

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PH7 asynchronous motor
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.
400 V 3 AC line voltage, Servo Control									
400	160	9.5 (12.74)	227 (167)	30	274	1940	3700 ⁹⁾	6500 ⁹⁾	1PH7163-■ ■ B ■ ■ -■ ...
		13 (17.43)	310 (229)	37	294	1540	3700 ⁹⁾	6500 ⁹⁾	1PH7167-■ ■ B ■ ■ -■ ...
1000	100	3.7 (4.96)	35 (25.8)	10	343	2250	5500 ⁹⁾	9000 ⁹⁾	1PH7103-■ ■ D ■ ■ -■ ...
		6.3 (8.45)	60 (44.3)	17.5	319	3560	5500 ⁹⁾	9000 ⁹⁾	1PH7107-■ ■ D ■ ■ -■ ...
	132	12 (16.1)	115 (84.8)	30	336	2500	4500	8000 ⁹⁾	1PH7133-■ ■ D ■ ■ -■ ...
		17 (22.8)	162 (119.5)	43	322	3390	4500	8000 ⁹⁾	1PH7137-■ ■ D ■ ■ -■ ...
	160	22 (29.5)	210 (155)	55	315	2750	3700	6500 ⁹⁾	1PH7163-■ ■ D ■ ■ -■ ...
		28 (37.55)	267 (197)	71	312	4090	3700	6500 ⁹⁾	1PH7167-■ ■ D ■ ■ -■ ...
1500	100	3.7 (4.96)	24 (17.7)	10	350	5360	5500	9000 ⁹⁾	1PH7101-■ ■ F ■ ■ -■ ...
		5.5 (7.38)	35 (25.8)	13	350	3000	5500	9000 ⁹⁾	1PH7103-■ ■ F ■ ■ -■ ...
		7.0 (9.39)	45 (33.2)	17.5	346	5110	5500	9000 ⁹⁾	1PH7105-■ ■ F ■ ■ -■ ...
		9.0 (12.1)	57 (42)	23.5	336	3500	5500	9000 ⁹⁾	1PH7107-■ ■ F ■ ■ -■ ...
	132	11 (14.75)	70 (51.6)	24	350	4310	4500	8000 ⁹⁾	1PH7131-■ ■ F ■ ■ -■ ...
		15 (20.12)	96 (70.8)	34	346	4400	4500	8000 ⁹⁾	1PH7133-■ ■ F ■ ■ -■ ...
		18.5 (24.81)	118 (87)	42	350	4920	4500	8000 ⁹⁾	1PH7135-■ ■ F ■ ■ -■ ...
		22 (29.5)	140 (103)	57	308	3750	4500	8000 ⁹⁾	1PH7137-■ ■ F ■ ■ -■ ...
	160	30 (40.23)	191 (141)	72	319	4000	3700	6500	1PH7163-■ ■ F ■ ■ -■ ...
		37 (49.62)	236 (174)	82	350	2750	3700	6500	1PH7167-■ ■ F ■ ■ -■ ...
2000	100	7 (9.39)	33 (24.3)	17.5	343	4630	5500	9000	1PH7103-■ ■ G ■ ■ -■ ...
		10.5 (14.18)	50 (36.9)	26	350	4000	5500	9000	1PH7107-■ ■ G ■ ■ -■ ...
	132	20 (26.82)	96 (70.8)	45	350	4000	4500	8000	1PH7133-■ ■ G ■ ■ -■ ...
		28 (37.55)	134 (98.8)	60	350	3750	4500	8000	1PH7137-■ ■ G ■ ■ -■ ...
	160	36 (48.28)	172 (127)	85	333	3000	3700	6500	1PH7163-■ ■ G ■ ■ -■ ...
		41 (54.98)	196 (145)	89	350	2750	3700	6500	1PH7167-■ ■ G ■ ■ -■ ...
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver						A E H J M N R
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver						F D Q P
Terminal box/cable entry (view DE):			Top/from right Top/from NDE Top/from left						0 2 3
Type:			IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) available only for shaft heights 100 and 132 IM B35 (IM V15, IM V35)						0 2 3
Holding brake with emergency stop function ⁴⁾ :			Without brake						0
			Brake supply voltage 230 V 1 AC, 50/60 Hz		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)				1 2 3 4
			Brake supply voltage 24 V DC		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)				5 6 7 8

Selection and ordering data

Power factor	Magne- tizing cur- rent	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
cos φ	I _μ A	η _{rated}	f _{rated} Hz	J kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	I _{rated} A	Order No.
400 V 3 AC line voltage, Servo Control								
0.88	11.5	0.809	14.3	0.185 (1.64)	175 (386)	1PH7163- . . B . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.88	14.0	0.814	14.3	0.228 (2.02)	210 (463)	1PH7167- . . B . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.82	4.8	0.794	35.6	0.017 (0.15)	40 (88.2)	1PH7103- . . D . . . ■■■	9 ⁸⁾	6SL3120- ■ TE21-0AA3
0.81	9	0.822	35.3	0.029 (0.26)	65 (143)	1PH7107- . . D . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.86	13	0.865	34.8	0.076 (0.67)	90 (198)	1PH7133- . . D . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.86	19	0.878	34.6	0.109 (0.96)	150 (331)	1PH7137- . . D . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.85	24	0.899	34.2	0.185 (1.64)	175 (386)	1PH7163- . . D . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.84	33	0.903	34.2	0.228 (2.02)	210 (463)	1PH7167- . . D . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.74	5.9	0.847	51.6	0.017 (0.15)	40 (88.2)	1PH7101- . . F . . . ■■■	9 ⁸⁾	6SL3120- ■ TE21-0AA3
0.84	5.4	0.832	52.7	0.017 (0.15)	40 (88.2)	1PH7103- . . F . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.78	9.4	0.866	51.7	0.029 (0.26)	65 (143)	1PH7105- . . F . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.80	11.0	0.859	52.0	0.029 (0.26)	65 (143)	1PH7107- . . F . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.88	8.4	0.896	51.3	0.076 (0.67)	90 (198)	1PH7131- . . F . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.85	14	0.895	51.3	0.076 (0.67)	90 (198)	1PH7133- . . F . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.85	17	0.902	51.1	0.109 (0.96)	150 (331)	1PH7135- . . F . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.85	23	0.900	51.2	0.109 (0.96)	150 (331)	1PH7137- . . F . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.85	30	0.912	50.9	0.185 (1.64)	175 (386)	1PH7163- . . F . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.86	32	0.916	50.8	0.228 (2.02)	210 (463)	1PH7167- . . F . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.80	8.3	0.857	68.9	0.017 (0.15)	40 (88.2)	1PH7103- . . G . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.80	12	0.869	68.6	0.029 (0.26)	65 (143)	1PH7107- . . G . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.86	18	0.898	68.0	0.076 (0.67)	90 (198)	1PH7133- . . G . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.88	21	0.903	68.0	0.109 (0.96)	150 (331)	1PH7137- . . G . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.84	37	0.906	67.5	0.185 (1.64)	175 (386)	1PH7163- . . G . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.84	40	0.907	67.4	0.228 (2.02)	210 (463)	1PH7167- . . G . . . ■■■	85 ⁸⁾	6SL3120- 1 TE28-5AA3
Output type: Coupling/belt Coupling/belt Coupling/belt Coupling/belt Increased max. speed ⁵⁾		Vibrat. magnitude: Grade R Grade S Grade SR Grade N Grade SR		Shaft and flange accuracy: Tolerance R Tolerance R Tolerance R Tolerance N (with brake mounting) Tolerance R		B C D K L		
Shaft extension (DE): Fitted key Fitted key Fitted key Fitted key Plain shaft Plain shaft		Balancing: Half-key Half-key Full-key Full-key – –		Direction of air flow (fan): DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾		A B C D J K		
Seal: – Flange/shaft seal ring ⁶⁾ – Flange/shaft seal ring ⁶⁾ – Flange/shaft seal ring ⁶⁾		Paint finish: None None Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, special paint finish Anthracite RAL 7016, special paint finish				0 2 3 5 6 8		
Special version:		Specify supplm. order code and plain text if applic. (see Options).					–Z	
Motor Module:		Single Motor Module Double Motor Module						1 2

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

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

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

⁴⁾ Version with brake possible if: 12th Position "2" or "3", 14th position "K", 15th position "A", "B", "J" or "K", 16th position "0", "3" or "6".

⁵⁾ Max. possible speed (see also selection guides): SH 100: 12000 rpm, SH 132: 10000 rpm, SH 160: 8000 rpm, with plain shaft only (15th position "J" or "K" and 16th position "0", "3" or "6").

⁶⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6), or version with increased maximum speed.

⁷⁾ Preferred air-flow direction in polluted environment.

⁸⁾ The rated output current of the Motor Module is lower than the motor rated current.

⁹⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.
400 V 3 AC line voltage, Servo Control									
400	180	16.3 (21.9)	390 (288)	51	271	2100 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7184-■ ■ B ■ ■ -■ ...
		21.2 (28.4)	505 (373)	67	268	2400 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7186-■ ■ B ■ ■ -■ ...
	225	30.4 (40.8)	725 (535)	88	268	1900	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7224-■ ■ B ■ ■ -■ ...
		39.2 (52.6)	935 (690)	114	264	2200 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7226-■ ■ B ■ ■ -■ ...
		48 (64.4)	1145 (845)	136	272	2200 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ⁴⁾¹⁰⁾	1PH7228-■ ■ B ■ ■ -■ ...
1000	180	39 (52.3)	372 (274)	90	335	3300	3500 ⁴⁾	5000	1PH7184-■ ■ D ■ ■ -■ ...
		51 (68.4)	485 (358)	116	340	3700	3500 ⁴⁾	5000	1PH7186-■ ■ D ■ ■ -■ ...
	225	71 (95.2)	678 (500)	161	335	2900	3100 ⁴⁾	4500	1PH7224-■ ■ D ■ ■ -■ ...
		92 (123)	880 (649)	198	340	2900	3100 ⁴⁾	4500	1PH7226-■ ■ D ■ ■ -■ ...
		113 (152)	1080 (797)	240	340	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ D ■ ■ -■ ...
1500	180	51 (68.4)	325 (240)	120	335	5000	3500 ⁴⁾	5000	1PH7184-■ ■ F ■ ■ -■ ...
		74 (99.2)	471 (347)	170	330	5000	3500 ⁴⁾	5000	1PH7186-■ ■ F ■ ■ -■ ...
	225	95 (127)	605 (446)	204	340	2900	3100 ⁴⁾	4500	1PH7224-■ ■ U ■ ■ -■ ...
		130 (174)	828 (611)	278	340	2900	3100 ⁴⁾	4500	1PH7226-■ ■ F ■ ■ -■ ...
		160 (215)	1019 (752)	350	340	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ F ■ ■ -■ ...
2500	180	78 (10.5)	298 (220)	171	340	5000	3500 ⁴⁾	5000	1PH7184-■ ■ L ■ ■ -■ ...
		106 (142)	405 (299)	235	335	5000	3500 ⁴⁾	5000	1PH7186-■ ■ L ■ ■ -■ ...
	225	142 (190)	542 (400)	298	340	3500	3100 ⁴⁾	4500	1PH7224-■ ■ L ■ ■ -■ ...
		168 (225)	642 (438)	362	335	3500	3100 ⁴⁾	4500	1PH7226-■ ■ L ■ ■ -■ ...
		205 (275)	783 (578)	433	340	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ L ■ ■ -■ ...
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver						A E H J M N R
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver						F D Q P
Terminal box/cable entry (view DE):			Top/from right Top/from DE Top/from NDE Top/from left						0 1 2 3
Type:			IM B3 IM B3 IM B35 (only for 1PH7184 with flange A 400/1PH7186 with flange A 450/1PH7 with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 450/1PH7186 with flange A 450/1PH7 with flange A 550) IM B35 (only for 1PH7184 with flange A 450) Hoisting concept for other types (IM 6, IM B7, IM B8, IM V5, IM V6) Hoisting concept for other types (IM V15, IM V35) Hoisting concept for other types (IM V15, IM V35)						0 1 3 4 5 6
Holding brake with emergency stop function (suitable for coupling output in type IM B3) ⁵⁾ :			Without brake With brake (includes emergency release screws and microswitch) With brake (includes manual release and microswitch)						0 2 4

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
cos φ	I _μ A	η _{rated}	f _{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	Rated out- put current I _{rated} A	Order No.
400 V 3 AC line voltage, Servo Control								
0.84	26	0.830	14.2	0.503 (4.45)	370 (816)	1PH7184- . . B . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.81	38.5	0.845	14.0	0.666 (5.89)	440 (970)	1PH7186- . . B . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.87	36.5	0.864	14.0	1.479 (13.1)	630 (1389)	1PH7224- . . B . . . ■■■	85 ⁹⁾	6SL3120- 1 TE28-5AA3
0.86	49	0.880	14.0	1.930 (17.1)	750 (1654)	1PH7226- . . B . . . ■■■	132	6SL3120- 1 TE31-3AA3
0.85	60.5	0.888	13.9	2.326 (20.6)	860 (1896)	1PH7228- . . B . . . ■■■	132 ⁹⁾	6SL3120- 1 TE31-3AA3
0.83	44	0.913	34.2	0.503 (4.45)	370 (816)	1PH7184- . . D . . . ■■■	85 ⁹⁾	6SL3120- 1 TE28-5AA3
0.81	58	0.918	34.1	0.666 (5.89)	440 (970)	1PH7186- . . D . . . ■■■	132	6SL3120- 1 TE31-3AA3
0.81	78.5	0.934	33.9	1.479 (13.1)	630 (1389)	1PH7224- . . D . . . ■■■	200	6SL3120- 1 TE32-0AA3
0.84	87.5	0.935	33.9	1.930 (17.1)	750 (1654)	1PH7226- . . D . . . ■■■	200	6SL3120- 1 TE32-0AA3
0.85	98	0.938	33.9	2.326 (20.6)	860 (1896)	1PH7228- . . D . . . ■■■	260	6SL3320- 1 TE32-6AA0
0.78	64	0.930	50.7	0.503 (4.45)	370 (816)	1PH7184- . . F . . . ■■■	132	6SL3120- 1 TE31-3AA3
0.81	84	0.937	50.7	0.666 (5.89)	440 (970)	1PH7186- . . F . . . ■■■	200	6SL3120- 1 TE32-0AA3
0.84	88.5	0.944	50.6	1.479 (13.1)	630 (1398)	1PH7224- . . U . . . ■■■	200 ⁹⁾	6SL3120- 1 TE32-0AA3
0.84	120	0.945	50.6	1.930 (17.1)	750 (1654)	1PH7226- . . F . . . ■■■	310	6SL3320- 1 TE33-1AA0
0.82	169	0.949	50.5	2.326 (20.6)	860 (1896)	1PH7228- . . F . . . ■■■	380	6SL3320- 1 TE33-8AA0
0.82	77	0.937	84.1	0.503 (4.45)	370 (816)	1PH7184- . . L . . . ■■■	200	6SL3120- 1 TE32-0AA3
0.82	108	0.942	84.1	0.666 (5.89)	440 (970)	1PH7186- . . L . . . ■■■	260	6SL3320- 1 TE32-6AA0
0.84	115	0.948	84.0	1.479 (13.1)	630 (1389)	1PH7224- . . L . . . ■■■	310	6SL3320- 1 TE33-1AA0
0.84	154	0.950	84.0	1.930 (17.1)	750 (1654)	1PH7226- . . L . . . ■■■	380	6SL3320- 1 TE33-8AA0
0.84	185	0.950	83.9	2.326 (20.6)	860 (1896)	1PH7228- . . L . . . ■■■	490	6SL3320- 1 TE35-0AA0
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		A B C D E F G H J		
Coupling		Grade R		Tolerance N				
Coupling		Grade R		Tolerance R				
Coupling		Grade S		Tolerance R				
Coupling		Grade SR		Tolerance R				
Belt		Grade R		Tolerance N				
Belt		Grade R		Tolerance R				
Increased cantil. forces		Grade R		Tolerance N				
Increased cantil. forces		Grade R		Tolerance R				
Increased max. speed ⁶⁾		Grade S		Tolerance R				
Shaft extension (DE):		Balancing:		Direction of air flow (fan):		A B C D J K		
Fitted key		Half-key		DE → NDE				
Fitted key		Half-key		NDE → DE ⁸⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁸⁾				
Plain shaft		–		DE → NDE				
Plain shaft		–		NDE → DE ⁸⁾		0 2 3 5 6 8		
Seal:		Paint finish:						
–		Primed						
Flange/shaft seal ring ⁷⁾		Primed						
–		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, standard paint finish						
–		Anthracite RAL 7016, special paint finish				–Z		
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, special paint finish						
Special version:		Specify suppl. order code and plain text if applicable (see Options).						

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

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

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

⁴⁾ The speed is reduced for increased cantilever forces, see selection guides.

⁵⁾ Version with brake:
12th data position "0"
14th data position "A",
15th data position "A" or "B",
16th data position "0", "3" or "6".

⁶⁾ For shaft height 180 $n_{\text{max}} = 7000$ rpm, 1PH7224: $n_{\text{max}} = 5500$ rpm only coupling drive possible and 16th data position "0", "3" or "6".

⁷⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased maximum speed, version with belt drive or increased cantilever forces.

⁸⁾ Preferred direction of air flow in a polluted environment.

⁹⁾ The rated output current of the Motor Module is lower than the motor rated current.

¹⁰⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾⁹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
400 V 3 AC line voltage, Vector Control												
400	160	9.5 (12.7)	227 (167)	30	274	2630 ⁹⁾	3700 ⁹⁾	6500 ⁹⁾	1PH7163-■ ■ B ■ ■ -■ ...			
		13.0 (17.4)	310 (229)	37	294	2140 ⁹⁾	3700 ⁹⁾	6500 ⁹⁾	1PH7167-■ ■ B ■ ■ -■ ...			
1150	100	4.3 (5.8)	36 (26.6)	10	391	2400	5500	9000 ⁹⁾	1PH7103-■ ■ D ■ ■ -■ ...			
		7.2 (9.7)	60 (44.3)	17.5	360	4170	5500	9000 ⁹⁾	1PH7107-■ ■ D ■ ■ -■ ...			
	132	13.5 (18.1)	112 (82.6)	29	381	3000	4500	8000 ⁹⁾	1PH7133-■ ■ D ■ ■ -■ ...			
		19.5 (26.2)	162 (119)	43	367	3930	4500	8000 ⁹⁾	1PH7137-■ ■ D ■ ■ -■ ...			
	160	25 (33.5)	208 (153)	55	364	3500	3700	6500 ⁹⁾	1PH7163-■ ■ D ■ ■ -■ ...			
		31 (41.6)	257 (190)	70	357	4840	3700	6500 ⁹⁾	1PH7167-■ ■ D ■ ■ -■ ...			
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver						A E H J M N R			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver						F D Q P			
Terminal box/cable entry (view DE):			Top/from right Top/from NDE Top/from left						0 2 3			
Type:			IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) available only for shaft heights 100 and 132 IM B35 (IM V15, IM V35)						0 2 3			
Holding brake with emergency stop function ⁴⁾ :			Without brake									0
			Brake supply voltage 230 V 1 AC, 50/60 Hz		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							1 2 3 4
			Brake supply voltage 24 V DC		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							5 6 7 8

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _F -in-s ²)	kg (lb)		Rated out- put current I_{rated} A	Order No.
cos φ						Order No.		
400 V 3 AC line voltage, Vector Control								
0.88	11.5	0.809	14.3	0.185 (1.64)	175 (386)	1PH7163- . . B . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3
0.88	14.0	0.814	14.3	0.228 (2.02)	210 (463)	1PH7167- . . B . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3
0.81	5.0	0.813	40.6	0.017 (0.15)	40 (88.2)	1PH7103- . . D . . . ■ ■ ■	9 ⁸⁾	6SL3120- ■ TE21-0AA3
0.81	8.8	0.838	40.3	0.029 (0.26)	65 (143)	1PH7107- . . D . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3
0.85	13	0.877	39.7	0.076 (0.67)	90 (198)	1PH7133- . . D . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3
0.86	19	0.887	39.6	0.109 (0.96)	150 (331)	1PH7137- . . D . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3
0.84	25	0.904	39.2	0.185 (1.64)	175 (386)	1PH7163- . . D . . . ■ ■ ■	60	6SL3120- 1 TE26-0AA3
0.83	34	0.909	39.1	0.228 (2.02)	210 (463)	1PH7167- . . D . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		B C D K L		
Coupling/belt		Grade R		Tolerance R				
Coupling/belt		Grade S		Tolerance R				
Coupling/belt		Grade SR		Tolerance R				
Coupling/belt		Grade N		Tolerance N (with brake mounting)				
Increased max. speed ⁵⁾		Grade SR		Tolerance R		A B C D J K		
Shaft extension (DE):		Balancing:		Direction of air flow (fan):				
Fitted key		Half-key		DE → NDE				
Fitted key		Half-key		NDE → DE ⁷⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁷⁾		0 2 3 5 6 8		
Plain shaft		–		DE → NDE				
Plain shaft		–		NDE → DE ⁷⁾				
Seal:		Paint finish:						
–		None						
Flange/shaft seal ring ⁶⁾		None				–Z		
–		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, standard paint finish						
–		Anthracite RAL 7016, special paint finish						
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, special paint finish						
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						
Motor Module:		Single Motor Module Double Motor Module						1 2

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

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

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

⁴⁾ Version with brake is possible if:
12th data position "2" or "3",
14th data position "K",
15th data position "A", "B", "J" or "K",
16th data position "0", "3" or "6".

⁵⁾ Max. possible speed (see also selection guide):
SH 100: 12000 rpm, SH 132: 10000 rpm, SH 160: 8000 rpm, with plain shaft only (15th position "J" or "K" and 16th position "0", "3" or "6").

⁶⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6) or version with increased maximum speed.

⁷⁾ Preferred direction of air flow in a polluted environment.

⁸⁾ The rated output current of the Motor Module is lower than the motor rated current.

⁹⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
400 V 3 AC line voltage, Vector Control												
1750	100	4.3 (5.77)	24 (17.7)	10	398	6130	5500	9000 ⁹⁾	1PH7101-■ ■ F ■ ■ -■ ...			
		6.3 (8.45)	34 (25.1)	13	398	3500	5500	9000 ⁹⁾	1PH7103-■ ■ F ■ ■ -■ ...			
		8 (10.7)	44 (32.5)	17.5	398	5940	5500	9000 ⁹⁾	1PH7105-■ ■ F ■ ■ -■ ...			
		10 (13.4)	55 (40.6)	23	381	4500	5500	8750	1PH7107-■ ■ F ■ ■ -■ ...			
	132	13 (17.4)	71 (52.4)	24	398	4830	4500	8000	1PH7131-■ ■ F ■ ■ -■ ...			
		17.5 (23.5)	96 (70.8)	34	398	4990	4500	8000	1PH7133-■ ■ F ■ ■ -■ ...			
		21.5 (28.8)	117 (86.3)	42	398	5570	4500	8000	1PH7135-■ ■ F ■ ■ -■ ...			
		25 (33.5)	136 (100)	56	357	4000	4500	8000	1PH7137-■ ■ F ■ ■ -■ ...			
	160	34 (45.6)	186 (137)	72	364	4000	3700	6500	1PH7163-■ ■ F ■ ■ -■ ...			
		41 (55)	224 (165)	79	398	2750	3700	6500	1PH7167-■ ■ F ■ ■ -■ ...			
2300	100	7.5 (10.1)	31 (22.9)	17	388	6000	5500	9000	1PH7103-■ ■ G ■ ■ -■ ...			
		12 (16.1)	50 (36.9)	26	400	6000	5500	9000	1PH7107-■ ■ G ■ ■ -■ ...			
	132	22.5 (30.2)	93 (68.6)	45	398	4000	4500	8000	1PH7133-■ ■ G ■ ■ -■ ...			
		29 (38.9)	120 (88.5)	56	398	4000	4500	8000	1PH7137-■ ■ G ■ ■ -■ ...			
	160	38 (51)	158 (117)	82	398	3000	3700	6500	1PH7163-■ ■ G ■ ■ -■ ...			
		44 (59)	183 (135)	85	398	3000	3700	6500	1PH7167-■ ■ G ■ ■ -■ ...			
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver							A E H J M N R		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P		
Terminal box/cable entry (view DE):			Top/from right Top/from NDE Top/from left								0 2 3	
Type:			IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) available only for shaft heights 100 and 132 IM B35 (IM V15, IM V35)								0 2 3	
Holding brake with emergency stop function ⁴⁾ :			Without brake									0
			Brake supply voltage 230 V 1 AC, 50/60 Hz		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							1 2 3 4
			Brake supply voltage 24 V DC		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							5 6 7 8

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
cos φ	I _μ A	η _{rated}	f _{rated} Hz	J kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	Rated out- put current I _{rated} A	Order No.
400 V 3 AC line voltage, Vector Control								
0.75	5.7	0.855	60.0	0.017 (0.15)	40 (88.2)	1PH7101- . . F . . . ■■■	9 ⁸⁾	6SL3120- ■ TE21-0AA3
0.84	5.3	0.849	61.0	0.017 (0.15)	40 (88.2)	1PH7103- . . F . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.77	9.3	0.875	60.0	0.029 (0.26)	65 (143)	1PH7105- . . F . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.80	10.6	0.870	60.3	0.029 (0.26)	65 (143)	1PH7107- . . F . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.88	8.1	0.902	59.7	0.076 (0.67)	90 (198)	1PH7131- . . F . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.85	14	0.900	59.7	0.076 (0.67)	90 (198)	1PH7133- . . F . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.86	16	0.906	59.5	0.109 (0.96)	150 (331)	1PH7135- . . F . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.85	23	0.902	59.5	0.109 (0.96)	150 (331)	1PH7137- . . F . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.86	28	0.915	59.2	0.185 (1.64)	175 (386)	1PH7163- . . F . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.86	30	0.920	59.2	0.228 (2.02)	210 (463)	1PH7167- . . F . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.79	8.2	0.866	78.8	0.017 (0.15)	40 (88.2)	1PH7103- . . G . . . ■■■	18	6SL3120- ■ TE21-8AA3
0.80	12	0.878	78.7	0.029 (0.26)	65 (143)	1PH7107- . . G . . . ■■■	30	6SL3120- 1 TE23-0AA3
0.86	17	0.900	78.0	0.076 (0.67)	90 (198)	1PH7133- . . G . . . ■■■	45	6SL3120- 1 TE24-5AA3
0.87	21	0.903	77.8	0.109 (0.96)	150 (331)	1PH7137- . . G . . . ■■■	60	6SL3120- 1 TE26-0AA3
0.83	43	0.900	77.3	0.185 (1.64)	175 (386)	1PH7163- . . G . . . ■■■	85	6SL3120- 1 TE28-5AA3
0.84	40	0.911	77.4	0.228 (2.02)	210 (463)	1PH7167- . . G . . . ■■■	85	6SL3120- 1 TE28-5AA3
Output type: Coupling/belt Coupling/belt Coupling/belt Coupling/belt Increased max. speed ⁵⁾		Vibrat. magnitude: Grade R Grade S Grade SR Grade N Grade SR		Shaft and flange accuracy: Tolerance R Tolerance R Tolerance R Tolerance N (with brake mounting) Tolerance R		B C D K L		1 2
Shaft extension (DE): Fitted key Fitted key Fitted key Fitted key Plain shaft Plain shaft		Balancing: Half-key Half-key Full-key Full-key – –		Direction of air flow (fan): DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾		A B C D J K		
Seal: – Flange/shaft seal ring ⁶⁾ – Flange/shaft seal ring ⁶⁾ – Flange/shaft seal ring ⁶⁾		Paint finish: None None Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, special paint finish Anthracite RAL 7016, special paint finish				0 2 3 5 6 8		
Special versions:		Specify supplementary order code and plain text if applicable (see Options).					–Z	
Motor Module:		Single Motor Module Double Motor Module						

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

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

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

4) Version with brake is possible if:
12th data position "2" or "3",
14th data position "K",
15th data position "A", "B", "J" or "K",
16th data position "0", "3" or "6".

5) Max. possible speed (see also selection guide):
SH 100: 12000 rpm, SH 132: 10000 rpm, SH 160: 8000 rpm, with plain shaft only (15th position "J" or "K" and 16th position "0", "3" or "6").

6) Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6) or version with increased maximum speed.

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

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

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

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor						
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.						
400 V 3 AC line voltage, Vector Control															
400	180	16.3 (21.9)	390 (288)	51	271	2900 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7184-■ ■ B ■ ■ -■ ...						
		21.2 (28.4)	505 (373)	67	268	3300 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7186-■ ■ B ■ ■ -■ ...						
	225	30.4 (40.8)	725 (535)	88	268	2700 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7224-■ ■ B ■ ■ -■ ...						
		39.2 (52.6)	935 (690)	114	264	2900 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7226-■ ■ B ■ ■ -■ ...						
		48 (64.4)	1145 (845)	136	272	2900 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ⁴⁾¹⁰⁾	1PH7228-■ ■ B ■ ■ -■ ...						
1150	180	44 (59)	366 (270)	89	383	4200	3500 ⁴⁾	5000	1PH7184-■ ■ D ■ ■ -■ ...						
		58 (77.8)	482 (356)	116	390	4400	3500 ⁴⁾	5000	1PH7186-■ ■ D ■ ■ -■ ...						
	225	81 (109)	670 (494)	160	385	2900	3100 ⁴⁾	4500	1PH7224-■ ■ D ■ ■ -■ ...						
		105 (141)	870 (642)	197	390	2900	3100 ⁴⁾	4500	1PH7226-■ ■ D ■ ■ -■ ...						
		129 (173)	1070 (789)	238	390	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ D ■ ■ -■ ...						
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, PG cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box							2 6 7 8						
Encoder systems for motors without DRIVE-CLiQ interface:		Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D track Incremental encoder sin/cos 1 V _{pp} without C and D track 2-pole resolver							A E H J M N R						
Encoder systems for motors with DRIVE-CLiQ interface:		22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P						
Terminal box/cable entry (view DE):		Top/from right Top/from DE Top/from NDE Top/from left							0 1 2 3						
Type:		IM B3 IM B3 IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450)							Hoisting system for different types (IM B6, IM B7, IM B8, IM V5, IM V6)			0 1 3 4 5 6			
Holding brake with emergency stop function (suitable for coupling output in type IM B3) ⁵⁾ :		Without brake With brake (includes emergency release screws and microswitch) With brake (includes manual release and microswitch)							0 2 4						

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
	I_{μ}	η_{rated}	f_{rated}	J			Rated out- put current	
$\cos \varphi$	A		Hz	kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	I_{rated}	Order No.
400 V 3 AC line voltage, Vector Control								
0.84	26	0.830	14.2	0.503 (4.45)	370 (816)	1PH7184- . . B . . . ■■■	60	6SL3120-1TE26-0AA3
0.81	38.5	0.845	14.0	0.666 (5.89)	440 (970)	1PH7186- . . B . . . ■■■	85	6SL3120-1TE28-5AA3
0.87	36.5	0.864	14.0	1.479 (13.1)	630 (1389)	1PH7224- . . B . . . ■■■	85 ⁹⁾	6SL3120-1TE28-5AA3
0.86	49	0.880	14.0	1.930 (17.1)	750 (1654)	1PH7226- . . B . . . ■■■	132	6SL3120-1TE31-3AA3
0.85	60.5	0.888	13.9	2.326 (20.6)	860 (1896)	1PH7228- . . B . . . ■■■	132 ⁹⁾	6SL3120-1TE31-3AA3
0.82	42	0.920	39.2	0.503 (4.45)	370 (816)	1PH7184- . . D . . . ■■■	85 ⁹⁾	6SL3120-1TE28-5AA3
0.81	58	0.925	39.1	0.666 (5.89)	440 (970)	1PH7186- . . D . . . ■■■	132	6SL3120-1TE31-3AA3
0.81	79	0.938	38.9	1.479 (13.1)	630 (1389)	1PH7224- . . D . . . ■■■	200	6SL3120-1TE32-0AA3
0.84	87.5	0.941	38.9	1.930 (17.1)	750 (1654)	1PH7226- . . D . . . ■■■	200	6SL3120-1TE32-0AA3
0.85	98	0.943	38.9	2.326 (20.6)	860 (1896)	1PH7228- . . D . . . ■■■	260	6SL3320-1TE32-6AA0
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		A B C D E F G H J		
Coupling		Grade R		Tolerance N				
Coupling		Grade R		Tolerance R				
Coupling		Grade S		Tolerance R				
Coupling		Grade SR		Tolerance R				
Belt		Grade R		Tolerance N				
Belt		Grade R		Tolerance R				
Increased cantil. forces		Grade R		Tolerance N				
Increased cantil. forces		Grade R		Tolerance R				
Increased max. speed ⁶⁾		Grade S		Tolerance R				
Shaft extension (DE):		Balancing:		Direction of air flow (fan):		A B C D J K		
Fitted key		Half-key		DE → NDE				
Fitted key		Half-key		NDE → DE ⁸⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁸⁾				
Plain shaft		–		DE → NDE				
Plain shaft		–		NDE → DE ⁸⁾				
Seal:		Paint finish:				0 2 3 5 6 8		
–		Primed						
Flange/shaft seal ring ⁷⁾		Primed						
–		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, standard paint finish						
–		Anthracite RAL 7016, special paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, special paint finish						
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						–Z

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

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

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

⁴⁾ The speed is reduced for increased cantilever forces, see selection guides.

⁵⁾ Version with brake: 12th data position "0", 14th data position "A", 15th data position "A" or "B", 16th data position "0", "3" or "6".

⁶⁾ For axis height 180 $n_{\text{max}} = 7000$ rpm, 1PH7224 $n_{\text{max}} = 5500$ rpm, coupling output only possible and 16th data position "0", "3" or "6".

⁷⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased maximum speed, version for belt output or increased cantilever forces.

⁸⁾ Preferred direction of air flow in a polluted environment.

⁹⁾ The rated output current of the Motor Module is lower than the motor rated current.

¹⁰⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor
<i>n</i> _{rated} rpm		<i>P</i> _{rated} kW (HP)	<i>M</i> _{rated} Nm (lb _r -ft)	<i>I</i> _{rated} A	<i>V</i> _{rated} V	<i>n</i> ₂ rpm	<i>n</i> _{S1} rpm	<i>n</i> _{max} rpm	Order No.
400 V 3 AC line voltage, Vector Control									
1750	180	60 (80.5)	327 (241)	120	388	5000	3500 ⁴⁾	5000	1PH7184-■ ■ F ■ ■ - ■ ...
		85 (114)	465 (343)	169	385	5000	3500 ⁴⁾	5000	1PH7186-■ ■ F ■ ■ - ■ ...
	225	110 (148)	600 (443)	203	395	2900	3100 ⁴⁾	4500	1PH7224-■ ■ U ■ ■ - ■ ...
		135 (181)	737 (544)	254	395	2900	3100 ⁴⁾	4500	1PH7226-■ ■ F ■ ■ - ■ ...
		179 (240)	975 (719)	342	395	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ F ■ ■ - ■ ...
2900	180	81 (109)	265 (196)	158	395	5000	3500 ⁴⁾	5000	1PH7184-■ ■ L ■ ■ - ■ ...
		101 (135)	333 (246)	206	385	5000	3500 ⁴⁾	5000	1PH7186-■ ■ L ■ ■ - ■ ...
	225	149 (200)	490 (361)	274	395	3500	3100 ⁴⁾	4500	1PH7224-■ ■ L ■ ■ - ■ ...
		185 (248)	610 (450)	348	390	3500	3100 ⁴⁾	4500	1PH7226-■ ■ L ■ ■ - ■ ...
		215 (288)	708 (522)	402	395	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ L ■ ■ - ■ ...
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, PG cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box							2 6 7 8
Encoder systems for motors without DRIVE-CLiQ interface:		Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D track Incremental encoder sin/cos 1 V _{pp} without C and D track 2-pole resolver							A E H J M N R
Encoder systems for motors with DRIVE-CLiQ interface:		22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P
Terminal box/cable entry (view DE):		Top/from right Top/from DE Top/from NDE Top/from left							0 1 2 3
Type:		IM B3 IM B3 IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) Hoisting system for different types (IM B6, IM B7, IM B8, IM V5, IM V6) Hoisting system for different types (IM V15, IM V35) Hoisting system for different types (IM V15, IM V35)							0 1 3 4 5 6
Holding brake with emergency stop function (suitable for coupling output in type IM B3) ⁵⁾ :		Without brake With brake (includes emergency release screws and microswitch) With brake (includes manual release and microswitch)							0 2 4

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _F -in-s ²)	kg (lb)	Order No.	Rated out- put current I_{rated} A	Order No.
400 V 3 AC line voltage, Vector Control								
0.78	64	0.934	59.0	0.503 (4.45)	370 (816)	1PH7184- . . F . . . ■■■	132	6SL3120-1 TE31-3AA3
0.80	84	0.940	59.0	0.666 (5.89)	440 (970)	1PH7186- . . F . . . ■■■	200	6SL3120-1 TE32-0AA3
0.84	88	0.944	58.9	1.479 (13.1)	630 (1389)	1PH7224- . . U . . . ■■■	200 ⁹⁾	6SL3120-1 TE32-0AA3
0.82	120	0.947	58.9	1.930 (17.1)	750 (1654)	1PH7226- . . F . . . ■■■	260	6SL3320-1 TE32-6AA0
0.81	169	0.948	58.8	2.326 (20.6)	860 (1896)	1PH7228- . . F . . . ■■■	380	6SL3320-1 TE33-8AA0
0.80	77	0.934	97.4	0.503 (4.45)	370 (816)	1PH7184- . . L . . . ■■■	200	6SL3120-1 TE32-0AA3
0.78	107	0.936	97.3	0.666 (5.89)	440 (970)	1PH7186- . . L . . . ■■■	200 ⁹⁾	6SL3120-1 TE32-0AA3
0.84	115	0.946	97.3	1.479 (13.1)	630 (1389)	1PH7224- . . L . . . ■■■	310	6SL3320-1 TE33-1AA0
0.83	154	0.946	97.2	1.930 (17.1)	750 (1654)	1PH7226- . . L . . . ■■■	380	6SL3320-1 TE33-8AA0
0.82	186	0.946	97.2	2.326 (20.6)	860 (1896)	1PH7228- . . L . . . ■■■	490	6SL3320-1 TE35-0AA0
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		A B C D E F G H J		
Coupling		Grade R		Tolerance N				
Coupling		Grade R		Tolerance R				
Coupling		Grade S		Tolerance R				
Coupling		Grade SR		Tolerance R				
Belt		Grade R		Tolerance N				
Belt		Grade R		Tolerance R				
Increased cantil. forces		Grade R		Tolerance N				
Increased cantil. forces		Grade R		Tolerance R				
Increased max. speed ⁶⁾		Grade S		Tolerance R				
Shaft extension (DE):		Balancing:		Direction of air flow (fan):		A B C D J K		
Fitted key		Half-key		DE → NDE				
Fitted key		Half-key		NDE → DE ⁸⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁸⁾				
Plain shaft		–		DE → NDE				
Plain shaft		–		NDE → DE ⁸⁾				
Seal:		Paint finish:		0 2 3 5 6 8				
–		Primed						
Flange/shaft seal ring ⁷⁾		Primed						
–		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, standard paint finish						
–		Anthracite RAL 7016, special paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, special paint finish						
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						–Z

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

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

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

⁴⁾ The speed is reduced for increased cantilever forces, see selection guides.

⁵⁾ Version with brake: 12th data position "0", 14th data position "A", 15th data position "A" or "B", 16th data position "0", "3" or "6".

⁶⁾ For axis height 180 $n_{\text{max}} = 7000$ rpm, 1PH7224 $n_{\text{max}} = 5500$ rpm, coupling output only possible and 16th data position "0", "3" or "6".

⁷⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased maximum speed, version for belt output or increased cantilever forces.

⁸⁾ Preferred direction of air flow in a polluted environment.

⁹⁾ The rated output current of the Motor Module is lower than the motor rated current.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
400 V 3 AC line voltage, Vector Control												
500	280	80 (107)	1529 (1128)	144	400	1700	2200	3300 ⁶⁾	1PH7 284-■ ■ B ■ ■ -0 ...			
		100 (134)	1909 (1408)	180	400	1800	2200	3300 ⁶⁾	1PH7 286-■ ■ B ■ ■ -0 ...			
		130 (174)	2481 (1830)	233	400	1800	2200	3300 ⁶⁾	1PH7 288-■ ■ B ■ ■ -0 ...			
800	280	125 (168)	1492 (1101)	220	400	2200	2200	3300	1PH7 284-■ ■ C ■ ■ -0 ...			
		155 (208)	1850 (1365)	285	385	2200	2200	3300	1PH7 286-■ ■ C ■ ■ -0 ...			
		190 (255)	2268 (1673)	365	370	2200	2200	3300	1PH7 288-■ ■ C ■ ■ -0 ...			
1150	280	170 (228)	1414 (1043)	314	400	2200	2200	3300	1PH7 284-■ ■ D ■ ■ -0 ...			
		210 (282)	1745 (1287)	414	380	2200	2200	3300	1PH7 286-■ ■ D ■ ■ -0 ...			
		260 (349)	2160 (1593)	497	385	2200	2200	3300	1PH7 288-■ ■ D ■ ■ -0 ...			
1750	280	225 (302)	1228 (906)	393	400	2200	2200	3300	1PH7 284-■ ■ F ■ ■ -0 ...			
		270 (362)	1474 (1087)	466	400	2200	2200	3300	1PH7 286-■ ■ F ■ ■ -0 ...			
		340 (456)	1856 (1369)	586	400	2200	2200	3300	1PH7 288-■ ■ F ■ ■ -0 ...			
Fans ⁴⁾ :			External fan unit, NDE at top, air-flow direction NDE to DE External fan unit, NDE on right, air-flow direction NDE to DE External fan unit, NDE on left, air-flow direction NDE to DE External fan unit, DE at top, air-flow direction DE to NDE External fan unit, DE on right, air-flow direction DE to NDE External fan unit, DE on left, air-flow direction DE to NDE Without external fan unit, for single pipe connection at NDE on right						0 1 2 3 4 5 6			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver						A E H J M N R			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver						F D Q P			
Terminal box/cable entry (view DE) ⁴⁾ :			NDE right/from below/encoder connector DE NDE left/from below/encoder connector DE NDE top/from right/encoder connector DE DE top/from right/encoder connector NDE						0 1 2 5			
Type ⁴⁾ :			IM B3 IM V5 (can be subsequently modified to IM V6) IM B35 (with flange A 660) IM V15 (with flange A 660; can be subsequently modified to IM V35)						0 1 3 5			

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _F -in-s ²)	kg (lb)	Order No.	Rated out- put current I_{rated} A	Order No.
400 V 3 AC line voltage, Vector Control								
0.87	60	0.922	17	4.2 (37.2)	1300 (2867)	1PH7284- . . B . . -0 ■■■	200	6SL3120-1 TE32-0AA3
0.86	78	0.930	17	5.2 (46)	1500 (3308)	1PH7286- . . B . . -0 ■■■	200	6SL3120-1 TE32-0AA3
0.87	100	0.933	17	6.3 (55.8)	1700 (3749)	1PH7288- . . B . . -0 ■■■	260	6SL3320-1 TE32-6AA0
0.86	95	0.944	27	4.2 (37.2)	1300 (2867)	1PH7284- . . C . . -0 ■■■	260	6SL3320-1 TE32-6AA0
0.85	135	0.948	27	5.2 (46)	1500 (3308)	1PH7286- . . C . . -0 ■■■	310	6SL3320-1 TE33-1AA0
0.84	170	0.951	27	6.3 (55.8)	1700 (3749)	1PH7288- . . C . . -0 ■■■	380	6SL3320-1 TE33-8AA0
0.82	158	0.956	38.6	4.2 (37.2)	1300 (2867)	1PH7284- . . D . . -0 ■■■	310 ⁵⁾	6SL3320-1 TE33-1AA0
0.81	218	0.958	38.6	5.2 (46)	1500 (3308)	1PH7286- . . D . . -0 ■■■	490	6SL3320-1 TE35-0AA0
0.82	252	0.960	38.6	6.3 (55.8)	1700 (3749)	1PH7288- . . D . . -0 ■■■	490 ⁵⁾	6SL3320-1 TE35-0AA0
0.86	163	0.962	58.7	4.2 (37.2)	1300 (2867)	1PH7284- . . F . . -0 ■■■	490	6SL3320-1 TE35-0AA0
0.87	184	0.963	58.7	5.2 (46)	1500 (3308)	1PH7286- . . F . . -0 ■■■	490	6SL3320-1 TE35-0AA0
0.87	234	0.965	58.7	6.3 (55.8)	1700 (3749)	1PH7288- . . F . . -0 ■■■	605	6SL3320-1 TE36-1AA0
Output type ⁴⁾ : Coupling Coupling Belt/increased cantilever forces Belt/increased cantilever forces		Vibrat. magnitude: Grade N Grade R Grade N Grade R		Shaft and flange accuracy: Tolerance N Tolerance R Tolerance N Tolerance R		A B E F		
Shaft extension (DE): Fitted key Fitted key Plain shaft		Balancing: Half-key Full-key –				A C J		
Paint finish: Primed Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, special paint finish						0 3 6		
Special versions: Specify supplementary order code and plain text if applicable (see Options).							–Z	

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

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

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

⁴⁾ See table "Permissible combinations of mechanical designs", page 5/33.

⁵⁾ The rated output current of the Motor Module is lower than the motor rated current.

⁶⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor				
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.				
480 V 3 AC line voltage, Servo/Vector Control													
500	160	12 (16.1)	230 (170)	30	340	2840 ⁸⁾	3700 ⁸⁾	6500 ⁸⁾	1PH7163-■ ■ B ■ ■ -■ ...				
		16 (21.5)	306 (221)	35	350	2380 ⁸⁾	3700 ⁸⁾	6500 ⁸⁾	1PH7167-■ ■ B ■ ■ -■ ...				
1350	100	4.7 (6.30)	33 (24.3)	9.5	433	3500	5500	9000 ⁸⁾	1PH7103-■ ■ D ■ ■ -■ ...				
		8 (10.7)	57 (42.0)	17	405	5160	5500	9000 ⁸⁾	1PH7107-■ ■ D ■ ■ -■ ...				
	132	15 (20.1)	106 (78.2)	30	433	3500	4500	8000 ⁸⁾	1PH7133-■ ■ D ■ ■ -■ ...				
		22 (29.5)	156 (115)	42	416	4750	4500	8000 ⁸⁾	1PH7137-■ ■ D ■ ■ -■ ...				
	160	28 (37.6)	198 (146)	53	413	4000	3700	6500	1PH7163-■ ■ D ■ ■ -■ ...				
		34 (45.6)	241 (178)	67	400	5900	3700	6500	1PH7167-■ ■ D ■ ■ -■ ...				
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box							2 6 7 8			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver							A E H J M N R			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P			
Terminal box/cable entry (view DE):			Top/from right Top/from NDE Top/from left							0 2 3			
Type:			IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) available only for shaft heights 100 and 132 IM B35 (IM V15, IM V35)							0 2 3			
Holding brake with emergency stop function ⁴⁾ :			Without brake							0			
			Brake supply voltage 230 V 1 AC, 50/60 Hz		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)					1 2 3 4			
			Brake supply voltage 24 V DC		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)					5 6 7 8			

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor		SINAMICS S120 Motor Module	
							Rated out- put current		
cos φ	I _μ A	η _{rated}	f _{rated} Hz	J kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	I _{rated} A	Order No.	
480 V 3 AC line voltage, Servo/Vector Control									
0.86	13	0.841	17.6	0.185 (1.64)	175 (386)	1PH7163- . . B . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3	
0.89	13	0.836	17.7	0.228 (2.02)	210 (463)	1PH7167- . . B . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3	
0.81	4.5	0.830	47.1	0.017 (0.15)	40 (88.2)	1PH7103- . . D . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3	
0.80	8.1	0.853	47.0	0.029 (0.26)	65 (143)	1PH7107- . . D . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3	
0.84	12	0.887	46.4	0.076 (0.67)	90 (198)	1PH7133- . . D . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3	
0.85	17	0.895	46.3	0.109 (0.96)	150 (331)	1PH7137- . . D . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3	
0.83	24	0.911	45.8	0.185 (1.64)	175 (386)	1PH7163- . . D . . . ■ ■ ■	60	6SL3120- 1 TE26-0AA3	
0.83	34	0.910	45.8	0.228 (2.02)	210 (463)	1PH7167- . . D . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3	
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		B C D K L			
Coupling/belt		Grade R		Tolerance R					
Coupling/belt		Grade S		Tolerance R					
Coupling/belt		Grade SR		Tolerance R					
Coupling/belt		Grade N		Tolerance N (with brake mounting)					
Increased max. speed ⁵⁾		Grade SR		Tolerance R		A B C D J K			
Shaft extension (DE):		Balancing:		Direction of air flow (fan):					
Fitted key		Half-key		DE → NDE					
Fitted key		Half-key		NDE → DE ⁷⁾					
Fitted key		Full-key		DE → NDE					
Fitted key		Full-key		NDE → DE ⁷⁾					
Plain shaft		–		DE → NDE					
Plain shaft		–		NDE → DE ⁷⁾					
Seal:		Paint finish:							
–		None							
Flange/shaft seal ring ⁶⁾		None				0 2 3 5 6 8			
–		Anthracite RAL 7016, standard paint finish							
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, standard paint finish							
–		Anthracite RAL 7016, special paint finish							
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, special paint finish							
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						–Z	
Motor Module:		Single Motor Module							1
		Double Motor Module							2

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

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

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

⁴⁾ Version with brake is possible if:
12th data position "2" or "3",
14th data position "K",
15th data position "A", "B", "J" or "K",
16th data position "0", "3" or "6".

⁵⁾ Max. possible speed (see also selection guide):
SH 100: 12000 rpm, SH 132: 10000 rpm, SH 160: 8000 rpm, with plain shaft only (15th position "J" or "K" and 16th position "0", "3" or "6").

⁶⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6) or version with increased maximum speed.

⁷⁾ Preferred direction of air flow in a polluted environment.

⁸⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _f -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
480 V 3 AC line voltage, Servo/Vector Control												
2000	100	4.7 (6.3)	22 (16.2)	10	459	7580	5500	9000	1PH7101-■ ■ F ■ ■ - ■ . . .			
		7 (9.39)	33 (24.3)	13	459	4100	5500	9000	1PH7103-■ ■ F ■ ■ - ■ . . .			
		9 (12.7)	43 (31.7)	17.5	450	7160	5500	9000	1PH7105-■ ■ F ■ ■ - ■ . . .			
		11 (14.8)	53 (39.1)	23	433	5500	5500	9000	1PH7107-■ ■ F ■ ■ - ■ . . .			
	132	15 (20.1)	72 (53.1)	25	459	5660	4500	8000	1PH7131-■ ■ F ■ ■ - ■ . . .			
		20 (26.8)	96 (70.8)	34	459	5910	4500	8000	1PH7133-■ ■ F ■ ■ - ■ . . .			
		24 (32.2)	115 (84.8)	42	459	6730	4500	8000	1PH7135-■ ■ F ■ ■ - ■ . . .			
		28 (37.6)	134 (98.8)	55	402	4000	4500	8000	1PH7137-■ ■ F ■ ■ - ■ . . .			
	160	37 (49.6)	177 (131)	70	412	4000	3700	6500	1PH7163-■ ■ F ■ ■ - ■ . . .			
		45 (60.4)	215 (159)	76	459	3250	3700	6500	1PH7167-■ ■ F ■ ■ - ■ . . .			
2650	100	8 (10.7)	29 (21.4)	16.5	440	7500	5500	9000	1PH7103-■ ■ G ■ ■ - ■ . . .			
		13 (17.4)	47 (34.7)	24.5	459	7500	5500	9000	1PH7107-■ ■ G ■ ■ - ■ . . .			
	132	24 (32.2)	87 (64.2)	42	450	4000	4500	8000	1PH7133-■ ■ G ■ ■ - ■ . . .			
		30 (40.2)	108 (79.7)	52	450	4250	4500	8000	1PH7137-■ ■ G ■ ■ - ■ . . .			
	160	40 (53.6)	144 (106)	76	433	3500	3700	6500	1PH7163-■ ■ G ■ ■ - ■ . . .			
		44 (59.0)	159 (117)	77	459	3250	3700	6500	1PH7167-■ ■ G ■ ■ - ■ . . .			
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver							A E H J M N R		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P		
Terminal box/ cable entry (view DE):			Top/from right Top/from NDE Top/from left								0 2 3	
Type:			IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) available only for shaft heights 100 and 132 IM B35 (IM V15, IM V35)								0 2 3	
Holding brake with emergency stop function ⁴⁾ :			Without brake									0
			Brake supply voltage 230 V 1 AC, 50/60 Hz		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							1 2 3 4
			Brake supply voltage 24 V DC		With brake With brake (includes microswitch) With brake (includes manual release) With brake (includes manual release and microswitch)							5 6 7 8

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
							Rated out- put current	Order No.
cos φ	I _μ A	η _{rated}	f _r _{rated} Hz	J kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	I _r _{rated} A	
480 V 3 AC line voltage, Servo/Vector Control								
0.72	6.0	0.862	68.2	0.017 (0.15)	40 (88.2)	1PH7101- . . F . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3
0.82	5.6	0.860	69.1	0.017 (0.15)	40 (88.2)	1PH7103- . . F . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3
0.78	9.3	0.878	68.3	0.029 (0.26)	65 (143)	1PH7105- . . F . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3
0.79	10.8	0.876	68.6	0.029 (0.26)	65 (143)	1PH7107- . . F . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3
0.88	8.5	0.903	68.0	0.076 (0.67)	90 (198)	1PH7131- . . F . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3
0.84	15	0.900	68.0	0.076 (0.67)	90 (198)	1PH7133- . . F . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3
0.85	17	0.905	67.8	0.109 (0.96)	150 (331)	1PH7135- . . F . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3
0.85	23	0.900	67.9	0.109 (0.96)	150 (331)	1PH7137- . . F . . . ■ ■ ■	60	6SL3120- 1 TE26-0AA3
0.85	29	0.912	67.5	0.185 (1.64)	175 (386)	1PH7163- . . F . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3
0.84	32	0.916	67.4	0.228 (2.02)	210 (463)	1PH7167- . . F . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3
0.78	8.2	0.871	90.3	0.017 (0.15)	40 (88.2)	1PH7103- . . G . . . ■ ■ ■	18	6SL3120- ■ TE21-8AA3
0.78	12	0.887	90.2	0.029 (0.26)	65 (143)	1PH7107- . . G . . . ■ ■ ■	30	6SL3120- 1 TE23-0AA3
0.85	17	0.898	89.6	0.076 (0.67)	90 (198)	1PH7133- . . G . . . ■ ■ ■	45	6SL3120- 1 TE24-5AA3
0.84	21	0.894	89.4	0.109 (0.96)	150 (331)	1PH7137- . . G . . . ■ ■ ■	60	6SL3120- 1 TE26-0AA3
0.82	37	0.895	89.0	0.185 (1.64)	175 (386)	1PH7163- . . G . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3
0.80	40	0.911	89.0	0.228 (2.02)	210 (463)	1PH7167- . . G . . . ■ ■ ■	85	6SL3120- 1 TE28-5AA3
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:		B C D K L A B C D J K 0 2 3 5 6 8 -Z		
Coupling/belt		Grade R		Tolerance R				
Coupling/belt		Grade S		Tolerance R				
Coupling/belt		Grade SR		Tolerance R				
Coupling/belt		Grade N		Tolerance N (with brake mounting)				
Increased max. speed ⁵⁾		Grade SR		Tolerance R				
Shaft extension (DE):		Balancing:		Direction of air flow (fan):				
Fitted key		Half-key		DE → NDE				
Fitted key		Half-key		NDE → DE ⁷⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁷⁾				
Plain shaft		—		DE → NDE				
Plain shaft		—		NDE → DE ⁷⁾				
Seal:		Paint finish:						
—		None						
Flange/shaft seal ring ⁶⁾		None						
—		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, standard paint finish						
—		Anthracite RAL 7016, special paint finish						
Flange/shaft seal ring ⁶⁾		Anthracite RAL 7016, special paint finish						
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						
Motor Module:		Single Motor Module Double Motor Module						

- ¹⁾ n_2 : Max. permissible thermal speed at constant output or speed, which is at the voltage limit when $P = P_{\text{rated}}$.
- ²⁾ n_{S1} : Max. permissible speed that is continuously permitted without speed duty cycles.
- ³⁾ n_{max} : Maximum speed which must not be exceeded.
- ⁴⁾ Version with brake is possible if:
12th data position "2" or "3",
14th data position "K",
15th data position "A", "B", "J" or "K",
16th data position "0", "3" or "6".

- ⁵⁾ Max. possible speed (see also selection guides):
SH 100: 12000 rpm, SH 132: 10000 rpm, SH 160: 8000 rpm, with plain shaft only (15th position "J" or "K" and 16th position "0", "3" or "6").
- ⁶⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6) or version with increased maximum speed.
- ⁷⁾ Preferred direction of air flow in a polluted environment.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor	
<i>n</i> _{rated} rpm		<i>P</i> _{rated} kW (HP)	<i>M</i> _{rated} Nm (lb _r -ft)	<i>I</i> _{rated} A	<i>V</i> _{rated} V	<i>n</i> ₂ rpm	<i>n</i> _{S1} rpm	<i>n</i> _{max} rpm	Order No.	
480 V 3 AC line voltage, Servo/Vector Control										
500	180	20.5 (27.5)	392 (289)	51	335	3200 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7184-■ ■ B ■ ■ -■ ...	
		26.5 (35.5)	506 (373)	67	335	3600 ¹⁰⁾	3500 ⁴⁾¹⁰⁾	5000 ¹⁰⁾	1PH7186-■ ■ B ■ ■ -■ ...	
	225	38 (51.0)	725 (535)	86	335	2900 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7224-■ ■ B ■ ■ -■ ...	
		49 (65.7)	935 (690)	112	330	3200 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ¹⁰⁾	1PH7226-■ ■ B ■ ■ -■ ...	
		60 (80.5)	1145 (845)	135	340	3200 ¹⁰⁾	3100 ⁴⁾¹⁰⁾	4500 ⁴⁾¹⁰⁾	1PH7228-■ ■ B ■ ■ -■ ...	
1350	180	50 (67.1)	355 (262)	86	450	5000	3500 ⁴⁾	5000	1PH7184-■ ■ D ■ ■ -■ ...	
		67 (89.9)	475 (350)	114	460	5000	3500 ⁴⁾	5000	1PH7186-■ ■ D ■ ■ -■ ...	
	225	92 (123)	650 (479)	156	450	2900	3100 ⁴⁾	4500	1PH7224-■ ■ D ■ ■ -■ ...	
		120 (161)	847 (625)	193	460	2900	3100 ⁴⁾	4500	1PH7226-■ ■ D ■ ■ -■ ...	
		147 (197)	1043 (769)	232	460	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ D ■ ■ -■ ...	
2000	180	68 (91.2)	325 (240)	120	450	5000	3500 ⁴⁾	5000	1PH7184-■ ■ F ■ ■ -■ ...	
		94 (126)	450 (332)	165	445	5000	3500 ⁴⁾	5000	1PH7186-■ ■ F ■ ■ -■ ...	
	225	124 (166)	590 (435)	200	460	2900	3100 ⁴⁾	4500	1PH7224-■ ■ U ■ ■ -■ ...	
		153 (205)	730 (538)	254	450	2900	3100 ⁴⁾	4500	1PH7226-■ ■ F ■ ■ -■ ...	
		196 (263)	936 (690)	332	450	3000	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ F ■ ■ -■ ...	
2900	180	81 (109)	267 (197)	158	395	5000	3500 ⁴⁾	5000	1PH7184-■ ■ L ■ ■ -■ ...	
		101 (135)	333 (246)	206	385	5000	3500 ⁴⁾	5000	1PH7186-■ ■ L ■ ■ -■ ...	
	225	149 (200)	490 (361)	274	395	3500	3100 ⁴⁾	4500	1PH7224-■ ■ L ■ ■ -■ ...	
		185 (248)	610 (450)	348	390	3500	3100 ⁴⁾	4500	1PH7226-■ ■ L ■ ■ -■ ...	
		215 (288)	708 (522)	402	395	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7228-■ ■ L ■ ■ -■ ...	
Fans:			External fan unit, heavy-gauge threaded cable entry in terminal box Without external fan unit, for pipe connection, heavy-gauge threaded cable entry in terminal box External fan unit, metric cable entry in terminal box Without external fan unit, for pipe connection, metric cable entry in terminal box						2 6 7 8	
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver						A E H J M N R	
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver						F D Q P	
Terminal box/cable entry (view DE):			Top/from right Top/from DE Top/from NDE Top/from left						0 1 2 3	
Type:			IM B3 IM B3 IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 400, 1PH7186 with flange A 450, 1PH722. with flange A 550) IM B35 (only for 1PH7184 with flange A 450) IM B35 (only for 1PH7184 with flange A 450)						Hoisting system for different types (IM B6, IM B7, IM B8, IM V5, IM V6) Hoisting system for different types (IM V15, IM V35) Hoisting system for different types (IM V15, IM V35)	0 1 3 4 5 6
Holding brake with emergency stop function (suitable for coupling output in type IM B3) ⁵⁾ :			Without brake With brake (includes emergency release screws and microswitch) With brake (includes manual release and microswitch)						0 2 4	

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _r -in-s ²)	kg (lb)	Order No.	Rated out- put current I_{rated} A	Order No.
480 V 3 AC line voltage, Servo/Vector Control								
0.83	26	0.858	17.5	0.503 (4.45)	370 (816)	1PH7184- . . B . . . ■■■	60	6SL3120-1 TE26-0AA3
0.79	39.5	0.870	17.3	0.666 (5.89)	440 (970)	1PH7186- . . B . . . ■■■	85	6SL3120-1 TE28-5AA3
0.85	37.5	0.888	17.3	1.479 (13.9)	630 (1389)	1PH7224- . . B . . . ■■■	85 ⁹⁾	6SL3120-1 TE28-5AA3
0.85	50	0.900	17.3	1.930 (17.1)	750 (1654)	1PH7226- . . B . . . ■■■	132	6SL3120-1 TE31-3AA3
0.84	61.5	0.907	17.2	2.326 (20.6)	860 (1896)	1PH7228- . . B . . . ■■■	132 ⁹⁾	6SL3120-1 TE31-3AA3
0.81	42	0.928	45.8	0.503 (4.45)	370 (816)	1PH7184- . . D . . . ■■■	85 ⁹⁾	6SL3120-1 TE28-5AA3
0.79	59.5	0.930	45.7	0.666 (5.89)	440 (970)	1PH7186- . . D . . . ■■■	132	6SL3120-1 TE31-3AA3
0.80	78.5	0.942	45.6	1.479 (13.1)	630 (1389)	1PH7224- . . D . . . ■■■	200	6SL3120-1 TE32-0AA3
0.82	88.5	0.945	45.6	1.930 (17.1)	750 (1654)	1PH7226- . . D . . . ■■■	200	6SL3120-1 TE32-0AA3
0.84	99.5	0.947	45.6	2.326 (20.6)	860 (1896)	1PH7228- . . D . . . ■■■	260	6SL3320-1 TE32-6AA0
0.78	66	0.935	67.3	0.503 (4.45)	370 (816)	1PH7184- . . F . . . ■■■	132	6SL3120-1 TE31-3AA3
0.78	87	0.941	67.3	0.666 (5.89)	440 (970)	1PH7186- . . F . . . ■■■	200	6SL3120-1 TE32-0AA3
0.82	91	0.944	67.2	1.479 (13.1)	630 (1389)	1PH7224- . . U . . . ■■■	200	6SL3120-1 TE32-0AA3
0.82	119	0.948	67.2	1.930 (17.1)	750 (1654)	1PH7226- . . F . . . ■■■	260	6SL3320-1 TE32-6AA0
0.79	168	0.950	67.1	2.326 (20.6)	860 (1896)	1PH7228- . . F . . . ■■■	380	6SL3320-1 TE33-8AA0
0.80	77	0.934	97.4	0.503 (4.45)	370 (816)	1PH7184- . . L . . . ■■■	200	6SL3120-1 TE32-0AA3
0.78	107	0.936	97.3	0.666 (5.89)	440 (970)	1PH7186- . . L . . . ■■■	210	6SL3320-1 TE32-1AA0
0.84	115	0.946	97.3	1.479 (13.1)	630 (1389)	1PH7224- . . L . . . ■■■	310	6SL3320-1 TE33-1AA0
0.83	154	0.946	97.2	1.930 (17.1)	750 (1654)	1PH7226- . . L . . . ■■■	380	6SL3320-1 TE33-8AA0
0.82	188	0.954	97.2	2.326 (20.6)	860 (1896)	1PH7228- . . L . . . ■■■	490	6SL3320-1 TE35-0AA0
Output type:		Vibrat. magnitude:		Shaft and flange accuracy:				
Coupling		Grade R		Tolerance N		A B C D E F G H J		
Coupling		Grade R		Tolerance R				
Coupling		Grade S		Tolerance R				
Coupling		Grade SR		Tolerance R				
Belt		Grade R		Tolerance N				
Belt		Grade R		Tolerance R				
Increased cantil. forces		Grade R		Tolerance N				
Increased cantil. forces		Grade R		Tolerance R				
Increased max. speed ⁶⁾		Grade S		Tolerance R				
Shaft extension (DE):		Balancing:		Direction of air flow (fan):				
Fitted key		Half-key		DE → NDE		A B C D J K		
Fitted key		Half-key		NDE → DE ⁸⁾				
Fitted key		Full-key		DE → NDE				
Fitted key		Full-key		NDE → DE ⁸⁾				
Plain shaft		–		DE → NDE				
Plain shaft		–		NDE → DE ⁸⁾				
Seal:		Paint finish:						
–		Primed				0 2 3 5 6 8		
Flange/shaft seal ring ⁷⁾		Primed						
–		Anthracite RAL 7016, standard paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, standard paint finish						
–		Anthracite RAL 7016, special paint finish						
Flange/shaft seal ring ⁷⁾		Anthracite RAL 7016, special paint finish						
Special versions:		Specify suppl. order code and plain text if applicable (see Options).						–Z

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

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

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

⁴⁾ The speed is reduced for increased cantilever forces, see selection guides.

⁵⁾ Version with brake: 12th data position "0", 14th data position "A", 15th data position "A" or "B", 16th data position "0", "3" or "6".

⁶⁾ For axis height 180 $n_{\text{max}} = 7000$ rpm, 1PH7224 $n_{\text{max}} = 5500$ rpm, coupling output only possible and 16th data position "0", "3" or "6".

⁷⁾ Only appropriate if oil spray/mist occasionally gets onto the sealing ring. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased maximum speed, version for belt output or increased cantilever forces.

⁸⁾ Preferred direction of air flow in a polluted environment.

⁹⁾ The rated output current of the Motor Module is lower than the motor rated current.

¹⁰⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
480 V 3 AC line voltage, Servo/Vector Control												
600	280	95 (127)	1519 (1120)	144	480	2200	2200	3300 ⁶⁾	1PH7284-■ ■ B ■ ■ - 0 ...			
		120 (161)	1916 (1413)	180	480	2200	2200	3300 ⁶⁾	1PH7286-■ ■ B ■ ■ - 0 ...			
		155 (208)	2467 (1820)	233	480	2200	2200	3300 ⁶⁾	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	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	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 ...			
Fans ⁴⁾ :			External fan unit, NDE at top, air-flow direction NDE to DE External fan unit, NDE on right, air-flow direction NDE to DE External fan unit, NDE on left, air-flow direction NDE to DE External fan unit, DE at top, air-flow direction DE to NDE External fan unit, DE on right, air-flow direction DE to NDE External fan unit, DE on left, air-flow direction DE to NDE Without external fan unit, for single pipe connection at NDE on right						0 1 2 3 4 5 6			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver							A E H J M N R		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P		
Terminal box/cable entry (view DE) ⁴⁾ :			NDE right/from below/encoder connector DE NDE left/from below/encoder connector DE NDE top/from right/encoder connector DE DE top/from right/encoder connector NDE								0 1 2 5	
Type ⁴⁾ :			IM B3 IM V5 (can be subsequently modified to IM V6) IM B35 (with flange A 660) IM V15 (with flange A 660: can be subsequently modified to IM V35)								0 1 3 5	

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	Rated out- put current I_{rated} A	Order No.
480 V 3 AC line voltage, Servo/Vector Control								
0.86	61	0.932	20.3	4.2 (37.2)	1300 (2867)	1PH7284- . . B . . -0 ■■■	200	6SL3120-1TE32-0AA3
0.86	80	0.939	20.3	5.2 (46.0)	1500 (3308)	1PH7286- . . B . . -0 ■■■	200	6SL3120-1TE32-0AA3
0.86	102	0.941	20.3	6.3 (55.8)	1700 (3749)	1PH7288- . . B . . -0 ■■■	260	6SL3320-1TE32-6AA0
0.86	90	0.950	34	4.2 (37.2)	1300 (2867)	1PH7284- . . C . . -0 ■■■	260	6SL3320-1TE32-6AA0
0.84	135	0.954	34	5.2 (46.0)	1500 (3308)	1PH7286- . . C . . -0 ■■■	310	6SL3320-1TE33-1AA0
0.84	170	0.956	34	6.3 (55.8)	1700 (3749)	1PH7288- . . C . . -0 ■■■	380	6SL3320-1TE33-8AA0
0.82	159	0.958	45.3	4.2 (37.2)	1300 (2867)	1PH7284- . . D . . -0 ■■■	310 ⁵⁾	6SL3320-1TE33-1AA0
0.80	217	0.960	45.3	5.2 (46.0)	1500 (3308)	1PH7286- . . D . . -0 ■■■	490	6SL3320-1TE35-0AA0
0.82	250	0.962	45.3	6.3 (55.8)	1700 (3749)	1PH7288- . . D . . -0 ■■■	490 ⁵⁾	6SL3320-1TE35-0AA0
0.86	162	0.962	67	4.2 (37.2)	1300 (2867)	1PH7284- . . F . . -0 ■■■	490	6SL3320-1TE35-0AA0
0.87	182	0.964	67	5.2 (46.0)	1500 (3308)	1PH7286- . . F . . -0 ■■■	490	6SL3320-1TE35-0AA0
0.87	232	0.965	67	6.3 (55.8)	1700 (3749)	1PH7288- . . F . . -0 ■■■	605	6SL3320-1TE36-1AA0
Output type ⁴⁾ : Coupling Coupling Belt/increased cantilever forces Belt/increased cantilever forces		Vibrat. magnitude: Grade N Grade R Grade N Grade R	Shaft and flange accuracy: Tolerance N Tolerance R Tolerance N Tolerance R			A		
						B		
						E		
						F		
Shaft extension (DE): Fitted key Fitted key Plain shaft		Balancing: Half-key Full-key –				A		
						C		
						J		
Paint finish: Primed Anthracite RAL 7016, standard paint finish Anthracite RAL 7016, special paint finish						0		
						3		
						6		
Special versions:		Specify supplementary order code and plain text if applicable (see Options).						–Z

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

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

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

⁴⁾ See table "Permissible combinations of mechanical designs", page 5/33.

⁵⁾ The rated output current of the Motor Module is lower than the motor rated current.

⁶⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency $< 5 \times$ motor rated frequency.

Asynchronous motors

1PH7 motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height SH	Rated power	Rated torque	Rated current	Rated voltage	Speed during field weakening ¹⁾	Continuous speed, max. ²⁾	Speed, max. ³⁾	1PH7 asynchronous motor			
n_{rated} rpm		P_{rated} kW (HP)	M_{rated} Nm (lb _F -ft)	I_{rated} A	V_{rated} V	n_2 rpm	n_{S1} rpm	n_{max} rpm	Order No.			
690 V 3 AC line voltage, Servo/Vector Control												
500	280	77 (103)	1471 (1085)	80	690	1700	2200	3300 ⁶⁾	1PH7284-■ ■ B ■ ■ - 0 ...			
		96 (128)	1834 (1353)	101	690	1800	2200	3300 ⁶⁾	1PH7286-■ ■ B ■ ■ - 0 ...			
		125 (168)	2388 (1761)	130	690	1900	2200	3300 ⁶⁾	1PH7288-■ ■ B ■ ■ - 0 ...			
800	280	115 (154)	1373 (1013)	120	690	2200	2200	3300	1PH7284-■ ■ C ■ ■ - 0 ...			
		145 (194)	1731 (1277)	160	665	2200	2200	3300	1PH7286-■ ■ C ■ ■ - 0 ...			
		185 (248)	2208 (1629)	210	640	2200	2200	3300	1PH7288-■ ■ C ■ ■ - 0 ...			
1150	280	164 (220)	1362 (1005)	176	690	2200	2200	3300	1PH7284-■ ■ D ■ ■ - 0 ...			
		203 (272)	1686 (1244)	233	655	2200	2200	3300	1PH7286-■ ■ D ■ ■ - 0 ...			
		251 (337)	2084 (1537)	280	665	2200	2200	3300	1PH7288-■ ■ D ■ ■ - 0 ...			
1750	280	217 (291)	1184 (873)	221	690	2200	2200	3300	1PH7284-■ ■ F ■ ■ - 0 ...			
		261 (350)	1424 (1050)	262	690	2200	2200	3300	1PH7286-■ ■ F ■ ■ - 0 ...			
		329 (441)	1795 (1324)	330	690	2200	2200	3300	1PH7288-■ ■ F ■ ■ - 0 ...			
Fans ⁴⁾ :			External fan unit, NDE at top, air-flow direction NDE to DE External fan unit, NDE on right, air-flow direction NDE to DE External fan unit, NDE on left, air-flow direction NDE to DE External fan unit, DE at top, air-flow direction DE to NDE External fan unit, DE on right, air-flow direction DE to NDE External fan unit, DE on left, air-flow direction DE to NDE Without external fan unit, for single pipe connection at NDE on right						0 1 2 3 4 5 6			
Encoder systems for motors without DRIVE-CLiQ interface:			Without encoder Absolute encoder EnDat 2048 S/R Incremental encoder HTL 1024 S/R Incremental encoder HTL 2048 S/R Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks 2-pole resolver							A E H J M N R		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit absolute encoder single-turn + 12 bit multi-turn 22 bit incremental encoder with 11 bit commutation position 22 bit incremental encoder 14 bit resolver							F D Q P		
Terminal box/cable entry (view DE) ⁴⁾ :			NDE on right/from below/encoder connector DE NDE on left/from below/encoder connector DE NDE at top/from right/encoder connector DE DE at top/from right/encoder connector NDE								0 1 2 5	
Type ⁴⁾ :			IM B3 IM V5 (can be subsequently modified to IM V6) IM B35 (with flange A 660) IM V15 (with flange A 660; can be subsequently modified to IM V35)								0 1 3 5	

Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH7 asynchronous motor	SINAMICS S120 Motor Module
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	Rated out- put current I_{rated} A
							Order No.
690 V 3 AC line voltage, Servo/Vector Control							
0.87	34	0.923	17	4.2 (37.2)	1300 (2867)	1PH7284- . . B . . -0 ■■■	85 6SL3320-1TG28-5AA0
0.86	45	0.927	17	5.2 (46.0)	1500 (3308)	1PH7286- . . B . . -0 ■■■	100 ⁵⁾ 6SL3320-1TG31-0AA0
0.86	57	0.930	17	6.3 (55.8)	1700 (3749)	1PH7288- . . B . . -0 ■■■	150 6SL3320-1TG31-5AA0
0.85	55	0.943	27	4.2 (37.2)	1300 (2867)	1PH7284- . . C . . -0 ■■■	120 6SL3320-1TG31-2AA0
0.84	80	0.947	27	5.2 (46.0)	1500 (3308)	1PH7286- . . C . . -0 ■■■	175 6SL3320-1TG31-8AA0
0.84	100	0.950	27	6.3 (55.8)	1700 (3749)	1PH7288- . . C . . -0 ■■■	215 6SL3320-1TG32-2AA0
0.81	91	0.955	38.6	4.2 (37.2)	1300 (2867)	1PH7284- . . D . . -0 ■■■	175 ⁵⁾ 6SL3320-1TG31-8AA0
0.80	125	0.957	38.6	5.2 (46.0)	1500 (3308)	1PH7286- . . D . . -0 ■■■	260 6SL3320-1TG32-6AA0
0.81	145	0.959	38.6	6.3 (55.8)	1700 (3749)	1PH7288- . . D . . -0 ■■■	330 6SL3320-1TG33-3AA0
0.86	94	0.961	58.7	4.2 (37.2)	1300 (2867)	1PH7284- . . F . . -0 ■■■	260 6SL3320-1TG32-6AA0
0.87	105	0.963	58.7	5.2 (46.0)	1500 (3308)	1PH7286- . . F . . -0 ■■■	260 ⁵⁾ 6SL3320-1TG32-6AA0
0.86	134	0.964	58.7	6.3 (55.8)	1700 (3749)	1PH7288- . . F . . -0 ■■■	330 6SL3320-1TG33-3AA0
Output type ⁴⁾:		Vibrat. magnitude:		Shaft and flange accuracy:			
Coupling		Grade N		Tolerance N		A	
Coupling		Grade R		Tolerance R		B	
Belt/increased cantilever forces		Grade N		Tolerance N		E	
Belt/increased cantilever forces		Grade R		Tolerance R		F	
Shaft extension:		Balancing:				A	
Fitted key		Half-key				C	
Fitted key		Full-key				J	
Plain shaft		—					
Paint finish:						0	
Primed						3	
Anthracite RAL 7016, standard paint finish						6	
Special versions:		Specify additional short code and, if necessary, plain text (see options).				—Z	
		C30 absolutely essential					

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

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

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

⁴⁾ See table "Permissible combinations of mechanical designs", page 5/33.

⁵⁾ The rated output current is lower than the motor rated current.

⁶⁾ The speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

Asynchronous motors

Permissible combinations of mechanical designs for 1PH7 motors, shaft height 280

Selection and ordering data – supplements

Permissible combinations of mechanical designs

1PH728 . motors Shaft height 280

Position in
Order No. 8 9 10 11 12 13 14 15 16
1PH728 . - ■ . . . ■ . . . ■ . . .

Permissible combinations of mechanical designs

External fan unit
8th position in Order No.
1PH728 . - ■

Order No. supplement

0	1	2	3	4	5	6
NDE at top NDE → DE	NDE on right NDE → DE	NDE on left NDE → DE	DE at top DE → NDE	DE on right DE → NDE	DE on left DE → NDE	Single pipe connection NDE on right (can be modified subseq. to NDE left)

1PH728 0 - Type IM B3

1PH728 1 - Type IM V5
(can be modified
subsequently to IM V6)

1PH728 3 - Type IM B35

1PH728 5 - Type IM V15
(can be modified
subsequently to IM V35)

Order codes for options

R1Y Standard finish RAL ...

R2Y Special finish RAL ...

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)

K31 Second rating plate

K45 230 V standstill heating

C30 690 V version

Y55 Non-standard shaft extension DE

Y80 Different rating plate data ¹⁾

Y82 Extra rating plate with customer data ¹⁾

M83 Additional thread for a setting screw on motor feet

Standard design

Released supplementary versions

¹⁾ Plain text required

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