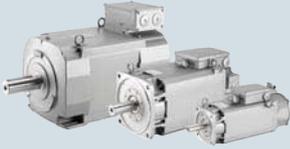
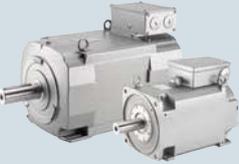


SIMOTICS main motors

Overview

Motor type	Features	Degree of protection	Cooling method
SIMOTICS M-1PH8 asynchronous motor 	Three-phase squirrel-cage motor without housing Compact unit with high power density	IP55 IP23 IP55/IP65	Forced ventilation Forced ventilation Water cooling
SIMOTICS M-1PH8 synchronous motor 	Permanent-magnet synchronous motor Outstanding performance capabilities Compact unit with extremely high power density	IP55 IP55/IP65	Forced ventilation Water cooling
SIMOTICS M-1FE1/1FE2 synchronous built-in motors 	Synchronous built-in motors Permanent-magnet	IP00	Water cooling

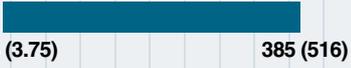
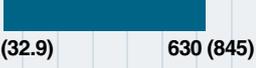
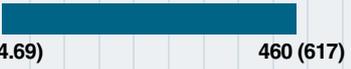
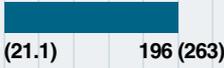
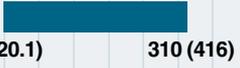
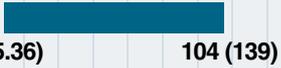
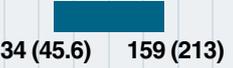
SIMOTICS M main motors

The potential applications for SIMOTICS M-1PH8/M-1FE1/M-1FE2 motors are extremely versatile.

In machine tools, they are usually designated and used as main spindle motors.

In production machines, such as printing, packaging, and reforming machines, they are used as high-output main motors.

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

Shaft height	Rated power P_{rated} for duty type S1 kW (hp)	Rated torque M_{rated}	Page
SH 80/SH 100/SH 132/SH 160/ SH 180/SH 225/SH 280	 2.8 (3.75) 385 (516)	13 ... 2475 Nm (9.59 ... 1825 lb _f -ft)	9/8
SH 180/SH 225/SH 280	 24.5 (32.9) 630 (845)	317 ... 3710 Nm (234 ... 2736 lb _f -ft)	9/26
SH 80/SH 100/SH 132/SH 160/ SH 180/SH 225/SH 280	 3.5 (4.69) 460 (617)	20 ... 2610 Nm (14.8 ... 1925 lb _f -ft)	9/36
SH 132/SH 160/SH 180/SH 225	 15.7 (21.1) 196 (263)	94 ... 1091 Nm (69.3 ... 805 lb _f -ft)	9/52
SH 132/SH 160/SH 180/SH 225	 15 (20.1) 310 (416)	107 ... 1650 Nm (78.9 ... 1217 lb _f -ft)	9/58
Outer diameter (cooling jacket)			
High Torque series 95/115/130/190/ 205/250/310	 4 (5.36) 104 (139)	4.5 ... 820 Nm (3.32 ... 605 lb _f -ft)	9/90
High Speed series 120/155/180/205/ 230/270	 6.5 (8.72) 94 (126)	5 ... 300 Nm (3.69 ... 221 lb _f -ft)	9/94
High Torque series 180	 34 (45.6) 159 (213)	640 ... 1530 Nm (472 ... 1128 lb _f -ft)	9/98

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

SIMOTICS M-1PH8 main motors

Overview



SIMOTICS M-1PH8 motors, forced ventilation, shaft heights 80 to 160

The SIMOTICS M-1PH8 series is the latest motor generation for universal use with Motion Control applications. The wide power range is aimed at use as a central machine drive (as what is known as a "main motor") for various 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. The flexible configuration – such as storage or electrical connection technology – allows you to adapt the motors to the requirements of almost any industrial application.

**Main drive with 1PH8 = high power +
high dynamic response +
high accuracy**



SIMOTICS M-1PH8 motors, water cooling, shaft heights 80 to 160



SIMOTICS M-1PH8 motors, water cooling, shaft heights 180 to 280

When developing the SIMOTICS M-1PH8 motor series, we placed special emphasis on making them perfectly compatible 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. What's more, thanks to the harmonization of the system, they are capable of handling extreme duty cycles, short rise times, and are exceptionally precise in terms of speed, torque, and positioning.

Benefits

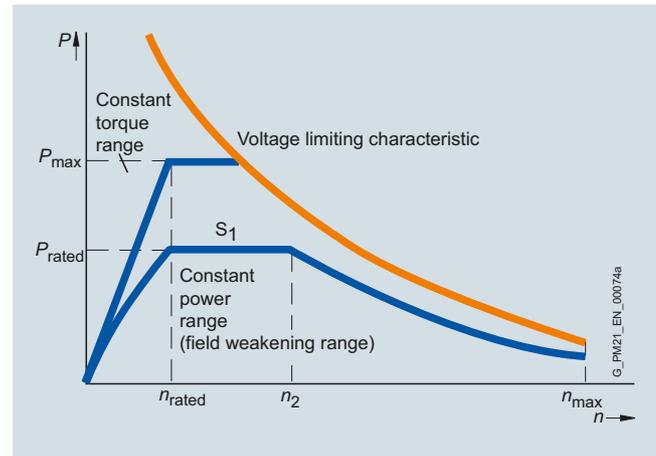
- Low space requirements thanks to high power density
- Performance capability thanks to wide rotational speed setting ranges
- High degree of structural flexibility due to the choice of
 - Asynchronous or synchronous design
 - Forced ventilation or water cooling
 - Mechanical designs
- Minimized maintenance costs thanks to high bearing service lives
- Precise motion control thanks to high rotational accuracy, even at the lowest speeds
- Maximum thermal utilization over the complete speed range
- Quiet operation as a result of low sound pressure level
- Optimized for the SINAMICS S120 drive system

Application

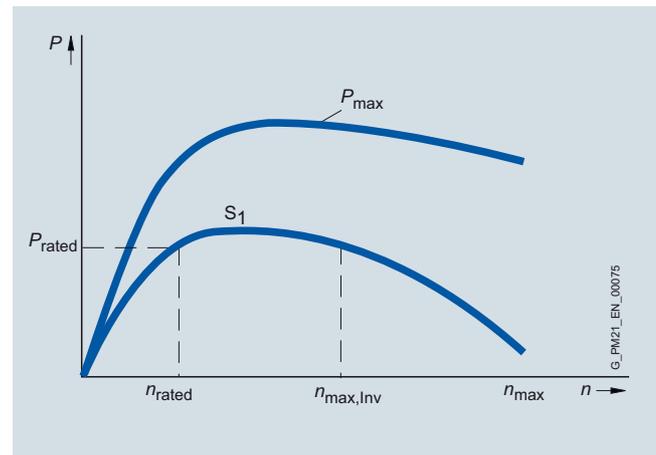
The application spectrum reaches across all industries and comprises, for example:

- Main drives in presses and extruders
- Converting applications
- Main spindle drives in machine tools
(See [Catalog NC 62](#))
- Rotary axes in the paper and printing industry
- Use in crane systems

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

Characteristic curves**SIMOTICS M-1PH8 asynchronous motor**

Typical speed/power characteristic curve for SIMOTICS M-1PH8 asynchronous motors

SIMOTICS M-1PH8 synchronous motor

Typical speed/power characteristic curve for SIMOTICS M-1PH8 synchronous motors

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

The detailed characteristic curves for the corresponding voltage and winding can be found in the [SIMOTICS M-1PH8 Configuration Manual](#).

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

SIMOTICS M-1PH8 asynchronous and synchronous motors, forced ventilation

Technical specifications

SIMOTICS M-1PH8 motor, forced ventilation	
Stator winding insulation 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 ... 1PH822 • 1PH828	Forced ventilation Fan mounted axially at NDE Fan mounted radially at NDE
Temperature monitoring	Pt1000 temperature sensor in the stator winding 1PH818 ... 1PH828 additional Pt1000 as reserve
Fan supply voltage • 1PH808 • 1PH810 ... 1PH816 • 1PH818/1PH822 • 1PH828	230 V 1 AC 50/60 Hz, 265 V 1 AC 60 Hz 400 V 3 AC 50/60 Hz, 480 V 3 AC 60 Hz 200 ... 277 V 1 AC 50/60 Hz (EC fan) 400 V 3 AC 50/60 Hz, 480 V 3 AC 60 Hz (optional) 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) • 1PH808 • 1PH810 ... 1PH828	IM B3, IM B5 IM B3, IM B5, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5) • 1PH808 ... 1PH828 • 1PH818 ... 1PH828	IP55 (forced ventilation) IP23 (open-circuit cooling)
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60034-5)	Plain shaft or feather key full-key or half-key balancing for feather key
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1) ¹⁾	Without holding brake: Tolerance R (reduced) With holding brake: Tolerance N (normal)
Vibration severity	In accordance with Siemens/EN 60034-14 (IEC 60034-14) ¹⁾
Sound pressure level L_{pA} (1 m) in accordance with DIN EN ISO 1680, max. Tolerance +3 dB <u>Forced ventilation (IP55)</u> • 1PH808 ... 1PH813 • 1PH816 • 1PH818 • 1PH822 • 1PH828 <u>Forced ventilation (IP23)</u> • 1PH818 • 1PH822 • 1PH828	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 73 dB at a rated pulse frequency of 2 kHz and a speed range up to 5000 rpm 73 dB at a rated pulse frequency of 2 kHz and a speed range up to 3500 rpm 74 dB at a rated pulse frequency of 2 kHz and a speed range up to 3300 rpm 73 dB at a rated pulse frequency of 2 kHz and a speed range up to 3000 rpm 73 dB at a rated pulse frequency of 2 kHz and a speed range up to 2000 rpm 74 dB at a rated pulse frequency of 2 kHz and a speed range up to 2800 rpm
Built-in encoder systems	Absolute and incremental encoder with or without DRIVE-CLiQ interface
Connection <u>Power</u> • 1PH808 ... 1PH813 • 1PH816 ... 1PH828 <u>Fan</u> • 1PH808 • 1PH810 ... 1PH813 • 1PH816 ... 1PH828 <u>Encoder system</u>	Connector for signals or DRIVE-CLiQ interface (mating connector not included in the scope of supply) Power connector or terminal box Terminal box Power connector Power connector or terminal box Terminal box Connector for signals or DRIVE-CLiQ interface (mating connector not included in the scope of supply)
Rating plate	1 attached to motor 1 supplied separately with terminal box
Paint finish	Standard paint finish in anthracite RAL 7016
Certificate of suitability, according to	cURus, CE, EAC

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

Technical specifications (continued)

SIMOTICS M-1PH8 motor, water cooling	
Stator winding insulation in accordance with EN 60034-1 (IEC 60034-1)	For a coolant inlet temperature 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 ... 1PH816 • 1PH818 ... 1PH828	Pt1000 temperature sensor in the stator winding 1 additional Pt1000 as reserve
Type of construction in accordance with EN 60034-7 (IEC 60034-7) • 1PH808 • 1PH810 ... 1PH828	IM B3, IM B5 IM B3, IM B5, IM B35
Degree of protection in accordance with EN 60034-5 (IEC 60034-5) • 1PH808 ... 1PH816 • 1PH818 ... 1PH828	IP65 IP55
Shaft extension on the drive end in accordance with DIN 748-3 (IEC 60072-1)	Plain shaft or feather key, full-key or half-key balancing for feather key
Shaft and flange accuracy in accordance with DIN 42955 (IEC 60072-1) ¹⁾	Without holding brake: Tolerance R (reduced) With holding brake: Tolerance N (normal)
Vibration severity	in accordance with Siemens/EN 60034-14 (IEC 60034-14) ¹⁾
Sound pressure level L_{pA} (1 m) in accordance with DIN EN ISO 1680, max. Tolerance +3 dB • 1PH808 ... 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
Built-in encoder systems	Absolute and incremental encoder with or without DRIVE-CLiQ interface
Connection <u>Power</u> • 1PH808 ... 1PH813 • 1PH816 ... 1PH828 <u>Fan</u> • 1PH808 • 1PH810 ... 1PH813 • 1PH816 ... 1PH828 <u>Encoder system</u>	Connector for signals or DRIVE-CLiQ interface (mating connector not included in the scope of supply) Power connector or terminal box Terminal box Power connector Power connector or terminal box Terminal box Connector for signals or DRIVE-CLiQ interface (mating connector not included in the scope of supply)
Rating plate	1 attached to motor 1 supplied separately with terminal box
Paint finish	Standard paint finish in anthracite RAL 7016
Certificate of suitability	cURus, CE, EAC

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.F2/1PH8107-1.M2
1PH8138-2.F2/1PH8138-2.G2
1PH8164/1PH8166/1PH8168

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

SIMOTICS M-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 (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Article No.
Line voltage 400 V 3 AC, Smart/Basic Line Module									
700	180	33 (44.3)	450 (332)	80	278	47.0	1450	3800	1PH8184-■ ■ C ■ ■ -....
		44 (59.0)	600 (443)	108	269	47.0	1450	3800	1PH8186-■ ■ C ■ ■ -....
	225	48 (64.4)	655 (483)	120	256	47.0	1450	3500	1PH8224-■ ■ C ■ ■ -....
		64 (85.8)	873 (644)	170	238	47.0	1550	3500	1PH8226-■ ■ C ■ ■ -....
		80 (107)	1091 (805)	200	254	47.0	1450	3500	1PH8228-■ ■ C ■ ■ -....
1000	180	46 (61.7)	439 (324)	106	285	67.0	1950	3800	1PH8184-■ ■ D ■ ■ -....
		62 (83.1)	592 (437)	148	275	67.0	2050	3800	1PH8186-■ ■ D ■ ■ -....
	225	68 (91.2)	649 (479)	170	254	67.0	2050	3500	1PH8224-■ ■ D ■ ■ -....
		91 (122)	869 (641)	215	265	67.0	1950	3500	1PH8226-■ ■ D ■ ■ -....
		113 (152)	1079 (796)	265	271	67.0	1950	3500	1PH8228-■ ■ D ■ ■ -....
1500	132	15.7 (21.1)	100 (73.8)	29	388	50.0	2550	4500	1PH8131-■ ■ F ■ ■ -....
		19.9 (26.7)	127 (93.7)	44	316	50.0	3050	4500	1PH8133-■ ■ F ■ ■ -....
		23.7 (31.8)	151 (111)	43	383	50.0	2450	4500	1PH8135-■ ■ F ■ ■ -....
		30.6 (41.0)	195 (144)	60	356	50.0	2700	4500	1PH8137-■ ■ F ■ ■ -....
	160	61 (81.8)	390 (288)	119	340	100	2600	4000	1PH8165-■ ■ F ■ ■ -....
		69 (92.5)	435 (321)	133	345	100	2600	4000	1PH8167-■ ■ F ■ ■ -....
	180	70 (93.9)	446 (329)	148	308	100	2700	3800	1PH8184-■ ■ F ■ ■ -....
		93 (125)	592 (437)	215	282	100	2950	3800	1PH8186-■ ■ F ■ ■ -....
	225	101 (135)	643 (474)	235	271	100	2900	3500	1PH8224-■ ■ F ■ ■ -....
		134 (180)	853 (629)	295	288	100	2700	3500	1PH8226-■ ■ F ■ ■ -....
		168 (225)	1070 (789)	395	270	100	2900	3500	1PH8228-■ ■ F ■ ■ -....
2000	132	31.4 (42.1)	150 (111)	59	356	66.7	3500	4500	1PH8135-■ ■ G ■ ■ -....
2500	132	25 (33.5)	96 (70.8)	44	371	83.3	4050	4500	1PH8131-■ ■ L ■ ■ -....
		31.7 (42.5)	121 (89.2)	55	371	83.3	3950	4500	1PH8133-■ ■ L ■ ■ -....
		48.4 (64.9)	185 (136)	83	371	83.3	3900	4500	1PH8137-■ ■ L ■ ■ -....
	160	84 (113)	320 (236)	148	370	167	3900	4000	1PH8165-■ ■ L ■ ■ -....
		95 (127)	360 (266)	177	350	167	4000	4000	1PH8167-■ ■ L ■ ■ -....
3000	132	57.5 (77.1)	183 (135)	104	370	100	4500	4500	1PH8137-■ ■ M ■ ■ -....

For versions, see
Article No. supplements
and options.

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

SIMOTICS M-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 (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Article No.	
Line voltage 400 V 3 AC, Active Line Module										
800	180	38 (51.0)	454 (335)	80	316	53.0	1450	3800	1PH8184-■ ■ C ■ ■ -....	
		50 (67.1)	597 (440)	108	306	53.0	1450	3800	1PH8186-■ ■ C ■ ■ -....	
	225	55 (73.8)	657 (485)	120	292	53.0	1450	3500	1PH8224-■ ■ C ■ ■ -....	
		73 (97.9)	871 (642)	170	271	53.0	1550	3500	1PH8226-■ ■ C ■ ■ -....	
		91 (122)	1086 (801)	198	290	53.0	1450	3500	1PH8228-■ ■ C ■ ■ -....	
1150	180	53 (71.1)	440 (325)	106	327	77.0	1950	3800	1PH8184-■ ■ D ■ ■ -....	
		71 (95.2)	590 (435)	148	315	77.0	2050	3800	1PH8186-■ ■ D ■ ■ -....	
	225	78 (105)	648 (478)	170	292	77.0	2050	3500	1PH8224-■ ■ D ■ ■ -....	
		104 (139)	864 (637)	215	304	77.0	1950	3500	1PH8226-■ ■ D ■ ■ -....	
		129 (173)	1071 (790)	260	311	77.0	1950	3500	1PH8228-■ ■ D ■ ■ -....	
1750	132	18 (24.1)	98 (72.3)	29	415	58.3	2550	4500	1PH8131-■ ■ F ■ ■ -....	
		23.1 (31.0)	126 (92.9)	43	366	58.3	3050	4500	1PH8133-■ ■ F ■ ■ -....	
		27.2 (36.5)	149 (110)	42	415	58.3	2450	4500	1PH8135-■ ■ F ■ ■ -....	
		35.6 (47.7)	194 (143)	59	412	58.3	2700	4500	1PH8137-■ ■ F ■ ■ -....	
	160	69 (92.5)	375 (277)	115	395	117	2600	4000	1PH8165-■ ■ F ■ ■ -....	
		77 (103)	420 (310)	128	400	117	2600	4000	1PH8167-■ ■ F ■ ■ -....	
	180	82 (110)	447 (330)	150	359	117	2700	3800	1PH8184-■ ■ F ■ ■ -....	
		109 (146)	595 (439)	215	328	117	2950	3800	1PH8186-■ ■ F ■ ■ -....	
		117 (157)	638 (471)	235	315	117	2900	3500	1PH8224-■ ■ F ■ ■ -....	
	225	156 (209)	851 (628)	295	335	117	2700	3500	1PH8226-■ ■ F ■ ■ -....	
		195 (261)	1064 (785)	390	314	117	2900	3500	1PH8228-■ ■ F ■ ■ -....	
	2300	132	35.6 (47.7)	148 (109)	59	407	76.7	3500	4500	1PH8135-■ ■ G ■ ■ -....
	2800	132	27.7 (37.1)	95 (70.1)	44	415	93.3	4050	4500	1PH8131-■ ■ L ■ ■ -....
35.2 (47.2)			120 (88.5)	54	415	93.3	3950	4500	1PH8133-■ ■ L ■ ■ -....	
53.4 (71.6)			182 (134)	82	415	93.3	3900	4500	1PH8137-■ ■ L ■ ■ -....	
160		87 (117)	300 (221)	138	410	187	3900	4000	1PH8165-■ ■ L ■ ■ -....	
		98 (131)	335 (247)	164	385	187	4000	4000	1PH8167-■ ■ L ■ ■ -....	
3300	132	62.2 (83.4)	180 (133)	102	405	110	4500	4500	1PH8137-■ ■ M ■ ■ -....	

For versions, see
Article No. supplements
and options.

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

SIMOTICS M-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 (lb _r -ft)	I_{rated} A	U_{rated} V	f_{rated} Hz	$n_{max, Inv}$ rpm	n_{max} rpm	Article No.	
Line voltage 480 V 3 AC, Smart/Basic/Active Line Module										
1000	180	46 (61.7)	439 (324)	78	390	67.0	1450	3800	1PH8184-■ ■ C ■ ■ -....	
		62 (83.1)	592 (437)	108	379	67.0	1450	3800	1PH8186-■ ■ C ■ ■ -....	
	225	68 (91.2)	649 (479)	118	363	67.0	1450	3500	1PH8224-■ ■ C ■ ■ -....	
		91 (122)	869 (641)	170	338	67.0	1550	3500	1PH8226-■ ■ C ■ ■ -....	
		113 (152)	1079 (796)	198	361	67.0	1450	3500	1PH8228-■ ■ C ■ ■ -....	
1350	180	62 (83.1)	439 (324)	106	382	90.0	1950	3800	1PH8184-■ ■ D ■ ■ -....	
		83 (111)	587 (433)	146	368	90.0	2050	3800	1PH8186-■ ■ D ■ ■ -....	
	225	91 (122)	644 (475)	168	342	90.0	2050	3500	1PH8224-■ ■ D ■ ■ -....	
		121 (162)	856 (631)	215	356	90.0	1950	3500	1PH8226-■ ■ D ■ ■ -....	
		151 (202)	1068 (1432)	260	364	90.0	1950	3500	1PH8228-■ ■ D ■ ■ -....	
2000	132	19.9 (26.7)	95 (70.1)	29	449	66.7	2550	4500	1PH8131-■ ■ F ■ ■ -....	
		26.2 (35.1)	125 (92.2)	43	415	66.7	3050	4500	1PH8133-■ ■ F ■ ■ -....	
		30.2 (40.5)	144 (106)	42	449	66.7	2450	4500	1PH8135-■ ■ F ■ ■ -....	
		40 (53.6)	191 (141)	59	449	66.7	2700	4500	1PH8137-■ ■ F ■ ■ -....	
	160	74 (99.2)	355 (262)	110	445	133	2600	4000	1PH8165-■ ■ F ■ ■ -....	
		82 (110)	395 (291)	123	450	133	2600	4000	1PH8167-■ ■ F ■ ■ -....	
	180	86 (115)	411 (303)	138	404	133	2700	3800	1PH8184-■ ■ F ■ ■ -....	
		115 (154)	549 (405)	200	370	133	2950	3800	1PH8186-■ ■ F ■ ■ -....	
	225	118 (158)	563 (415)	210	355	133	2900	3500	1PH8224-■ ■ F ■ ■ -....	
		157 (211)	750 (553)	260	378	133	2700	3500	1PH8226-■ ■ F ■ ■ -....	
		196 (263)	936 (690)	345	355	133	2900	3500	1PH8228-■ ■ F ■ ■ -....	
	2650	132	40.2 (53.9)	145 (107)	58	449	88.3	3500	4500	1PH8135-■ ■ G ■ ■ -....
	3000	132	29.5 (39.6)	94 (69.3)	43	449	100	4050	4500	1PH8131-■ ■ L ■ ■ -....
37.4 (50.2)			119 (87.8)	54	449	100	3950	4500	1PH8133-■ ■ L ■ ■ -....	
56.9 (76.3)			181 (133)	81	449	100	3900	4500	1PH8137-■ ■ L ■ ■ -....	
160		89 (119)	285 (210)	131	440	200	3900	4000	1PH8165-■ ■ L ■ ■ -....	
		99 (133)	315 (232)	155	410	200	4000	4000	1PH8167-■ ■ L ■ ■ -....	
3600	132	66.7 (89.4)	177 (131)	100	440	120	4500	4500	1PH8137-■ ■ M ■ ■ -....	

For versions, see
Article No. supplements
and options.

SIMOTICS main motors

SIMOTICS M asynchronous and synchronous motors for SINAMICS S120

Article No. supplements for SIMOTICS M-1PH8 without holding brake > SH 180 to SH 280**Selection and ordering data**

Data position of the Article 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	.	-	■	■	■	■	-	■	■	■	-	Z	
Shaft height 225	1	P	H	8	2	2	.	-	■	■	■	■	-	■	■	■	.	-	Z
Shaft height 280 (only asynchronous variant with water cooling)	1	P	H	8	2	8	.	-	■	■	■	■	-	■	■	■	.	-	Z
Overall length (cannot be selected, determined by the choice of rated power)	.																		
Asynchronous version									1										
Synchronous version									2										
Encoder systems for motors <u>without</u> DRIVE-CLiQ interface																			
Without encoder ¹⁾																			
Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)																			
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) ¹⁾																			
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) ^{1) 4)}																			
Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) with connection via additional terminal box ¹⁾																			
Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) with connection via additional terminal box ^{1) 4)}																			
Incremental encoder sin/cos 1 V _{pp} 2048 S/R with C and D track (encoder IC2048S/R)																			
Encoder systems for motors <u>with</u> DRIVE-CLiQ interface																			
Absolute encoder 22-bit singleturn + 12-bit multeturn (encoder AM22DQ)																			
Incremental encoder 22-bit with commutation position (encoder IC22DQ)																			
Rated speeds (380 V to 480 V 3 AC) (winding design)																			
400 rpm, 500 rpm, 600 rpm, 700 rpm																			
700 rpm, 800 rpm, 1000 rpm, 1100 rpm																			
1000 rpm, 1150 rpm, 1350 rpm, 1500 rpm																			
1500 rpm, 1750 rpm, 2000 rpm, 2200 rpm																			
2500 rpm, 2900 rpm, 3400 rpm																			
Rated speeds (690 V 3 AC) only with shaft height 280 (winding design)																			
400 rpm, 500 rpm																			
700 rpm, 800 rpm																			
1000 rpm, 1150 rpm																			
1500 rpm, 1750 rpm																			
Cooling																			
Degree of protection																			
Forced ventilation, DE → NDE																			
Forced ventilation, NDE → DE																			
Water cooling																			
Forced ventilation, DE → NDE (only asynchronous version)																			
Forced ventilation, NDE → DE (only asynchronous version)																			
Type of construction																			
<u>Shaft height 180</u>																			
<u>Shaft height 225</u>																			
<u>Shaft height 280</u>																			
IM B3 (IM B6, IM B7, IM B8, IM V6)																			
IM B3 (IM B6, IM B7, IM B8, IM V6)																			
IM B3 (IM V6)																			
IM V5																			
IM V5 ⁹⁾																			
IM B5 with A450 flange (IM V3) ⁵⁾																			
IM B5 with A550 flange (IM V3) ⁶⁾																			
IM B5 with A660 flange (IM V3) ^{7) 9)}																			
IM B35 with A450 flange (IM V35)																			
IM B35 with A550 flange (IM V35)																			
IM B35 with A660 flange (IM V35)																			
IM V15 with A450 flange																			
IM V15 with A550 flange																			
IM V15 with flange A660 ⁹⁾																			
Version status ¹⁰⁾																			
Special version (order codes required for options)																			

For the 13th to 16th digit of the Article No., see next page.

Selection and ordering data (continued)

Data position of the Article No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
		1	P	H	8	.	.	.	-	■	■	■	■	■	-	■	■	■	.	-	Z
Shaft extension (DE)		Balancing																			
Plain shaft	-															0					
Feather key	Full-key															1					
Feather key	Half-key															2					
Bearing		Vibration severity acc. to Siemens/EN 60034-14										Shaft and flange accuracy									
Standard	A											N						A			
Standard	R/A											R						B			
Increased radial forces	A											N						E			
Increased radial forces	R/A											R						F			
Also possible with shaft heights 180 and 225:																					
Standard	S/A											R						C			
Standard ¹⁾	SR/A											R						D			
Performance ⁸⁾	SR/A											R						L			
Power connection (looking at 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 ¹⁰⁾																					
Special version (order codes required for options)																Z					

1) Only possible when 8th data position is "1" (Asynchronous version).

4) Limited to $n_{\max} = 4600$ rpm.

5) Limited to $n_{\max} = 3000$ rpm, not possible when 14th data position is "L" (Performance).

6) Limited to $n_{\max} = 2500$ rpm, not possible when 14th data position is "L" (Performance).

7) Limited to $n_{\max} = 2000$ rpm.

8) Only possible when 8th data position is "1" (Asynchronous version); not possible when 12th data position is "2" (IM B5) and 11th data position is "3" and "4" (Forced ventilation, IP23).

Shaft height 180: limited to $n_{\max} = 7500$ rpm;

Shaft height 225: limited to $n_{\max} = 6000$ rpm.

9) Only possible when 14th data position is "A" or "B" (Standard bearing).

10) Directly coupled to 9th data position.