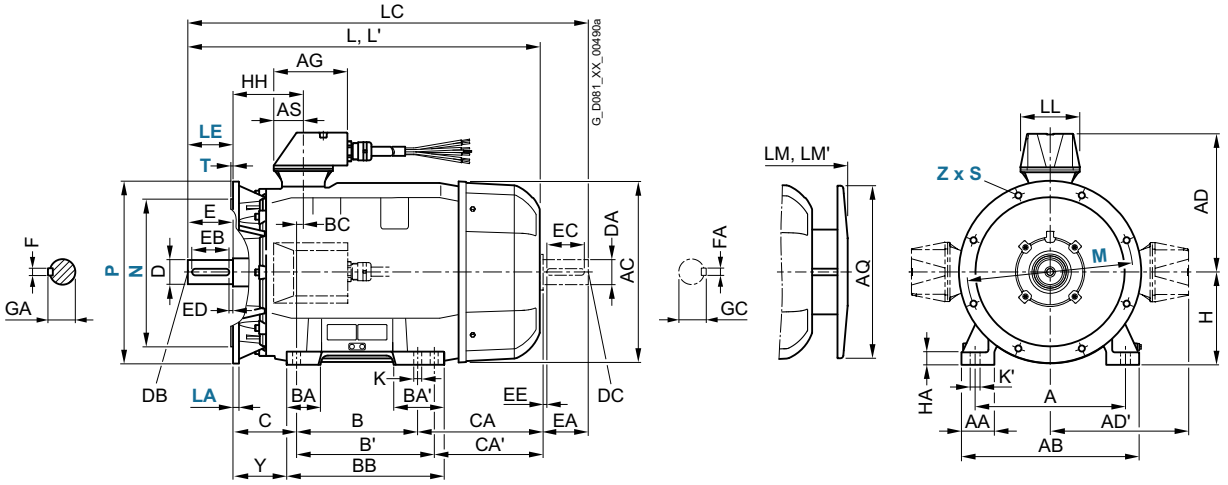
For motor				Dimension designation acc. to **IEC**																					
Frame size	Type		No. of poles	A	AA	AB	AC	AD	AD'	AG	AS	AH	AQ	AS	B	B'	BA	BA'	BB	BC	C	CA	CA'	H	HA	Y
180 M	1PC1301/ 1PC1304	1EA2, 1EB2	2, 4	279	65	339	356	242.5	242.5	100	50	468	340	50	241	279	85	120	328	34	121	202	164	180	20	95
180 L	1PC1301/ 1PC1304	1EB4	4	279	65	339	356	242.5	242.5	100	50	468	340	50	241	279	85	120	328	34	121	232	194	180	20	95
	1PC1301	1EC4	6																			202	164			
200 L	1PC1301	2AA4, 2AA5, 2AB5, 2AC4, 2AC5	2 4, 6 6	318	70	378	396	306	306	175	65	533	340	65	305	–	104	104	355	31	133	177	–	200	25	108
	1PC1304	2AA4 2AA5, 2AB5	2 2, 4																							
225 S	1PC1301/ 1PC1304	2BB0	4	356	80	436	449	328	328	175	65	556	425	65	286	311	92	117	361	15	149	218	193	225	34	124
225 M	1PC1301	2BA2 2BB2, 2BC2	2 4, 6	356	80	436	449	328	328	175	65	556	425	65	286	311	92	117	361	15	149	278	253	225	34	124
	1PC1304	2BA2 2BB2	2 4																							
250 M	1PC1301	2CA2 2CB2, 2CC2	2 4, 6	406	100	490	497	398	398	224	90	620	470	90	349	–	102	102	409	24	168	235	–	250	40	138
	1PC1304	2CA2 2CB2	2 4																							

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



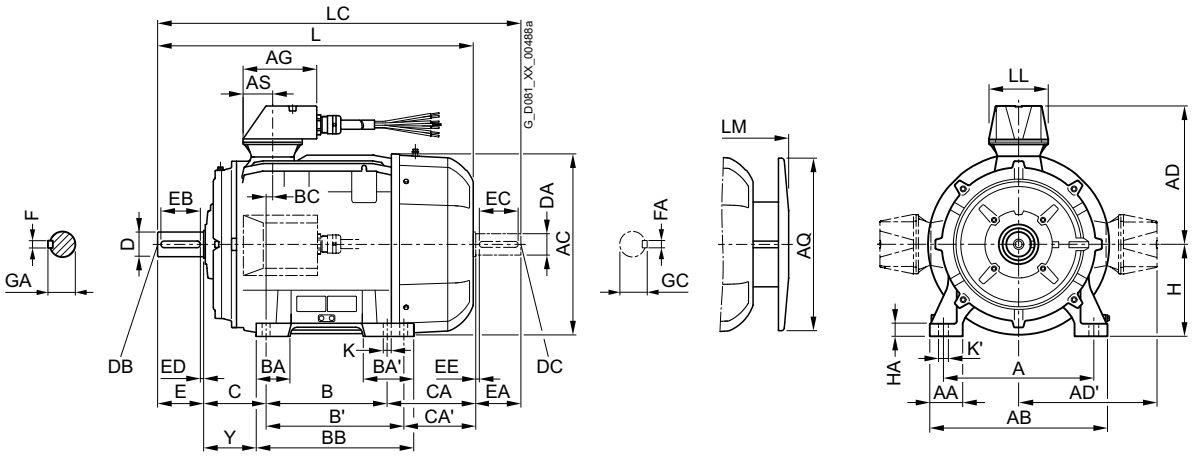
For motor				Dimension designation acc. to **IEC**							DE shaft extension							NDE shaft extension						
Frame size	Type		No. of poles	HH	K	K'	L	LC [1]	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1PC1301/ 1PC1304	1EA2, 1EB2	2, 4	155	15	19	668	784	100	758	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1PC1301/ 1PC1304	1EB4	4	155	15	19	698	814	100	788	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
	1PC1301	1EC4	6				668	784		758														
200 L	1PC1301	2AA4, 2AA5, 2AB5, 2AC4, 2AC5	2 4, 6 6	164	19	25	721	835	130	811	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1PC1304	2AA4	2																					
		2AA5, 2AB5	2, 4				746	860		836														
225 S	1PC1301/ 1PC1304	2BB0	4	164	19	25	788	903	130	888	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1PC1301	2BA2	2	164	19	25	818	933	130	918	55	M20	110	100	5	18	59	48	M16	110	100	5	14	51.5
		2BB2, 2BC2	4, 6				848	963		948	60		140	125	10		64	55	M20				16	59
	1PC1304	2BA2	2				818	933		918	55		110	100	5	16	59	48	M16				14	51.5
		2BB2	4				848	963		948	60		140	125	10	18	64	55	M20				16	59
250 M	1PC1301	2CA2	2	192	24	30	887	1002	180	987	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		2CB2, 2CC2	4, 6					1032			65						69	60		140	125	10	18	64
	1PC1304	2CA2	2					1002			60						64	55		110	100	5	16	59
		2CB2	4					1032			65						69	60		140	125	10	18	64

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

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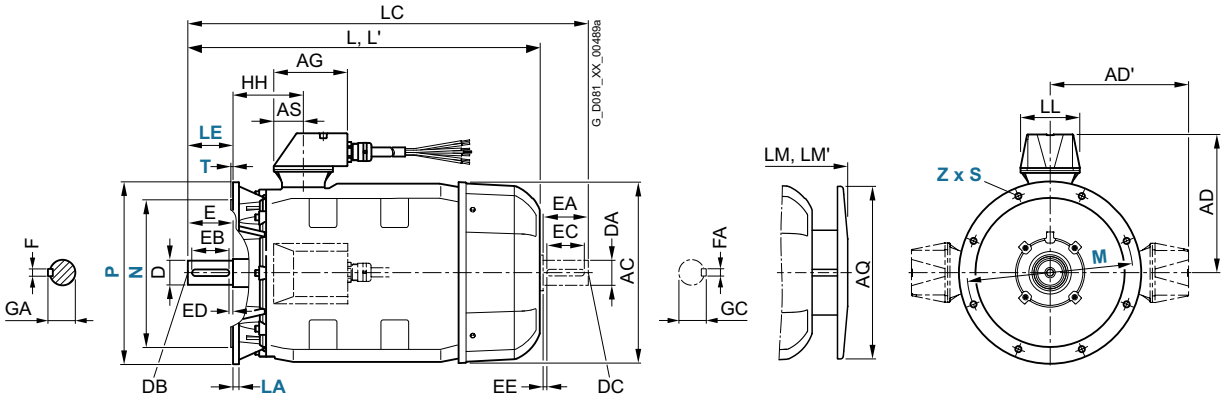
Dimensional drawings (continued)

Type of construction IM B3



Type of construction IM B5

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor				Dimension designation acc. to **IEC**																						
Frame size	Type		No. poles	A	AA	AB	AC	AD	AD'	AG	AH	AQ'	AS	B	B'	BA	BA'	BB	BC	C	CA	CA'	H	HA	Y
280 S	1PC1301	2DA0	2	457	100	540	551	421	421	224	672	525	90	368	419	101	152	479	20	190	267	216	280	40	160
		2DB0, 2DC0	4, 6																						
	1PC1304	2DA0	2																						
		2DB0	4																						
280 M	1PC1301	2DA2	2	457	100	540	551	421	421	224	672	525	90	368	419	101	152	479	20	190	267	216	280	40	160
		2DB2	4																						
		2DC2	6																		377	326			
	1PC1304	2DA2	2																						
		2DB2	4																						
315 S	1PC1301	3AA0	2	508	120	610	616	455	455	242	780	590	121	406	457	113	170	527	22	216	295	244	315	50	181
		3AB0, 3AC0	4, 6																						
	1PC1304	3AA0	2																						
		3AB0	4																						
315 M [1]	1PC1301	3AA2	2	508	120	610	616	455	455	242	780	590	121	457	508	113	170	578	22	216	409	358	315	50	181
		3AB2	4																						
		3AC2	6											406	457			527			295	244			
	1PC1304	3AA2	2											457	508			578			409	358			
		3AB2	4																						
315 L [1]	1PC1301	3AA4	2	508	120	610	616	455	455	242	780	590	121	457	508	113	170	578	22	216	409	358	315	50	181
		3AB4, 3AC4	4, 6																						
		3AA5	2													176	227	648			564	513			146
		3AB5	4																						
		3AC5	6													113	170	578			409	358			181
		3AC6	6													176	227	648			564	513			146
	1PC1304	3AA4	2													113	170	578			409	–			181
		3AB4	4																						
		3AA5	2													176	227	648			564	–			146
		3AB5	4																						

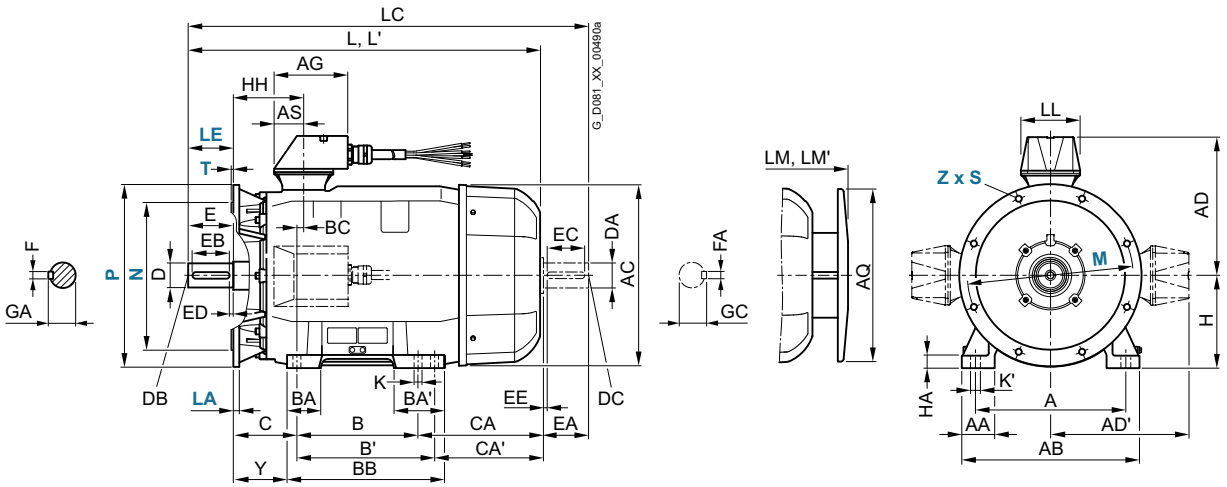
[1] When ordering with screwed-on feet (as standard for RHS and LHS terminal box positions; optional for top terminal box position – order code **H01**) these screwed-on feet have 3 drill holes on the NDE with the respective dimension B 406, 457 and 508 mm; the dimension BB is 666 mm.

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



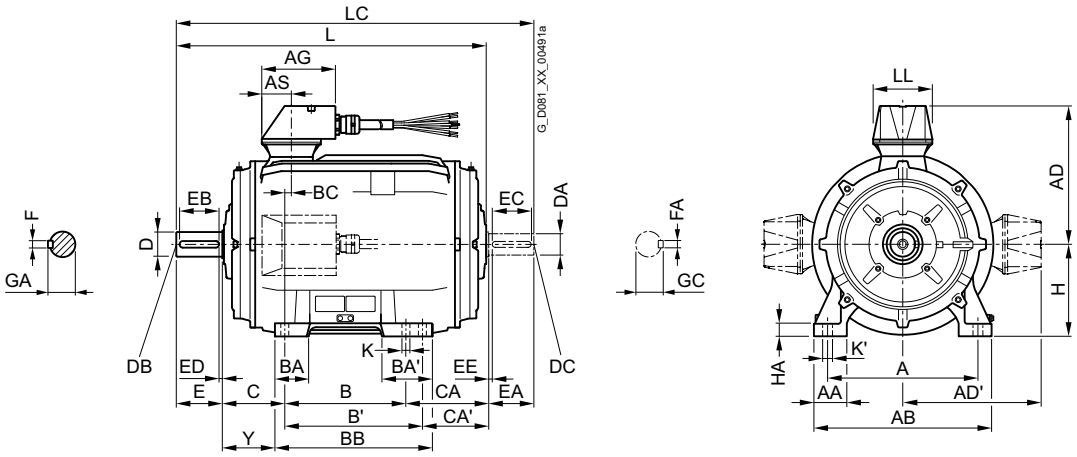
For motor				Dimension designation acc. to **IEC**							DE shaft extension							NDE shaft extension						
Frame size	Type		No. of poles	HH	K	K'	L	LC [1]	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
280 S	1PC1301	2DA0	2	210	24	30	960	1105	180	1070	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		2DB0, 2DC0	4, 6								75					20	79.5	65						69
	1PC1304	2DA0	2								65					18	69	60						64
		2DB0	4								75					20	79.5	65						69
280 M	1PC1301	2DA2	2	210	24	30	960	1105	180	1070	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		2DB2	4								75					20	79.5	65						69
		2DC2	6																					
	1PC1304	2DA2	2				1070	1215		1180	65					18	69	60						64
		2DB2	4								75					20	79.5	65						69
315 S	1PC1301	3AA0	2	238	28	35	1052	1197	242	1162	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB0, 3AC0	4, 6				1082	1227		1192	80		170	140	25	22	85	70					20	74.5
	1PC1304	3AA0	2				1052	1197		1162	65		140	125	10	18	69	60					18	64
		3AB0	4				1082	1227		1192	80		170	140	25	22	85	70					20	74.5
315 M	1PC1301	3AA2	2	238	28	35	1217	1362	242	1327	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB2	4				1247	1392		1357	80		170	140	25	22	85	70					20	74.5
		3AC2	6				1082	1227		1192														
	1PC1304	3AA2	2				1217	1362		1327	65		140	125	10	18	69	60					18	64
		3AB2	4				1247	1392		1357	80		170	140	25	22	85	70					20	74.5
315 L	1PC1301	3AA4	2	238	28	35	1217	1362	242	1327	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB4, 3AC4	4, 6				1247	1392		1357	80		170	140	25	22	85	70					20	74.5
		3AA5	2				1372	1517		1482	65		140	125	10	18	69	60					18	64
		3AB5	4				1402	1547		1512	80		170	140	25	22	85	70					20	74.5
		3AC5	6				1247	1392		1357														
		3AC6	6				1402	1547		1512														
	1PC1304	3AA4	2				1217	1362		1327	65		140	125	10	18	69	60					18	64
		3AB4	4				1247	1392		1357	80		170	140	25	22	85	70					20	74.5
		3AA5	2				1372	1517		1482	65		140	125	10	18	69	60					18	64
		3AB5	4				1402	1547		1512	80		170	140	25	22	85	70					20	74.5

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

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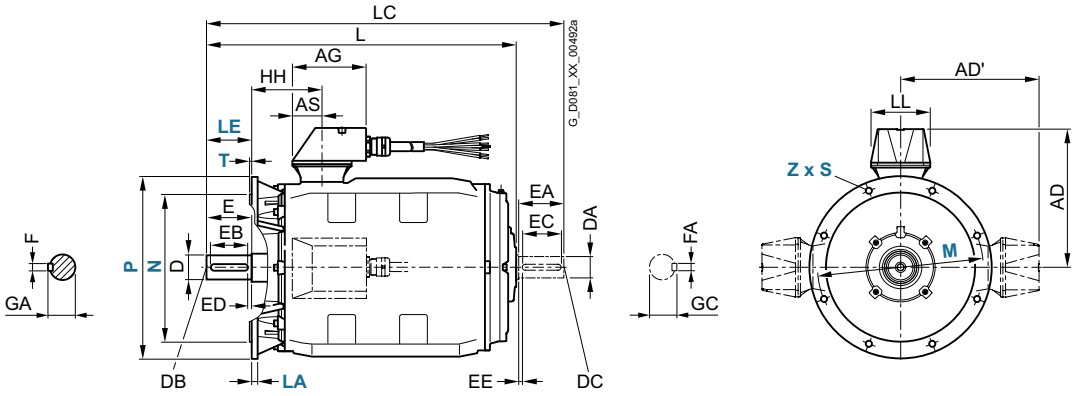
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



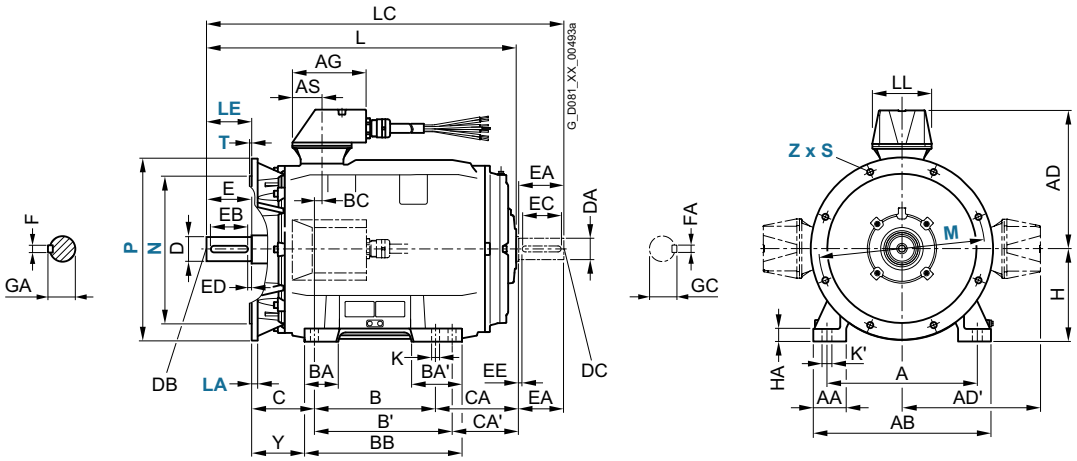
For motor				Dimension designation acc. to **IEC**																			
Frame size	Type		No. of poles	A	AA	AB	AD	AD'	AG	AH	AS	B	B'	BA	BA'	BB	BC	C	CA	CA'	H	HA	Y
180 M	1PC1301/ 1PC1304	1EA2, 1EB2	2, 4	279	65	339	244	244	100	468	50	241	279	85	120	328	34	121	94	56	180	20	95
180 L	1PC1301/ 1PC1304	1EB4	4 4	279	65	339	244	244	100	468	50	241	279	85	120	328	34	121	124	86	180	20	95
	1PC1301	1EC4	6																94	56			
200 L	1PC1301	2AA4, 2AA5 2AB5, 2AC4 2AC5	2 4, 6 6	318	70	378	307	307	175	533	65	305	–	104	104	355	31	133	76	–	200	25	108
	1PC1304	2AA4 2AA5, 2AB5	2 2, 4																				
225 S	1PC1301/ 1PC1304	2BB0	4	356	80	436	328	328	175	556	65	286	311	92	117	361	15	149	99	74	225	34	124
225 M	1PC1301	2BA2 2BB2, 2BC2	2 4, 6	356	80	436	328	328	175	556	65	286	311	92	117	361	15	149	159	134	225	34	124
	1PC1304	2BA2 2BB2	2 4									311	–							–			
250 M	1PC1301	2CA2 2CB2, 2CC2	2 4, 6	406	100	490	398	398	224	620	90	349	–	102	102	409	24	168	111	–	250	40	138
	1PC1304	2CA2 2CB2	2 4																				

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



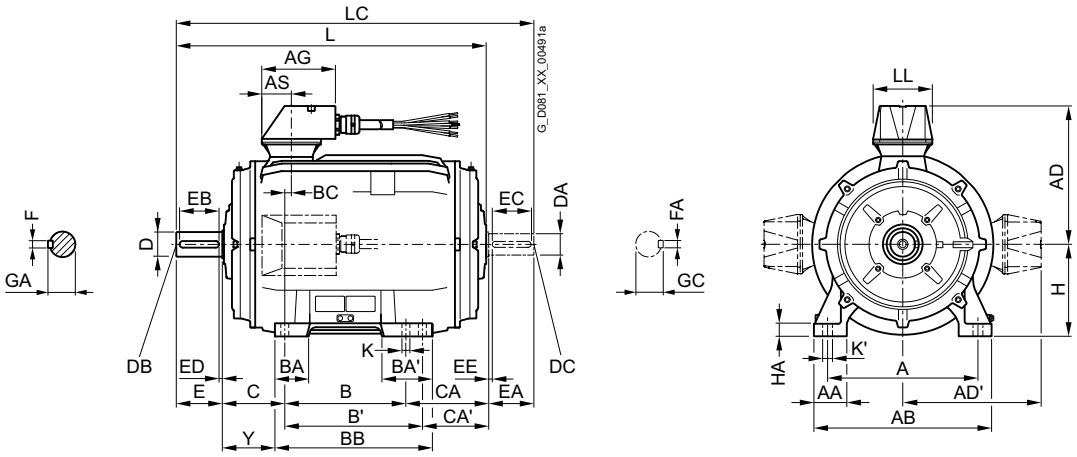
For motor				Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension						
Frame size	Type		No. of poles	HH	K	K'	L	LC [1]	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1PC1301/ 1PC1304	1EA2, 1EB2	2, 4	155	15	19	562	676	100	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1PC1301/ 1PC1304	1EB4	4	155	15	19	592	706	100	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
	1PC1301	1EC4	6				562	676															
200 L	1PC1301	2AA4, 2AA5	2	164	19	25	617	734	130	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		2AB5, 2AC4, 2AC5	4, 6 6																				
	1PC1304	2AA4	2																				
		2AA5, 2AB5	2, 4				642	759															
225 S	1PC1301/ 1PC1304	2BB0	4	164	19	25	610	724	130	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1PC1301	2BA2	4	164	19	25	700	814	130	55	M20	110	100	5	18	59	48	M16	110	100	5	14	51.5
		2BB2, 2BC2	4, 6				730	844		60		140	125	10		64	55	M20				16	59
	1PC1304	2BA2	2				700	814		55		110	100	5	16	59	48	M16				14	51.5
		2BB2	4				730	844		60		140	125	10	18	64	55	M20				16	59
250 M	1PC1301	2CA2	2	192	24	30	764	878	180	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		2CB2, 2CC2	4, 6					908		65						69	60		140	125	10	18	64
	1PC1304	2CA2	2					878		60						64	55		110	100	5	16	59
		2CB2	4					908		65						69	60		140	125	10	18	64

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

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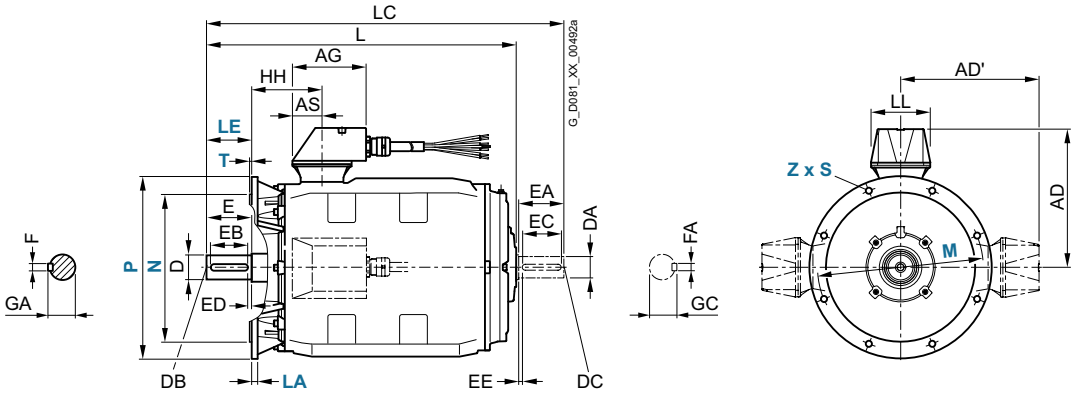
Dimensional drawings (continued)

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor				Dimension designation acc. to **IEC**																				
Frame size	Type		No. poles	A	AA	AB	AD	AD'	AG	AH	AS	B	B'	BA	BA'	BB	BC	C	CA	CA'	H	HA	Y
280 S	1PC1301	2DA0	2	457	100	540	398	398	180	672	90	368	419	101	152	479	20	190	137	86	280	40	160
		2DB0, 2DC0	4, 6																				
	1PC1304	2DA0	2																				
		2DB0	4																				
280 M	1PC1301	2DA2	2	457	100	540	398	398	180	672	90	368	419	101	152	479	20	190	137	86	280	40	160
		2DB2, 2DC2	4, 6																				
	1PC1304	2DA2	2									419	–						247	196			
		2DB2	4																				
315 S	1PC1301	3AA0	2	508	120	610	455	455	242	780	121	406	457	113	170	527	22	216	148	97	315	50	181
		3AB0, 3AC0	4, 6																				
	1PC1304	3AA0	2																				
		3AB0	4																				
315 M [1]	1PC1301	3AA2	2	508	120	610	455	455	242	780	121	457	508	113	170	578	22	216	262	211	315	50	181
		3AB2	4									406	457			527			148	97			
		3AC2	6									457	508			578			262	211			
	1PC1304	3AA2	2																				
		3AB2	4																				
315 L [1]	1PC1301	3AA4	2	508	120	610	455	455	242	780	121	457	508	113	170	578	22	216	262	211	315	50	181
		3AB4, 3AC4	4, 6																				
		3AA5	2											176	227	648			417	366			146
		3AB5	4																				
		3AC5	6											113	170	578			262	211			181
		3AC6	6											176	227	648			417	366			146
	1PC1304	3AA4	2									508	–	113	170	578			262	211			181
		3AB4	4																				
		3AA5	2											176	227	648			477	366			146
		3AB5	4																				

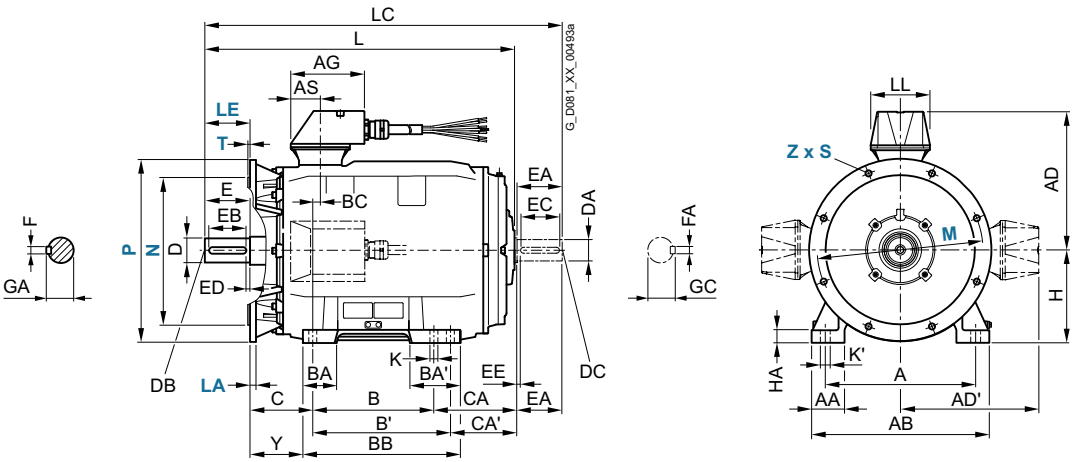
[1] When ordering with screwed-on feet (as standard for RHS and LHS terminal box positions; optional for top terminal box position – order code **H01**) these screwed-on feet have 3 drill holes on the NDE with the respective dimension B 406, 457 and 508 mm; the dimension BB is 666 mm.

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor				Dimension designation acc. to **IEC**						DE shaft extension							NDE shaft extension						
Frame size	Type		No. poles	HH	K	K'	L	LC [1]	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
280 S	1PC1301	2DA0	2	210	24	30	830	975	180	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		2DB0, 2DC0	4, 6							75					20	79.5	65						69
	1PC1304	2DA0	2							65					18	69	60						64
		2DB0	4							75					20	79.5	65						69
280 M	1PC1301	2DA2	2	210	24	30	830	975	180	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		2DB2, 2DC2	4, 6							75					20	79.5	65						69
	1PC1304	2DA2	2				940	1085		65					18	69	60						64
		2DB2	4							75					20	79.5	65						69
315 S	1PC1301	3AA0	2	238	28	35	905	1050	242	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB0, 3AC0	4, 6				935	1100		80		170	140	25	22	85	70					20	74.5
	1PC1304	3AA0	2				905	1050		65		140	125	10	18	69	60					18	64
		3AB0	4				935	1100		80		170	140	25	22	85	70					20	74.5
315 M	1PC1301	3AA2	2	238	28	35	1070	1215	242	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB2	4				1100	1245		80		170	140	25	22	85	70					20	74.5
		3AC2	6				935	1100															
	1PC1304	3AA2	2				1070	1215		65		140	125	10	18	69	60					18	64
		3AB2	4				1100	1245		80		170	140	25	22	85	70					20	74.5
315 L	1PC1301	3AA4	2	238	28	35	1070	1215	242	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		3AB4, 3AC4	4, 6				1100	1245		80		170	140	25	22	85	70					20	74.5
		3AA5	2				1225	1370		65		140	125	10	18	69	60					18	64
		3AB5	4				1255	1400		80		170	140	25	22	58	70					20	74.5
		3AC5	6				1100	1245															
		3AC6	6				1255	1400															
	1PC1304	3AA4	2				1070	1215		65		140	125	10	18	69	60					18	64
		3AB4	4				1100	1245		80		170	140	25	22	85	70					20	74.5
		3AA5	2				1225	1370		65		140	125	10	18	69	60					18	64
		3AB5	4				1255	1400		80		170	140	25	22	85	70					20	74.5

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

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Orientation

Overview



Low-voltage motors in the marine version can be used below deck on ships and in the offshore industry. The thermal utilization of the motors is adapted to the generally higher ambient temperatures onboard ships. If the application demands compliance with additional regulations, such as explosion protection (Directive 94/9/EC (ATEX 95)), the appropriate motor series must be chosen.

The motors on board ships are generally subdivided into three classes of importance by the marine classification societies in cooperation with customers, depending on the field of application:

- **Essential Service for Propulsion** or also referred to as Primary Essential Service
- **Essential Service** or also referred to as Secondary Essential Service or Important Service
- **Non-Essential Service** or also referred to as Non-Important Service

The class of importance must be specified by the customer (ordering party). Retrospective certification by means of individual acceptance test or construction supervision cannot be issued.

The categories include the following requirements of the classification societies:

	Class of importance		
	Essential Service for Propulsion	**Essential Service**	**Non-Essential Service**
Typical applications	Propeller drive, thruster	Thrusters, lateral thrust units, anchor winches, bilge and ballast pumps, fire-fighting pumps	Pumps for service water
Version	In accordance with the regulations set up by the classification society		In accordance with ambient conditions set up by the classification society
Acceptance test certificate	Acceptance test certificate 3.2 according to EN 10204	Acceptance test certificate 3.1 according to EN 10204	None
Individual acceptance by classification society	Necessary if no type test certificate exists or the rated power lies above the limit defined by the classification society		Not required
Type test	Not a requirement of the classification societies For standard motors up to frame size 315 L, a type test certificate is supplied. These motors can only be ordered with options E11 to E54 in accordance with the classification society.		
Ordering several identical motors	Differentiation between the first motor and additional ones must be realized when ordering using an order code		No distinction
Rating plate data	Information about ambient conditions of the classification society		
Stamp of the classification society	Stamp on shaft and housing		No stamp

Classification societies

Society	Abbreviation	Location
American Bureau of Shipping	**ABS**	USA
Bureau Veritas	**BV**	France
Det Norske Veritas	**DNV**	Norway
Germanischer Lloyd	**GL**	Germany
Korean Register	**KR**	Korea
Lloyds Register	**LR**	UK
Registro Italiano Navale	**RINA**	Italy
Russian Maritime Register of Shipping	**RS**	Russia

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Overview (continued)

Type test (type approval)

All 1LE1, 1MB1, 1PC1, 1PC3 motors are manufactured and type tested in accordance with the regulations set up by the following international classification societies:

- ABS (American Bureau of Shipping)
- BV (Bureau Veritas, France)
- DNV (Det Norske Veritas, Norway)
- GL (Germanischer Lloyd, Deutschland)
- KR (Korean Register of Shipping)
- LR (Lloyds Register of Shipping)
- Registro Italiano Navale (RINA)
- Russian Maritime Register of Shipping (RS)

Special versions that differ from the range defined in the catalog are possible on request.

Benefits

The marine motors offer the user a number of advantages and benefits:

- Cast-iron versions can be supplied for corrosive atmospheres especially for high humidity levels and salty air
- Increased corrosion protection using specially designed paint finishes is available
- Certified marine motors can be supplied for use in areas to be protected against explosion (hazardous zones)
- Due to the existing type test, individual acceptance test in power ranges below the power limits defined by the classification societies is not required which means short delivery times
- In depth know-how regarding customer requirements
- Worldwide service network with 24 hour service hotline for motors and converters

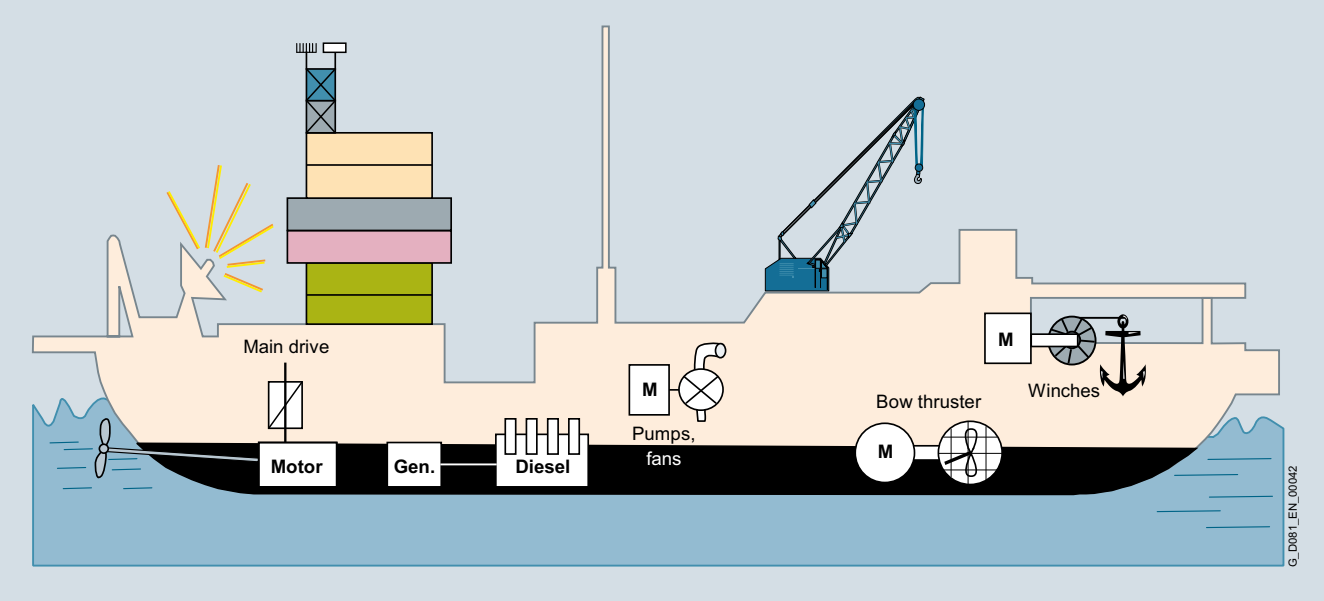
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Orientation

Application

Our type tested marine motors are specially designed for use below deck on ships and for the offshore industry:

- Applications on ships as main and auxiliary drives below deck, e.g.:
  - Fans (air conditioning systems, refrigeration systems)
  - Pumps (for fire-extinguishing water, fuels, oils)
  - Winches (anchor winches, warping winches, lifting gear)
  - Compressors
  - Bow thruster drives
  - Ex motors for hazardous zones
- Application in the offshore industry
  - Coastal areas, e.g. oil rigs, drilling ships



Typical below-deck applications

Technical specifications

Housing design

Motors can be supplied depending on the motor series in a corrosion-resistant aluminum housing and in a rugged low-vibration cast-iron version.

Motor connection

Cable glands are not included in the standard scope of supply with the exception of explosion-proof motors (see "Special versions").

All marine motors generally have an external grounding terminal.

Mountings (encoder, separately driven fan, brake)

Brakes, encoders and separately driven fans from our basic series (1LE, 1MB) are accepted as mountings without a separate certificate from the marine classification societies by the following: GL, LR, RINA, RS, DNV, ABS and KR.

However, BV always demands separate certification for encoders. For this reason, 1LE1, 1MB1, 1PC1 and 1PC3 motors for BV can only be supplied in the "prepared for encoder mounting" condition. In this instance, the customer must bear responsibility for purchasing and installing a suitable encoder. With respect to brakes and separately driven fans, BV will also accept Siemens standard components.

Fan / fan cover

Fans and fan covers are made from the same materials as components from the basic series. BV stipulates that these components must be made of metal, and they are automatically supplied in this material when order code **E31** is specified.

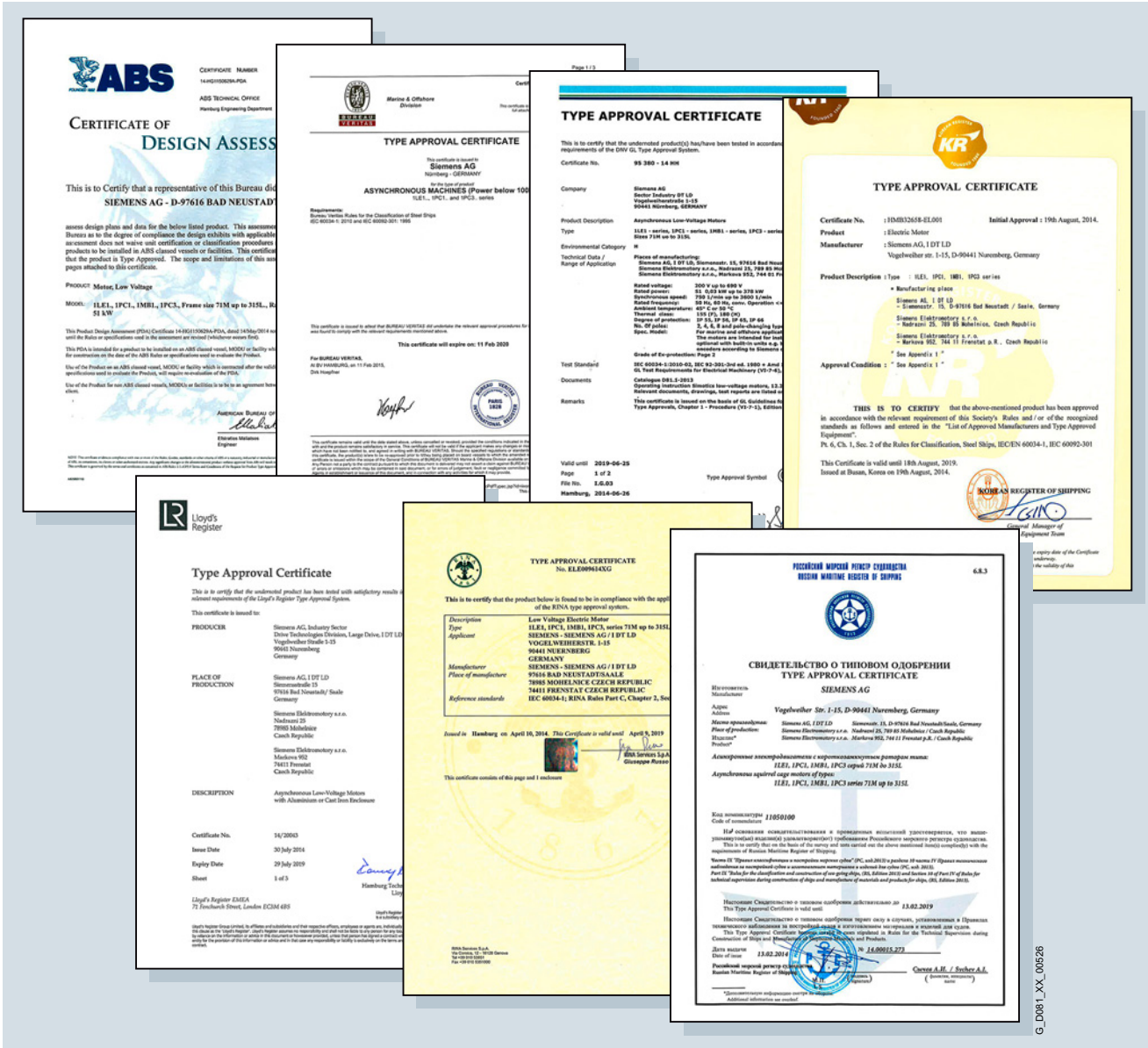
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Technical specifications (continued)

Specifications of the individual classification societies with order codes (options) for motors in frame sizes 71 M - 315 L

Classification society	Coolant temperature CT	Admissible temperature rise limit according to classification society Temperature class 130 (B)	155 (F)	Rated power limit for individual acceptance test for essential service drive	Rated power limit for construction supervision for essential service drive	Order codes for surface-cooled motors up to frame size 315 L with type test certificate
	°C	K	K	kW	kW	
GL	45	75	100	≥ 50	–	E11
LR	45	70	95	≥ 100	≥ 100	E21
BV	45	75	100	≥ 100	–	E31
DNV	45	75	100	≥ 300	–	E51
ABS	50	70	95	≥ 100 [1]	–	E52
RINA	45	75	100	≥ 100	–	E41
RS	45	75	95	≥ 20	–	E46
KR	45	75	95	≥ 7.5	–	E54

Type test certificates



[1] Required for all ratings for ATEX compliance.

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Technical specifications (continued)

Temperature class and coolant temperature

SIMOTICS GP/SD standard motors and SIMOTICS XP explosion-proof motors up to frame size 315 L

In general, marine motors are designed for a coolant temperature CT 45 °C in temperature class 155 (F) – used according to 155 (F) – with thermal reserve. When motors are used according to temperature class 130 (B) (order code **N05**), derating is required. For standard motors up to frame size 315 L, the derating is approx. 4 % (for order codes **E52** and **E21** approx. 8 %).

1MB1 motors in Zones 2, 21 and 22 are designed for temperature class 155 (F) – used according to temperature class 130 (B) – with derating of approx. 4 % (with order code **E52** approx. 8 %). Motors with increased power in temperature class 155 (F) – used according to temperature class 155 (F) – are also derated by approx. 4 % (with order code **E52** and **E21** approx. 8 %). If temperature class 155 (F) is to be used according to 130 (B), further derating of approximately 10 % is required.

Coolant temperatures that exceed CT 45 °C require derating in accordance with the following table:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for line operation	1.00	0.96	0.92	0.87

Non-standard motors SIMOTICS N-compact

For the non-standard motors 1LA8, 1PQ8 the following derating factors apply for increased coolant temperatures and with line operation:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for line operation	1.00	0.96	0.92	0.87
Temperature class 155 (F) used according to 130 (B)				
Derating factor for line operation	0.90	0.86	0.83	0.78

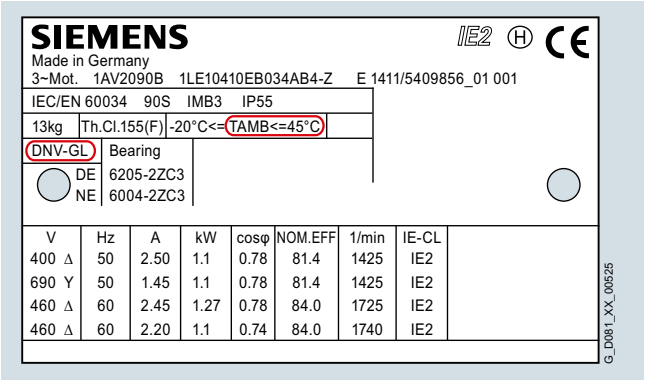
For the non-standard motors 1LA8, 1PQ8 the following derating factors apply for increased coolant temperatures and converter operation:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for converter operation	0.96	0.92	0.87	0.82
Temperature class 155 (F) used according to 130 (B)				
Derating factor for converter operation	0.82	0.78	0.74	0.70

More detailed information is available on request.

Rating plate and acceptance test certificate

The rating plate indicates the relevant classification society and the associated coolant temperature



Rating plate for a marine motor according to DNV

Degree of protection

The protection classes applicable here are specified in the catalog sections for basic series 1LE1/1MB1/1PC1. With IP56, icing must be avoided.

Winding and motor protection

For monitoring the winding and bearings, the motors can be equipped with PTC thermistors, temperature sensors and resistance thermometers. Anti-condensation heaters can also be fitted to the marine motors to prevent condensation building up on the winding.

Paint finish

The standard paint finish is suitable for indoor installations or outdoor installations which are roof-protected against weathering.

When installing the standard motors in sea air or in rooms with permanent moisture, the special paint type climate group "worldwide" according to IEC 60721-2-1 is appropriate, because this ensures a higher degree of corrosion protection. Most marine motors are finished in this special paint type as standard (see "Special versions").

With particularly corrosive atmospheres, the sea-air-resistant special paint finish (order code **S03**) or the offshore special paint system (order code **S04**) is recommended.

Special paint colors and increased layer thicknesses are available on request.

Converter operation

The standard insulation of the motors is designed such that converter operation is permissible at line voltages up to $U_{rated} \leq 500$ V. Compliance with the following limit values is essential (voltage values are peak values):
$\hat{U}_{phase\text{-}to\text{-}phase} \leq 1500$ V, $\hat{U}_{phase\text{-}to\text{-}ground} \leq 1100$ V,
voltage rise times of $t_s > 0.1$ µs.
Operation of the motors at higher voltage peaks (e.g. on converters with controlled input, e.g. AFE, ALM) requires motors with higher insulation resistance. Please inquire in this case.

During installation, the EMC guidelines must be complied with. This does not apply to motors in type of protection Ex e according to IEC/EN 60079-2 that are certified only for line operation.

It is important to note the extent to which the converter used must also be acceptance tested by the marine classification authority.

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Technical specifications (continued)

Recommended special versions

- Motor protection with 1 or 3 PTC thermistors – for tripping (2 terminals) – 15th position of the Article No. **B**
- Installation of Pt100 resistance thermometers for winding temperature monitoring – 16th position of the Article No. **H**
- Specially for motor series 1LA8, 1PQ8 and 1LL8: Installation of 2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings – order code **A72**
- Anti-condensation heating for 230 V – order code **Q02**
- Anti-condensation heating for 115 V – order code **Q03**
- IP56 degree of protection for protection against harmful dust deposits, protection against water jets from any direction – order code **H22**
- IP65 degree of protection for complete protection against dust deposits, protection against water jets from any direction – order code **H20**
  Not possible for 1LA8, 1PQ8 and 1LL8 non-standard motors
- Special bearing for drive-end (DE) and non-drive-end (NDE) bearing size 63 – order code **L25**, for non-standard motors on request
- External metal fan for self-ventilated motors – order code **F76** (standard with order code **E31**)

Additional notes

Order information

The fees levied by the classification societies for individual acceptance testing are included in order code **B10** for motor types 1LE1, 1MB1, 1PC1 and 1PC3.

When ordering, add the supplement **-Z** to the Article No. and state details in plain text if required.

For information about other special versions, refer to the appropriate sections under "SIMOTICS GP/SD 1LE1/1PC1 standard motors" and "SIMOTICS XP 1MB1 explosion-proof motors".

In addition to this, for marine motors, the following special versions are the "Standard version" and therefore included in the order codes for the basic marine version.

Standard version:

Designation	Order code
Acceptance test certificate 3.1 in accordance with EN 10204 Note: The delivery time for the factory test certificate may differ from the delivery time for the motor.	**B02**
External grounding terminal	**H04**

Ordering example

Selection criteria	Requirement	Structure of the Article No.
Motor type	SIMOTICS SD Basic Line, Efficiency class IE3 Premium Efficiency, IP55 degree of protection, IM B3 type of construction without winding protection, terminal box at top	**1LE1503**
No. of poles, speed, rated power	4-pole, 1500 rpm, 55 kW	**1LE1503-2CB2**
Voltage, frequency	400 VΔ/690 VY, 50 Hz	**1LE1503-2CB23-4**
Type of construction	IM B3	**1LE1503-2CB23-4A**
Motor protection	3 PTC thermistors for tripping	**1LE1503-2CB23-4AB**
Terminal box position	Terminal box right	**1LE1503-2CB23-4AB5**
Paint finish	Paint finish in "Brilliant blue" RAL 5007	**1LE1503-2CB23-4AB5-Z Y53** Plain text: **RAL5007**
Marine version	Drive for "Essential Services" with type test certificate according to **Germanischer Lloyd** with coolant temperature CT 45 °C	**1LE1503-2CB23-4AB5-Z Y53+E11** Plain text: **RAL5007**
	Individual acceptance (by marine classification society)	**1LE1503-2CB23-4AB5-Z Y53+E11+B10** Plain text: **RAL5007**
Motor order		
	Type test with temperature-rise run for horizontal motors, with acceptance	**1LE1503-2CB23-4AB5-Z Y53+E11+B10+B83** Plain text: **RAL5007**

The ordering example is valid for an order quantity of 1 item.
For larger order quantities, a type test with heat run (order code **B83**) has only to be ordered for one motor.
For all other identical motors (in the same order), order code **B83** is not required.
The order must be divided into two order items; see "Example for 5 identical motors".

Example for 5 identical motors

Order item	Quantity in units	Article No.
1	1	**1LE1503-2CB23-4AB5-Z Z=Y53+E11+B10+B83** Plain text: **RAL 5007**
2	4	**1LE1503-2CB23-4AB5-Z Z=Y53+E11+B10** Plain text: **RAL 5007**

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Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category								
		Motor version	**Motor type (aluminum)**	**Motor type – frame size**						
				80	**90**	**100**	**112**	**132**	**160**	**180**	**200**
		IE2 High Efficiency	1LE1001	**1LE1001**							
		IE3 Premium Efficiency	1LE1003	**1LE1003**							
		IE1 Standard Efficiency	1LE1002			**1LE1002**					
		IE4 Super Premium Efficiency	1LE1004			**1LE1004**					
		NEMA Energy Efficient	1LE1021	**1LE1021 Eagle Line**							
		NEMA Premium Efficient	1LE1023	**1LE1023 Eagle Line**							
		Pole-changing	1LE1011			**1LE1011**					
			1LE1012			**1LE1012**					
1LE10 . . - . . . . . - . . . . -Z	Order code	Motor version	Motor type	Frame size							
				80	90	100	112	132	160	180	200
Marine version – Basic version											
With type test certificate according to Germanischer Lloyd (GL), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E11**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Lloyds Register (LR), CT 45 °C, Temperature class 155 (F), utilized according to 155 (F)	**E21**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Bureau Veritas (BV), CT 45 °C, Temperature class 155 (F), utilized according to 155 (F)	**E31**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Registro Italiano Navale (RINA), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E41**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Russian Maritime Register (RS), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E46**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Det Norske Veritas (DNV), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E51**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to American Bureau of Shipping (ABS), CT 50 °C, temperature class 155 (F) utilized according to 155 (F)	**E52**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Korean Register of Shipping (KR), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E54**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification											
Individual acceptance by marine classification society	**B10**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for horizontal motors, with acceptance	**B83**	All	All	✓	✓	✓	✓	✓	✓	✓	✓

✓ With additional charge

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Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category													
		Motor version	**Motor type (cast iron)**	**Motor type – frame size**											
				71	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
		IE2 High Efficiency	1LE1501	**1LE1501 Basic Line**												
			1LE1601				**1LE1601 Performance Line**									
		IE3 Premium Efficiency	1LE1503	**1LE1503 Basic Line**												
			1LE1603				**1LE1603 Performance Line**									
		IE4 Super Premium Efficiency	1LE1504				**1LE1504 Basic Line**									
			1LE1604				**1LE1604 Performance Line**									
		NEMA Energy Efficient	1LE1521	**1LE1521 Eagle Line Basic**												
		NEMA Premium Efficient	1LE1523				**1LE1523 Eagle Line Basic**									
			1LE1623				**1LE1623 Eagle Line Performance**									
1LE15 . . - . . . . . - . . . . -Z		Motor version	Motor type	Frame size												
1LE16 . . - . . . . . - . . . . -Z	Order code			71	80	90	100	112	132	160	180	200	225	250	280	315
Marine version – Basic version																
With type test certificate according to Germanischer Lloyd (GL), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E11**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Lloyds Register (LR), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E21**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Bureau Veritas (BV), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E31**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Registro Italiano Navale (RINA), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E41**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Russian Maritime Register (RS), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E46**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Det Norske Veritas (DNV), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E51**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to American Bureau of Shipping (ABS), CT 50 °C, temperature class 155 (F) utilized according to 155 (F)	**E52**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Korean Register of Shipping (KR), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E54**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification																
Individual acceptance by marine classification society	**B10**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for horizontal motors, with acceptance	**B83**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ With additional charge

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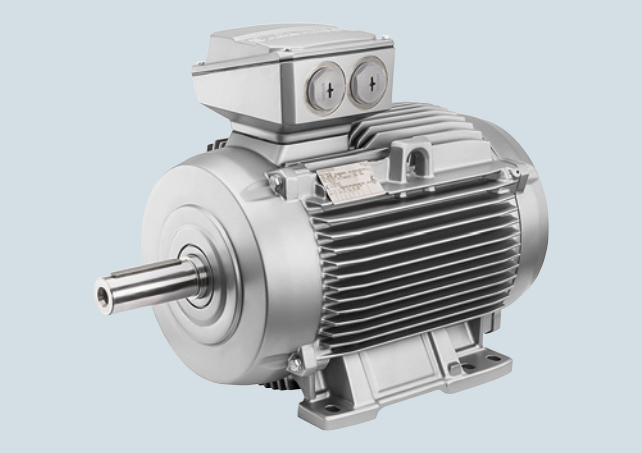
Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category												
		Motor version	**Motor type (aluminum/ cast iron)**	**Motor type – frame size**										
				80	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
		Ex t (Zone 21/22) Ex n (Zone 2) IE1 Standard Efficiency	1MB10.2			**1MB10.2**									
		Ex t (Zone 21/22) Ex n (Zone 2) IE2 High Efficiency	1MB10.1	**1MB10.1**											
		Ex t (Zone 21/22) Ex n (Zone 2) IE3 Premium Efficiency	1MB10.3	**1MB10.3**											
		Ex t (Zone 21/22) Ex n (Zone 2) IE2 High Efficiency	1MB15.1 1MB16.1			**1MB15.1** **1MB16.1**									
		Ex t (Zone 21/22) Ex n (Zone 2) IE3 Premium Efficiency	1MB15.3 1MB16.3			**1MB15.3** **1MB16.3**									
1MB1 . . . - . . . . . - . . . . -Z	Order code	Motor version	Motor type	Frame size											
				80	90	100	112	132	160	180	200	225	250	280	315
Marine version – Basic version															
With type test certificate according to Germanischer Lloyd (GL), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E11**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Lloyds Register (LR), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E21**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Bureau Veritas (BV), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E31**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Registro Italiano Navale (RINA), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E41**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Russian Maritime Register (RS), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E46**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Det Norske Veritas (DNV), CT 45 °C, temperature class 155 (F), utilized according to 155 (F)	**E51**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to American Bureau of Shipping (ABS), CT 50 °C, temperature class 155 (F) utilized according to 155 (F)	**E52**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to Korean Register of Shipping (KR), CT 45 °C, temperature class 155 (F) utilized according to 155 (F)	**E54**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification															
Individual acceptance by marine classification society	**B10**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for horizontal motors, with acceptance	**B83**	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ With additional charge

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Overview



Motors deployed in steel rolling mills and other metal-processing sectors must be capable of operating under diverse electrical conditions, but must also withstand high mechanical stresses.

The analysis of plant-specific requirements can be divided into two parts.

The first part includes duty with typical reversing operation under conditions of extreme mechanical stress and very high temperatures. 1LP3 roller-table motors must be deployed for this purpose. Modern transport roller tables and work roller tables situated close to roll stands in rolling mills are now equipped with directly driven reversing rollers.

The second part includes the downstream applications such as slab furnace feed, cooling line, reheating furnace, straightening machines and slitting lines in which the mechanical stresses are significantly lower. These are the applications for which the new steel plant motors have been designed by Siemens. These motors are available for direct-on-line operation (DOL) in efficiency class IE3, and as variants optimized for converter operation (VSD).

Whether a steel plant or roller-table motor is selected depends on stress factors and the decision as to which motor type is suitable must be taken by the customer (ordering party).

Benefits

The steel plant motors offer the user a number of advantages and benefits:

- Highly efficient in efficiency class IE3 for direct-on-line operation (DOL)
- Highly efficient motors for converter operation
- Cast-iron versions for aggressive ambient conditions, in corrosivity class C3 (IEC 12944-2)
- Increased corrosion protection using specially designed paint finishes is available
- Self-ventilated motors for direct-on-line operation (DOL) 1PC1433 with efficiency class IE3
- Self-ventilated motors 1PC1443 for converter operation (VSD) on SINAMICS S120
- Naturally cooled motors 1PC1463 in enclosed version, without external fan, for converter operation (VSD) on SINAMICS S120
- Motors are designed to withstand vibration and shocks to Class 3M4 according to EN 60721-3-3 (approx. 10G incl. 10 shocks/min)
- Simple to commission in combination with a SINAMICS S120 converter
- In depth know-how with respect to plant-specific designs
- Worldwide service network with 24 hour service hotline for motors and converters
- High resistance to peak transient torques $T_B = 3 \cdot T_{rated}$
- Naturally cooled

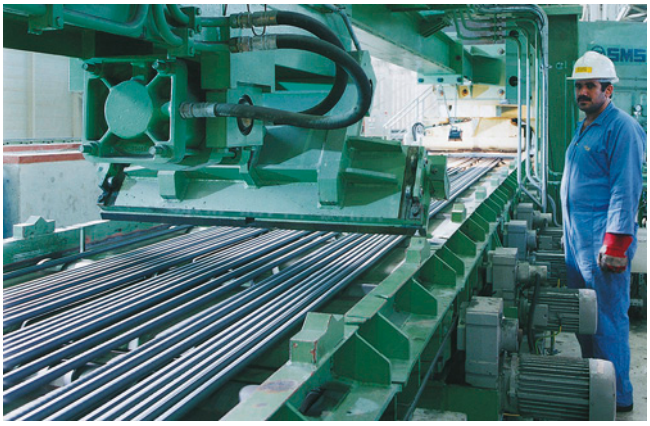
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Orientation

Application

Steel plant motors have been specially designed for metal production applications. They are capable of withstanding exceptionally high mechanical stresses caused by vibration and shocks. Their primary applications include the transport of steel or aluminum, and the transport of semi-finished products to cooling or heating systems, or to metal sheet and foil coilers.





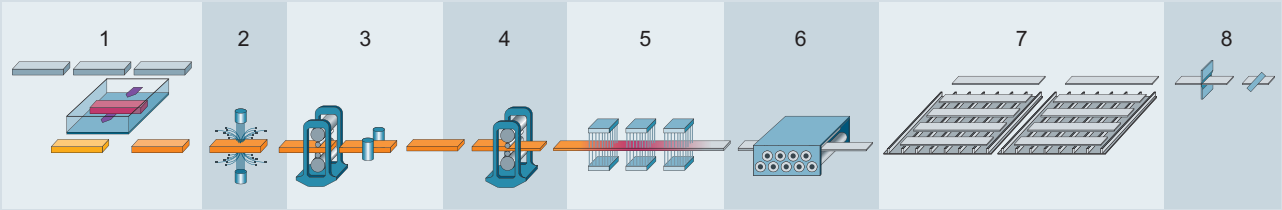
Steel plant motors – transport material for coiling

Siemens roller-table motors with "ring-rib" design must be used for reversing rolling operation in the "hot zone" (close to the roll stands) in extremely polluted atmospheres with severe continuous vibrations combined with continuous shocks.



Application for roller-table motor

Applications in a typical steel plant



G_D081_EN_00527

Area		Drive solutions
1	Slab furnace feed and reheating furnace	Steel plant motors
2	Descaling and slab transport	Steel plant motors
3	Roughing stand with edger	Roller-table motors
4	Finishing stand	Roller-table motors
5	Cooling line	Steel plant motors
6	Hot/cold straightening machine	Steel plant motors
7	Cooling table	SIMOTICS SD motors
8	Slitting line and adjustment	Steel plant motors

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Technical specifications

Housing design

Steel plant motors have a low-vibration, cast-iron housing in longitudinal-rib design and bearing plates with special vibration-damping action.

Bearings

Optimized bearing systems have been developed to ensure safe, fault-free operation of the motors when they are subjected to the combined effects of vibration and shocks. The motors are equipped as standard with bearings of series 63. The bearing at the drive end is always a located bearing, while the bearing arrangement is preloaded at the non-drive end.

Bearing plates

Bearing plates are installed on both sides and are designed in terms of their form and material to withstand the high mechanical stresses defined for category 3M4 (EN 60721-3-3). It is absolutely essential that the actual stresses associated with the application are taken into account in these design data. Verification of the design must be requested in special cases.

Electrical design

Motor type 1PC1433 can be ordered in all standard voltage variants, see selection and ordering data.

Motor types 1PC1443 and 1PC1463 have been specially developed for converter operation. The standard version of these motors is designed for a rated voltage of 400 V, other voltages are optionally available.

Type of connection

Frame sizes 112 M to 160 L: Star
(neutral point in winding overhang)

Frame sizes 180 L to 280 M: Delta

Insulation

All motors are fitted with the DURIGNIT IR 2000 insulation system in temperature class 155 (F). Utilization of the motors for line operation corresponds to temperature class 130 (B) at rated power and in line operation, and to temperature class 155 (F) when the motors are supplied by a converter.

The variants for converter operation are optimized for use with SINAMICS S120 converters. The motors are fitted with special insulation to ensure that they can operate without restriction in four-quadrant operation on SINAMICS S120 converters (incl. Active Line Module) up to a maximum line voltage of 480 V.

Motor connection

The standard terminal box from the basic motor series 1LE15 is also used for steel plant motors. The terminal box position can be freely selected. Larger terminal boxes are optionally available.

All steel plant motors generally have an external grounding terminal.

Foot design

Motor construction types with feet and terminal box at the top have cast feet.

With motor construction types with feet and terminal box on the RHS/LHS, the feet are screwed on with frame sizes 112 to 200, and cast with frame sizes 225 to 280.

Winding temperature monitoring

Standard version of motor 1PC1433 for line operation has no PTC thermistors, but these can be optionally fitted.

The standard versions of motor types 1PC1443 and 1PC1463 specially designed for converter operation are equipped with PTC thermistors for alarm and tripping. Alternatively, the temperature is detected by one or two KTY84-130 sensors (which replace the PTC thermistors).

Paint finish

Special paint finish in RAL 7030, corrosivity class C3 according to IEC 12944-2 is provided as standard.

Other colors and finishes are optionally available.

Degree of protection

These correspond to the protection classes specified in the catalog for basic motor series 1LE15. With IP56, icing must be avoided.

Higher coolant temperatures

Coolant temperatures that exceed CT 40 °C require derating in accordance with the following table:

	Coolant temperature CT			
	40 °C	45 °C	50 °C	55 °C
Temperature class 155 (F) used according to 130 (B)				
Derating factor for line operation	1.00	0.96	0.92	0.87

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Technical specifications (continued)

Overview of technical specifications

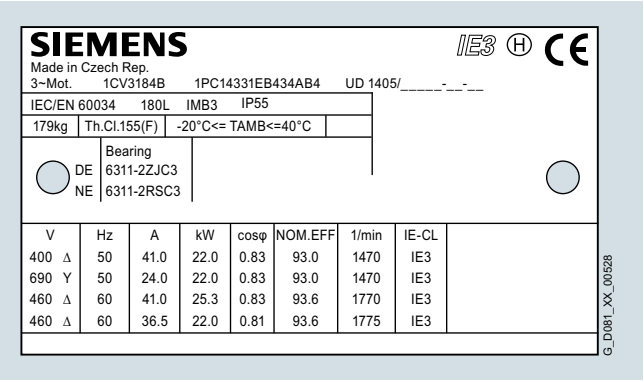
This table lists the most important technical specifications. For more information and details, see Catalog Section 1 "Introduction".

Characteristic	Steel plant motors		
	1PC1433 (TEFC, DOL, IC411)	1PC1443 (TEFC, VSD,IC411)	1PC1463 (TENV, VSD, IC410)
Version	Motor for line operation, self-ventilated	Motor for converter operation, self-ventilated	Motor for converter operation, naturally cooled without external fan, enclosed version
Housing	Cast iron		
Number of poles	4, 6		
Efficiency class	IE3 (Premium Efficiency)	– (no IE class for converter motors)	
Frame sizes	112 M … 280 L		
Rated power	1 … 38 kW		
Torque	Approx. 26 … 578 Nm		Approx. 20 … 340 Nm
Rated speed	4-pole: 1500 rpm (50 Hz)/ 1800 rpm (60 Hz) 6-pole: 1000 rpm (50 Hz)/ 1200 rpm (60 Hz)	4-pole: 1500 rpm (50 Hz)/1800 rpm (60 Hz)/ 2610 rpm (87 Hz) 6-pole: 1000 rpm (50 Hz)/1200 rpm (60 Hz)/ 1740 rpm (87 Hz)	
Voltage	Standard motor input voltage: 400 V (50 Hz), other voltages optionally available	Standard motor input voltage: 400 V (50 Hz), insulation strength for operation on frequency converter up to 500 V	
Standard voltages	50 Hz: 230 V, 400 V, 500 V, 690 V 60 Hz: 460 V		
Frequencies	50 Hz, 60 Hz	50 … 87 Hz	
Certificates	DE, GOST-R		
Marking	IEC 60034-30		
Temperature class	155 (F) utilized according to 130 (B)	155 (F) utilized according to 155 (F)	
Insulation according to EN 60034-1	Temperature class 155 (F), Durignit IR2000		
Degree of protection acc. to EN 60034-5	Standard IP55, optionally IP56 and IP65		
Cooling method	Self-ventilated (IC411)		Naturally cooled without external fan, enclosed version (IC410)
Permissible coolant temperature	Standard –20 … 40 °C		
Types of construction acc. to EN 60034-7	IM B3, IM B5, IM V1, IM V3, IM B35		
Paint finish (climate group according to IEC 60721)	RAL 7030, class C3 as standard		
Vibration quantity level according to EN 60034-14	Level A or B optionally available		
Shaft extension in accordance with DIN 748	Half-key balancing as standard		
Sound pressure level according to EN ISO 1680 (tolerance +3 dB)	The sound pressure level is listed in the "Selection and ordering data" for the required motor.		
Weights	The weight is listed in the "Selection and ordering data" for the required motor.		
Modular mounting concept	Encoder, brake, separately driven fan optional		
Consistent series concept	• Cast housing feet, screwed-on feet optional • Terminal box obliquely partitioned and rotatable through 4 × 90° • Bearings of series 63 at both ends as standard		
Options	See "Article No. supplements and special versions".		

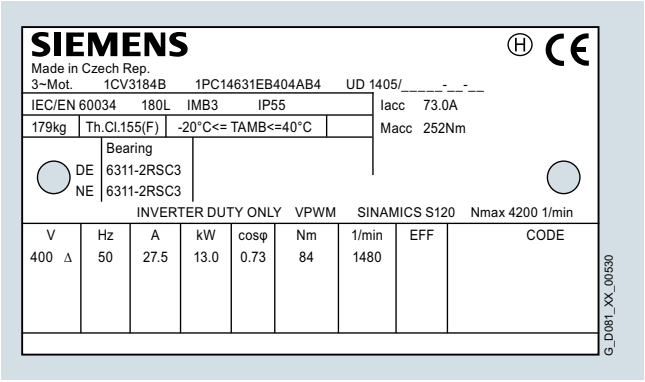
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Technical specifications (continued)

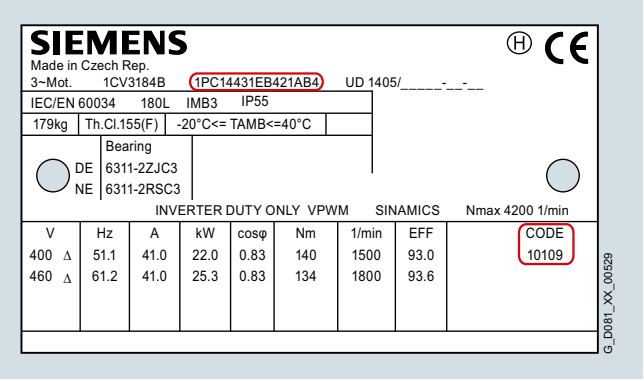
Examples of rating plates



Motor 1PC1433 for line operation, self-ventilated with efficiency class IE3 (Premium Efficiency)



Motor 1PC1463 for converter operation, naturally cooled without external fan, enclosed version



Motor 1PC1443 for converter operation, self-ventilated

The self-ventilated motors 1PC1443 also have the motor code for simple commissioning on SINAMICS S120 converters.

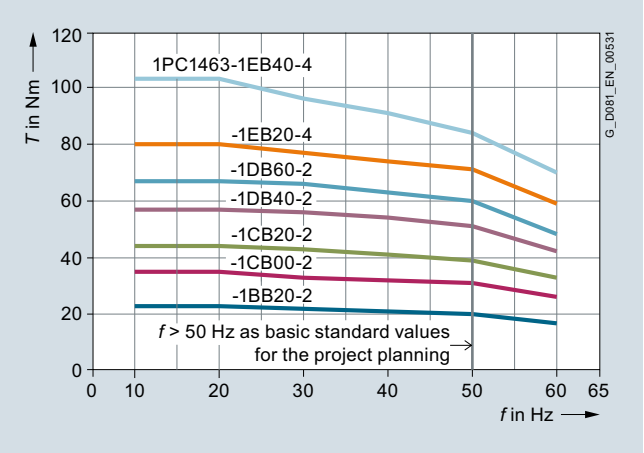
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Technical specifications (continued)

Torque/frequency characteristics

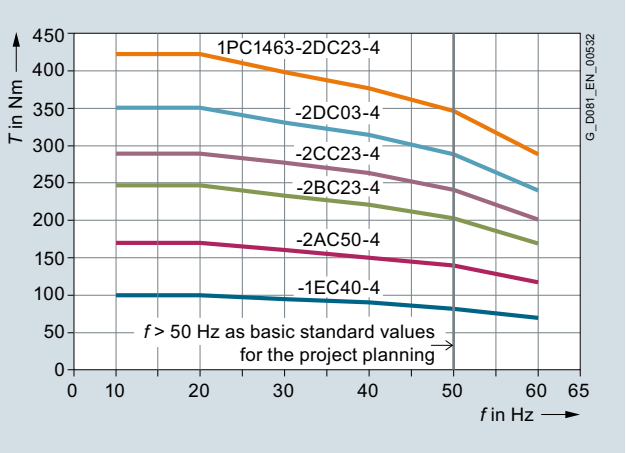
1PC1463, 4-pole

Type	Frequency *f* Hz					
	10	**20**	**30**	**40**	**50**	**60**
	Torque *T* Nm					
1PC1463-1BB20-2	23.0	23.0	22.0	21.0	20.0	16.9
1PC1463-1CB00-2	35.0	35.0	33.0	32.0	31.0	26.2
1PC1463-1CB20-2	44.0	44.0	43.0	41.0	39.0	33.0
1PC1463-1DB40-2	57.0	57.0	56.0	54.0	51.0	42.3
1PC1463-1DB60-2	67.0	67.0	66.0	63.0	60.0	48.2
1PC1463-1EB20-4	80.0	80.0	77.0	74.0	71.0	59.0
1PC1463-1EB40-4	103.0	103.0	96.0	91.0	84.0	69.9



1PC1463, 6-pole

Type	Frequency *f* Hz					
	10	**20**	**30**	**40**	**50**	**60**
	Torque *T* Nm					
1PC1463-1EC40-4	100.0	100.0	95.0	90.0	82.0	70.0
1PC1463-2AC50-4	170.0	170.0	160.0	150.0	140.0	117.0
1PC1463-2BC23-4	247.0	247.0	233.0	221.0	203.0	169.0
1PC1463-2CC23-4	289.0	289.0	277.0	263.0	241.0	201.0
1PC1463-2DC03-4	351.0	351.0	331.0	314.0	288.0	240.0
1PC1463-2DC23-4	422.0	422.0	398.0	377.0	346.0	288.0



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Selection and ordering data

Operating values at rated power																	Cast-iron series **1PC1433** – *IE3 version in accordance with IEC 60034-30* Article No.			
P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	n_{rated}, 50 Hz	T_{rated}, 50 Hz	IE class 50 Hz	IE class 60 Hz	η_{rated}, 50 Hz, 4/4	η_{rated}, 50 Hz, 3/4	η_{rated}, 50 Hz, 2/4	cos φ_{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	L_{WA}, 50 Hz		$m_{IM\ B3}$	J	Torque class
kW	kW	FS	rpm	Nm			%	%	%		A				dB(A)	dB(A)		kg	kgm^2	CL
• Cooling: self-ventilated (IC 411) • Efficiency: IE3 Premium Efficiency, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz [1]																				
4	**4.55**	**112 M**	1460	26	IE3	IE3	88.6	89.2	88.6	0.82	7.90	2.4	7.1	3.7	58	70	**1PC1433-1BB2■-■■■■**	47	0.017	16
5.5	**6.3**	**132 S**	1470	36	IE3	IE2	89.6	90.1	89.5	0.84	10.5	2.1	7.2	3.4	64	76	**1PC1433-1CB0■-■■■■**	75	0.046	16
7.5	**8.6**	**132 M**	1470	49	IE3	IE2	90.4	91.1	90.8	0.84	14.3	2.4	7.4	3.5	64	76	**1PC1433-1CB2■-■■■■**	83	0.046	16
11	**12.6**	**160 M**	1475	71	IE3	IE3	91.4	91.9	91.4	0.84	20.5	2.2	6.8	3.2	65	77	**1PC1433-1DB2■-■■■■**	116	0.083	16
15	**17.3**	**160 L**	1475	97	IE3	IE3	92.1	92.3	91.5	0.82	28.5	2.5	8.5	3.8	65	77	**1PC1433-1DB4■-■■■■**	135	0.099	16
18.5	**21.3**	**180 M**	1470	120	IE3	IE3	92.6	93.1	92.9	0.82	35.0	2.5	7.2	3.3	66	73	**1PC1433-1EB2■-■■■■**	172	0.13	16
22	**25.3**	**180 L**	1470	143	IE3	IE3	93.0	93.7	93.6	0.83	41.0	2.3	6.8	3.3	68	75	**1PC1433-1EB4■-■■■■**	182	0.14	16
30	**34.5**	**200 L**	1470	195	IE3	IE2	93.6	94.0	93.7	0.84	55.0	2.6	7.3	3.1	65	72	**1PC1433-2AB5■-■■■■**	246	0.22	16
37	**42.5**	**225 S**	1478	239	IE3	IE2	93.9	94.5	94.4	0.86	66.0	2.5	6.4	2.7	65	78	**1PC1433-2BB0■-■■■■**	295	0.42	16
45	**52**	**225 M**	1478	291	IE3	IE2	94.2	94.9	95.1	0.86	80.0	2.6	6.4	2.7	65	78	**1PC1433-2BB2■-■■■■**	330	0.47	16
55	**63**	**250 M**	1482	354	IE3	IE2	94.6	95.1	95.0	0.87	96.0	2.5	6.8	2.9	66	79	**1PC1433-2CB2■-■■■■**	430	0.85	16
75	**86**	**280 S**	1485	482	IE3	IE2	95.0	95.3	95.0	0.86	133	2.5	6.9	3.0	69	83	**1PC1433-2DB0■-■■■■**	580	1.4	16
90	**104**	**280 M**	1485	579	IE3	IE2	95.2	95.5	95.3	0.87	157	2.6	7.2	3.0	70	84	**1PC1433-2DB2■-■■■■**	680	1.7	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz [1]																				
2.2	**2.55**	**112 M**	970	22	IE3	IE2	84.3	85.0	83.9	0.75	5.00	2.2	5.6	2.8	65	74	**1PC1433-1BC2■-■■■■**	48	0.017	13
3	**3.45**	**132 S**	975	30	IE3	IE2	85.6	86.9	86.6	0.77	6.60	1.6	5.3	2.4	63	75	**1PC1433-1CC0■-■■■■**	71	0.029	13
4	**4.55**	**132 M**	975	39	IE3	IE2	86.8	88.0	87.8	0.77	8.60	1.7	5.6	2.5	63	75	**1PC1433-1CC2■-■■■■**	71	0.037	13
5.5	**6.3**	**132 M**	975	54	IE3	IE2	88.0	89.1	88.8	0.77	11.7	1.8	5.7	2.6	63	75	**1PC1433-1CC3■-■■■■**	84	0.046	13
7.5	**8.6**	**160 M**	980	73	IE3	IE2	89.1	90.1	89.7	0.76	16.0	1.9	4.9	2.3	67	79	**1PC1433-1DC2■-■■■■**	128	0.098	13
11	**12.6**	**160 L**	975	108	IE3	IE2	90.3	91.2	90.8	0.77	23.0	1.9	5.0	2.3	67	79	**1PC1433-1DC4■-■■■■**	153	0.12	13
15	**18**	**180 L**	975	147	IE3	IE2	91.2	92.0	91.9	0.80	29.5	2.3	5.9	2.8	61	68	**1PC1433-1EC4■-■■■■**	169	0.19	16
18.5	**22**	**200 L**	978	181	IE3	IE2	91.7	92.5	92.4	0.79	37.0	2.5	5.6	2.6	64	71	**1PC1433-2AC4■-■■■■**	221	0.28	16
22	**26.5**	**200 L**	978	215	IE3	IE2	92.2	93.1	93.2	0.79	43.5	2.5	5.6	2.6	61	68	**1PC1433-2AC5■-■■■■**	236	0.32	16
30	**36**	**225 M**	982	292	IE3	IE2	92.9	93.6	93.5	0.83	56.0	2.6	6.6	3.0	64	77	**1PC1433-2BC2■-■■■■**	330	0.67	16
37	**44.5**	**250 M**	985	359	IE3	IE2	93.3	94.0	94.0	0.85	67.0	2.7	7.0	2.9	62	75	**1PC1433-2CC2■-■■■■**	415	1	16
45	**54**	**280 S**	988	435	IE3	IE2	93.7	94.3	94.2	0.85	82.0	3.0	6.8	2.8	60	74	**1PC1433-2DC0■-■■■■**	520	1.4	16
55	**66**	**280 M**	988	532	IE3	IE2	94.1	94.6	94.4	0.85	99.0	3.2	7.2	3.0	60	74	**1PC1433-2DC2■-■■■■**	570	1.6	16

Voltages				No. poles	Frame size	Motor type	Version				Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz [1]	460 VY	4, 6	112 M ... 280 M	1PC1433-1B … -2D	**Standard**	2	2		–
50 Hz	400 VΔ/690 VY	60 Hz [1]	460 VΔ	4, 6	112 M ... 280 M	1PC1433-1B … -2D	**Standard**	3	4		–
50 Hz	500 VY			4, 6	112 M ... 280 M	1PC1433-1B … -2D	W/o add. charge	2	7		–
50 Hz	500 VΔ			4, 6	112 M ... 280 M	1PC1433-1B … -2D	W/o add. charge	4	0		–
Further voltages [1]		For price information, code numbers, order codes and descriptions, see page 5/59						9	0		. . .
Types of construction				No. poles	Frame size	Motor type	Version				Order code(s)
Without flange		IM B3 [2]		4, 6	112 M ... 280 M	1PC1433-1B … -2D	**Standard**			A	–
With flange		IM B5 [2]		4, 6	112 M ... 280 M	1PC1433-1B … -2D	With add. charge			F	–
Further types of construction		For price information, code letters and descriptions, see page 5/60								■	. . .
Motor protection				No. poles	Frame size	Motor type	Version				Order code(s)
PTC thermistor with 3 temperature sensors				4, 6	112 M ... 280 M	1PC1433-1B … -2D	With add. charge			B	–
Further motor protection		For price information, code letters and descriptions, see page 5/61								■	. . .
Terminal box position				No. poles	Frame size	Motor type	Version				Order code(s)
Terminal box at top				4, 6	112 M ... 280 M	1PC1433-1B … -2D	**Standard**			4	–
Further terminal box positions		For price information, code numbers and descriptions, see page 5/62									
Special versions											Order code(s)
Options		For price information, order codes and descriptions, see from page 5/63					**1PC1433-. . . .■-■■■■-Z**				. . .+. . .+. . .+. . .

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

[2] Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

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Motors for converter operation · Cast-iron series 1PC1443 self-ventilated – line voltage 400 V/50 Hz, 440 V/60 Hz

Selection and ordering data

P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Connection	Operating values at rated power f_{rated}	T_{rated}	η_{rated}, 4/4 for converter operation	$\cos\varphi_{rated,\ 4/4}$	I_{rated}	Cast-iron series 1PC1443 – version specifically for converter operation
kW	kW	FS		Hz	Nm	%		A	Article No.
• Cooling: self-ventilated (IC 411) • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) • Operation on a converter with uncontrolled infeed – SINAMICS S; rated voltage 400 V/50 Hz, 440 V/60 Hz									
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz									
4		112 M	Y	51.4	25.5	88.6	0.82	7.9	1PC1443-1BB2 . - . . . .
	4.55		Y	61.4	24.1	89.5	0.83	7.7	
5.5		132 S	Y	51.0	35.0	89.6	0.82	10.8	1PC1443-1CB0 . - . . . .
	6.3		Y	61.0	33.4	91.7	0.83	10.4	
7.5		132 M	Y	51.0	47.7	90.4	0.84	14.3	1PC1443-1CB2 . - . . . .
	8.6		Y	61.0	45.6	91.7	0.85	13.8	
11		160 M	Y	50.9	70.0	91.4	0.84	20.5	1PC1443-1DB2 . - . . . .
	12.6		Y	60.9	67.0	92.4	0.85	20.0	
15		160 L	Y	50.7	96.0	92.1	0.82	28.5	1PC1443-1DB4 . - . . . .
	17.5		Y	60.8	93.0	93.6	0.83	28.0	
18.5		180 M	Δ	51.0	118.0	92.6	0.82	35.0	1PC1443-1EB2 . - . . . .
	21.3		Δ	61.0	113.0	93.6	0.83	34.5	
22		180 L	Δ	51.1	140.0	93.0	0.83	41.0	1PC1443-1EB4 . - . . . .
	25.3		Δ	61.2	134.0	93.6	0.83	41.0	
30		200 L	Δ	50.9	191.0	93.6	0.84	55.0	1PC1443-2AB5 . - . . . .
	34.5		Δ	60.9	183.0	93.0	0.85	55.0	
37		225 S	Δ	50.7	236.0	93.9	0.86	66.0	1PC1443-2BB0 . - . . . .
	42.5		Δ	60.8	225.0	93.6	0.86	66.0	
45		225 M	Δ	50.8	286.0	94.2	0.86	80.0	1PC1443-2BB2 . - . . . .
	52		Δ	60.8	276.0	94.1	0.86	81.0	
55		250 M	Δ	50.6	350.0	94.6	0.87	96.0	1PC1443-2CB2 . - . . . .
	63		Δ	60.6	334.0	94.1	0.87	97.0	
75		280 S	Δ	50.5	477.0	95.0	0.86	133.0	1PC1443-2DB0 . - . . . .
	86		Δ	60.5	456.0	94.5	0.87	131.0	
90		280 M	Δ	50.5	573.0	95.2	0.87	157.0	1PC1443-2DB2 . - . . . .
	104		Δ	60.5	552.0	95.0	0.87	158.0	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz									
2.2		112 M	Y	51.6	21.0	84.3	0.75	4.7	1PC1443-1BC2 . - . . . .
	2.55		Y	61.6	20.3	87.5	0.77	4.75	
3		132 S	Y	51.0	28.7	85.6	0.76	6.7	1PC1443-1CC0 . - . . . .
	3.45		Y	61.0	27.5	89.5	0.77	6.3	
4		132 M	Y	51.2	38.2	86.8	0.77	8.6	1PC1443-1CC2 . - . . . .
	4.55		Y	61.2	36.2	89.5	0.78	8.2	
5.5		132 M	Y	51.2	53.0	88.0	0.78	11.6	1PC1443-1CC3 . - . . . .
	6.3		Y	61.2	50.0	91.0	0.78	11.1	
7.5		160 M	Y	51.1	72.0	89.1	0.76	16.0	1PC1443-1DC2 . - . . . .
	8.6		Y	61.1	68.0	91.0	0.76	15.6	
11		160 L	Y	51.1	105.0	90.3	0.77	23.0	1PC1443-1DC4 . - . . . .
	12.6		Y	61.1	100.0	91.7	0.77	22.5	
15		180 L	Δ	51.4	143.0	91.2	0.80	29.5	1PC1443-1EC4 . - . . . .
	18		Δ	61.4	143.0	91.7	0.81	30.5	
18.5		200 L	Δ	51.2	176.0	91.7	0.79	37.0	1PC1443-2AC4 . - . . . .
	22		Δ	61.2	175.0	91.7	0.80	37.5	
22		200 L	Δ	51.3	210.0	92.2	0.79	43.5	1PC1443-2AC5 . - . . . .
	26.5		Δ	61.4	211.0	93.0	0.81	26.5	
30		225 M	Δ	51.0	286.0	92.9	0.83	56.0	1PC1443-2BC2 . - . . . .
	36		Δ	61.1	286.0	93.0	0.84	58.0	
37		250 M	Δ	50.8	353.0	93.3	0.85	67.0	1PC1443-2CC2 . - . . . .
	44.5		Δ	60.9	354.0	93.6	0.85	70.0	
45		280 S	Δ	50.6	430.0	93.7	0.85	82.0	1PC1443-2DC0 . - . . . .
	54		Δ	60.6	430.0	93.6	0.86	84.0	
55		280 M	Δ	50.6	525.0	94.1	0.85	99.0	1PC1443-2DC2 . - . . . .
	66		Δ	60.7	525.0	94.1	0.85	104.0	

All technical specifications refer to converter operation.

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Selection and ordering data (continued)

Motor type	$m_{IM\ B3}$	J	L_{pfA}, Tolerance +3 dB(A) Load	L_{WA}, Tolerance +3 dB(A) Load	Mech. speed limit	Terminal box type	**Preferred Motor Modules of the SINAMICS S120** Other SINAMICS converters also possible – low overload operating mode [1]	Base load current I_{CH}	Rated current I_{rated}	Single Motor Module booksize Width
	kg	kgm^2	dB(A)	dB(A)	rpm		Type	A	A	mm
1PC1443-1BB2 . -	47	0.017	58.0	70.0	4200	TB1F01	6SL3210-1TE21-0AA3	7.7	9.0	50
	47	0.017	62.0	74.0	4200		6SL3210-1TE21-0AA3	7.7	9.0	50
1PC1443-1CB0 . -	75	0.034	64.0	76.0	4200	TB1H01	6SL3210-1TE21-8AA3	15.3	18.0	50
	75	0.034	68.0	80.0	4200		6SL3210-1TE21-8AA3	15.3	18.0	50
1PC1443-1CB2 . -	83	0.046	64.0	76.0	4200	TB1H01	6SL3210-1TE21-8AA3	15.3	18.0	50
	83	0.046	68.0	80.0	4200		6SL3210-1TE21-8AA3	15.3	18.0	50
1PC1443-1DB2 . -	116	0.083	65.0	77.0	4200	TB1J01	6SL3210-1TE23-0AA3	25.5	30.0	100
	116	0.083	69.0	81.0	4200		6SL3210-1TE23-0AA3	25.5	30.0	100
1PC1443-1DB4 . -	135	0.099	65.0	77.0	4200	TB1J01	6SL3210-1TE23-0AA3	25.5	30.0	100
	135	0.099	69.0	81.0	4200		6SL3210-1TE23-0AA3	25.5	30.0	100
1PC1443-1EB2 . -	172	0.13	66.0	73.0	4200	TB1J01	6SL3210-1TE24-5AA3	38.0	45.0	150
	172	0.13	68.0	75.0	4200		6SL3210-1TE24-5AA3	38.0	45.0	150
1PC1443-1EB4 . -	182	0.14	68.0	75.0	4200	TB1J01	6SL3210-1TE24-5AA3	38.0	45.0	150
	182	0.14	70.0	77.0	4200		6SL3210-1TE24-5AA3	38.0	45.0	150
1PC1443-2AB5 . -	246	0.22	65.0	72.0	4200	TB1L01	6SL3210-1TE26-0AA3	52.0	60.0	150
	246	0.22	67.0	74.0	4200		6SL3210-1TE26-0AA3	52.0	60.0	150
1PC1443-2BB0 . -	295	0.42	65.0	78.0	4500	TB1L01	6SL3210-1TE28-5AA3	68.0	85.0	200
	295	0.42	68.0	82.0	4500		6SL3210-1TE28-5AA3	68.0	85.0	200
1PC1443-2BB2 . -	330	0.47	65.0	78.0	4500	TB1L01	6SL3210-1TE28-5AA3	68.0	85.0	200
	330	0.47	68.0	82.0	4500		6SL3210-1TE28-5AA3	68.0	85.0	200
1PC1443-2CB2 . -	430	0.85	66.0	79.0	3700	TB1N01	6SL3210-1TE31-3AA3	105.0	132.0	300
	430	0.85	68.0	82.0	3700		6SL3210-1TE31-3AA3	105.0	132.0	300
1PC1443-2DB0 . -	580	1.40	69.0	83.0	3000	TB1N01	6SL3210-1TE32-0AA4	141.0	200.0	300
	580	1.39	77.0	91.0	3000		6SL3210-1TE32-0AA4	141.0	200.0	300
1PC1443-2DB2 . -	680	1.7	70.0	84.0	3000	TB1N01	6SL3210-1TE32-0AA4	141.0	200.0	300
	680	1.7	79.0	93.0	3000		6SL3210-1TE32-0AA4	141.0	200.0	300
1PC1443-1BC2 . -	48	0.017	65.0	74.0	3600	TB1F01	6SL3210-1TE15-0AA3	4.3	5.0	50
	48	0.017	65.0	77.0	3600		6SL3210-1TE15-0AA3	4.3	5.0	50
1PC1443-1CC0 . -	71	0.037	63.0	75.0	3600	TB1H01	6SL3210-1TE21-0AA3	7.7	9.0	50
	71	0.037	67.0	79.0	3600		6SL3210-1TE21-0AA3	7.7	9.0	50
1PC1443-1CC2 . -	71	0.037	63.0	75.0	3600	TB1H01	6SL3210-1TE21-0AA3	7.7	9.0	50
	71	0.037	67.0	79.0	3600		6SL3210-1TE21-0AA3	7.7	9.0	50
1PC1443-1CC3 . -	84	0.046	63.0	75.0	3600	TB1H01	6SL3210-1TE21-8AA3	15.3	18.0	50
	84	0.046	67.0	79.0	3600		6SL3210-1TE21-8AA3	15.3	18.0	50
1PC1443-1DC2 . -	128	0.098	67.0	79.0	3600	TB1J01	6SL3210-1TE21-8AA3	15.3	18.0	50
	128	0.098	70.0	82.0	3600		6SL3210-1TE21-8AA3	15.3	18.0	50
1PC1443-1DC4 . -	153	0.12	67.0	79.0	3600	TB1J01	6SL3210-1TE23-0AA3	25.5	30.0	100
	153	0.12	70.0	82.0	3600		6SL3210-1TE23-0AA3	25.5	30.0	100
1PC1443-1EC4 . -	169	0.19	61.0	68.0	3600	TB1J01	6SL3210-1TE23-0AA3	25.5	30.0	100
	169	0.19	61.0	68.0	3600		6SL3210-1TE23-0AA3	25.5	30.0	100
1PC1443-2AC4 . -	221	0.28	64.0	71.0	3600	TB1L01	6SL3210-1TE24-5AA3	38.0	45.0	150
	221	0.28	64.0	71.0	3600		6SL3210-1TE24-5AA3	38.0	45.0	150
1PC1443-2AC5 . -	236	0.32	61.0	68.0	3600	TB1L01	6SL3210-1TE24-5AA3	38.0	45.0	150
	236	0.32	63.0	70.0	3600		6SL3210-1TE24-5AA3	38.0	45.0	150
1PC1443-2BC2 . -	330	0.67	64.0	77.0	4400	TB1L01	6SL3210-1TE26-0AA3	52.0	60.0	150
	330	0.67	66.0	80.0	4400		6SL3210-1TE26-0AA3	52.0	60.0	150
1PC1443-2CC2 . -	415	1.00	62.0	75.0	3700	TB1N01	6SL3210-1TE28-5AA3	68.0	85.0	200
	415	1.00	63.0	76.0	3700		6SL3210-1TE28-5AA3	68.0	85.0	200
1PC1443-2DC0 . -	520	1.40	60.0	74.0	3000	TB1N01	6SL3210-1TE28-5AA3	68.0	85.0	200
	520	1.40	66.0	80.0	3000		6SL3210-1TE28-5AA3	68.0	85.0	200
1PC1443-2DC2 . -	570	1.60	60.0	74.0	3000	TB1N01	6SL3210-1TE31-3AA3	105.0	132.0	300
	570	1.60	66.0	80.0	3000		6SL3210-1TE31-3AA3	105.0	132.0	300

[1] In addition to the Power Module, a Control Unit and an Operator Panel are required (see Catalog D 31 and/or D 35).

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Motors for converter operation · Cast-iron series 1PC1463 naturally cooled – line voltage 400 V/50 Hz, 440 V/60 Hz

Selection and ordering data

				Operating values at rated power												**Cast-iron series 1PC1463 –** version specifically for converter operation
P_{rated}, 50 Hz	P_{rated}, 60 Hz	Frame size	Con-nection	f_{rated}	T_{rated}	η_{rated}, 4/4 for converter operation	cos φ_{rated}, 4/4	I_{rated}	$m_{IM\ B3}$	J	L_{pfA}, Tolerance +3 dB(A) Load	L_{WA}, Tolerance +3 dB(A) Load	Mech. speed limit	Terminal box type	
kW	kW	FS		Hz	Nm	%		A	kg	kgm^2	dB(A)	dB(A)	rpm		Article No.
• Cooling: Naturally cooled in enclosed version without external fan (IC 410) • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) • Operation on a converter with uncontrolled infeed – SINAMICS S; rated voltage 400 V/50 Hz, 440 V/60 Hz															
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz															
3.1		**112 M**	Y	50.85	20.0	87.8	0.73	7.00	47	0.017	57	70	4200	TB1F01	**1PC1463-1BB2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
4.8		**132 S**	Y	50.55	31.0	90.2	0.72	10.8	74	0.040	58	71	4200	TB1H01	**1PC1463-1CB0 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
6.1		**132 M**	Y	50.70	39.0	91.3	0.76	12.6	81	0.046	59	72	4200	TB1H01	**1PC1463-1CB2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
8		**160 L**	Y	50.50	51.0	91.5	0.72	17.5	130	0.099	59	72	4200	TB1J01	**1PC1463-1DB4 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
9.3		**160 L**	Y	50.50	60.0	92.5	0.76	19.1	140	0.11	58	71	4200	TB1J01	**1PC1463-1DB6 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
11		**180 M**	Δ	50.60	71.0	93.5	0.72	23.5	170	0.13	59	72	4200	TB1J01	**1PC1463-1EB2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
13		**180 L**	Δ	50.70	84.0	94.1	0.73	27.5	180	0.14	60	73	4200	TB1J01	**1PC1463-1EB4 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz															
8.5		**180 L**	Δ	50.80	82.0	92.2	0.65	20.5	165	0.19	56	69	3600	TB1J01	**1PC1463-1EC4 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
14.5		**200 L**	Δ	50.60	140	93.0	0.64	35	245	0.32	61	74	3600	TB1L01	**1PC1463-2AC5 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
21		**225 M**	Δ	50.55	201	92.8	0.71	46	330	0.67	63	76	4400	TB1L01	**1PC1463-2BC2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
25		**250 M**	Δ	50.40	239	93.6	0.72	54	410	1.00	65	78	3700	TB1N01	**1PC1463-2CC2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
30		**280 S**	Δ	50.35	286	93.8	0.73	63	510	1.40	74	85	3000	TB1N01	**1PC1463-2DC0 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
36		**280 M**	Δ	50.35	344	94.1	0.74	75	550	1.60	74	85	3000	TB1N01	**1PC1463-2DC2 . - . . . .**
	O. R.		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		

All technical specifications refer to converter operation.

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Selection and ordering data

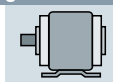
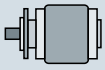
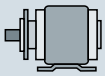
Voltages	Voltage code 12th and 13th position of the Article No.		Additional identification code with order code and plain text, if required	Motor category								
				Motor version	**Motor type (cast iron)**	**Motor type – frame size**						
						112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
				TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
					1PC1443	**1PC1443 for converter operation (VSD) ②**							
				TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
1PC14 . . - . . . . ■ - ■ . . .			Order code	Motor version	Motor type	Frame size							
						112	132	160	180	200	225	250	280
Voltage at 50 Hz or 60 Hz													
50 Hz 400 VY, 60 Hz 460 VY	**0**	**2**	**–**	Only applicable for ② and ③		□	□	□	–	–	–	–	–
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	**2**	**2**	**–**	Only applicable for ①		□	□	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	**3**	**4**	**–**	Only applicable for ①		□	□	□	□	□	□	□	□
50 Hz 400 VΔ, 60 Hz 460 VΔ	**0**	**4**	**–**	Only applicable for ② and ③		–	–	–	□	□	□	□	□
50 Hz 500 VY	**2**	**7**	**–**	Only applicable for ①		○	○	○	○	○	○	○	○
50 Hz 500 VΔ	**4**	**0**	**–**	Only applicable for ①		○	○	○	○	○	○	○	○
50 Hz 220 VΔ/380 VY, 60 Hz 440 VΔ	**2**	**1**	**–**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 380 VΔ/660 VY, 60 Hz 440 VΔ	**3**	**3**	**–**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 380 VΔ				Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY	**2**	**3**	**–**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 415 VΔ, 60 Hz 480 VΔ	**3**	**5**	**–**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
Voltage at 60 Hz and required power													
220 VΔ/380 VY; 50 Hz power	**9**	**0**	**M2A**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz power	**9**	**0**	**M1A**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz power	**9**	**0**	**M2B**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ; 50 Hz power				Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz power	**9**	**0**	**M1B**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz power	**9**	**0**	**M2C**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz power	**9**	**0**	**M1C**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz power	**9**	**0**	**M2D**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz power	**9**	**0**	**M1D**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz power	**9**	**0**	**M2E**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz power	**9**	**0**	**M1E**	Only applicable for ①		○	○	○	○	○	○	○	○
460 VΔ; 50 Hz power	**9**	**0**	**M2F**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz power	**9**	**0**	**M1F**	Only applicable for ①		○	○	○	○	○	○	○	○
575 VY; 50 Hz power	**9**	**0**	**M2G**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz power	**9**	**0**	**M1G**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz power	**9**	**0**	**M2H**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz power	**9**	**0**	**M1H**	Only applicable for ①		✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies													
Non-standard winding [1]	**9**	**0**	**M1Y** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓	✓	✓

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

[1] 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.

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Selection and ordering data

Types of construction		Type of construction letter 14th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category								
				Motor version	**Motor type (cast iron)**	**Motor type – frame size**						
						112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
				TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
					1PC1443	**1PC1443 for converter operation (VSD) ②**							
				TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
				Motor version	Motor type	Frame size							
						112	132	160	180	200	225	250	280
1PC14 . . - . . . . . - . ■ . . (Z)			Order code										
Without flange													
IM B3		**A**	**–**	All	All	□	□	□	□	□	□	□	□
With flange		**Acc. to EN 50347 Acc. to DIN 42948**				**FF215 A 250**	**FF265 A 300**	**FF300 A 350**	**FF300 A 350**	**FF350 A 400**	**FF400 A 450**	**FF500 A 550**	**FF500 A 550**
IM B5		**F**	**–**	All	All	✓	✓	✓	✓	✓	✓	–	–
IM V1 without protective cover		**G**	**–**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
IM V1 with protective cover		**G**	**H00**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
IM V3		**H**	**–**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
IM B35		**J**	**–**	All	All	✓	✓	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge

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Selection and ordering data

Motor protection	Motor protection letter 15th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category								
			Motor version	**Motor type (cast iron)**	**Motor type – frame size**						
					112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
			TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
				1PC1443	**1PC1443 for converter operation (VSD) ②**							
			TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
			Motor version	Motor type	Frame size							
1PC14 . . - . . . . - . . ■ .		Order code			112	132	160	180	200	225	250	280
Motor protection												
None (standard)	**A**	–	Standard for ①, not for ② and ③		□	□	□	□	□	□	□	□
1 or 3 PTC thermistors – for disconnection (2 terminals)	**B**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
2 or 6 PTC thermistors – for warning and disconnection (4 terminals)	**C**	–	Standard for ② and ③		✓	✓	✓	✓	✓	✓	✓	✓
1 KTY84-130 temperature sensor (2 terminals)	**F**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
2 KTY84-130 temperature sensors (4 terminals)	**G**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
3 Pt100 resistance thermometers – 2 wire input (6 terminals)	**H**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt100 resistance thermometers – 2 wire input (12 terminals)	**J**	–	All	All	–	–	–	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge
– Not possible

Note:

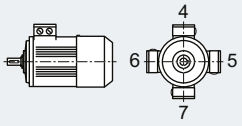
Options are available specifically for bearing protection –
For order codes and descriptions, see from page 5/63.

1) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended.

2) Not UL-certified. Not in combination with option **D31**.

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Selection and ordering data

Terminal box position	Terminal box position code 16th position of the Article No.	Additional identification code with order code and plain text, if required	Motor category								
			**Motor version**	**Motor type (cast iron)**	**Motor type – frame size**						
					112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
			TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
				1PC1443	**1PC1443 for converter operation (VSD) ②**							
			TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
1PC14 . . - . . . . . - . . . ■		Order code	Motor version	Motor type	Frame size							
					112	132	160	180	200	225	250	280
Terminal box position [1]												
Terminal box at top	**4**	–	All	All	□	□	□	□	□	□	□	□
Terminal box on RHS	**5**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Terminal box on LHS	**6**	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓

□ Standard version
✓ With additional charge

1) For types of construction with feet, cast feet are standard.

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Selection and ordering data

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category								
		Motor version	**Motor type (cast iron)**	**Motor type – frame size**						
				112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
		TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
			1PC1443	**1PC1443 for converter operation (VSD) ②**							
		TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
1PC14 . . - . . . . . - . . . . -Z	Order code	Motor version	Motor type	Frame size							
				112	132	160	180	200	225	250	280
Motor protection											
Prepared for mounting a SIPLUS CMS 1000 vibration sensor	**Q05**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection and terminal box											
External grounding		All	All	◘	◘	◘	◘	◘	◘	◘	◘
Terminal box on NDE	**H08**	All	All	–	–	–	✓	✓	✓	✓	✓
Second external grounding	**H70**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the terminal box through 90°, entry from DE	**R10**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the terminal box through 90°, entry from NDE	**R11**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the terminal box through 180°	**R12**	All	All	○	○	○	✓	✓	✓	✓	✓
One metal cable gland	**R15**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
EMC cable gland, maximum configuration	**R16**	All	All	–	–	–	✓	✓	✓	✓	✓
Metal cable gland, maximum configuration	**R18**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Larger terminal box	**R50**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Terminal box without cable entry opening	**R51**	All	All	–	–	–	○	○	○	○	○
Silicon-free version	**R74**	All	All	◘	◘	◘	◘	◘	◘	✓	✓
Windings and insulation											
Temperature class 180 (H), utilized according to 155 (F) at rated power and max. CT 60 °C [1]	**N11**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Colors and paint finish											
Standard paint finish in RAL 7030 stone gray		All	All	◘	◘	◘	◘	◘	◘	◘	◘
Special paint finish	**S02**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Paint 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 Catalog Section 1 "Introduction")	**Y53 •** and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Paint finish in special RAL colors: For RAL colors, see "Special paint finish in special RAL colors" (See Catalog Section 1 "Introduction")	**Y56 •** and RAL … paint finish.	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Special technology											
Mounting of LL 861 900 220 rotary pulse encoder [3]	**G04**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder [3]	**G05**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder [3]	**G06**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Versions in accordance with standards and specifications											
Version according to UL with "Recognition Mark" [9]	**D31**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) [10]	**D40**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical version and degrees of protection											
Prepared for mountings with D16 shaft	**G42**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Protective cover [2] [3] [4]	**H00**	Only for ① and ②		✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes		All	All	◘	◘	◘	◘	◘	◘	◘	◘
Rust-resistant screws (externally)	**H07**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection [5]	**H20**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication											
Regreasing device	**L23**	All	All	✓	✓	✓	✓	✓	◘	◘	◘
Bearing insulation NDE	**L51**	All	All	–	–	–	–	–	✓	✓	✓

For legends and footnotes, see page 5/64.

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Article No. supplements and special versions · Options · Cast-iron series 1PC1433, 1PC1443, 1PC1463

Special versions	Additional identification code **-Z** with order code and plain text if required	Motor category								
		Motor version	**Motor type (cast iron)**	**Motor type – frame size**						
				112	**132**	**160**	**180**	**200**	**225**	**250**	**280**
		TEFC (IC411)	1PC1433	**1PC1433 for line operation (DOL) ①**							
			1PC1443	**1PC1443 for converter operation (VSD) ②**							
		TENV (IC410)	1PC1463	**1PC1463 for converter operation (VSD) ③**							
		Motor version	Motor type	Frame size							
1PC14 . . - . . . . . - . . . . -Z	Order code			112	132	160	180	200	225	250	280
Balance and vibration quantity											
Vibration quantity level A		All	All	◘	◘	◘	◘	◘	◘	◘	◘
Vibration quantity level B	**L00**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without feather key, feather key is supplied	**L01**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	**L02**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor											
Shaft extension with standard dimensions, without feather keyway	**L04**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of stainless steel (e.g. 1.4021)	**L06**	All	All	–	–	–	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	**L07**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	**L08**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension, DE [6]	**Y58** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Special shaft steel as requested by customer	**Y60**	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Heating and ventilation											
Metal external fan	**F76**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 230 V	**Q02**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 115 V	**Q03**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and additional rating plates											
Second rating plate, loose	**M10**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Additional rating plate with deviating rating plate data	**Y80** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Additional rating plate with customer specifications	**Y82** • and customer specifications	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates											
Acceptance test certificate 3.1 according to EN 10204 [7]	**B02**	All	All	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English operating instructions enclosed [8]	**B04**	All	All	✓	✓	✓	✓	✓	✓	✓	✓

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

1) Cannot be used for motors in UL version (order code **D31**). The grease lifetime specified in catalog section 0 "Introduction" refers to CT 40 °C. If the coolant temperature is increased by 10 K, the grease lifetime and regreasing interval are halved.

2) The 1XP8 rotary pulse encoders are fitted with a protective cover as standard. The protective cover is omitted at the factory when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.

3) LL and HOG rotary pulse encoders up to frame size 160 are fitted with a protective cover as standard. The protective cover is omitted at the factory when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.

4) Order code **H00** provides mechanical protection for encoders.

5) Not possible in combination with HOG 9 D 1024I rotary pulse encoder (order code **G05**) and/or brake 2LM8 (order code **F01**).

6) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer in accordance with the appropriate standard. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Applies to non-standard shaft extensions DE. The feather keys are always supplied. The following applies to order code **Y58**:
– Dimensions D and DA ≤ inner diameter of roller bearing (see dimension tables under "Dimensions")
– Dimensions E and EA ≤ 2 × length E (normal) of the shaft extension.

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

8) The compact operating instructions are available in PDF format for all official EU languages at http://support.automation.siemens.com/WW/view/en/10803948/133300.

9) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.

10) The rated voltage is indicated on the rating plate without voltage range.

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Overview

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that flexible couplings, types N-EUPEX and RUPEX or torsionally rigid couplings, types ARPEX and ZAPEX are used.
For special applications, FLUDEX and ELPEX-S couplings are recommended.

Available from:

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

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Phone: +49 2871 922185
Fax: +49 2871 922579

www.siemens.com
Email: flendercouplings@siemens.com

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

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

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

Standardized taper pins are commercially available.

For instance, available from:

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

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

Foundation block according to DIN 799

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

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

Available from:

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

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

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

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

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

Available from:

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

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

More information

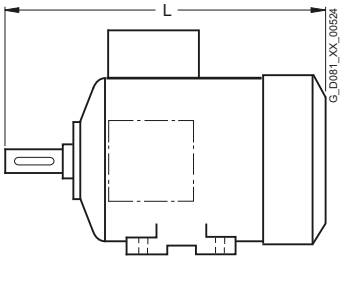
Spare motors and repair parts

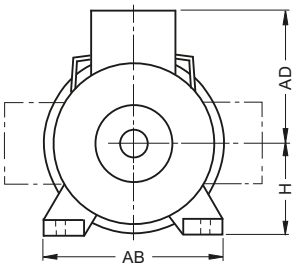
- Commitment to provide replacement motors and repair parts following delivery of the motor:
  - For up to 3 years after the delivery of the original motor, in the event of total motor failure – with regard to the mounting dimensions and functions – Siemens will supply a comparable replacement motor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

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

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Overview





Frame size	Type	Dimensions L	AD	H	AB	O
112 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	407	195	112	226	2 × M32 × 1.5
132 S	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	457	214.5	132	256	2 × M32 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	372	214.5	132	256	2 × M32 × 1.5
132 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	507	214.5	132	256	2 × M32 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	422	214.5	132	256	2 × M32 × 1.5
160 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	594	265	160	300	2 × M40 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	500	265	160	300	2 × M40 × 1.5
160 L	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	654	265	160	300	2 × M40 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463- 1DB4 1DB6	500 560	265	160	300	2 × M40 × 1.5
180 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	669	286	180	339	2 × M40 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	571	286	180	339	2 × M40 × 1.5
180 L	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	699	286	180	339	2 × M40 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463- 1EB4 1EC4	671 571	286	180	339	2 × M40 × 1.5

Frame size	Type	Dimensions L	AD	H	AB	O
200 L	Cast-iron series, self-ventilated					
	1PC1433-, 1PC1443- 2AC4 2AB5, 2AC5	721 746	315	200	378	2 × M50 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	652	315	200	378	2 × M50 × 1.5
225 S	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	788	338	225	436	2 × M50 × 1.5
225 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	848	338	225	436	2 × M50 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	728	338	225	436	2 × M50 × 1.5
250 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	887	410	250	490	2 × M63 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	762	410	250	490	2 × M63 × 1.5
280 S	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	960	433	280	540	2 × M63 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	830	433	280	540	2 × M63 × 1.5
280 M	Cast-iron series, self-ventilated					
	1PC1433, 1PC1443	1070	433	280	540	2 × M63 × 1.5
	Cast-iron series, naturally cooled					
	1PC1463	830	433	280	540	2 × M63 × 1.5

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Overview (continued)

Notes on the dimensions

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

Dimension designation	ISO fit ISO 286-2	
D, DA	to 30 over 30 to 50 over 50	j6 k6 m6
N	to 250 over 250	j6 h6
F, FA		h9
K		H17
S	flange (FF)	H17

  The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

- Dimension tolerances
  For the following dimensions, the permissible deviations are given below:

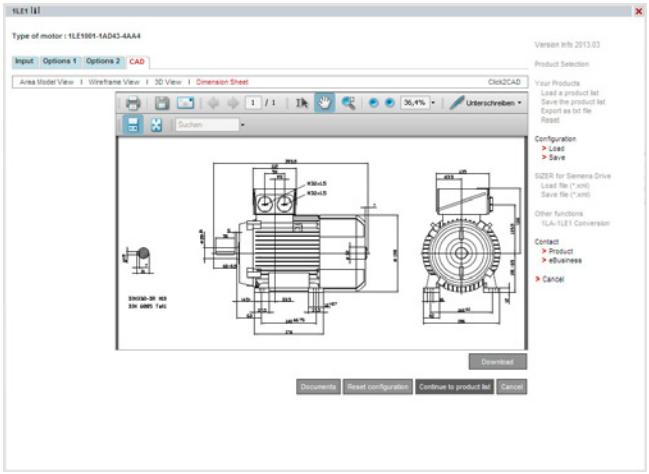
Dimension designation	Dimension	Permissible deviation
H	to 250 over 250	– 0.5 – 1.0
E, EA		– 0.5

  Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.
- All dimensions are specified in mm.

Dimension sheet generator

(within the Drive Technology Configurator)

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



When a complete Article No. is entered or configured with or without order codes, a dimensional drawing can be called up under the "Documentation" tab.
These dimensional drawings can be presented in different views and sections and printed.
The corresponding dimension sheets can be exported, saved and processed further in DXF format (interchange/import format for CAD systems) or as bitmap graphics.

Online access in the Siemens Industry Mall

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

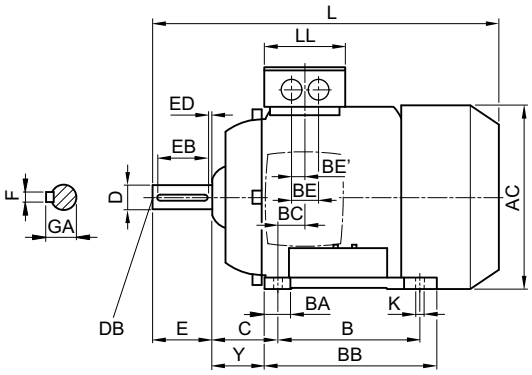
Offline access in the Interactive Catalog CA 01

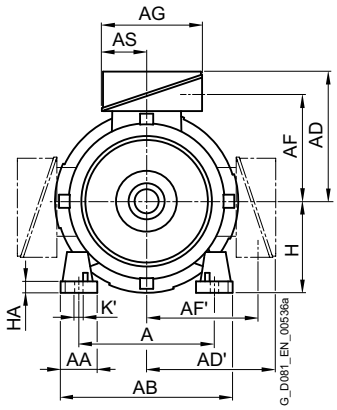
The DT Configurator is also part of the Interactive Catalog CA 01 on DVD – the offline version of Siemens Industry Mall. CA 01 can be ordered from the relevant Siemens sales office or via the Internet: www.siemens.com/automation/CA01

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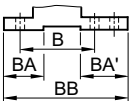
Dimensional drawings

Type of construction IM B3



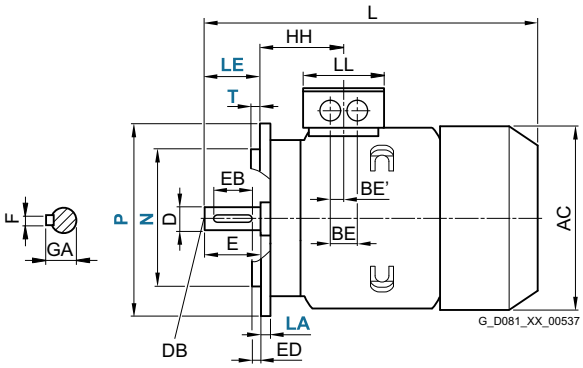


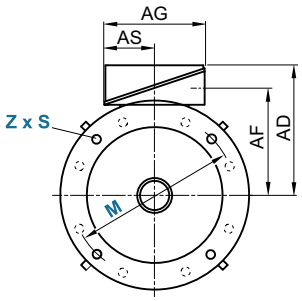
Only cast housing feet for frame sizes 132 S/M and 160 L/M each have 2 holes at NDE.



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)





For motor			Dimension designation acc. to **IEC**																			
Frame size	Motor type 1PC1433 1PC1443	No. of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C	H	HA	Y
112 M	All	4, 6	190	46	226	239	195	195	150	150	163	80.5	140	48	48	176	30	48	24	70	112	12	52
132 S	All	4, 6	216	53	256	281	214.5	214.5	169	169	163	80.5	140	52[5]	89[1]	218[3]	26.5	48	24	89	132	15	69
132 M	All	4, 6	216	53	256	281	214.5	214.5	169	169	163	80.5	178	52[5]	89[1]	218	26.5	48	24	89	132	15	69
160 M	All	4, 6	254	60	300	333.5	265	265	213	213	190	92	210	73[6]	117[2]	300 [4]	37	60	30	108	160	18	85
160 L	All	4, 6	254	60	300	333.5	265	265	213	213	190	92	254	73[6]	117[2]	300	37	60	30	108	160	18	85

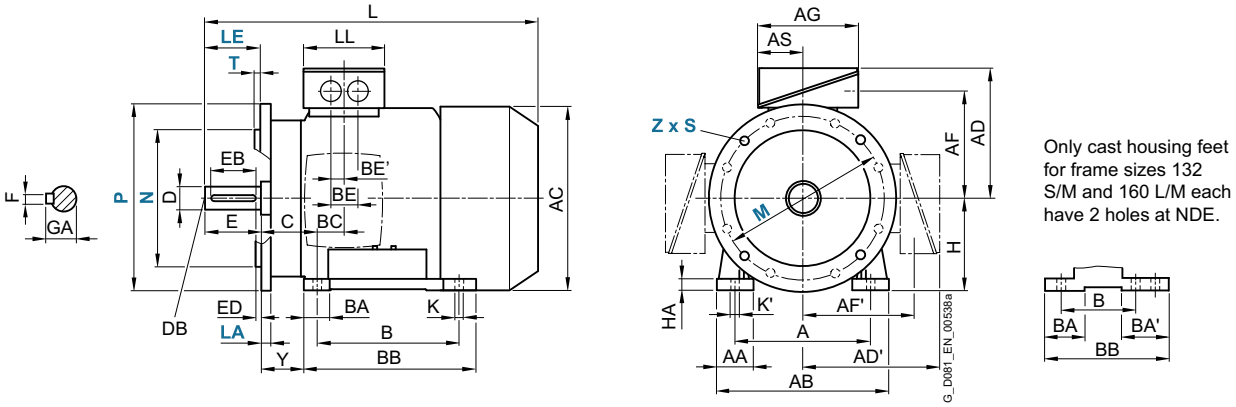
[1] With screwed-on feet, dimension BA' is 95 mm.
[2] With screwed-on feet, dimension BA' is 79 mm.
[3] With screwed-on feet, dimension BB is 180 mm.
[4] With screwed-on feet, dimension BB is 256 mm.
[5] With screwed-on feet, dimension BA is 41 mm.
[6] With screwed-on feet, dimension BA is 51 mm.

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)

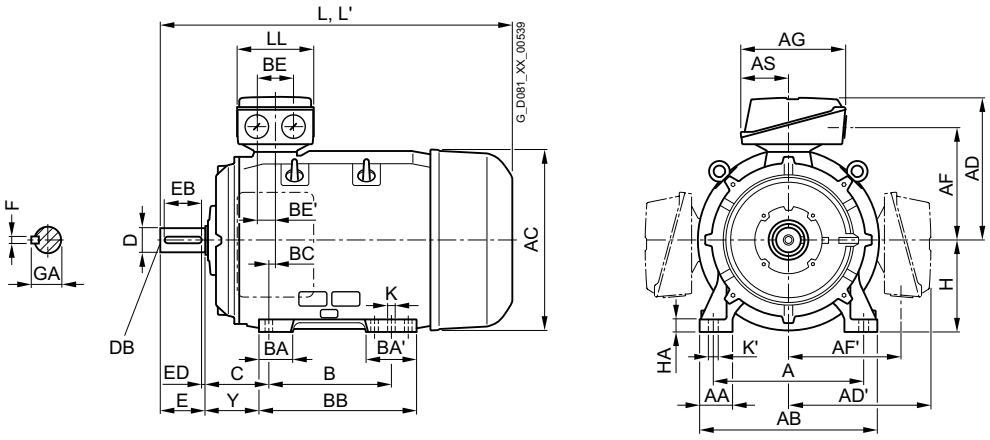


For motor			Dimension designation acc. to **IEC**					DE shaft extension					
Frame size	Motor type 1PC1433 1PC1443	No. of poles	HH	K	K'	L	LL	D	DB	E	EB	ED	F
112 M	All	4, 6	100.5	12	16	407	134	28	M10	60	50	5	8
132 S	All	4, 6	115.5	12	16	457	134	38	M12	80	70	5	10
132 M	All	4, 6	115.5	12	16	507	134	38	M12	80	70	5	10
160 M	All	4, 6	145	14.5	18	594	165	42	M16	110	90	10	12
160 L	All	4, 6	145	14.5	198	654	165	42	M16	110	90	10	12

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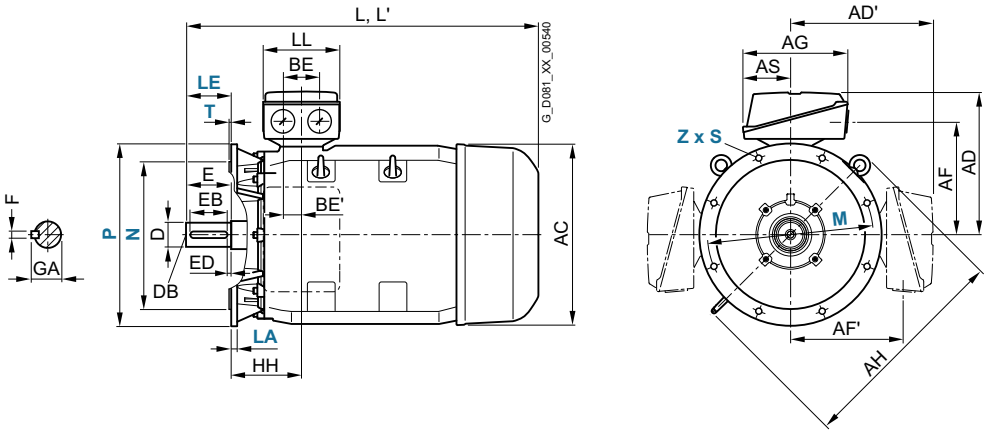
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



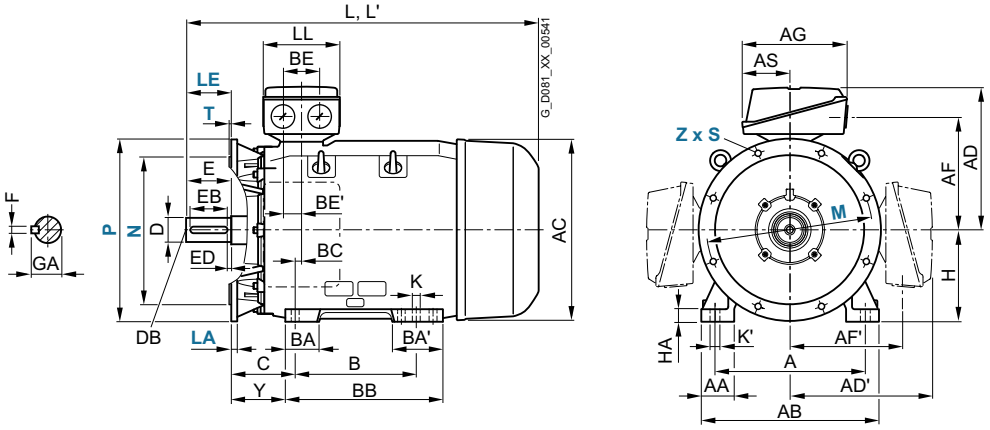
For motor			Dimension designation acc. to **IEC**																		
Frame size	Motor type 1PC1433- 1PC1443-	No. of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AH	AS	B	BA	BA'	BB	BC	BE	BE'	C
180 M	All	4	279	65	339	356	286	286	234	234	190	468	92	241	85	120	328	34	60	30	121
180 L	All	4, 6	279	65	339	356	286	286	234	234	190	468	92	279	85	120	328	34	60	30	121
200 L	2AC4	6	318	70	378	396	315	315	259	259	266	533	112	305	104	104	355	31	85	42.5	133
	2AB5, 2AC5	4, 6																			
225 S	All	4	356	80	436	449	338	338	282	282	266	556	112	311	92	117	361	15	85	42.5	149
225 M	All	4, 6	356	80	436	449	338	338	282	282	266	556	112	311	92	117	361	15	85	42.5	149
250 M	All	4, 6	406	100	490	497	410	410	322	322	319	620	145	349	102	102	409	24	110	55	168
280 S	All	4, 6	457	100	540	551	433	433	345	345	319	672	145	368	101	152	479	20	110	55	190
280 M	All	4, 6	457	100	540	551	433	433	345	345	319	672	145	419	101	152	479	20	110	55	190

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)

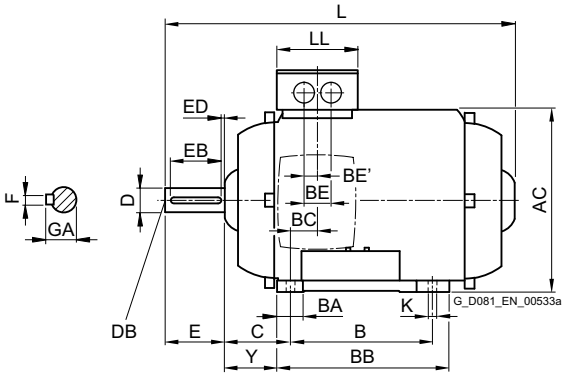


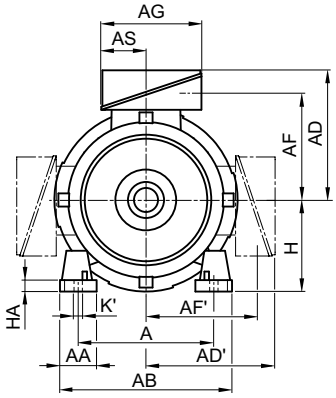
For motor			Dimension designation acc. to **IEC**								DE shaft extension					
Frame size	Motor type 1PC1433- 1PC1443-	No. of poles	H	HA	Y	HH	K	K'	L	LL	D	DB	E	EB	ED	F
180 M	All	4	180	20	95	155	15	19	669	165	48	M16	110	100	5	14
180 L	All	4, 6	180	20	95	155	15	19	699	165	48	M16	110	100	5	14
200 L	2AC4	6	200	25	108	164	19	25	721	197	55	M20	110	100	5	16
	2AB5, 2AC5	4, 6							746							
225 S	All	4	225	34	124	164	19	25	788	197	60	M20	140	125	10	18
225 M	All	4, 6	225	34	124	164	19	25	848	197	60	M20	140	125	10	18
250 M	All	4, 6	250	40	138	192	24	30	887	233	60	M20	140	125	10	18
280 S	All	4, 6	280	40	160	210	24	30	960	233	75	M20	140	125	10	20
280 M	All	4, 6	280	40	160	210	24	30	1070	233	75	M20	140	125	10	20

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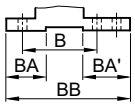
Dimensional drawings

Type of construction IM B3



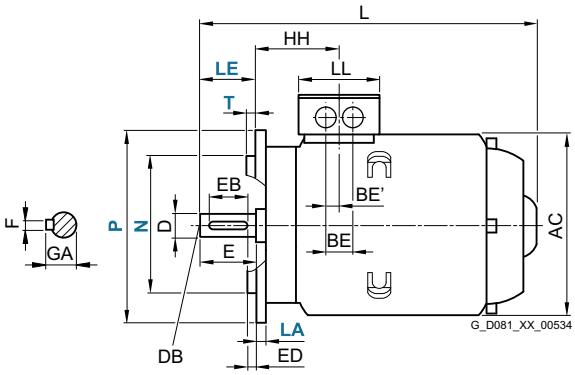


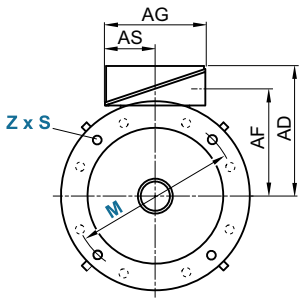
Only cast housing feet for frame sizes 132 S/M and 160 L/M each have 2 holes at NDE.



Types of construction IM B5 and IM V1

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)





For motor			Dimension designation acc. to IEC																	
Frame size	Motor type 1PC1463-	No. of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AS	B	BA	BA'	BB	BC	BE	BE'	C
132 S	All	4	216	53	256	281	214.5	214.5	169	169	163	80.5	140	52[5]	89[1]	218[3]	26.5	48	24	89
132 M	All	4	216	53	256	281	214.5	214.5	169	169	163	80.5	178	52[5]	89[1]	218	26.5	48	24	89
160 L	1DB4	4	254	60	300	333.5	265	265	213	213	190	92	210	73[6]	117[2]	300[4]	37	60	30	108
	1DB6	4											254							
180 M	1EB2, 1EC4	4	279	65	339	356	286	286	234	234	190	92	241	85	120	328	34	60	30	121
180 L	1EB4	4	279	65	339	356	286	286	234	234	190	92	279	85	120	328	34	60	30	121
	1EC4	6											241							
200 L	2AC5	6	318	70	378	396	315	315	259	259	266	112	305	104	104	355	31	85	42.5	133
225 M	2BC2	6	356	80	436	449	338	338	282	282	266	112	311	92	117	361	15	85	42.5	149
250 M	2CC2	6	406	100	490	497	410	410	322	322	319	145	349	102	102	409	24	110	55	168
280 S	2DC0	6	457	100	540	551	433	433	345	345	319	145	368	101	152	479	20	110	55	190
280 M	2DC2	6	457	100	540	551	433	433	345	345	319	145	419	101	152	479	20	110	55	190

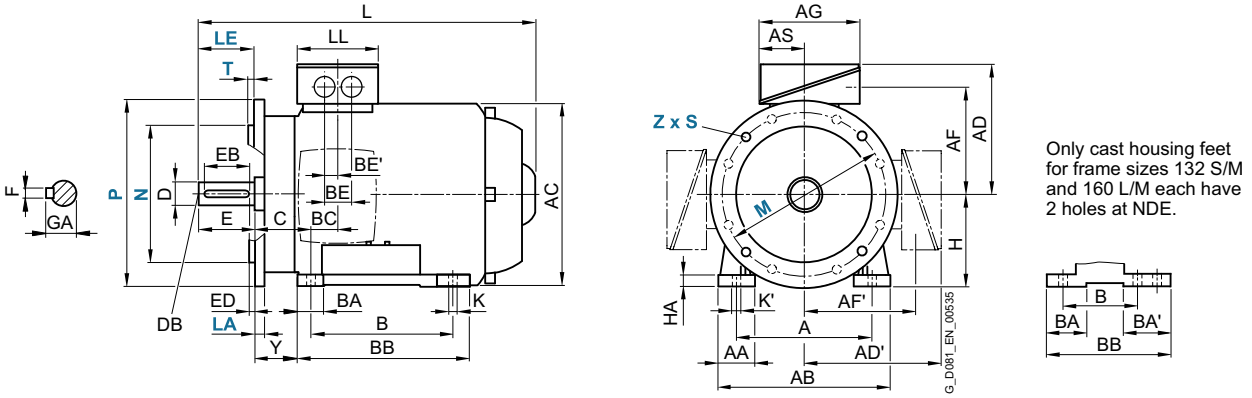
[1] With screwed-on feet, dimension BA' is 95 mm.
[2] With screwed-on feet, dimension BA' is 79 mm.
[3] With screwed-on feet, dimension BB is 180 mm.
[4] With screwed-on feet, dimension BB is 256 mm.
[5] With screwed-on feet, dimension BA is 41 mm.
[6] With screwed-on feet, dimension BA is 51 mm.

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Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see page 1/39 (**Z** = the number of retaining holes)



For motor			Dimension designation acc. to IEC								DE shaft extension					
Frame size	Motor type 1PC1463-	No. of poles	H	HA	Y	HH	K	K'	L	LL	D	DB	E	EB	ED	F
132 S	All	4	132	15	69	115.5	12	16	372	134	38	M12	80	70	5	10
132 M	All	4	132	15	69	115.5	12	16	422	134	38	M12	80	70	5	10
160 L	1DB4	4	160	18	85	145	14.5	18	500	165	42	M16	110	90	10	12
	1DB6	4							560							
180 M	1EB2	4	180	20	95	155	15	19	571	165	48	M16	110	100	5	14
180 L	1EB4	4	180	20	95	155	15	19	671	165	48	M16	110	100	5	14
	1EC4	6							571							
200 L	2AC5	6	200	25	108	164	19	25	652	197	55	M20	110	100	5	16
225 M	2BC2	6	225	34	124	164	19	25	728	197	60	M20	140	125	10	18
250 M	2CC2	6	250	40	138	192	24	30	762	233	65	M20	140	125	10	18
280 S	2DC0	6	280	40	160	210	24	30	830	233	75	M20	140	125	10	20
280 M	2DC2	6	280	40	160	210	24	30	830	233	75	M20	140	125	10	20

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Notes