

Main motors

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2D/3D CAD generatorwww.siemens.com/cadcreator

Main motors

Overview

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Motor type	Features	Degree of protection	Cooling method
1PH8 asynchronous motor 	Three-phase squirrel-cage motor without housing High power density with small motor dimensions	IP55 IP23 IP55/IP65	Forced ventilation Forced ventilation Water cooling
1PH8 synchronous motor 	Permanent-magnet synchronous motor Excellent performance features Extremely high power density with small motor dimensions	IP55 IP55/IP65	Forced ventilation Water cooling
1PH7 asynchronous motor 	Three-phase squirrel-cage motor without housing High power density with small motor dimensions	IP55	Forced ventilation
1PL6 asynchronous motor 	Three-phase squirrel-cage motor without housing Extremely high power density with small motor dimensions	IP23	Forced ventilation

The selection and ordering data for the SINAMICS S120 Motor Modules are based on the booksize format by way of example. Other formats are also possible. The SIZER configuration tool is available for detailed configuration.

For technical definitions for AC motors, see chapter Servomotors.

Main motors

Overview

Shaft height	Rated power P_{rated} for S1 duty kW [HP]	Rated torque M_{rated}	Page
SH 80/SH 100/SH 132/SH 160/ SH 355	2.8 [3.75] 590 (730) ¹⁾ [791 (979)]	13 ... 5900 Nm [9.6 ... 4352 lb _f -ft] (13 ... 6860 Nm) [9.6 ... 5060 lb _f -ft] ¹⁾	5/8
SH 355	275 [369] (295) [396] ¹⁾ 1230 [1649] (1340) [1797] ¹⁾	4280 ... 11640 Nm [3157 ... 8586 lb _f -ft] (4730 ... 12435 Nm) [3489 ... 9172 lb _f -ft] ¹⁾	5/20
SH 80/SH 100/SH 132/SH 160/ SH 180/SH 225/SH 280	3.5 [4.70] 460 [617]	20 ... 2610 Nm [14.8 ... 1925 lb _f -ft]	5/30
SH 132/SH 160	15.7 [21.0] 99 [133]	94 ... 435 Nm [69.3 ... 321 lb _f -ft]	5/44
SH 132/SH 160/ SH 180/SH 225	15 [20.1] 310 [416]	107 ... 1650 Nm [78.9 ... 1217 lb _f -ft]	5/46
SH 180/SH 225/SH 280	16.3 [21.9] 385 [516]	265 ... 2480 Nm [196 ... 1829 lb _f -ft]	5/64
SH 180/SH 225/SH 280	20.5 [27.5] 630 [845]	370 ... 3600 Nm [273 ... 2655 lb _f -ft]	5/82

¹⁾ Information in round brackets refers to data for shaft height 355 at 85 dB, for selection and ordering data see Catalog CR1.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Overview

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1PH8 motors, forced ventilation, shaft heights 80 to 160



1PH8 motors, water cooling, shaft heights 180 to 280



1PH8 motors, water cooling, shaft heights 80 to 160

The 1PH8 motor series is a new motor generation for universal implementation in plants and machines that have been developed with Motion Control applications. The motors are available as an asynchronous variant as well as a compact synchronous variant with either forced ventilation or water cooling, based on a flexible building block principle. Comprehensive function expansions such as different bearing concepts expand the application range.

In comparison to the freely selectable performance of vector and servo control with the SINAMICS S120 drive system, it is possible to select between asynchronous or synchronous variants in the case of the 1PH8 motor series. This flexible interoperation of converter and motor makes it even easier to master extreme duty cycles, short control rise times and high precision in terms of speed, torque and positioning.

Because the 1PH8 motors are often used as the largest and central drive in the machine, they are known as "main motors".

**Main motor = High performance +
Highly dynamic response +
High degree of precision**



1PH8 motors, forced ventilation, shaft height 355

When developing the new 1PH8 motor series, we took special care to ensure maximum compatibility with the SINAMICS S120 drive system. For example, the specially harmonized power components, electronic rating plates, and the ability to integrate the motors via the DRIVE-CLiQ system interface ensure quick and easy commissioning as well as problem-free operation.

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Benefits

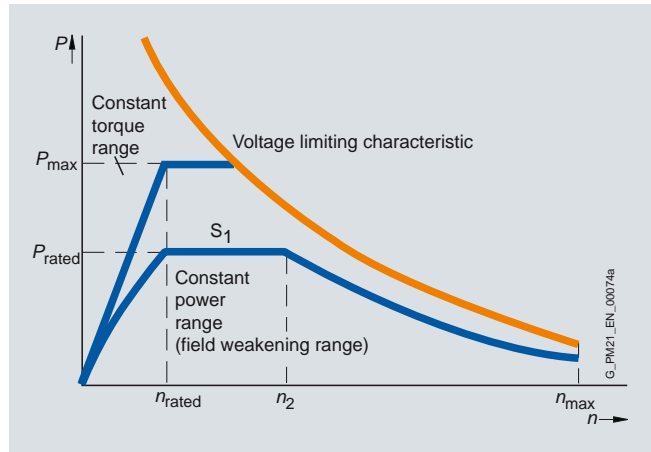
- High power density with small motor dimensions
- Wide speed control ranges
- High degree of flexibility due to the choice of
 - Asynchronous or synchronous design
 - Forced ventilation or water cooling
 - Mechanical designs
- Long-life bearings
- High rotational accuracy, even at the lowest speeds
- Maximum thermal utilization over the complete speed range
- Low sound pressure level
- Optimized for the SINAMICS S120 drive system

Application

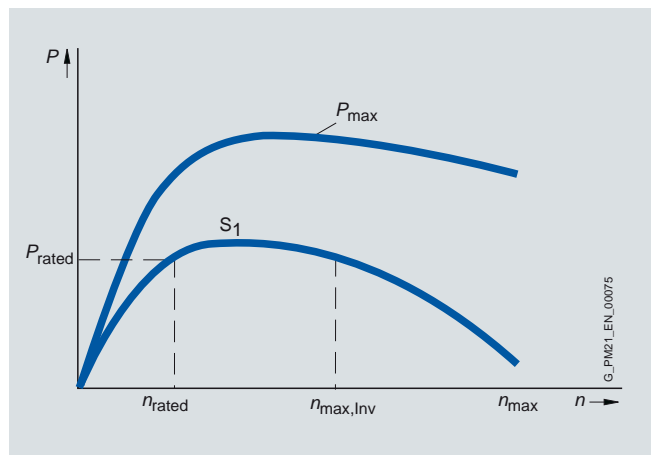
The application spectrum reaches across all sectors and comprises, for example:

- Main drives in presses and extruders
- Converting applications
- Rotary axes in the paper and printing industry
- Use in crane systems

The 1PH8 motors are suitable for installation in dry indoor areas without corrosive atmospheres.

Characteristic curves**1PH8 asynchronous motor**

Typical speed/power characteristic for 1PH8 asynchronous motors

1PH8 synchronous motor

Typical speed/power characteristic for 1PH8 synchronous motors

The characteristic curves show the typical relationship between motor speed and drive power for 1PH8 motors for duty type S1 (continuous duty) in accordance with IEC 60034-1.

The detailed characteristic curves for the corresponding voltage and winding variants can be found in the 1PH8 Configuration Manual.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors Forced ventilation

Technical specifications

1PH8 motor, forced ventilation	
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	For an ambient temperature of up to 40 °C (104°F) Temperature class 180 (H)
Cooling according to EN 60034-6 (IEC 60034-6) • 1PH808 to 1PH816 • 1PH835	Forced ventilation Fan mounted axially at NDE Fan mounted radially at NDE
Temperature monitoring • 1PH808 to 1PH816 • 1PH835	Temperature sensor KTY84 in the stator winding 1 additional KTY84 as reserve
Motor fan ratings • 1PH808 • 1PH810 to 1PH835	230 V 1 AC 50 Hz/265 V 1 AC 60 Hz 400 V 3 AC 50 Hz/480 V 3 AC 60 Hz
Type of construction in accordance with EN 60034-7 (IEC 60034-7) • 1PH808 • 1PH810 to 1PH816 • 1PH835	IM B3, IM B5 IM B3, IM B5, IM B35 IM B3, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5) • 1PH808 to 1PH835 • 1PH835	IP55 IP23
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60072-1)	Plain shaft or fitted key full-key or half-key balancing for fitted key
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1)¹⁾ • 1PH808 to 1PH816 • 1PH835	Tolerance R (reduced) Tolerance N (normal)
Vibration magnitude in accordance with Siemens/EN 60034-14 (IEC 60034-14)¹⁾ • 1PH808 to 1PH816 • 1PH835	Grade R/A Grade A
Max. sound pressure level L_{pA} (1 m) in accordance with EN ISO 1680, max. Tolerance + 3 dB, external fan 50 Hz • 1PH808 to 1PH813 • 1PH816 • 1PH835	70 dB at a rated pulse frequency of 4 kHz and a speed range up to 5000 rpm 73 dB at a rated pulse frequency of 4 kHz and a speed range up to 5000 rpm 77 dB at a rated pulse frequency of 2.5 kHz and a speed range up to 2800 rpm
Connection • 1PH808 to 1PH813 • 1PH816 • 1PH835	Connector for signals or DRIVE-CLiQ interface (mating connector is not included in the scope of supply) Terminal box NDE top/power connector Terminal box NDE top Terminal box DE right
Paint finish	Anthracite RAL 7016

¹⁾ Shaft extension run-out, concentricity of centering ring and shaft, and perpendicularity of flange to shaft.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors Water cooling

Technical specifications (continued)

1PH8 motor, water cooling	
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	For a cooling water inlet temperature of up to 30 °C (86°F) Temperature class 180 (H) ²⁾
Cooling according to EN 60034-6 (IEC 60034-6)	Water cooling Max. cooling water pressure at inlet: 6 bar Connecting thread at NDE
Temperature monitoring • 1PH808 to 1PH816 • 1PH818 to 1PH828	Temperature sensor KTY84 in the stator winding 1 additional KTY84 as reserve
Type of construction in accordance with EN 60034-7 (IEC 60034-7) • 1PH808 • 1PH810 to 1PH828	IM B3, IM B5 IM B3, IM B5, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5) • 1PH808 to 1PH816 • 1PH818 to 1PH828	IP65 IP55
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60072-1)	Plain shaft or fitted key full-key or half-key balancing for fitted key
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1)¹⁾ • 1PH808 to 1PH816 • 1PH818 to 1PH828	Tolerance R (reduced) Tolerance N (normal)
Vibration magnitude in accordance with Siemens/EN 60034-14 (IEC 60034-14)¹⁾ • 1PH808 to 1PH816 • 1PH818 to 1PH828	Grade R/A Grade A
Sound pressure level L_{pA} (1 m) in accordance with EN ISO 1680, max. Tolerance +3 dB • 1PH808 to 1PH813 • 1PH816 • 1PH818 • 1PH822 • 1PH828	68 dB at a rated pulse frequency of 4 kHz and a speed range up to 5000 rpm 69 dB at a rated pulse frequency of 4 kHz and a speed range up to 5000 rpm 70 dB at a rated pulse frequency of 2 or 4 kHz and a speed range up to 5000 rpm 70 dB at a rated pulse frequency of 2 or 4 kHz and a speed range up to 4500 rpm 72 dB at a rated pulse frequency of 2 kHz and a speed range up to 3300 rpm
Connection • 1PH808 to 1PH813 • 1PH816 to 1PH828	Connector for signals or DRIVE-CLiQ interface (mating connector is not included in the scope of supply) Terminal box NDE top/power connector Terminal box NDE top
Paint finish	Anthracite RAL 7016

¹⁾ Shaft extension run-out, concentricity of centering ring and shaft, and perpendicularity of flange to shaft.

²⁾ The following motors are designed to conform to temperature class 155 (F):
1PH8107-1.F2
1PH8138-2.F2/1PH8138-2.G2
1PH8164/1PH8166/1PH8168

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Smart/Basic Line Module										
400	160	9.5 (12.74)	227 (167)	30	260	14.3	2150	6500	1PH8163-1 B -... 1	
		13 (17.43)	310 (229)	36	300	14.1	1750	6500	1PH8165-1 B -... 1	
1000	100	3.7 (4.96)	35 (25.8)	10	333	35.8	2550	9000	1PH8103-1 D -... 1	
		6.3 (8.45)	60 (44.3)	17.5	307	35.5	4300	9000	1PH8107-1 D -... 1	
	132	12 (16.1)	115 (84.8)	30	319	35.0	3000	8000	1PH8133-1 D -... 1	
		17 (22.8)	162 (119)	43	307	34.8	4300	8000	1PH8137-1 D -... 1	
160	22 (29.5)	210 (155)	55	300	34.2	2800	6500	1PH8163-1 D -... 1		
	28 (37.55)	267 (197)	71	292	34.2	4600	6500	1PH8165-1 D -... 1		
1500	80	2.8 (3.75)	18 (13.3)	7.5	346	53.3	4700	10000	1PH8083-1 F -... 1	
		3.7 (4.96)	24 (17.7)	10	336	53.2	5200	10000	1PH8087-1 F -... 1	
	100	3.7 (4.96)	24 (17.7)	12.5	265	52.4	5000	9000	1PH8101-1 F -... 1	
		5.5 (7.38)	35 (25.8)	13.5	368	52.4	4200	9000	1PH8103-1 F -... 1	
		7.0 (9.39)	45 (33.2)	17.5	348	51.9	5250	9000	1PH8105-1 F -... 1	
		9.0 (12.1)	57 (42)	23.5	330	52.2	4500	9000	1PH8107-1 F -... 1	
	132	11 (14.75)	70 (51.6)	24	360	51.4	4800	8000	1PH8131-1 F -... 1	
		15 (20.12)	96 (70.8)	34	342	51.3	5500	8000	1PH8133-1 F -... 1	
		18.5 (24.81)	118 (87)	43	330	51.3	6150	8000	1PH8135-1 F -... 1	
		22 (29.5)	140 (103)	56	308	51.3	4300	8000	1PH8137-1 F -... 1	
	160	30 (40.23)	191 (141)	71	319	50.8	3500	6500	1PH8163-1 F -... 1	
		37 (49.62)	236 (174)	78	350	50.8	2800	6500	1PH8165-1 F -... 1	
2000	80	3.7 (4.96)	18 (13.3)	11.6	293	70.2	9200	10000	1PH8083-1 G -... 1	
		4.9 (6.57)	23 (17.0)	14.1	320	69.8	8400	10000	1PH8087-1 G -... 1	
	100	7 (9.39)	33 (24.3)	17.5	345	69.0	6000	9000	1PH8103-1 G -... 1	
		10.5 (14.18)	50 (36.9)	26	355	68.6	4000	9000	1PH8107-1 G -... 1	
	132	20 (26.82)	96 (70.8)	45	350	68.1	4000	8000	1PH8133-1 G -... 1	
		28 (37.55)	134 (98.8)	60	350	68.1	4000	8000	1PH8137-1 G -... 1	
	160	36 (48.28)	172 (127)	83	324	67.5	3000	6500	1PH8163-1 G -... 1	
		41 (54.98)	196 (145)	88	350	67.4	2750	6500	1PH8165-1 G -... 1	
	3000	80	4.1 (5.50)	13 (9.59)	13.6	298	102.6	10000	10000	1PH8083-1 M -... 1
			4.8 (6.44)	15 (11.1)	17.3	284	102.2	10000	10000	1PH8087-1 M -... 1
100		8.4 (11.3)	27 (20.0)	25.7	297	102.1	14250	9000	1PH8103-1 M -... 1	
		12 (16.1)	38 (28.0)	38	294	101.6	16500	9000	1PH8107-1 M -... 1	

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magnetizing current I_{μ} A	Efficiency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8163-1. B...	0.91	8.1	0.823	0.2160 (1.912)	196 (432)	gk863	30	6SL312-1TE23-0AA3
1PH8165-1. B...	0.86	14.9	0.826	0.2320 (2.053)	230 (507)	gk863	45	6SL312-1TE24-5AA3
1PH8103-1. D...	0.82	4.6	0.814	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. D...	0.82	8.2	0.834	0.0289 (0.256)	73 (161)	gk813	18	6SL312-1TE21-8AA3
1PH8133-1. D...	0.88	10.1	0.871	0.0760 (0.673)	106 (234)	gk833	30	6SL312-1TE23-0AA3
1PH8137-1. D...	0.88	15.1	0.881	0.1090 (0.965)	141 (311)	gk833	45	6SL312-1TE24-5AA3
1PH8163-1. D...	0.89	17.3	0.909	0.2160 (1.912)	196 (432)	gk863	60	6SL312-1TE26-0AA3
1PH8165-1. D...	0.89	22.2	0.914	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. F...	0.80	3.8	0.809	0.0064 (0.057)	32 (70.6)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F...	0.81	4.9	0.817	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F...	0.80	6.0	0.835	0.0138 (0.122)	42 (92.6)	gk813	18	6SL312-1TE21-8AA3
1PH8103-1. F...	0.80	6.5	0.852	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8105-1. F...	0.79	8.8	0.867	0.0252 (0.223)	65 (143)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. F...	0.81	10.8	0.869	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8131-1. F...	0.84	10.4	0.899	0.0590 (0.522)	89 (196)	gk833	30	6SL312-1TE23-0AA3
1PH8133-1. F...	0.85	14.2	0.899	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8135-1. F...	0.85	18.1	0.898	0.0940 (0.832)	125 (276)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. F...	0.84	24.2	0.904	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. F...	0.87	25.6	0.923	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. F...	0.88	27.0	0.926	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. G...	0.79	5.7	0.832	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G...	0.78	7.3	0.853	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. G...	0.79	8.7	0.877	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. G...	0.78	12.9	0.897	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8133-1. G...	0.85	18.1	0.919	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. G...	0.87	21.5	0.924	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. G...	0.88	28.1	0.929	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. G...	0.87	32.4	0.927	0.2320 (2.053)	230 (507)	gk863	85 ⁴⁾	6SL312-1TE28-5AA3
1PH8083-1. M...	0.74	7.3	0.869	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. M...	0.72	9.6	0.871	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. M...	0.78	12.2	0.900	0.0172 (0.152)	51 (112)	gk813	30	6SL312-1TE23-0AA3
1PH8107-1. M...	0.76	19.2	0.900	0.0289 (0.256)	73 (161)	gk813	45	6SL312-1TE24-5AA3

Cooling:

Internal air cooling
External air cooling

0
1

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position B to D).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz. For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 4 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Active Line Module										
500	160	12 (16.1)	229 (169)	30	325	17.6	2200	6500	1PH8163-1 B -... 1	
		16 (21.5)	306 (221)	36	365	17.5	1850	6500	1PH8165-1 B -... 1	
1150	100	4.3 (5.77)	36 (26.6)	10	380	40.7	2450	9000	1PH8103-1 D -... 1	
		7.2 (9.66)	60 (44.3)	17.5	348	40.6	4750	9000	1PH8107-1 D -... 1	
	132	13.5 (18.1)	112 (82.6)	29	361	40.0	3000	8000	1PH8133-1 D -... 1	
		19.5 (26.1)	162 (119)	43	350	39.8	4000	8000	1PH8137-1 D -... 1	
	160	25 (33.5)	208 (153)	55	343	39.2	3550	6500	1PH8163-1 D -... 1	
		31 (41.6)	257 (190)	69	333	39.2	4850	6500	1PH8165-1 D -... 1	
1750	80	3.3 (4.43)	18 (13.3)	7.5	398	61.7	5200	10000	1PH8083-1 F -... 1	
		4.3 (5.77)	23 (17.0)	10	396	61.3	5850	10000	1PH8087-1 F -... 1	
	100	4.3 (5.77)	23 (17.0)	12.5	304	60.8	5000	9000	1PH8101-1 F -... 1	
		6.3 (8.45)	34 (25.1)	13.1	412	60.8	4000	9000	1PH8103-1 F -... 1	
		8 (10.7)	44 (32.5)	17.5	400	60.2	5900	9000	1PH8105-1 F -... 1	
		10 (13.4)	55 (40.6)	22	380	60.4	5000	9000	1PH8107-1 F -... 1	
	132	13 (17.4)	71 (52.4)	24	416	59.8	5150	8000	1PH8131-1 F -... 1	
		17.5 (23.5)	96 (70.8)	34	392	59.7	5000	8000	1PH8133-1 F -... 1	
		21.5 (28.8)	117 (86.3)	43	383	59.6	5500	8000	1PH8135-1 F -... 1	
		25 (33.5)	136 (100)	56	353	59.6	5000	8000	1PH8137-1 F -... 1	
		160	34 (45.6)	186 (137)	70	366	59.2	3050	6500	1PH8163-1 F -... 1
			41 (55.0)	224 (165)	76	400	59.1	2650	6500	1PH8165-1 F -... 1
	2300	80	4.1 (5.50)	17 (12.5)	11.3	332	80.0	10000	10000	1PH8083-1 G -... 1
			5.4 (7.24)	22 (16.2)	13.7	353	79.8	9650	10000	1PH8087-1 G -... 1
100		7.5 (10.1)	31 (22.9)	17	382	78.9	6000	9000	1PH8103-1 G -... 1	
		12.0 (16.1)	50 (36.9)	26	406	78.6	4600	9000	1PH8107-1 G -... 1	
132		22.5 (30.2)	93 (68.6)	44	400	78.1	5000	8000	1PH8133-1 G -... 1	
		29 (38.9)	120 (88.5)	56	400	77.9	5000	8000	1PH8137-1 G -... 1	
160		38 (51.0)	158 (116)	78	370	77.4	3200	6500	1PH8163-1 G -... 1	
		44 (59.0)	183 (135)	85	394	77.4	3000	6500	1PH8165-1 G -... 1	
3300		80	4.5 (6.03)	13 (9.59)	13.5	327	112.6	10000	10000	1PH8083-1 M -... 1
			5.2 (6.97)	15 (11.1)	17.1	303	112.3	10000	10000	1PH8087-1 M -... 1
	100	9.3 (12.5)	27 (20.0)	25.7	326	112.1	16000	9000	1PH8103-1 M -... 1	
		13 (17.4)	38 (28.0)	38	314	111.7	18000	9000	1PH8107-1 M -... 1	

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Efficiency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8163-1. B...	0.90	8.9	0.819	0.2160 (1.912)	196 (432)	gk863	30	6SL312-1TE23-0AA3
1PH8165-1. B...	0.85	14.8	0.830	0.2320 (2.053)	230 (507)	gk863	45	6SL312-1TE24-5AA3
1PH8103-1. D...	0.81	4.8	0.824	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. D...	0.82	8.2	0.852	0.0289 (0.256)	73 (161)	gk813	18	6SL312-1TE21-8AA3
1PH8133-1. D...	0.87	10.7	0.884	0.0760 (0.673)	106 (234)	gk833	30	6SL312-1TE23-0AA3
1PH8137-1. D...	0.87	16.1	0.891	0.1090 (0.965)	141 (311)	gk833	45	6SL312-1TE24-5AA3
1PH8163-1. D...	0.88	17.5	0.915	0.2160 (1.912)	196 (432)	gk863	60	6SL312-1TE26-0AA3
1PH8165-1. D...	0.89	20.9	0.921	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. F...	0.80	3.8	0.831	0.0064 (0.057)	32 (70.6)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F...	0.78	5.3	0.838	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F...	0.80	6.0	0.852	0.0138 (0.122)	42 (92.6)	gk813	18	6SL312-1TE21-8AA3
1PH8103-1. F...	0.81	6.0	0.859	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8105-1. F...	0.78	8.8	0.878	0.0252 (0.223)	65 (143)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. F...	0.80	10.9	0.878	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8131-1. F...	0.84	10.3	0.914	0.0590 (0.522)	89 (196)	gk833	30	6SL312-1TE23-0AA3
1PH8133-1. F...	0.85	13.6	0.913	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8135-1. F...	0.84	18.3	0.909	0.0940 (0.832)	125 (276)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. F...	0.86	23.1	0.907	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. F...	0.87	24.6	0.926	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. F...	0.88	25.8	0.934	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. G...	0.78	5.7	0.852	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G...	0.79	6.8	0.859	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. G...	0.79	8.1	0.891	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. G...	0.78	13.0	0.909	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8133-1. G...	0.84	18.1	0.933	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. G...	0.86	21.9	0.929	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. G...	0.87	28.2	0.935	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. G...	0.86	31.0	0.932	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. M...	0.74	7.3	0.875	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. M...	0.73	9.2	0.878	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. M...	0.78	12.2	0.900	0.0172 (0.152)	51 (112)	gk813	30	6SL312-1TE23-0AA3
1PH8107-1. M...	0.78	12.2	0.900	0.0289 (0.256)	73 (161)	gk813	45	6SL312-1TE24-5AA3

Cooling:	
Internal air cooling	0
External air cooling	1

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard; 14th data position B to D).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz. For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
600	160	14.5 (19.4)	231 (170)	30	370	21.0	2150	6500	1PH8163-1 B -... 1
		19 (25.5)	302 (223)	35	420	20.8	1800	6500	1PH8165-1 B -... 1
1350	100	4.7 (6.30)	33 (24.3)	9.7	423	47.3	3500	9000	1PH8103-1 D -... 1
		8 (10.7)	57 (42.0)	17	400	47.1	5045	9000	1PH8107-1 D -... 1
	132	15 (20.1)	106 (78.2)	28	417	46.5	3500	8000	1PH8133-1 D -... 1
		22 (29.5)	156 (115)	42	404	46.4	4000	8000	1PH8137-1 D -... 1
160	28 (37.6)	198 (146)	52	400	45.8	4000	6500	1PH8163-1 D -... 1	
	34 (45.6)	241 (178)	66	387	45.8	5600	6500	1PH8165-1 D -... 1	
2000	80	3.7 (4.96)	18 (13.3)	7.6	447	70.0	5550	10000	1PH8083-1 F -... 1
		4.9 (6.57)	23 (17.0)	10	435	69.9	6100	10000	1PH8087-1 F -... 1
	100	4.7 (6.30)	22 (16.2)	12.5	343	69.0	7500	9000	1PH8101-1 F -... 1
		7 (9.39)	33 (24.3)	12.7	460	69.1	4100	9000	1PH8103-1 F -... 1
		9 (12.1)	43 (31.7)	17	453	68.5	6180	9000	1PH8105-1 F -... 1
		11 (14.8)	53 (39.1)	21.5	428	68.6	5500	9000	1PH8107-1 F -... 1
	132	15 (20.1)	72 (53.1)	24	460	68.2	5300	8000	1PH8131-1 F -... 1
		20 (26.8)	96 (70.8)	34	445	68.0	6200	8000	1PH8133-1 F -... 1
		24 (32.2)	115 (84.8)	43	434	67.9	7100	8000	1PH8135-1 F -... 1
		28 (37.6)	134 (98.8)	55	401	67.9	4000	8000	1PH8137-1 F -... 1
	160	37 (49.6)	177 (131)	68	416	67.4	3550	6500	1PH8163-1 F -... 1
		45 (60.4)	215 (159)	75	440	67.5	3300	6500	1PH8165-1 F -... 1
2650	80	4.6 (6.17)	17 (12.5)	11.2	376	91.6	10000	10000	1PH8083-1 G -... 1
		6 (8.05)	22 (16.2)	13.6	390	91.6	10000	10000	1PH8087-1 G -... 1
	100	8 (10.7)	29 (21.4)	16	434	90.4	7500	9000	1PH8103-1 G -... 1
		13 (17.4)	47 (34.7)	24	460	90.0	7000	9000	1PH8107-1 G -... 1
	132	24 (32.2)	86 (63.4)	41	456	89.6	7000	8000	1PH8133-1 G -... 1
		30 (40.2)	108 (79.7)	52	460	89.4	4250	8000	1PH8137-1 G -... 1
	160	40 (53.6)	144 (106)	76	390	89.2	3500	6500	1PH8163-1 G -... 1
		50 (67.1)	180 (133)	85	440	89.0	3250	6500	1PH8165-1 G -... 1
3600	80	4.9 (6.57)	13 (9.59)	14	355	122.6	10000	10000	1PH8083-1 M -... 1
		5.7 (7.64)	15 (11.1)	17.1	329	122.4	10000	10000	1PH8087-1 M -... 1
	100	10 (13.4)	27 (19.9)	25.4	355	122.1	17650	9000	1PH8103-1 M -... 1
		14 (18.8)	37 (27.3)	37.5	350	121.6	18000	9000	1PH8107-1 M -... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor	Magne- tizing current	Efficiency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
	$\cos \varphi$	I_{μ} A	η	J kgm ² (lb _r -in-s ²)	kg (lb)	Type	Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8163-1. B...	0.90	8.1	0.851	0.2160 (1.912)	196 (432)	gk863	30	6SL312-1TE23-0AA3
1PH8165-1. B...	0.88	12.0	0.850	0.2320 (2.053)	230 (507)	gk863	45	6SL312-1TE24-5AA3
1PH8103-1. D...	0.82	4.4	0.848	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. D...	0.80	8.2	0.867	0.0289 (0.256)	73 (161)	gk813	18	6SL312-1TE21-8AA3
1PH8133-1. D...	0.86	10.7	0.904	0.0760 (0.673)	106 (234)	gk833	30	6SL312-1TE23-0AA3
1PH8137-1. D...	0.86	15.9	0.902	0.1090 (0.965)	141 (311)	gk833	45	6SL312-1TE24-5AA3
1PH8163-1. D...	0.88	17.7	0.924	0.2160 (1.912)	196 (432)	gk863	60	6SL312-1TE26-0AA3
1PH8165-1. D...	0.86	22.5	0.928	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. F...	0.79	3.7	0.850	0.0064 (0.057)	32 (70.6)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F...	0.80	4.9	0.864	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F...	0.79	6.0	0.871	0.0138 (0.122)	42 (92.6)	gk813	18	6SL312-1TE21-8AA3
1PH8103-1. F...	0.81	5.8	0.894	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8105-1. F...	0.78	8.7	0.911	0.0252 (0.223)	65 (143)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. F...	0.79	10.8	0.901	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8131-1. F...	0.86	9.2	0.931	0.0590 (0.522)	89 (196)	gk833	30	6SL312-1TE23-0AA3
1PH8133-1. F...	0.85	13.5	0.933	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8135-1. F...	0.84	18.1	0.929	0.0940 (0.832)	125 (276)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. F...	0.84	23.1	0.931	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. F...	0.86	24.6	0.932	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. F...	0.89	23.6	0.936	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. G...	0.78	5.7	0.862	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G...	0.79	6.5	0.884	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. G...	0.78	8.1	0.913	0.0172 (0.152)	51 (112)	gk813	18	6SL312-1TE21-8AA3
1PH8107-1. G...	0.77	12.8	0.932	0.0289 (0.256)	73 (161)	gk813	30	6SL312-1TE23-0AA3
1PH8133-1. G...	0.83	18.1	0.949	0.0760 (0.673)	106 (234)	gk833	45	6SL312-1TE24-5AA3
1PH8137-1. G...	0.83	22.4	0.941	0.1090 (0.965)	141 (311)	gk833	60	6SL312-1TE26-0AA3
1PH8163-1. G...	0.89	23.1	0.936	0.2160 (1.912)	196 (432)	gk863	85	6SL312-1TE28-5AA3
1PH8165-1. G...	0.87	28.9	0.932	0.2320 (2.053)	230 (507)	gk863	85	6SL312-1TE28-5AA3
1PH8083-1. M...	0.74	7.3	0.881	0.0064 (0.057)	32 (70.6)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. M...	0.73	9.2	0.878	0.0089 (0.079)	39 (86.0)	gk803	18	6SL312-1TE21-8AA3
1PH8103-1. M...	0.77	12.3	0.910	0.0172 (0.152)	51 (112)	gk813	30	6SL312-1TE23-0AA3
1PH8107-1. M...	0.77	12.3	0.910	0.0289 (0.256)	73 (161)	gk813	45	6SL312-1TE24-5AA3

Cooling:

Internal air cooling
External air cooling

0
1

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position B to D).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz. For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Active Line Module (noise value 77 dB)									
480	355	160 (215)	3183 (2348)	315	400	24.2	1150	2800	1PH8350-1B1-... 0
		190 (255)	3780 (2788)	375	400	24.2	1150	2800	1PH8352-1B1-... 0
		225 (302)	4477 (3302)	420	400	24.2	1150	2800	1PH8354-1B1-... 0
		255 (342)	5073 (3742)	485	400	24.2	1150	2800	1PH8356-1B1-... 0
		295 (396)	5869 (4329)	560	400	24.2	1150	2800	1PH8358-1B1-... 0
640	355	210 (282)	3134 (2312)	405	400	32.2	1150	2800	1PH8350-1Q1-... 0
		250 (335)	3730 (2751)	475	400	32.2	1150	2800	1PH8352-1Q1-... 0
		290 (389)	4327 (3192)	560	400	32.2	1150	2800	1PH8354-1Q1-... 0
		335 (449)	4999 (3687)	640	400	32.2	1150	2800	1PH8356-1Q1-... 0
		385 (516)	5745 (4238)	700	400	32.2	1150	2800	1PH8358-1Q1-... 0
800	355	250 (335)	2984 (2201)	490	400	40.2	1200	2800	1PH8350-1C1-... 0
		305 (409)	3641 (2686)	570	400	40.2	1200	2800	1PH8352-1C1-... 0
		355 (476)	4238 (3126)	650	400	40.2	1200	2800	1PH8354-1C1-... 0
		410 (550)	4894 (3610)	750	400	40.2	1300	2800	1PH8356-1C1-... 0
830	355	475 (637)	5444 (4015)	920	400	41.9	1350	2800	1PH8358-1C1-... 0
1080	355	270 (362)	2388 (1761)	495	400	54.2	1450	2800	1PH8350-1D1-... 0
		330 (443)	2918 (2152)	620	400	54.2	1450	2800	1PH8352-1D1-... 0
		375 (503)	3316 (2446)	670	400	54.2	1400	2800	1PH8354-1D1-... 0
		440 (590)	3891 (2870)	810	400	54.2	1400	2800	1PH8356-1D1-... 0
		470 (630)	4156 (3065)	880	400	54.2	1400	2800	1PH8358-1D1-... 0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Efficiency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. B 1...	0.76	194	0.955	14.74 (130)	2235 (4928)	1XB7712-P01	380	6SL3320-1TE33-8AA3
1PH8352-1. B 1...	0.77	223	0.957	17.40 (154)	2560 (5645)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8354-1. B 1...	0.79	236	0.959	20.66 (183)	2889 (6370)	1XB7712-P03	490	6SL3320-1TE35-0AA3
1PH8356-1. B 1...	0.78	285	0.961	24.22 (214)	3256 (7179)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8358-1. B 1...	0.79	316	0.962	27.79 (246)	3629 (8002)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8350-1. Q 1...	0.77	235	0.961	14.74 (130)	2235 (4928)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8352-1. Q 1...	0.78	267	0.964	17.40 (154)	2560 (5645)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8354-1. Q 1...	0.77	334	0.965	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. Q 1...	0.78	380	0.966	24.22 (214)	3256 (7179)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8358-1. Q 1...	0.82	359	0.967	27.79 (246)	3629 (8002)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8350-1. C 1...	0.76	294	0.965	14.74 (130)	2235 (4928)	1XB7712-P01	745	6SL3320-1TE37-5AA3
1PH8352-1. C 1...	0.80	302	0.967	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. C 1...	0.81	328	0.968	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. C 1...	0.80	410	0.969	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. C 1...	0.76	567	0.969	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. D 1...	0.82	235	0.968	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8352-1. D 1...	0.79	338	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. D 1...	0.83	314	0.970	20.66 (183)	2889 (6370)	1XB7712-P03	840 ⁴⁾	6SL3320-1TE38-4AA3
1PH8356-1. D 1...	0.80	433	0.970	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. D 1...	0.79	489	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3

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¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic Line Module (noise value 77 dB)									
550	355	185 (248)	3212 (2369)	320	460	27.7	1400	2800	1PH8350-1B1-...0
		220 (295)	3820 (2818)	375	460	27.7	1400	2800	1PH8352-1B1-...0
		255 (342)	4428 (3266)	420	460	27.7	1400	2800	1PH8354-1B1-...0
		295 (396)	5122 (3778)	490	460	27.7	1400	2800	1PH8356-1B1-...0
		340 (456)	5904 (4355)	560	460	27.7	1400	2800	1PH8358-1B1-...0
750	355	245 (329)	3120 (2301)	405	465	37.7	1400	2800	1PH8350-1Q1-...0
		295 (396)	3756 (2770)	475	465	37.7	1400	2800	1PH8352-1Q1-...0
		340 (456)	4329 (3193)	560	465	37.7	1400	2800	1PH8354-1Q1-...0
		395 (530)	5030 (3710)	640	465	37.7	1400	2800	1PH8356-1Q1-...0
		450 (603)	5730 (4226)	700	465	37.7	1400	2800	1PH8358-1Q1-...0
900	355	280 (375)	2971 (2191)	490	450	45.2	1500	2800	1PH8350-1C1-...0
		340 (456)	3608 (2661)	560	450	45.2	1500	2800	1PH8352-1C1-...0
		400 (536)	4244 (3130)	650	450	45.2	1500	2800	1PH8354-1C1-...0
		460 (617)	4881 (3600)	760	450	45.2	1600	2800	1PH8356-1C1-...0
		515 (691)	5465 (4031)	920	430	45.2	1600	2800	1PH8358-1C1-...0
1250	355	315 (422)	2407 (1775)	495	460	62.7	1800	2800	1PH8350-1D1-...0
		380 (510)	2903 (2141)	620	460	62.7	1800	2800	1PH8352-1D1-...0
		435 (583)	3323 (2451)	670	460	62.7	1700	2800	1PH8354-1D1-...0
		510 (684)	3896 (2874)	810	460	62.7	1700	2800	1PH8356-1D1-...0
		545 (731)	4164 (3071)	880	460	62.7	1700	2800	1PH8358-1D1-...0
Line voltage 480 V 3 AC, Active Line Module (noise value 77 dB)									
600	355	200 (268)	3183 (2348)	315	500	30.2	1400	2800	1PH8350-1B1-...0
		240 (322)	3820 (2818)	375	500	30.2	1400	2800	1PH8352-1B1-...0
		280 (375)	4457 (3287)	420	500	30.2	1400	2800	1PH8354-1B1-...0
		320 (429)	5093 (3757)	485	500	30.2	1400	2800	1PH8356-1B1-...0
		370 (496)	5889 (4344)	560	500	30.2	1400	2800	1PH8358-1B1-...0
800	355	260 (349)	3104 (2290)	405	500	40.2	1400	2800	1PH8350-1Q1-...0
		315 (422)	3760 (2773)	475	500	40.2	1400	2800	1PH8352-1Q1-...0
		365 (489)	4357 (3214)	560	500	40.2	1400	2800	1PH8354-1Q1-...0
		420 (563)	5014 (3698)	640	500	40.2	1400	2800	1PH8356-1Q1-...0
		480 (644)	5730 (4226)	700	500	40.2	1400	2800	1PH8358-1Q1-...0
1000	355	310 (416)	2961 (2184)	490	500	50.2	1500	2800	1PH8350-1C1-...0
		380 (510)	3629 (2677)	570	500	50.2	1500	2800	1PH8352-1C1-...0
		445 (597)	4250 (3135)	650	500	50.2	1500	2800	1PH8354-1C1-...0
		510 (684)	4871 (3593)	750	500	50.2	1600	2800	1PH8356-1C1-...0
		570 (764)	5444 (4015)	920	480	50.2	1600	2800	1PH8358-1C1-...0
1350	355	340 (456)	2405 (1774)	495	500	67.7	1800	2800	1PH8350-1D1-...0
		410 (550)	2900 (2139)	620	500	67.7	1800	2800	1PH8352-1D1-...0
		470 (630)	3325 (2453)	670	500	67.7	1700	2800	1PH8354-1D1-...0
		550 (738)	3891 (2870)	810	500	67.7	1700	2800	1PH8356-1D1-...0
		590 (791)	4174 (3079)	880	500	67.7	1700	2800	1PH8358-1D1-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magnetizing current I_{μ} A	Efficiency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. B 1...	0.75	197	0.958	14.74 (130)	2235 (4928)	1XB7712-P01	380	6SL3320-1TE33-8AA3
1PH8352-1. B 1...	0.77	225	0.960	17.40 (154)	2560 (5645)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8354-1. B 1...	0.79	238	0.962	20.66 (183)	2889 (6370)	1XB7712-P03	490	6SL3320-1TE35-0AA3
1PH8356-1. B 1...	0.78	287	0.963	24.22 (214)	3256 (7179)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8358-1. B 1...	0.79	321	0.965	27.79 (246)	3629 (8002)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8350-1. Q 1...	0.77	231	0.964	14.74 (130)	2235 (4928)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8352-1. Q 1...	0.79	262	0.966	17.40 (154)	2560 (5645)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8354-1. Q 1...	0.78	328	0.967	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. Q 1...	0.78	372	0.968	24.22 (214)	3256 (7179)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8358-1. Q 1...	0.82	351	0.969	27.79 (246)	3629 (8002)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8350-1. C 1...	0.76	295	0.966	14.74 (130)	2235 (4928)	1XB7712-P01	745	6SL3320-1TE37-5AA3
1PH8352-1. C 1...	0.80	303	0.968	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. C 1...	0.81	328	0.969	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. C 1...	0.80	410	0.970	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. C 1...	0.77	557	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. D 1...	0.82	232	0.969	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8352-1. D 1...	0.79	329	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. D 1...	0.83	311	0.971	20.66 (183)	2889 (6370)	1XB7712-P03	840 ⁴⁾	6SL3320-1TE38-4AA3
1PH8356-1. D 1...	0.81	427	0.971	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. D 1...	0.80	484	0.971	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. B 1...	0.75	194	0.960	14.74 (130)	2235 (4928)	1XB7712-P01	380	6SL3320-1TE33-8AA3
1PH8352-1. B 1...	0.77	223	0.962	17.40 (154)	2560 (5645)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8354-1. B 1...	0.79	236	0.964	20.66 (183)	2889 (6370)	1XB7712-P03	490	6SL3320-1TE35-0AA3
1PH8356-1. B 1...	0.78	285	0.965	24.22 (214)	3256 (7179)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8358-1. B 1...	0.79	316	0.966	27.79 (246)	3629 (8002)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8350-1. Q 1...	0.77	235	0.965	14.74 (130)	2235 (4928)	1XB7712-P01	490	6SL3320-1TE35-0AA3
1PH8352-1. Q 1...	0.78	267	0.967	17.40 (154)	2560 (5645)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8354-1. Q 1...	0.77	334	0.967	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. Q 1...	0.78	380	0.968	24.22 (214)	3256 (7179)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8358-1. Q 1...	0.82	359	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8350-1. C 1...	0.75	294	0.967	14.74 (130)	2235 (4928)	1XB7712-P01	745	6SL3320-1TE37-5AA3
1PH8352-1. C 1...	0.80	302	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. C 1...	0.81	328	0.970	20.66 (183)	2889 (6370)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8356-1. C 1...	0.80	410	0.970	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. C 1...	0.76	567	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. D 1...	0.82	235	0.969	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8352-1. D 1...	0.79	338	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. D 1...	0.83	314	0.971	20.66 (183)	2889 (6370)	1XB7712-P03	840 ⁴⁾	6SL3320-1TE38-4AA3
1PH8356-1. D 1...	0.80	433	0.971	24.22 (214)	3256 (7179)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8358-1. D 1...	0.79	489	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 690 V 3 AC, Basic Line Module (noise value 77 dB)									
550	355	185 (248)	3212 (2369)	230	635	27.7	1400	2800	1PH8350-1H1-...0
		220 (295)	3820 (2818)	265	635	27.7	1400	2800	1PH8352-1H1-...0
		255 (342)	4428 (3266)	305	635	27.7	1400	2800	1PH8354-1H1-...0
		295 (396)	5122 (3778)	355	635	27.7	1400	2800	1PH8356-1H1-...0
		340 (456)	5904 (4355)	410	635	27.7	1400	2800	1PH8358-1H1-...0
750	355	245 (329)	3120 (2301)	290	650	37.7	1400	2800	1PH8350-1K1-...0
		295 (396)	3756 (2770)	350	650	37.7	1400	2800	1PH8352-1K1-...0
		340 (456)	4329 (3193)	390	650	37.7	1400	2800	1PH8354-1K1-...0
		395 (530)	5030 (3710)	455	650	37.7	1400	2800	1PH8356-1K1-...0
		450 (603)	5730 (4226)	510	650	37.7	1400	2800	1PH8358-1K1-...0
900	355	280 (375)	2971 (2191)	355	620	45.2	1500	2800	1PH8350-1U1-...0
		340 (456)	3608 (2661)	415	620	45.2	1500	2800	1PH8352-1U1-...0
		400 (536)	4244 (3130)	480	620	45.2	1500	2800	1PH8354-1U1-...0
		460 (617)	4881 (3600)	540	620	45.2	1600	2800	1PH8356-1U1-...0
		515 (691)	5465 (4031)	620	620	45.2	1600	2800	1PH8358-1U1-...0
1250	355	315 (422)	2407 (1775)	360	640	62.7	1800	2800	1PH8350-1V1-...0
		380 (510)	2903 (2141)	430	640	62.7	1800	2800	1PH8352-1V1-...0
		435 (583)	3323 (2451)	480	640	62.7	1700	2800	1PH8354-1V1-...0
		510 (684)	3896 (2874)	590	640	62.7	1700	2800	1PH8356-1V1-...0
		545 (731)	4164 (3071)	620	640	62.7	1700	2800	1PH8358-1V1-...0
Line voltage 690 V 3 AC, Active Line Module (noise value 77 dB)									
600	355	200 (268)	3183 (2348)	230	690	30.2	1400	2800	1PH8350-1H1-...0
		240 (322)	3820 (2818)	265	690	30.2	1400	2800	1PH8352-1H1-...0
		280 (375)	4457 (3287)	310	690	30.2	1400	2800	1PH8354-1H1-...0
		320 (429)	5093 (3757)	355	690	30.2	1400	2800	1PH8356-1H1-...0
		370 (496)	5889 (4344)	410	690	30.2	1400	2800	1PH8358-1H1-...0
800	355	260 (349)	3104 (2290)	290	690	40.2	1400	2800	1PH8350-1K1-...0
		315 (422)	3760 (2773)	350	690	40.2	1400	2800	1PH8352-1K1-...0
		365 (489)	4357 (3214)	395	690	40.2	1400	2800	1PH8354-1K1-...0
		420 (563)	5014 (3698)	453	690	40.2	1400	2800	1PH8356-1K1-...0
		480 (644)	5730 (4226)	510	690	40.2	1400	2800	1PH8358-1K1-...0
1000	355	310 (416)	2961 (2184)	355	690	50.2	1500	2800	1PH8350-1U1-...0
		380 (510)	3629 (2677)	415	690	50.2	1500	2800	1PH8352-1U1-...0
		445 (597)	4250 (3135)	480	690	50.2	1500	2800	1PH8354-1U1-...0
		510 (684)	4871 (3593)	540	690	50.2	1600	2800	1PH8356-1U1-...0
		570 (764)	5444 (4015)	610	690	50.2	1600	2800	1PH8358-1U1-...0
1350	355	340 (456)	2405 (1774)	360	690	67.7	1800	2800	1PH8350-1V1-...0
		410 (550)	2900 (2139)	430	690	67.7	1800	2800	1PH8352-1V1-...0
		470 (630)	3325 (2453)	485	690	67.7	1700	2800	1PH8354-1V1-...0
		550 (738)	3891 (2870)	590	690	67.7	1700	2800	1PH8356-1V1-...0
		590 (791)	4174 (3079)	620	690	67.7	1700	2800	1PH8358-1V1-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system
								Order No.
1PH8350-1. H 1...	0.76	140	0.959	14.74 (130)	2235 (4928)	1XB7712-P01	260 ⁴⁾	6SL3320-1TG32-6AA3
1PH8352-1. H 1...	0.78	151	0.960	17.40 (154)	2560 (5645)	1XB7712-P01	330	6SL3320-1TG33-3AA3
1PH8354-1. H 1...	0.78	178	0.962	20.66 (183)	2889 (6370)	1XB7712-P01	410	6SL3320-1TG34-1AA3
1PH8356-1. H 1...	0.78	211	0.964	24.22 (214)	3256 (7179)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8358-1. H 1...	0.78	247	0.964	27.79 (246)	3629 (8002)	1XB7712-P01	465 ⁴⁾	6SL3320-1TG34-7AA3
1PH8350-1. K 1...	0.78	164	0.964	14.74 (130)	2235 (4928)	1XB7712-P01	410	6SL3320-1TG34-1AA3
1PH8352-1. K 1...	0.77	210	0.965	17.40 (154)	2560 (5645)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8354-1. K 1...	0.79	218	0.967	20.66 (183)	2889 (6370)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8356-1. K 1...	0.80	252	0.968	24.22 (214)	3256 (7179)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8358-1. K 1...	0.81	275	0.969	27.79 (246)	3629 (8002)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8350-1. U 1...	0.75	216	0.966	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. U 1...	0.79	231	0.968	17.40 (154)	2560 (5645)	1XB7712-P01	575	6SL3320-1TG35-8AA3
1PH8354-1. U 1...	0.79	268	0.969	20.66 (183)	2889 (6370)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8356-1. U 1...	0.81	283	0.970	24.22 (214)	3256 (7179)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8358-1. U 1...	0.80	338	0.971	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8350-1. V 1...	0.81	179	0.969	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. V 1...	0.82	208	0.970	17.40 (154)	2560 (5645)	1XB7712-P01	575	6SL3320-1TG35-8AA3
1PH8354-1. V 1...	0.83	220	0.971	20.66 (183)	2889 (6370)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8356-1. V 1...	0.80	319	0.971	24.22 (214)	3256 (7179)	1XB7712-P03	735 ⁴⁾	6SL3320-1TG37-4AA3
1PH8358-1. V 1...	0.81	322	0.971	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8350-1. H 1...	0.76	139	0.961	14.74 (130)	2235 (4928)	1XB7712-P01	260 ⁴⁾	6SL3320-1TG32-6AA3
1PH8352-1. H 1...	0.78	149	0.961	17.40 (154)	2560 (5645)	1XB7712-P01	330	6SL3320-1TG33-3AA3
1PH8354-1. H 1...	0.79	176	0.964	20.66 (183)	2889 (6370)	1XB7712-P01	410	6SL3320-1TG34-1AA3
1PH8356-1. H 1...	0.78	209	0.965	24.22 (214)	3256 (7179)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8358-1. H 1...	0.78	242	0.966	27.79 (246)	3629 (8002)	1XB7712-P01	465 ⁴⁾	6SL3320-1TG34-7AA3
1PH8350-1. K 1...	0.78	162	0.965	14.74 (130)	2235 (4928)	1XB7712-P01	410	6SL3320-1TG34-1AA3
1PH8352-1. K 1...	0.77	207	0.966	17.40 (154)	2560 (5645)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8354-1. K 1...	0.80	215	0.968	20.66 (183)	2889 (6370)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8356-1. K 1...	0.80	249	0.969	24.22 (214)	3256 (7179)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8358-1. K 1...	0.81	272	0.970	27.79 (246)	3629 (8002)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8350-1. U 1...	0.75	216	0.967	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. U 1...	0.78	232	0.968	17.40 (154)	2560 (5645)	1XB7712-P01	575	6SL3320-1TG35-8AA3
1PH8354-1. U 1...	0.79	269	0.969	20.66 (183)	2889 (6370)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8356-1. U 1...	0.81	283	0.971	24.22 (214)	3256 (7179)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8358-1. U 1...	0.80	339	0.971	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8350-1. V 1...	0.81	178	0.969	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. V 1...	0.82	208	0.970	17.40 (154)	2560 (5645)	1XB7712-P01	575	6SL3320-1TG35-8AA3
1PH8354-1. V 1...	0.84	219	0.971	20.66 (183)	2889 (6370)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8356-1. V 1...	0.80	317	0.970	24.22 (214)	3256 (7179)	1XB7712-P03	735 ⁴⁾	6SL3320-1TG37-4AA3
1PH8358-1. V 1...	0.81	322	0.971	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Active Line Module (noise value 77 dB)									
480	355	275 (369)	5471 (4035)	495	400	24.4	850	2800	1PH8350-1■B4■-...0
		310 (416)	6168 (4550)	550	400	24.5	850	2800	1PH8351-1■B4■-...0
		370 (496)	7361 (5429)	650	400	24.5	800	2800	1PH8352-1■B4■-...0
		435 (583)	8655 (6384)	750	400	24.5	800	2800	1PH8354-1■B4■-...0
		510 (684)	10147 (7484)	880	400	24.4	700	2800	1PH8356-1■B4■-...0
		585 (784)	11639 (8585)	990	400	24.4	700	2800	1PH8358-1■B4■-...0
640	355	340 (456)	5073 (3742)	600	400	32.4	1100	2800	1PH8350-1■Q4■-...0
		375 (503)	5596 (4128)	660	400	32.4	1100	2800	1PH8351-1■Q4■-...0
		455 (610)	6789 (5008)	790	400	32.4	1000	2800	1PH8352-1■Q4■-...0
		535 (717)	7983 (5888)	930	400	32.4	1000	2800	1PH8354-1■Q4■-...0
		625 (838)	9326 (6879)	1060	400	32.4	950	2800	1PH8356-1■Q4■-...0
		705 (945)	10520 (7760)	1180	400	32.4	950	2800	1PH8358-1■Q4■-...0
800	355	435 (583)	5193 (3830)	770	400	40.4	1200	2800	1PH8350-1■C4■-...0
		490 (657)	5849 (4314)	860	400	40.4	1200	2800	1PH8351-1■C4■-...0
		570 (764)	6804 (5019)	980	400	40.5	1100	2800	1PH8352-1■C4■-...0
		665 (892)	7938 (5855)	1120	400	40.4	1000	2800	1PH8354-1■C4■-...0
		760 (1019)	9073 (6692)	1280	400	40.4	950	2800	1PH8356-1■C4■-...0
830	355	915 (1227)	10486 (7734)	1560	400	42.0	1000	2800	1PH8358-1■C4■-...0
1080	355	485 (650)	4289 (3164)	830	400	54.4	1350	2800	1PH8350-1■D4■-...0
		545 (731)	4819 (3554)	940	400	54.5	1350	2800	1PH8351-1■D4■-...0
		655 (878)	5792 (4272)	1120	400	54.4	1350	2800	1PH8352-1■D4■-...0
		760 (1019)	6720 (4957)	1280	400	54.5	1100	2800	1PH8354-1■D4■-...0
		855 (1147)	7560 (5576)	1440	400	54.4	1100	2800	1PH8356-1■D4■-...0
		985 (1321)	8710 (6424)	1640	400	54.4	1100	2800	1PH8358-1■D4■-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. B 4...	0.84	194	0.944	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8351-1. B 4...	0.85	194	0.938	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8352-1. B 4...	0.86	223	0.942	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. B 4...	0.88	236	0.943	20.66 (183)	2889 (6370)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8356-1. B 4...	0.88	285	0.946	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. B 4...	0.89	316	0.948	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. Q 4...	0.84	235	0.956	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8351-1. Q 4...	0.85	235	0.953	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8352-1. Q 4...	0.86	267	0.955	17.40 (154)	2560 (5645)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8354-1. Q 4...	0.86	334	0.958	20.66 (183)	2889 (6370)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8356-1. Q 4...	0.87	380	0.959	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. Q 4...	0.89	359	0.958	27.79 (246)	3629 (8002)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8350-1. C 4...	0.84	294	0.961	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. C 4...	0.85	294	0.958	14.74 (130)	2235 (4928)	1XB7712-P03	985 ⁴⁾	6SL3320-1TE41-0AA3
1PH8352-1. C 4...	0.87	302	0.960	17.40 (154)	2560 (5645)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8354-1. C 4...	0.88	328	0.961	20.66 (183)	2889 (6370)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8356-1. C 4...	0.88	410	0.964	24.22 (214)	3256 (7179)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8358-1. C 4...	0.87	567	0.967	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8350-1. D 4...	0.86	235	0.965	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. D 4...	0.86	235	0.963	14.74 (130)	2235 (4928)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8352-1. D 4...	0.87	338	0.967	17.40 (154)	2560 (5645)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8354-1. D 4...	0.88	314	0.966	20.66 (183)	2889 (6370)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8356-1. D 4...	0.88	433	0.970	24.22 (214)	3256 (7179)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8358-1. D 4...	0.89	489	0.971	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985 ⁴⁾	2 × 6SL3320-1TE41-0AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic Line Module (noise value 77 dB)									
550	355	315 (422)	5470 (4035)	490	460	27.9	1100	2800	1PH8350-1■B4■-... 0
		355 (476)	6164 (4547)	550	460	28.0	1100	2800	1PH8351-1■B4■-... 0
		420 (563)	7293 (5379)	640	460	27.9	1000	2800	1PH8352-1■B4■-... 0
		500 (671)	8682 (6404)	750	460	28.0	1000	2800	1PH8354-1■B4■-... 0
		585 (784)	10158 (7493)	870	460	27.9	900	2800	1PH8356-1■B4■-... 0
		670 (898)	11634 (8581)	990	460	27.9	900	2800	1PH8358-1■B4■-... 0
750	355	400 (536)	5093 (3757)	610	465	37.9	1400	2800	1PH8350-1■Q4■-... 0
		440 (590)	5603 (4133)	670	465	37.9	1400	2800	1PH8351-1■Q4■-... 0
		535 (717)	6812 (5025)	800	465	37.9	1300	2800	1PH8352-1■Q4■-... 0
		630 (845)	8022 (5917)	930	465	37.9	1300	2800	1PH8354-1■Q4■-... 0
		730 (979)	9295 (6856)	1080	465	37.9	1200	2800	1PH8356-1■Q4■-... 0
		825 (1106)	10505 (7748)	1200	465	37.9	1200	2800	1PH8358-1■Q4■-... 0
900	355	490 (657)	5199 (3835)	770	450	45.4	1500	2800	1PH8350-1■C4■-... 0
		550 (738)	5836 (4305)	860	450	45.4	1500	2800	1PH8351-1■C4■-... 0
		640 (858)	6791 (5009)	980	450	45.5	1400	2800	1PH8352-1■C4■-... 0
		745 (999)	7905 (5831)	1120	450	45.4	1300	2800	1PH8354-1■C4■-... 0
		855 (1147)	9073 (6692)	1280	450	45.4	1200	2800	1PH8356-1■C4■-... 0
		990 (1328)	10505 (7748)	1560	430	45.4	1200	2800	1PH8358-1■C4■-... 0
1250	355	560 (751)	4278 (3155)	840	460	62.9	1700	2800	1PH8350-1■D4■-... 0
		630 (845)	4813 (3550)	940	460	63.0	1700	2800	1PH8351-1■D4■-... 0
		760 (1019)	5806 (4283)	1120	460	62.9	1700	2800	1PH8352-1■D4■-... 0
		880 (1180)	6723 (4959)	1280	460	63.0	1400	2800	1PH8354-1■D4■-... 0
		990 (1328)	7564 (5579)	1440	460	62.9	1400	2800	1PH8356-1■D4■-... 0
		1140 (1529)	8710 (6424)	1660	460	62.9	1400	2800	1PH8358-1■D4■-... 0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. B 4...	0.84	197	0.950	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8351-1. B 4...	0.85	197	0.945	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8352-1. B 4...	0.86	225	0.949	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. B 4...	0.88	238	0.949	20.66 (183)	2889 (6370)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8356-1. B 4...	0.88	287	0.952	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. B 4...	0.88	321	0.953	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. Q 4...	0.84	231	0.960	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8351-1. Q 4...	0.85	231	0.958	14.74 (130)	2235 (4928)	1XB7712-P03	840 ⁴⁾	6SL3320-1TE38-4AA3
1PH8352-1. Q 4...	0.86	262	0.959	17.40 (154)	2560 (5645)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8354-1. Q 4...	0.87	328	0.962	20.66 (183)	2889 (6370)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8356-1. Q 4...	0.87	372	0.963	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. Q 4...	0.89	351	0.962	27.79 (246)	3629 (8002)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8350-1. C 4...	0.84	295	0.964	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. C 4...	0.85	295	0.961	14.74 (130)	2235 (4928)	1XB7712-P03	985 ⁴⁾	6SL3320-1TE41-0AA3
1PH8352-1. C 4...	0.87	303	0.963	17.40 (154)	2560 (5645)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8354-1. C 4...	0.88	328	0.964	20.66 (183)	2889 (6370)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8356-1. C 4...	0.88	410	0.966	24.22 (214)	3256 (7179)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8358-1. C 4...	0.87	557	0.968	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8350-1. D 4...	0.86	232	0.968	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. D 4...	0.86	232	0.966	14.74 (130)	2235 (4928)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8352-1. D 4...	0.87	329	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8354-1. D 4...	0.88	311	0.969	20.66 (183)	2889 (6370)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8356-1. D 4...	0.88	427	0.972	24.22 (214)	3256 (7179)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8358-1. D 4...	0.89	484	0.972	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985 ⁴⁾	2 × 6SL3320-1TE41-0AA3

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¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Active Line Module (noise value 77 dB)									
600	355	345 (463)	5491 (4050)	495	500	30.4	1100	2800	1PH8350-1■B4■-...0
		385 (516)	6128 (4520)	550	500	30.5	1100	2800	1PH8351-1■B4■-...0
		460 (617)	7322 (5401)	650	500	30.4	1000	2800	1PH8352-1■B4■-...0
		545 (731)	8675 (6399)	750	500	30.5	1000	2800	1PH8354-1■B4■-...0
		640 (858)	10187 (7514)	880	500	30.4	900	2800	1PH8356-1■B4■-...0
		730 (979)	11619 (8570)	990	500	30.4	900	2800	1PH8358-1■B4■-...0
800	355	425 (570)	5073 (3742)	600	500	40.4	1400	2800	1PH8350-1■Q4■-...0
		470 (630)	5611 (4139)	660	500	40.4	1400	2800	1PH8351-1■Q4■-...0
		570 (764)	6804 (5019)	790	500	40.4	1300	2800	1PH8352-1■Q4■-...0
		670 (898)	7998 (5899)	930	500	40.4	1300	2800	1PH8354-1■Q4■-...0
		780 (1046)	9311 (6868)	1060	500	40.4	1200	2800	1PH8356-1■Q4■-...0
		880 (1180)	10505 (7748)	1180	500	40.4	1200	2800	1PH8358-1■Q4■-...0
1000	355	545 (731)	5205 (3839)	770	500	50.4	1500	2800	1PH8350-1■C4■-...0
		610 (818)	5826 (4297)	860	500	50.4	1500	2800	1PH8351-1■C4■-...0
		710 (952)	6781 (5002)	980	500	50.5	1400	2800	1PH8352-1■C4■-...0
		830 (1113)	7927 (5847)	1120	500	50.4	1300	2800	1PH8354-1■C4■-...0
		950 (1274)	9073 (6692)	1280	500	50.4	1200	2800	1PH8356-1■C4■-...0
		1100 (1475)	10505 (7748)	1560	480	50.4	1200	2800	1PH8358-1■C4■-...0
1350	355	605 (811)	4280 (3157)	830	500	67.9	1700	2800	1PH8350-1■D4■-...0
		680 (912)	4810 (3548)	940	500	68.0	1700	2800	1PH8351-1■D4■-...0
		820 (1100)	5801 (4279)	1120	500	67.9	1700	2800	1PH8352-1■D4■-...0
		950 (1274)	6720 (4957)	1280	500	68.0	1400	2800	1PH8354-1■D4■-...0
		1070 (1435)	7569 (5583)	1440	500	67.9	1400	2800	1PH8356-1■D4■-...0
		1230 (1649)	8701 (6418)	1640	500	67.9	1400	2800	1PH8358-1■D4■-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. B 4...	0.84	194	0.953	14.74 (130)	2235 (4928)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8351-1. B 4...	0.85	194	0.949	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8352-1. B 4...	0.86	223	0.951	17.40 (154)	2560 (5645)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8354-1. B 4...	0.87	236	0.952	20.66 (183)	2889 (6370)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8356-1. B 4...	0.88	285	0.954	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. B 4...	0.88	316	0.956	27.79 (246)	3629 (8002)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8350-1. Q 4...	0.84	235	0.962	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8351-1. Q 4...	0.85	235	0.960	14.74 (130)	2235 (4928)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8352-1. Q 4...	0.86	267	0.961	17.40 (154)	2560 (5645)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8354-1. Q 4...	0.86	334	0.964	20.66 (183)	2889 (6370)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8356-1. Q 4...	0.87	380	0.965	24.22 (214)	3256 (7179)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8358-1. Q 4...	0.89	359	0.964	27.79 (246)	3629 (8002)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8350-1. C 4...	0.84	294	0.966	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. C 4...	0.85	294	0.964	14.74 (130)	2235 (4928)	1XB7712-P03	985 ⁴⁾	6SL3320-1TE41-0AA3
1PH8352-1. C 4...	0.86	302	0.965	17.40 (154)	2560 (5645)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8354-1. C 4...	0.88	328	0.966	20.66 (183)	2889 (6370)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8356-1. C 4...	0.88	410	0.968	24.22 (214)	3256 (7179)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8358-1. C 4...	0.87	567	0.970	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8350-1. D 4...	0.86	235	0.969	14.74 (130)	2235 (4928)	1XB7712-P03	985	6SL3320-1TE41-0AA3
1PH8351-1. D 4...	0.86	235	0.967	14.74 (130)	2235 (4928)	1XB7712-P03	1260	6SL3320-1TE41-2AA3
1PH8352-1. D 4...	0.87	338	0.970	17.40 (154)	2560 (5645)	1XB7712-P03	1260 ⁴⁾	6SL3320-1TE41-2AA3
1PH8354-1. D 4...	0.88	314	0.970	20.66 (183)	2889 (6370)	1XB7820-P00	1405	6SL3320-1TE41-4AA3
1PH8356-1. D 4...	0.88	433	0.973	24.22 (214)	3256 (7179)	1XB7820-P00	2 × 985	2 × 6SL3320-1TE41-0AA3
1PH8358-1. D 4...	0.89	489	0.973	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 985 ⁴⁾	2 × 6SL3320-1TE41-0AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 690 V 3 AC, Basic Line Module (noise value 77 dB)									
550	355	315 (422)	5470 (4035)	355	635	28.0	1100	2800	1PH8350-1H4-...0
		355 (476)	6164 (4547)	400	635	28.0	1100	2800	1PH8351-1H4-...0
		420 (563)	7293 (5379)	465	635	28.0	1000	2800	1PH8352-1H4-...0
		500 (671)	8682 (6404)	550	635	28.0	1000	2800	1PH8354-1H4-...0
		585 (784)	10158 (7493)	630	635	27.9	900	2800	1PH8356-1H4-...0
		670 (898)	11634 (8581)	720	635	27.9	900	2800	1PH8358-1H4-...0
750	355	400 (536)	5093 (3757)	435	650	37.9	1400	2800	1PH8350-1K4-...0
		440 (590)	5603 (4133)	475	650	37.9	1400	2800	1PH8351-1K4-...0
		535 (717)	6812 (5025)	580	650	37.9	1300	2800	1PH8352-1K4-...0
		630 (845)	8022 (5917)	660	650	37.9	1300	2800	1PH8354-1K4-...0
		730 (979)	9295 (6856)	760	650	37.9	1200	2800	1PH8356-1K4-...0
		825 (1106)	10505 (7748)	880	650	37.8	1200	2800	1PH8358-1K4-...0
900	355	490 (657)	5199 (3835)	560	620	45.4	1500	2800	1PH8350-1U4-...0
		550 (738)	5836 (4305)	620	620	45.4	1500	2800	1PH8351-1U4-...0
		640 (858)	6791 (5009)	710	620	45.4	1400	2800	1PH8352-1U4-...0
		745 (999)	7905 (5831)	820	620	45.4	1300	2800	1PH8354-1U4-...0
		855 (1147)	9073 (6692)	930	620	45.4	1200	2800	1PH8356-1U4-...0
		990 (1328)	10505 (7748)	1080	620	45.4	1200	2800	1PH8358-1U4-...0
1250	355	560 (751)	4278 (3155)	600	640	63.0	1700	2800	1PH8350-1V4-...0
		630 (845)	4813 (3550)	680	640	63.0	1700	2800	1PH8351-1V4-...0
		760 (1019)	5806 (4283)	810	640	63.0	1700	2800	1PH8352-1V4-...0
		880 (1180)	6723 (4959)	920	640	63.0	1400	2800	1PH8354-1V4-...0
		990 (1328)	7564 (5579)	1040	640	62.9	1400	2800	1PH8356-1V4-...0
		1140 (1529)	8710 (6424)	1180	640	62.9	1400	2800	1PH8358-1V4-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8350-1. H 4...	0.85	140	0.946	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8351-1. H 4...	0.85	140	0.946	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. H 4...	0.87	151	0.946	17.40 (154)	2560 (5645)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8354-1. H 4...	0.87	178	0.949	20.66 (183)	2889 (6370)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8356-1. H 4...	0.88	211	0.952	24.22 (214)	3256 (7179)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8358-1. H 4...	0.88	247	0.954	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8350-1. K 4...	0.85	164	0.958	14.74 (130)	2235 (4928)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8351-1. K 4...	0.85	164	0.958	14.74 (130)	2235 (4928)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8352-1. K 4...	0.85	210	0.960	17.40 (154)	2560 (5645)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8354-1. K 4...	0.87	218	0.961	20.66 (183)	2889 (6370)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8356-1. K 4...	0.88	252	0.963	24.22 (214)	3256 (7179)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8358-1. K 4...	0.86	275	0.966	27.79 (246)	3629 (8002)	1XB7712-P03	1025	6SL3320-1TG41-0AA3
1PH8350-1. U 4...	0.85	216	0.962	14.74 (130)	2235 (4928)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8351-1. U 4...	0.85	216	0.962	14.74 (130)	2235 (4928)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8352-1. U 4...	0.86	231	0.963	17.40 (154)	2560 (5645)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8354-1. U 4...	0.87	268	0.965	20.66 (183)	2889 (6370)	1XB7712-P03	1025	6SL3320-1TG41-0AA3
1PH8356-1. U 4...	0.88	283	0.966	24.22 (214)	3256 (7179)	1XB7712-P03	1270	6SL3320-1TG41-3AA3
1PH8358-1. U 4...	0.88	338	0.967	27.79 (246)	3629 (8002)	1XB7712-P03	2 × 735	2 × 6SL3320-1TG37-4AA3
1PH8350-1. V 4...	0.86	179	0.966	14.74 (130)	2235 (4928)	1XB7712-P03	735 ⁴⁾	6SL3320-1TG37-4AA3
1PH8351-1. V 4...	0.86	179	0.966	14.74 (130)	2235 (4928)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8352-1. V 4...	0.87	208	0.968	17.40 (154)	2560 (5645)	1XB7712-P03	910 ⁴⁾	6SL3320-1TG38-8AA3
1PH8354-1. V 4...	0.88	220	0.969	20.66 (183)	2889 (6370)	1XB7712-P03	1270	6SL3320-1TG41-3AA3
1PH8356-1. V 4...	0.88	319	0.972	24.22 (214)	3256 (7179)	1XB7712-P03	1270 ⁴⁾	6SL3320-1TG41-3AA3
1PH8358-1. V 4...	0.89	322	0.972	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 810	2 × 6SL3320-1TG38-1AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 690 V 3 AC, Active Line Module (noise value 77 dB)									
600	355	345 (463)	5491 (4050)	355	690	30.5	1100	2800	1PH8350-1H4-...0
		385 (516)	6128 (4520)	395	690	30.5	1100	2800	1PH8351-1H4-...0
		460 (617)	7322 (5401)	465	690	30.5	1000	2800	1PH8352-1H4-...0
		545 (731)	8675 (6399)	550	690	30.5	1000	2800	1PH8354-1H4-...0
		640 (858)	10187 (7514)	640	690	30.4	900	2800	1PH8356-1H4-...0
		730 (979)	11619 (8570)	720	690	30.4	900	2800	1PH8358-1H4-...0
800	355	425 (570)	5073 (3742)	435	690	40.4	1400	2800	1PH8350-1K4-...0
		470 (630)	5611 (4139)	480	690	40.4	1400	2800	1PH8351-1K4-...0
		570 (764)	6804 (5019)	580	690	40.4	1300	2800	1PH8352-1K4-...0
		670 (898)	7998 (5899)	660	690	40.4	1300	2800	1PH8354-1K4-...0
		780 (1046)	9311 (6868)	770	690	40.4	1200	2800	1PH8356-1K4-...0
		880 (1180)	10505 (7748)	880	690	40.3	1200	2800	1PH8358-1K4-...0
1000	355	545 (731)	5205 (3839)	560	690	50.4	1500	2800	1PH8350-1U4-...0
		610 (818)	5826 (4297)	620	690	50.4	1500	2800	1PH8351-1U4-...0
		710 (952)	6781 (5002)	710	690	50.4	1400	2800	1PH8352-1U4-...0
		830 (1113)	7927 (5847)	820	690	50.4	1300	2800	1PH8354-1U4-...0
		950 (1274)	9073 (6692)	930	690	50.4	1200	2800	1PH8356-1U4-...0
		1100 (1475)	10505 (7748)	1080	690	50.4	1200	2800	1PH8358-1U4-...0
1350	355	605 (811)	4280 (3157)	600	690	68.0	1700	2800	1PH8350-1V4-...0
		680 (912)	4810 (3548)	680	690	68.0	1700	2800	1PH8351-1V4-...0
		820 (1100)	5801 (4279)	810	690	68.0	1700	2800	1PH8352-1V4-...0
		950 (1274)	6720 (4957)	920	690	68.0	1400	2800	1PH8354-1V4-...0
		1070 (1435)	7569 (5583)	1040	690	67.9	1400	2800	1PH8356-1V4-...0
		1230 (1649)	8701 (6418)	1180	690	67.9	1400	2800	1PH8358-1V4-...0

For versions, see
Order No. supplement
and options on page 5/58.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
							I_{rated} A	
1PH8350-1. H 4...	0.85	139	0.949	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8351-1. H 4...	0.85	139	0.949	14.74 (130)	2235 (4928)	1XB7712-P01	465	6SL3320-1TG34-7AA3
1PH8352-1. H 4...	0.87	149	0.949	17.40 (154)	2560 (5645)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8354-1. H 4...	0.87	176	0.952	20.66 (183)	2889 (6370)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8356-1. H 4...	0.88	209	0.955	24.22 (214)	3256 (7179)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8358-1. H 4...	0.88	245	0.957	27.79 (246)	3629 (8002)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8350-1. K 4...	0.85	162	0.959	14.74 (130)	2235 (4928)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8351-1. K 4...	0.85	162	0.959	14.74 (130)	2235 (4928)	1XB7712-P03	575	6SL3320-1TG35-8AA3
1PH8352-1. K 4...	0.86	207	0.961	17.40 (154)	2560 (5645)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8354-1. K 4...	0.87	215	0.962	20.66 (183)	2889 (6370)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8356-1. K 4...	0.88	249	0.964	24.22 (214)	3256 (7179)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8358-1. K 4...	0.86	272	0.967	27.79 (246)	3629 (8002)	1XB7712-P03	1025	6SL3320-1TG41-0AA3
1PH8350-1. U 4...	0.85	216	0.964	14.74 (130)	2235 (4928)	1XB7712-P03	735	6SL3320-1TG37-4AA3
1PH8351-1. U 4...	0.85	216	0.964	14.74 (130)	2235 (4928)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8352-1. U 4...	0.86	232	0.965	17.40 (154)	2560 (5645)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8354-1. U 4...	0.87	269	0.967	20.66 (183)	2889 (6370)	1XB7712-P03	1025	6SL3320-1TG41-0AA3
1PH8356-1. U 4...	0.88	283	0.968	24.22 (214)	3256 (7179)	1XB7712-P03	1270	6SL3320-1TG41-3AA3
1PH8358-1. U 4...	0.88	339	0.969	27.79 (246)	3629 (8002)	1XB7712-P03	2 × 735	2 × 6SL3320-1TG37-4AA3
1PH8350-1. V 4...	0.86	178	0.967	14.74 (130)	2235 (4928)	1XB7712-P03	735 ⁴⁾	6SL3320-1TG37-4AA3
1PH8351-1. V 4...	0.86	178	0.967	14.74 (130)	2235 (4928)	1XB7712-P03	810	6SL3320-1TG38-1AA3
1PH8352-1. V 4...	0.87	208	0.969	17.40 (154)	2560 (5645)	1XB7712-P03	910 ⁴⁾	6SL3320-1TG38-8AA3
1PH8354-1. V 4...	0.88	219	0.969	20.66 (183)	2889 (6370)	1XB7712-P03	1270	6SL3320-1TG41-3AA3
1PH8356-1. V 4...	0.88	317	0.973	24.22 (214)	3256 (7179)	1XB7712-P03	1270 ⁴⁾	6SL3320-1TG41-3AA3
1PH8358-1. V 4...	0.89	322	0.973	27.79 (246)	3629 (8002)	1XB7820-P00	2 × 810	2 × 6SL3320-1TG38-1AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A, B, E or F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2.5 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the rated motor current at 2.5 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP65 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm lb _f -ft	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
1500	80	3.5 (4.69)	22 (16.2)	8.9	357	54.5	3550	10000	1PH8083-1F2-... 1
		4.6 (6.17)	29 (21.4)	13.7	316	53.3	6000	10000	1PH8087-1F2-... 1
	100	5 (6.71)	32 (23.6)	12.8	357	53.1	2500	9000	1PH8101-1F2-... 1
		7.1 (9.52)	45 (33.2)	19.7	317	53.0	4000	9000	1PH8103-1F2-... 1
		11 (14.8)	70 (51.6)	28.5	340	52.8	3500	9000	1PH8105-1F2-... 1
	132	14 (18.8)	89 (65.6)	43.7	277	53.3	5600	9000	1PH8107-1F2-... 1
		15 (20.1)	96 (70.8)	30	380	52.3	2500	8000	1PH8131-1F2-... 1
		17 (22.8)	108 (79.7)	38	345	51.5	3500	8000	1PH8133-1F2-... 1
	160	22 (29.5)	140 (103)	51	342	51.5	4000	8000	1PH8135-1F2-... 1
		27 (36.2)	172 (127)	67	315	51.6	4000	8000	1PH8137-1F2-... 1
		30 (40.2)	191 (141)	80	289	51.9	5000	8000	1PH8138-1F2-... 1
	160	37 (49.62)	236 (174)	84	328	51.1	3000	6500	1PH8163-1F2-... 1
		46 (61.7)	293 (216)	104	330	50.9	3050	6500	1PH8165-1F2-... 1
		52 (69.7)	331 (224)	116	332	51.2	3050	6500	1PH8166-1F2-... 1
	2000	80	4.3 (5.8)	21 (15.5)	12	322	70.4	7200	10000
6.1 (8.2)			29 (21.4)	17.5	312	70.3	7950	10000	1PH8087-1G2-... 1
100		6.4 (8.6)	31 (22.9)	16.8	335	69.8	4000	9000	1PH8101-1G2-... 1
		9.5 (12.7)	45 (33.2)	23.8	343	69.8	3000	9000	1PH8103-1G2-... 1
		13.0 (17.4)	62 (45.7)	34.5	326	69.3	4000	9000	1PH8105-1G2-... 1
132		18 (24.1)	86 (63.4)	40	352	69.1	4000	8000	1PH8131-1G2-... 1
		22 (29.5)	105 (77.4)	52	336	68.2	5000	8000	1PH8133-1G2-... 1
		29 (38.9)	138 (102)	64	348	68.3	4500	8000	1PH8135-1G2-... 1
160		42 (56.3)	201 (148)	93	335	67.6	5000	6500	1PH8163-1G2-... 1
		53 (71.1)	253 (187)	110	352	67.6	3500	6500	1PH8165-1G2-... 1
		64 (85.8)	306 (221)	125	376	67.8	3000	6500	1PH8166-1G2-... 1
3000		100	10.6 (14.2)	34 (25.1)	30	309	102.4	11900	9000
	16.8 (22.5)		53 (39.1)	45	324	102.3	8050	9000	1PH8105-1M2-... 1
	18 (24.1)		57 (42.0)	60	264	102.2	17000	9000	1PH8107-1M2-... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP65 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8083-1. F 2...	0.84	3.6	0.784	0.0064 (0.057)	36 (79.4)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F 2...	0.78	7.2	0.814	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F 2...	0.81	6.0	0.813	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. F 2...	0.82	8.6	0.827	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. F 2...	0.81	13.3	0.843	0.0252 (0.223)	74 (163)	gk823	30	6SL312-1TE23-0AA3
1PH8107-1. F 2...	0.83	17.8	0.829	0.0289 (0.256)	83 (183)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. F 2...	0.89	9.2	0.883	0.0590 (0.522)	105 (232)	gk843	30	6SL312-1TE23-0AA3
1PH8133-1. F 2...	0.86	14.2	0.897	0.0760 (0.673)	123 (271)	gk843	45	6SL312-1TE24-5AA3
1PH8135-1. F 2...	0.85	20.3	0.901	0.0940 (0.832)	141 (311)	gk843	60	6SL312-1TE26-0AA3
1PH8137-1. F 2...	0.86	25.3	0.900	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8138-1. F 2...	0.88	27.1	0.882	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. F 2...	0.88	27.4	0.916	0.2160 (1.912)	229 (505)	gk873	85	6SL312-1TE28-5AA3
1PH8165-1. F 2...	0.87	37.2	0.930	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. F 2...	0.88	36.7	0.936	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8083-1. G 2...	0.80	5.9	0.833	0.0064 (0.057)	36 (79.4)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G 2...	0.80	8.4	0.843	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. G 2...	0.81	7.6	0.857	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. G 2...	0.82	10.3	0.857	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. G 2...	0.81	15.6	0.879	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. G 2...	0.85	15.5	0.908	0.0590 (0.522)	105 (232)	gk843	45	6SL312-1TE24-5AA3
1PH8133-1. G 2...	0.84	22.2	0.909	0.0760 (0.673)	123 (271)	gk843	60	6SL312-1TE26-0AA3
1PH8135-1. G 2...	0.86	23.9	0.924	0.0940 (0.832)	141 (311)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. G 2...	0.88	30.8	0.937	0.2160 (1.912)	229 (505)	gk873	132	6SL312-1TE31-3AA3
1PH8165-1. G 2...	0.89	32.1	0.938	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. G 2...	0.88	39.3	0.937	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8103-1. M 2...	0.80	13.0	0.900	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. M 2...	0.80	20.3	0.900	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8107-1. M 2...	0.80	26.0	0.900	0.0289 (0.256)	83 (183)	gk823	60	6SL312-1TE26-0AA3

Cooling:
Internal air cooling
External air cooling

0
1

- ¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.
²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position B to D).
³⁾ The rated pulse frequencies must be taken into account. The rated pulse data is valid for 4 kHz.
 For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP65 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Active Line Module										
1750	80	4.0 (5.36)	22 (16.2)	8.7	416	62.4	4100	10000	1PH8083-1F2-... 1	
		5.4 (7.24)	29 (21.4)	13.7	358	61.8	6600	10000	1PH8087-1F2-... 1	
	100	5.8 (7.78)	32 (23.6)	12.8	400	61.7	2500	9000	1PH8101-1F2-... 1	
		8.2 (11.0)	45 (33.2)	19.7	364	61.4	5000	9000	1PH8103-1F2-... 1	
		12.5 (16.8)	68 (50.2)	28.5	380	61.2	3400	9000	1PH8105-1F2-... 1	
		15.5 (20.8)	85 (62.7)	42	314	61.4	4500	9000	1PH8107-1F2-... 1	
		17 (22.8)	93 (68.6)	30	425	60.7	2500	8000	1PH8131-1F2-... 1	
	132	19.5 (26.1)	106 (78.2)	38	403	59.8	3500	8000	1PH8133-1F2-... 1	
		25.5 (34.2)	139 (103)	51	395	59.8	4000	8000	1PH8135-1F2-... 1	
		31.5 (42.2)	172 (127)	67	365	59.9	4500	8000	1PH8137-1F2-... 1	
		33 (44.3)	180 (133)	77	332	60.0	5000	8000	1PH8138-1F2-... 1	
	160	43 (57.7)	235 (173)	84	380	59.4	3500	6500	1PH8163-1F2-... 1	
		53 (71.1)	289 (213)	104	374	59.3	3050	6500	1PH8165-1F2-... 1	
		61 (81.8)	333 (246)	116	381	59.5	3050	6500	1PH8166-1F2-... 1	
	2300	80	4.9 (6.57)	20 (14.8)	12	362	80.5	8150	10000	1PH8083-1G2-... 1
7.0 (9.39)			29 (21.4)	17.7	355	80.3	8850	10000	1PH8087-1G2-... 1	
100		7.3 (9.79)	30 (22.1)	16.8	382	79.7	5000	9000	1PH8101-1G2-... 1	
		10.9 (14.6)	45 (33.2)	23.8	390	79.8	3000	9000	1PH8103-1G2-... 1	
		15 (20.1)	62 (45.7)	34	370	79.3	3500	9000	1PH8105-1G2-... 1	
132		20 (26.8)	83 (61.2)	39	400	78.5	4000	8000	1PH8131-1G2-... 1	
		25 (33.5)	104 (76.7)	52	373	78.3	6000	8000	1PH8133-1G2-... 1	
		31 (41.6)	129 (95.2)	61	397	78.1	4500	8000	1PH8135-1G2-... 1	
160		48 (64.4)	199 (147)	93	382	77.6	4000	6500	1PH8163-1G2-... 1	
		60 (80.5)	249 (184)	107	410	77.6	3000	6500	1PH8165-1G2-... 1	
		72 (96.6)	299 (221)	124	420	77.8	3000	6500	1PH8166-1G2-... 1	
3300		100	11.7 (15.7)	34 (25.1)	30	340	112.4	13550	9000	1PH8103-1M2-... 1
			18.5 (24.81)	54 (39.8)	45	355	112.4	9050	9000	1PH8105-1M2-... 1
			20 (26.82)	58 (42.8)	60	290	112.6	18050	9000	1PH8107-1M2-... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP65 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8083-1. F 2...	0.82	4.0	0.808	0.0064 (0.057)	36 (79.4)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F 2...	0.80	6.8	0.831	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F 2...	0.83	5.4	0.834	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. F 2...	0.82	8.6	0.851	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. F 2...	0.81	12.1	0.862	0.0252 (0.223)	74 (163)	gk823	30	6SL312-1TE23-0AA3
1PH8107-1. F 2...	0.83	17.5	0.847	0.0289 (0.256)	83 (183)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. F 2...	0.89	8.2	0.897	0.0590 (0.522)	105 (232)	gk843	30	6SL312-1TE23-0AA3
1PH8133-1. F 2...	0.85	14.9	0.913	0.0760 (0.673)	123 (271)	gk843	45	6SL312-1TE24-5AA3
1PH8135-1. F 2...	0.85	20.1	0.914	0.0940 (0.832)	141 (311)	gk843	60	6SL312-1TE26-0AA3
1PH8137-1. F 2...	0.86	24.8	0.911	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8138-1. F 2...	0.87	27.1	0.898	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. F 2...	0.88	27.3	0.924	0.2160 (1.912)	229 (505)	gk873	85	6SL312-1TE28-5AA3
1PH8165-1. F 2...	0.88	33.8	0.935	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. F 2...	0.89	35.2	0.940	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8083-1. G 2...	0.80	5.8	0.846	0.0064 (0.057)	36 (79.4)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G 2...	0.79	8.6	0.860	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. G 2...	0.80	7.8	0.874	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. G 2...	0.82	10.3	0.883	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. G 2...	0.81	15.1	0.891	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. G 2...	0.85	15.4	0.920	0.0590 (0.522)	105 (232)	gk843	45	6SL312-1TE24-5AA3
1PH8133-1. G 2...	0.86	19.4	0.923	0.0760 (0.673)	123 (271)	gk843	60	6SL312-1TE26-0AA3
1PH8135-1. G 2...	0.85	24.1	0.933	0.0940 (0.832)	141 (311)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. G 2...	0.88	30.2	0.939	0.2160 (1.912)	229 (505)	gk873	132	6SL312-1TE31-3AA3
1PH8165-1. G 2...	0.88	33.7	0.946	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. G 2...	0.89	35.5	0.946	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8103-1. M 2...	0.80	13.2	0.900	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. M 2...	0.80	20.2	0.910	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8107-1. M 2...	0.80	26.1	0.900	0.0289 (0.256)	83 (183)	gk823	60	6SL312-1TE26-0AA3

Cooling:

Internal air cooling
External air cooling

0
1

- ¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.
²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position B to D).
³⁾ The rated pulse frequencies must be taken into account. The rated pulse data is valid for 4 kHz.
 For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP65 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
2000	80	4.6 (6.17)	22 (16.2)	8.7	457	71.0	4250	10000	1PH8083-1F2-... 1
		6.1 (8.18)	29 (21.4)	13.7	402	70.0	6950	10000	1PH8087-1F2-... 1
	100	6.6 (8.85)	32 (23.6)	12.5	450	69.9	2500	9000	1PH8101-1F2-... 1
		9.4 (12.6)	45 (33.2)	19.7	411	69.7	5000	9000	1PH8103-1F2-... 1
		14 (18.8)	67 (49.4)	27.5	426	69.5	3000	9000	1PH8105-1F2-... 1
		18 (24.1)	86 (63.4)	42.6	363	69.7	3000	9000	1PH8107-1F2-... 1
	132	18.5 (24.8)	88 (64.9)	30	460	68.7	2500	8000	1PH8131-1F2-... 1
		22.5 (30.2)	107 (78.9)	38	452	68.2	4000	8000	1PH8133-1F2-... 1
		29 (38.9)	138 (102)	52	448	68.2	4500	8000	1PH8135-1F2-... 1
		36 (48.3)	172 (127)	67	415	68.3	4000	8000	1PH8137-1F2-... 1
		37 (49.62)	177 (131)	76	380	68.4	6000	8000	1PH8138-1F2-... 1
	160	49 (65.7)	234 (173)	84	430	67.7	3500	6500	1PH8163-1F2-... 1
		60 (80.5)	287 (212)	103	426	67.6	3050	6500	1PH8165-1F2-... 1
		68 (91.2)	325 (240)	116	426	67.9	3050	6500	1PH8166-1F2-... 1
	2650	80	5.6 (7.51)	20 (14.8)	12	425	91.8	8500	10000
8.1 (10.9)			29 (21.4)	17.8	415	91.8	9150	10000	1PH8087-1G2-... 1
100		8.4 (11.3)	30 (22.1)	16.8	435	91.4	4000	9000	1PH8101-1G2-... 1
		12.5 (16.8)	45 (33.2)	23.5	454	91.2	4000	9000	1PH8103-1G2-... 1
		17 (22.8)	61 (45.0)	33.5	424	90.9	4500	9000	1PH8105-1G2-... 1
132		23 (30.8)	83 (61.2)	39	458	90.1	4500	8000	1PH8131-1G2-... 1
		28 (37.5)	101 (74.5)	50	427	89.9	6000	8000	1PH8133-1G2-... 1
		32 (42.9)	115 (84.8)	58	448	89.6	5500	8000	1PH8135-1G2-... 1
160		55 (73.8)	198 (146)	90	450	89.2	5000	6500	1PH8163-1G2-... 1
		65 (87.2)	234 (173)	100	460	89.2	4000	6500	1PH8165-1G2-... 1
		83 (111)	299 (221)	125	460	89.6	3000	6500	1PH8166-1G2-... 1
3600		100	12.7 (17.0)	34 (25.1)	29.7	368	122.5	17650	9000
	20 (26.8)		53 (39.1)	45	375	122.5	10000	9000	1PH8105-1M2-... 1
	21 (28.2)		56 (41.3)	59	315	122.1	17650	9000	1PH8107-1M2-... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP65 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8083-1. F 2...	0.83	3.8	0.839	0.0064 (0.057)	36 (79.4)	gk803	9	6SL312-1TE21-0AA3
1PH8087-1. F 2...	0.79	6.8	0.868	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. F 2...	0.82	4.4	0.858	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. F 2...	0.82	8.5	0.869	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. F 2...	0.82	11.7	0.894	0.0252 (0.223)	74 (163)	gk823	30	6SL312-1TE23-0AA3
1PH8107-1. F 2...	0.81	19.1	0.873	0.0289 (0.256)	83 (183)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. F 2...	0.90	7.2	0.912	0.0590 (0.522)	105 (232)	gk843	30	6SL312-1TE23-0AA3
1PH8133-1. F 2...	0.86	14.4	0.938	0.0760 (0.673)	123 (271)	gk843	45	6SL312-1TE24-5AA3
1PH8135-1. F 2...	0.85	19.9	0.931	0.0940 (0.832)	141 (311)	gk843	60	6SL312-1TE26-0AA3
1PH8137-1. F 2...	0.86	25.4	0.928	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8138-1. F 2...	0.86	28.4	0.920	0.1090 (0.965)	157 (346)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. F 2...	0.88	26.9	0.925	0.2160 (1.912)	229 (505)	gk873	85	6SL312-1TE28-5AA3
1PH8165-1. F 2...	0.88	34.0	0.940	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. F 2...	0.89	32.8	0.941	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8083-1. G 2...	0.76	6.5	0.862	0.0064 (0.057)	36 (79.4)	gk803	18	6SL312-1TE21-8AA3
1PH8087-1. G 2...	0.77	9.3	0.871	0.0089 (0.079)	44 (97.0)	gk803	18	6SL312-1TE21-8AA3
1PH8101-1. G 2...	0.80	7.7	0.888	0.0138 (0.122)	51 (112)	gk823	18	6SL312-1TE21-8AA3
1PH8103-1. G 2...	0.79	11.3	0.904	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. G 2...	0.81	15.3	0.911	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8131-1. G 2...	0.85	15.4	0.938	0.0590 (0.522)	105 (232)	gk843	45	6SL312-1TE24-5AA3
1PH8133-1. G 2...	0.85	19.5	0.933	0.0760 (0.673)	123 (271)	gk843	60	6SL312-1TE26-0AA3
1PH8135-1. G 2...	0.84	23.0	0.942	0.0940 (0.832)	141 (311)	gk843	85	6SL312-1TE28-5AA3
1PH8163-1. G 2...	0.86	33.6	0.940	0.2160 (1.912)	229 (505)	gk873	132	6SL312-1TE31-3AA3
1PH8165-1. G 2...	0.89	31.9	0.948	0.2320 (2.053)	264 (582)	gk873	132	6SL312-1TE31-3AA3
1PH8166-1. G 2...	0.90	35.7	0.948	0.2320 (2.053)	269 (593)	gk873	132	6SL312-1TE31-3AA3
1PH8103-1. M 2...	0.80	13.0	0.910	0.0172 (0.152)	60 (132)	gk823	30	6SL312-1TE23-0AA3
1PH8105-1. M 2...	0.81	18.6	0.920	0.0252 (0.223)	74 (163)	gk823	45	6SL312-1TE24-5AA3
1PH8107-1. M 2...	0.79	26.1	0.910	0.0289 (0.256)	83 (183)	gk823	60	6SL312-1TE26-0AA3

Cooling:
Internal air cooling
External air cooling

0
1

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position B to D).

³⁾ The rated pulse frequencies must be taken into account; the rated motor data is valid for 4 kHz.
For lower power ratings, Motor Modules in blocksize format can be configured as an alternative (levels of output current: 7.7 A/10.2 A/18 A).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Smart/Basic Line Module										
400	180	17 (22.8)	406 (299)	50	271	14.0	1500	5000	1PH8184-1B2-... 1	
		23 (30.8)	549 (405)	68	268	13.9	1800	5000	1PH8186-1B2-... 1	
	225	36 (48.3)	859 (634)	100	268	14.0	1400	4500	1PH8224-1B2-... 1	
		47 (63.0)	1122 (828)	130	264	14.0	1600	4500	1PH8226-1B2-... 1	
		58 (77.8)	1385 (1022)	154	272	13.9	1700	4500	1PH8228-1B2-... 1	
	280	71 (95.2)	1695 (1250)	170	295	13.8	2200	3300	1PH8284-1B2-... 1	
		89 (119)	2125 (1567)	210	300	13.7	2200	3300	1PH8286-1B2-... 1	
		109 (146)	2602 (1919)	260	295	13.7	2200	3300	1PH8288-1B2-... 1	
	700	180	33 (44.3)	450 (332)	77	320	24.2	2500	5000	1PH8184-1C2-... 1
			43 (57.7)	587 (433)	97	330	23.9	3000	5000	1PH8186-1C2-... 1
225		61 (81.8)	832 (614)	128	340	24.0	2100	4500	1PH8224-1C2-... 1	
		81 (109)	1105 (815)	184	310	23.9	2300	4500	1PH8226-1C2-... 1	
		96 (129)	1310 (966)	210	315	23.9	2500	4500	1PH8228-1C2-... 1	
280		123 (165)	1678 (1238)	260	330	23.7	2200	3300	1PH8284-1C2-... 1	
		153 (205)	2087 (1539)	320	325	23.7	2200	3300	1PH8286-1C2-... 1	
		188 (252)	2565 (1892)	400	324	23.6	2200	3300	1PH8288-1C2-... 1	
1000		180	47 (63.0)	449 (331)	114	300	34.2	5000	5000	1PH8184-1D2-... 1
			64 (85.8)	611 (451)	148	320	34.0	5000	5000	1PH8186-1D2-... 1
	225	89 (119)	850 (627)	188	335	33.9	2800	4500	1PH8224-1D2-... 1	
		115 (154)	1098 (810)	235	340	33.9	2400	4500	1PH8226-1D2-... 1	
		141 (189)	1346 (993)	280	340	33.9	2300	4500	1PH8228-1D2-... 1	
	280	172 (231)	1643 (1212)	350	335	33.7	2200	3300	1PH8284-1D2-... 1	
		214 (287)	2044 (1508)	460	330	33.6	2200	3300	1PH8286-1D2-... 1	
		264 (354)	2521 (1859)	550	335	33.6	2200	3300	1PH8288-1D2-... 1	
	1500	180	70 (93.9)	446 (329)	150	335	51.0	5000	5000	1PH8184-1F2-... 1
			93 (125)	592 (437)	198	330	51.0	5000	5000	1PH8186-1F2-... 1
225		119 (160)	758 (559)	240	340	50.6	3500	4500	1PH8224-1F2-... 1	
		145 (194)	923 (681)	295	340	50.5	3700	4500	1PH8226-1F2-... 1	
		192 (257)	1222 (901)	390	340	50.5	3700	4500	1PH8228-1F2-... 1	
280		227 (304)	1445 (1066)	445	343	50.4	2200	3300	1PH8284-1F2-... 1	
		281 (377)	1789 (1320)	540	343	50.4	2200	3300	1PH8286-1F2-... 1	
		345 (463)	2197 (1621)	660	345	50.3	2200	3300	1PH8288-1F2-... 1	
2500		180	95 (127)	363 (268)	196	340	85.2	5000	5000	1PH8184-1L2-... 1
			120 (161)	458 (338)	250	335	83.9	5000	5000	1PH8186-1L2-... 1
	225	153 (205)	584 (431)	310	340	83.8	3200	4500	1PH8224-1L2-... 1	
		185 (248)	707 (521)	380	335	83.8	3200	4500	1PH8226-1L2-... 1	
	226 (303)	863 (637)	455	340	83.7	3200	4500	1PH8228-1L2-... 1		

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8184-1. B 2...	0.87	28	0.831	0.489 (4.3)	340 (750)	1XB7322-P05	60	6SL3120-1TE26-0AA3
1PH8186-1. B 2...	0.86	42	0.845	0.652 (5.8)	410 (904)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8224-1. B 2...	0.91	37	0.858	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. B 2...	0.90	49	0.875	1.90 (16.8)	740 (1632)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8228-1. B 2...	0.90	62	0.886	2.35 (20.8)	870 (1918)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8284-1. B 2...	0.89	70	0.914	4.21 (37.3)	1280 (2822)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8286-1. B 2...	0.89	83	0.916	5.16 (45.7)	1490 (3285)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8288-1. B 2...	0.89	110	0.925	6.29 (55.7)	1750 (3859)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8184-1. C 2...	0.89	33	0.872	0.489 (4.3)	340 (750)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8186-1. C 2...	0.86	49	0.898	0.652 (5.8)	410 (904)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8224-1. C 2...	0.89	48	0.914	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. C 2...	0.88	79	0.928	1.90 (16.8)	740 (1632)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8228-1. C 2...	0.90	82	0.930	2.35 (20.8)	870 (1918)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8284-1. C 2...	0.87	108	0.945	4.21 (37.3)	1280 (2822)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8286-1. C 2...	0.89	123	0.948	5.16 (45.7)	1490 (3285)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8288-1. C 2...	0.88	172	0.952	6.29 (55.7)	1750 (3859)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-1. D 2...	0.88	45	0.904	0.489 (4.3)	340 (750)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-1. D 2...	0.85	78	0.920	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. D 2...	0.87	79	0.937	1.45 (12.8)	610 (1345)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-1. D 2...	0.89	87	0.938	1.90 (16.8)	740 (1632)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8228-1. D 2...	0.91	98	0.943	2.35 (20.8)	870 (1918)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8284-1. D 2...	0.88	144	0.957	4.21 (37.3)	1280 (2822)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8286-1. D 2...	0.85	215	0.960	5.16 (45.7)	1490 (3285)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8288-1. D 2...	0.86	251	0.962	6.29 (55.7)	1750 (3859)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-1. F 2...	0.87	66	0.928	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. F 2...	0.88	85	0.935	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. F 2...	0.89	87	0.951	1.45 (12.8)	610 (1345)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8226-1. F 2...	0.87	119	0.957	1.90 (16.8)	740 (1632)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8228-1. F 2...	0.87	169	0.959	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8284-1. F 2...	0.89	161	0.964	4.21 (37.3)	1280 (2822)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8286-1. F 2...	0.90	181	0.966	5.16 (45.7)	1490 (3285)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8288-1. F 2...	0.90	234	0.967	6.29 (55.7)	1750 (3859)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8184-1. L 2...	0.87	75	0.945	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. L 2...	0.87	109	0.948	0.652 (5.8)	410 (904)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8224-1. L 2...	0.87	113	0.961	1.45 (12.8)	610 (1345)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8226-1. L 2...	0.87	151	0.963	1.90 (16.8)	740 (1632)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-1. L 2...	0.87	181	0.964	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A to D, E and F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Active Line Module									
500	180	23 (30.8)	439 (324)	54	335	17.4	1800	5000	1PH8184-1B2-... 1
		30 (40.2)	573 (423)	70	335	17.3	2200	5000	1PH8186-1B2-... 1
	225	46 (61.7)	879 (648)	100	335	17.3	1500	4500	1PH8224-1B2-... 1
		59 (79.1)	1127 (831)	128	330	17.3	1700	4500	1PH8226-1B2-... 1
		72 (96.6)	1375 (1014)	150	340	17.2	1800	4500	1PH8228-1B2-... 1
	280	89 (119)	1700 (1254)	172	365	17.1	2200	3300	1PH8284-1B2-... 1
		111 (149)	2120 (1564)	205	375	17.0	2200	3300	1PH8286-1B2-... 1
		136 (182)	2598 (1916)	260	365	17.0	2200	3300	1PH8288-1B2-... 1
800	180	38 (51.0)	454 (335)	77	365	27.5	2900	5000	1PH8184-1C2-... 1
		49 (65.7)	585 (431)	99	360	27.4	3500	5000	1PH8186-1C2-... 1
	225	70 (93.9)	836 (617)	130	380	27.3	2300	4500	1PH8224-1C2-... 1
		93 (125)	1110 (819)	186	350	27.2	2500	4500	1PH8226-1C2-... 1
		110 (148)	1313 (968)	210	360	27.2	2700	4500	1PH8228-1C2-... 1
	280	141 (189)	1683 (1241)	260	375	27.0	2200	3300	1PH8284-1C2-... 1
		175 (235)	2089 (1541)	320	375	27.0	2200	3300	1PH8286-1C2-... 1
		215 (288)	2567 (1893)	405	370	27.0	2200	3300	1PH8288-1C2-... 1
1150	180	54 (72.4)	448 (330)	112	350	39.2	5000	5000	1PH8184-1D2-... 1
		74 (99.2)	615 (454)	148	370	38.9	5000	5000	1PH8186-1D2-... 1
	225	101 (135)	839 (619)	186	385	38.9	3000	4500	1PH8224-1D2-... 1
		131 (176)	1088 (803)	230	390	38.9	2700	4500	1PH8226-1D2-... 1
		161 (216)	1337 (986)	280	390	38.9	2500	4500	1PH8228-1D2-... 1
	280	198 (266)	1644 (1213)	355	385	38.7	2200	3300	1PH8284-1D2-... 1
		246 (330)	2043 (1507)	455	380	38.6	2200	3300	1PH8286-1D2-... 1
		304 (408)	2525 (1862)	550	385	38.6	2300	3300	1PH8288-1D2-... 1
1750	180	82 (110)	447 (330)	150	390	59.3	5000	5000	1PH8184-1F2-... 1
		111 (149)	606 (447)	200	385	59.3	5000	5000	1PH8186-1F2-... 1
	225	138 (185)	753 (555)	240	395	58.9	3800	4500	1PH8224-1F2-... 1
		169 (227)	922 (680)	295	390	58.8	3900	4500	1PH8226-1F2-... 1
		221 (296)	1206 (890)	390	390	58.8	3900	4500	1PH8228-1F2-... 1
	280	265 (355)	1446 (1067)	445	400	58.7	2200	3300	1PH8284-1F2-... 1
		328 (440)	1790 (1320)	540	400	58.7	2300	3300	1PH8286-1F2-... 1
		403 (540)	2199 (1622)	670	400	58.7	2400	3300	1PH8288-1F2-... 1
2900	180	102 (137)	336 (248)	182	395	97.5	5000	5000	1PH8184-1L2-... 1
		135 (181)	445 (328)	245	385	97.3	5000	5000	1PH8186-1L2-... 1
	225	164 (220)	540 (398)	285	395	97.1	3600	4500	1PH8224-1L2-... 1
		204 (274)	672 (496)	360	390	97.1	3600	4500	1PH8226-1L2-... 1
		237 (318)	780 (575)	415	395	97.0	3600	4500	1PH8228-1L2-... 1

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8184-1. B 2...	0.86	27	0.850	0.489 (4.3)	340 (750)	1XB7322-P05	60	6SL3120-1TE26-0AA3
1PH8186-1. B 2...	0.85	43	0.868	0.652 (5.8)	410 (904)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8224-1. B 2...	0.90	38	0.883	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. B 2...	0.90	50	0.899	1.90 (16.8)	740 (1632)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8228-1. B 2...	0.90	63	0.908	2.35 (20.8)	870 (1918)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8284-1. B 2...	0.88	69	0.929	4.21 (37.3)	1280 (2822)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8286-1. B 2...	0.89	84	0.931	5.16 (45.7)	1490 (3285)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8288-1. B 2...	0.88	109	0.938	6.29 (55.7)	1750 (3859)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8184-1. C 2...	0.88	33	0.885	0.489 (4.3)	340 (750)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8186-1. C 2...	0.88	44	0.904	0.652 (5.8)	410 (904)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8224-1. C 2...	0.89	46	0.920	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. C 2...	0.88	77	0.934	1.90 (16.8)	740 (1632)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8228-1. C 2...	0.90	82	0.937	2.35 (20.8)	870 (1918)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8284-1. C 2...	0.88	108	0.950	4.21 (37.3)	1280 (2822)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8286-1. C 2...	0.88	126	0.953	5.16 (45.7)	1490 (3285)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8288-1. C 2...	0.87	172	0.956	6.29 (55.7)	1750 (3859)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-1. D 2...	0.87	46	0.915	0.489 (4.3)	340 (750)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-1. D 2...	0.84	80	0.927	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. D 2...	0.86	79	0.944	1.45 (12.8)	610 (1345)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-1. D 2...	0.89	87	0.945	1.90 (16.8)	740 (1632)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8228-1. D 2...	0.90	98	0.948	2.35 (20.8)	870 (1918)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8284-1. D 2...	0.87	144	0.960	4.21 (37.3)	1280 (2822)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8286-1. D 2...	0.85	216	0.962	5.16 (45.7)	1490 (3285)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8288-1. D 2...	0.86	251	0.964	6.29 (55.7)	1750 (3859)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-1. F 2...	0.87	65	0.933	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. F 2...	0.89	85	0.939	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. F 2...	0.88	87	0.954	1.45 (12.8)	610 (1345)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8226-1. F 2...	0.88	116	0.959	1.90 (16.8)	740 (1632)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8228-1. F 2...	0.87	165	0.961	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8284-1. F 2...	0.89	161	0.966	4.21 (37.3)	1280 (2822)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8286-1. F 2...	0.90	182	0.967	5.16 (45.7)	1490 (3285)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8288-1. F 2...	0.90	232	0.968	6.29 (55.7)	1750 (3859)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8184-1. L 2...	0.87	77	0.945	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. L 2...	0.87	108	0.948	0.652 (5.8)	410 (904)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8224-1. L 2...	0.88	114	0.961	1.45 (12.8)	610 (1345)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8226-1. L 2...	0.87	152	0.962	1.90 (16.8)	740 (1632)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-1. L 2...	0.87	182	0.963	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A to D, E and F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
600	180	29 (38.9)	462 (341)	55	405	20.8	1800	5000	1PH8184-1B2-... 1
		38 (51.0)	605 (446)	73	405	20.6	2500	5000	1PH8186-1B2-... 1
	225	53 (71.1)	844 (623)	94	410	20.6	1900	4500	1PH8224-1B2-... 1
		70 (93.9)	1114 (822)	122	410	20.5	2000	4500	1PH8226-1B2-... 1
		85 (114)	1353 (998)	148	410	20.5	2100	4500	1PH8228-1B2-... 1
	280	107 (143)	1703 (1256)	170	440	20.4	2200	3300	1PH8284-1B2-... 1
		133 (178)	2117 (1561)	205	445	20.4	2200	3300	1PH8286-1B2-... 1
		164 (220)	2610 (1925)	260	440	20.3	2200	3300	1PH8288-1B2-... 1
1000	180	48 (64)	458 (338)	77	460	34.1	3100	5000	1PH8184-1C2-... 1
		61 (82)	583 (430)	98	450	34.0	3700	5000	1PH8186-1C2-... 1
	225	87 (117)	831 (613)	132	460	34.0	2500	4500	1PH8224-1C2-... 1
		116 (156)	1108 (817)	184	440	33.9	2700	4500	1PH8226-1C2-... 1
		138 (185)	1318 (972)	210	450	33.9	2900	4500	1PH8228-1C2-... 1
	280	176 (236)	1681 (1240)	265	455	33.7	2200	3300	1PH8284-1C2-... 1
		219 (294)	2091 (1542)	325	455	33.7	2200	3300	1PH8286-1C2-... 1
		269 (361)	2569 (1895)	405	460	33.6	2200	3300	1PH8288-1C2-... 1
1350	180	64 (85.8)	453 (334)	112	410	45.8	5000	5000	1PH8184-1D2-... 1
		86 (115)	608 (448)	148	420	45.7	5000	5000	1PH8186-1D2-... 1
	225	115 (154)	813 (600)	180	450	45.5	3400	4500	1PH8224-1D2-... 1
		150 (201)	1061 (783)	225	460	45.5	3200	4500	1PH8226-1D2-... 1
		184 (247)	1302 (960)	270	460	45.5	3000	4500	1PH8228-1D2-... 1
	280	232 (311)	1641 (1210)	355	450	45.4	2200	3300	1PH8284-1D2-... 1
		289 (388)	2044 (1508)	460	445	45.3	2300	3300	1PH8286-1D2-... 1
		357 (479)	2525 (1862)	550	450	45.3	2400	3300	1PH8288-1D2-... 1
2000	180	95 (127)	454 (335)	152	450	67.3	5000	5000	1PH8184-1F2-... 1
		126 (169)	602 (444)	200	445	67.3	5000	5000	1PH8186-1F2-... 1
	225	155 (208)	740 (546)	235	460	67.2	4200	4500	1PH8224-1F2-... 1
		191 (256)	912 (673)	290	450	67.1	4100	4500	1PH8226-1F2-... 1
		245 (329)	1170 (863)	380	450	67.1	4100	4500	1PH8228-1F2-... 1
	280	303 (406)	1447 (1067)	445	455	67.0	2300	3300	1PH8284-1F2-... 1
		375 (503)	1791 (1321)	550	455	67.0	2400	3300	1PH8286-1F2-... 1
		460 (617)	2197 (1621)	670	455	67.0	2500	3300	1PH8288-1F2-... 1
3400	180	100 (134)	281 (207)	158	460	114.0	5000	5000	1PH8184-1L2-... 1
		121 (162)	340 (251)	200	455	113.5	5000	5000	1PH8186-1L2-... 1
	225	164 (220)	461 (340)	255	460	114.0	4100	4500	1PH8224-1L2-... 1
		199 (267)	559 (412)	310	460	114.0	4100	4500	1PH8226-1L2-... 1
		237 (318)	666 (491)	370	460	114.0	4100	4500	1PH8228-1L2-... 1

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _F -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8184-1. B 2...	0.86	28	0.869	0.489 (4.3)	340 (750)	1XB7322-P05	60	6SL3120-1TE26-0AA3
1PH8186-1. B 2...	0.84	44	0.883	0.652 (5.8)	410 (904)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8224-1. B 2...	0.87	40	0.908	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. B 2...	0.88	55	0.919	1.90 (16.8)	740 (1632)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8228-1. B 2...	0.88	64	0.923	2.35 (20.8)	870 (1918)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8284-1. B 2...	0.88	71	0.939	4.21 (37.3)	1280 (2822)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8286-1. B 2...	0.89	83	0.940	5.16 (45.7)	1490 (3285)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8288-1. B 2...	0.88	111	0.946	6.29 (55.7)	1750 (3859)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8184-1. C 2...	0.86	34	0.905	0.489 (4.3)	340 (750)	1XB7322-P05	85	6SL3120-1TE28-5AA3
1PH8186-1. C 2...	0.87	44	0.920	0.652 (5.8)	410 (904)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8224-1. C 2...	0.89	44	0.931	1.45 (12.8)	610 (1345)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8226-1. C 2...	0.88	79	0.944	1.90 (16.8)	740 (1632)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8228-1. C 2...	0.89	83	0.946	2.35 (20.8)	870 (1918)	1XB7322-P05	210	6SL3320-1TE32-1AA3
1PH8284-1. C 2...	0.88	102	0.956	4.21 (37.3)	1280 (2822)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8286-1. C 2...	0.89	120	0.958	5.16 (45.7)	1490 (3285)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8288-1. C 2...	0.87	171	0.961	6.29 (55.7)	1750 (3859)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-1. D 2...	0.87	46	0.924	0.489 (4.3)	340 (750)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-1. D 2...	0.86	73	0.933	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. D 2...	0.86	79	0.950	1.45 (12.8)	610 (1345)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-1. D 2...	0.88	88	0.951	1.90 (16.8)	740 (1632)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8228-1. D 2...	0.90	99	0.954	2.35 (20.8)	870 (1918)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8284-1. D 2...	0.87	143	0.963	4.21 (37.3)	1280 (2822)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8286-1. D 2...	0.85	216	0.964	5.16 (45.7)	1490 (3285)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8288-1. D 2...	0.86	249	0.966	6.29 (55.7)	1750 (3859)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-1. F 2...	0.85	68	0.938	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. F 2...	0.87	89	0.943	0.652 (5.8)	410 (904)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-1. F 2...	0.86	90	0.958	1.45 (12.8)	610 (1345)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8226-1. F 2...	0.88	118	0.961	1.90 (16.8)	740 (1632)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8228-1. F 2...	0.86	169	0.963	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8284-1. F 2...	0.89	160	0.967	4.21 (37.3)	1280 (2822)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8286-1. F 2...	0.90	180	0.968	5.16 (45.7)	1490 (3285)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8288-1. F 2...	0.90	230	0.969	6.29 (55.7)	1750 (3859)	1XB7712-P03	840	6SL3320-1TE38-4AA3
1PH8184-1. L 2...	0.84	76	0.944	0.489 (4.3)	340 (750)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-1. L 2...	0.81	110	0.942	0.652 (5.8)	410 (904)	1XB7422-P06	260	6SL3320-1TE32-6AA3
1PH8224-1. L 2...	0.84	113	0.959	1.45 (12.8)	610 (1345)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8226-1. L 2...	0.84	153	0.958	1.90 (16.8)	740 (1632)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-1. L 2...	0.84	180	0.959	2.35 (20.8)	870 (1918)	1XB7700-P02	490	6SL3320-1TE35-0AA3

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A to D, E and F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed during field weakening, max. ¹⁾	Speed, max. ²⁾	1PH8 asynchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	n_2 rpm	n_{max} rpm	Order No.
Line voltage 690 V 3 AC, Basic Line Module									
400	280	68 (91.2)	1624 (1198)	89	555	13.7	2000	3300	1PH8284-1 H 2 -... 1
		85 (114)	2029 (1497)	108	555	13.7	2000	3300	1PH8286-1 H 2 -... 1
		105 (141)	2507 (1849)	134	555	13.7	2000	3300	1PH8288-1 H 2 -... 1
700	280	119 (160)	1624 (1197)	136	605	23.7	2200	3300	1PH8284-1 K 2 -... 1
		148 (198)	2019 (1489)	174	605	23.6	2200	3300	1PH8286-1 K 2 -... 1
		182 (244)	2483 (1831)	205	605	23.7	2200	3300	1PH8288-1 K 2 -... 1
1000	280	167 (224)	1595 (1176)	196	600	33.6	2200	3300	1PH8284-1 U 2 -... 1
		208 (279)	1986 (1465)	260	570	33.6	2200	3300	1PH8286-1 U 2 -... 1
		256 (343)	2445 (1803)	310	580	33.6	2200	3300	1PH8288-1 U 2 -... 1
1500	280	220 (295)	1401 (1033)	250	590	50.4	2200	3300	1PH8284-1 W 2 -... 1
		273 (366)	1738 (1282)	310	590	50.4	2200	3300	1PH8286-1 W 2 -... 1
		335 (449)	2133 (1573)	375	590	50.3	2200	3300	1PH8288-1 W 2 -... 1
Line voltage 690 V 3 AC, Active Line Module									
500	280	85 (114)	1624 (1198)	89	690	17.0	2000	3300	1PH8284-1 H 2 -... 1
		106 (142)	2025 (1494)	108	690	17.0	2000	3300	1PH8286-1 H 2 -... 1
		131 (176)	2502 (1845)	134	690	17.0	2000	3300	1PH8288-1 H 2 -... 1
800	280	137 (184)	1635 (1206)	138	690	27.0	2200	3300	1PH8284-1 K 2 -... 1
		170 (228)	2029 (1497)	176	690	27.0	2200	3300	1PH8286-1 K 2 -... 1
		209 (280)	2495 (1840)	205	690	27.0	2200	3300	1PH8288-1 K 2 -... 1
1150	280	192 (257)	1594 (1176)	198	690	38.6	2200	3300	1PH8284-1 U 2 -... 1
		239 (320)	1985 (1464)	260	655	38.6	2200	3300	1PH8286-1 U 2 -... 1
		295 (396)	2450 (1807)	310	665	38.6	2300	3300	1PH8288-1 U 2 -... 1
1750	280	257 (345)	1401 (1033)	250	690	58.7	2200	3300	1PH8284-1 W 2 -... 1
		318 (426)	1735 (1280)	305	690	58.7	2300	3300	1PH8286-1 W 2 -... 1
		391 (524)	2134 (1574)	375	690	58.7	2400	3300	1PH8288-1 W 2 -... 1

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Effi- ciency η	Moment of inertia J kgm ² (lb _f -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
							Rated output current ³⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PH8284-1.H 2...	0.87	41	0.917	4.21 (37.3)	1280 (2822)	1XB7322-P05	100	6SL3320-1TG31-0AA3
1PH8286-1.H 2...	0.89	45	0.917	5.16 (45.7)	1490 (3285)	1XB7322-P05	120	6SL3320-1TG31-2AA3
1PH8288-1.H 2...	0.88	58	0.923	6.29 (55.7)	1750 (3859)	1XB7322-P05	150	6SL3320-1TG31-5AA3
1PH8284-1.K 2...	0.88	54	0.942	4.21 (37.3)	1280 (2822)	1XB7322-P05	150	6SL3320-1TG31-5AA3
1PH8286-1.K 2...	0.85	84	0.950	5.16 (45.7)	1490 (3285)	1XB7322-P05	215	6SL3320-1TG32-2AA3
1PH8288-1.K 2...	0.90	77	0.946	6.29 (55.7)	1750 (3859)	1XB7322-P05	260	6SL3320-1TG32-6AA3
1PH8284-1.U 2...	0.86	89	0.956	4.21 (37.3)	1280 (2822)	1XB7322-P05	215	6SL3320-1TG32-2AA3
1PH8286-1.U 2...	0.85	123	0.959	5.16 (45.7)	1490 (3285)	1XB7700-P02	330	6SL3320-1TG33-3AA3
1PH8288-1.U 2...	0.86	145	0.961	6.29 (55.7)	1750 (3859)	1XB7700-P02	410	6SL3320-1TG34-1AA3
1PH8284-1.W 2...	0.89	92	0.963	4.21 (37.3)	1280 (2822)	1XB7422-P06	330	6SL3320-1TG33-3AA3
1PH8286-1.W 2...	0.90	104	0.965	5.16 (45.7)	1490 (3285)	1XB7700-P02	410	6SL3320-1TG34-1AA3
1PH8288-1.W 2...	0.90	132	0.966	6.29 (55.7)	1750 (3859)	1XB7700-P02	465	6SL3320-1TG34-7AA3
1PH8284-1.H 2...	0.86	41	0.931	4.21 (37.3)	1280 (2822)	1XB7322-P05	100	6SL3320-1TG31-0AA3
1PH8286-1.H 2...	0.88	45	0.931	5.16 (45.7)	1490 (3285)	1XB7322-P05	120	6SL3320-1TG31-2AA3
1PH8288-1.H 2...	0.88	58	0.936	6.29 (55.7)	1750 (3859)	1XB7322-P05	150	6SL3320-1TG31-5AA3
1PH8284-1.K 2...	0.88	54	0.947	4.21 (37.3)	1280 (2822)	1XB7322-P05	150	6SL3320-1TG31-5AA3
1PH8286-1.K 2...	0.85	84	0.954	5.16 (45.7)	1490 (3285)	1XB7322-P05	215	6SL3320-1TG32-2AA3
1PH8288-1.K 2...	0.90	77	0.951	6.29 (55.7)	1750 (3859)	1XB7322-P05	260	6SL3320-1TG32-6AA3
1PH8284-1.U 2...	0.85	90	0.959	4.21 (37.3)	1280 (2822)	1XB7322-P05	215	6SL3320-1TG32-2AA3
1PH8286-1.U 2...	0.85	123	0.962	5.16 (45.7)	1490 (3285)	1XB7700-P02	330	6SL3320-1TG33-3AA3
1PH8288-1.U 2...	0.86	144	0.963	6.29 (55.7)	1750 (3859)	1XB7700-P02	410	6SL3320-1TG34-1AA3
1PH8284-1.W 2...	0.89	92	0.965	4.21 (37.3)	1280 (2822)	1XB7422-P06	330	6SL3320-1TG33-3AA3
1PH8286-1.W 2...	0.90	104	0.967	5.16 (45.7)	1490 (3285)	1XB7700-P02	410	6SL3320-1TG34-1AA3
1PH8288-1.W 2...	0.90	133	0.968	6.29 (55.7)	1750 (3859)	1XB7700-P02	465	6SL3320-1TG34-7AA3

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¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

²⁾ n_{max} : Maximum speed that must not be exceeded (applicable to Standard: 14th data position A and B, E and F).

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed, max. ¹⁾	Speed, max. ²⁾	1PH8 synchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lbf-ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
1500	132	15.7 (21.1)	100 (73.8)	29	388	50.0	2550	4500	1PH8131-2■F.■-... 1
		19.9 (26.7)	127 (93.7)	44	316	50.0	3050	4500	1PH8133-2■F.■-... 1
		23.7 (31.8)	151 (111)	43	383	50.0	2450	4500	1PH8135-2■F.■-... 1
		30.6 (41.0)	195 (144)	60	356	50.0	2700	4500	1PH8137-2■F.■-... 1
160	61 (81.8)	390 (288)	119	340	100.0	2600	4000	1PH8165-2■F.■-... 1	
	69 (92.5)	435 (321)	133	345	100.0	2600	4000	1PH8167-2■F.■-... 1	
2000	132	31.4 (42.1)	150 (111)	59	356	66.7	3500	4500	1PH8135-2■G.■-... 1
2500	132	25 (33.5)	96 (71)	44	371	83.3	4050	4500	1PH8131-2■L.■-... 1
		31.7 (42.5)	121 (89)	55	371	83.3	3950	4500	1PH8133-2■L.■-... 1
		48.4 (64.9)	185 (136)	83	371	83.3	3900	4500	1PH8137-2■L.■-... 1
	160	84 (113)	320 (236)	148	370	167.0	3900	4000	1PH8165-2■L.■-... 1
		95 (127)	360 (266)	177	350	167.0	4000	4000	1PH8167-2■L.■-... 1
3000	132	57.5 (77.1)	183 (135)	104	370	100.0	4500	4500	1PH8137-2■M.■-... 1
Line voltage 400 V 3 AC, Active Line Module									
1750	132	18 (24.1)	98 (72.3)	29	415	58.3	2550	4500	1PH8131-2■F.■-... 1
		23.1 (31.0)	126 (92.9)	43	366	58.3	3050	4500	1PH8133-2■F.■-... 1
		27.2 (36.5)	149 (110)	42	415	58.3	2450	4500	1PH8135-2■F.■-... 1
		35.6 (47.7)	194 (143)	59	412	58.3	2700	4500	1PH8137-2■F.■-... 1
160	69 (92.5)	375 (277)	115	395	117.0	2600	4000	1PH8165-2■F.■-... 1	
	77 (103)	420 (310)	128	400	117.0	2600	4000	1PH8167-2■F.■-... 1	
2300	132	35.6 (47.7)	148 (109)	59	407	76.7	3500	4500	1PH8135-2■G.■-... 1
2800	132	27.7 (37.1)	95 (70.1)	44	415	93.3	4050	4500	1PH8131-2■L.■-... 1
		35.2 (47.2)	120 (88.5)	54	415	93.3	3950	4500	1PH8133-2■L.■-... 1
		53.4 (71.6)	182 (134)	82	415	93.3	3900	4500	1PH8137-2■L.■-... 1
	160	87 (117)	300 (221)	138	410	187.0	3900	4000	1PH8165-2■L.■-... 1
		98 (131)	335 (247)	164	385	187.0	4000	4000	1PH8167-2■L.■-... 1
3300	132	62.2 (83.4)	180 (133)	102	405	110.0	4500	4500	1PH8137-2■M.■-... 1
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
2000	132	19.9 (26.7)	95 (70.1)	29	449	66.7	2550	4500	1PH8131-2■F.■-... 1
		26.2 (35.1)	125 (92.2)	43	415	66.7	3050	4500	1PH8133-2■F.■-... 1
		30.2 (40.5)	144 (106)	42	449	66.7	2450	4500	1PH8135-2■F.■-... 1
		40.0 (53.6)	191 (141)	59	449	66.7	2700	4500	1PH8137-2■F.■-... 1
160	74 (99.2)	355 (262)	110	445	133.0	2600	4000	1PH8165-2■F.■-... 1	
	82 (110)	395 (291)	123	450	133.0	2600	4000	1PH8167-2■F.■-... 1	
2650	132	40.2 (53.9)	145 (107)	58	449	88.3	3500	4500	1PH8135-2■G.■-... 1
3000	132	29.5 (39.6)	94 (69.3)	43	449	100.0	4050	4500	1PH8131-2■L.■-... 1
		37.4 (50.2)	119 (87.8)	54	449	100.0	3950	4500	1PH8133-2■L.■-... 1
		56.9 (76.3)	181 (134)	81	449	100.0	3900	4500	1PH8137-2■L.■-... 1
	160	89 (119)	285 (210)	131	440	200.0	3900	4000	1PH8165-2■L.■-... 1
		99 (133)	315 (232)	155	410	200.0	4000	4000	1PH8167-2■L.■-... 1
3600	132	66.7 (89.4)	177 (131)	100	440	120.0	4500	4500	1PH8137-2■M.■-... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Static torque	Static current	Effi- ciency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
							I_{rated} A	
M_0 Nm (lb _f -ft)	I_0 A	η	J kgm ² (lb _f -in-s ²)	kg (lb)	Type			
1PH8131-2. F ...	105 (77.4)	30	0.944	0.0446 (0.39)	85 (187)	gk833	30	6SL312-1TE23-0AA3
1PH8133-2. F ...	131 (96.6)	45	0.948	0.0600 (0.53)	103 (227)	gk833	45	6SL312-1TE24-5AA3
1PH8135-2. F ...	158 (117)	44	0.952	0.0750 (0.66)	120 (265)	gk833	45	6SL312-1TE24-5AA3
1PH8137-2. F ...	203 (150)	62	0.952	0.0885 (0.78)	136 (300)	gk833	60	6SL312-1TE26-0AA3
1PH8165-2. F ...	440 (325)	126	0.940	0.2160 (1.91)	218 (481)	gk874	132	6SL312-1TE31-3AA3
1PH8167-2. F ...	500 (369)	143	0.940	0.2440 (2.16)	240 (529)	gk874	132 ⁵⁾	6SL312-1TE31-3AA3
1PH8135-2. G ...	158 (117)	63	0.953	0.0750 (0.66)	120 (265)	gk833	60	6SL312-1TE26-0AA3
1PH8131-2. L ...	105 (77.4)	48	0.948	0.0446 (0.39)	85 (187)	gk833	45	6SL312-1TE24-5AA3
1PH8133-2. L ...	131 (96.6)	59	0.951	0.0600 (0.53)	103 (227)	gk833	60	6SL312-1TE26-0AA3
1PH8137-2. L ...	203 (150)	89 ⁴⁾	0.954	0.0885 (0.78)	136 (300)	gk833	85	6SL312-1TE28-5AA3
1PH8165-2. L ...	440 (325)	188	0.955	0.2160 (1.91)	218 (481)	gk874	200	6SL312-1TE32-0AA3
1PH8167-2. L ...	500 (369)	230	0.955	0.2440 (2.16)	240 (529)	gk874	200	6SL312-1TE32-0AA3
1PH8137-2. M ...	203 (150)	115 ⁴⁾	0.953	0.0885 (0.78)	136 (300)	gk833	132	6SL312-1TE31-3AA3
1PH8131-2. F ...	105 (77.4)	30	0.947	0.0446 (0.39)	85 (187)	gk833	30	6SL312-1TE23-0AA3
1PH8133-2. F ...	131 (96.6)	45	0.950	0.0600 (0.53)	103 (227)	gk833	45	6SL312-1TE24-5AA3
1PH8135-2. F ...	158 (117)	44	0.952	0.0750 (0.66)	120 (265)	gk833	45	6SL312-1TE24-5AA3
1PH8137-2. F ...	203 (150)	62	0.953	0.0885 (0.78)	136 (300)	gk833	60	6SL312-1TE26-0AA3
1PH8165-2. F ...	440 (325)	126	0.943	0.2160 (1.91)	218 (481)	gk874	132	6SL312-1TE31-3AA3
1PH8167-2. F ...	500 (369)	143	0.943	0.2440 (2.16)	240 (529)	gk874	132	6SL312-1TE31-3AA3
1PH8135-2. G ...	158 (117)	63	0.953	0.0750 (0.66)	120 (265)	gk833	60	6SL312-1TE26-0AA3
1PH8131-2. L ...	105 (77.4)	48	0.949	0.0446 (0.39)	85 (187)	gk833	45	6SL312-1TE24-5AA3
1PH8133-2. L ...	131 (96.6)	59	0.952	0.0600 (0.53)	103 (227)	gk833	60	6SL312-1TE26-0AA3
1PH8137-2. L ...	203 (150)	89 ⁴⁾	0.953	0.0885 (0.78)	136 (300)	gk833	85	6SL312-1TE28-5AA3
1PH8165-2. L ...	440 (325)	188	0.959	0.2160 (1.91)	218 (481)	gk874	200	6SL312-1TE32-0AA3
1PH8167-2. L ...	500 (369)	230	0.959	0.2440 (2.16)	240 (529)	gk874	200	6SL312-1TE32-0AA3
1PH8137-2. M ...	203 (150)	115 ⁴⁾	0.952	0.0885 (0.78)	136 (300)	gk833	132	6SL312-1TE31-3AA3
1PH8131-2. F ...	105 (77.4)	30	0.948	0.0446 (0.39)	85 (187)	gk833	30	6SL312-1TE23-0AA3
1PH8133-2. F ...	131 (96.6)	45	0.951	0.0600 (0.53)	103 (227)	gk833	45	6SL312-1TE24-5AA3
1PH8135-2. F ...	158 (117)	44	0.953	0.0750 (0.66)	120 (265)	gk833	45	6SL312-1TE24-5AA3
1PH8137-2. F ...	203 (150)	62	0.954	0.0885 (0.78)	136 (300)	gk833	60	6SL312-1TE26-0AA3
1PH8165-2. F ...	440 (325)	126	0.946	0.2160 (1.91)	218 (481)	gk874	132	6SL312-1TE31-3AA3
1PH8167-2. F ...	500 (369)	143	0.946	0.2440 (2.16)	240 (529)	gk874	132	6SL312-1TE31-3AA3
1PH8135-2. G ...	158 (117)	63	0.952	0.0750 (0.66)	120 (265)	gk833	60	6SL312-1TE26-0AA3
1PH8131-2. L ...	105 (77.4)	48	0.951	0.0446 (0.39)	85 (187)	gk833	45	6SL312-1TE24-5AA3
1PH8133-2. L ...	131 (96.6)	59	0.952	0.0600 (0.53)	103 (227)	gk833	60	6SL312-1TE26-0AA3
1PH8137-2. L ...	203 (150)	89 ⁴⁾	0.953	0.0885 (0.78)	136 (300)	gk833	85	6SL312-1TE28-5AA3
1PH8165-2. L ...	440 (325)	188	0.960	0.2160 (1.91)	218 (481)	gk874	200	6SL312-1TE32-0AA3
1PH8167-2. L ...	500 (369)	230	0.960	0.2440 (2.16)	240 (529)	gk874	200	6SL312-1TE32-0AA3
1PH8137-2. M ...	203 (150)	115 ⁴⁾	0.950	0.0885 (0.78)	136 (300)	gk833	132	6SL312-1TE31-3AA3

Cooling:
Internal air cooling
External air cooling

0
1

- 1) $n_{max,Inv}$: Maximum permissible operating speed based on the induced voltage in the motor and the voltage strength of the Motor Module (without protective circuit).
- 2) n_{max} : Maximum speed that must not be exceeded.
- 3) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz.
- 4) Above approx. 85 A, connection type "Power connector top" is not possible (15th data position E to H).
Power connector is generally not possible with 1PH816.
- 5) The rated output current of the Motor Module is lower than the rated motor current at 4 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors Water cooling, IP65 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed, max. ¹⁾	Speed, max. ²⁾	1PH8 synchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
1500	132	17.6 (23.6)	112 (82.6)	40	326	50.0	3150	4500	1PH8131-2 F2 -... 1
		23.1 (31.0)	147 (108)	42	371	50.0	2450	4500	1PH8133-2 F2 -... 1
		29.7 (39.8)	189 (139)	57	384	50.0	2650	4500	1PH8135-2 F2 -... 1
		32.7 (43.9)	208 (153)	58	371	50.0	2350	4500	1PH8137-2 F2 -... 1
		44.9 (60.2)	286 (211)	118	316	50.0	3500	4500	1PH8138-2 F2 -... 1
160	59.0 (79.1)	375 (277)	111	380	100.0	2400	4000	1PH8164-2 F2 -... 1	
	74.0 (99.2)	475 (350)	148	355	100.0	2600	4000	1PH8166-2 F2 -... 1	
	84.0 (113)	530 (391)	169	355	100.0	2600	4000	1PH8168-2 F2 -... 1	
2000	132	30.6 (41.0)	146 (108)	57	383	66.7	3450	4500	1PH8133-2 G2 -... 1
		39.0 (52.3)	186 (137)	81	346	66.7	3800	4500	1PH8135-2 G2 -... 1
		44.4 (59.5)	212 (156)	85	371	66.7	3500	4500	1PH8137-2 G2 -... 1
		59.3 (79.5)	283 (209)	131	374	66.7	3900	4500	1PH8138-2 G2 -... 1
2500	132	28.5 (38.2)	109 (80.4)	57	359	83.3	4500	4500	1PH8131-2 L2 -... 1
		88.0 (118)	335 (247)	165	355	167.0	4000	4000	1PH8164-2 L2 -... 1
	160	102 (137)	390 (288)	188	380	167.0	3900	4000	1PH8166-2 L2 -... 1
		119 (160)	455 (336)	225	355	167.0	4000	4000	1PH8168-2 L2 -... 1
Line voltage 400 V 3 AC, Active Line Module									
1750	132	20.4 (27.4)	112 (82.6)	40	377	58.3	3150	4500	1PH8131-2 F2 -... 1
		26.4 (35.4)	144 (106)	42	415	58.3	2450	4500	1PH8133-2 F2 -... 1
		34.1 (45.7)	186 (137)	56	415	58.3	2650	4500	1PH8135-2 F2 -... 1
		37.0 (49.6)	202 (149)	58	415	58.3	2350	4500	1PH8137-2 F2 -... 1
		52.4 (70.3)	286 (211)	118	366	58.3	3500	4500	1PH8138-2 F2 -... 1
160	67.0 (89.9)	365 (269)	108	440	117.0	2400	4000	1PH8164-2 F2 -... 1	
	85.0 (114)	460 (339)	143	410	117.0	2600	4000	1PH8166-2 F2 -... 1	
	94.0 (126)	510 (376)	164	410	117.0	2600	4000	1PH8168-2 F2 -... 1	
2300	132	34.9 (46.8)	145 (107)	57	415	76.7	3450	4500	1PH8133-2 G2 -... 1
		44.3 (59.4)	184 (136)	80	395	76.7	3800	4500	1PH8135-2 G2 -... 1
		50.5 (67.7)	210 (155)	84	424	76.7	3500	4500	1PH8137-2 G2 -... 1
		67.7 (90.8)	281 (207)	130	415	76.7	3900	4500	1PH8138-2 G2 -... 1
2800	132	31.7 (42.5)	108 (79.7)	56	400	93.3	4500	4500	1PH8131-2 L2 -... 1
		93.0 (125)	315 (232)	156	395	187.0	4000	4000	1PH8164-2 L2 -... 1
	160	109 (146)	375 (277)	177	420	187.0	3900	4000	1PH8166-2 L2 -... 1
		123 (165)	420 (310)	210	395	187.0	4000	4000	1PH8168-2 L2 -... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors
Water cooling, IP65 degree of protection

Motor type (repeated)	Static torque	Static current	Efficiency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
							I_{rated}	
	M_0	I_0	η	J	kg (lb)	Type	A	
	Nm (lb _f -ft)	A		kgm ² (lb _f -in-s ²)				
1PH8131-2. F 2...	115 (84.8)	41	0.946	0.0446 (0.39)	102 (225)	gk843	45	6SL312-1TE24-5AA3
1PH8133-2. F 2...	155 (114)	43	0.947	0.0600 (0.53)	120 (265)	gk843	45	6SL312-1TE24-5AA3
1PH8135-2. F 2...	196 (145)	59	0.950	0.0750 (0.66)	138 (304)	gk843	60	6SL312-1TE26-0AA3
1PH8137-2. F 2...	226 (167)	60	0.951	0.0885 (0.78)	153 (337)	gk843	60	6SL312-1TE26-0AA3
1PH8138-2. F 2...	290 (214)	120 ⁴⁾	0.958	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8164-2. F 2...	440 (325)	118	0.940	0.1750 (1.55)	224 (494)	gk874	132	6SL312-1TE31-3AA3
1PH8166-2. F 2...	550 (406)	159	0.940	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8168-2. F 2...	620 (457)	179	0.940	0.2440 (2.16)	279 (615)	gk874	200	6SL312-1TE32-0AA3
1PH8133-2. G 2...	155 (114)	61	0.950	0.0600 (0.53)	120 (265)	gk843	60	6SL312-1TE26-0AA3
1PH8135-2. G 2...	196 (145)	85 ⁴⁾	0.952	0.0750 (0.66)	138 (304)	gk843	85	6SL312-1TE28-5AA3
1PH8137-2. G 2...	226 (167)	90 ⁴⁾	0.954	0.0885 (0.78)	153 (337)	gk843	85	6SL312-1TE28-5AA3
1PH8138-2. G 2...	290 (214)	133 ⁴⁾	0.960	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8131-2. L 2...	115 (84.8)	60	0.948	0.0446 (0.39)	102 (225)	gk843	60	6SL312-1TE26-0AA3
1PH8164-2. L 2...	440 (325)	205	0.955	0.1750 (1.55)	224 (494)	gk874	200	6SL312-1TE32-0AA3
1PH8166-2. L 2...	550 (406)	240	0.955	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8168-2. L 2...	520 (384)	240	0.955	0.2440 (2.16)	279 (615)	gk874	260	6SL3320-1TE32-1AA3
1PH8131-2. F 2...	115 (84.8)	41	0.947	0.0446 (0.39)	102 (225)	gk843	45	6SL312-1TE24-5AA3
1PH8133-2. F 2...	155 (114)	43	0.948	0.0600 (0.53)	120 (265)	gk843	45	6SL312-1TE24-5AA3
1PH8135-2. F 2...	196 (145)	59	0.951	0.0750 (0.66)	138 (304)	gk843	60	6SL312-1TE26-0AA3
1PH8137-2. F 2...	226 (167)	60	0.952	0.0885 (0.78)	153 (337)	gk843	60	6SL312-1TE26-0AA3
1PH8138-2. F 2...	290 (214)	120 ⁴⁾	0.959	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8164-2. F 2...	440 (325)	118	0.943	0.1750 (1.55)	224 (494)	gk874	132	6SL312-1TE31-3AA3
1PH8166-2. F 2...	550 (406)	159	0.943	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8168-2. F 2...	620 (457)	179	0.943	0.2440 (2.16)	279 (615)	gk874	200	6SL312-1TE32-0AA3
1PH8133-2. G 2...	155 (114)	61	0.951	0.0600 (0.53)	120 (265)	gk843	60	6SL312-1TE26-0AA3
1PH8135-2. G 2...	196 (145)	85 ⁴⁾	0.953	0.0750 (0.66)	138 (304)	gk843	85	6SL312-1TE28-5AA3
1PH8137-2. G 2...	226 (167)	90 ⁴⁾	0.956	0.0885 (0.78)	153 (337)	gk843	85	6SL312-1TE28-5AA3
1PH8138-2. G 2...	290 (214)	133 ⁴⁾	0.961	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8131-2. L 2...	115 (84.8)	60	0.949	0.0446 (0.39)	102 (225)	gk843	60	6SL312-1TE26-0AA3
1PH8164-2. L 2...	440 (325)	205	0.959	0.1750 (1.55)	224 (494)	gk874	200	6SL312-1TE32-0AA3
1PH8166-2. L 2...	550 (406)	240	0.959	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8167-2. L 2...	520 (384)	240	0.959	0.2440 (2.16)	279 (615)	gk874	260	6SL3320-1TE32-1AA3

Cooling:

Internal air cooling
External air cooling

0
1

¹⁾ $n_{max,Inv}$: Maximum permissible operating speed based on the induced voltage in the motor and the voltage strength of the Motor Module (without protective circuit).

²⁾ n_{max} : Maximum speed that must not be exceeded.

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz.

⁴⁾ Above approx. 85 A, connection type "Power connector top" is not possible (15th data position E to H).
Power connector is generally not possible with 1PH816.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors Water cooling, IP65 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed, max. ¹⁾	Speed, max. ²⁾	1PH8 synchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{\text{max, Inv}}$ rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
2000	132	23.2 (31.1)	111 (81.9)	39	427	66.7	3150	4500	1PH8131-2 F2 -... 1
		29 (38.9)	139 (103)	41	449	66.7	2450	4500	1PH8133-2 F2 -... 1
		37.9 (50.8)	181 (134)	56	449	66.7	2650	4500	1PH8135-2 F2 -... 1
		40.6 (54.4)	194 (143)	57	449	66.7	2350	4500	1PH8137-2 F2 -... 1
		59.7 (80.1)	285 (210)	118	416	66.7	3500	4500	1PH8138-2 F2 -... 1
160	70 (93.9)	330 (243)	105	500	133.0	2400	4000	1PH8164-2 F2 -... 1	
	89 (119)	425 (314)	138	465	133.0	2600	4000	1PH8166-2 F2 -... 1	
	100 (134)	480 (354)	157	465	133.0	2600	4000	1PH8168-2 F2 -... 1	
2650	132	39.1 (52.4)	141 (104)	57	449	88.3	3450	4500	1PH8133-2 G2 -... 1
		50.5 (67.7)	182 (134)	79	452	88.3	3800	4500	1PH8135-2 G2 -... 1
		56.8 (76.2)	205 (151)	83	449	88.3	3500	4500	1PH8137-2 G2 -... 1
		76.3 (102)	275 (203)	130	449	88.3	3900	4500	1PH8138-2 G2 -... 1
3000	132	33.6 (45.1)	107 (78.9)	56	427	100.0	4500	4500	1PH8131-2 L2 -... 1
		96 (129)	305 (225)	150	420	200.0	4000	4000	1PH8164-2 L2 -... 1
	160	110 (148)	350 (258)	169	450	200.0	3900	4000	1PH8166-2 L2 -... 1
		125 (168)	395 (291)	197	420	200.0	4000	4000	1PH8168-2 L2 -... 1

For versions, see
Order No. supplement
and options on page 5/54.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors
Water cooling, IP65 degree of protection

Motor type (repeated)	Static torque	Static current	Efficiency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
							I_{rated} A	
	M_0 Nm (lb _f -ft)	I_0 A	η	J kgm ² (lb _f -in-s ²)	kg (lb)	Type		
1PH8131-2 . F 2...	115 (84.8)	41	0.948	0.0446 (0.39)	102 (225)	gk843	45	6SL312-1TE24-5AA3
1PH8133-2 . F 2...	155 (114)	43	0.949	0.0600 (0.53)	120 (265)	gk843	45	6SL312-1TE24-5AA3
1PH8135-2 . F 2...	196 (145)	59	0.952	0.0750 (0.66)	138 (304)	gk843	60	6SL312-1TE26-0AA3
1PH8137-2 . F 2...	226 (167)	60	0.953	0.0885 (0.78)	153 (337)	gk843	60	6SL312-1TE26-0AA3
1PH8138-2 . F 2...	290 (214)	120 ⁴⁾	0.960	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8164-2 . F 2...	440 (325)	118	0.946	0.1750 (1.55)	224 (494)	gk874	132	6SL312-1TE31-3AA3
1PH8166-2 . F 2...	550 (406)	159	0.946	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8168-2 . F 2...	620 (457)	179	0.946	0.2440 (2.16)	279 (615)	gk874	200	6SL312-1TE32-0AA3
1PH8133-2 . G 2...	155 (114)	61	0.952	0.0600 (0.53)	120 (265)	gk843	60	6SL312-1TE26-0AA3
1PH8135-2 . G 2...	196 (145)	85 ⁴⁾	0.954	0.0750 (0.66)	138 (304)	gk843	85	6SL312-1TE28-5AA3
1PH8137-2 . G 2...	226 (167)	90 ⁴⁾	0.958	0.0885 (0.78)	153 (337)	gk843	85	6SL312-1TE28-5AA3
1PH8138-2 . G 2...	290 (214)	133 ⁴⁾	0.962	0.0885 (0.78)	156 (344)	gk843	132	6SL312-1TE31-3AA3
1PH8131-2 . L 2...	115 (84.8)	60	0.950	0.0446 (0.39)	102 (225)	gk843	60	6SL312-1TE26-0AA3
1PH8164-2 . L 2...	440 (325)	205	0.960	0.1750 (1.55)	224 (494)	gk874	200	6SL312-1TE32-0AA3
1PH8166-2 . L 2...	550 (406)	240	0.960	0.2160 (1.91)	257 (567)	gk874	200	6SL312-1TE32-0AA3
1PH8168-2 . L 2...	520 (384)	240	0.960	0.2440 (2.16)	279 (615)	gk874	260	6SL3320-1TE32-1AA3

Cooling:

Internal air cooling
External air cooling

0
1

5

¹⁾ $n_{\text{max,Inv}}$: Maximum permissible operating speed based on the induced voltage in the motor and the voltage strength of the Motor Module (without protective circuit).

²⁾ n_{max} : Maximum speed that must not be exceeded.

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz.

⁴⁾ Above approx. 85 A, connection type "Power connector top" is not possible (15th data position E to H).
Power connector is generally not possible with 1PH816.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed, max. ¹⁾	Speed, max. ²⁾	1PH8 synchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
700	180	42 (56.3)	573 (423)	100	303	47	1450	3800	1PH8184-2 C2 -... 1
		58 (77.8)	791 (583)	142	295	47	1450	3800	1PH8186-2 C2 -... 1
	225	72 (96.6)	982 (724)	180	275	47	1450	3500	1PH8224-2 C2 -... 1
		95 (127)	1296 (956)	255	255	47	1550	3500	1PH8226-2 C2 -... 1
		121 (162)	1651 (1218)	305	270	47	1450	3500	1PH8228-2 C2 -... 1
1000	180	61 (82)	583 (430)	140	313	67	1950	3800	1PH8184-2 D2 -... 1
		80 (107)	764 (564)	190	300	67	2050	3800	1PH8186-2 D2 -... 1
	225	101 (135)	964 (711)	255	275	67	2050	3500	1PH8224-2 D2 -... 1
		135 (181)	1289 (951)	325	285	67	1950	3500	1PH8226-2 D2 -... 1
		169 (227)	1614 (1190)	395	290	67	1950	3500	1PH8228-2 D2 -... 1
1500	180	90 (121)	573 (423)	190	334	100	2700	3800	1PH8184-2 F2 -... 1
		119 (160)	758 (559)	275	305	100	2950	3800	1PH8186-2 F2 -... 1
	225	151 (202)	961 (709)	355	290	100	2900	3500	1PH8224-2 F2 -... 1
		201 (270)	1280 (944)	445	305	100	2700	3500	1PH8226-2 F2 -... 1
		251 (337)	1598 (1179)	590	285	100	2900	3500	1PH8228-2 F2 -... 1
2500	180	127 (170)	485 (358)	260	328	167	3800	3800	1PH8184-2 L2 -... 1
		168 (225)	642 (474)	370	305	167	3800	3800	1PH8186-2 L2 -... 1
	225	182 (244)	695 (513)	365	320	167	3500	3500	1PH8224-2 L2 -... 1
		228 (306)	871 (642)	400	360	167	3500	3500	1PH8226-2 L2 -... 1
		270 (362)	1031 (760)	570	300	167	3500	3500	1PH8228-2 L2 -... 1
Line voltage 400 V 3 AC, Active Line Module									
800	180	48 (64.4)	573 (423)	102	342	53	1450	3800	1PH8184-2 C2 -... 1
		66 (88.5)	788 (581)	142	335	53	1450	3800	1PH8186-2 C2 -... 1
	225	81 (109)	967 (713)	178	310	53	1450	3500	1PH8224-2 C2 -... 1
		108 (145)	1289 (951)	255	287	53	1550	3500	1PH8226-2 C2 -... 1
		138 (185)	1647 (1215)	305	315	53	1450	3500	1PH8228-2 C2 -... 1
1150	180	70 (93.9)	581 (429)	140	386	77	1950	3800	1PH8184-2 D2 -... 1
		92 (123)	764 (564)	190	345	77	2050	3800	1PH8186-2 D2 -... 1
	225	115 (154)	955 (704)	250	310	77	2050	3500	1PH8224-2 D2 -... 1
		155 (208)	1287 (949)	325	325	77	1950	3500	1PH8226-2 D2 -... 1
		194 (260)	1611 (1188)	395	330	77	1950	3500	1PH8228-2 D2 -... 1
1750	180	103 (138)	562 (415)	186	386	117	2700	3800	1PH8184-2 F2 -... 1
		138 (185)	753 (555)	275	355	117	2950	3800	1PH8186-2 F2 -... 1
	225	175 (235)	955 (704)	355	335	117	2900	3500	1PH8224-2 F2 -... 1
		233 (312)	1271 (937)	440	355	117	2700	3500	1PH8226-2 F2 -... 1
		289 (388)	1577 (1163)	580	335	117	2900	3500	1PH8228-2 F2 -... 1
2900	180	140 (188)	461 (340)	250	375	193	3800	3800	1PH8184-2 L2 -... 1
		178 (239)	586 (432)	340	345	193	3800	3800	1PH8186-2 L2 -... 1
	225	191 (256)	629 (464)	335	370	193	3500	3500	1PH8224-2 L2 -... 1
		238 (319)	784 (578)	365	413	193	3500	3500	1PH8226-2 L2 -... 1
		283 (380)	932 (687)	520	345	193	3500	3500	1PH8228-2 L2 -... 1

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Static torque	Static current	Efficiency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system
							I_{rated}	Order No.
	M_0	I_0	η	J			A	
	Nm (lb _f -ft)	A		kgm ² (lb _f -in-s ²)	kg (lb)	Type		
1PH8184-2. C 2...	590 (435)	103	0.919	0.457 (4.04)	330 (728)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-2. C 2...	800 (590)	143	0.924	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. C 2...	1007 (743)	183	0.947	1.28 (11.3)	580 (1279)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-2. C 2...	1330 (981)	260	0.952	1.66 (14.7)	700 (1544)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8228-2. C 2...	1680 (1239)	306	0.955	2.02 (17.9)	810 (1786)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8184-2. D 2...	600 (443)	143	0.937	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. D 2...	800 (590)	196	0.943	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. D 2...	1007 (743)	262	0.956	1.28 (11.3)	580 (1279)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8226-2. D 2...	1330 (981)	330	0.960	1.66 (14.7)	700 (1544)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-2. D 2...	1680 (1239)	408	0.962	2.02 (17.9)	810 (1786)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-2. F 2...	600 (443)	196	0.951	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. F 2...	800 (590)	285	0.952	0.599 (5.30)	400 (882)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8224-2. F 2...	1007 (743)	367	0.962	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. F 2...	1330 (981)	454	0.965	1.66 (14.7)	700 (1544)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8228-2. F 2...	1680 (1239)	612	0.964	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-2. L 2...	530 (391)	278	0.957	0.457 (4.04)	330 (728)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8186-2. L 2...	720 (531)	405	0.957	0.599 (5.30)	400 (882)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8224-2. L 2...	885 (653)	460	0.961	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. L 2...	1170 (863)	532	0.962	1.66 (14.7)	700 (1544)	1XB7700-P02	380 ⁴⁾	6SL3320-1TE33-8AA3
1PH8228-2. L 2...	1400 (1033)	762	0.963	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-2. C 2...	590 (435)	103	0.926	0.457 (4.04)	330 (728)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-2. C 2...	800 (590)	143	0.931	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. C 2...	1007 (743)	183	0.952	1.28 (11.3)	580 (1279)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-2. C 2...	1330 (981)	260	0.956	1.66 (14.7)	700 (1544)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8228-2. C 2...	1680 (1239)	306	0.958	2.02 (17.9)	810 (1786)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8184-2. D 2...	600 (443)	143	0.942	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. D 2...	800 (590)	196	0.948	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. D 2...	1007 (743)	262	0.959	1.28 (11.3)	580 (1279)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8226-2. D 2...	1330 (981)	330	0.962	1.66 (14.7)	700 (1544)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-2. D 2...	1680 (1239)	408	0.964	2.02 (17.9)	810 (1786)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-2. F 2...	600 (443)	196	0.954	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. F 2...	800 (590)	285	0.955	0.599 (5.30)	400 (882)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8224-2. F 2...	1007 (743)	367	0.963	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. F 2...	1330 (981)	454	0.965	1.66 (14.7)	700 (1544)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8228-2. F 2...	1680 (1239)	612	0.965	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-2. L 2...	530 (391)	278	0.956	0.457 (4.04)	330 (728)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8186-2. L 2...	720 (531)	405	0.955	0.599 (5.30)	400 (882)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8224-2. L 2...	885 (653)	460	0.958	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. L 2...	1170 (863)	532	0.958	1.66 (14.7)	700 (1544)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-2. L 2...	1400 (1033)	762	0.958	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3

¹⁾ $n_{max,Inv}$: Maximum permissible operating speed based on the induced voltage in the motor and the voltage strength of the Motor Module (without protective circuit).

²⁾ n_{max} : Maximum speed that must not be exceeded.

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

⁴⁾ The rated output current of the Motor Module is lower than the motor rated current at 2.0 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors Water cooling, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Rated frequency	Operating speed, max. ¹⁾	Speed, max. ²⁾	1PH8 synchronous motor Water cooling
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
1000	180	60 (80.5)	573 (423)	102	423	67	1450	3800	1PH8184-2 C2 -... 1
		82 (110)	783 (578)	140	415	67	1450	3800	1PH8186-2 C2 -... 1
	225	101 (135)	964 (711)	178	385	67	1450	3500	1PH8224-2 C2 -... 1
		134 (180)	1280 (944)	255	357	67	1550	3500	1PH8226-2 C2 -... 1
		172 (231)	1642 (1211)	300	390	67	1450	3500	1PH8228-2 C2 -... 1
1350	180	82 (110)	580 (428)	140	417	90	1950	3800	1PH8184-2 D2 -... 1
		107 (143)	757 (558)	190	400	90	2050	3800	1PH8186-2 D2 -... 1
	225	135 (181)	955 (704)	250	365	90	2050	3500	1PH8224-2 D2 -... 1
		180 (241)	1273 (939)	320	380	90	1950	3500	1PH8226-2 D2 -... 1
		226 (303)	1599 (1179)	395	395	90	1950	3500	1PH8228-2 D2 -... 1
2000	180	110 (148)	525 (387)	176	434	133	2700	3800	1PH8184-2 F2 -... 1
		154 (207)	735 (542)	265	400	133	2950	3800	1PH8186-2 F2 -... 1
	225	186 (249)	888 (655)	330	380	133	2900	3500	1PH8224-2 F2 -... 1
		248 (333)	1184 (873)	410	390	133	2700	3500	1PH8226-2 F2 -... 1
		310 (416)	1480 (1092)	550	380	133	2900	3500	1PH8228-2 F2 -... 1
3200	180	142 (190)	424 (313)	230	405	213	3800	3800	1PH8184-2 L2 -... 1
		183 (245)	546 (403)	315	375	213	3800	3800	1PH8186-2 L2 -... 1
	225	196 (263)	585 (431)	310	400	213	3500	3500	1PH8224-2 L2 -... 1
		245 (329)	731 (539)	340	460	213	3500	3500	1PH8226-2 L2 -... 1
		291 (390)	868 (640)	485	380	213	3500	3500	1PH8228-2 L2 -... 1

For versions, see
Order No. supplement
and options on page 5/56.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 synchronous motors
Water cooling, IP55 degree of protection

Motor type (repeated)	Static torque	Static current	Effi- ciency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
							Rated output current ³⁾	For additional versions and components see chapter SINAMICS S120 drive system
							I_{rated}	Order No.
	M_0	I_0	η	J			A	
	Nm (lb _f -ft)	A		kgm ² (lb _f -in-s ²)	kg (lb)	Type		
1PH8184-2. C 2...	590 (435)	103	0.937	0.457 (4.04)	330 (728)	1XB7322-P05	132	6SL3120-1TE31-3AA3
1PH8186-2. C 2...	800 (590)	143	0.941	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. C 2...	1007 (743)	183	0.957	1.28 (11.3)	580 (1279)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8226-2. C 2...	1330 (981)	260	0.960	1.66 (14.7)	700 (1544)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8228-2. C 2...	1680 (1239)	306	0.961	2.02 (17.9)	810 (1786)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8184-2. D 2...	600 (443)	143	0.946	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. D 2...	800 (590)	196	0.952	0.599 (5.30)	400 (882)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8224-2. D 2...	1007 (743)	262	0.961	1.28 (11.3)	580 (1279)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8226-2. D 2...	1330 (981)	330	0.964	1.66 (14.7)	700 (1544)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-2. D 2...	1680 (1239)	408	0.965	2.02 (17.9)	810 (1786)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8184-2. F 2...	600 (443)	196	0.957	0.457 (4.04)	330 (728)	1XB7322-P05	200	6SL3120-1TE32-0AA3
1PH8186-2. F 2...	800 (590)	285	0.956	0.599 (5.30)	400 (882)	1XB7700-P02	310	6SL3320-1TE33-1AA3
1PH8224-2. F 2...	1007 (743)	367	0.964	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. F 2...	1330 (981)	454	0.965	1.66 (14.7)	700 (1544)	1XB7700-P02	490	6SL3320-1TE35-0AA3
1PH8228-2. F 2...	1680 (1239)	612	0.964	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3
1PH8184-2. L 2...	530 (391)	278	0.954	0.457 (4.04)	330 (728)	1XB7700-P02	260	6SL3320-1TE32-6AA3
1PH8186-2. L 2...	720 (531)	405	0.953	0.599 (5.30)	400 (882)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8224-2. L 2...	885 (653)	460	0.954	1.28 (11.3)	580 (1279)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8226-2. L 2...	1170 (863)	532	0.954	1.66 (14.7)	700 (1544)	1XB7700-P02	380	6SL3320-1TE33-8AA3
1PH8228-2. L 2...	1400 (1033)	762	0.954	2.02 (17.9)	810 (1786)	1XB7712-P03	745	6SL3320-1TE37-5AA3

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¹⁾ $n_{max,Inv}$: Maximum permissible operating speed based on the induced voltage in the motor and the voltage strength of the Motor Module (without protective circuit).

²⁾ n_{max} : Maximum speed that must not be exceeded.

³⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH808/1PH810/1PH813/1PH816 motors

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Shaft height 80	1	P	H	8	0	8	.	-	.	■	.	■	■	-	■	■	■	1	-	Z
Shaft height 100	1	P	H	8	1	0	.													
Shaft height 132	1	P	H	8	1	3	.													
Shaft height 160	1	P	H	8	1	6	.													
Overall length¹⁾							.													
Asynchronous variant									1											
Synchronous variant (1PH813/1PH816)									2											
Encoder systems for motors without DRIVE-CLiQ interface																				
Without encoder ²⁾																				
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R) ³⁾																				
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) ²⁾⁴⁾																				
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) ²⁾⁵⁾																				
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R) ³⁾																				
Encoder systems for motors with DRIVE-CLiQ interface																				
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ) ³⁾																				
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ) ³⁾																				
Rated speeds at 380 V to 480 V 3 AC (winding design)																				
400 rpm/500 rpm/600 rpm																				
1000 rpm/1150 rpm/1350 rpm																				
1500 rpm/1750 rpm/2000 rpm																				
2000 rpm/2300 rpm/2650 rpm																				
2500 rpm/2800 rpm/3000 rpm																				
3000 rpm/3300 rpm/3600 rpm																				
Cooling																				
Degree of protection																				
Forced ventilation IP55																				
DE → NDE																				
Forced ventilation IP55																				
NDE → DE																				
Water cooling IP65																				
Type of construction																				
IM B3 (IM V5, IM V6)																				
IM B5 (IM V1, IM V3)																				
IM B35 (IM V15, IM V35) ⁶⁾																				

For 13th to 15th data position of the Order No., see page 5/55.

- 1) Not selectable. Determined by the choice of rated power.
- 2) Only possible with 8th data position "1" (asynchronous variant).
- 3) Limited to $n_{max} = 12000$ rpm.
- 4) Limited to $n_{max} = 9000$ rpm.
- 5) Limited to $n_{max} = 4600$ rpm.
- 6) Only possible with 1PH810 to 1PH816.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH808/1PH810/1PH813/1PH816 motors (continued)

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1	P	H	8	.	.	.	-	.	■	■	■	-	■	■	■	1	-	Z	
Shaft extension DE	Balancing																			
Plain shaft	-													0						
Fitted key	Full-key													1						
Fitted key	Half-key													2						
Bearing	Vibration magnitude acc. to Siemens/EN 60034-14²⁾												Shaft and flange accuracy²⁾							
Standard	R/A												R				B			
Standard	S/A												R				C			
Standard ¹⁾	SR/A												SPECIAL				D			
Performance ³⁾	SPECIAL/B												SPECIAL				L			
Advanced lifetime ⁴⁾	S/A												R				Q			
Cable connection (view of DE)																				
<u>Terminal box</u>	<u>Cable entry</u>					<u>Signal connection</u>														
Top	Right					DE						A								
Top	Left					DE						B								
Top	NDE					Left						C								
<u>Power connector⁵⁾</u>																				
Top	Right					DE						E								
Top	Left					DE						F								
Top	NDE					Left						G								
Top	DE					Left						H								
Version status																1				
Special version (order codes are required for options, see page 5/60)																-	Z			

Ordering example

Selection criteria	Design	Structure of the order number
1PH8 motor	Synchronous variant, water cooling Shaft height 132 version status 1	1PH8131-2..2.-...1
Encoder system	Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	1PH8131-2M.2.-...1
Rated operating point	1500 rpm, 17.6 kW (23.6 HP), 112 Nm (82.6 lb _f -ft)	1PH8131-2MF2.-...1
Type of construction	IM B3 (IM V5, IM V6)	1PH8131-2MF20-...1
Shaft extension DE	Plain shaft	1PH8131-2MF20-0..1
Bearing version	Standard Vibration magnitude R/A Shaft and flange accuracy R	1PH8131-2MF20-0B.1
Connection	Cable connection terminal box top Cable entry on the right Signal connection DE	1PH8131-2MF20-0BA1
Options		1PH8131-2MF20-0BA1-Z
	Additional PTC thermistor chain for alarm and tripping	1PH8131-2MF20-0BA1-Z A12
	Special paint finish worldwide: sky blue, RAL 5015	1PH8131-2MF20-0BA1-Z A12+K23+X05

¹⁾ Only possible with 8th data position "1" (asynchronous variant).

²⁾ For definition, see 1PH8 Configuration Manual

³⁾ Only possible with 8th data position "1" (asynchronous variant),
 1PH808: Limited to $n_{max} = 15000$ rpm
 1PH810: Limited to $n_{max} = 12000$ rpm
 1PH813: Limited to $n_{max} = 10000$ rpm
 1PH816: Limited to $n_{max} = 9000$ rpm. Not possible with 12th data position "2" (IM B5)

⁴⁾ Limited to $n_{max} = 5000$ rpm.
 1PH813: Limited to $n_{max} = 4500$ rpm
 1PH816: Limited to $n_{max} = 4000$ rpm.

⁵⁾ With 1PH810, power connector is only possible up to a maximum static current of $I_0 = 36$ A.
 With 1PH813, power connector is only possible up to a maximum static current of $I_0 = 85$ A.
 Not possible for 1PH816.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH818/1PH822/1PH828 motors

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Shaft height 180	1	P	H	8	1	8	.	-	.	■	.	■	■	-	■	■	■	1	-	Z
Shaft height 225	1	P	H	8	2	2	.													
Shaft height 280	1	P	H	8	2	8	.													
Overall length¹⁾	.																			
Asynchronous variant									1											
Synchronous variant (1PH818/1PH822)									2											
Encoder systems for motors without DRIVE-CLiQ interface																				
Without encoder ²⁾																				
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)																				
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) ²⁾																				
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) ²⁾³⁾																				
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)																				
Encoder systems for motors with DRIVE-CLiQ interface																				
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)																				
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)																				
Rated speeds at 380 V to 480 V 3 AC (winding design)																				
400 rpm/500 rpm/600 rpm																				
700 rpm/800 rpm/1000 rpm																				
1000 rpm/1150 rpm/1350 rpm																				
1500 rpm/1750 rpm/2000 rpm																				
2500 rpm/2900 rpm/3200 (3400) rpm																				
Rated speeds at 690 V 3 AC (1PH828) (winding design)																				
400 rpm/500 rpm																				
700 rpm/800 rpm																				
1000 rpm/1150 rpm																				
1500 rpm/1750 rpm																				
Cooling																				
Degree of protection																				
Water cooling																				
IP55																				
Type of construction																				
1PH818																				
1PH822																				
1PH828																				
• IM B3 (IM B6, IM B7, IM B8, IM V6)																				
• IM V5																				
• IM B5 with A450 flange (IM V3) ⁴⁾																				
• IM B35 with A450 flange (IM V35)																				
• IM V15 with A450 flange																				
• IM V5																				
• IM B5 with A550 flange (IM V3) ⁵⁾																				
• IM B35 with A550 flange (IM V35)																				
• IM V15 with A550 flange																				
• IM B3 (IM V6)																				
• IM V5 ⁷⁾																				
• IM B5 with A660 flange (IM V3) ⁶⁾⁷⁾																				
• IM B35 with A660 flange (IM V35)																				
• IM V15 with A660 flange ⁷⁾																				
0																				
1																				
2																				
3																				
5																				

For 13th to 15th data position of the Order No., see page 5/57.

¹⁾ Not selectable. Determined by the choice of rated power.

²⁾ Only possible with 8th data position "1" (asynchronous variant).

³⁾ Limited to $n_{\max} = 4600$ rpm.

⁴⁾ Limited to $n_{\max} = 3000$ rpm. Not possible with 14th data position "L" (bearing performance).

⁵⁾ Limited to $n_{\max} = 2500$ rpm. Not possible with 14th data position "L" (bearing performance).

⁶⁾ Limited to $n_{\max} = 2000$ rpm.

⁷⁾ Only possible with 14th data position A or B (standard bearing).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH818/1PH822/1PH828 motors (continued)

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1	P	H	8	.	.	.	-	.	■	.	■	■	-	■	■	■	1	-	Z
Shaft extension DE	Balancing																			
Plain shaft	-													0						
Fitted key	Full-key													1						
Fitted key	Half-key													2						
Bearing	Vibration magnitude acc. to Siemens/EN 60034-14¹⁾											Shaft and flange accuracy¹⁾								
Standard	A											N					A			
Standard	R/A											R					B			
Increased radial forces	A											N					E			
Increased radial forces	R/A											R					F			
<u>Also possible with 1PH818 and 1PH822:</u>																				
Standard	S/A											R					C			
Standard ²⁾	SR/A											R					D			
Performance ²⁾³⁾	SR/A											R					L			
Cable connection (view of DE)																				
<u>Terminal box</u>	<u>Cable entry</u>					<u>Signal connection</u>														
Top	Right					DE											A			
Top	Left					DE											B			
Top	NDE					Right											C			
Top	DE					Right											D			
Version status																1				
Special version (order codes are required for options, see page 5/60)																-	Z			

Ordering example

Selection criteria	Design	Structure of the order number
1PH8 motor	Asynchronous variant, water cooling Shaft height 180 Version status 1	1PH8184- 1 . . 2 . - . . . 1
Encoder system	Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	1PH8184- 1M . 2 . - . . . 1
Rated operating point	1750 rpm, 82 kW (110 HP), 447 Nm (330 lb _f -ft)	1PH8184- 1MF2 . - . . . 1
Type of construction	IM B3 (IM B6, IM B7, IM B8, IM V6)	1PH8184- 1MF20- . . . 1
Shaft extension DE	Plain shaft	1PH8184- 1MF20-0 . . 1
Bearing version	Standard Vibration magnitude R/A Shaft and flange accuracy R	1PH8184- 1MF20-0B . 1
Connection	Cable connection terminal box top Cable entry on the right Signal connection DE	1PH8184- 1MF20-0BA1
Options		1PH8184- 1MF20-0BA1-Z
	Additional PTC thermistor chain for alarm and tripping	1PH8184- 1MF20-0BA1-Z A12
	Special paint finish worldwide: sky blue, RAL 5015	1PH8184- 1MF20-0BA1-Z A12+K23+X05

¹⁾ For definition, see 1PH8 Configuration Manual

²⁾ Only possible with 8th data position "1" (asynchronous variant).

³⁾ Only possible with 1PH818: Limited to $n_{\max} = 7500$ rpm. Not possible with 12th data position "2" (IM B5 type of construction).
Only possible with 1PH822: Limited to $n_{\max} = 6000$ rpm. Not possible with 12th data position "2" (IM B5 type of construction).

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH835 motors

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16							
Shaft height 355	1	P	H	8	3	5	.	-	1	■	.	■	■	-	■	■	0	-	Z				
Overall length¹⁾	.																						
Asynchronous variant																							
Forced ventilation with noise value 77 dB ²⁾									1														
Encoder systems for motors without DRIVE-CLiQ interface																							
Without encoder																				A			
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)																				E			
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)																				H			
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)																				J			
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)																				M			
Encoder systems for motors with DRIVE-CLiQ interface																							
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)																					F		
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)																					D		
Prepared for mounting external encoder systems³⁾																							
Incremental encoder HTL1024 S/R with solid shaft Mounting of incremental encoder POG 10 D 1024																					K	-	Z
Incremental encoder HTL1024 S/R with solid shaft Incremental encoder POG 10 supplied by customer																					K	-	Z
Incremental encoder HTL1024 S/R with hollow shaft Incremental encoder HOG 28 supplied by customer																				G	-	Z	
Rated speeds at 400 V to 500 V 3 AC (winding design)																							
480 rpm/550 rpm/600 rpm																						B	
640 rpm/750 rpm/800 rpm																						Q	
800 (830) rpm/900 rpm/1000 rpm																							C
1080 rpm/1250 rpm/1350 rpm																							D
Rated speeds at 690 V 3 AC (winding design)																							
550 rpm/600 rpm																							H
750 rpm/800 rpm																							K
900 rpm/1000 rpm																							U
1250 rpm/1350 rpm																							V
Cooling		Degree of protection																					
Forced ventilation		IP55																					
Forced ventilation		IP23 (open-circuit cooling)																					
Type of construction																							
IM B3																0							
IM B35 with A800 flange																3							

For 13th to 15th data position of the Order No., see page 5/59.

¹⁾ Not selectable. Determined by the choice of rated power.

²⁾ 1PH835.-7 asynchronous motors with forced ventilation and noise value of 85 dB, see Catalog CR 1.

³⁾ For more information on incremental encoders, see: www.baumerhuebner.com

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Order No. supplements for 1PH835 motors (continued)

Data position of the Order No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
		1	P	H	8	3	5	.	-	1	■	■	■	-	■	■	■	0	-	Z			
Shaft extension DE		Balancing																					
Plain shaft		-													0								
Fitted key		Full-key													1								
Fitted key		Half-key													2								
Bearing		Vibration magnitude acc. to Siemens/EN 60034-1¹⁾										Shaft and flange accuracy¹⁾											
Standard		A										N			A								
Standard		R/A										R			B								
Increased radial forces		A										N			E								
Increased radial forces		R/A										R			F								
Cable connection (view of DE)		<u>Terminal box</u>		<u>Cable entry</u>		<u>Signal connection</u>		External fan NDE with air inlet from NDE air-flow direction NDE → DE															
NDE right		Bottom		Bottom		NDE		Top										U					
								Left (order code G00 required)										U				-	Z
NDE left		Bottom		Bottom		NDE		Top										V					
								Right (order code G02 required)										V				-	Z
NDE top		Right		Right		NDE		Left (order code G00 required)										W				-	Z
								Right (order code G02 required)										W				-	Z
DE top ²⁾		Right		Right		NDE		Top ²⁾³⁾										X					
								Left (order code G00 required) ²⁾										X				-	Z
								Right (order code G02 required) ²⁾										X				-	Z
Version status															0								
Special version (additional order codes are required for options, see page 5/60)																				-	Z		

Ordering example

Selection criteria	Design	Structure of the order number
1PH8 motor	Asynchronous variant, forced ventilation with noise value of 77 dB Shaft height 355 IP55 degree of protection Version status 0	1PH8350-1 . . 1 . - . . . 0
Encoder system	Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)	1PH8350-1D.1 . - . . . 0
Rated operating point	1080 rpm, 270 kW (362 HP), 2388 Nm (1761 lb _f -ft)	1PH8350-1DF1 . - . . . 0
Type of construction	IM B3	1PH8350-1DF10- . . . 0
Shaft extension DE	Plain shaft	1PH8350-1DF10-0 . . 0
Bearing version	Standard Vibration magnitude R/A Shaft and flange accuracy R	1PH8350-1DF10-0B. 0
Connection	Cable connection, terminal box NDE top Cable entry on the right Signal connection NDE External fan NDE left with air inlet from NDE, air-flow direction NDE → DE	1PH8350-1DF10-0BW0-Z
Options	With air filter	1PH8350-1DF10-0BW0-Z G00+G14
	Special paint finish worldwide: sky blue, RAL 5015	1PH8350-1DF10-0BW0-Z G00+G14+K23+X05

¹⁾ For definition, see 1PH8 Configuration Manual

²⁾ Only possible with 12th data position "0" (IM B3).

³⁾ Only possible for assignments with terminal box 1XB7712-P.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Options

Order code	Description	For use with motors		
		1PH808 1PH810 1PH813 1PH816	1PH818 1PH822 1PH828	1PH835
A12	Additional PTC thermistor chain for alarm and tripping (only possible for version with terminal box)	✓	✓	✓
A25	Additional KTY84 temperature sensor as reserve connected to signal terminal strip (only possible for version with terminal box)	✓	Standard	Standard
G00	External fan NDE left (possible if 15th data position is U, W or X)	–	–	✓
G02	External fan NDE right (possible if 15th data position is V, W or X)	–	–	✓
G14	With air filter	–	–	✓
G80	Mounting of a POG 10 incremental encoder supplied by customer (possible if 9th data position is K)	–	–	✓
H56	Mounting of the POG 10 D 1024 incremental encoder (possible if 9th data position is K)	–	–	✓
H75	Mounting of an HOG 28 incremental encoder supplied by customer (possible if 9th data position is G)	–	–	✓
K08	Encoder connector mounted opposite	–	✓	–
K09	Terminal box or power connector NDE right	✓ For 1PH810 only ^{1)/} 1PH813/1PH816	–	–
	Terminal box NDE right, cable entry DE, signal connection top (possible if 15th data position is A)	–	✓	–
K10	Terminal box or power connector NDE left	✓ For 1PH810 only ^{1)/} 1PH813/1PH816	–	–
	Terminal box NDE left, cable entry DE, signal connection top (possible if 15th data position is A)	–	✓	–
K16	Second shaft extension (d × l: 120 mm × 210 mm (4.72 in × 8.27 in)) (possible if 9th data position is A or G)	–	–	✓
K18	Radial shaft sealing ring DE ²⁾	✓	✓	–
K40	Regreasing system, DE and NDE	–	✓ Only for 1PH818/1PH822	Standard
		–	Standard with 1PH828	
K80	Axial pipe connection NDE (only possible with forced ventilation)	✓	–	✓
K83	Rotation of terminal box by +90 degrees (possible in combination with options K09 or K10)	–	✓ ⁴⁾	–
K84	Rotation of terminal box by -90 degrees (possible in combination with options K09 or K10)	–	✓ ⁴⁾	–
K85	Rotation of terminal box by +180 degrees (possible in combination with options K09 or K10)	–	✓	–
K90	Version with flange size A400 (possible if 12th data position 2, 3 and 5)	–	✓ Only for 1PH818	–
L00	Replace terminal box (standard) with the next largest terminal box Note dimension implications, see CAD CREATOR.	–	✓	✓
L27	NDE bearing in insulated version	–	✓ Only for 1PH818	Standard
		–	Standard with 1PH822/1PH828	
L74	Fan version in IP65 degree of protection ³⁾	✓	–	–

✓ Option available

– Option not available

¹⁾ Not possible with 12th data position "2" (IM B5 type of construction).

²⁾ Only appropriate if oil spray or oil vapor is occasionally deposited on the sealing ring. Radial shaft sealing ring is not possible with: 14th data position E, F and L.

³⁾ Regardless of the degree of protection, at high levels of atmospheric pollution, the fan must be cleaned.

⁴⁾ Not possible for 1PH822 and 1XB7712-P03 terminal box.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH8 asynchronous and synchronous motors

Options (continued)

Order code	Description	For use with motors		
		1PH808 1PH810 1PH813 1PH816	1PH818 1PH822 1PH828	1PH835
P00	Undrilled cable entry plate	–	✓	✓ Not for 1XB7820-P00
P01	Cable entry plate 3 × M63 × 1.5	–	✓ Only for 1XB7700-P02 1XB7712-P03	✓ Only for 1XB7712-P03
P02	Cable entry plate 3 × M75 × 1.5	–	✓ Only for 1XB7712-P03	✓ Only for 1XB7712-P01 1XB7712-P03
P03	Cable entry plate 4 × M75 × 1.5	–	–	✓ Only for 1XB7712-P01
P04	Cable entry plate 4 × M63 × 1.5	–	✓ Only for 1XB7712-P03	✓ Only for 1XB7712-P01 1XB7712-P03
V90	1PH7-compatible shaft extension ($d \times l$: 42 mm × 110 mm (1.65 in × 4.33 in)) (note reduced radial forces)	✓ Only for 1PH813	–	–
–	Paint finish: anthracite RAL 7016	Standard	Standard	Standard
X01	Paint finish: jet black, matt RAL 9005	✓	✓	✓
X02	Paint finish: cream white RAL9001	✓	✓	✓
X03	Paint finish: reseda green RAL 6011	✓	✓	✓
X04	Paint finish: pebble gray RAL 7032	✓	✓	✓
X05	Paint finish: sky blue RAL 5015	✓	✓	✓
X06	Paint finish: light ivory RAL 1015	✓	✓	✓
X08	Paint finish: white aluminum RAL 9006	✓	✓	✓
K24	Primer	✓ Pale green	✓ Red brown	✓ Red brown
K23	Special paint finish worldwide, primer and paint finish: anthracite RAL 7016	✓	✓	✓
K23+X..	Special paint finish worldwide, primer and other paint finish can be selected from X01 to X08	✓	✓	✓

✓ Option available

– Option not available

When ordering a motor with options, **-Z** should be added to the order number.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors Forced ventilation, IP55 degree of protection

Overview



1PH7 motors, shaft heights 180 and 225



1PH7 motors, shaft height 280

The 1PH7 AC motors are compact, force-ventilated squirrel-cage asynchronous motors with degree of protection IP55. The motors are ventilated using a mounted external fan unit.

The motor can be ordered either with the air flow from the motor drive end (DE) to the motor non-drive end (NDE) - or vice versa.

These motors have been designed specifically for use in conjunction with converters. Depending on the control requirements, the appropriate encoder systems are available for the motors. These encoders are used to sense the motor speed and indirect position.

Benefits

- High power density with small motor dimensions
- High degree of protection
- Wide speed control ranges
- Speed down to zero without reducing the torque
- Ruggedness
- Essentially maintenance-free
- Bearings for high cantilever load
- High rotational accuracy, even at the lowest speeds
- Integrated encoder system to sense the motor speed, connected using a connector or DRIVE-CLiQ interface
- Terminal box to connect the power cable
- Motor temperature monitoring with KTY84
- Various types of cooling systems
- Basic external cooling using a pipe connection
- Optional bearing versions with re-lubrication device and insulated bearings (NDE)

Application

Crane systems:

- Hoisting and closing gears for cranes
- Hoisting and traversing gears for high-bay racking vehicles

Printing industry:

- Single and main drives for printing machines

Rubber, plastic, wire, and glass manufacturing:

- Drives for extruders, calenders, rubber injection machines, foil machines, fleece plants
- Wire-drawing machines, cable-stranding machines, etc.

General applications such as coiler and winder drives.

The 1PH7 motors are suitable for installation in dry indoor areas without corrosive atmospheres.

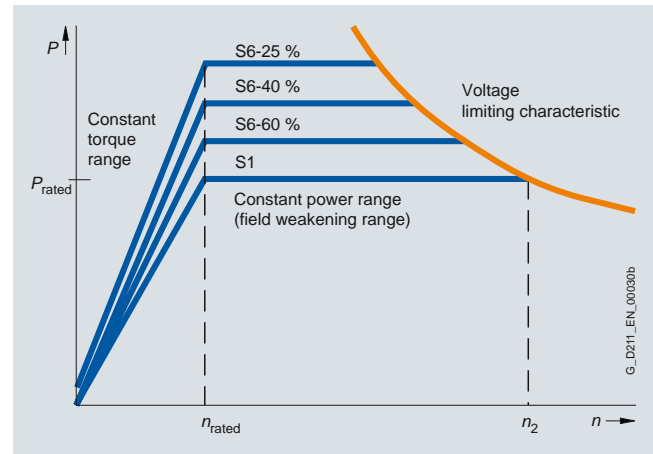
Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Technical specifications

1PH7 motor	
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 155 (F) for a coolant temperature of up to 40 °C (104°F)
Cooling in accordance with EN 60034-6 (IEC 60034-6)	Forced ventilation
<ul style="list-style-type: none"> 1PH718/1PH722 1PH728 	Fan mounted axially at NDE Fan mounted radially at NDE
Temperature monitoring	Temperature sensor KTY84 in the stator winding
<ul style="list-style-type: none"> 1PH728 	1 additional KTY84 as reserve
Motor fan ratings	400 V 3 AC 50/60 Hz 480 V 3 AC 60 Hz
Type of construction in accordance with EN 60034-7 (IEC 60034-7)	IM B3, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5)	IP55 (fan IP54)
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60072-1)	With fitted key, half-key/full-key balancing
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1)¹⁾	Tolerance N/Tolerance R
Vibration magnitude in accordance with Siemens/EN 60034-14 (IEC 60034-14)	
<ul style="list-style-type: none"> 1PH718/1PH722 1PH728 	Grade R/A, grade S/A, grade SR/A Grade A, grade R/A
Sound pressure level L_{pA} (1 m) in accordance with EN ISO 1680, max. Tolerance + 3 dB External fan 50 Hz	Sound pressure level as a function of air-flow direction
Connection	Connector for signals (mating connector not supplied) Terminal box for power
<ul style="list-style-type: none"> 1PH718/1PH722 1PH728 	Terminal box at top Terminal box NDE right
Paint finish	Primed Paint finish anthracite RAL 7016

Characteristic curves



Typical speed/power characteristic for 1PH7 motors

¹⁾ Shaft extension run-out, concentricity of centering ring and shaft and perpendicularity of flange to shaft.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
400	180	16.3 (21.9)	390 (288)	51	271	2100 ⁴⁾	3500 ⁵⁾⁴⁾	5000 ⁴⁾	1PH7184-■ ■ B ■ ■ - ■ ...
		21.2 (28.4)	505 (373)	67	268	2400 ⁴⁾	3500 ⁵⁾⁴⁾	5000 ⁴⁾	1PH7186-■ ■ B ■ ■ - ■ ...
	225	30.4 (40.8)	725 (535)	88	268	1900	3100 ⁵⁾⁴⁾	4500 ⁴⁾	1PH7224-■ ■ B ■ ■ - ■ ...
		39.2 (52.6)	935 (690)	114	264	2200 ⁴⁾	3100 ⁵⁾⁴⁾	4500 ⁴⁾	1PH7226-■ ■ B ■ ■ - ■ ...
		48 (64.4)	1145 (845)	136	272	2200 ⁴⁾	3100 ⁵⁾⁴⁾	4500 ⁵⁾⁴⁾	1PH7228-■ ■ B ■ ■ - ■ ...
1000	180	39 (52.3)	372 (274)	90	335	3300	3500 ⁵⁾	5000	1PH7184-■ ■ D ■ ■ - ■ ...
		51 (68.4)	485 (358)	116	340	3700	3500 ⁵⁾	5000	1PH7186-■ ■ D ■ ■ - ■ ...
	225	71 (95.2)	678 (500)	161	335	2900	3100 ⁵⁾	4500	1PH7224-■ ■ D ■ ■ - ■ ...
		92 (123)	880 (649)	198	340	2900	3100 ⁵⁾	4500	1PH7226-■ ■ D ■ ■ - ■ ...
		113 (152)	1080 (797)	240	340	2900	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■ ■ D ■ ■ - ■ ...
1500	180	51 (68.4)	325 (240)	120	335	5000	3500 ⁵⁾	5000	1PH7184-■ ■ F ■ ■ - ■ ...
		74 (99.2)	471 (347)	170	330	5000	3500 ⁵⁾	5000	1PH7186-■ ■ F ■ ■ - ■ ...
	225	95 (127)	605 (446)	204	340	2900	3100 ⁵⁾	4500	1PH7224-■ ■ U ■ ■ - ■ ...
		130 (174)	828 (611)	278	340	2900	3100 ⁵⁾	4500	1PH7226-■ ■ F ■ ■ - ■ ...
		160 (215)	1019 (752)	350	340	2900	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■ ■ F ■ ■ - ■ ...
2500	180	78 (10.5)	298 (220)	171	340	5000	3500 ⁵⁾	5000	1PH7184-■ ■ L ■ ■ - ■ ...
		106 (142)	405 (299)	235	335	5000	3500 ⁵⁾	5000	1PH7186-■ ■ L ■ ■ - ■ ...
	225	142 (190)	542 (400)	298	340	3500	3100 ⁵⁾	4500	1PH7224-■ ■ L ■ ■ - ■ ...
		168 (225)	642 (438)	362	335	3500	3100 ⁵⁾	4500	1PH7226-■ ■ L ■ ■ - ■ ...
		205 (275)	783 (578)	433	340	3500	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■ ■ L ■ ■ - ■ ...

For versions, see
Order No. supplement and
options on page 5/72.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
		A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Type	A	
1PH7184-..B...	0.84	26	0.830	14.2	0.503 (4.45)	370 (816)	1XB7322	60	6SL3120- 1 TE26-0AA3
1PH7186-..B...	0.81	38.5	0.845	14.0	0.666 (5.89)	440 (970)	1XB7322	85	6SL3120- 1 TE28-5AA3
1PH7224-..B...	0.87	36.5	0.864	14.0	1.479 (13.1)	630 (1389)	1XB7322	85 ⁷⁾	6SL3120- 1 TE28-5AA3
1PH7226-..B...	0.86	49	0.880	14.0	1.930 (17.1)	750 (1654)	1XB7322	132	6SL3120- 1 TE31-3AA3
1PH7228-..B...	0.85	60.5	0.888	13.9	2.326 (20.6)	860 (1896)	1XB7322	132 ⁷⁾	6SL3120- 1 TE31-3AA3
1PH7184-..D...	0.83	44	0.913	34.2	0.503 (4.45)	370 (816)	1XB7322	85 ⁷⁾	6SL3120- 1 TE28-5AA3
1PH7186-..D...	0.81	58	0.918	34.1	0.666 (5.89)	440 (970)	1XB7322	132	6SL3120- 1 TE31-3AA3
1PH7224-..D...	0.81	78.5	0.934	33.9	1.479 (13.1)	630 (1389)	1XB7322	200	6SL3120- 1 TE32-0AA3
1PH7226-..D...	0.84	87.5	0.935	33.9	1.930 (17.1)	750 (1654)	1XB7422	200	6SL3120- 1 TE32-0AA3
1PH7228-..D...	0.85	98	0.938	33.9	2.326 (20.6)	860 (1896)	1XB7700	260	6SL3320- 1 TE32-6AA3
1PH7184-..F...	0.78	64	0.930	50.7	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120- 1 TE31-3AA3
1PH7186-..F...	0.81	84	0.937	50.7	0.666 (5.89)	440 (970)	1XB7422	200	6SL3120- 1 TE32-0AA3
1PH7224-..U...	0.84	88.5	0.944	50.6	1.479 (13.1)	630 (1398)	1XB7422	200 ⁷⁾	6SL3120- 1 TE32-0AA3
1PH7226-..F...	0.84	120	0.945	50.6	1.930 (17.1)	750 (1654)	1XB7700	310	6SL3320- 1 TE33-1AA3
1PH7228-..F...	0.82	169	0.949	50.5	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320- 1 TE33-8AA3
1PH7184-..L...	0.82	77	0.937	84.1	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120- 1 TE32-0AA3
1PH7186-..L...	0.82	108	0.942	84.1	0.666 (5.89)	440 (970)	1XB7422	260	6SL3320- 1 TE32-6AA3
1PH7224-..L...	0.84	115	0.948	84.0	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320- 1 TE33-1AA3
1PH7226-..L...	0.84	154	0.950	84.0	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320- 1 TE33-8AA3
1PH7228-..L...	0.84	185	0.950	83.9	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320- 1 TE35-0AA3

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¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

³⁾ n_{max} : Maximum speed that must not be exceeded.

⁴⁾ The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency $< 5 \times$ motor rated frequency.

⁵⁾ Speed is reduced with increased radial forces, see selection guides.

⁶⁾ The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

⁷⁾ The rated output current of the Motor Module is lower than the motor rated current.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor Forced ventilation	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Active Line Module										
400	180	16.3 (21.9)	390 (288)	51	271	2900 ⁴⁾	3500 ⁴⁾⁵⁾	5000 ⁴⁾	1PH7184-■■■B■■■-■...	
		21.2 (28.4)	505 (373)	67	268	3300 ⁴⁾	3500 ⁴⁾⁵⁾	5000 ⁴⁾	1PH7186-■■■B■■■-■...	
	225	30.4 (40.8)	725 (535)	88	268	2700 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾	1PH7224-■■■B■■■-■...	
		39.2 (52.6)	935 (690)	114	264	2900 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾	1PH7226-■■■B■■■-■...	
		48 (64.4)	1145 (845)	136	272	2900 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾⁵⁾	1PH7228-■■■B■■■-■...	
500	280	80 (107)	1529 (1128)	144	400	1700	2200	3300 ⁴⁾	1PH7284-■■■B■■■-0...	
		100 (134)	1909 (1408)	180	400	1800	2200	3300 ⁴⁾	1PH7286-■■■B■■■-0...	
		130 (174)	2481 (1830)	233	400	1800	2200	3300 ⁴⁾	1PH7288-■■■B■■■-0...	
800	280	125 (168)	1492 (1101)	220	400	2200	2200	3300	1PH7284-■■■C■■■-0...	
		155 (208)	1850 (1365)	285	385	2200	2200	3300	1PH7286-■■■C■■■-0...	
		190 (255)	2268 (1673)	365	370	2200	2200	3300	1PH7288-■■■C■■■-0...	
1150	180	44 (59)	366 (270)	89	383	4200	3500 ⁵⁾	5000	1PH7184-■■■D■■■-■...	
		58 (77.8)	482 (356)	116	390	4400	3500 ⁵⁾	5000	1PH7186-■■■D■■■-■...	
	225	81 (109)	670 (494)	160	385	2900	3100 ⁵⁾	4500	1PH7224-■■■D■■■-■...	
		105 (141)	870 (642)	197	390	2900	3100 ⁵⁾	4500	1PH7226-■■■D■■■-■...	
		129 (173)	1070 (789)	238	390	2900	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■D■■■-■...	
	280	170 (228)	1414 (1043)	314	400	2200	2200	2200	3300	1PH7284-■■■D■■■-0...
		210 (282)	1745 (1287)	414	380	2200	2200	2200	3300	1PH7286-■■■D■■■-0...
260 (349)		2160 (1593)	497	385	2200	2200	2200	3300	1PH7288-■■■D■■■-0...	
1750	180	60 (80.5)	327 (241)	120	388	5000	3500 ⁵⁾	5000	1PH7184-■■■F■■■-■...	
		85 (114)	465 (343)	169	385	5000	3500 ⁵⁾	5000	1PH7186-■■■F■■■-■...	
	225	110 (148)	600 (443)	203	395	2900	3100 ⁵⁾	4500	1PH7224-■■■U■■■-■...	
		135 (181)	737 (544)	254	395	2900	3100 ⁵⁾	4500	1PH7226-■■■F■■■-■...	
		179 (240)	975 (719)	342	395	2900	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■F■■■-■...	
	280	225 (302)	1228 (906)	393	400	2200	2200	2200	3300	1PH7284-■■■F■■■-0...
		270 (362)	1474 (1087)	466	400	2200	2200	2200	3300	1PH7286-■■■F■■■-0...
340 (456)		1856 (1369)	586	400	2200	2200	2200	3300	1PH7288-■■■F■■■-0...	
2900	180	81 (109)	265 (196)	158	395	5000	3500 ⁵⁾	5000	1PH7184-■■■L■■■-■...	
		101 (135)	333 (246)	206	385	5000	3500 ⁵⁾	5000	1PH7186-■■■L■■■-■...	
	225	149 (200)	490 (361)	274	395	3500	3100 ⁵⁾	4500	1PH7224-■■■L■■■-■...	
		185 (248)	610 (450)	348	390	3500	3100 ⁵⁾	4500	1PH7226-■■■L■■■-■...	
		215 (288)	708 (522)	402	395	3500	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■L■■■-■...	

For versions, see
Order No. supplement and
options on page 5/72.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	Order No.
		A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Type	A	
1PH7184-..B...	0.84	26	0.830	14.2	0.503 (4.45)	370 (816)	1XB7322	60	6SL3120-1TE26-0AA3
1PH7186-..B...	0.81	38.5	0.845	14.0	0.666 (5.89)	440 (970)	1XB7322	85	6SL3120-1TE28-5AA3
1PH7224-..B...	0.87	36.5	0.864	14.0	1.479 (13.1)	630 (1389)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PH7226-..B...	0.86	49	0.880	14.0	1.930 (17.1)	750 (1654)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7228-..B...	0.85	60.5	0.888	13.9	2.326 (20.6)	860 (1896)	1XB7322	132 ⁷⁾	6SL3120-1TE31-3AA3
1PH7284-..B...	0.87	60	0.922	17	4.2 (37.2)	1300 (2867)	1XB7712	200	6SL3120-1TE32-0AA3
1PH7286-..B...	0.86	78	0.930	17	5.2 (46)	1500 (3308)	1XB7712	200	6SL3120-1TE32-0AA3
1PH7288-..B...	0.87	100	0.933	17	6.3 (55.8)	1700 (3749)	1XB7712	260	6SL3320-1TE32-6AA3
1PH7284-..C...	0.86	95	0.944	27	4.2 (37.2)	1300 (2867)	1XB7712	260	6SL3320-1TE32-6AA3
1PH7286-..C...	0.85	135	0.948	27	5.2 (46)	1500 (3308)	1XB7712	310	6SL3320-1TE33-1AA3
1PH7288-..C...	0.84	170	0.951	27	6.3 (55.8)	1700 (3749)	1XB7712	380	6SL3320-1TE33-8AA3
1PH7184-..D...	0.82	42	0.920	39.2	0.503 (4.45)	370 (816)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PH7186-..D...	0.81	58	0.925	39.1	0.666 (5.89)	440 (970)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7224-..D...	0.81	79	0.938	38.9	1.479 (13.1)	630 (1389)	1XB7322	200	6SL3120-1TE32-0AA3
1PH7226-..D...	0.84	87.5	0.941	38.9	1.930 (17.1)	750 (1654)	1XB7422	200	6SL3120-1TE32-0AA3
1PH7228-..D...	0.85	98	0.943	38.9	2.326 (20.6)	860 (1896)	1XB7700	260	6SL3320-1TE32-6AA3
1PH7284-..D...	0.82	158	0.956	38.6	4.2 (37.2)	1300 (2867)	1XB7712	310 ⁷⁾	6SL3320-1TE33-1AA3
1PH7286-..D...	0.81	218	0.958	38.6	5.2 (46)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7288-..D...	0.82	252	0.960	38.6	6.3 (55.8)	1700 (3749)	1XB7712	490 ⁷⁾	6SL3320-1TE35-0AA3
1PH7184-..F...	0.78	64	0.934	59.0	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7186-..F...	0.80	84	0.940	59.0	0.666 (5.89)	440 (970)	1XB7422	200	6SL3120-1TE32-0AA3
1PH7224-..U...	0.84	88	0.944	58.9	1.479 (13.1)	630 (1389)	1XB7422	200 ⁷⁾	6SL3120-1TE32-0AA3
1PH7226-..F...	0.82	120	0.947	58.9	1.930 (17.1)	750 (1654)	1XB7700	260	6SL3320-1TE32-6AA3
1PH7228-..F...	0.81	169	0.948	58.8	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320-1TE33-8AA3
1PH7284-..F...	0.86	163	0.962	58.7	4.2 (37.2)	1300 (2867)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7286-..F...	0.87	184	0.963	58.7	5.2 (46)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7288-..F...	0.87	234	0.965	58.7	6.3 (55.8)	1700 (3749)	1XB7712	745	6SL3320-1TE37-5AA3
1PH7184-..L...	0.80	77	0.934	97.4	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120-1TE32-0AA3
1PH7186-..L...	0.78	107	0.936	97.3	0.666 (5.89)	440 (970)	1XB7422	200 ⁷⁾	6SL3120-1TE32-0AA3
1PH7224-..L...	0.84	115	0.946	97.3	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320-1TE33-1AA3
1PH7226-..L...	0.83	154	0.946	97.2	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320-1TE33-8AA3
1PH7228-..L...	0.82	186	0.946	97.2	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320-1TE35-0AA3

1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

3) n_{max} : Maximum speed that must not be exceeded.

4) The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency < 5 × motor rated frequency.

5) Speed is reduced with increased radial forces, see selection guides.

6) The rated pulse frequencies must be taken into account: The rated motor data is valid for 4 kHz or 2 kHz.

7) The rated output current of the Motor Module is lower than the motor rated current.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb-ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module									
500	180	20.5 (27.5)	392 (289)	51	335	3200 ⁴⁾	3500 ⁴⁾⁵⁾	5000 ⁴⁾	1PH7184-■■■B■■■-■...
		26.5 (35.5)	506 (373)	67	335	3600 ⁴⁾	3500 ⁴⁾⁵⁾	5000 ⁴⁾	1PH7186-■■■B■■■-■...
	225	38 (51.0)	725 (535)	86	335	2900 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾	1PH7224-■■■B■■■-■...
		49 (65.7)	935 (690)	112	330	3200 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾	1PH7226-■■■B■■■-■...
		60 (80.5)	1145 (845)	135	340	3200 ⁴⁾	3100 ⁴⁾⁵⁾	4500 ⁴⁾⁵⁾	1PH7228-■■■B■■■-■...
600	280	95 (127)	1519 (1120)	144	480	2200	2200	3300 ⁴⁾	1PH7284-■■■B■■■-0...
		120 (161)	1916 (1413)	180	480	2200	2200	3300 ⁴⁾	1PH7286-■■■B■■■-0...
		155 (208)	2467 (1820)	233	480	2200	2200	3300 ⁴⁾	1PH7288-■■■B■■■-0...
1000	280	150 (201)	1433 (1057)	220	480	2200	2200	3300	1PH7284-■■■C■■■-0...
		185 (248)	1767 (1303)	285	480	2200	2200	3300	1PH7286-■■■C■■■-0...
		230 (308)	2197 (1621)	365	460	2200	2200	3300	1PH7288-■■■C■■■-0...
1350	180	50 (67.1)	355 (262)	86	450	5000	3500 ⁵⁾	5000	1PH7184-■■■D■■■-■...
		67 (89.9)	475 (350)	114	460	5000	3500 ⁵⁾	5000	1PH7186-■■■D■■■-■...
	225	92 (123)	650 (479)	156	450	2900	3100 ⁵⁾	4500	1PH7224-■■■D■■■-■...
		120 (161)	847 (625)	193	460	2900	3100 ⁵⁾	4500	1PH7226-■■■D■■■-■...
		147 (197)	1043 (769)	232	460	2900	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■D■■■-■...
	280	200 (268)	1416 (1044)	314	470	2200	2200	3300	1PH7284-■■■D■■■-0...
		245 (329)	1733 (1278)	414	445	2200	2200	3300	1PH7286-■■■D■■■-0...
		305 (409)	2158 (1592)	497	450	2200	2200	3300	1PH7288-■■■D■■■-0...
2000	180	68 (91.2)	325 (240)	120	450	5000	3500 ⁵⁾	5000	1PH7184-■■■F■■■-■...
		94 (126)	450 (332)	165	445	5000	3500 ⁵⁾	5000	1PH7186-■■■F■■■-■...
	225	124 (166)	590 (435)	200	460	2900	3100 ⁵⁾	4500	1PH7224-■■■U■■■-■...
		153 (205)	730 (538)	254	450	2900	3100 ⁵⁾	4500	1PH7226-■■■F■■■-■...
		196 (263)	936 (690)	332	450	3000	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■F■■■-■...
	280	255 (342)	1218 (898)	393	455	2200	2200	3300	1PH7284-■■■F■■■-0...
		310 (416)	1481 (1092)	466	455	2200	2200	3300	1PH7286-■■■F■■■-0...
		385 (516)	1838 (1356)	586	455	2200	2200	3300	1PH7288-■■■F■■■-0...
2900	180	81 (109)	267 (197)	158	395	5000	3500 ⁵⁾	5000	1PH7184-■■■L■■■-■...
		101 (135)	333 (246)	206	385	5000	3500 ⁵⁾	5000	1PH7186-■■■L■■■-■...
	225	149 (200)	490 (361)	274	395	3500	3100 ⁵⁾	4500	1PH7224-■■■L■■■-■...
		185 (248)	610 (450)	348	390	3500	3100 ⁵⁾	4500	1PH7226-■■■L■■■-■...
		215 (288)	708 (522)	402	395	3500	3100 ⁵⁾	4500 ⁵⁾	1PH7228-■■■L■■■-■...

For versions, see
Order No. supplement and
options on page 5/72.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	Order No.
		A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Type	A	
1PH7184-..B...	0.83	26	0.858	17.5	0.503 (4.45)	370 (816)	1XB7322	60	6SL3120-1TE26-0AA3
1PH7186-..B...	0.79	39.5	0.870	17.3	0.666 (5.89)	440 (970)	1XB7322	85	6SL3120-1TE28-5AA3
1PH7224-..B...	0.85	37.5	0.888	17.3	1.479 (13.1)	630 (1389)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PH7226-..B...	0.85	50	0.900	17.3	1.930 (17.1)	750 (1654)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7228-..B...	0.84	61.5	0.907	17.2	2.326 (20.6)	860 (1896)	1XB7322	132 ⁷⁾	6SL3120-1TE31-3AA3
1PH7284-..B...	0.86	61	0.932	20.3	4.2 (37.2)	1300 (2867)	1XB7712	200	6SL3120-1TE32-0AA3
1PH7286-..B...	0.86	80	0.939	20.3	5.2 (46.0)	1500 (3308)	1XB7712	200	6SL3120-1TE32-0AA3
1PH7288-..B...	0.86	102	0.941	20.3	6.3 (55.8)	1700 (3749)	1XB7712	260	6SL3320-1TE32-6AA3
1PH7284-..C...	0.86	90	0.950	34	4.2 (37.2)	1300 (2867)	1XB7712	260	6SL3320-1TE32-6AA3
1PH7286-..C...	0.84	135	0.954	34	5.2 (46.0)	1500 (3308)	1XB7712	310	6SL3320-1TE33-1AA3
1PH7288-..C...	0.84	170	0.956	34	6.3 (55.8)	1700 (3749)	1XB7712	380	6SL3320-1TE33-8AA3
1PH7184-..D...	0.81	42	0.928	45.8	0.503 (4.45)	370 (816)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PH7186-..D...	0.79	59.5	0.930	45.7	0.666 (5.89)	440 (970)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7224-..D...	0.80	78.5	0.942	45.6	1.479 (13.1)	630 (1389)	1XB7322	200	6SL3120-1TE32-0AA3
1PH7226-..D...	0.82	88.5	0.945	45.6	1.930 (17.1)	750 (1654)	1XB7422	200	6SL3120-1TE32-0AA3
1PH7228-..D...	0.84	99.5	0.947	45.6	2.326 (20.6)	860 (1896)	1XB7700	260	6SL3320-1TE32-6AA3
1PH7284-..D...	0.82	159	0.958	45.3	4.2 (37.2)	1300 (2867)	1XB7712	310 ⁷⁾	6SL3320-1TE33-1AA3
1PH7286-..D...	0.80	217	0.960	45.3	5.2 (46.0)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7288-..D...	0.82	250	0.962	45.3	6.3 (55.8)	1700 (3749)	1XB7712	490 ⁷⁾	6SL3320-1TE35-0AA3
1PH7184-..F...	0.78	66	0.935	67.3	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120-1TE31-3AA3
1PH7186-..F...	0.78	87	0.941	67.3	0.666 (5.89)	440 (970)	1XB7422	200	6SL3120-1TE32-0AA3
1PH7224-..U...	0.82	91	0.944	67.2	1.479 (13.1)	630 (1389)	1XB7422	200	6SL3120-1TE32-0AA3
1PH7226-..F...	0.82	119	0.948	67.2	1.930 (17.1)	750 (1654)	1XB7700	260	6SL3320-1TE32-6AA3
1PH7228-..F...	0.79	168	0.950	67.1	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320-1TE33-8AA3
1PH7284-..F...	0.86	162	0.962	67	4.2 (37.2)	1300 (2867)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7286-..F...	0.87	182	0.964	67	5.2 (46.0)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PH7288-..F...	0.87	232	0.965	67	6.3 (55.8)	1700 (3749)	1XB7712	745	6SL3320-1TE37-5AA3
1PH7184-..L...	0.80	77	0.934	97.4	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120-1TE32-0AA3
1PH7186-..L...	0.78	107	0.936	97.3	0.666 (5.89)	440 (970)	1XB7422	210	6SL3320-1TE32-1AA3
1PH7224-..L...	0.84	115	0.946	97.3	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320-1TE33-1AA3
1PH7226-..L...	0.83	154	0.946	97.2	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320-1TE33-8AA3
1PH7228-..L...	0.82	188	0.954	97.2	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320-1TE35-0AA3

1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

3) n_{max} : Maximum speed that must not be exceeded.

4) The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency < 5 × motor rated frequency.

5) Speed is reduced with increased radial forces, see selection guides.

6) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

7) The rated output current of the Motor Module is lower than the motor rated current.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor Forced ventilation	Order code
n_{rated}	SH	P_{rated}	M_{rated}	I_{rated}	U_{rated}	n_2	n_{S1}	n_{max}		
rpm		kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.	
Line voltage 690 V 3 AC, Active Line Module										
500	280	77 (103)	1471 (1085)	80	690	1700	2200	3300 ⁴⁾	1PH7284-■ ■ B ■ ■ - 0 ... -Z C30	
		96 (128)	1834 (1353)	101	690	1800	2200	3300 ⁴⁾	1PH7286-■ ■ B ■ ■ - 0 ... -Z C30	
		125 (168)	2388 (1761)	130	690	1900	2200	3300 ⁴⁾	1PH7288-■ ■ B ■ ■ - 0 ... -Z C30	
800	280	115 (154)	1373 (1013)	120	690	2200	2200	3300	1PH7284-■ ■ C ■ ■ - 0 ... -Z C30	
		145 (194)	1731 (1277)	160	665	2200	2200	3300	1PH7286-■ ■ C ■ ■ - 0 ... -Z C30	
		185 (248)	2208 (1629)	210	640	2200	2200	3300	1PH7288-■ ■ C ■ ■ - 0 ... -Z C30	
1150	280	164 (220)	1362 (1005)	176	690	2200	2200	3300	1PH7284-■ ■ D ■ ■ - 0 ... -Z C30	
		203 (272)	1686 (1244)	233	655	2200	2200	3300	1PH7286-■ ■ D ■ ■ - 0 ... -Z C30	
		251 (337)	2084 (1537)	280	665	2200	2200	3300	1PH7288-■ ■ D ■ ■ - 0 ... -Z C30	
1750	280	217 (291)	1184 (873)	221	690	2200	2200	3300	1PH7284-■ ■ F ■ ■ - 0 ... -Z C30	
		261 (350)	1424 (1050)	262	690	2200	2200	3300	1PH7286-■ ■ F ■ ■ - 0 ... -Z C30	
		329 (441)	1795 (1324)	330	690	2200	2200	3300	1PH7288-■ ■ F ■ ■ - 0 ... -Z C30	

For versions, see Order No. supplement and options on page 5/74.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Motor type (repeated)	Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
		A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Type	A	
1PH7284-..B...	0.87	34	0.923	17	4.2 (37.2)	1300 (2867)	1XB7712	85 ⁷⁾	6SL3320-1TG28-5AA3
1PH7286-..B...	0.86	45	0.927	17	5.2 (46.0)	1500 (3308)	1XB7712	120	6SL3320-1TG31-2AA3
1PH7288-..B...	0.86	57	0.930	17	6.3 (55.8)	1700 (3749)	1XB7712	150	6SL3320-1TG31-5AA3
1PH7284-..C...	0.85	55	0.943	27	4.2 (37.2)	1300 (2867)	1XB7712	150	6SL3320-1TG31-5AA3
1PH7286-..C...	0.84	80	0.947	27	5.2 (46.0)	1500 (3308)	1XB7712	175	6SL3320-1TG31-8AA3
1PH7288-..C...	0.84	100	0.950	27	6.3 (55.8)	1700 (3749)	1XB7712	260	6SL3320-1TG32-6AA3
1PH7284-..D...	0.81	91	0.955	38.6	4.2 (37.2)	1300 (2867)	1XB7712	215	6SL3320-1TG32-2AA3
1PH7286-..D...	0.80	125	0.957	38.6	5.2 (46.0)	1500 (3308)	1XB7712	260	6SL3320-1TG32-6AA3
1PH7288-..D...	0.81	145	0.959	38.6	6.3 (55.8)	1700 (3749)	1XB7712	330	6SL3320-1TG33-3AA3
1PH7284-..F...	0.86	94	0.961	58.7	4.2 (37.2)	1300 (2867)	1XB7712	260	6SL3320-1TG32-6AA3
1PH7286-..F...	0.87	105	0.963	58.7	5.2 (46.0)	1500 (3308)	1XB7712	330	6SL3320-1TG33-3AA3
1PH7288-..F...	0.86	134	0.964	58.7	6.3 (55.8)	1700 (3749)	1XB7712	410	6SL3320-1TG34-1AA3

5

¹⁾ n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{\text{rated}}$.

²⁾ n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

³⁾ n_{max} : Maximum speed that must not be exceeded.

⁴⁾ The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency $< 5 \times$ motor rated frequency.

⁵⁾ [Speed is reduced with increased radial forces, see selection guides.](#)

⁶⁾ The rated pulse frequencies must be taken into account: The rated motor data is valid for 4 kHz or 2 kHz.

⁷⁾ The rated output current of the Motor Module is lower than the rated motor current at 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Order No. supplements for 1PH718/1PH722 motors

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16								
Shaft height 180	1	P	H	7	1	8	.	-	.	■	.	■	■	-	■	■	■	■	-	Z				
Shaft height 225	1	P	H	7	2	2	.																	
Overall length¹⁾							.																	
Fan																								
External fan, PG cable gland in terminal box									2															
Without external fan, for pipe connection, PG cable gland in terminal box									6															
External fan, metric cable gland in terminal box									7															
Without external fan, for pipe connection, metric cable gland in terminal box									8															
Encoder systems for motors without DRIVE-CLiQ interface																								
Without encoder																					A			
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)																						E		
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)																							H	
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)																							J	
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)																								M
Incremental encoder sin/cos 1 V _{pp} 2048 S/R without C and D tracks (encoder IN2048S/R)																								N
Encoder systems for motors with DRIVE-CLiQ interface																								
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)																								F
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)																								D
Incremental encoder 22 bit without commutation position (encoder IN22DQ)																								Q
Rated speeds at 380 V to 480 V 3 AC (winding design)																								
400 rpm/500 rpm																								B
1000 rpm/1150 rpm/1350 rpm																								D
1500 rpm/1750 rpm/2000 rpm																								F
1500 rpm/1750 rpm/2000 rpm (for 1PH7224 only)																								U
2500 rpm/2900 rpm																								L
Cable connection (view of DE)																								
<u>Terminal box</u>																								
<u>Cable entry</u>																								
Top																								0
Top																								1
Top																								2
Top																								3
Type of construction																								
IM B3																								0
IM B3																								1
IM B35																								3
IM B35																								4
IM B35																								5
IM B35																								6

For 13th to 16th data position of the Order No., see page 5/73.

¹⁾ Not selectable. Determined by the choice of rated power.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Order No. supplements for 1PH718/1PH722 motors (continued)

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Shaft height 180	1	P	H	7	1	8	.	-	.	■	.	■	■	-	■	■	■	■	-	Z
Shaft height 225	1	P	H	7	2	2	.													
Holding brake with emergency stop function (suitable for coupling output in type of construction IM B3) ¹⁾																				
Without brake													0							
With brake													2							
With brake													4							
Bearing version							Vibration magnitude acc. to Siemens/EN 60034-14²⁾							Shaft and flange accuracy²⁾						
Coupling							R/A													A
Coupling							R/A													B
Coupling							S/A													C
Coupling							SR/A													D
Belt							R/A													E
Belt							R/A													F
Increased cantilever forces							R/A													G
Increased cantilever forces							R/A													H
Increased maximum speed ⁵⁾							S/A													J
Shaft extension DE							Balancing							Direction of air flow (fan)						
Fitted key							Half-key													A
Fitted key							Half-key													B
Fitted key							Full-key													C
Fitted key							Full-key													D
Plain shaft							-													J
Plain shaft							-													K
Seal							Paint finish													
-							Primed													0
Flange and shaft sealing ring ⁴⁾							Primed													2
-							Anthracite RAL 7016													3
Flange and shaft sealing ring ⁴⁾							Anthracite RAL 7016													5
-							Special paint finish in anthracite RAL 7016													6
Flange and shaft sealing ring ⁴⁾							Special paint finish in anthracite RAL 7016													8
Special version (order codes are required for options)																	-	Z		

¹⁾ Version with holding brake possible with:
12th data position 0
14th data position A
15th data position A or B
16th data position 0, 3 or 6

²⁾ For definition see 1PH7 Configuration Manual.

³⁾ Preferred direction of air flow in a polluted environment.

⁴⁾ Only appropriate if oil spray or oil vapor is occasionally deposited on the sealing ring. A sealing ring is not possible for type of construction IM B3 (IM V5, IM V6) or version with increased maximum speed, version with belt or increased cantilever forces.

⁵⁾ 1PH718: $n_{\max} = 7000$ rpm
1PH7224: $n_{\max} = 5500$ rpm
Version possible for coupling output: 16th data position 0, 3 or 6.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Order No. supplements for 1PH728 motors

Data position of the Order No.			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
Shaft height 280			1	P	H	7	2	8	.	-	.	■	.	■	■	-	0	■	■	■	-	Z	
Overall length¹⁾			.																				
Fans²⁾	Mounting	Direction of air flow																					
External fan	NDE top	NDE → DE	0																				
External fan	NDE right	NDE → DE	1																				
External fan	NDE left	NDE → DE	2																				
External fan	DE top	DE → NDE	3																				
External fan	DE right	DE → NDE	4																				
External fan	DE left	DE → NDE	5																				
Without external fan	NDE right for single pipe connection		6																				
Encoder systems for motors without DRIVE-CLiQ interface																							
Without encoder			A																				
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)			E																				
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)			H																				
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)			J																				
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)			M																				
Incremental encoder sin/cos 1 V _{pp} 2048 S/R without C and D tracks (encoder IN2048S/R)			N																				
Encoder systems for motors with DRIVE-CLiQ interface																							
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)			F																				
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)			D																				
Incremental encoder 22 bit without commutation position (encoder IN22DQ)			Q																				
Rated speeds at 380 V to 480 V 3 AC (winding design)																							
500 rpm/600 rpm			B																				
800 rpm/1000 rpm			C																				
1150 rpm/1350 rpm			D																				
1750 rpm/2000 rpm			F																				
Rated speeds at 690 V 3 AC (winding design)																							
500 rpm	Order code C30 required		B																			-	Z
800 rpm	Order code C30 required		C																			-	Z
1150 rpm	Order code C30 required		D																			-	Z
1750 rpm	Order code C30 required		F																			-	Z
Cable connection (view of DE)																							
Terminal box	Cable entry	Signal connection																					
NDE right	Bottom	DE	0																				
NDE left	Bottom	DE	1																				
NDE top	Right	DE	2																				
DE top	Right	NDE	5																				

For 12th to 16th data position of the Order No., see page 5/75.

¹⁾ Not selectable. Determined by the choice of rated power.

²⁾ See selection guides.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Order No. supplements for 1PH728 motors (continued)

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16							
Shaft height 280	1	P	H	7	2	8	.	-	.	■	.	■	■	-	0	■	■	■	-	Z			
Type of construction¹⁾																							
IM B3													0										
IM V5	Can be subsequently modified to IM V6.												1										
IM B35	With A660 flange												3										
IM V15	With A660 flange Can be subsequently modified to IM V35.												5										
Bearing version																							
Coupling													A										
Coupling													R/A										
Increased cantilever forces													A										
Increased cantilever forces													R/A										
Shaft extension DE																							
Fitted key													Half-key										
Fitted key													Full-key										
Plain shaft													-										
Paint finish																							
Primed													0										
Anthracite RAL 7016													3										
Special paint finish in anthracite RAL 7016													6										
Special version (order codes are required for options)																							

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¹⁾ See technical definitions for AC motors in chapter Servomotors.

²⁾ For definition, see 1PH7 Configuration Manual

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Order No. supplements for 1PH728/1PL628 motors

Permissible combinations of mechanical variants – External fan, terminal box, type of construction and drive type

1PH728/1PL628 motors Shaft height 280		Permissible combinations of mechanical designs						
Data position of Order No. 8. 9. 10. 11. 12. 13. 14. 15. 16.		External fan 8th data position of the Order No.						
1PH728 . - ■ . . . ■ ■ . . . ■ . . .		1PH728 . - ■						
1PL628 . - ■ . . . ■ ■ . . . ■ . . .		1PL628 . - ■						
		Order No. supplement						
		0	1	2	3	4	5	6
		NDE top NDE → DE	NDE right NDE → DE	NDE left NDE → DE	DE top DE → NDE	DE right DE → NDE	DE left DE → NDE	Single pipe connection NDE right (can be modified subsequently to NDE left)
1P . . 28 . - 0 -	Type of construction IM B3							
1PL628 . - 0 -								
1PH728 . - 1 -	Type of construction IM V5 (can be modified subsequently to IM V6)							
1PL628 . - 1 -								
1PH728 . - 3 -	Type of construction IM B35							
1PL628 . - 3 -								
1PH728 . - 5 -	Type IM V15 (can be modified subsequently to IM V35)							
1PL628 . - 5 -								
Order codes for options								
G14 With air filter								
K08 Encoder connector mounted opposite								
K55 Cable entry plate, terminal box, customer-specific ¹⁾								
K83 Terminal box rotated through +90 degrees								
K84 Terminal box rotated through -90 degrees								
K85 Terminal box rotated through 180 degrees								
K16 Second standard shaft extension (only possible without encoder)								
Y55 Non-standard shaft extension DE								
M83 Additional thread for a setting screw on motor feet								

Standard design
 Released supplementary versions

¹⁾ Plain text is required.

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Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Options

Order code	Description	For use with motors	
		1PH718 1PH722	1PH728
C30	Winding version 690 V 3 AC	–	✓
G14	Fan unit with air filter	✓	✓
G80	Prepared for mounting an incremental encoder POG 10	–	✓
K08	Signal connector mounted opposite	–	✓
K16	Second standard shaft extension (only possible without encoder)	–	✓
K31	2nd rating plate supplied separately in terminal box	✓	✓
K40	Re-lubrication device DE and NDE (not possible with bearings for increased maximum speed)	✓	Standard
K45	230 V AC standstill heating	–	✓
K55	Cable entry plate, terminal box, customer-specific ¹⁾	✓	✓
K83	Terminal box rotated through +90 degrees	–	✓
K84	Terminal box rotated through -90 degrees	–	✓
K85	Terminal box rotated through 180 degrees	–	✓
L27	NDE bearing in insulated version	✓ Only for 1PH718	Standard
		Standard with 1PH722	
M39	Version for zone 22 hazardous areas in accordance with EN 50281 ²⁾	✓	✓
M83	Additional thread for a setting screw on motor feet	–	✓
Y55	Non-standard shaft extension DE	On request	On request
Y80	Different rating plate data ¹⁾	On request	On request
Y82	Additional rating plate with customer data ¹⁾	On request	On request
	Primer or paint finish in anthracite RAL 7016	Standard	Standard
R1Y	Paint finish in other RAL color ³⁾	✓	✓
R2Y	Special finish in other RAL color ³⁾	✓	✓

✓ Option available

– Option not available

When ordering a motor with options, **-Z** should be added to the order number.

¹⁾ Plain text is required in addition to order code.

²⁾ The general conditions and information in the declaration of conformity must be taken into account.. Declarations of conformity are available on request from your local Siemens sales office.

³⁾ RAL color number must be specified in addition to order code.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PH7 asynchronous motors
Forced ventilation, IP55 degree of protection

Options (continued)

Ordering example

Selection criteria	Design	Structure of the order number
1PH7 motor	Shaft height 180	1PH7184-.....-.....
Fan	External fan, PG cable gland in terminal box	1PH7184-2.....-.....
Encoder system	Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	1PH7184-2M.....-.....
Rated operating point	2900 rpm, 81 kW (109 HP), 265 Nm (196 lb _f -ft)	1PH7184-2ML.....-.....
Cable connection	Terminal box at top, cable entry NDE	1PH7184-2ML2.....-.....
Type of construction	IM B3	1PH7184-2ML20-.....
Brake	Without holding brake	1PH7184-2ML20-0...
Bearing version	Coupling Vibration magnitude R/A Shaft and flange accuracy R	1PH7184-2ML20-0B..
Shaft extension DE Balancing Air direction	Fitted key Half-key DE → NDE	1PH7184-2ML20-0BA.
Paint finish	Primed	1PH7184-2ML20-0BA0
Options		1PH7184-2ML20-0BA0-Z
	Fan unit with air filter	1PH7184-2ML20-0BA0-Z G14
	Paint finish in other RAL color pearl white	1PH7184-2ML20-0BA0-Z G14+R1Y RAL1013

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors Forced ventilation, IP23 degree of protection

Overview



1PL6 motors, shaft heights 180 to 225



1PL6 motors, shaft height 280

The 1PL6 AC motors are compact, force-ventilated or enclosed-ventilated squirrel-cage asynchronous motors with degree of protection IP23. The motors are ventilated using a mounted external fan unit.

The motor can be ordered either with the air flow from the motor drive end (DE) to the motor non-drive end (NDE) - or vice versa.

Depending on the control requirements, the appropriate encoder systems are available for the motors. These encoders are used to sense the motor speed and indirect position.

The motors comply with DIN standards and have degree of protection IP23 in accordance with EN 60034-5 (IEC 60034-5).

Benefits

- Extremely high power density with small motor dimensions (50 to 60 % higher output as compared to 1PH7 in degree of protection IP55)
- Speed down to zero without reducing the torque
- Ruggedness
- Essentially maintenance-free
- Bearings for high cantilever load
- High rotational accuracy, even at the lowest speeds
- Integrated encoder system to sense the motor speed, connected using a connector or DRIVE-CLiQ interface
- Terminal box to connect the power cables
- Motor temperature monitoring with KTY84
- Various types of cooling systems
- Basic external cooling using a pipe connection
- Optional bearing versions with re-lubrication device and insulated bearings (NDE)

Application

Crane systems:

- Hoisting and closing gears for cranes

Printing industry:

- Main drives for printing machines

Manufacture of rubber, plastic and wire:

- Drives for extruders, calenders, rubber injection machines, foil machines, fleece plants
- Wire-drawing machines, cable-stranding machines, etc.

General applications such as coiler and winder drives.

The 1PL6 motors are suitable for installation in dry indoor areas without corrosive atmospheres.

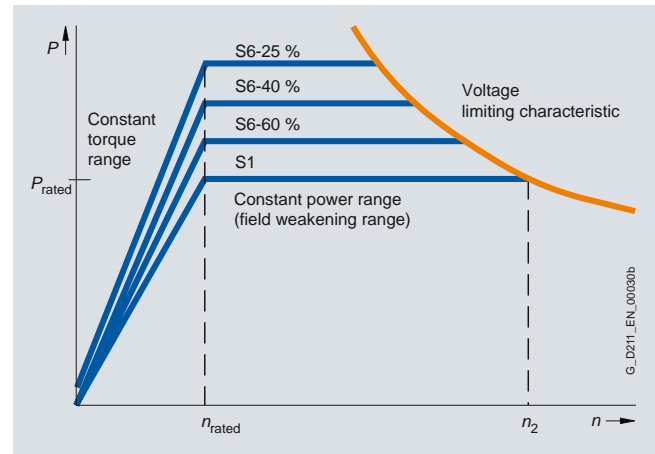
Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Technical specifications

1PL6 motor	
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 155 (F) for a coolant temperature of up to 40 °C (104°F)
Cooling in accordance with EN 60034-6 (IEC 60034-6)	
<ul style="list-style-type: none"> 1PL618/1PL622 	Forced ventilation and enclosed ventilation Fan mounted axially at NDE
<ul style="list-style-type: none"> 1PL628 	Forced ventilation, the fan is mounted radially at the NDE
Temperature monitoring	Temperature sensor KTY84 in the stator winding
<ul style="list-style-type: none"> 1PL628 	1 additional KTY84 as reserve
Motor fan ratings	400 V 3 AC 50/60 Hz 480 V 3 AC 60 Hz
Type of construction in accordance with EN 60034-7 (IEC 60034-7)	IM B3, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5)	IP23
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60072-1)	With fitted key, half-key/full-key balancing
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1)¹⁾	Tolerance N/Tolerance R
Vibration magnitude in accordance with Siemens/EN 60034-14 (IEC 60034-14)	
<ul style="list-style-type: none"> 1PL618/1PL622 1PL628 	Grade R/A, grade S/A, grade SR/A Grade A, grade R/A
Sound pressure level L_{pA} (1 m) in accordance with EN ISO 1680, max. Tolerance + 3 dB	Sound pressure level as a function of the air-flow direction
Connection	Connector for signals (mating connector not supplied) Terminal box for power
<ul style="list-style-type: none"> 1PL618/1PL622 1PL628 	Terminal box at top terminal box NDE right
Paint finish	Primed anthracite RAL 7016

Characteristic curves



Typical speed/power characteristic for 1PL6 motors

¹⁾ Shaft extension run-out, concentricity of centering ring and shaft and perpendicularity of flange to shaft.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PL6 asynchronous motor Forced ventilation
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
400	180	20.5 (27.5)	489 (361)	58	290	1500	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6184- ■ ■ B ■ ■ - 0 ...
		30.5 (40.9)	728 (537)	87	290	1600	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6186- ■ ■ B ■ ■ - 0 ...
	225	40 (53.6)	955 (704)	105	296	1400	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6224- ■ ■ B ■ ■ - 0 ...
		57 (76.4)	1361 (1004)	145	305	1400	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6226- ■ ■ B ■ ■ - 0 ...
		72 (96.6)	1719 (1268)	181	305	1300	3100 ⁴⁾⁵⁾	4500 ⁴⁾⁵⁾	1PL6228- ■ ■ B ■ ■ - 0 ...
1000	180	57 (76.4)	544 (401)	122	345	2100	3500 ⁴⁾	5000	1PL6184- ■ ■ D ■ ■ - 0 ...
		74 (99.2)	707 (522)	157	345	2400	3500 ⁴⁾	5000	1PL6186- ■ ■ D ■ ■ - 0 ...
	225	105 (141)	1003 (740)	220	345	2500	3100 ⁴⁾	4500	1PL6224- ■ ■ D ■ ■ - 0 ...
		135 (181)	1289 (951)	278	345	2200	3100 ⁴⁾	4500	1PL6226- ■ ■ D ■ ■ - 0 ...
		165 (221)	1576 (1163)	331	348	2200	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ D ■ ■ - 0 ...
1500	180	76 (102)	484 (357)	165	345	4000	3500 ⁴⁾	5000	1PL6184- ■ ■ F ■ ■ - 0 ...
		108 (145)	688 (508)	233	340	4000	3500 ⁴⁾	5000	1PL6186- ■ ■ F ■ ■ - 0 ...
	225	142 (190)	904 (667)	292	345	2900	3100 ⁴⁾	4500	1PL6224- ■ ■ F ■ ■ - 0 ...
		175 (235)	1114 (822)	356	345	2900	3100 ⁴⁾	4500	1PL6226- ■ ■ F ■ ■ - 0 ...
		230 (308)	1465 (1081)	468	345	2900	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ F ■ ■ - 0 ...
2500	180	100 (134)	382 (282)	208	345	5000	3500 ⁴⁾	5000	1PL6184- ■ ■ L ■ ■ - 0 ...
		130 (174)	497 (367)	275	340	5000	3500 ⁴⁾	5000	1PL6186- ■ ■ L ■ ■ - 0 ...
	225	178 (239)	680 (502)	358	345	3500	3100 ⁴⁾	4500	1PL6224- ■ ■ L ■ ■ - 0 ...
		235 (315)	698 (515)	476	340	3500	3100 ⁴⁾	4500	1PL6226- ■ ■ L ■ ■ - 0 ...
		265 (355)	1013 (747)	535	345	3500	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ L ■ ■ - 0 ...

For versions, see
 Order No. supplement and
 options on page 5/90.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
		A		Hz	kgm ² (lb _r -in-s ²)	kg (lb)	Type	A	
1PL6184-..B...	0.84	33.4	0.820	14.2	0.503 (4.45)	370 (816)	1XB7322	60	6SL3120-1TE26-0AA3
1PL6186-..B...	0.84	48.6	0.828	14.1	0.666 (5.89)	440 (970)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PL6224-..B...	0.86	45.8	0.864	14	1.479 (13.1)	630 (1389)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6226-..B...	0.85	67	0.868	14	1.930 (17.1)	750 (1654)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6228-..B...	0.86	77	0.871	14.1	2.326 (20.6)	860 (1896)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6184-..D...	0.87	45	0.897	34.4	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6186-..D...	0.86	61	0.907	34.3	0.666 (5.89)	440 (970)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6224-..D...	0.86	86	0.927	34.5	1.479 (13.1)	630 (1389)	1XB7422	210 ⁷⁾	6SL3320-1TE32-1AA3
1PL6226-..D...	0.88	90	0.927	31.1	1.930 (17.1)	750 (1654)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6228-..D...	0.89	103	0.928	34.2	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6184-..F...	0.84	70	0.924	50.9	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6186-..F...	0.85	91	0.930	50.9	0.666 (5.89)	440 (970)	1XB7422	260	6SL3320-1TE32-1AA3
1PL6224-..F...	0.87	91	0.940	50.9	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6226-..F...	0.87	125	0.944	50.7	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6228-..F...	0.86	177	0.947	50.7	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6184-..L...	0.86	80	0.936	84.2	0.503 (4.45)	370 (816)	1XB7422	210	6SL3320-1TE32-1AA3
1PL6186-..L...	0.85	113	0.943	84.1	0.666 (5.89)	440 (970)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6224-..L...	0.87	119	0.950	84.1	1.479 (13.1)	630 (1389)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6226-..L...	0.88	157	0.953	84	1.930 (17.1)	750 (1654)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6228-..L...	0.87	189	0.952	84	2.326 (20.6)	860 (1896)	1XB7700	745	6SL3320-1TE37-5AA3

5

1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

3) n_{max} : Maximum speed that must not be exceeded.

4) Speed is reduced with increased radial forces, see selection guides.

5) The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency < 5 × motor rated frequency.

6) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

7) The rated output current of the Motor Module is lower than the motor rated current.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PL6 asynchronous motor Forced ventilation	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb-ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.	
Line voltage 400 V 3 AC, Active Line Module										
400	180	24.5 (32.9)	585 (432)	69	300	1700	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6184- ■ ■ B ■ ■ - 0 ...	
		31.5 (42.2)	752 (555)	90	290	1900	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6186- ■ ■ B ■ ■ - 0 ...	
	225	45 (60.4)	1074 (792)	117	300	1600	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6224- ■ ■ B ■ ■ - 0 ...	
		57 (76.4)	1361 (1004)	145	305	1800	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6226- ■ ■ B ■ ■ - 0 ...	
		72 (96.6)	1719 (1268)	181	305	1800	3100 ⁴⁾⁵⁾	4500 ⁴⁾⁵⁾	1PL6228- ■ ■ B ■ ■ - 0 ...	
800	280	195 (262)	2328 (1717)	335	400	1700	2200	3300	1PL6284- ■ ■ C ■ ■ - 0 ...	
		250 (335)	2984 (2201)	440	385	1900	2200	3300	1PL6286- ■ ■ C ■ ■ - 0 ...	
		310 (416)	3701 (2730)	570	370	2200	2200	3300	1PL6288- ■ ■ C ■ ■ - 0 ...	
1150	180	65 (87.2)	540 (398)	121	400	2500	3500 ⁴⁾	5000	1PL6184- ■ ■ D ■ ■ - 0 ...	
		85 (114)	706 (521)	158	400	2700	3500 ⁴⁾	5000	1PL6186- ■ ■ D ■ ■ - 0 ...	
	225	120 (161)	997 (735)	218	400	2800	3100 ⁴⁾	4500	1PL6224- ■ ■ D ■ ■ - 0 ...	
		155 (208)	1287 (949)	275	400	2600	3100 ⁴⁾	4500	1PL6226- ■ ■ D ■ ■ - 0 ...	
		190 (255)	1578 (1164)	334	400	2500	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ D ■ ■ - 0 ...	
	280	280 (375)	2325 (1715)	478	400	2200	2200	2200	3300	1PL6284- ■ ■ D ■ ■ - 0 ...
		355 (476)	2944 (2172)	637	380	2200	2200	2200	3300	1PL6286- ■ ■ D ■ ■ - 0 ...
		435 (583)	3607 (2688)	765	385	2200	2200	3300	1PL6288- ■ ■ D ■ ■ - 0 ...	
1750	180	89 (119)	486 (359)	166	400	4500	3500 ⁴⁾	5000	1PL6184- ■ ■ F ■ ■ - 0 ...	
		125 (168)	682 (503)	231	400	4500	3500 ⁴⁾	5000	1PL6186- ■ ■ F ■ ■ - 0 ...	
	225	165 (221)	900 (664)	292	400	2900	3100 ⁴⁾	4500	1PL6224- ■ ■ F ■ ■ - 0 ...	
		200 (268)	1091 (805)	350	400	2900	3100 ⁴⁾	4500	1PL6226- ■ ■ F ■ ■ - 0 ...	
		265 (355)	1446 (1067)	470	400	2900	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ F ■ ■ - 0 ...	
	280	370 (496)	2019 (1489)	616	400	2200	2200	2200	3300	1PL6284- ■ ■ F ■ ■ - 0 ...
		445 (597)	2429 (1792)	736	400	2200	2200	2200	3300	1PL6286- ■ ■ F ■ ■ - 0 ...
		560 (751)	3055 (2253)	924	400	2200	2200	3300	1PL6288- ■ ■ F ■ ■ - 0 ...	
2900	180	113 (152)	372 (274)	209	400	5000	3500 ⁴⁾	5000	1PL6184- ■ ■ L ■ ■ - 0 ...	
		150 (201)	494 (364)	280	390	5000	3500 ⁴⁾	5000	1PL6186- ■ ■ L ■ ■ - 0 ...	
	225	205 (275)	675 (498)	365	400	3500	3100 ⁴⁾	4500	1PL6224- ■ ■ L ■ ■ - 0 ...	
		270 (362)	889 (656)	470	400	3500	3100 ⁴⁾	4500	1PL6226- ■ ■ L ■ ■ - 0 ...	
		300 (402)	988 (729)	530	400	3500	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ L ■ ■ - 0 ...	

For versions, see
Order No. supplement and
options on page 5/90.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor $\cos \varphi$	Magne- tizing current I_{μ} A	Efficiency η_{rated}	Rated frequency f_{rated} Hz	Moment of inertia J kgm ² (lb _r -in-s ²)	Weight, approx. kg (lb)	Terminal box Type	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾ I_{rated} A	For additional versions and components see chapter SINAMICS S120 drive system Order No.
1PL6184-..B...	0.86	33	0.800	14.4	0.503 (4.45)	370 (816)	1XB7322	85	6SL3120-1TE28-5AA3
1PL6186-..B...	0.85	47	0.814	14.3	0.666 (5.89)	440 (970)	1XB7322	85 ⁷⁾	6SL3120-1TE28-5AA3
1PL6224-..B...	0.87	45	0.844	14.2	1.479 (13.1)	630 (1389)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6226-..B...	0.85	67	0.868	14.0	1.930 (17.1)	750 (1654)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6228-..B...	0.86	77	0.871	14.0	2.326 (20.6)	860 (1896)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6284-..C...	0.90	95	0.929	27.3	4.2 (37.2)	1300 (2867)	1XB7712	380	6SL3320-1TE33-8AA3
1PL6286-..C...	0.90	135	0.934	27.3	5.2 (46.0)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PL6288-..C...	0.90	170	0.939	27.3	6.3 (55.8)	1700 (3749)	1XB7712	745	6SL3320-1TE37-5AA3
1PL6184-..D...	0.86	46	0.906	39.4	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6186-..D...	0.86	62	0.910	39.4	0.666 (5.89)	440 (970)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6224-..D...	0.85	86	0.930	39.1	1.479 (13.1)	630 (1389)	1XB7422	260	6SL3320-1TE32-6AA3
1PL6226-..D...	0.87	92	0.930	39.2	1.930 (17.1)	750 (1654)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6228-..D...	0.88	102	0.931	39.2	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6284-..D...	0.89	156	0.950	38.9	4.2 (37.2)	1300 (2867)	1XB7712	490	6SL3320-1TE35-0AA3
1PL6286-..D...	0.89	214	0.953	38.9	5.2 (46.0)	1500 (3308)	1XB7712	840	6SL3320-1TE38-4AA3
1PL6288-..D...	0.89	248	0.955	38.9	6.3 (55.8)	1700 (3749)	1XB7712	985	6SL3320-1TE41-0AA3
1PL6184-..F...	0.84	68	0.921	59.3	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6186-..F...	0.84	92	0.935	59.3	0.666 (5.89)	440 (970)	1XB7422	260	6SL3320-1TE32-6AA3
1PL6224-..F...	0.87	90	0.942	59.2	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6226-..F...	0.87	122	0.942	59.1	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6228-..F...	0.86	174	0.948	59.0	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6284-..F...	0.90	162	0.959	59.0	4.2 (37.2)	1300 (2867)	1XB7712	745	6SL3320-1TE37-5AA3
1PL6286-..F...	0.91	182	0.960	59.0	5.2 (46.0)	1500 (3308)	1XB7712	840 ⁷⁾	6SL3320-1TE38-4AA3
1PL6288-..F...	0.91	232	0.962	59.0	6.3 (55.8)	1700 (3749)	1XB7712	1260	6SL3320-1TE41-2AA3
1PL6184-..L...	0.85	79	0.938	97.6	0.503 (4.45)	370 (816)	1XB7422	210	6SL3320-1TE32-1AA3
1PL6186-..L...	0.84	110	0.943	97.5	0.666 (5.89)	440 (970)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6224-..L...	0.86	118	0.950	97.5	1.479 (13.1)	630 (1389)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6226-..L...	0.87	160	0.952	97.4	1.930 (17.1)	750 (1654)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6228-..L...	0.86	188	0.952	97.3	2.326 (20.6)	860 (1896)	1XB7700	745	6SL3320-1TE37-5AA3

1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

3) n_{max} : Maximum speed that must not be exceeded.

4) Speed is reduced with increased radial forces, see selection guides.

5) The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency < 5 × motor rated frequency.

6) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

7) The rated output current of the Motor Module is lower than the rated motor current at 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PL6 asynchronous motor Forced ventilation	
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb-ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.	
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module										
500	180	30 (40.2)	573 (423)	66	370	1900	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6184- ■ ■ B ■ ■ - 0 ...	
		40 (53.6)	764 (564)	91	355	2000	3500 ⁴⁾⁵⁾	5000 ⁵⁾	1PL6186- ■ ■ B ■ ■ - 0 ...	
	225	55 (73.8)	1050 (774)	114	370	1800	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6224- ■ ■ B ■ ■ - 0 ...	
		72 (96.6)	1375 (1014)	147	375	2000	3100 ⁴⁾⁵⁾	4500 ⁵⁾	1PL6226- ■ ■ B ■ ■ - 0 ...	
		90 (121)	1719 (1268)	180	380	1900	3100 ⁴⁾⁵⁾	4500 ⁴⁾⁵⁾	1PL6228- ■ ■ B ■ ■ - 0 ...	
1000	280	235 (315)	2244 (1655)	335	480	2200	2200	3300	1PL6284- ■ ■ C ■ ■ - 0 ...	
		310 (416)	2961 (2184)	440	480	2200	2200	3300	1PL6286- ■ ■ C ■ ■ - 0 ...	
		385 (516)	3677 (2712)	570	460	2200	2200	3300	1PL6288- ■ ■ C ■ ■ - 0 ...	
1350	180	74 (99.2)	523 (386)	119	460	3000	3500 ⁴⁾	5000	1PL6184- ■ ■ D ■ ■ - 0 ...	
		98 (131)	693 (511)	156	460	3100	3500 ⁴⁾	5000	1PL6186- ■ ■ D ■ ■ - 0 ...	
	225	137 (184)	969 (715)	215	460	2900	3100 ⁴⁾	4500	1PL6224- ■ ■ D ■ ■ - 0 ...	
		172 (231)	1217 (898)	265	460	2900	3100 ⁴⁾	4500	1PL6226- ■ ■ D ■ ■ - 0 ...	
		218 (292)	1542 (1137)	332	460	2900	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ D ■ ■ - 0 ...	
	280	325 (436)	2299 (1696)	478	470	2200	2200	2200	3300	1PL6284- ■ ■ D ■ ■ - 0 ...
		410 (550)	2901 (2140)	637	445	2200	2200	2200	3300	1PL6286- ■ ■ D ■ ■ - 0 ...
		505 (677)	3573 (2635)	765	450	2200	2200	3300	1PL6288- ■ ■ D ■ ■ - 0 ...	
2000	180	98 (131)	468 (345)	161	460	5000	3500 ⁴⁾	5000	1PL6184- ■ ■ F ■ ■ - 0 ...	
		135 (181)	645 (476)	220	460	5000	3500 ⁴⁾	5000	1PL6186- ■ ■ F ■ ■ - 0 ...	
	225	178 (239)	850 (627)	275	460	2900	3100 ⁴⁾	4500	1PL6224- ■ ■ F ■ ■ - 0 ...	
		220 (295)	1050 (774)	342	460	2900	3100 ⁴⁾	4500	1PL6226- ■ ■ F ■ ■ - 0 ...	
		288 (386)	1375 (1014)	450	460	2900	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ F ■ ■ - 0 ...	
	280	415 (557)	1981 (1461)	616	455	2200	2200	2200	3300	1PL6284- ■ ■ F ■ ■ - 0 ...
		500 (671)	2387 (1761)	736	455	2200	2200	2200	3300	1PL6286- ■ ■ F ■ ■ - 0 ...
		630 (845)	3009 (2219)	924	455	2200	2200	3300	1PL6288- ■ ■ F ■ ■ - 0 ...	
2900	180	113 (152)	372 (274)	209	400	5000	3500 ⁴⁾	5000	1PL6184- ■ ■ L ■ ■ - 0 ...	
		150 (201)	494 (364)	280	390	5000	3500 ⁴⁾	5000	1PL6186- ■ ■ L ■ ■ - 0 ...	
	225	205 (275)	675 (498)	365	400	3500	3100 ⁴⁾	4500	1PL6224- ■ ■ L ■ ■ - 0 ...	
		270 (362)	889 (656)	470	395	3500	3100 ⁴⁾	4500	1PL6226- ■ ■ L ■ ■ - 0 ...	
		300 (402)	988 (729)	530	400	3500	3100 ⁴⁾	4500 ⁴⁾	1PL6228- ■ ■ L ■ ■ - 0 ...	

For versions, see
Order No. supplement and
options on page 5/90.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁶⁾	For additional versions and components see chapter SINAMICS S120 drive system
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	Order No.
		A		Hz	kgm ² (lb _T -in-s ²)	kg (lb)	Type	A	
1PL6184-..B...	0.84	34	0.844	17.6	0.503 (4.45)	370 (816)	1XB7322	85	6SL3120-1TE28-5AA3
1PL6186-..B...	0.84	46	0.845	17.6	0.666 (5.89)	440 (970)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6224-..B...	0.86	46	0.875	17.5	1.479 (13.1)	630 (1389)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6226-..B...	0.85	66	0.887	17.4	1.930 (17.1)	750 (1654)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6228-..B...	0.85	79	0.894	17.4	2.326 (20.6)	860 (1896)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6284-..C...	0.90	90	0.939	34.0	4.2 (37.2)	1300 (2867)	1XB7712	380	6SL3320-1TE33-8AA3
1PL6286-..C...	0.90	135	0.945	34.0	5.2 (46.0)	1500 (3308)	1XB7712	490	6SL3320-1TE35-0AA3
1PL6288-..C...	0.90	170	0.948	34.0	6.3 (55.8)	1700 (3749)	1XB7712	745	6SL3320-1TE37-5AA3
1PL6184-..D...	0.86	44	0.918	46.1	0.503 (4.45)	370 (816)	1XB7322	132	6SL3120-1TE31-3AA3
1PL6186-..D...	0.85	60	0.920	46.0	0.666 (5.89)	440 (970)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6224-..D...	0.85	82	0.940	45.8	1.479 (13.1)	630 (1389)	1XB7422	210 ⁷⁾	6SL3320-1TE32-1AA3
1PL6226-..D...	0.87	88	0.940	45.8	1.930 (17.1)	750 (1654)	1XB7700	260 ⁷⁾	6SL3320-1TE32-6AA3
1PL6228-..D...	0.88	100	0.938	45.8	2.326 (20.6)	860 (1896)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6284-..D...	0.89	157	0.955	45.5	4.2 (37.2)	1300 (2867)	1XB7712	490	6SL3320-1TE35-0AA3
1PL6286-..D...	0.89	215	0.957	45.5	5.2 (46.0)	1500 (3308)	1XB7712	840	6SL3320-1TE38-4AA3
1PL6288-..D...	0.89	248	0.959	45.5	6.3 (55.8)	1700 (3749)	1XB7712	985	6SL3320-1TE41-0AA3
1PL6184-..F...	0.83	70	0.934	67.5	0.503 (4.45)	370 (816)	1XB7322	200	6SL3120-1TE32-0AA3
1PL6186-..F...	0.83	94	0.940	67.5	0.666 (5.89)	440 (970)	1XB7422	260	6SL3320-1TE32-6AA3
1PL6224-..F...	0.86	91	0.944	67.5	1.479 (13.1)	630 (1389)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6226-..F...	0.86	124	0.948	67.5	1.930 (17.1)	750 (1654)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6228-..F...	0.85	176	0.948	67.3	2.326 (20.6)	860 (1896)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6284-..F...	0.90	161	0.961	67.3	4.2 (37.2)	1300 (2867)	1XB7712	745	6SL3320-1TE37-5AA3
1PL6286-..F...	0.91	181	0.963	67.3	5.2 (46.0)	1500 (3308)	1XB7712	840 ⁷⁾	6SL3320-1TE38-4AA3
1PL6288-..F...	0.91	231	0.965	67.3	6.3 (55.8)	1700 (3749)	1XB7712	1260	6SL3320-1TE41-2AA3
1PL6184-..L...	0.85	79	0.938	97.6	0.503 (4.45)	370 (816)	1XB7422	210	6SL3320-1TE32-1AA3
1PL6186-..L...	0.84	110	0.943	97.5	0.666 (5.89)	440 (970)	1XB7700	310	6SL3320-1TE33-1AA3
1PL6224-..L...	0.86	118	0.950	97.5	1.479 (13.1)	630 (1389)	1XB7700	380	6SL3320-1TE33-8AA3
1PL6226-..L...	0.87	160	0.952	97.4	1.930 (17.1)	750 (1654)	1XB7700	490	6SL3320-1TE35-0AA3
1PL6228-..L...	0.86	188	0.952	97.3	2.326 (20.6)	860 (1896)	1XB7700	745	6SL3320-1TE37-5AA3

1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.

2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.

3) n_{max} : Maximum speed that must not be exceeded.

4) Speed is reduced with increased radial forces, see selection guides.

5) The speed is limited to lower values in some cases. The following restriction applies: Maximum output frequency < 5 × motor rated frequency.

6) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.

7) The rated output current of the Motor Module is lower than the rated motor current at 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors Forced ventilation, IP23 degree of protection

Selection and ordering data

Rated speed	Shaft height	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PL6 asynchronous motor Forced ventilation	Order code
n_{rated} rpm	SH	P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	U_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.	Order code
Line voltage 690 V 3 AC, Active Line Module										
800	280	185 (248)	2208 (1629)	185	690	2000	2200	3300	1PL6284- ■ ■ C ■ ■ - 0 ... -Z	C30
		240 (322)	2865 (2113)	250	665	2100	2200	3300	1PL6286- ■ ■ C ■ ■ - 0 ... -Z	C30
		300 (402)	3581 (2641)	320	640	2200	2200	3300	1PL6288- ■ ■ C ■ ■ - 0 ... -Z	C30
1150	280	272 (365)	2259 (1666)	270	690	2200	2200	3300	1PL6284- ■ ■ D ■ ■ - 0 ... -Z	C30
		344 (461)	2857 (2107)	359	655	2200	2200	3300	1PL6286- ■ ■ D ■ ■ - 0 ... -Z	C30
		422 (566)	3504 (2585)	431	665	2200	2200	3300	1PL6288- ■ ■ D ■ ■ - 0 ... -Z	C30
1750	280	359 (481)	1959 (1445)	347	690	2200	2200	3300	1PL6284- ■ ■ F ■ ■ - 0 ... -Z	C30
		432 (579)	2357 (1739)	415	690	2200	2200	3300	1PL6286- ■ ■ F ■ ■ - 0 ... -Z	C30
		543 (728)	2963 (2186)	520	690	2200	2200	3300	1PL6288- ■ ■ F ■ ■ - 0 ... -Z	C30

For versions, see Order No. supplement and options on page 5/92.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Motor type (repeated)	Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	Terminal box	SINAMICS S120 Motor Module	
								Rated output current ⁴⁾	For additional versions and components see chapter SINAMICS S120 drive system Order No.
	$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
		A		Hz	kgm^2 (lb _f -in-s ²)	kg (lb)	Type	A	
1PL6284-..C...	0.90	55	0.928	27	4.2 (37.2)	1300 (2867)	1XB7712	215	6SL3320-1TG32-2AA3
1PL6286-..C...	0.90	80	0.934	27	5.2 (46.0)	1500 (3308)	1XB7712	330	6SL3320-1TG33-3AA3
1PL6288-..C...	0.90	100	0.938	27	6.3 (55.8)	1700 (3749)	1XB7712	410	6SL3320-1TG34-1AA3
1PL6284-..D...	0.89	89	0.949	38.9	4.2 (37.2)	1300 (2867)	1XB7712	330	6SL3320-1TG33-3AA3
1PL6286-..D...	0.89	123	0.953	38.9	5.2 (46.0)	1500 (3308)	1XB7712	410	6SL3320-1TG34-1AA3
1PL6288-..D...	0.89	143	0.955	38.9	6.3 (55.8)	1700 (3749)	1XB7712	465 ⁵⁾	6SL3320-1TG34-7AA3
1PL6284-..F...	0.90	93	0.958	59	4.2 (37.2)	1300 (2867)	1XB7712	410	6SL3320-1TG34-1AA3
1PL6286-..F...	0.91	105	0.960	59	5.2 (46.0)	1500 (3308)	1XB7712	465	6SL3320-1TG34-7AA3
1PL6288-..F...	0.91	133	0.962	59	6.3 (55.8)	1700 (3749)	1XB7712	575	6SL3320-1TG35-8AA3

5

- 1) n_2 : Max. permissible thermal speed at constant power or speed which is at the voltage limit when $P = P_{rated}$.
- 2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.
- 3) n_{max} : Maximum speed that must not be exceeded.
- 4) The rated pulse frequencies must be taken into account. The rated motor data is valid for 4 kHz or 2 kHz.
- 5) The rated output current of the Motor Module is lower than the rated motor current at 2 kHz.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Order No. supplements for 1PL618/1PL622 motors

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Shaft height 180	1	P	L	6	1	8	.	-	.	■	.	■	■	-	0	■	■	■	-	Z
Shaft height 225	1	P	L	6	2	2	.													
Overall length¹⁾							.													
Fan																				
External fan, PG cable gland in terminal box									2											
Without external fan, for pipe connection, PG cable gland in terminal box									6											
External fan, metric cable gland in terminal box									7											
Without external fan, for pipe connection, metric cable gland in terminal box									8											
Encoder systems for motors without DRIVE-CLiQ interface																				
Without encoder																				A
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)																				E
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)																				H
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)																				J
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)																				M
Incremental encoder sin/cos 1 V _{pp} 2048 S/R without C and D tracks (encoder IN2048S/R)																				N
Encoder systems for motors with DRIVE-CLiQ interface																				
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)																				F
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)																				D
Incremental encoder 22 bit without commutation position (encoder IN22DQ)																				Q
Rated speeds at 380 V to 480 V 3 AC (winding design)																				
400 rpm/500 rpm																				B
1000 rpm/1150 rpm/1350 rpm																				D
1500 rpm/1750 rpm/2000 rpm																				F
2500 rpm/2900 rpm																				L
Cable connection (view of DE)																				
<u>Terminal box</u>																				
<u>Cable entry</u>																				
Top																				0
Top																				1
Top																				2
Top																				3

For 12th to 16th data position of the Order No., see page 5/91.

¹⁾ Not selectable. Determined by the choice of rated power.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Order No. supplements for 1PL628 motors

Data position of the Order No.			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Shaft height 280			1	P	L	6	2	8	.	-	.	■	.	■	■	-	0	■	■	■	-	Z
Overall length¹⁾			.																			
Fans²⁾	<u>Mounting</u>	<u>Direction of air flow</u>																				
External fan	NDE top	NDE → DE	0																			
External fan	NDE right	NDE → DE	1																			
External fan	NDE left	NDE → DE	2																			
External fan	DE top	DE → NDE	3																			
External fan	DE right	DE → NDE	4																			
External fan	DE left	DE → NDE	5																			
Without external fan	NDE right for single pipe connection		6																			
Encoder systems for motors without DRIVE-CLiQ interface																						
Without encoder																						
Absolute encoder 2048 S/R, 4096 revolutions, multi-turn (encoder AM2048S/R)																						
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)																						
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)																						
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)																						
Incremental encoder sin/cos 1 V _{pp} 2048 S/R without C and D tracks (encoder IN2048S/R)																						
Encoder systems for motors with DRIVE-CLiQ interface																						
Absolute encoder 22 bit (resolution 4194304, internal 2048 S/R) + 12 bit multi-turn (traversing range 4096 revolutions) (encoder AM22DQ)																						
Incremental encoder 22 bit (resolution 4194304, internal 2048 S/R) + commutation position 11 bit (encoder IC22DQ)																						
Incremental encoder 22 bit without commutation position (encoder IN22DQ)																						
Rated speeds at 380 V to 480 V 3 AC (winding design)																						
800 rpm/1000 rpm																						
1150 rpm/1350 rpm																						
1750 rpm/2000 rpm																						
Rated speeds at 690 V 3 AC (winding design)																						
800 rpm	Order code C30 required		C																			
1150 rpm	Order code C30 required		D																			
1750 rpm	Order code C30 required		F																			
Cable connection (view of DE)²⁾																						
<u>Terminal box</u>	<u>Cable entry</u>	<u>Signal connection</u>																				
NDE right	Bottom	DE	0																			
NDE left	Bottom	DE	1																			
NDE top	Right	DE	2																			
DE top	Right	NDE	5																			

For 12th to 16th data position of the Order No., see page 5/93.

¹⁾ Not selectable. Determined by the choice of rated power.

²⁾ See selection guides.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors
Forced ventilation, IP23 degree of protection

Order No. supplements for 1PL628 motors (continued)

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16							
Shaft height 280	1	P	L	6	2	8	.	-	.	■	.	■	■	-	0	■	■	■	-	Z			
Type of construction¹⁾																							
IM B3													0										
IM V5	Can be subsequently modified to IM V6.												1										
IM B35	With A660 flange												3										
IM V15	With A660 flange												5										
Bearing version													Vibration magnitude acc. to Siemens/EN 60034-14²⁾		Shaft and flange accuracy²⁾								
Coupling													A		N			A					
Coupling													R/A		R			B					
Increased cantilever forces													A		N			E					
Increased cantilever forces													R/A		R			F					
Shaft extension DE													Balancing										
Fitted key													Half-key					A					
Fitted key													Full-key					C					
Plain shaft													-					J					
Paint finish																							
Primed																				0			
Anthracite RAL 7016																				3			
Special paint finish in anthracite RAL 7016																				6			
Special version (order codes are required for options)																						- Z	

Permissible combinations of mechanical variants for 1PL6 motors, see 1PH7 motors, page 5/76.

¹⁾ See technical definitions for AC motors in chapter Servomotors.

²⁾ For definition, see 1PL6 Configuration Manual.

Main motors

Asynchronous and synchronous motors for SINAMICS S120

1PL6 asynchronous motors Forced ventilation, IP23 degree of protection

Options

Order code	Description	For use with motors	
		1PL618 1PL622	1PL628
C30	Winding version 690 V 3 AC	–	✓
G14	Fan unit with air filter	✓	✓
G80	Prepared for mounting an incremental encoder POG 10	–	✓
K08	Signal connector mounted opposite	–	✓
K16	Second standard shaft extension (only possible without encoder)	–	✓
K31	2nd rating plate supplied separately in terminal box	✓	✓
K40	Re-lubrication device DE and NDE (not possible with bearings for increased maximum speed)	✓	Standard
K45	230 V AC standstill heating	–	✓
K55	Cable entry plate, terminal box, customer-specific ¹⁾	✓	✓
K83	Terminal box rotated through +90 degrees	–	✓
K84	Terminal box rotated through -90 degrees	–	✓
K85	Terminal box rotated through 180 degrees	–	✓
L27	NDE bearing in insulated version	✓	Standard
		Only for 1PL618	
		Standard with 1PL622	
M83	Additional thread for a setting screw on motor feet	–	✓
Y55	Non-standard shaft extension DE	On request	On request
Y80	Different rating plate data ¹⁾	On request	On request
Y82	Additional rating plate with customer data ¹⁾	On request	On request
	Primer or paint finish in anthracite RAL 7016	Standard	Standard
R1Y	Paint finish in other RAL color ²⁾	✓	✓
R2Y	Special finish in other RAL color ²⁾	✓	✓

✓ Option available

– Option not available

When ordering a motor with options, **-Z** should be added to the order number.

¹⁾ Plain text is required in addition to order code.

²⁾ RAL color number must be specified in addition to order code.

Technical specifications

Terminal box type (see selection and ordering data for assignment)	Cable entry		Max. outer cable diameter ³⁾ mm (in)	Number of main terminals	Max. cross-section per terminal mm ²	Max. rated current ⁴⁾ A
	Power	External signals				
gk803	1 × M25 × 1.5	1 × M16 × 1.5 ¹⁾	20 (0.79)	Phases: 3 × M5 Grounding: 2 × M5	1 × 10	52
gk813	1 × M32 × 1.5	1 × M16 × 1.5 ¹⁾	24.2 (0.95)	Phases: 3 × M5 Grounding: 2 × M5	1 × 16	70
gk823	1 × M32 × 1.5	1 × M16 × 1.5 ¹⁾	24.2 (0.95)	Phases: 3 × M5 Grounding: 2 × M5	1 × 16	70
gk826	1 × M32 × 1.5	1 × M16 × 1.5 ¹⁾	24.2 (0.95)	Phases: 6 × M5 Grounding: 2 × M5	1 × 10	52
gk833	1 × M40 × 1.5	1 × M16 × 1.5 ¹⁾	32 (1.26)	Phases: 3 × M6 Grounding: 2 × M6	1 × 35	110
gk843	1 × M50 × 1.5	1 × M16 × 1.5 ¹⁾	38 (1.50)	Phases: 3 × M6 Grounding: 2 × M6	1 × 50	133
gk863	1 × M50 × 1.5	1 × M16 × 1.5 ¹⁾	38 (1.50)	Phases: 3 × M6 Grounding: 2 × M6	1 × 50	133
gk873	1 × M63 × 1.5	1 × M16 × 1.5 ¹⁾	42.6 (1.68)	Phases: 3 × M6 Grounding: 2 × M6	1 × 50	133
gk874	1 × M63 × 1.5	1 × M16 × 1.5 ¹⁾	42.6 (1.68)	Phases: 3 × M10 Grounding: 2 × M6	2 × 70	240
1XB7322-P05	2 × M50 × 1.5	1 × PG 13.5 ²⁾	38 (1.50)	Phases: 3 × M12 Grounding: 2 × fixing eyelet	2 × 50	210
1XB7422-P06	2 × M63 × 1.5	1 × PG 13.5 ²⁾	53 (2.09)	Phases: 3 × M12 Grounding: 2 × fixing eyelet	2 × 70	270
1XB7700-P02	3 × M75 × 1.5	1 × PG 13.5 ²⁾	68 (2.68)	Phases: 3 × 2 × M12 Grounding: 2 × fixing eyelet	3 × 150	700
1XB7712-P03	4 × M75 × 1.5	1 × PG 13.5 ²⁾	68 (2.68)	Phases: 3 × 4 × M16 Grounding: 4 × M16	4 × 185	1150
With 1PH835 only						
1XB7712-P01	3 × M63 × 1.5	1 × M20 × 1.5 ⁵⁾ 1 × M25 × 1.5 ⁶⁾	53 (2.09)	Phases: 3 × 4 × M16 Grounding: 4 × M16	3 × 95	450
1XB7712-P03	4 × M75 × 1.5	1 × M20 × 1.5 ⁵⁾ 1 × M25 × 1.5 ⁶⁾	68 (2.68)	Phases: 3 × 4 × M16 Grounding: 4 × M16	4 × 185	1150
1XB7820-P00	Undrilled	1 × M20 × 1.5 ⁵⁾ 1 × M25 × 1.5 ⁶⁾	–	Phases: 2 × 3 × 4 × M16 Grounding: 8 × M16	8 × 240	2100

For terminal box type **1XB7712-P01** or **1XB7712-P03**, other cable entries (power) can be ordered via P options depending on the standard:

P00	Undrilled cable entry plate
P01	Cable entry plate 3 × M63 × 1.5 (not for 1XB7712-P01)
P02	Cable entry plate 3 × M75 × 1.5
P03	Cable entry plate 4 × M75 × 1.5 (not for 1XB7712-P03)
P04	Cable entry plate 4 × M63 × 1.5

For terminal box type **1XB7700-P02** other cable entries (power) can be ordered via P options depending on the standard:

P00	Undrilled cable entry plate
P01	Cable entry plate 3 × M63 × 1.5

For terminal box type **1XB7322-P05** and **1XB7422-P06**, other cable entries (power) can be ordered via the P option depending on the standard:

P00	Undrilled cable entry plate
------------	-----------------------------

For options **K09** or **K10**, instead of terminal box **gk863**, terminal box **gk873** is used mounted on the side.

For options **K09** or **K10**, instead of terminal box **gk833**, terminal box **gk843** is used mounted on the side.

For options **K09** or **K10**, instead of terminal box **gk813**, terminal box **gk823** is used mounted on the side.

- 1) Thread M16 × 1.5 arranged with 90° to signal connection; thread only for options A12, A25 and 9th data position "A" (without encoder).
- 2) Arranged opposite of signal connection (sideways from cable entry plate).
- 3) Dependent on the design of the metric cable gland.
- 4) Current-carrying capacity based on EN 60204-1/IEC 60364-5-52 with installation type E.
- 5) Mounted on left side of terminal box (viewed toward cable entries).
- 6) Mounted on right side of terminal box (viewed toward cable entries).

Main motors

Selection guides

Selection guides for 1PH8 motors Ventilation data/Sound pressure levels

Technical specifications (continued)

Motor type	Direction of air flow	Fan motor max. current consumption at			Volume of air, min. m ³ /s (ft ³ /s)	Sound pressure level L _{pA} (1 m) Motor + external fan operation at 50 Hz tolerance + 3 dB dB
		A	A	A		
Forced ventilation		230 V 50 Hz (± 10 %)	230 V 60 Hz (± 10 %)	265 V 60 Hz (± 10 %)		
1PH808	NDE → DE	0.33	0.25	0.32	0.02 (0.71)	70 ¹⁾
	DE → NDE	0.20	0.16	0.19	0.02 (0.71)	70 ¹⁾
Forced ventilation		400 V 50 Hz (± 10 %)	400 V 60 Hz (± 10 %)	480 V 60 Hz (± 10 %)		
1PH810	NDE → DE	0.12	0.09	0.12	0.04 (1.41)	70 ¹⁾
	DE → NDE	0.13	0.09	0.13	0.04 (1.41)	70 ¹⁾
1PH813	NDE → DE	0.13	0.16	0.17	0.09 (3.18)	70 ¹⁾
	DE → NDE	0.21	0.19	0.23	0.09 (3.18)	70 ¹⁾
1PH816	NDE → DE	0.17	0.22	0.22	0.16 (5.65)	73 ¹⁾
	DE → NDE	0.23	0.30	0.30	0.16 (5.65)	73 ¹⁾
Forced ventilation		400 V 50 Hz (± 10 %)	400 V 60 Hz (+ 5%/- 10 %)	480 V 60 Hz (+ 5%/- 10 %)		
1PH835.-1..1 (IP55 degree of protection)	NDE → DE	4.7	4.6	4.6	0.75 (26.5)	77 ²⁾
	DE → NDE					
1PH835.-1..4 (IP23 degree of protection)	NDE → DE	4.7	4.6	4.6	1 (35.3)	77 ²⁾
	DE → NDE					

¹⁾ For rated pulse frequency of 4 kHz and speed range up to 5000 rpm.

²⁾ For rated pulse frequency of 2.5 kHz and speed range up to 2800 rpm.

Technical specifications (continued)

Cooling data and sound pressure levels

Motor type	Flow volume, min.	Pressure drop	Water connection at NDE thread	Sound pressure level L_{pA} (1 m) motor tolerance + 3 dB
	l/min (US gal./min)			
Water cooling				
1PH808	6 (1.58)	0.6	G 1/8	68 ¹⁾
1PH810	8 (2.11)	0.4	G 1/4	68 ¹⁾
1PH813	12 (3.17)	0.9	G 3/8	68 ¹⁾
1PH816	15 (3.96)	0.2	G 1/2	69 ¹⁾
1PH8184	15 (3.96)	0.6	G 3/8	70 ²⁾
1PH8186	15 (3.96)	0.7	G 3/8	70 ²⁾
1PH822.-1 (asynchronous variant)	20 (5.28)	0.6	G 3/8	70 ²⁾
1PH822.-2 (synchronous variant)	25 (6.61)	0.9	G 3/8	70 ³⁾
1PH828	35 (9.25)	0.6	G 1/2	72 ³⁾

Water specification

Cooling water quality

The values specified for the cooling water correspond to the requirements for a closed cooling circuit. Not all of the specified concentrations will occur in the cooling water at the same time. For trouble-free operation, a filter can be installed. The filter fineness should be no less than 100 µm.

Cooling water specifications

pH value	6.0 ... 9.0
Total hardness	< 170 ppm
Conductivity	< 500 µS/cm
Operating pressure, max.	< 6 bar
Pressure drop at V(N)	< 1 bar
Cooling water inlet temperature, max.	< 30 °C (86 °F)
Cooling water temperature, min.	$T_{\text{cooling water}} > T_{\text{ambient}} - 5 \text{ K}$
Anti-freeze protection / corrosion protection	20 ... 30 %
NALCO 00GE056 inhibitor	0.2 ... 0.25 %

Components

Dissolved substances	< 340 ppm
Max. grain size	< 100 µm
Chloride ions	< 40 ppm
Sulfate ions	< 50 ppm
Nitrate ions	< 50 ppm

¹⁾ For rated pulse frequency of 4 kHz and speed range up to 5000 rpm.

²⁾ For rated pulse frequencies of 2 kHz or 4 kHz and speed ranges:
1PH818 up to 5000 rpm
1PH822 up to 4500 rpm.

³⁾ At rated pulse frequency of 2 kHz and speed ranges:
1PH822 up to 4500 rpm
1PH828 up to 3300 rpm.

Main motors

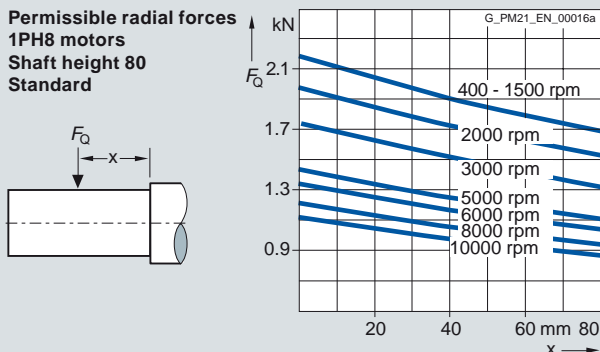
Selection guides

Selection guides for 1PH8 motors Radial force diagrams

Characteristic curves

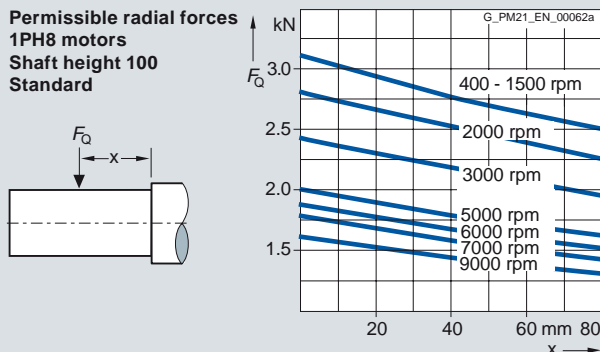
5

Permissible radial forces
1PH8 motors
Shaft height 80
Standard



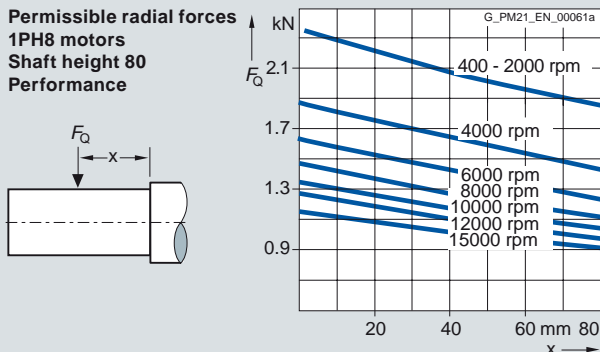
$L_{10h} = 20000$ h

Permissible radial forces
1PH8 motors
Shaft height 100
Standard



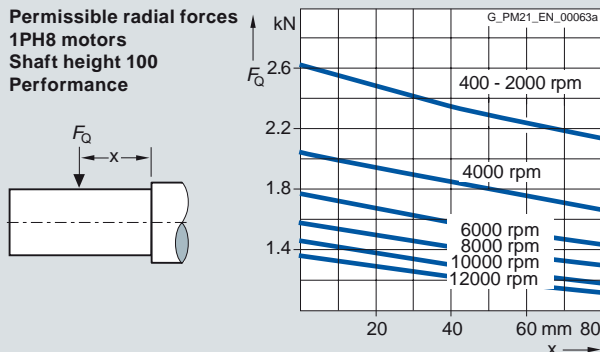
$L_{10h} = 20000$ h

Permissible radial forces
1PH8 motors
Shaft height 80
Performance



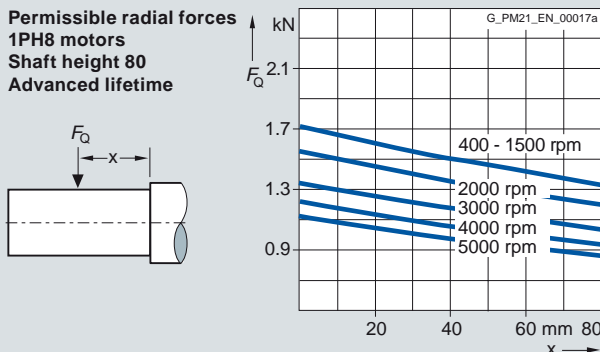
$L_{10h} = 12000$ h

Permissible radial forces
1PH8 motors
Shaft height 100
Performance



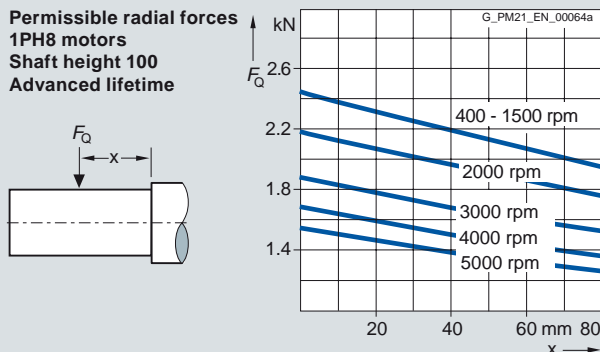
$L_{10h} = 12000$ h

Permissible radial forces
1PH8 motors
Shaft height 80
Advanced lifetime



$L_{10h} = 40000$ h

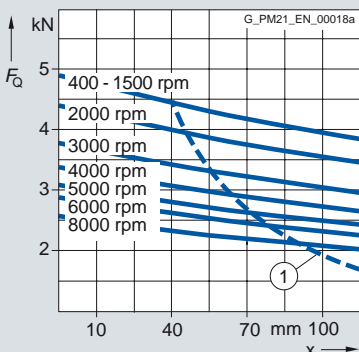
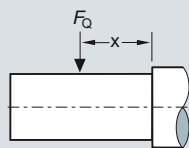
Permissible radial forces
1PH8 motors
Shaft height 100
Advanced lifetime



$L_{10h} = 40000$ h

Characteristic curves (continued)

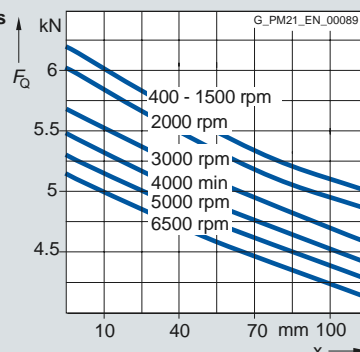
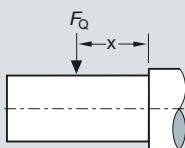
**Permissible radial forces
1PH8 motors
Shaft height 132
Standard**



① Maximum load for 1PH7-compatible shaft extension (42 x 110 mm) (1.65 x 4.33 in) (option V90)

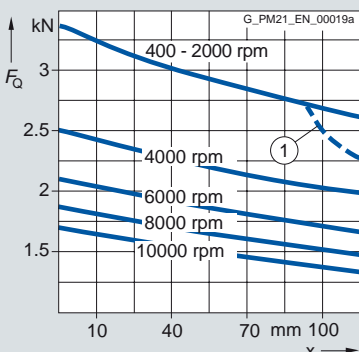
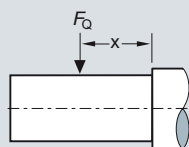
$L_{10h} = 20000$ h

**Permissible radial forces
1PH8 motors
Shaft height 160
Standard**



$L_{10h} = 20000$ h

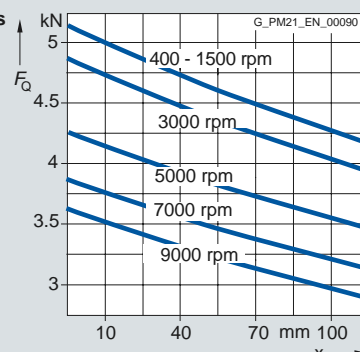
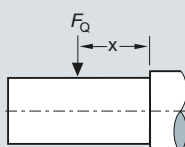
**Permissible radial forces
1PH8 motors
Shaft height 132
Performance**



① Maximum load for 1PH7-compatible shaft extension (42 x 110 mm) (1.65 x 4.33 in) (option V90)

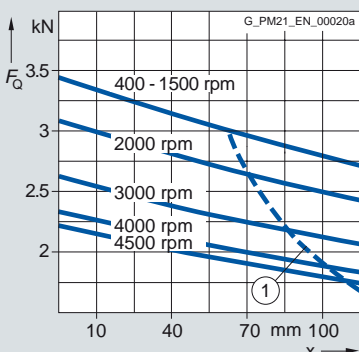
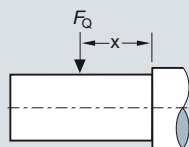
$L_{10h} = 12000$ h

**Permissible radial forces
1PH8 motors
Shaft height 160
Performance**



$L_{10h} = 12000$ h

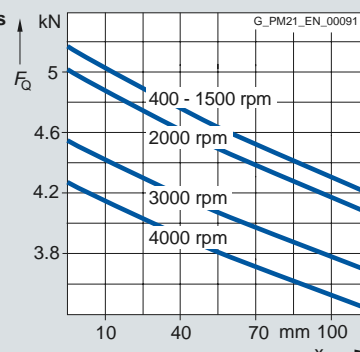
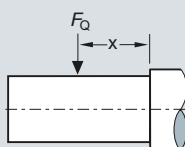
**Permissible radial forces
1PH8 motors
Shaft height 132
Advanced lifetime**



① Maximum load for 1PH7-compatible shaft extension (42 x 110 mm) (1.65 x 4.33 in) (option V90)

$L_{10h} = 40000$ h

**Permissible radial forces
1PH8 motors
Shaft height 160
Advanced Lifetime**



$L_{10h} = 40000$ h

Main motors

Selection guides

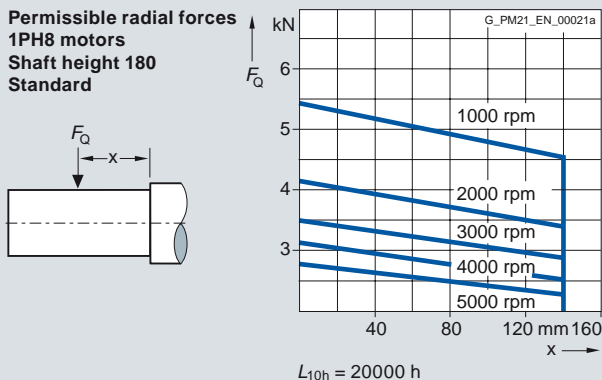
Selection guides for 1PH8 motors

Radial force diagrams

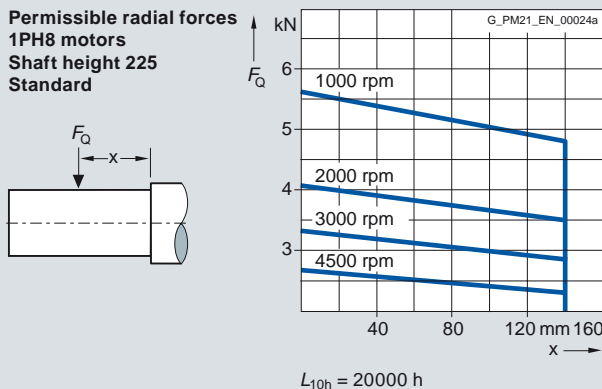
Characteristic curves (continued)

5

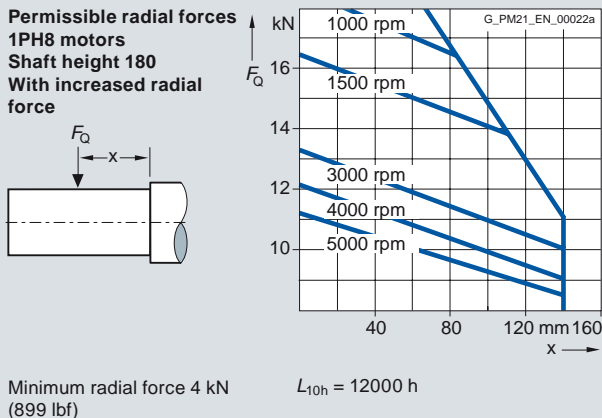
Permissible radial forces
1PH8 motors
Shaft height 180
Standard



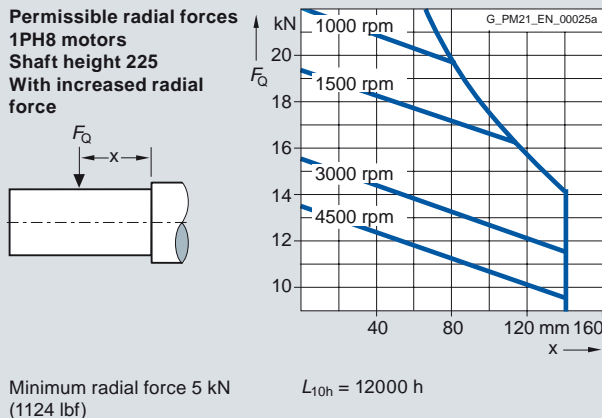
Permissible radial forces
1PH8 motors
Shaft height 225
Standard



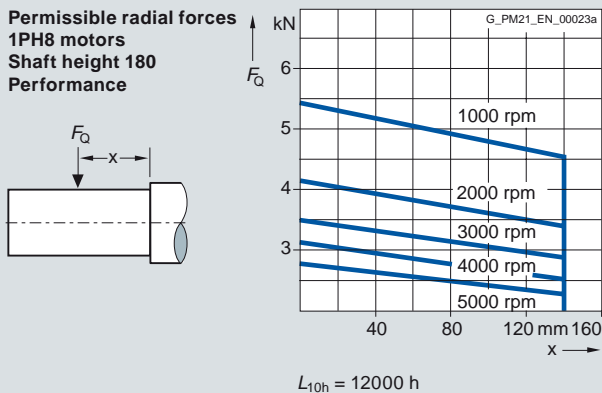
Permissible radial forces
1PH8 motors
Shaft height 180
With increased radial force



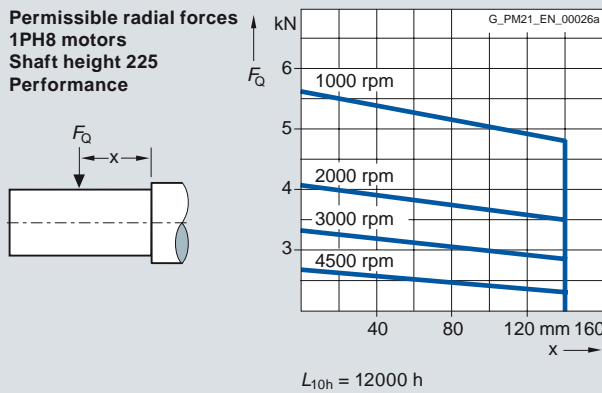
Permissible radial forces
1PH8 motors
Shaft height 225
With increased radial force



Permissible radial forces
1PH8 motors
Shaft height 180
Performance



Permissible radial forces
1PH8 motors
Shaft height 225
Performance

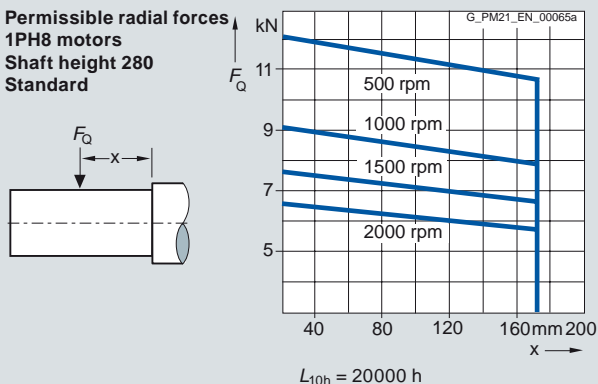


Note:

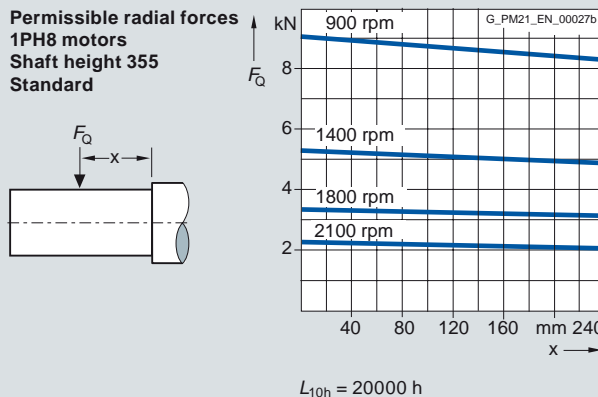
The roller bearings used here (bearings with increased radial force) could sustain damage if they are operated under no load. Observe the specified minimum radial forces!

Characteristic curves (continued)

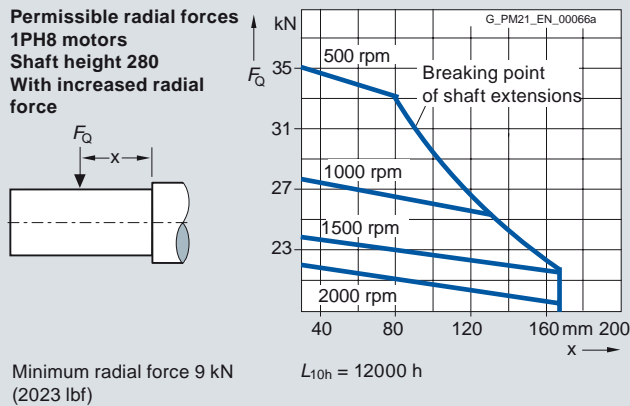
**Permissible radial forces
1PH8 motors
Shaft height 280
Standard**



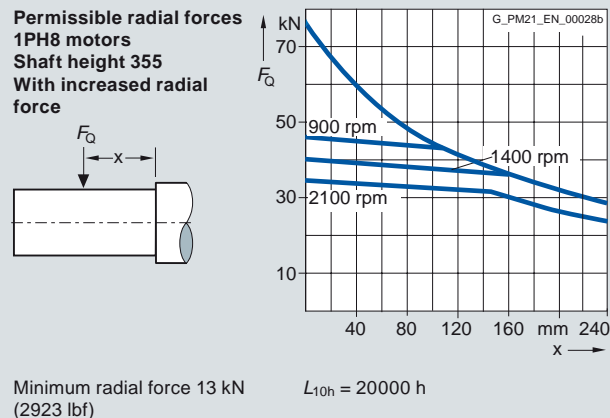
**Permissible radial forces
1PH8 motors
Shaft height 355
Standard**



**Permissible radial forces
1PH8 motors
Shaft height 280
With increased radial force**



**Permissible radial forces
1PH8 motors
Shaft height 355
With increased radial force**



Note:

The roller bearings used here (bearings with increased radial force) could sustain damage if they are operated under no load. Observe the specified minimum radial forces!

Main motors

Selection guides

Selection guides for 1PH7/1PL6 motors Terminal box/Cable cross-sections

Technical specifications

Terminal box	Cable entry	Outer cable diameter, max.	Cable entry	Outer cable diameter, max. ¹⁾	Number of main terminals	Cross-section per terminal, max.	Current per terminal, max. ²⁾
Type	Valid for Order No. with 8th data position 2, 4 or 6 ³⁾		Valid for Order No. with 8th data position 7 or 8			mm ²	A
		mm (in)		mm (in)			
1XB7322	2 x PG42	40 (1.57)	2 x M50 x 1.5	38 (1.50)	3 x M12	2 x 50	191
1XB7422	2 x M72 x 2	56 (2.20)	2 x M63 x 1.5	53 (2.09)	3 x M12	2 x 70	242
1XB7700	3 x M72 x 2	56 (2.20)	3 x M75 x 1.5	68 (2.68)	3 x 2 x M12	3 x 150	583
1XB7712	For 1PH728-..B / 1PH7284-..C / 1PH7284-..D motors						
	3 x M63 x 1.5	53 (2.09)	–	–	(3+1) ⁴⁾ x 3 x M16	3 x 95	450
	For 1PH728-..F / 1PH7286-..C / 1PH7286-..D / 1PH7288-..C / 1PH7288-..D motors						
	3 x M75 x 1.5	68 (2.68)	–	–	(3+1) ⁴⁾ x 3 x M16	3 x 185	710
	For 1PL628 motors						
	4 x M75 x 1.5	68 (2.68)	–	–	(3+1) ⁴⁾ x 4 x M16	4 x 185	925

¹⁾ Dependent on the design of the metric cable gland.

²⁾ Current carrying capacity similar to EN 60204-1 for installation type C.

³⁾ Not for 1PH728/1PL628.

⁴⁾ Including ground terminal.

Technical specifications (continued)

Motor Type	Direction of air flow	Fan motor current consumption at			Volume of air, approx. at 50 Hz	Sound pressure level L_{pA} (1 m)
		400 V 50 Hz (± 10 %)	400 V 60 Hz (± 10 %)	480 V 60 Hz (+ 5 %, - 10 %)		
		A	A	A	m ³ /s (ft ³ /s)	Motor + external fan operation 50 Hz Tolerance +3 dB Rated pulse frequency 4 kHz/2.5 kHz dB
Forced ventilation, 1PH7 motors						
1PH718	NDE → DE DE → NDE	0.8	1.1	1.1	0.19 (6.71)	73
1PH722	NDE → DE DE → NDE	1.9 2.8	2.2 2.8	2.2 2.8	0.36 (12.7) 0.36 (12.7)	74 76 ¹⁾
1PH728	NDE → DE DE → NDE	2.55	2.6	2.6	0.42 (14.8)	74
Forced ventilation, 1PL6 motors						
1PL618	NDE → DE DE → NDE	0.8	1.1	1.1	0.27 (9.53)	73 ²⁾
1PL622	NDE → DE DE → NDE	1.9 2.8	2.2 2.8	2.2 2.8	0.38 (13.4) 0.38 (13.4)	74 ²⁾ 76 ¹⁾²⁾
1PL628	NDE → DE DE → NDE	2.55	2.6	2.6	0.52 (18.3)	74 ²⁾

¹⁾ The sound pressure level can be reduced if the air flow is from the drive end to the non-drive end with option G15 (sound attenuator).

²⁾ Speed range 0 to 2000 rpm.

Main motors

Selection guides

Selection guides for 1PH7/1PL6 motors

Bearing design/Bearing service life

Technical specifications (continued)

Motor type	Bearing type	Drive type	Bearing		Continuous speed for S1 duty, max.		Speed limit, max. ¹⁾	
			Motor end	Bearing designation	n_{s1}	$n_{s1}^{2)}$	$n_{max.}$	$n_{max.}^{2)}$
					rpm	rpm	rpm	rpm
1PH718/1PL618	Deep-groove ball bearing	Coupling output	DE NDE	6214 C3 6214 C3	3500	4500	5000	7000
	Cylindrical roller bearing	Belt output	DE NDE	NU22 14E 6214 C3	3500	–	5000	–
	Cylindrical roller bearing	Increased radial forces	DE NDE	NU22 14E 6214 C3	3000	–	5000	–
1PH722/1PL622	Deep-groove ball bearing	Coupling output	DE NDE	6216 C3 6216 C3	3100	3600 (for 1PH7224)	4500	5500 (for 1PH7224)
	Cylindrical roller bearing	Belt output	DE NDE	NU22 16E 6216 C3	3100	–	4500	–
1PH7224/1PH7226/ 1PL6224/1PL6226	Cylindrical roller bearing	Increased radial forces	DE NDE	NU22 16E 6216 C3	2700	–	4500	–
1PH7228/1PL6228	Cylindrical roller bearing	Increased radial forces	DE NDE	NU22 16E 6216 C3	2500	–	4000	–
1PH728/1PL628	Deep-groove ball bearing	Coupling output	DE NDE	6220 C3 6220 C3	2200	–	3300	–
	Cylindrical roller bearing	Belt output	DE NDE	NU22 0E 6220 C3	2200	–	3300	–

Bearing service life

The bearing service life is limited by material fatigue, the fatigue service life, or lubrication failure, the grease service life.

The fatigue service life, the static bearing service life L_{10h} , is primarily dependent on the mechanical load. This correlation can be seen in the radial force/axial force diagrams. The values were determined in accordance with DIN/ISO 281.

The grease lifetime is mainly dependent on the bearing size, speed, temperature as well as the vibration load. The grease lifetime can be extended by especially favorable operating conditions, e.g. low average speed, low bearing temperature, radial force or vibration load.

A reduced bearing service life can be expected for difficult operating conditions and when motors are mounted vertically.

Lifetime lubrication

On motors equipped with lifetime lubrication, the grease lifetime is harmonized with bearing service life.

Apart from the 1PH728/1PL628 motors, the 1PH7/1PL6 motors in the basic version have lifetime lubrication.

Regreasing system

For motors with regreasing systems, the bearing service life can be extended through defined regreasing intervals and influencing factors such as mounting conditions, speed, bearing size and mechanical load can be compensated.

Lubricating nipples for regreasing are provided as standard on 1PH728/1PL628 motors. With the exception of 1PH728/1PL628 motors, regreasing with lubricating nipples can be supplied as an option, order code K40.

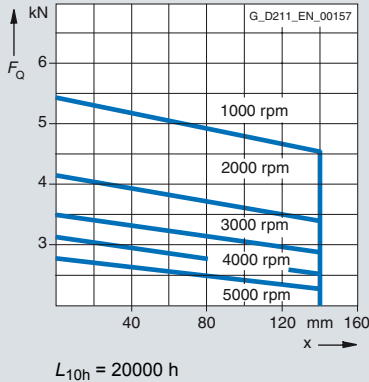
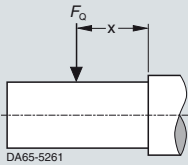
For more information, see 1PH7 and 1PL6 Configuration Manuals.

¹⁾ For continuous duty (with 30 % n_{max} , 60 % $2/3 n_{max}$, 10 % standstill) for a duty cycle duration of 10 min.

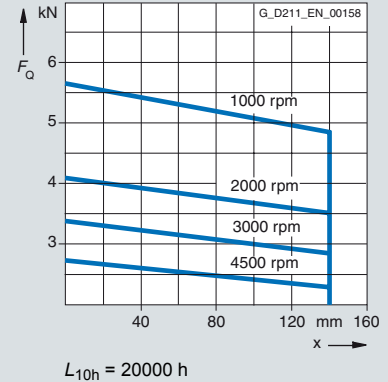
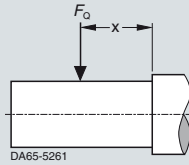
²⁾ Version for increased maximum speed, see selection and ordering data for 1PH7.

Characteristic curves

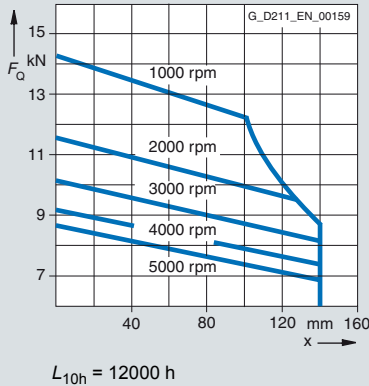
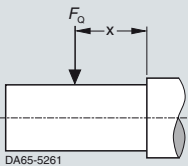
Permissible radial forces for coupling output 1PH718/1PL618 motors



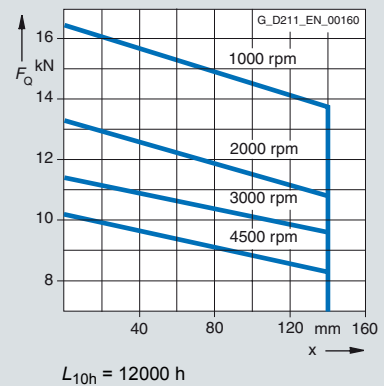
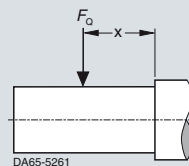
Permissible radial forces for coupling output 1PH722/1PL622 motors



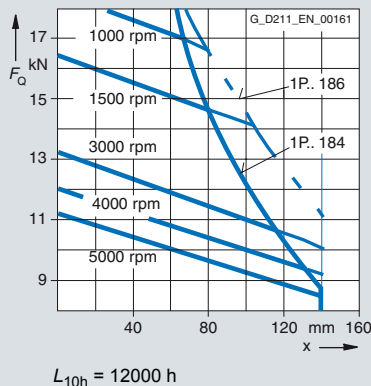
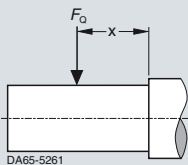
Permissible radial forces for belt output 1PH718/1PL618 motors



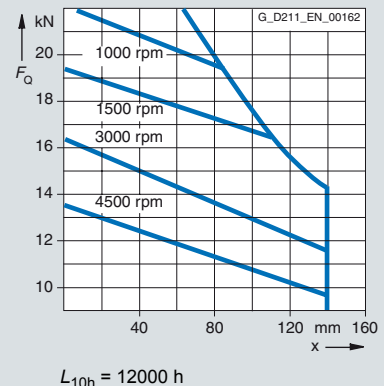
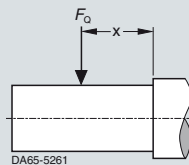
Permissible radial forces for belt output 1PH722/1PL622 motors



Permissible radial forces for belt output with increased radial force 1PH718/1PL618 motors



Permissible radial forces for belt output with increased radial force 1PH722/1PL622 motors



Note:

The roller bearings used here (bearings with increased radial force) could sustain damage if they are operated under no load. Observe the specified minimum radial forces!

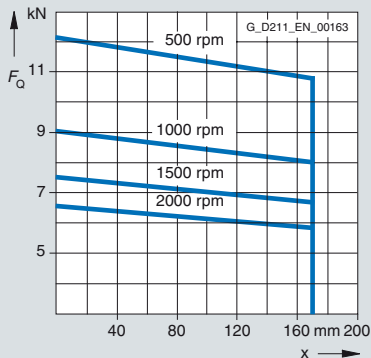
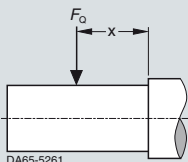
Main motors

Selection guides

Selection guides for 1PH7/1PL6 motors Radial force diagrams

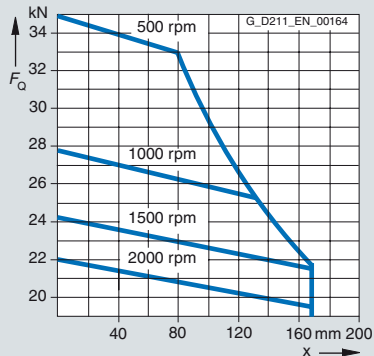
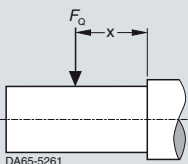
Characteristic curves (continued)

Permissible radial forces for coupling output 1PH728/1PL628 motors



$L_{10h} > 20000$ h
when regreased

Permissible radial forces for belt output with increased radial force 1PH728/1PL628 motors



$L_{10h} > 12000$ h
when regreased

Minimum radial force 9 kN

Note:

The roller bearings used here (bearings with increased radial force) could sustain damage if they are operated under no load. Observe the specified minimum radial forces!

Options

Mounted holding brake for 1PH718/1PH722 motors

A holding brake (Stromag) can be mounted on the DE end of 1PH718/1PH722 motors. The motor shaft is extended using a shrunk-on stub shaft. The torque is transmitted through a fitted key in accordance with DIN 6885-1. In addition, the stub shaft can be axially secured using a thrust washer and a central screw (M20).

The holding brake does not have its own bearings; the output forces are therefore absorbed by the motor bearings. Due to limitations of space and their high radial forces, belt pulleys cannot be attached. When selecting the coupling to couple to the motor-brake combination, it should be carefully noted that the shaft extension diameter is larger than the diameter of the motor shaft extension.

The electromagnetic holding brake operates in accordance with the quiescent current principle, i.e. when current is flowing, the brake is released electromagnetically and when no current is flowing, the braking effect is achieved through the spring force.

When the power fails or an emergency stop is issued, the drive is braked from its current speed down to standstill and the brake holds the drive steady.

The holding brake is designed for dry operation and maintains IP55 degree of protection. The connection must be provided by the customer.

In the basic version, the brake has three emergency release screws; these are axially accessible from the front. The integrated or built-on microswitch can be incorporated in a higher-level control system as either an NC or an NO contact. The fast switching rectifier in the terminal box for the holding brake is used to over-excite the coil to release the brake and to achieve short release times. Release current = 2 × holding current

Motor Type	Holding brake Type	Holding torque (tolerance ± 20 %)	Speed, max.	Single switching energy, perm.	Service life switching energy	Coil current	Shaft extension dimension DIN 748		Cantilever force, perm. (3000 rpm, $\chi_{max.}$)	Moment of inertia of brake	Opening time	Closing time	Weight, brake
			$n_{max.}$	W_E	$W_{max.}$	I	Ø	Length		J			
		Nm (lb _r -ft)	rpm	kJ	MJ	A	mm (in)	mm (in)	N (lb _r)	kgm ² (lb _r -in-s ²)	ms	ms	kg (lb)
Brake supply voltage 230 V AC, 50 to 60 Hz													
1PH7184	NFE 60	600 (443)	3500	69	154	0.9	90 (3.54)	90 (3.54)	2800 (629.47)	0.027 (0.24)	400	160	55 (121)
1PH7186	NFE 60/80	800 (590)		91	56					0.026 (0.23)			
1PH7224	NFE 100	1000 (738)	3100	158	153	1.3	100 (3.94)	100 (3.94)	2800 (629.47)	0.041 (0.36)	460	200	75 (165)
1PH7226	NFE 100	1000 (738)		206	109					0.041 (0.36)			
1PH7228	NFE 100/140	1400 (1033)		248	32					0.041 (0.36)			

Speed $n_{max.}$:

Max. permissible speed at which an emergency stop is possible.

Single switching energy, perm. W_E :

Perm. switching energy for emergency stop
 $W_E = J_{tot.} \times n^2 / 182.5 \times 10^{-3}$ (J in kgm², n in rpm)

Service life switching energy $W_{max.}$:

Max. possible switching energy of the brake (for emergency stop) until the brake linings must be replaced. $W_{max.} = W_E \times z$

Number of emergency stops z :

The number of emergency stops refers to the following conditions:

Braking from speed $n_{max.}$, $J_{tot.} = 2 \times J_{mot.}$

A conversion can be made for operation under different conditions:

Number of emergency stops $z = W_{max.} / W_E$

Coil current I :

Current in order to maintain the brake in a released condition.

Release current = 2 × holding current

Permissible radial force:

Only coupling output is permissible.

Opening time:

Separating time until the brake opens. The values refer to the maximum braking torque.

Closing time:

Interlocking time until the brake closes. The values refer to the maximum braking torque.

Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 80 – Forced ventilation

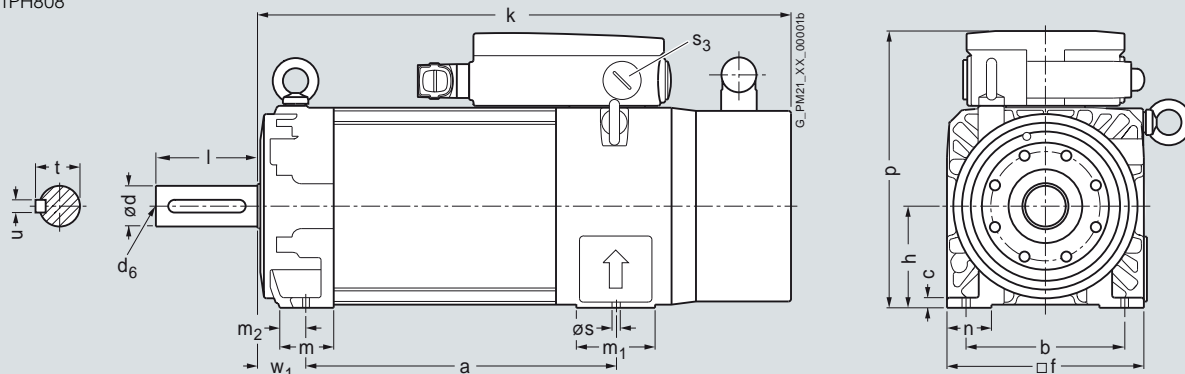
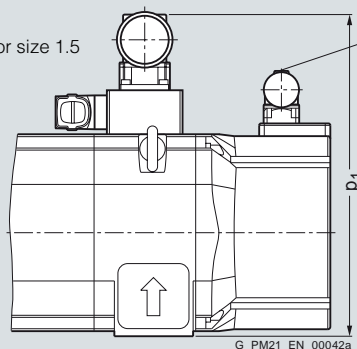
Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN a IEC B	b A	c HA	f AB	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	p HD	p ₁ –
1PH8, type of construction IM B3, forced ventilation													
80	1PH8083	194 (7.64)	125 (4.92)	8 (0.31)	155 (6.10)	80 (3.15)	375 (14.76)	42 (1.65)	62 (2.44)	20 (0.79)	35 (1.38)	216 (8.50)	253.5 (9.98)
	1PH8087	244 (9.61)					425 (16.73)						

Shaft height	Type	DIN s IEC K	s ₃ –	w ₁ C	Shaft extension DE				
					d D	d ₆ –	l E	t GA	u F
80	1PH8083	10 (0.39)	M25 × 1.5	38 (1.50)	32 (1.26)	M12	80 (3.15)	35 (1.38)	10 (0.39)
	1PH8087								

1PH808

Variant with
power connector size 1.5Connector size 1 for
fan connection

Main motors Dimensional drawings

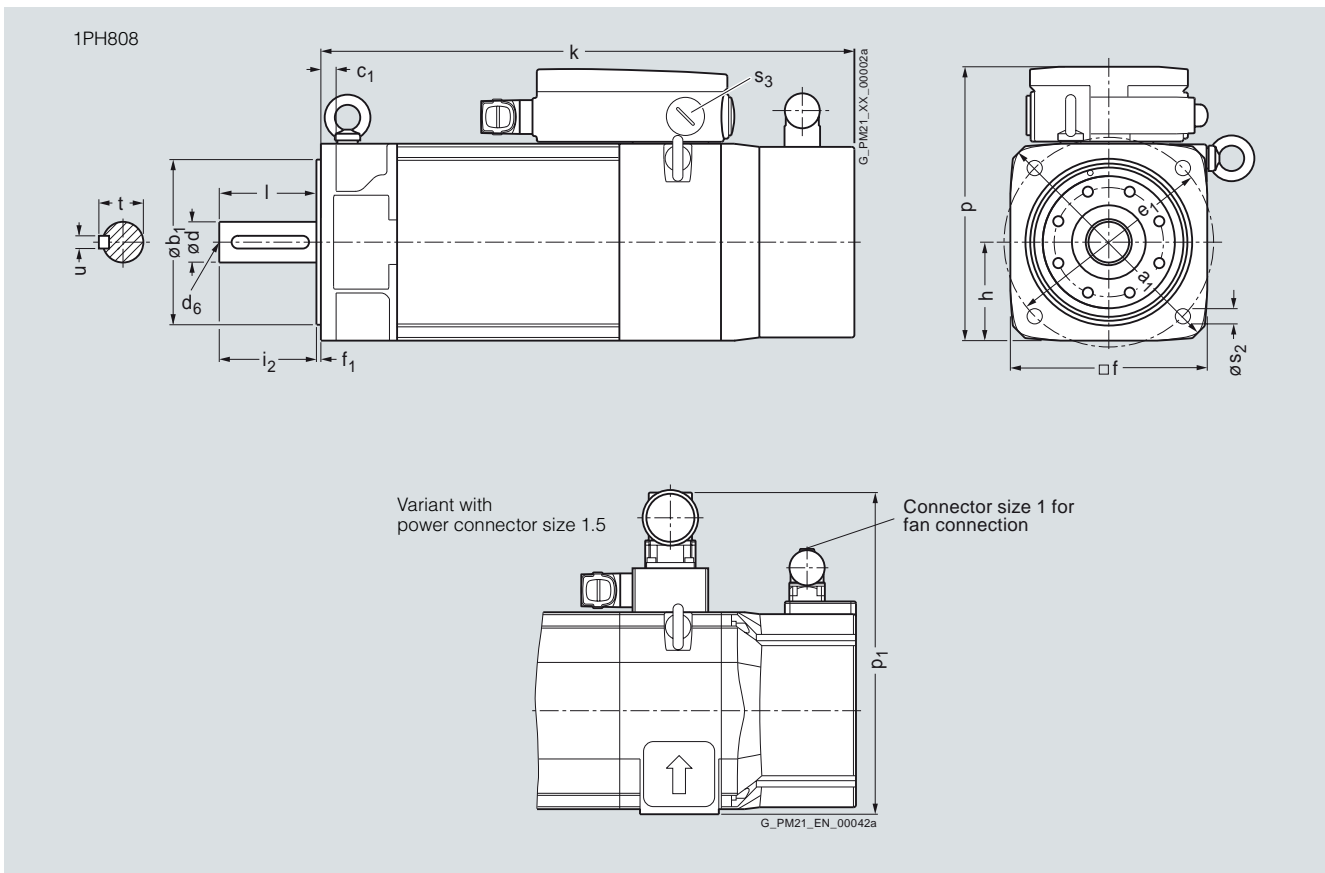
1PH8 asynchronous motors Shaft height 80 – Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)												
Shaft height	Type	DIN IEC P	a ₁ N	b ₁ N	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	p HD	p ₁ -	s ₂ -	s ₃ -
1PH8, type of construction IM B5, forced ventilation														
80	1PH8083	200 (7.87)	130 (5.12)	12 (0.47)	165 (6.50)	155 (6.10)	3.5 (0.14)	77.5 (3.05)	375 (14.76)	213.5 (8.41)	251 (9.88)	12 (0.47)	M25 × 1.5	
	1PH8087								425 (16.73)					

		Shaft extension DE				
Shaft height	Type	DIN IEC D	d ₆ -	i ₂ E	t GA	u F
80	1PH8083	32 (1.26)	M12	80 (3.15)	35 (1.38)	10 (0.39)
	1PH8087					

5



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 80 – Water cooling

Dimensional drawings

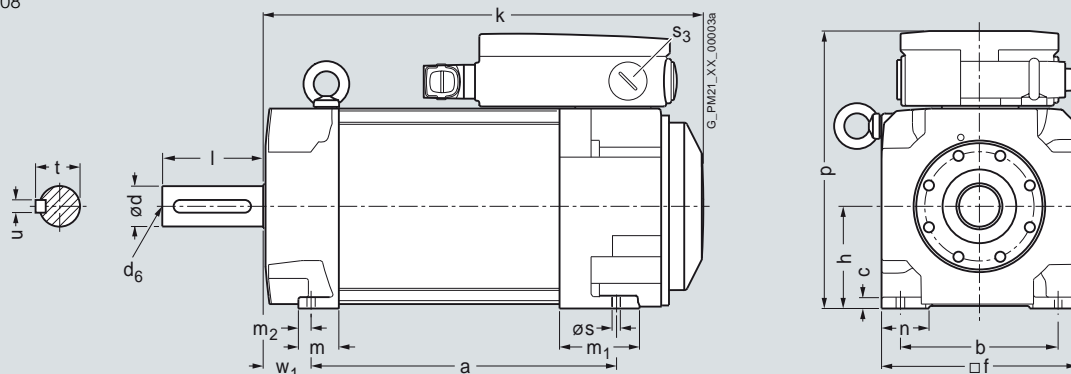
For motor Dimensions in mm (inches)

Shaft height	Type	DIN a IEC B	b A	c HA	f AB	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	p HD	p ₁ –
1PH8, type of construction IM B3, water cooling													
80	1PH8083	194 (7.64)	125 (4.92)	8 (0.31)	155 (6.10)	80 (3.15)	301.5 (11.87)	37 (1.46)	63.5 (2.50)	15 (0.59)	35 (1.38)	216 (8.50)	253.5 (9.98)
	1PH8087	244 (9.61)					351.5 (13.84)						

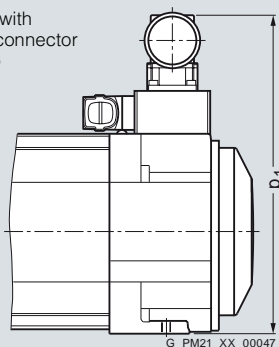
Shaft extension DE

Shaft height	Type	DIN s IEC K	s ₃ –	w ₁ C	d D	d ₆ –	l E	t GA	u F
80	1PH8083	10 (0.39)	M25 × 1.5	38 (1.50)	32 (1.26)	M12	80 (3.15)	35 (1.38)	10 (0.39)
	1PH8087								

1PH808



Variant with
power connector
size 1.5



Main motors Dimensional drawings

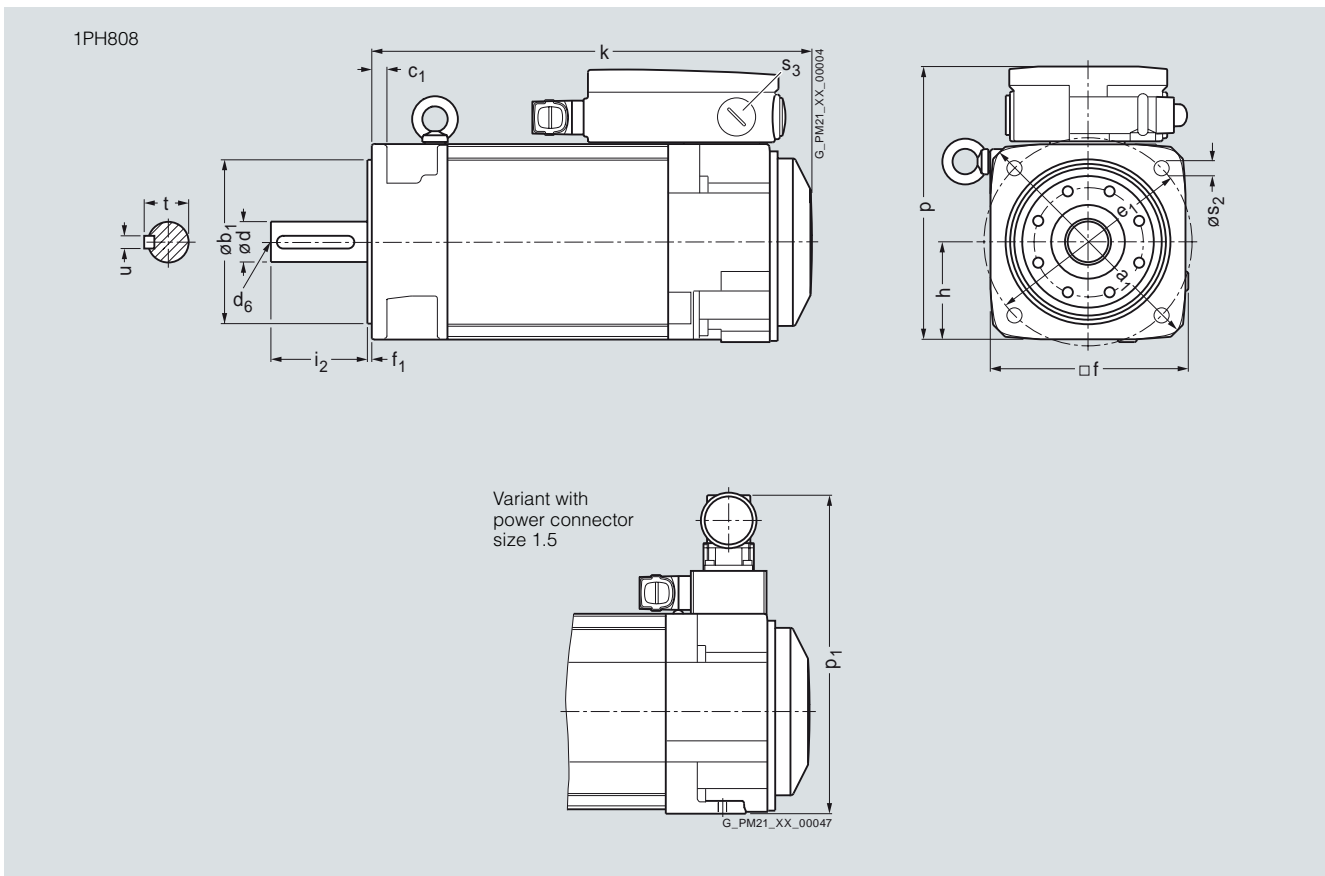
1PH8 asynchronous motors Shaft height 80 – Water cooling

Dimensional drawings

For motor		Dimensions in mm (inches)												
Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	p HD	p ₁ -	s ₂ -	s ₃ -
1PH8, type of construction IM B5, water cooling														
80	1PH8083		200 (7.87)	130 (5.12)	12 (0.47)	165 (6.50)	155 (6.10)	3.5 (0.14)	77.5 (3.05)	301.5 (11.87)	213.5 (8.41)	251 (9.88)	12 (0.47)	M25 × 1.5
	1PH8087									351.5 (13.84)				

		Shaft extension DE					
Shaft height	Type	DIN IEC	d D	d ₆ -	i ₂ E	t GA	u F
80	1PH8083		32 (1.26)	M12	80 (3.15)	35 (1.38)	10 (0.39)
	1PH8087						

5



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 100 – Forced ventilation

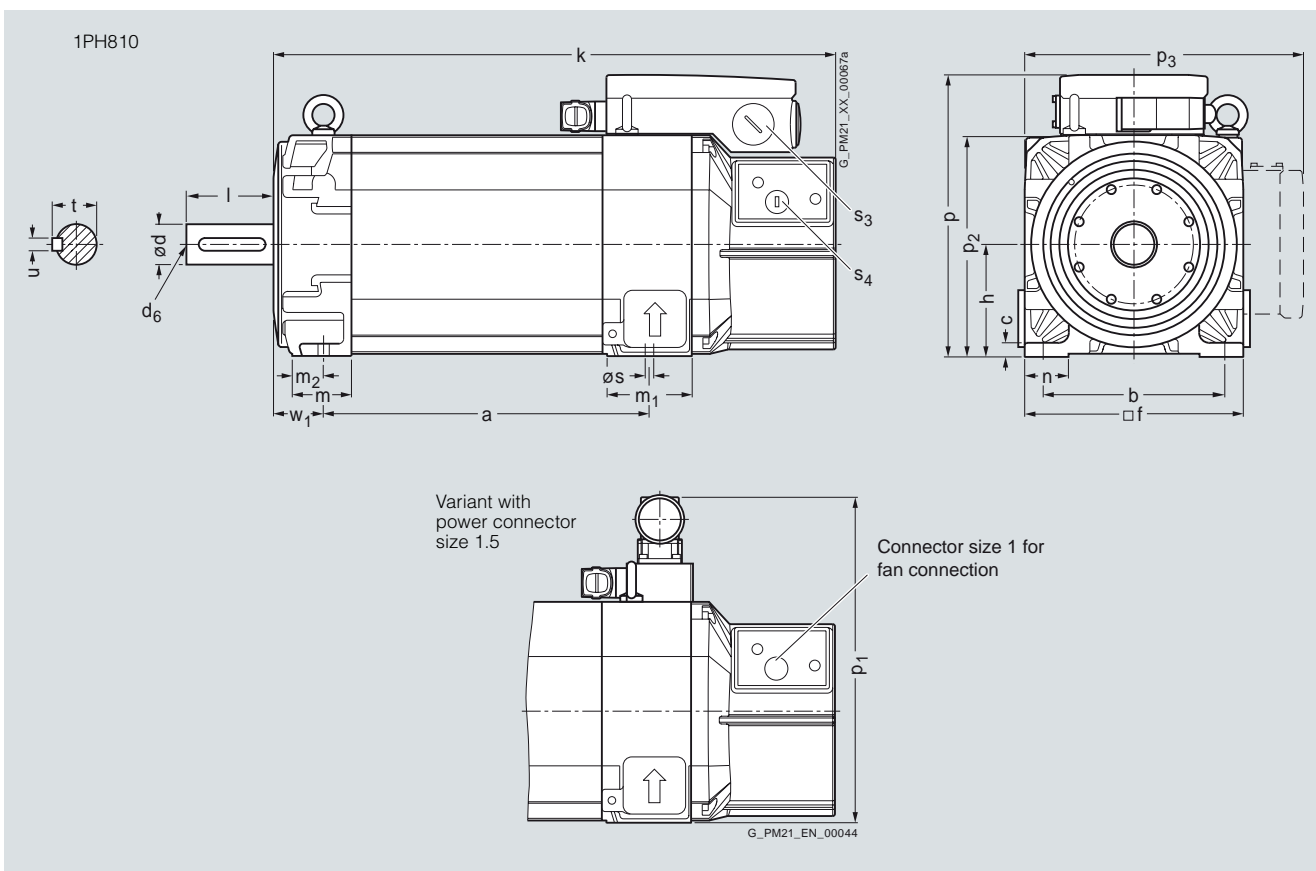
Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	
1PH8, type of construction IM B3, forced ventilation																		
100	1PH8101		167 (6.57)	–	160 (6.30)	–	11 (0.43)	–	–	196 (7.72)	–	100 (3.94)	369.5 (14.55)	49 (1.93)	74 (2.91)	24 (0.94)	40 (1.57)	
	1PH8103		202.5 (7.97)										405 (15.94)					
	1PH8105		262 (10.31)										464.5 (18.29)					
	1PH8107		297.5 (11.71)										500 (19.69)					

5

Shaft height	Type	DIN IEC	p HD	Shaft extension DE							d D	Shaft extension DE			
				p ₁ –	p ₂ –	p ₃ –	s K	s ₃ –	s ₄ –	w ₁ C		d ₆ –	l E	t GA	u F
100	1PH8101		252 (9.92)	294 (11.57)	198 (7.80)	276.5 (10.89)	12 (0.47)	M32 × 1.5	M20 × 1.5	43 (1.69)	38 (1.50)	M12	80 (3.15)	41 (1.61)	10 (0.39)
	1PH8103														
	1PH8105														
	1PH8107														



Main motors

Dimensional drawings

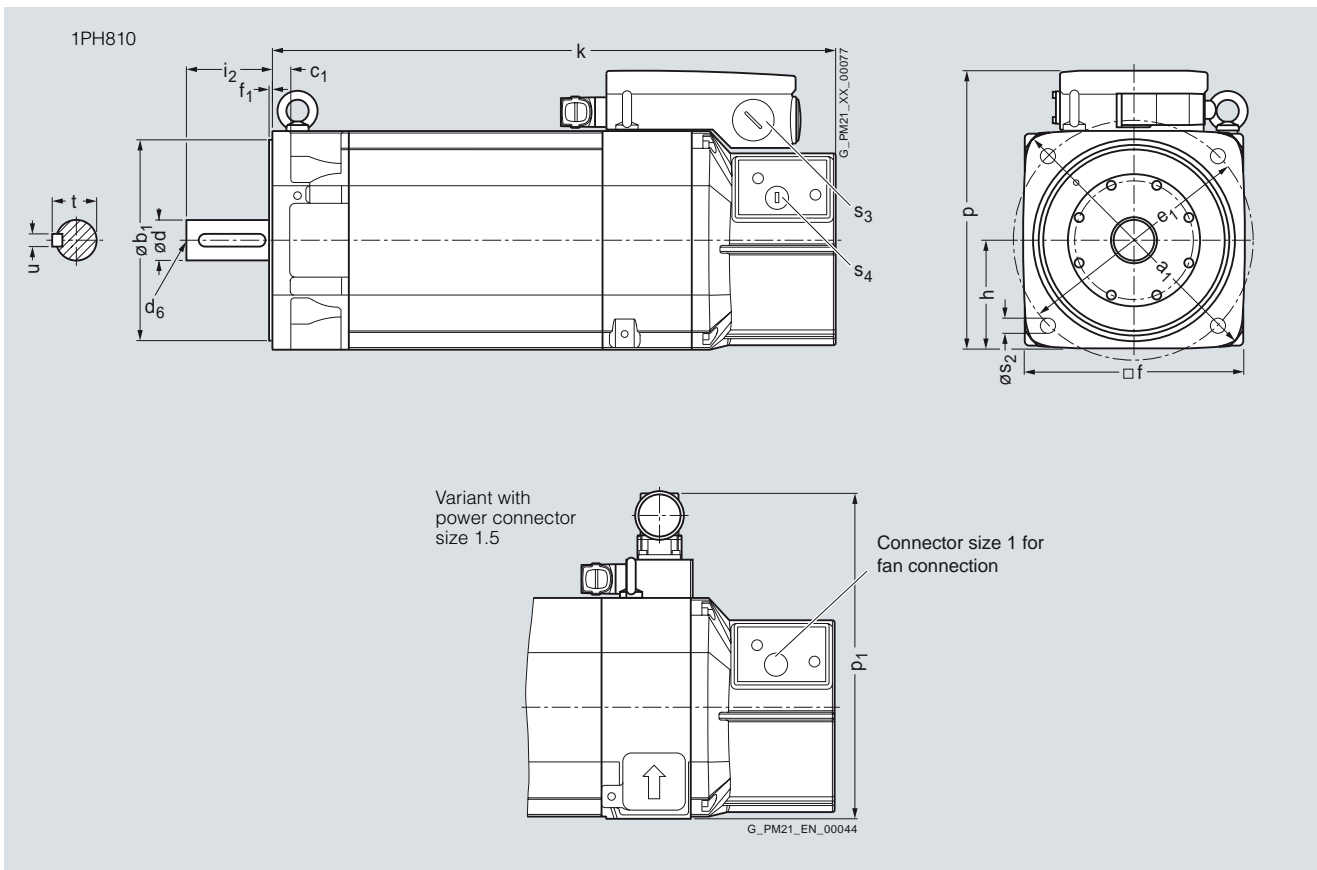
1PH8 asynchronous motors Shaft height 100 – Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)											
Shaft height	Type	DIN a ₁ IEC P	b ₁ N	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	p HD	p ₁ –	p ₂ –	p ₃ –
1PH8, type of construction IM B5, forced ventilation													
100	1PH8101	250 (9.84)	180 (7.09)	16 (0.63)	215 (8.46)	196 (7.72)	4 (0.16)	98 (3.86)	369.5 (14.55)	250 (9.84)	292 (11.50)	–	–
	1PH8103								405 (15.94)				
	1PH8105								464.5 (18.29)				
	1PH8107								500 (19.69)				

Shaft height	Type	DIN s ₂ IEC –	Shaft extension DE			d D	d ₆ –	i ₂ E	t GA	u F
			s ₃ –	s ₄ –	s ₄ –					
100	1PH8101	14 (0.55)	M32 × 1.5	M20 × 1.5	38 (1.50)	M12	80 (3.15)	41 (1.61)	10 (0.39)	
	1PH8103									
	1PH8105									
	1PH8107									

5



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 100 – Forced ventilation

Dimensional drawings

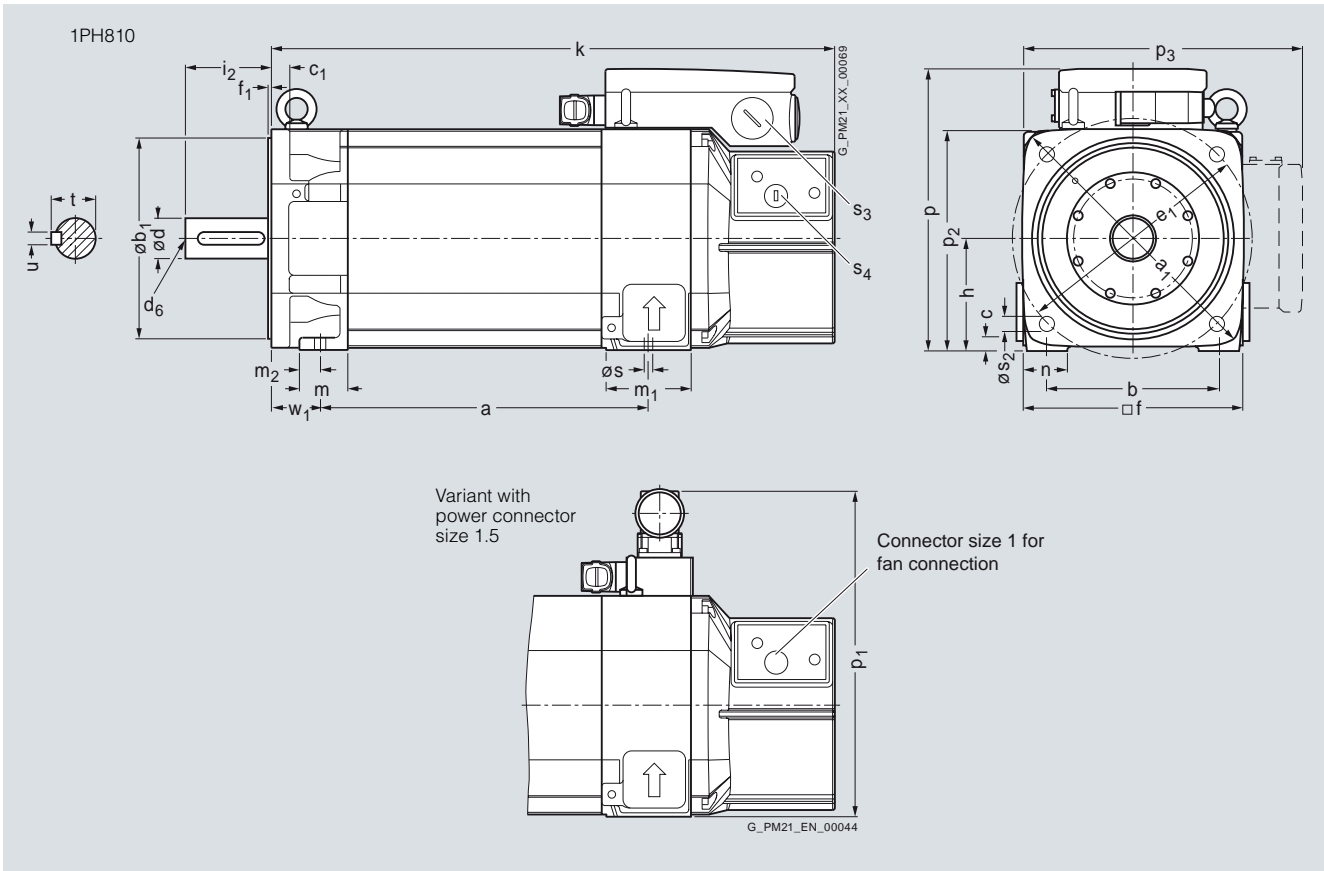
For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
1PH8, type of construction IM B35, forced ventilation																		
100	1PH8101		167	250	160	180	11	16	215	196	4	100	369.5	44	74	19	40	
			(6.57)	(9.84)	(6.30)	(7.09)	(0.43)	(0.63)	(8.46)	(7.72)	(0.16)	(3.94)	(14.55)	(1.73)	(2.91)	(0.75)	(1.57)	
	1PH8103		202.5										405					
			(7.97)										(15.94)					
	1PH8105		262										464.5					
			(10.31)										(18.29)					
	1PH8107		297.5										500					
			(11.71)										(19.69)					

5

Shaft extension DE

Shaft height	Type	DIN IEC HD	p	p ₁	p ₂	p ₃	s	s ₂	s ₃	s ₄	w ₁	d	d ₆	i ₂	t	u
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
100	1PH8101		252	294	198	276.5	12	14	M32 × 1.5	M20 × 1.5	43	38	M12	80	41	10
			(9.92)	(11.57)	(7.80)	(10.89)	(0.47)	(0.55)			(1.69)	(1.50)		(3.15)	(1.61)	(0.39)
	1PH8103															
	1PH8105															
	1PH8107															



Main motors

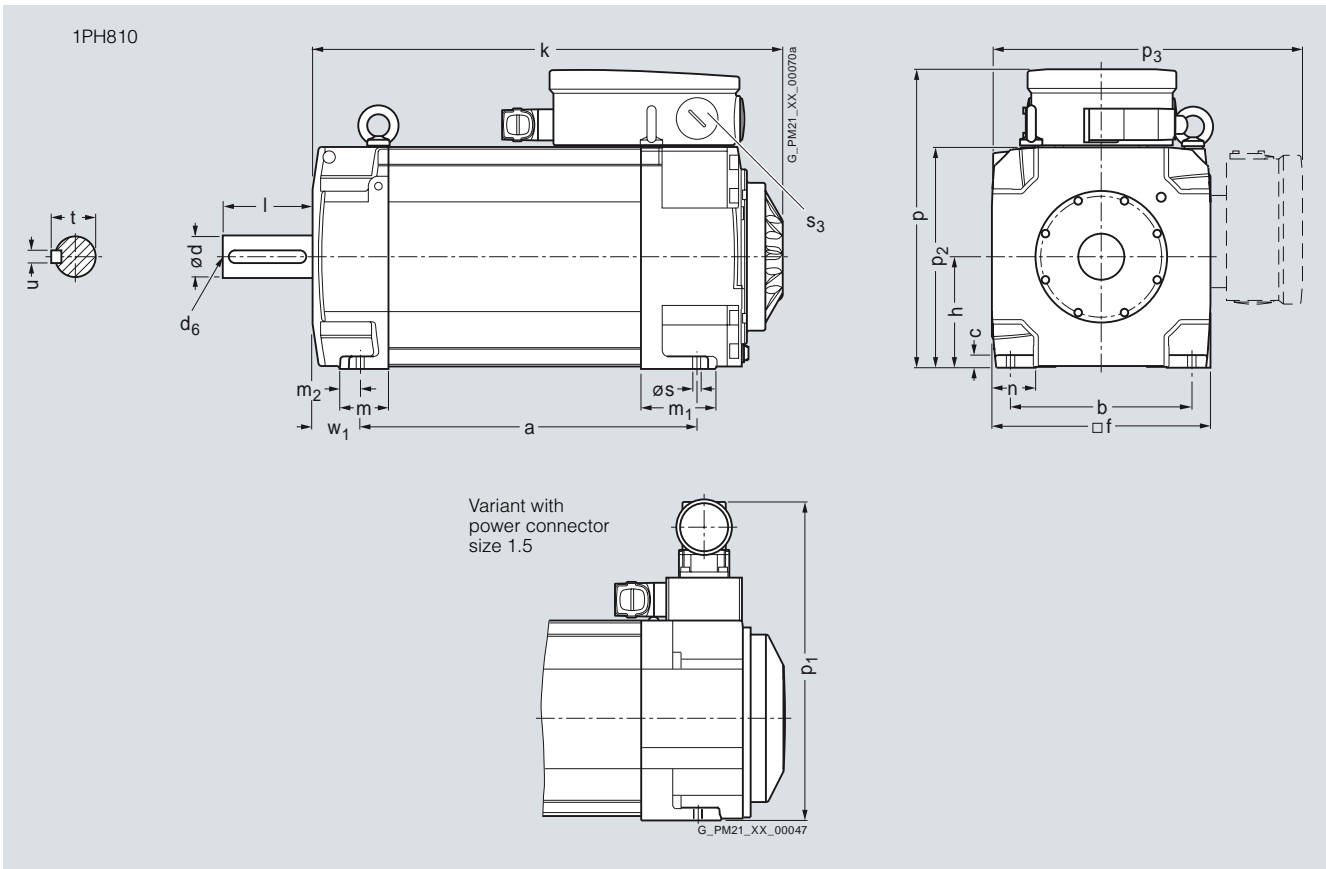
Dimensional drawings

1PH8 asynchronous motors Shaft height 100 – Water cooling

Dimensional drawings

For motor		Dimensions in mm (inches)																
Shaft height	Type	DIN IEC B	a	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	
1PH8, type of construction IM B3, water cooling																		
100	1PH8101	167	–	160	–	11	–	–	196	–	100	289.5	44	68	19	43		
		(6.57)		(6.30)		(0.43)			(7.72)		(3.94)	(11.40)	(1.73)	(2.68)	(0.75)	(1.69)		
	1PH8103	202.5										325						
		(7.97)										(12.80)						
	1PH8105	262										384.5						
		(10.31)										(15.14)						
	1PH8107	297.5										420						
		(11.71)										(16.54)						

Shaft height	Type	DIN IEC HD	Shaft extension DE						w ₁ C	Shaft extension DE				
			p	p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –		s ₃ –	d D	d ₆ –	l E	t GA
100	1PH8101	266.5	294	198	276.5	12	–	M32 x 1.5	43	38	M12	80	41	10
		(10.49)	(11.57)	(7.80)	(10.89)	(0.47)			(1.69)	(1.50)		(3.15)	(1.61)	(0.39)
	1PH8103													
	1PH8105													
	1PH8107													



5

Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 100 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a P	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA
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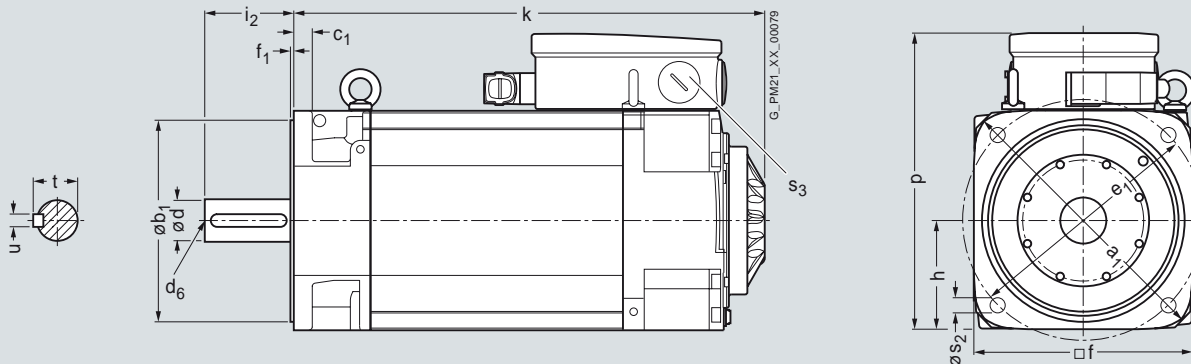
1PH8, type of construction IM B5, water cooling

100	1PH8101	–	250 (9.84)	–	180 (7.09)	–	16 (0.63)	215 (8.46)	196 (7.72)	4 (0.16)	98 (3.86)	289.5 (11.40)	–	–	–	–	–
	1PH8103											325 (12.80)					
	1PH8105											384.5 (15.14)					
	1PH8107											420 (16.54)					

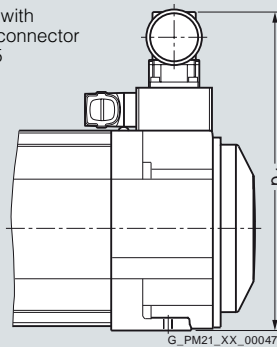
5

Shaft height	Type	DIN IEC HD	p	Shaft extension DE					w ₁ C	d D	d ₆ –	i ₂ E	t GA	u F	
				p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –							s ₃ –
100	1PH8101	264.5 (10.41)	292 (11.50)	–	–	–	–	14 (0.55)	M32 × 1.5	–	38 (1.50)	M12	80 (3.15)	41 (1.61)	10 (0.39)
	1PH8103														
	1PH8105														
	1PH8107														

1PH810



Variant with
power connector
size 1.5



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 100 – Water cooling

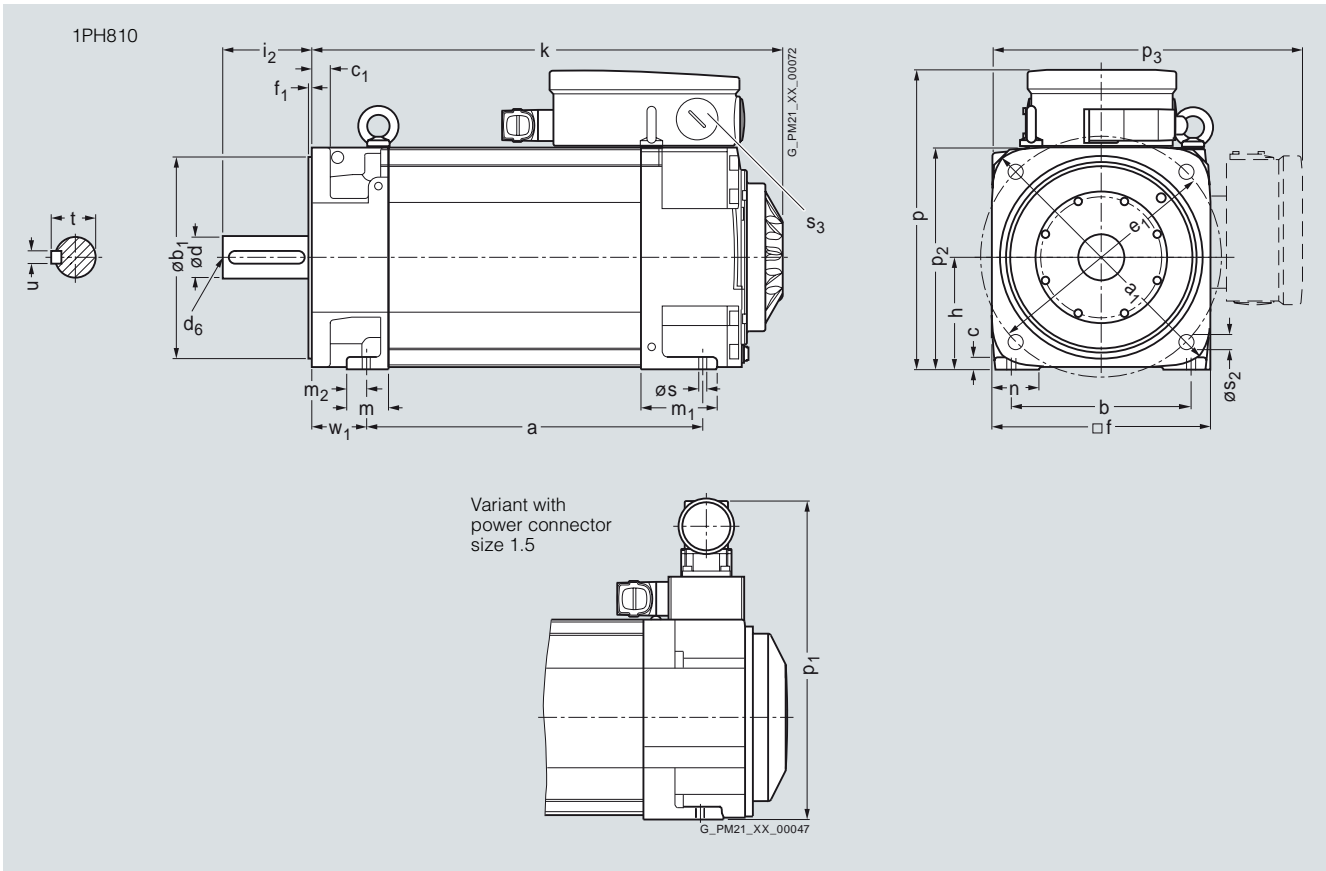
Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n	
				P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA	
1PH8, type of construction IM B35, water cooling																		
100	1PH8101		167 (6.57)	250 (9.84)	160 (6.30)	180 (7.09)	11 (0.43)	16 (0.63)	215 (8.46)	196 (7.72)	4 (0.16)	100 (3.94)	289.5 (11.40)	37 (1.46)	68 (2.68)	12 (0.47)	43 (1.69)	
	1PH8103			202.5 (7.97)													325 (12.80)	
	1PH8105			262 (10.31)														384.5 (15.14)
	1PH8107			297.5 (11.71)														420 (16.54)

Shaft height	Type	DIN IEC HD	Shaft extension DE						w ₁	C	Shaft extension DE								
			p	p ₁	p ₂	p ₃	s	s ₂			s ₃	D	d ₆	i ₂	t	u			
100	1PH8101		266.5 (10.49)	294 (11.57)	198 (7.80)	276.5 (10.89)	12 (0.47)	14 (0.55)	M32 x 1.5	43 (1.69)	38 (1.50)	M12	80 (3.15)	41 (1.61)	10 (0.39)				
	1PH8103																		
	1PH8105																		
	1PH8107																		

5



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 132 – Forced ventilation

Dimensional drawings

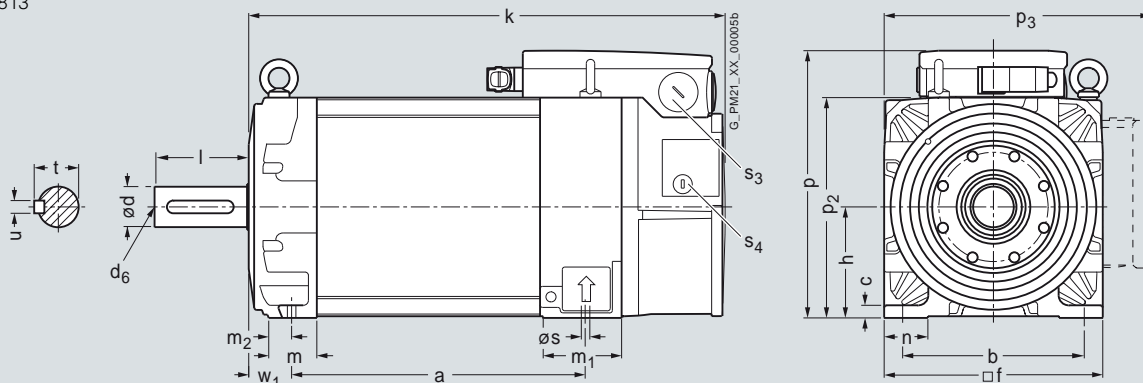
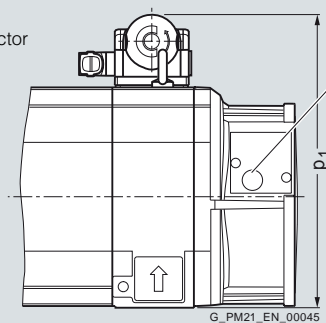
For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	
1PH8, type of construction IM B3, forced ventilation																		
132	1PH8131	220.5 (8.68)	–	216 (8.50)	–	15 (0.59)	–	–	–	260 (10.24)	–	132 (5.20)	439 (17.28)	57 (2.24)	93 (3.66)	27 (1.06)	52 (2.05)	
	1PH8133	265.5 (10.45)											484 (19.06)					
	1PH8135	310.5 (12.22)											529 (20.83)					
	1PH8137	350.5 (13.80)											569 (22.40)					

5

Shaft height	Type	DIN IEC	ρ HD	Shaft extension DE								w ₁ C	Shaft extension DE			
				p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –	s ₃ –	s ₄ –	d D		d ₆ –	l E	t GA	u F
132	1PH8131	317.5 (12.50)	347 (13.66)	262 (10.31)	357.5 (14.07)	12 (0.47)	–	M40 × 1.5	M20 × 1.5	53 (2.09)	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)	
	1PH8133															
	1PH8135															
	1PH8137															

1PH813

Variant with
power connector
size 3Connector size 1 for
fan connection

Main motors

Dimensional drawings

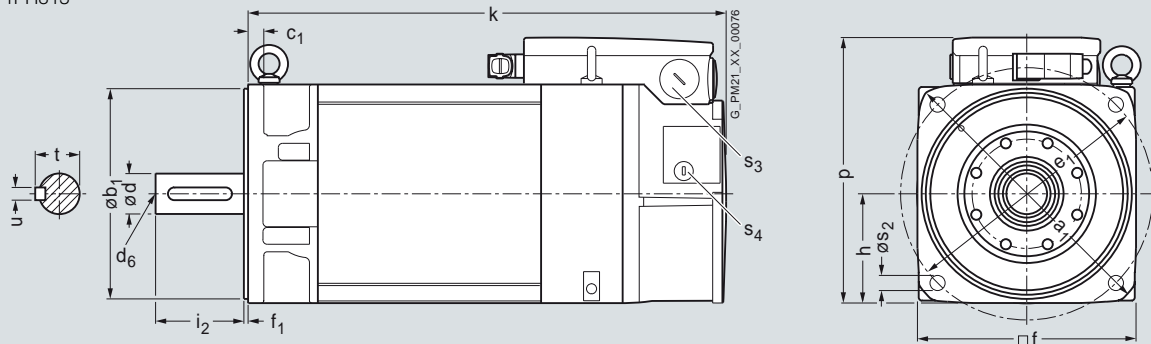
1PH8 asynchronous and synchronous motors Shaft height 132 – Forced ventilation

Dimensional drawings

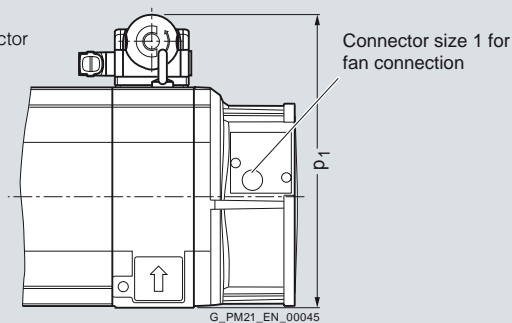
For motor		Dimensions in mm (inches)														
Shaft height	Type	DIN IEC B	a P	a ₁ A	b N	b ₁ HA	c LA	c ₁ M	e ₁ AB	f T	f ₁ H	h LB	k BA	m ₁	m ₂	n AA
1PH8, type of construction IM B5, forced ventilation																
132	1PH8131	-	340 (13.39)	-	250 (9.84)	-	18 (0.71)	300 (11.81)	260 (10.24)	5 (0.20)	130 (5.12)	439 (17.28)	-	-	-	-
	1PH8133											484 (19.06)				
	1PH8135											529 (20.83)				
	1PH8137											569 (22.40)				

Shaft height	Type	DIN IEC HD											Shaft extension DE				
			p	p ₁	p ₂	p ₃	s K	s ₂	s ₃	s ₄	w ₁ C	d D	d ₆	i ₂ E	t GA	u F	
132	1PH8131	315.5 (12.42)	345 (13.58)	-	-	-	18 (0.71)	M40 × 1.5	M20 × 1.5	-	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)		
	1PH8133																
	1PH8135																
	1PH8137																

1PH813



Variant with power connector size 3



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 132 – Forced ventilation

Dimensional drawings

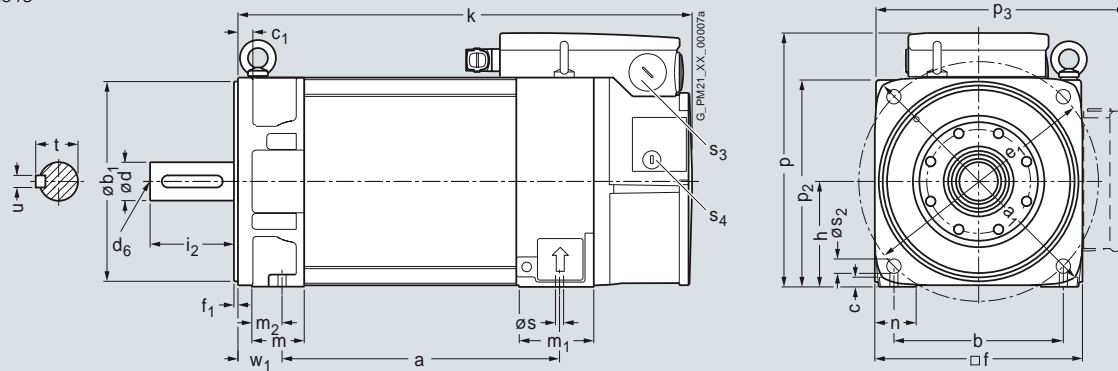
For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n
			P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA	
1PH8, type of construction IM B35, forced ventilation																	
132	1PH8131	220.5 (8.68)	340 (13.39)	216 (8.50)	250 (9.84)	15 (0.59)	18 (0.71)	300 (11.81)	260 (10.24)	5 (0.20)	132 (5.20)	439 (17.28)	65 (2.56)	93 (3.66)	35 (1.38)	52 (2.05)	
	1PH8133	265.5 (10.45)										484 (19.06)					
	1PH8135	310.5 (12.22)										529 (20.83)					
	1PH8137	350.5 (13.80)										569 (22.40)					

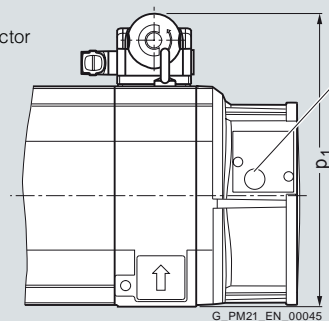
5

Shaft height	Type	DIN IEC HD	Shaft extension DE													
			p ₁	p ₂	p ₃	s	s ₂	s ₃	s ₄	w ₁	d	d ₆	i ₂	t	u	
			K	-	-	-	K	-	-	-	C	D	-	F ₂	GA	F
132	1PH8131	317.5 (12.50)	347 (13.66)	262 (10.31)	357.5 (14.07)	12 (0.47)	18 (0.71)	M40 × 1.5	M20 × 1.5	53 (2.09)	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)	
	1PH8133															
	1PH8135															
	1PH8137															

1PH813



Variant with
power connector
size 3



Connector size 1 for
fan connection

Main motors

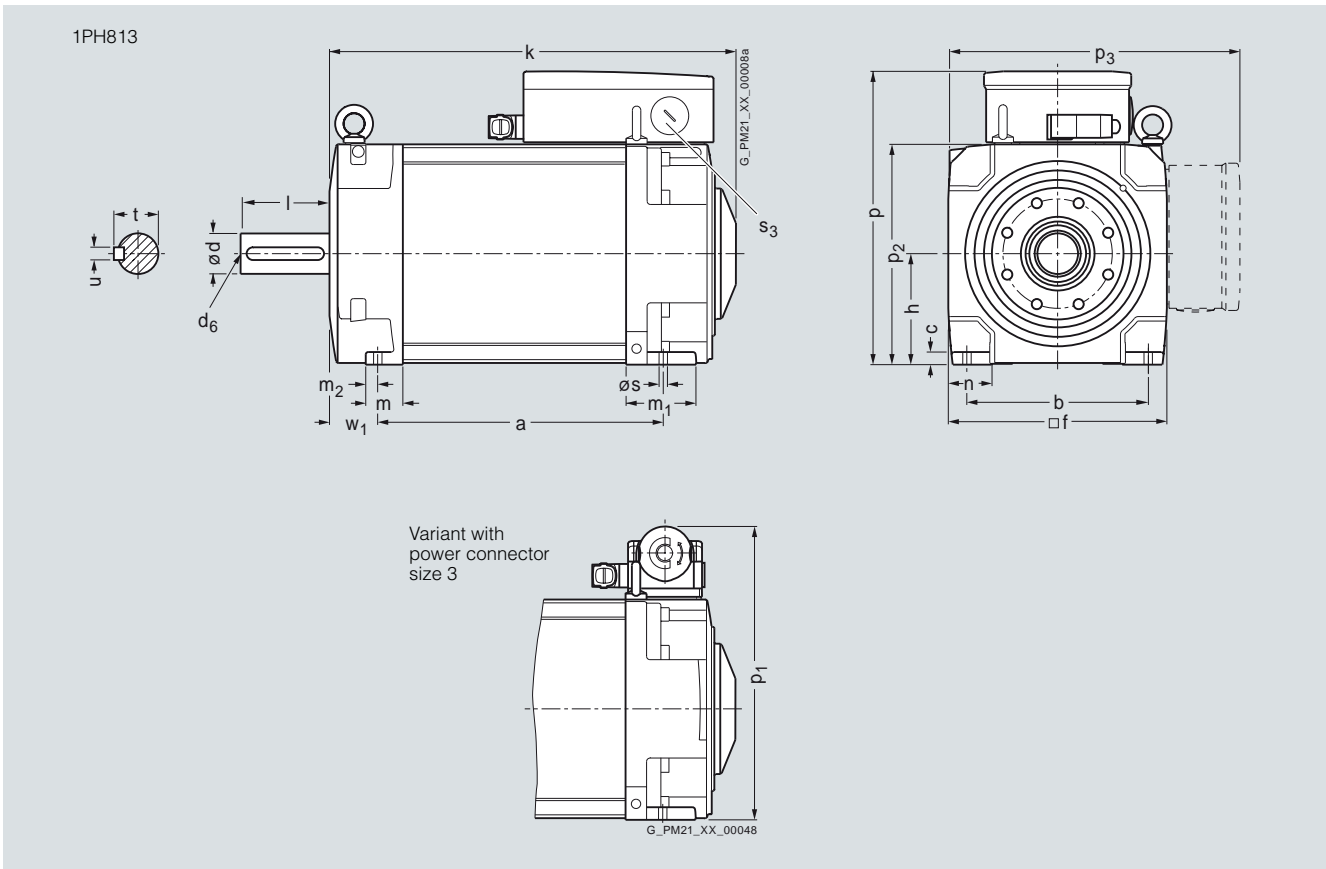
Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 132 – Water cooling

Dimensional drawings

For motor		Dimensions in mm (inches)																
Shaft height	Type	DIN IEC B	a	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA	
1PH8, type of construction IM B3, water cooling																		
132	1PH8131	220.5 (8.68)	–	216 (8.50)	–	15 (0.59)	–	–	260 (10.24)	–	132 (5.20)	347.5 (13.68)	42 (1.65)	81 (3.19)	12 (0.47)	43 (1.69)		
	1PH8133	265.5 (10.45)											392.5 (15.45)					
	1PH8135	310.5 (12.22)											437.5 (17.22)					
	1PH8137	350.5 (13.80)											477.5 (18.80)					

Shaft height	Type	DIN IEC HD	Shaft extension DE							w ₁ C	d D	d ₆ –	l E	t GA	u F
			p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –	s ₃ –							
132	1PH8131	347.5 (13.68)	347 (13.66)	262 (10.31)	357.5 (14.07)	12 (0.47)	–	M50 × 1.5	53 (2.09)	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)	
	1PH8133														
	1PH8135														
	1PH8137														



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 132 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA
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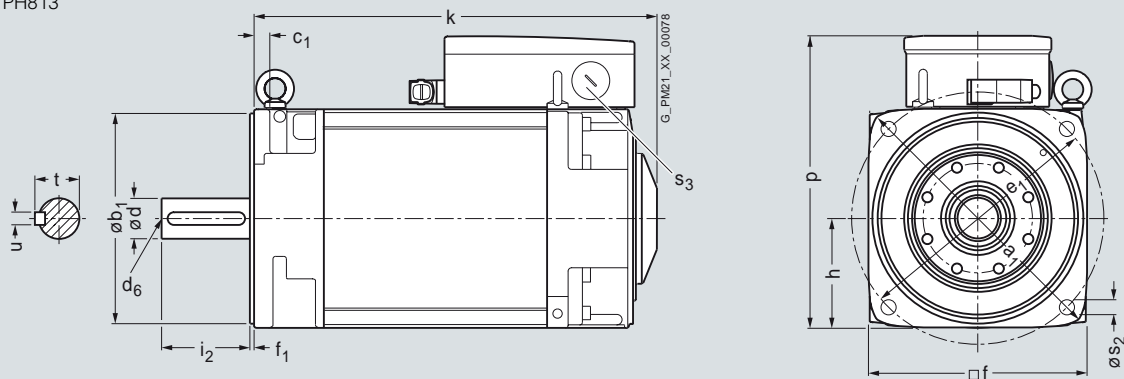
1PH8, type of construction IM B5, water cooling

132	1PH8131	–	340 (13.39)	–	250 (9.84)	–	18 (0.71)	300 (11.81)	260 (10.24)	5 (0.20)	132 (5.20)	347.5 (13.68)	–	–	–	–
	1PH8133											392.5 (15.45)				
	1PH8135											437.5 (17.22)				
	1PH8137											477.5 (18.80)				

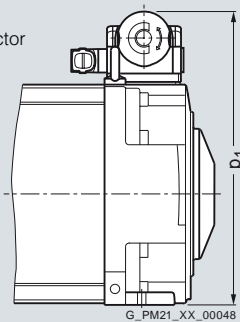
5

Shaft height	Type	DIN IEC HD	p	p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –	s ₃ –	w ₁ C	Shaft extension DE				
											d D	d ₆ –	i ₂ E	t GA	u F
132	1PH8131		345.5 (13.60)	345 (13.58)	–	–	–	18 (0.71)	M50 x 1.5	–	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)
	1PH8133														
	1PH8135														
	1PH8137														

1PH813



Variant with
power connector
size 3



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 132 – Water cooling

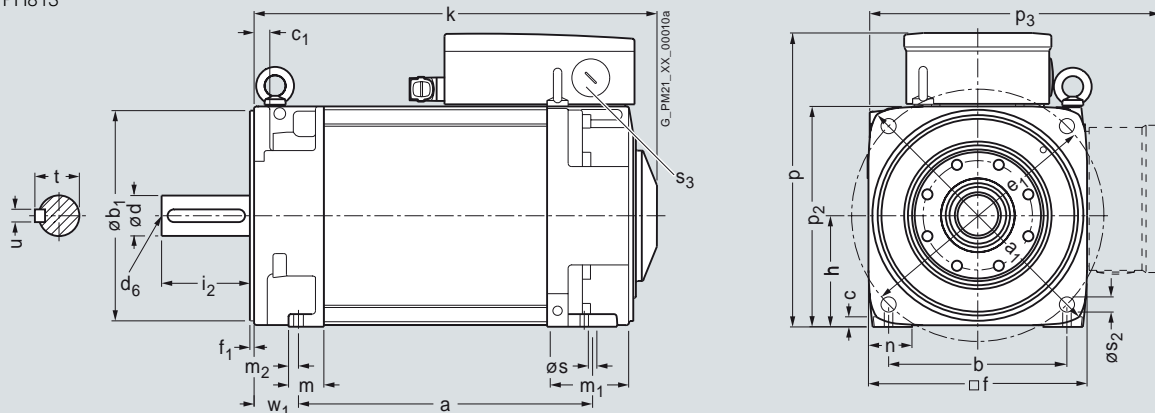
Dimensional drawings

For motor Dimensions in mm (inches)

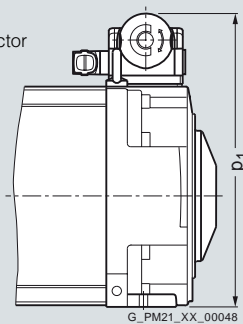
Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n	
				P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA	
1PH8, type of construction IM B35, water cooling																		
132	1PH8131	220.5 (8.68)	340 (13.39)	216 (8.50)	250 (9.84)	15 (0.59)	18 (0.71)	300 (11.81)	260 (10.24)	5 (0.20)	132 (5.20)	347.5 (13.68)	42 (1.65)	81 (3.19)	12 (0.47)	43 (1.69)		
	1PH8133	265.5 (10.45)											392.5 (15.45)					
	1PH8135	310.5 (12.22)											437.5 (17.22)					
	1PH8137	350.5 (13.80)											477.5 (18.80)					

Shaft height	Type	DIN IEC HD	p	p ₁	p ₂	p ₃	s	s ₂	s ₃	w ₁	Shaft extension DE				
											d	d ₆	i ₂	t	u
							K	-	-	C	D	-	E	GA	F
132	1PH8131	347.5 (13.68)	347 (13.66)	262 (10.31)	357.5 (14.07)	12 (0.47)	18 (0.71)	M50 x 1.5		53 (2.09)	48 (1.89)	M16	110 (4.33)	51.5 (2.03)	14 (0.55)
	1PH8133														
	1PH8135														
	1PH8137														

1PH813



Variant with
power connector
size 3



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 160 – Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

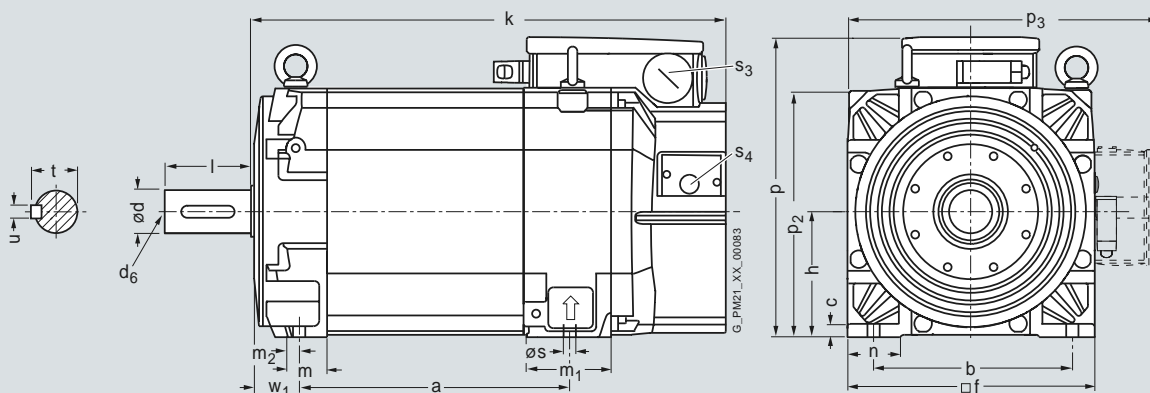
Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA
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1PH8, type of construction IM B3, forced ventilation

160	1PH8163	346.5 (13.64)	–	254 (10.00)	–	17 (0.67)	23 (0.91)	–	314 (12.36)	–	160 (6.30)	610.5 (24.04)	64 (2.52)	99.5 (3.92)	28 (1.10)	70 (2.76)
	1PH8165	406.5 (16.00)										670.5 (26.40)				

Shaft height	Type	DIN IEC	p HD	p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –	s ₃ –	s ₄ –	w ₁ C	Shaft extension DE				
												d D	d ₆ –	l L	t GA	u F
160	1PH8163	382.5 (15.06)	–	317 (12.48)	412.5 (16.24)	14 (0.55)	–	M50 × 1.5	M20 × 1.5	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)	
	1PH8165															

1PH816



Main motors Dimensional drawings

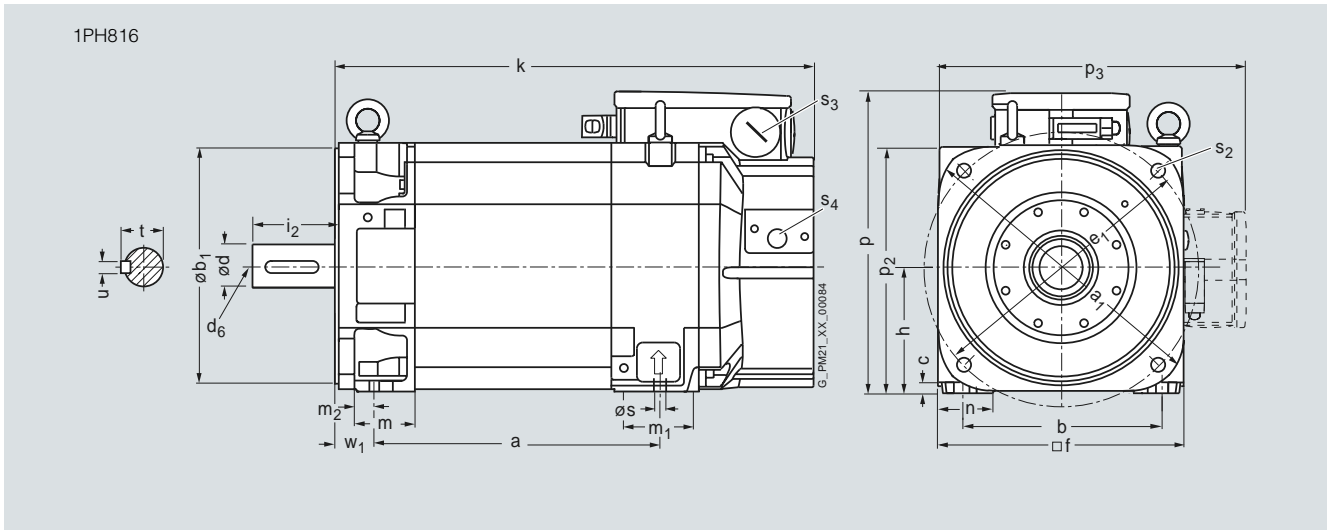
1PH8 asynchronous motors Shaft height 160 – Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ -	m ₂ -	n AA		
1PH8, type of construction IM B5/IM B35, forced ventilation																			
160	1PH8163		346.5 (13.64)	393 (15.47)	254 (10.00)	300 (11.81)	17 (0.67)	-	350 (13.78)	314 (12.36)	5 (0.20)	160 (6.30)	610.5 (24.04)	55 (2.17)	99.5 (3.92)	19 (0.75)	70 (2.76)		
	1PH8165												670.5 (26.40)						

Shaft height	Type	DIN IEC HD	Shaft extension DE										w ₁ C	d D	d ₆ -	i ₂ E	t GA	u F
			p ₁ -	p ₂ -	p ₃ -	s K	s ₂ -	s ₃ -	s ₄ -									
	1PH8163		382.5 (15.06)	-	317 (12.48)	412.5 (16.24)	14 (0.55)	18 (0.71)	M50 × 1.5	M20 × 1.5	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)		
	1PH8165																	



Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 160 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁	m ₂	n AA
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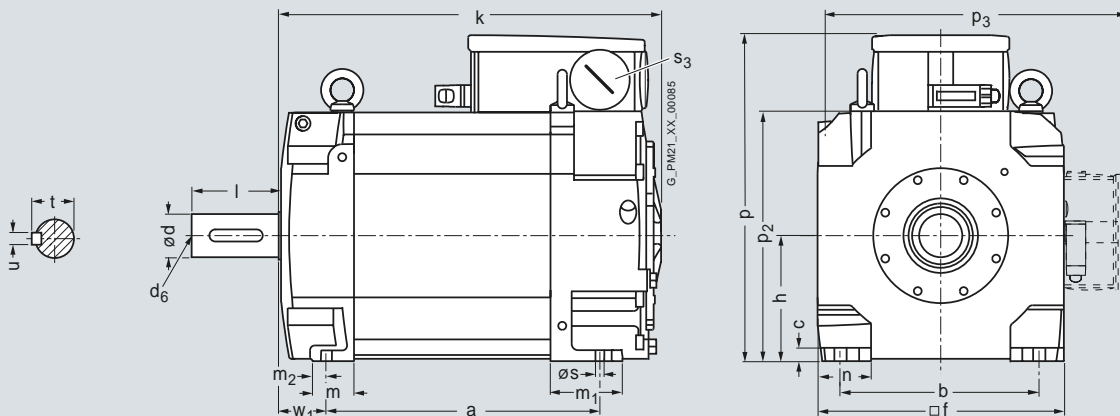
1PH8, type of construction IM B3, water cooling

160	1PH8163		346.5 (13.64)	–	254 (10.00)	–	17 (0.67)	23 (0.91)	–	314 (12.36)	–	160 (6.30)	488.5 (19.23)	53 (2.09)	91 (3.58)	17 (0.67)	70 (2.76)
	1PH8165		406.5 (16.00)										548.5 (21.59)				
	1PH8166																

5

Shaft height	Type	DIN IEC HD	p	p ₁	p ₂	p ₃	s K	s ₂	s ₃	s ₄	w ₁ C	Shaft extension DE				
												d D	d ₆	l L	t GA	u F
	1PH8163		415.5 (16.36)	–	317 (12.48)	412.5 (16.24)	14 (0.55)	–	M63 × 1.5	–	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)
	1PH8165															
	1PH8166															

1PH816



Main motors Dimensional drawings

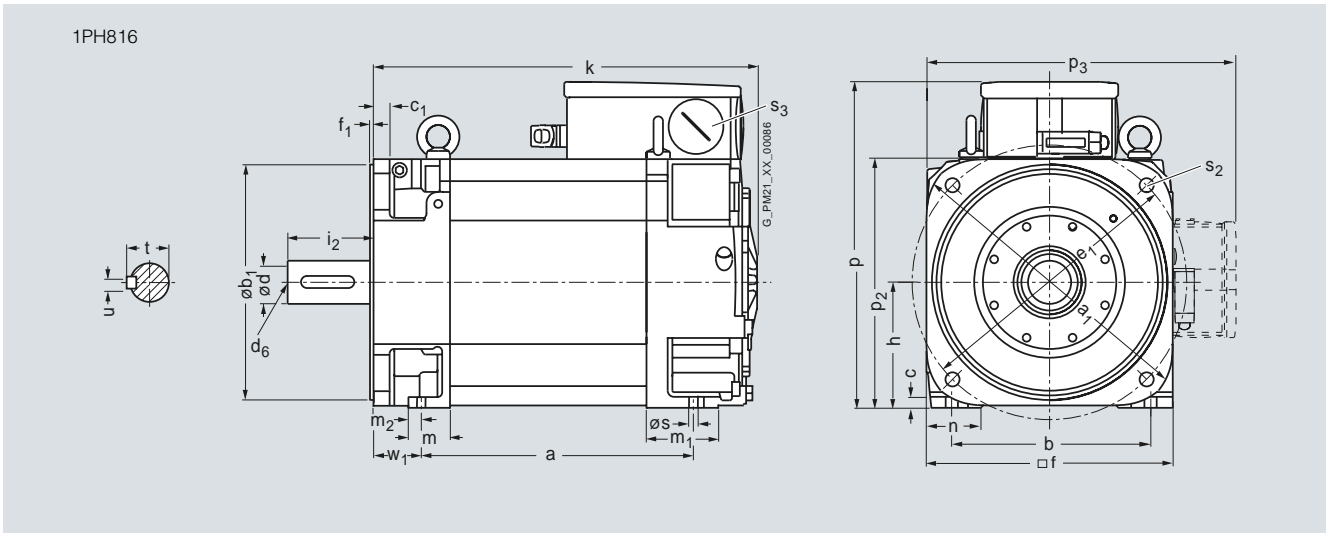
1PH8 asynchronous motors Shaft height 160 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n	
				P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA	
1PH8, type of construction IM B5/IM B35, water cooling																		
160	1PH8163		346.5 (13.64)	393 (15.47)	254 (10.00)	300 (11.81)	17 (0.67)	-	350 (13.78)	314 (12.36)	5 (0.20)	160 (6.30)	488.5 (19.23)	53 (2.09)	91 (3.58)	17 (0.67)	70 (2.76)	
	1PH8165		406.5 (16.00)										548.5 (21.59)					
	1PH8166																	

Shaft height	Type	DIN IEC HD	p	p ₁	p ₂	p ₃	s	s ₂	s ₃	s ₄	w ₁	Shaft extension DE				
												C	d	d ₆	i ₂	t
	1PH8163		415.5 (16.36)	-	317 (12.48)	412.5 (16.24)	14 (0.55)	18 (0.71)	M63 x 1.5	-	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)
	1PH8165															
	1PH8166															



Main motors

Dimensional drawings

1PH8 synchronous motors Shaft height 160 – Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

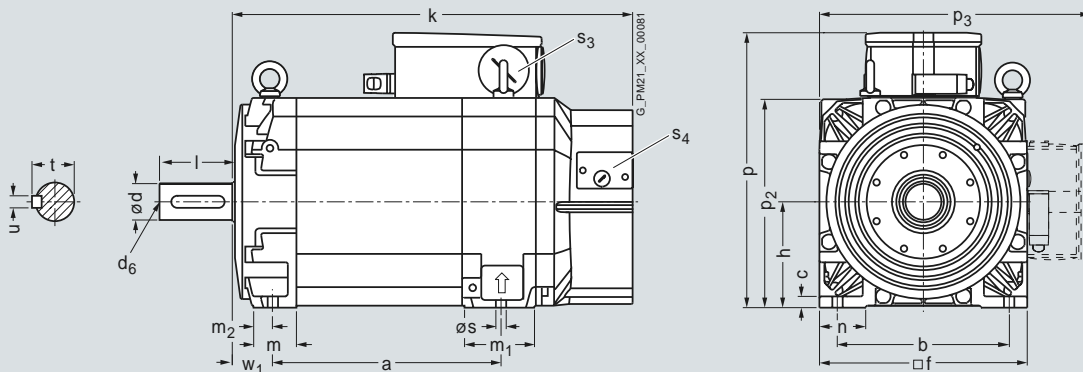
Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ -	m ₂ -	n AA
--------------	------	---------	-----	------------------	-----	------------------	------	-------------------	------------------	------	------------------	-----	------	------	------------------	------------------	------

1PH8, type of construction IM B3, forced ventilation																	
160	1PH8165		406.5 (16.00)	-	254 (10.00)	-	17 (0.67)	23 (0.91)	-	314 (12.36)	-	160 (6.30)	670.5 (26.40)	64 (2.52)	99.5 (3.92)	28 (1.10)	70 (2.76)
	1PH8167		446.5 (17.58)										710.5 (27.97)				

Shaft height	Type	DIN IEC	p HD	p ₁ -	p ₂ -	p ₃ -	s K	s ₂ -	s ₃ -	s ₄ -	w ₁ C	Shaft extension DE				
												d D	d ₆ -	l L	t GA	u F

160	1PH8165		415.5 (16.36)	-	317 (12.48)	412.5 (16.24)	14 (0.55)	-	M63 x 1.5	M20 x 1.5	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)
	1PH8167															

1PH816



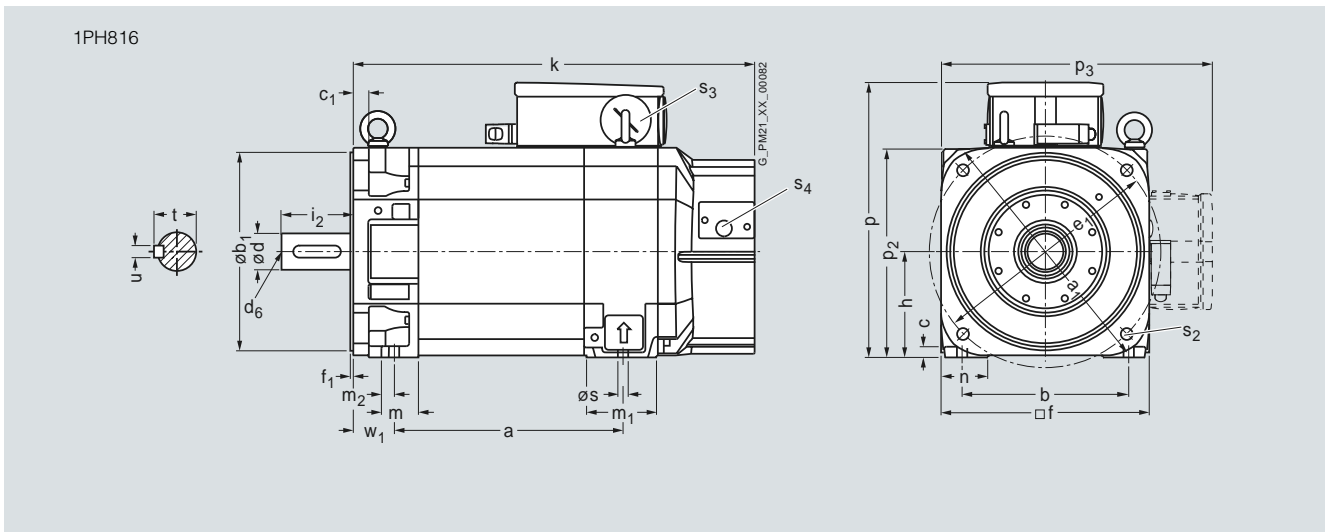
Main motors Dimensional drawings

1PH8 synchronous motors Shaft height 160 – Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)															
Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n
			P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA	
1PH8, type of construction IM B5/IM B35, forced ventilation																	
160	1PH8165	406.5 (16.00)	393 (15.47)	254 (10.00)	300 (11.81)	17 (0.67)	-	350 (13.78)	314 (12.36)	5 (0.20)	160 (6.30)	670.5 (26.40)	55 (2.17)	99.5 (3.92)	19 (0.75)	70 (2.76)	
	1PH8167	446.5 (17.58)										710.5 (27.97)					

Shaft height	Type	DIN IEC HD	Shaft extension DE							W ₁ C	d D	d ₆	i ₂ E	t GA	u F
			p ₁	p ₂	p ₃	s K	s ₂	s ₃	s ₄						
	1PH8165	415.5 (16.36)	-	317 (12.48)	412.5 (16.24)	14 (0.55)	18 (0.71)	M63 × 1.5	M20 × 1.5	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)
	1PH8167														



Main motors

Dimensional drawings

1PH8 synchronous motors Shaft height 160 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC B	a	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	h H	k LB	m BA	m ₁ –	m ₂ –	n AA
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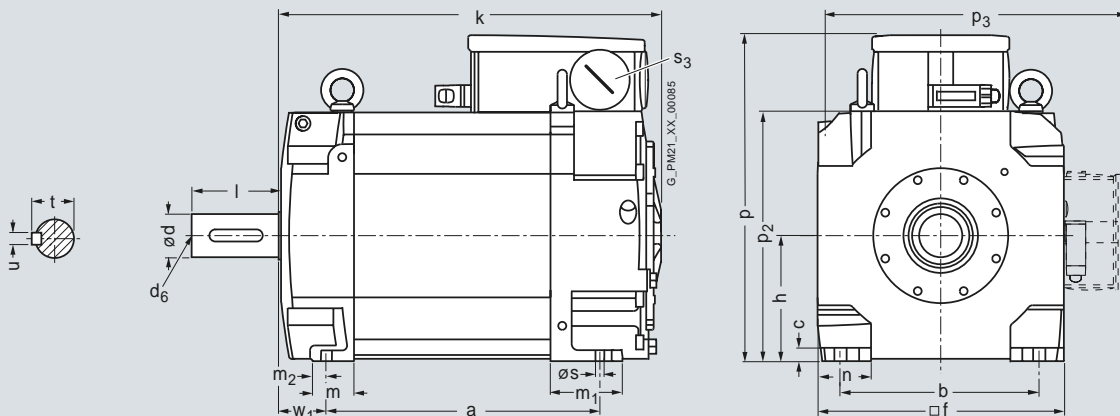
1PH8, type of construction IM B3, water cooling

160	1PH8164	346.5 (13.64)	–	254 (10.00)	–	17 (0.67)	23 (0.91)	–	314 (12.36)	–	160 (6.30)	488.5 (19.23)	53 (2.09)	91 (3.58)	17 (0.67)	70 (2.76)	
	1PH8166	406.5 (16.00)											548.5 (21.59)				
	1PH8168	446.5 (17.58)											588.5 (23.17)				

5

Shaft height	Type	DIN IEC HD	p	p ₁ –	p ₂ –	p ₃ –	s K	s ₂ –	s ₃ –	s ₄ –	w ₁ C	Shaft extension DE				
												d D	d ₆ –	l L	t GA	u F
	1PH8164	415.5 (16.36)	–	317 (12.48)	412.5 (16.24)	14 (0.55)	–	M63 × 1.5	–	61 (2.40)	55 (2.17)	M20	110 (4.33)	59 (2.32)	16 (0.63)	
	1PH8166															
	1PH8168															

1PH816



Main motors

Dimensional drawings

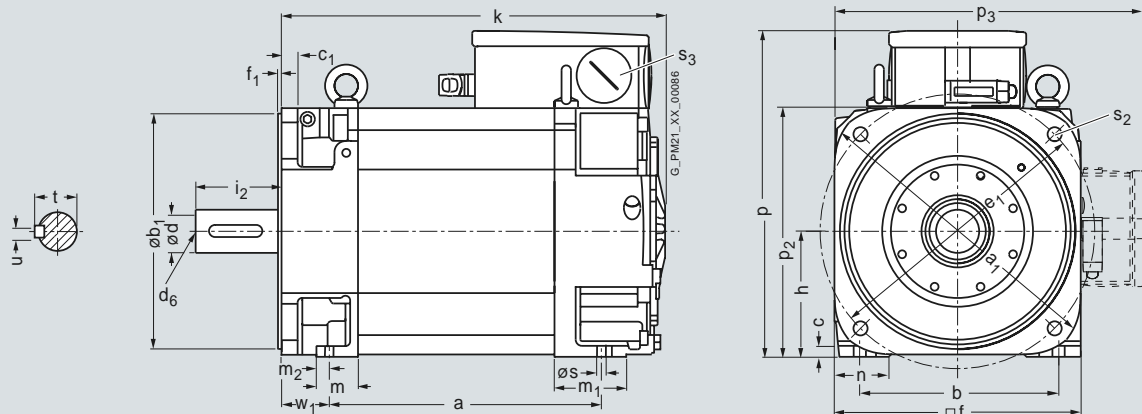
1PH8 synchronous motors
Shaft height 160 – Water cooling

Dimensional drawings

For motor		Dimensions in mm (inches)																
Shaft height	Type	DIN IEC B	a	a ₁	b	b ₁	c	c ₁	e ₁	f	f ₁	h	k	m	m ₁	m ₂	n	
			P	A	N	HA	LA	M	AB	T	H	LB	BA	-	-	AA		
1PH8, type of construction IM B5/IM B35, water cooling																		
160	1PH8164	346.5	393	254	300	17	-	350	314	5	160	488.5	53	91	17	70		
		(13.64)	(15.47)	(10.00)	(11.81)	(0.67)		(13.78)	(12.36)	(0.20)	(6.30)	(19.23)	(2.09)	(3.58)	(0.67)	(2.76)		
	1PH8166	406.5										548.5						
		(16.00)										(21.59)						
	1PH8168	446.5										588.5						
		(17.58)										(23.17)						

Shaft height	Type	DIN IEC HD	Shaft extension DE							w ₁	Shaft extension DE					
			p	p ₁	p ₂	p ₃	s	s ₂	s ₃		s ₄	d	d ₆	i ₂	t	u
			K	-	-	-	K	-	-	-	C	D	-	E	GA	F
	1PH8164	415.5	-	317	412.5	14	18	M63 x 1.5	-	61	55	M20	110	59	16	
		(16.36)		(12.48)	(16.24)	(0.55)	(0.71)			(2.40)	(2.17)		(4.33)	(2.32)	(0.63)	
	1PH8166															
	1PH8168															

1PH816



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 180 – Water cooling

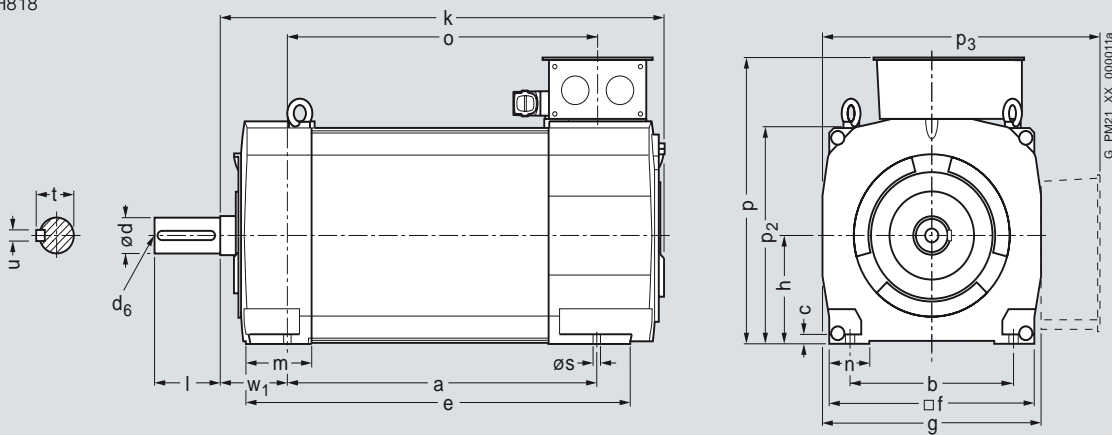
Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	b A	c HA	f AB	g AC	h H	k LB	m BA	n AA	p ₂ -	s K	w ₁ C
1PH8, types of construction IM B3/IM V5, water cooling														
180	1PH8184		430 (16.93)	279 (10.98)	15 (0.59)	356 (14.02)	384 (15.12)	180 (7.09)	670 (26.38)	138 (5.43)	73 (2.87)	372 (14.65)	14.5 (0.57)	121 (4.76)
	1PH8186		520 (20.47)						760 (29.92)					

Shaft height	Type	DIN IEC	Shaft extension DE					Terminal box type											
			d D	d ₆ -	l E	t GA	u F	1XB7322				1XB7422				1XB7700			
							p HD	p ₃ -	r LL	x ₁ AG	p HD	p ₃ -	r LL	x ₁ AG	p HD	p ₃ -	r LL	x ₁ AG	
180	1PH8184		65m6	M20	140 (5.51)	69 (2.72)	18 (0.71)	484 (19.06)	485 (19.09)	197 (7.76)	258 (10.16)	539 (21.22)	540 (21.26)	230 (9.06)	303 (11.93)	588 (23.15)	574 (22.60)	310 (12.20)	295 (11.61)
	1PH8186																		

1PH818



Main motors

Dimensional drawings

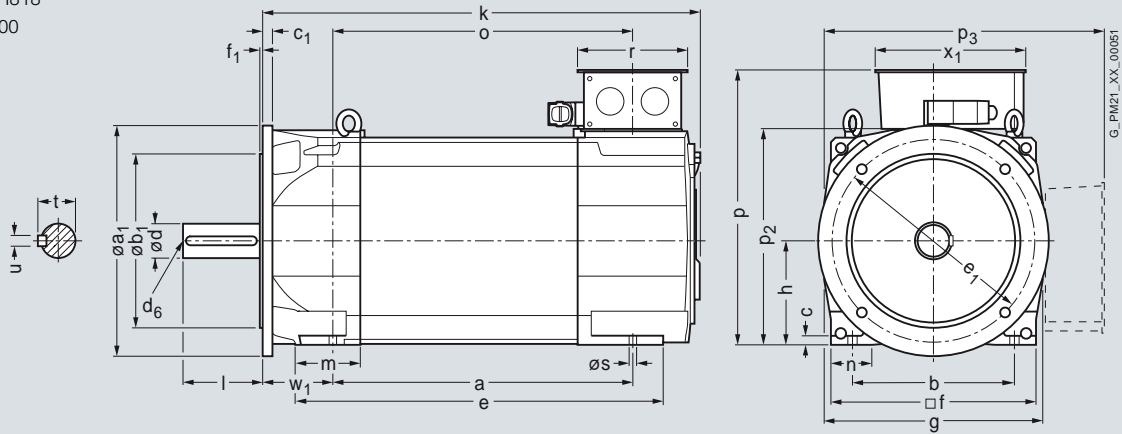
1PH8 asynchronous and synchronous motors Shaft height 180 – Water cooling

Dimensional drawings

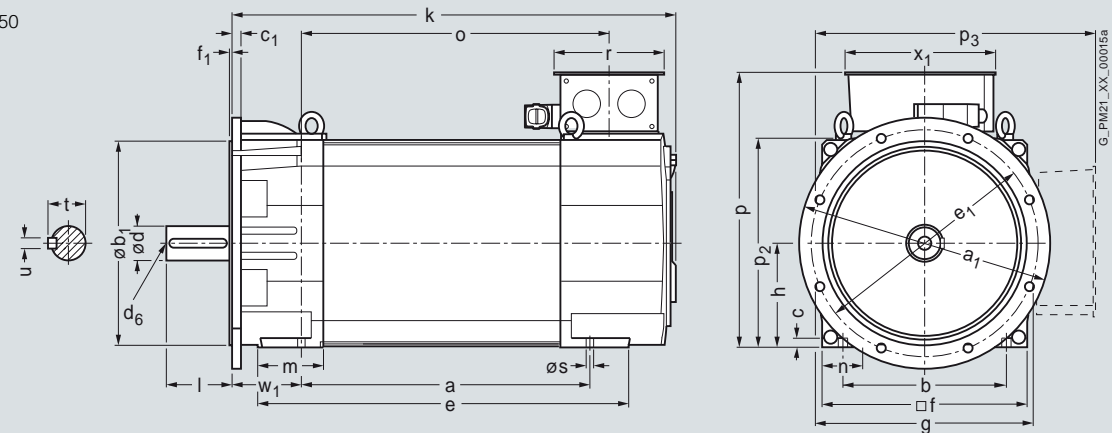
For motor		Dimensions in mm (inches)																			
Shaft height	Type	DIN IEC	a B	D400		D450		D400		D450		D400		D450		f AB	f ₁ T	g AC	h H	k LB	m BA
				a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M												
1PH8, types of construction IM B5/IM B35/IM V15, water cooling																					
180	1PH8184		430 (16.93)	400 (15.75)	450 (17.72)	279 (10.98)	300 (11.81)	350 (13.78)	15 (0.59)	16 (0.63)	350 (13.78)	400 (15.75)	356 (14.02)	5 (0.20)	384 (15.12)	180 (7.09)	670 (26.38)	123 (4.84)			
	1PH8186		520 (20.47)																760 (29.92)		

Shaft height	Type	DIN IEC	Shaft extension DE								Terminal box type		
			n AA	p ₂ -	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F	Dimensions as for types of construction IM B3/IM V5	
180	1PH8184		73 (2.87)	372 (14.65)	14.5 (0.57)	121 (4.76)	65m6	M20	140 (5.51)	69 (2.72)	18 (0.71)		
	1PH8186												

1PH818
D400



D450



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 225 – Water cooling

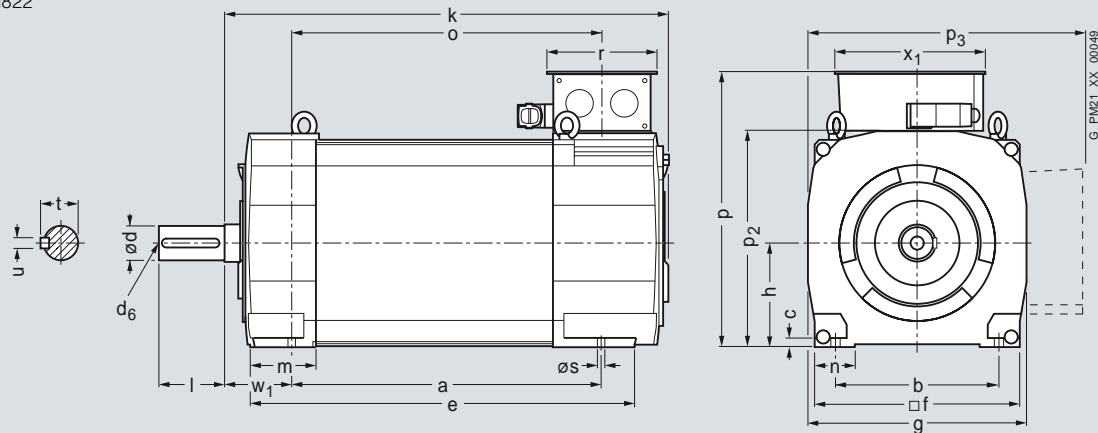
Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	b A	c HA	f AB	g AC	h H	k LB	m BA	n AA	p ₂ -	s K	w ₁ C
1PH8, types of construction IM B3/IM V5, water cooling														
225	1PH8224		445 (17.52)	356 (14.02)	18 (0.71)	446 (17.56)	474 (18.66)	225 (8.86)	775 (30.51)	154 (6.06)	88 (3.46)	462 (18.19)	18.5 (0.73)	149 (5.87)
	1PH8226		545 (21.46)						875 (34.45)					
	1PH8228		635 (25.0)						965 (37.99)					

Shaft height	Type	DIN IEC	Shaft extension DE					Terminal box type											
			d D	d ₆ -	l E	t GA	u F	1XB7322				1XB7422			1XB7700				
							p HD	p ₃ -	r LL	x ₁ AG	p HD	p ₃ -	r LL	x ₁ AG	p HD	p ₃ -	r LL	x ₁ AG	
225	1PH8224		75m6	M20	140 (5.51)	79.5 (3.13)	20 (0.79)	579 (22.80)	577 (22.72)	197 (7.76)	258 (10.16)	634 (24.96)	632 (24.88)	230 (9.06)	303 (11.93)	683 (26.89)	666 (26.22)	310 (12.20)	295 (11.61)
	1PH8226																		
	1PH8228																		

1PH822



Main motors

Dimensional drawings

1PH8 asynchronous and synchronous motors Shaft height 225 – Water cooling

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	g AC	h H	k LB	m BA	n AA	p ₂ -	w ₁ C
1PH8, types of construction IM B5/IM B35/IM V15 D550, water cooling																		
225	1PH8224		445 (17.52)	550 (21.65)	356 (14.02)	450 (17.72)	18 (0.71)	20 (0.79)	500 (19.69)	446 (17.56)	5 (0.20)	474 (18.66)	225 (8.86)	770 (30.31)	144 (5.67)	88 (3.46)	462 (18.19)	149 (5.87)
	1PH8226		545 (21.46)											872 (34.33)				
	1PH8228		635 (25.00)											962 (37.87)				

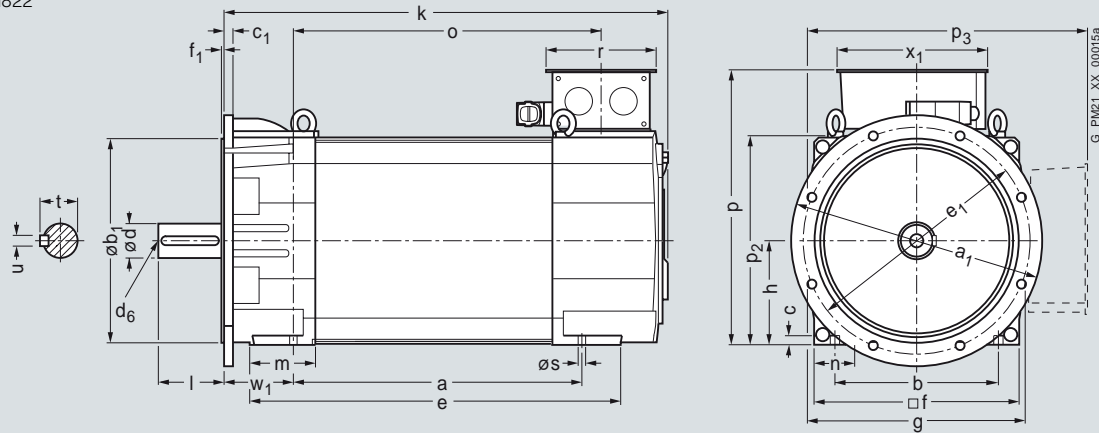
Shaft extension DE

Terminal box type

Dimensions as for types of construction IM B3/IM V5

Shaft height	Type	DIN IEC	d D	d ₆ -	l E	t GA	u F
225	1PH8224		75m6	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PH8226						
	1PH8228						

1PH822



Main motors

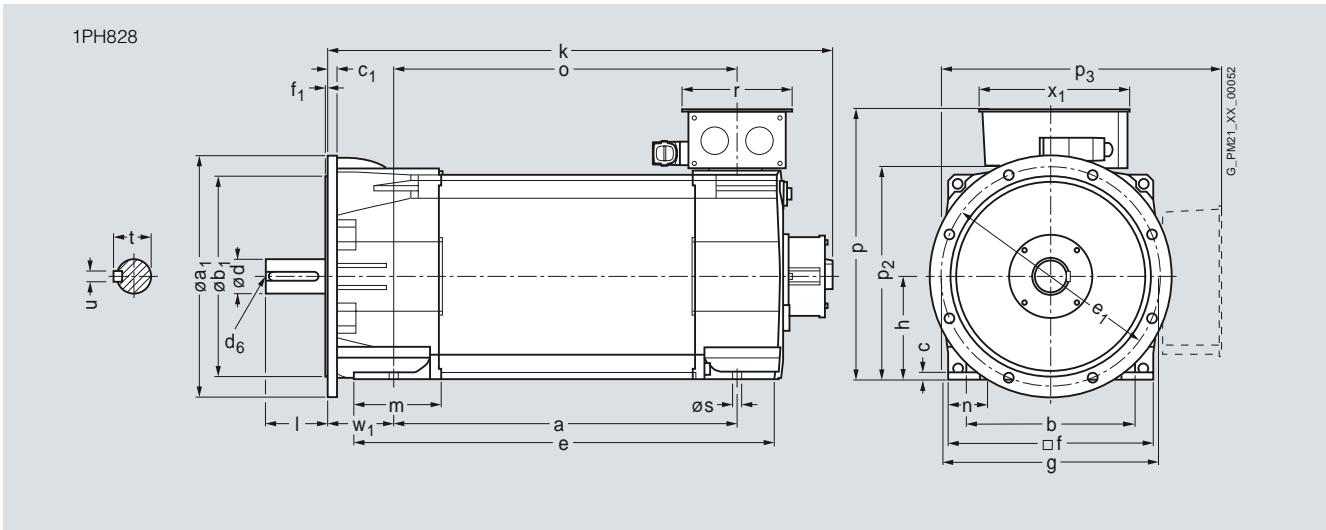
Dimensional drawings

1PH8 asynchronous motors Shaft height 280 – Water cooling

Dimensional drawings

For motor		Dimensions in mm (inches)																	
Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	c ₁ LA	e ₁ M	f AB	f ₁ T	g AC	h H	i ₂ EB	k LB	m BA	n AA	p ₂ -	s K
1PH8, types of construction IM B5/IM B35/IM V15 D660, water cooling																			
280	1PH8284		684 (26.93)	660 (25.98)	457 (17.99)	550 (21.65)	21 (0.83)	24 (0.94)	600 (23.62)	556 (21.89)	6 (0.24)	588 (23.15)	280 (11.02)	140 (5.51)	1134 (44.65)	220 (8.66)	105 (4.13)	574 (22.60)	24 (0.94)
	1PH8286		794 (31.26)												1244 (48.98)				
	1PH8288		924 (36.38)												1374 (54.09)				

		Shaft extension DE										Terminal box type
Shaft height	Type	DIN IEC	m BA	n AA	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F	Dimensions as for types of construction IM B3/IM V5
280	1PH8284		220 (8.66)	105 (4.13)	24 (0.94)	190 (7.48)	95m6	M24	170 (6.69)	100 (3.94)	25 (0.98)	
	1PH8286											
	1PH8288											



Main motors

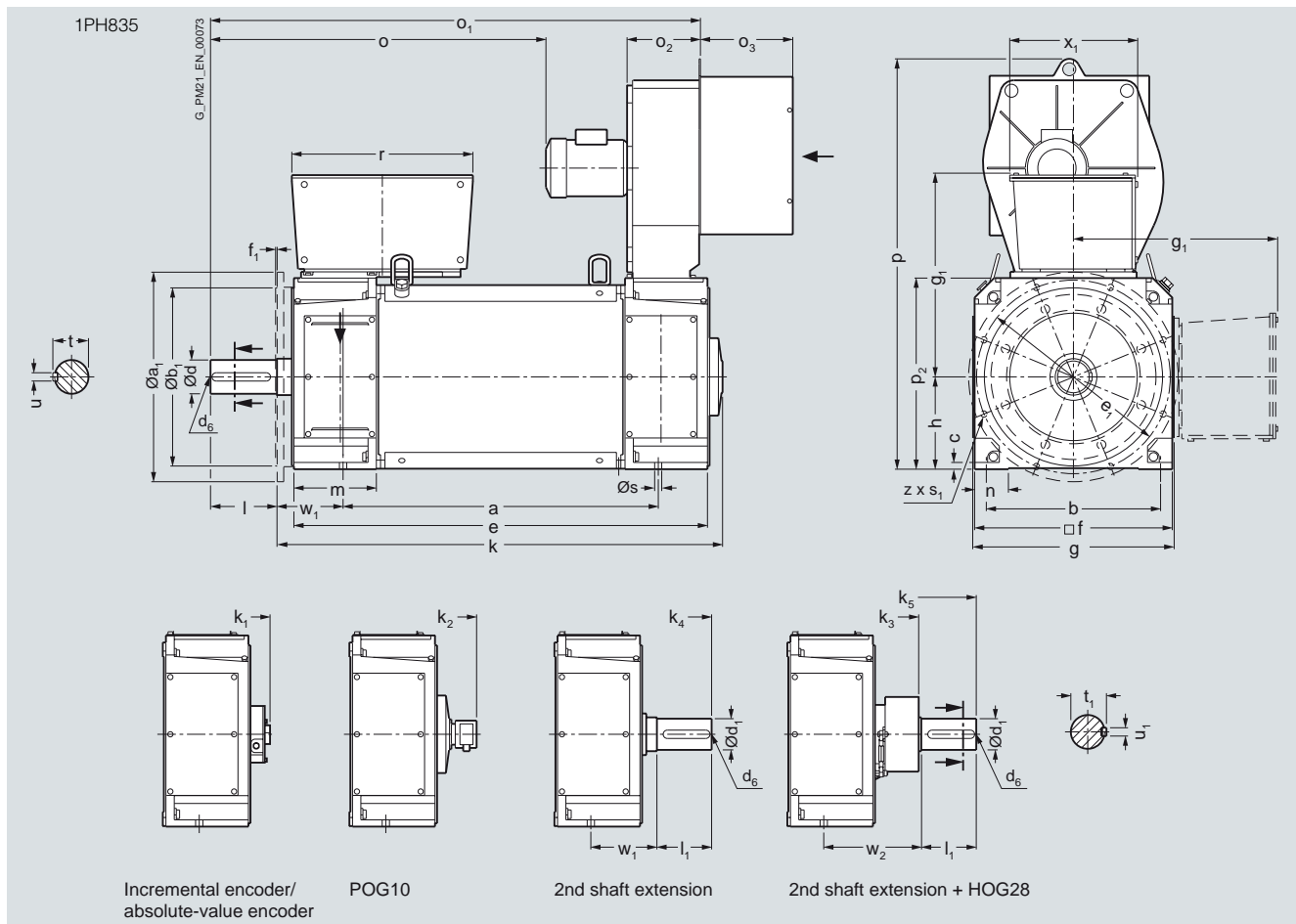
Dimensional drawings

1PH8 asynchronous motors Shaft height 355 – Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)																
Shaft height	Type	DIN IEC	a B	a ₁ P	b A	b ₁ N	c HA	e ₁ M	f AB	f ₁ T	h H	k L	k ₁	k ₂	k ₃	k ₄	k ₅	
1PH8, type of construction IM B35, forced ventilation																		
355	1PH8350		772	800	670	680	26	740	760	6	355	1273	1549	1625	1644	1740	1861	
	1PH8351		(30.39)	(31.50)	(26.38)	(26.77)	(1.02)	(29.13)	(29.92)	(0.24)	(13.98)	(50.12)	(60.98)	(63.98)	(64.72)	(68.50)	(73.27)	
	1PH8352		862									1363	1639	1715	1734	1830	1951	
			(33.94)									(53.66)	(64.53)	(67.52)	(68.27)	(72.05)	(76.81)	
	1PH8354		972									1473	1749	1825	1844	1940	2061	
			(38.27)									(57.99)	(68.86)	(71.85)	(72.60)	(76.38)	(81.14)	
	1PH8356		1092									1593	1869	1945	1964	2060	2181	
			(42.99)									(62.72)	(73.58)	(76.57)	(77.32)	(81.10)	(85.87)	
	1PH8358		1212									1713	1989	2065	2084	2180	2301	
			(47.72)									(67.44)	(78.31)	(81.30)	(82.05)	(85.83)	(90.59)	

Shaft height	Type	DIN IEC	m BA	n AA	p HD	p ₂ HC	o K1	o ₁ K2	o ₂ K3	o ₃ K4	s K	s ₁ S	w ₁ C/CA	w ₂ CA1	z Z
355	1PH8350		317	130	1269	735	900	1412	200	355	28	24	254	375	8
	1PH8351		(12.48)	(5.12)	(49.96)	(28.94)	(35.43)	(55.59)	(7.87)	(13.98)	(1.10)	(0.94)	(10.00)	(14.76)	
	1PH8352						990	1502							
							(38.98)	(59.13)							
	1PH8354						1110	1612							
							(43.70)	(63.46)							
	1PH8356						1220	1732							
							(48.03)	(68.19)							
	1PH8358						1340	1852							
							(52.76)	(72.91)							



For dimensions of shaft extension and terminal box, see page 5/139.

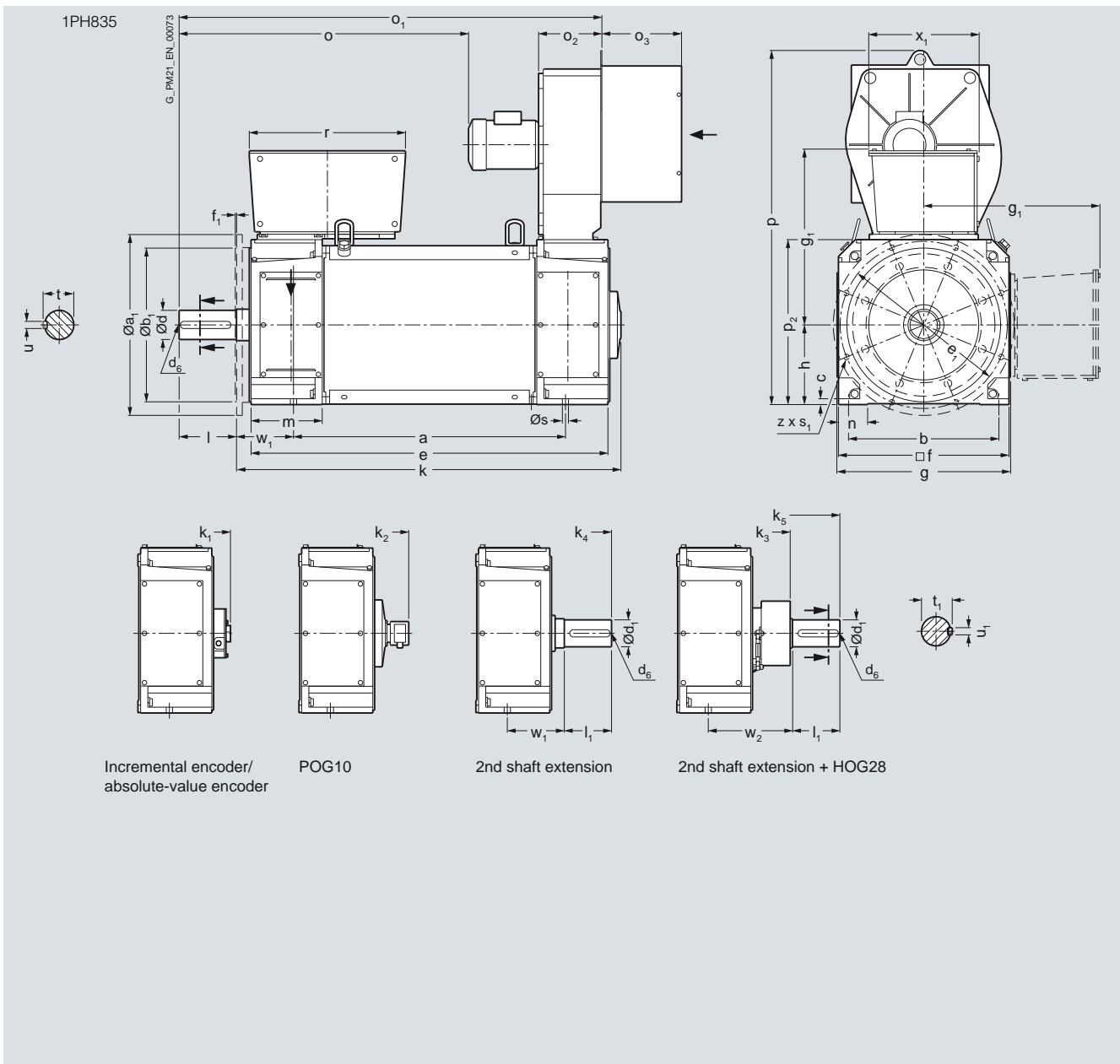
Main motors

Dimensional drawings

1PH8 asynchronous motors Shaft height 355 – Forced ventilation

Dimensional drawings

Shaft height	Type	DIN IEC	Shaft extension DE									Terminal box type					
			d D	d ₁ DA	d ₆ DB/DC	l E	l ₁ EC	t G	t ₁ GB	u F	u ₁ FA	g ₂ AD	r LL	x ₁ AG	g ₂ AD	r LL	x ₁ AG
355	1PH8350		130	120	M24	250	180	119	114	32	32	640	370	377	784	696	492
	1PH8351		(5.12)	(4.72)		(9.84)	(7.09)	(4.69)	(4.49)	(1.26)	(1.26)	(25.20)	(14.57)	(14.84)	(30.87)	(27.40)	(19.37)
	1PH8352																
	1PH8354																
	1PH8356																
	1PH8358																



Main motors

Dimensional drawings

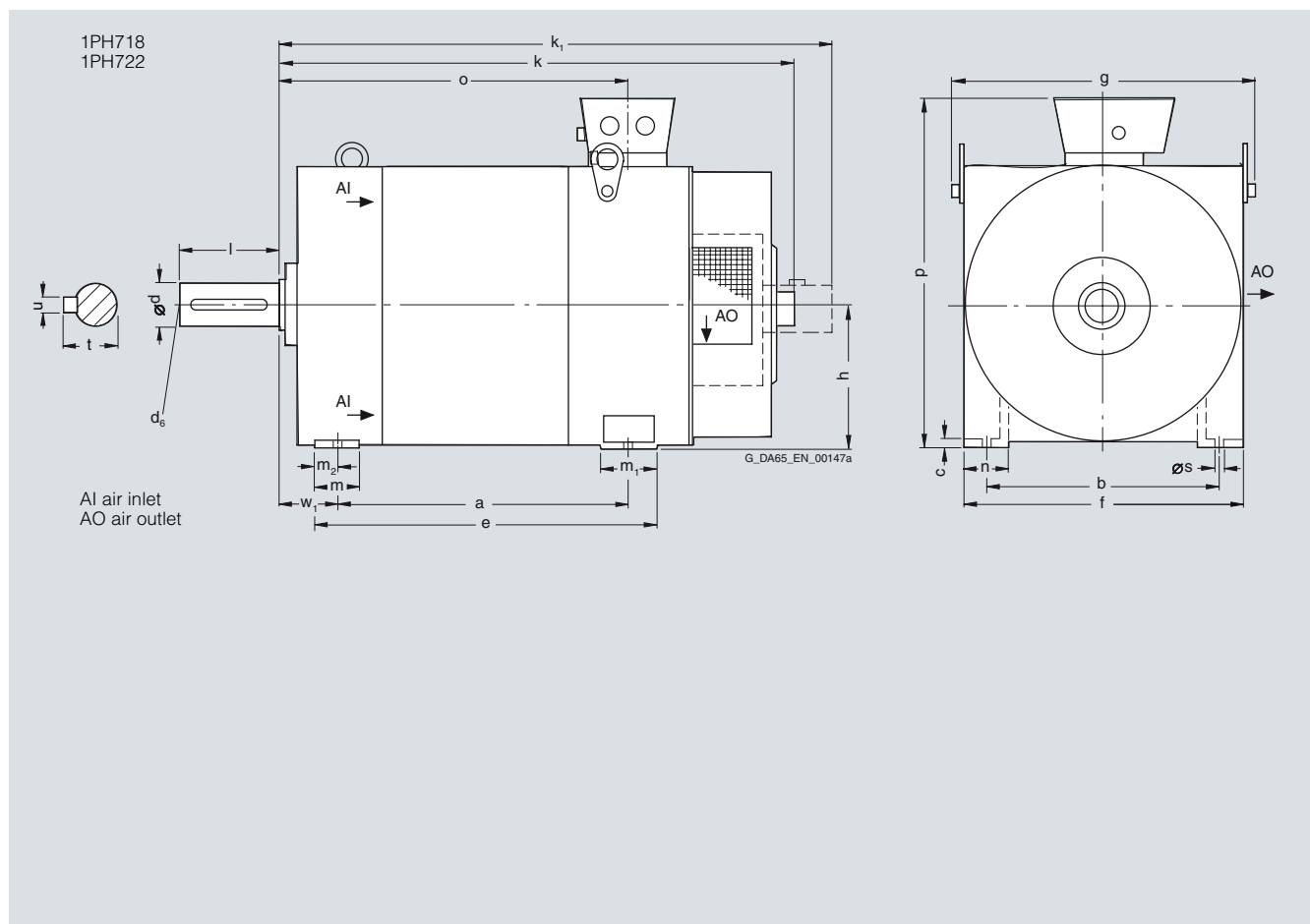
1PH7 asynchronous motors Forced ventilation

Dimensional drawings

Shaft height	Type	DIN IEC	Dimensions in mm (inches)														Terminal box type 1XB7...		
			a B	b A	c LA	e M	f AB	g AC	h H	k LB	k ₁	m BA	m ₁	m ₂	n AA	o	p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD
1PH7, type of construction IM B3, forced ventilation, direction of air flow DE → NDE																			
180	1PH7184		430 (16.93)	279 (10.98)	14 (0.55)	510 (20.08)	360 (14.17)	408 (16.06)	180 (7.09)	835 (32.87)	-	60 (2.36)	120 (4.72)	35 (1.38)	65 (2.56)	541 (21.30)	495 (19.49)	-	-
	1PH7186		520 (20.47)			600 (23.62)				925 (36.42)						631 (24.84)	545 (21.46)	-	-
225	1PH7224		445 (17.52)	356 (14.02)	18 (0.71)	530 (20.87)	450 (17.72)	498 (19.61)	225 (8.86)	-	1100 (43.31)	60 (2.36)	120 (4.72)	40 (1.57)	85 (3.35)	629 (24.76)	595 (23.43)	645 (25.39)	680 (26.77)
	1PH7226		545 (21.46)			630 (24.80)					1200 (47.24)				729 (28.70)				
	1PH7228		635 (25.00)			720 (28.35)					1290 (50.79)				819 (32.24)		-		

Shaft extension DE

Shaft height	Type	DIN IEC	s K	w ₁ C	d D	d ₆	l E	t GA	u F
180	1PH7184		14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PH7186				65 (2.56)			69 (2.72)	
225	1PH7224		18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PH7226								
	1PH7228								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

Dimensional drawings

1PH7 asynchronous motors

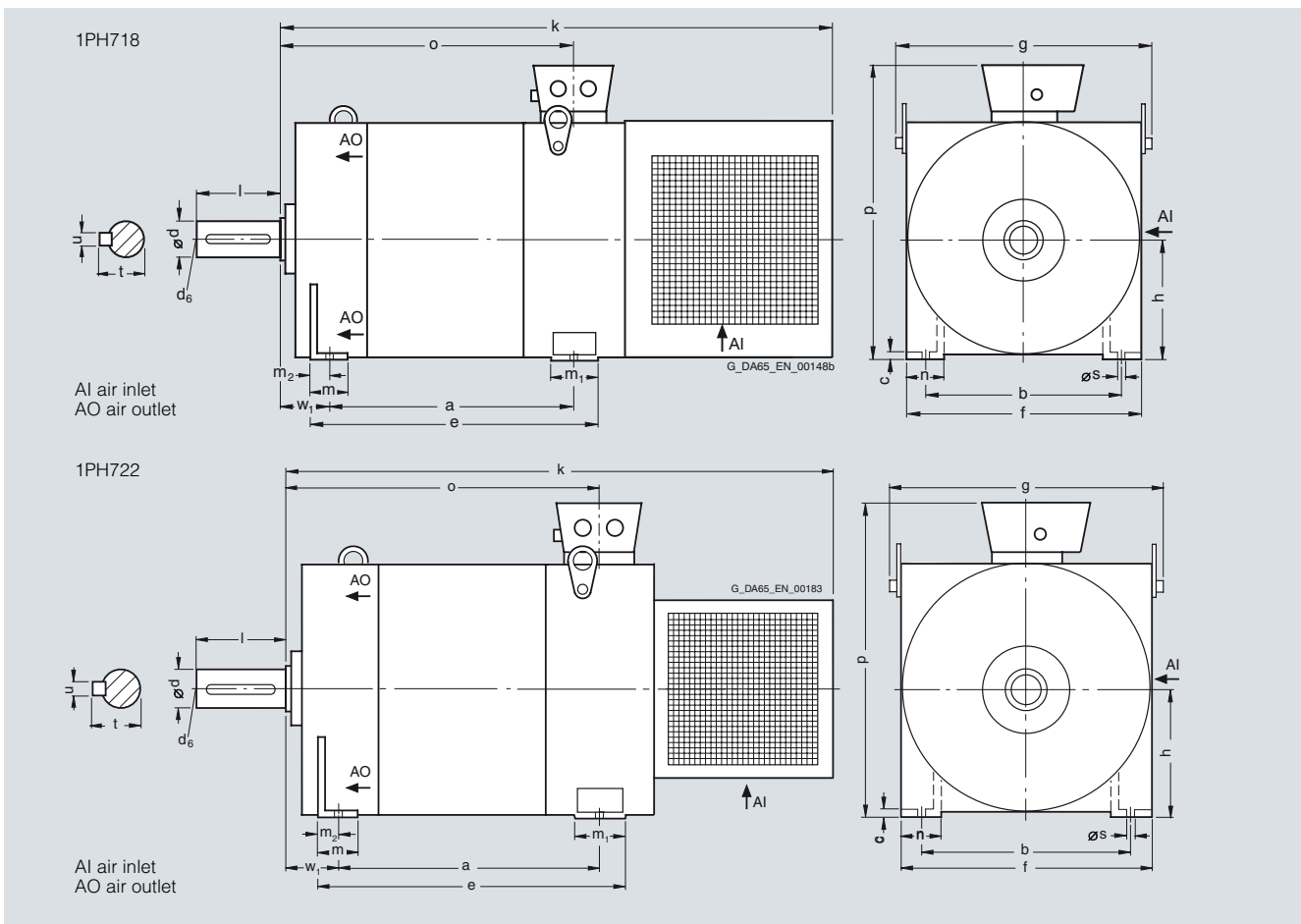
Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)														Terminal box type 1XB7...			
Shaft height	Type	DIN IEC	a B	b A	c LA	e M	f AB	g AC	h H	k LB	m BA	m ₁ -	m ₂ -	n AA	o -	322	422	700	
																p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD	
1PH7, type of construction IM B3, forced ventilation, direction of air flow NDE → DE																			
180	1PH7184		430 (16.93)	279 (10.98)	14 (0.55)	510 (20.08)	360 (14.17)	405 (15.94)	180 (7.09)	1010 (39.76)	60 (2.36)	120 (4.72)	35 (1.38)	65 (2.56)	541 (21.30)	495 (19.49)	-	-	
	1PH7186		520 (20.47)			600 (23.62)				1100 (43.31)					631 (24.84)	560 (22.05)			
225	1PH7224		445 (17.52)	356 (14.02)	18 (0.71)	530 (20.87)	450 (17.72)	498 (19.61)	225 (8.86)	1090 (42.91)	60 (2.36)	120 (4.72)	40 (1.57)	85 (3.35)	629 (24.76)	595 (23.43)	645 (25.93)	680 (26.77)	
	1PH7226		545 (21.46)			630 (24.80)				1190 (46.85)					729 (28.70)				
	1PH7228		635 (25.00)			720 (28.35)				1280 (50.39)					819 (32.24)				

Shaft extension DE

Shaft height	Type	DIN IEC	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F
180	1PH7184		14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PH7186				65 (2.56)			69 (2.72)	
225	1PH7224		18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PH7226								
	1PH7228								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

Dimensional drawings

1PH7 asynchronous motors Forced ventilation

Dimensional drawings

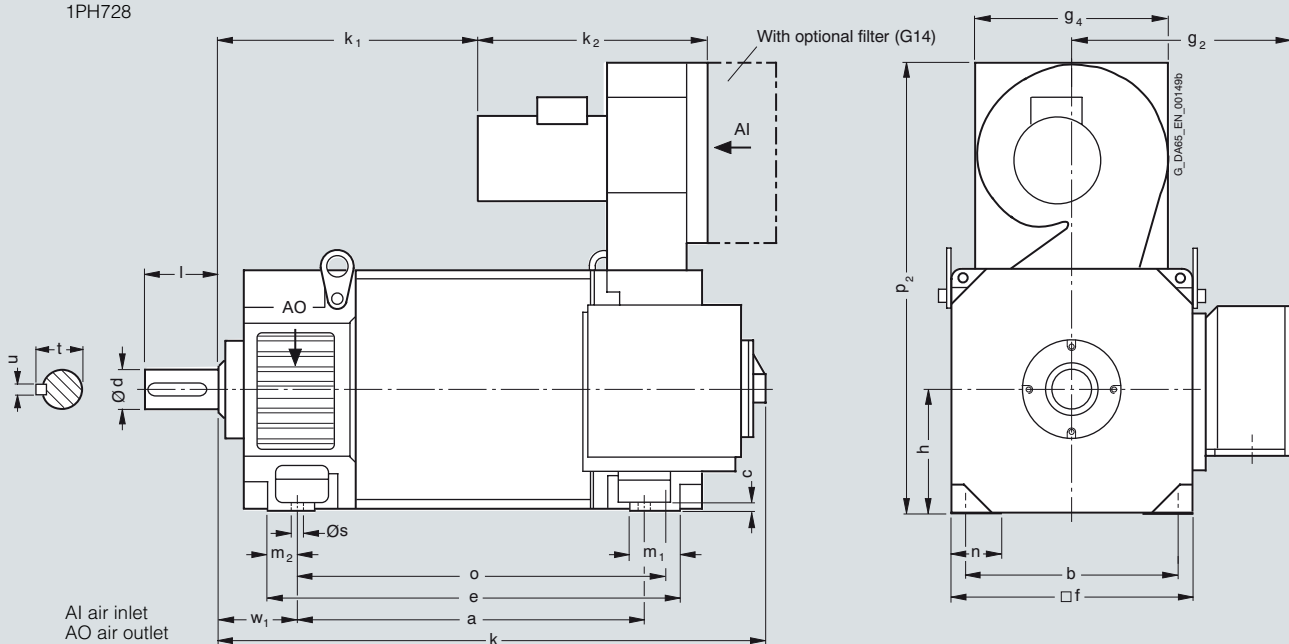
For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	b A	c HA	e BB	f AB	g ₂ AD	g ₄ -	h H	k LB	k ₁ -	k ₂ -	m ₁ -	m ₂ -	n AA	o -	p ₂ -	
1PH7, type of construction IM B3, forced ventilation, direction of air flow NDE → DE																			
280	1PH7284		684 (26.93)	457 (17.99)	22 (0.87)	840 (33.07)	560 (22.05)	518 (20.39)	449 (17.68)	280 (11.02)	1146 (45.12)	489 (19.25)	546 (21.50)	108 (4.25)	78 (3.07)	100 (3.94)	731 (28.78)	1042 (41.02)	
	1PH7286		794 (31.26)			950 (37.40)					1256 (49.45)	599 (23.58)						841 (33.11)	
	1PH7288		924 (36.38)			1080 (42.52)					1386 (54.57)	729 (28.70)						971 (38.23)	

Shaft extension
DE

Shaft height	Type	DIN IEC	s K	w ₁ C	d D	l E	t GA	u F
280	1PH7284		24 (0.94)	190 (7.48)	95 (3.74)	170 (6.69)	100 (3.94)	25 (0.98)
	1PH7286							
	1PH7288							

1PH728



Main motors

Dimensional drawings

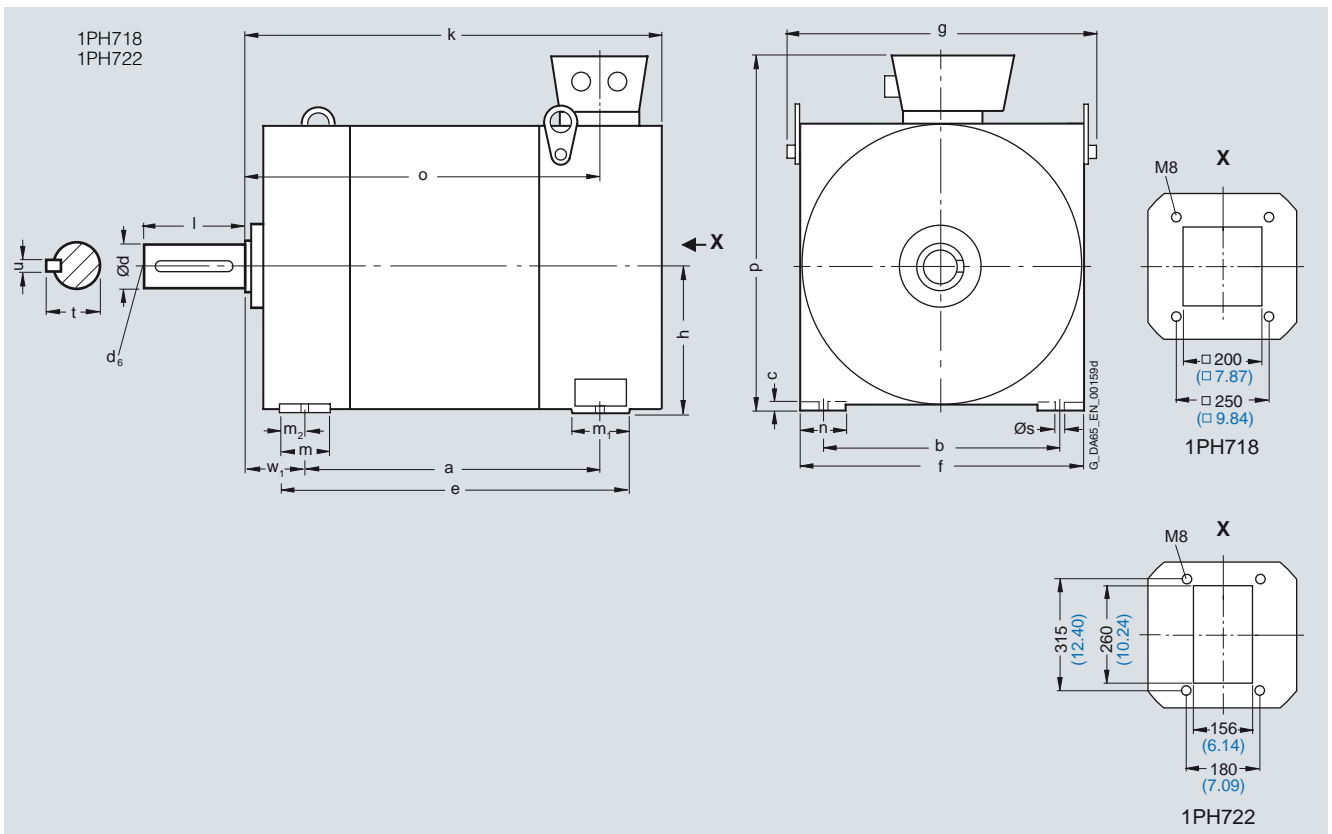
1PH7 asynchronous motors Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)														Terminal box type 1XB7...		
Shaft height	Type	DIN IEC	a	b	c	e	f	g	h	k	m	m ₁	m ₂	n	o	322	422	700
			B	A	LA	M	AB	AC	H	LB	BA	-	-	AA	-	p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD
1PH7, type of construction IM B3, forced ventilation, with pipe connection at NDE																		
180	1PH7184		430 (16.93)	279 (10.98)	14 (0.55)	510 (20.08)	360 (14.17)	408 (16.06)	180 (7.09)	830 (32.68)	60 (2.36)	120 (4.72)	35 (1.38)	65 (2.56)	541 (21.30)	495 (19.49)	-	-
	1PH7186		520 (20.47)			600 (23.62)				920 (36.22)					631 (24.84)	560 (22.05)	-	
225	1PH7224		445 (17.52)	356 (14.02)	18 (0.71)	530 (20.78)	450 (17.72)	498 (19.61)	225 (8.86)	950 (37.40)	60 (2.36)	120 (4.72)	40 (1.57)	80 (3.15)	629 (24.76)	595 (23.43)	645 (25.39)	680 (26.77)
	1PH7226		545 (21.46)			630 (24.80)				1050 (41.34)					729 (28.70)			
	1PH7228		635 (25.00)			720 (28.35)				1140 (44.88)					819 (32.24)			

Shaft extension DE

Shaft height	Type	DIN IEC	s	w ₁	d	d ₆	l	t	u
			K	C	D	-	E	GA	F
180	1PH7184		14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PH7186				65 (2.56)			69 (2.72)	
225	1PH7224		18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PH7226								
	1PH7228								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

Dimensional drawings

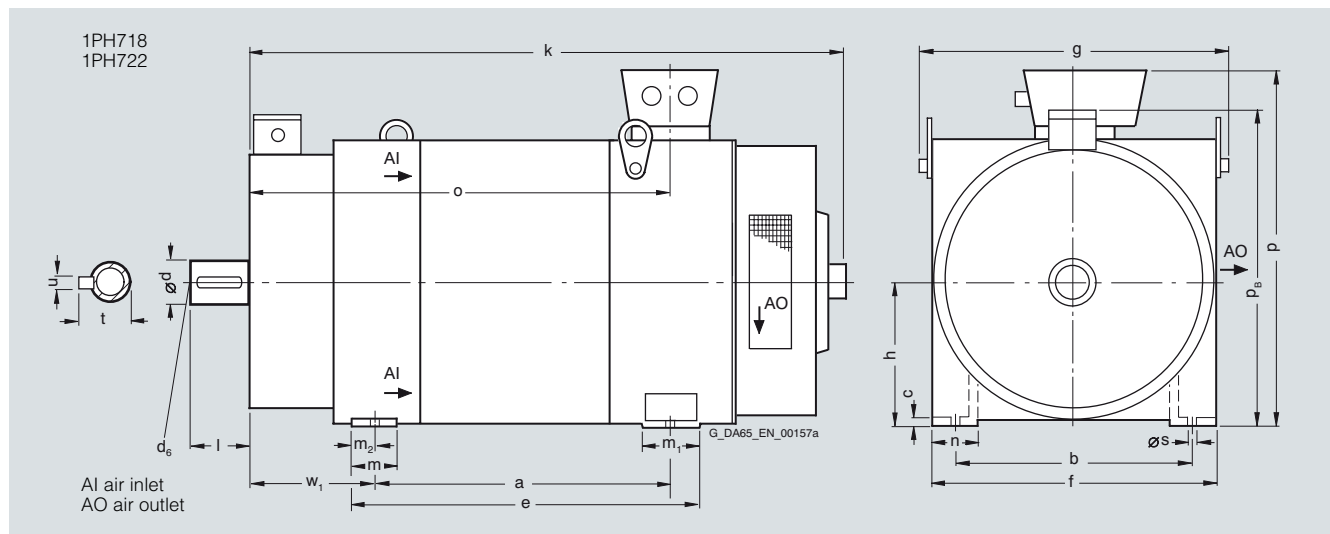
1PH7 asynchronous motors Forced ventilation

Dimensional drawings

Shaft height	Type	DIN IEC	Dimensions in mm (inches)														Terminal box type 1XB7...				
			a B	b A	c LA	e M	f AB	g AC	h H	k LB	m BA	m ₁	m ₂	n AA	o	p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD			
1PH7, type of construction IM B3, forced ventilation, brake control module, direction of air flow DE → NDE																					
180	1PH7184		430 (16.93)	279 (10.98)	14 (0.55)	510 (20.08)	360 (14.17)	408 (16.06)	180 (7.09)	945 (37.20)	60 (2.36)	120 (4.72)	35 (1.38)	65 (2.56)	644 (25.35)	495 (19.49)	-	-			
	1PH7186		520 (20.47)			600 (23.62)				1035 (40.75)					734 (28.90)	560 (22.05)	-				
225	1PH7224		445 (17.52)	356 (14.02)	18 (0.71)	530 (20.87)	450 (17.72)	498 (19.61)	225 (8.86)	1230 (48.43)	60 (2.36)	120 (4.72)	40 (1.57)	80 (3.15)	758 (29.84)	595 (23.43)	645 (25.39)	680 (26.77)			
	1PH7226		545 (21.46)			630 (24.80)				1330 (52.36)				858 (33.78)							
	1PH7228		635 (25.00)			720 (28.35)				1420 (55.91)				948 (37.32)		-					

Shaft extension DE

Shaft height	Type	DIN IEC	p _B	s K	w ₁ C	d D	d ₆	l E	t GA	u F
180	1PH7184		390	14.5	224	90	M20	90	95	25
	1PH7186		(15.35)	(0.57)	(8.82)	(3.54)		(3.54)	(3.74)	(0.98)
225	1PH7224		450	18.5	278	100	M20	100	106	28
	1PH7226		(17.72)	(0.73)	(10.94)	(3.94)		(3.94)	(4.17)	(1.10)
	1PH7228									



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

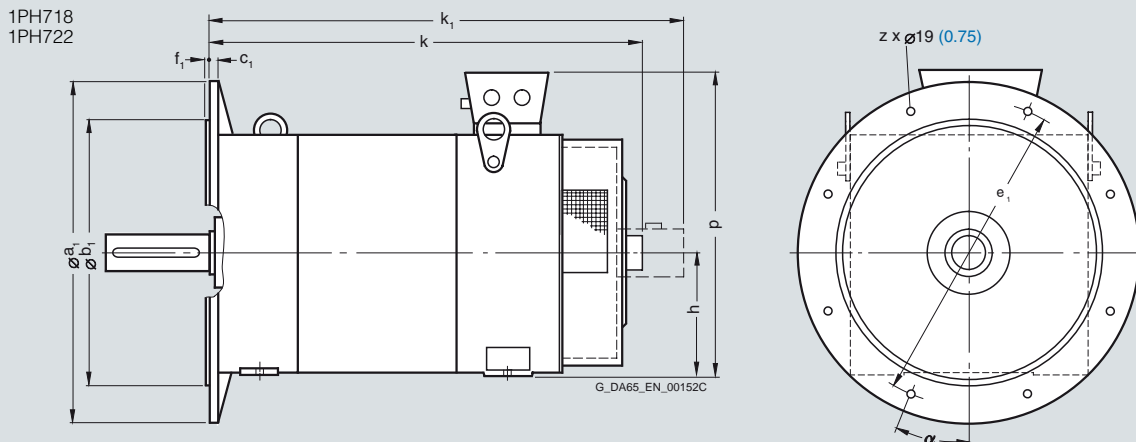
Main motors

Dimensional drawings

1PH7 asynchronous motors Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)										For dimensions for foot mounting, shaft and terminal box, see dimensional drawing of 1PH718/1PH722 motors, type of construction IM B3.			
Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	h H	k LB	k ₁ -	Terminal box type			z -	α -
											1XB7322	1XB7422	1XB7700		
1PH7, type of construction IM B35, forced ventilation, direction of air flow DE → NDE															
180	1PH7184 ²⁾		400 (15.75)	300 (11.81)	15 (0.59)	350 (13.78)	5 (0.20)	180 (7.09)	835 (32.87)	-	495 (19.49)	-	-	4	45°
	1PH7184 ²⁾		450 (17.72)	350 (13.78)	16 (0.63)	400 (15.75)			835 (32.87)			-	-	8	22.5°
	1PH7186								925 (36.42)			560 (22.05)	-		
225	1PH7224		550 (21.65)	450 (17.72)	18 (0.71)	500 (19.69)	5 (0.20)	225 (8.86)	-	1100 (43.31)	595 (23.43)	645 (25.39)	680 (26.77)	8	22.5°
	1PH7226									1200 (47.24)					
	1PH7228									1290 (50.79)		-			



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

²⁾ For flange selection, see Order No. supplement for 1PH718/1PH722.

Main motors

Dimensional drawings

1PH7 asynchronous motors Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

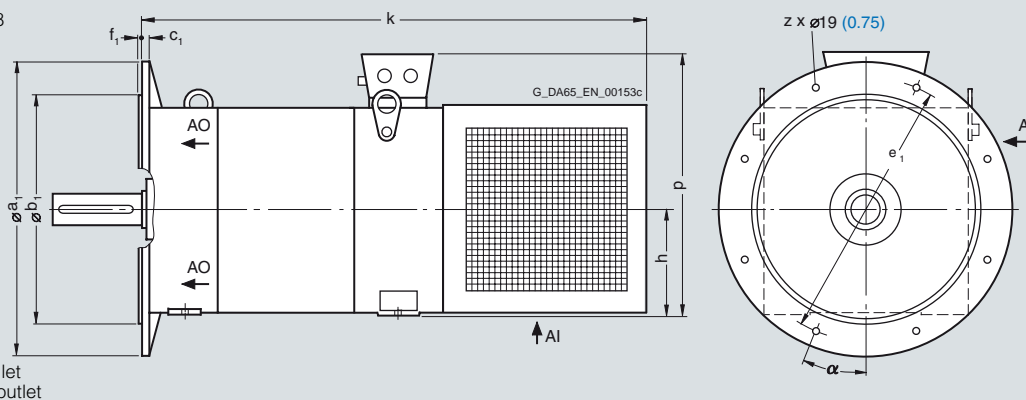
For dimensions for foot mounting, shaft and terminal box, see dimensional drawing of 1PH718/1PH722 motors, type of construction IM B3.

Terminal box type

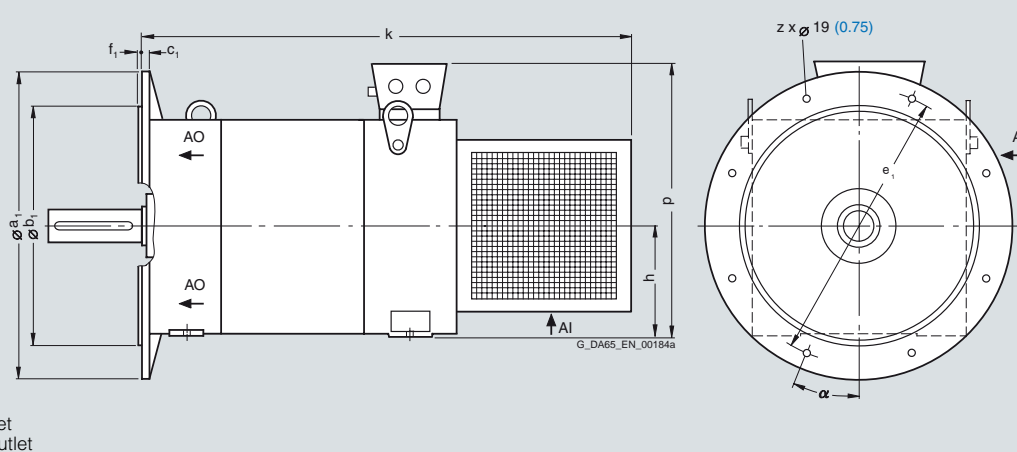
1XB7322 1XB7422 1XB7700

Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	h H	k LB	p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD	z	α
1PH7, type of construction IM B35, forced ventilation, direction of air flow NDE → DE														
180	1PH7184 ²⁾		400 (15.75)	300 (11.81)	15 (0.59)	350 (13.78)	5 (0.20)	180 (7.09)	1010 (39.76)	495 (19.49)	–	–	4	45°
	1PH7184 ²⁾		450 (17.72)	350 (13.78)	16 (0.63)	400 (15.75)			1010 (39.76)	–	–	–	8	22.5°
	1PH7186								1100 (43.31)	560 (22.05)	–	–		
225	1PH7224		550 (21.65)	450 (17.72)	18 (0.71)	500 (19.69)	5 (0.20)	225 (8.86)	1090 (42.91)	595 (23.43)	645 (25.39)	680 (26.77)	8	22.5°
	1PH7226								1190 (46.85)	–	–	–		
	1PH7228								1280 (50.39)	–	–	–		

1PH718



1PH722



1) Maximum dimensions, depending on electrical version (terminal box).

2) For flange selection, see Order No. supplement for 1PH718/1PH722.

Main motors

Dimensional drawings

1PH7 asynchronous motors Forced ventilation

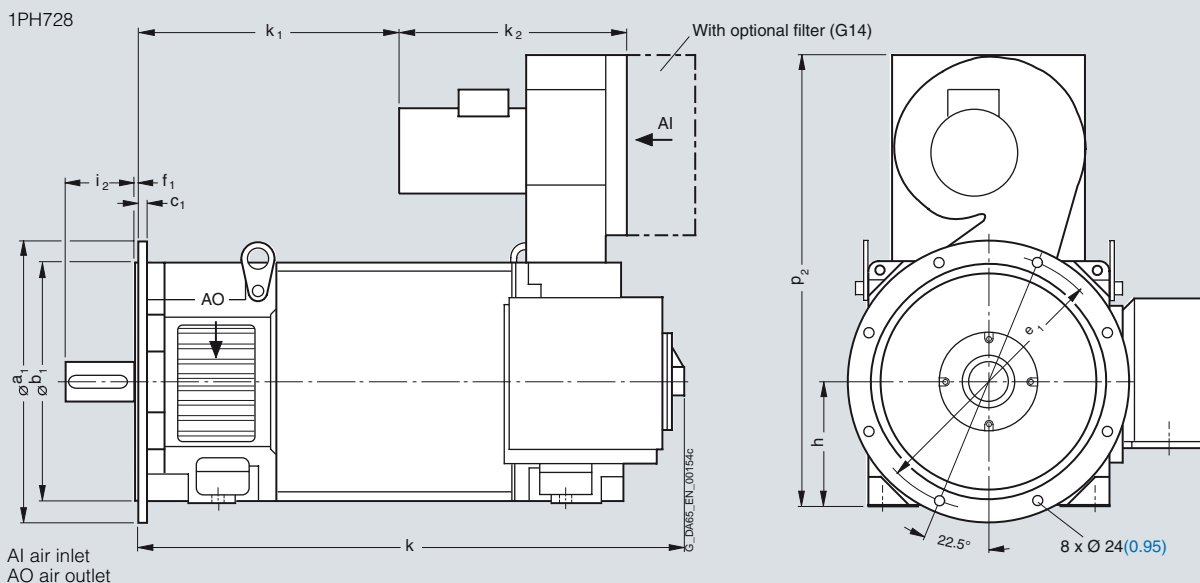
Dimensional drawings

For motor Dimensions in mm (inches) For dimensions for foot mounting, shaft and terminal box, see dimensional drawing of 1PH728 motors, type of construction IM B3.

Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	h H	i ₂ -	k LB	k ₁ -	k ₂ -	p ₂ -
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1PH7, type of construction IM B35, forced ventilation, direction of air flow NDE → DE

280	1PH7284		660 (25.98)	550 (21.65)	24 (0.94)	600 (23.62)	6 (0.24)	280 (11.02)	170 (6.69)	1146 (45.12)	489 (19.25)	546 (21.50)	1042 (41.02)
	1PH7286									1256 (49.45)	599 (23.58)		
	1PH7288									1386 (54.57)	729 (28.70)		



Main motors

Dimensional drawings

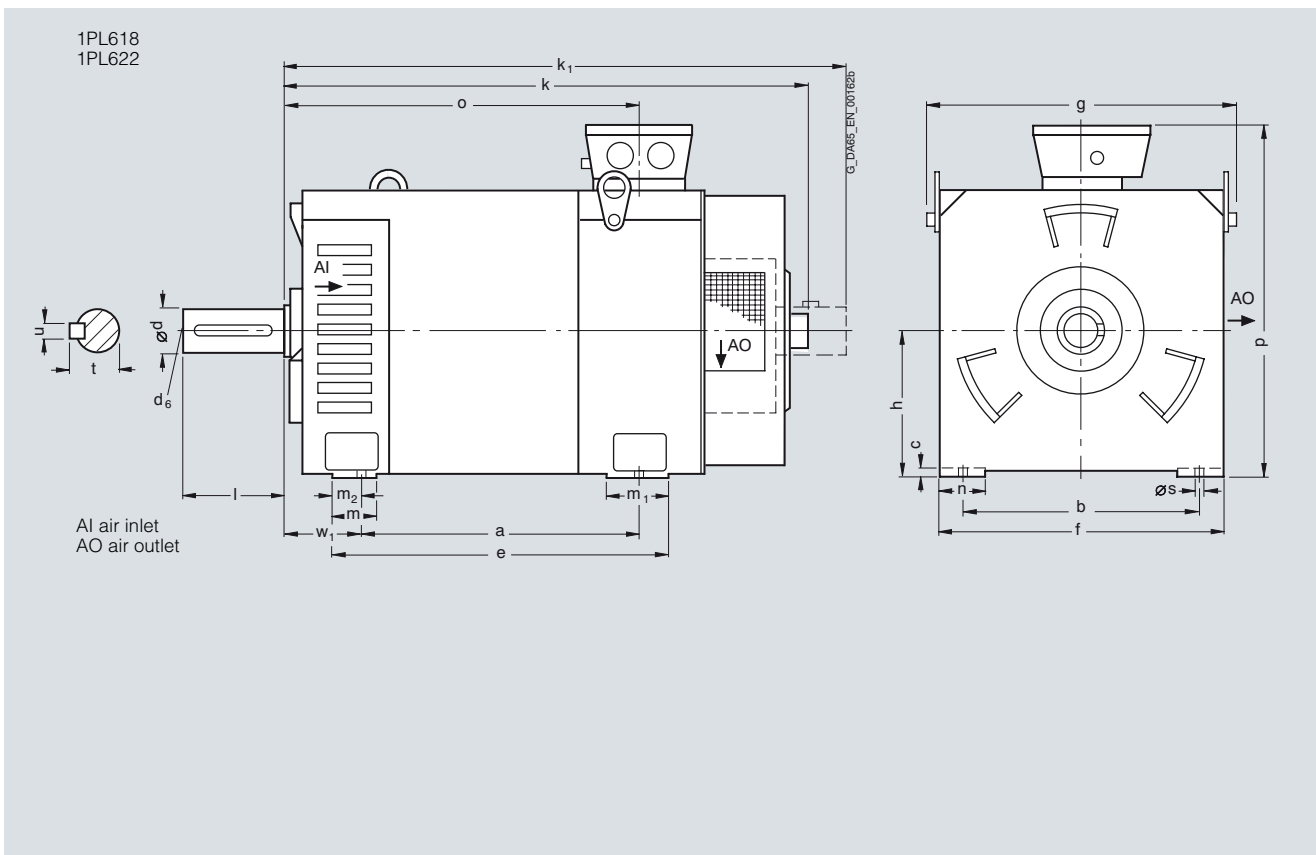
1PL6 asynchronous motors Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

Shaft height	Type	DIN IEC	a B	b A	c LA	e M	f AB	g AC	h H	k LB	k ₁ -	m BA	m ₁ -	m ₂ -	n AA	o -
1PL6, type of construction IM B3, forced ventilation, direction of air flow DE → NDE																
180	1PL6184		430 (16.93)	279 (10.98)	14 (0.55)	525 (20.67)	360 (14.17)	405 (15.94)	180 (7.09)	835 (32.87)	-	78 (3.07)	120 (4.72)	50 (1.97)	65 (2.56)	541 (21.30)
	1PL6186		520 (20.47)			615 (24.21)				925 (36.42)						631 (24.84)
225	1PL6224		445 (17.52)	356 (14.02)	18 (0.71)	545 (21.46)	450 (17.72)	498 (19.61)	225 (8.86)	-	1100 (43.31)	80 (3.15)	120 (4.72)	60 (2.36)	85 (3.35)	629 (24.76)
	1PL6226		545 (21.46)			645 (25.39)				1200 (47.24)						729 (28.70)
	1PL6228		635 (25.00)			735 (28.94)				1290 (50.79)						819 (32.24)

Shaft height	Type	DIN IEC	Terminal box type			Shaft extension DE						
			1XB7322 p ¹⁾ HD	1XB7422 p ¹⁾ HD	1XB7700 p ¹⁾ HD	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F
180	1PL6184		495 (19.49)	560 (22.05)	-	14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PL6186				580 (22.83)			65 (2.56)			69 (2.72)	
225	1PL6224		595 (23.43)	645 (25.39)	680 (26.77)	18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PL6226			-								
	1PL6228			-								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

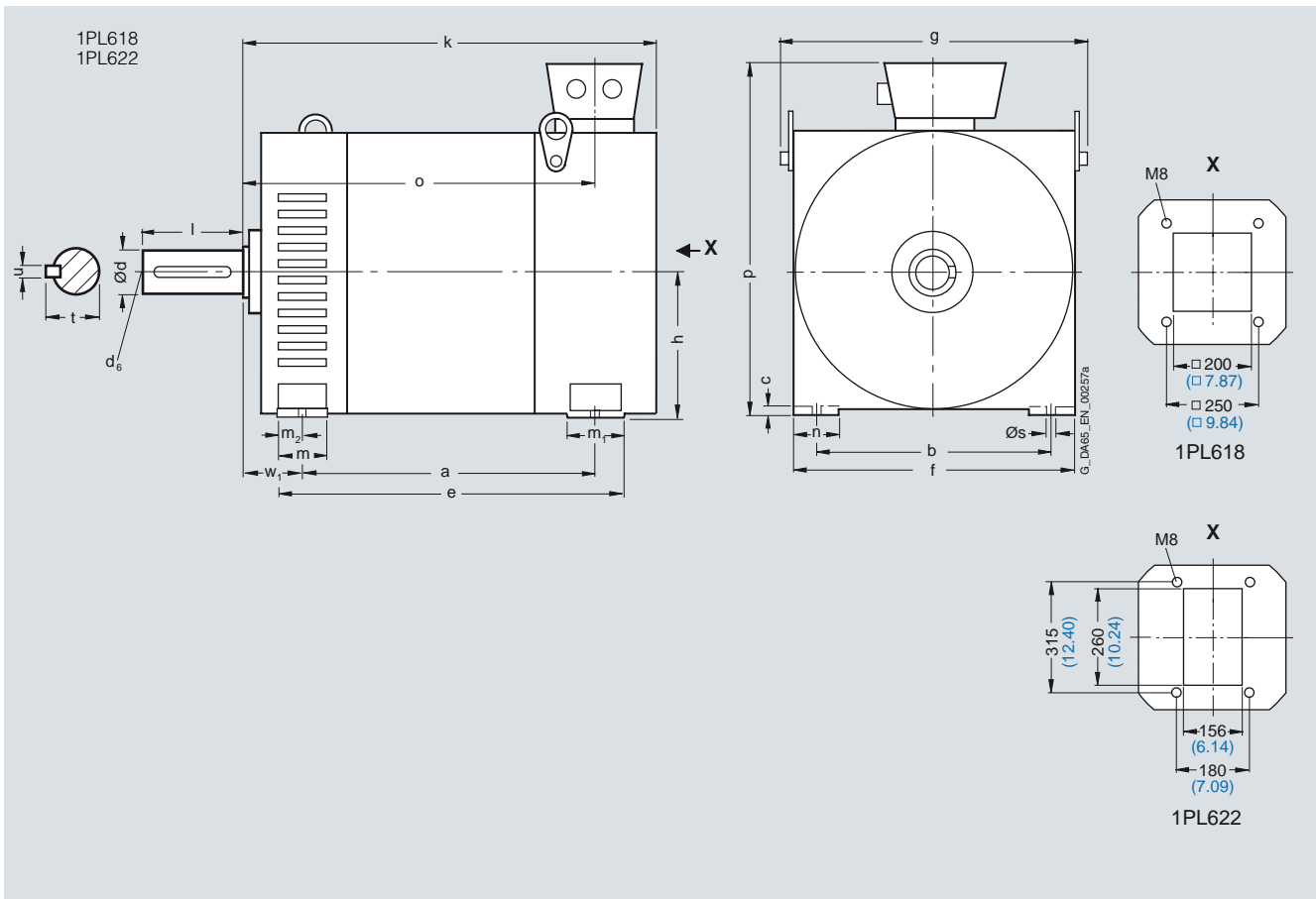
Dimensional drawings

1PL6 asynchronous motors Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)														Terminal box type 1XB7422 1XB7700		
Shaft height	Type	DIN IEC	a B	b A	c LA	e M	f AB	g AC	h H	k LB	m BA	m ₁ -	m ₂ -	n AA	o -	p ¹⁾ HD	p ¹⁾ HD	
1PL6, type of construction IM B3, forced ventilation, with pipe connection at NDE																		
180	1PL6184		430 (16.93)	279 (10.98)	14 (0.55)	510 (20.08)	360 (14.17)	408 (16.06)	180 (7.09)	630 (24.80)	60 (2.36)	120 (4.72)	35 (1.38)	65 (2.56)	541 (21.30)	560 (22.05)	-	
	1PL6186		520 (20.47)			600 (23.62)				720 (28.35)					631 (24.84)	680 (26.77)		
225	1PL6224		445 (17.52)	356 (14.02)	18 (0.71)	530 (20.87)	450 (17.72)	498 (19.61)	225 (8.86)	750 (29.53)	60 (2.36)	120 (4.72)	40 (1.57)	80 (3.15)	629 (24.76)	-	680 (26.77)	
	1PL6226		545 (21.46)			630 (24.80)				850 (33.46)					729 (28.70)			
	1PL6228		635 (25.00)			720 (28.35)				940 (37.01)					819 (32.24)			

Shaft extension DE									
Shaft height	Type	DIN IEC	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F
180	1PL6184		14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PL6186				65 (2.56)			69 (2.72)	
225	1PL6224		18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PL6226								
	1PL6228								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

Dimensional drawings

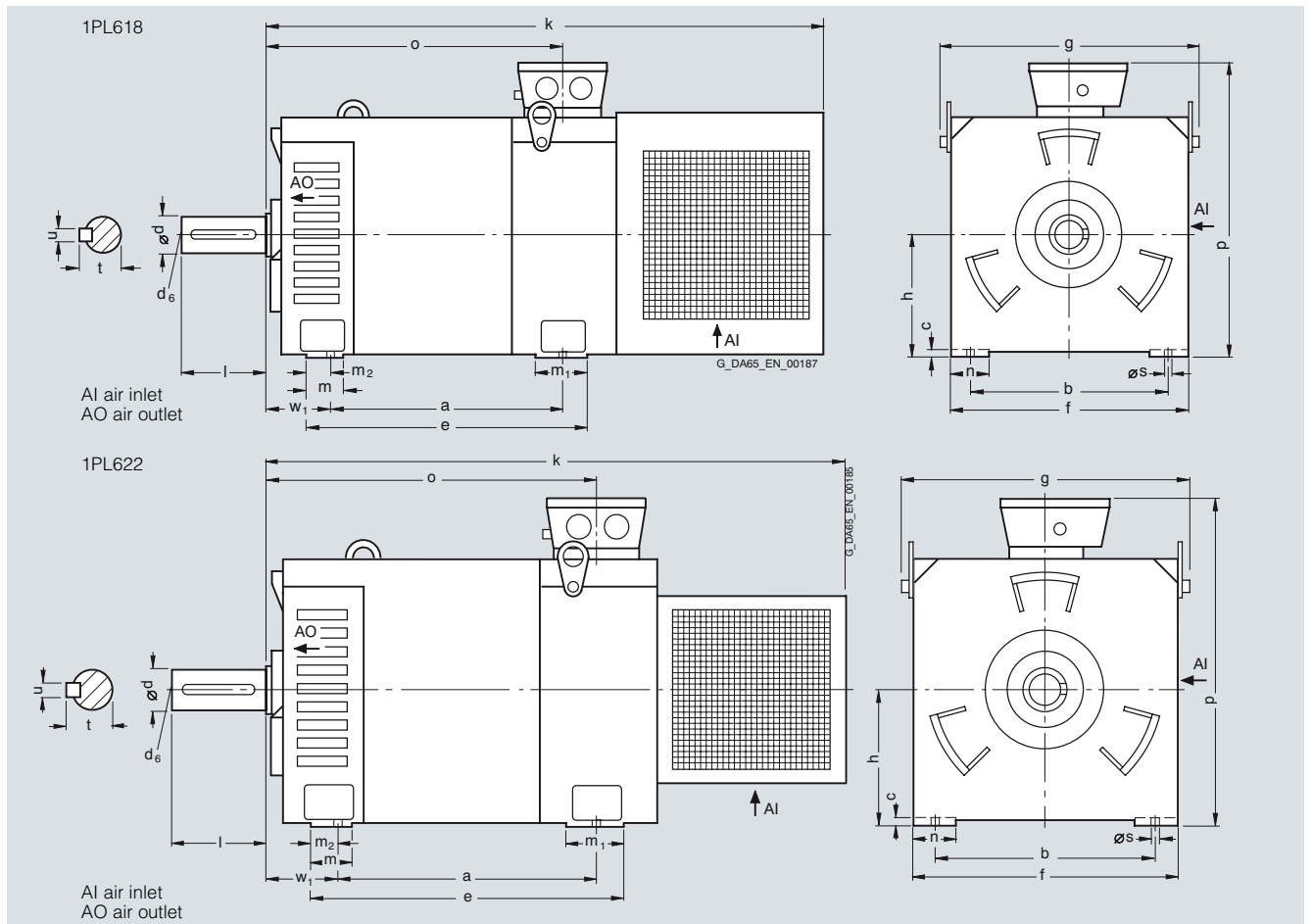
1PL6 asynchronous motors Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)														Terminal box type 1XB7...			
Shaft height	Type	DIN IEC	a	b	c	e	f	g	h	k	m	m ₁	m ₂	n	o	p ¹⁾	p ¹⁾	p ¹⁾	
			B	A	LA	M	AB	AC	H	LB	BA	-	-	AA	-	HD	HD	HD	
1PL6, type of construction IM B3, forced ventilation, direction of air flow NDE → DE																			
180	1PL6184		430 (16.93)	279 (10.98)	14 (0.55)	525 (20.67)	360 (14.17)	405 (15.94)	180 (7.09)	1010 (39.76)	78 (3.07)	120 (4.72)	50 (1.97)	65 (2.56)	541 (21.30)	495 (19.49)	560 (22.05)	-	
	1PL6186		520 (20.47)			615 (24.21)				1100 (43.31)					631 (24.84)			580 (22.83)	
225	1PL6224		445 (17.52)	356 (14.02)	18 (0.71)	545 (21.46)	450 (17.72)	498 (19.61)	225 (8.86)	1090 (42.91)	80 (3.15)	120 (4.72)	60 (2.36)	85 (3.35)	629 (24.76)	595 (23.43)	645 (25.39)	680 (26.77)	
	1PL6226		545 (21.46)			645 (25.39)				1190 (46.85)					729 (28.70)			-	
	1PL6228		635 (25.00)			735 (28.94)				1280 (50.39)					819 (32.24)			-	

Shaft extension DE

Shaft height	Type	DIN IEC	s	w ₁	d	d ₆	l	t	u
			K	C	D	-	E	GA	F
180	1PL6184		14.5 (0.57)	121 (4.76)	60 (2.36)	M20	140 (5.51)	64 (2.52)	18 (0.71)
	1PL6186				65 (2.56)			69 (2.72)	
225	1PL6224		18.5 (0.73)	149 (5.87)	75 (2.95)	M20	140 (5.51)	79.5 (3.13)	20 (0.79)
	1PL6226								
	1PL6228								



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors Dimensional drawings

1PL6 asynchronous motors Forced ventilation

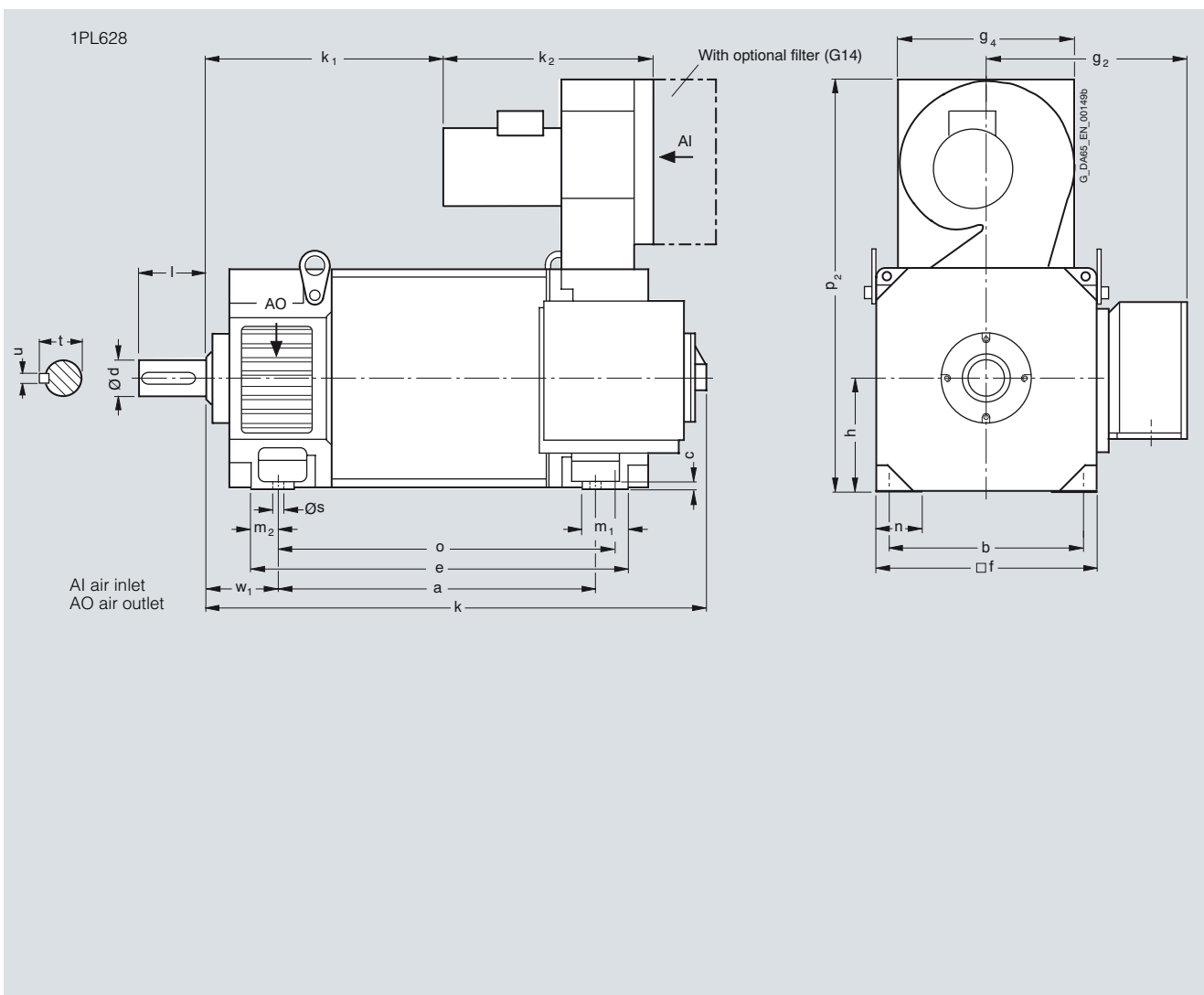
Dimensional drawings

For motor		Dimensions in mm (inches)														
Shaft height	Type	DIN IEC	a B	b A	c LA	e M	f AB	g ₂ AD	g ₄ -	h H	k LB	k ₁ -	k ₂ -	m ₁ -	m ₂ -	n AA
1PL6, type of construction IM B3, forced ventilation, direction of air flow NDE → DE																
280	1PL6284		684 (26.93)	457 (17.99)	22 (0.87)	840 (33.07)	560 (22.05)	518 (20.39)	449 (17.68)	280 (11.02)	1146 (45.12)	489 (19.25)	546 (21.50)	108 (4.25)	78 (3.07)	100 (3.94)
	1PL6286		794 (31.26)			950 (37.40)					1256 (49.45)	599 (23.58)				
	1PL6288		924 (36.38)			1080 (42.52)					1386 (54.57)	729 (28.70)				

Shaft extension DE

Shaft height	Type	DIN IEC	o -	p ₂ -	s K	w ₁ C	d D	d ₆ -	l E	t GA	u F
280	1PL6284		731 (28.78)	1042 (41.02)	24 (0.94)	190 (7.48)	95 (3.74)	170 (6.69)	100 (3.94)	25 (0.98)	
	1PL6286		841 (33.11)								
	1PL6288		971 (38.23)								

5



Main motors

Dimensional drawings

1PL6 asynchronous motors Forced ventilation

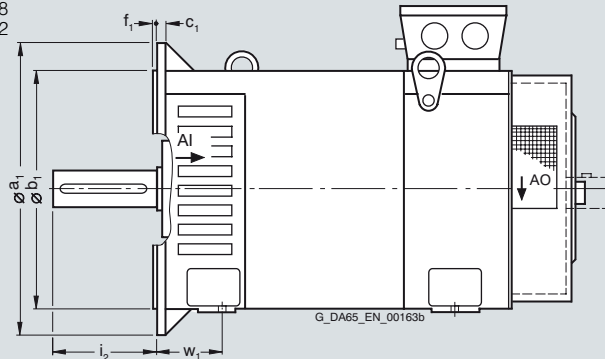
Dimensional drawings

For motor Dimensions in mm (inches)

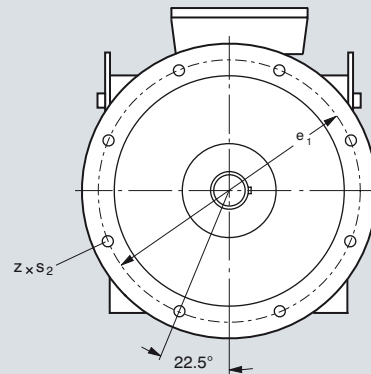
For dimensions for foot mounting, shaft and terminal box, see dimensional drawing of 1PL618/1PL622 motors, type of construction IM B3.

Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	i ₂ –	s ₂ S	Z –	w ₁ –
1PL6, type of construction IM B35, forced ventilation, direction of air flow DE → NDE											
180	1PL6184		450 (17.72)	350 (13.78)	16 (0.63)	400 (15.75)	5 (0.20)	140 (5.51)	19 (0.75)	8	121 (4.76)
	1PL6186										
225	1PL6224		550 (21.65)	450 (17.72)	18 (0.71)	500 (19.69)	5 (0.20)	140 (5.51)	19 (0.75)	8	149 (5.87)
	1PL6226										
	1PL6228										

1PL618
1PL622



AI air inlet
AO air outlet



Main motors

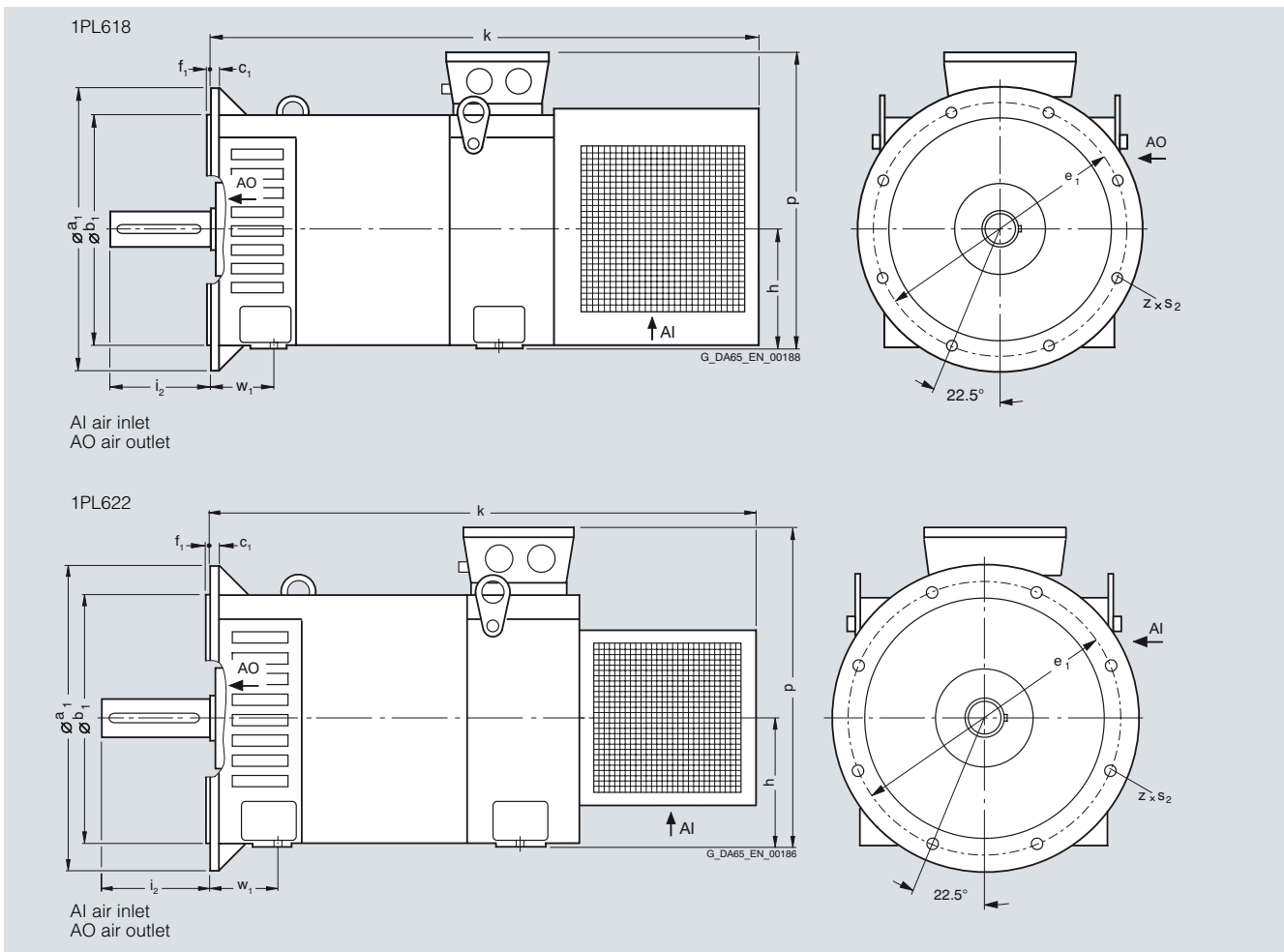
Dimensional drawings

1PL6 asynchronous motors

Forced ventilation

Dimensional drawings

For motor		Dimensions in mm (inches)										For dimensions for foot mounting, shaft and terminal box see dimensional drawing of 1PL618/1PL622 motors, type of construction IM B3.		
Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	h H	k LB	Terminal box type			s ₂ S	z -
										1XB7322	1XB7422	1XB7700		
										p ¹⁾ HD	p ¹⁾ HD	p ¹⁾ HD		
1PL6, type of construction IM B35, forced ventilation, direction of air flow NDE → DE														
180	1PL6184		450 (17.72)	350 (13.78)	16 (0.63)	400 (15.75)	5 (0.20)	180 (7.09)	1010 (39.76)	495 (19.49)	560 (22.05)	-	19 (0.75)	8
	1PL6186								1100 (43.31)			580 (22.83)		
225	1PL6224		550 (21.65)	450 (17.72)	18 (0.71)	500 (19.69)	5 (0.20)	225 (8.86)	1090 (42.91)	595 (23.43)	645 (25.39)	680 (26.77)	19 (0.75)	8
	1PL6226								1190 (46.85)		-			
	1PL6228								1280 (50.39)		-			



¹⁾ Maximum dimensions, depending on electrical version (terminal box).

Main motors

Dimensional drawings

1PL6 asynchronous motors Forced ventilation

Dimensional drawings

For motor Dimensions in mm (inches)

For dimensions for foot mounting, shaft and terminal box, see the dimensional drawing of 1PL628 motors, type of construction IM B3.

Shaft height	Type	DIN IEC	a ₁ P	b ₁ N	c ₁ LA	e ₁ M	f ₁ T	h H	i ₂	k LB	k ₁	k ₂	p ₂
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1PL6, type of construction IM B35, forced ventilation, direction of air flow NDE → DE

280	1PL6284		660 (25.98)	550 (21.65)	24 (0.94)	600 (23.62)	6 (0.24)	280 (11.02)	170 (6.69)	1146 (45.12)	489 (19.25)	546 (21.50)	1042 (41.02)
	1PL6286									1256 (49.45)	599 (23.58)		
	1PL6288									1386 (54.57)	729 (28.70)		

