

Asynchronous motors

1PH4 motors Water cooling

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⁾	1PH4 asynchronous motor ⁴⁾
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									
1500	100	7.5 (10.1)	48 (35.4)	20.5	350	3200	5600	7500 ⁶⁾	1PH4103-4 ■ F 5 6
		11 (14.8)	70 (51.6)	28	350	2900	5600	7500 ⁶⁾	1PH4105-4 ■ F 5 6
		14 (18.8)	89 (65.6)	35.5	350	3150	5600	7500 ⁶⁾	1PH4107-4 ■ F 5 6
	132	15 (20.1)	95 (70.1)	35	350	2200	5200	6700	1PH4133-4 ■ F 5 6
		22 (29.5)	140 (103)	52	350	2600	5200	6700	1PH4135-4 ■ F 5 6
		27 (36.2)	172 (127)	62	350	2450	5200	6700	1PH4137-4 ■ F 5 6
	160	37 (49.6)	236 (174)	89	350	3000	4000	5300	1PH4163-4 ■ F 5 6
		46 (61.7)	293 (216)	107	350	2850	4000	5300	1PH4167-4 ■ F 5 6
		52 (69.7)	331 (224)	117	350	2700	4000	5300	1PH4168-4 ■ F 5 6
Encoder systems for motors without DRIVE-CLiQ interface:			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						E H J M N
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						F D Q

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Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	1PH4 asynchronous motor ⁴⁾	SINAMICS S120 Motor Module	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _T -in-s ²)	kg (lb)	Order No.	Rated output current I_{rated} A	Order No.
400 V 3 AC line voltage, Servo Control								
0.74	12	0.820	52.8	0.017 (0.15)	52 (115)	1PH4103-4 . F 5 6	18 ⁵⁾	6SL3120-1 T E21-8AA3
0.78	13.5	0.836	52.9	0.024 (0.21)	67 (148)	1PH4105-4 . F 5 6	30	6SL3120-1 T E23-0AA3
0.77	18.5	0.851	52.5	0.031 (0.27)	80 (176)	1PH4107-4 . F 5 6	45	6SL3120-1 T E24-5AA3
0.81	13	0.877	51.8	0.046 (0.41)	90 (198)	1PH4133-4 . F 5 6	45	6SL3120-1 T E24-5AA3
0.79	24	0.890	51.4	0.071 (0.63)	112 (247)	1PH4135-4 . F 5 6	60	6SL3120-1 T E26-0AA3
0.81	24	0.895	51.5	0.085 (0.75)	130 (287)	1PH4137-4 . F 5 6	60 ⁵⁾	6SL3120-1 T E26-0AA3
0.77	45	0.905	50.9	0.170 (1.5)	175 (386)	1PH4163-4 . F 5 6	85 ⁵⁾	6SL3120-1 T E28-5AA3
0.79	48	0.910	51.0	0.206 (1.82)	210 (463)	1PH4167-4 . F 5 6	132	6SL3120-1 T E31-3AA3
0.81	48	0.913	51.0	0.220 (1.95)	240 (529)	1PH4168-4 . F 5 6	132	6SL3120-1 T E31-3AA3
Special versions:		Specify supplementary order code and plain text if applicable (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⁾ Standard version with duplex bearing.

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.

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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⁾	1PH4 asynchronous motor ⁴⁾
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	8.8 (11.8)	48 (35.4)	20.5	400	3750	5600	7500 ⁶⁾	1PH4103-4 ■ F 5 6
		12.8 (17.2)	70 (51.6)	28	400	3450	5600	7500 ⁶⁾	1PH4105-4 ■ F 5 6
		16.3 (21.9)	89 (65.6)	35.5	400	3700	5600	7500 ⁶⁾	1PH4107-4 ■ F 5 6
	132	17.5 (23.5)	96 (70.8)	35.5	400	2550	5200	6700	1PH4133-4 ■ F 5 6
		25.5 (34.2)	139 (103)	52	400	3000	5200	6700	1PH4135-4 ■ F 5 6
		31.5 (42.2)	172 (127)	63	400	2800	5200	6700	1PH4137-4 ■ F 5 6
	160	43 (57.7)	235 (173)	88	400	3400	4000	5300	1PH4163-4 ■ F 5 6
		54 (72.4)	295 (218)	107	400	3200	4000	5300	1PH4167-4 ■ F 5 6
		61 (81.8)	333 (246)	117	400	3050	4000	5300	1PH4168-4 ■ F 5 6

Encoder systems for motors without DRIVE-CLiQ interface:

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

**E
H
J
M
N**

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

**F
D
Q**

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Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated frequency	Moment of inertia	Weight, approx.	1PH4 asynchronous motor ⁴⁾	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 output current I_{rated} A	Order No.
400 V 3 AC line voltage, Vector Control								
0.75	11.5	0.841	61.2	0.017 (0.15)	52 (115)	1PH4103-4 . F 5 6	18 ⁵⁾	6SL3120-1 TE21-8AA3
0.78	13.5	0.854	61.3	0.024 (0.21)	67 (148)	1PH4105-4 . F 5 6	30	6SL3120-1 TE23-0AA3
0.78	18	0.867	61.0	0.031 (0.27)	80 (176)	1PH4107-4 . F 5 6	45	6SL3120-1 TE24-5AA3
0.82	12	0.887	60.2	0.046 (0.41)	90 (198)	1PH4133-4 . F 5 6	45	6SL3120-1 TE24-5AA3
0.79	22	0.901	59.8	0.071 (0.63)	112 (247)	1PH4135-4 . F 5 6	60	6SL3120-1 TE26-0AA3
0.81	23	0.905	59.9	0.085 (0.75)	130 (287)	1PH4137-4 . F 5 6	60 ⁵⁾	6SL3120-1 TE26-0AA3
0.78	42	0.914	59.3	0.170 (1.5)	175 (386)	1PH4163-4 . F 5 6	85 ⁵⁾	6SL3120-1 TE28-5AA3
0.80	44	0.920	59.4	0.206 (1.82)	210 (463)	1PH4167-4 . F 5 6	132	6SL3120-1 TE31-3AA3
0.82	43	0.921	59.4	0.220 (1.95)	240 (529)	1PH4168-4 . F 5 6	132	6SL3120-1 TE31-3AA3
Special versions:		Specify supplementary order code and plain text if applicable (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⁾ Standard version with duplex bearing.

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.

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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⁾	1PH4 asynchronous motor ⁴⁾
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	9.5 (12.7)	45 (32.2)	19.5	450	4850	5600	7500 ⁶⁾	1PH4103- 4 ■ F 5 6
		14 (18.8)	67 (49.4)	26.5	450	4450	5600	7500 ⁶⁾	1PH4105- 4 ■ F 5 6
		18 (24.1)	86 (63.4)	34.5	450	4700	5600	7500 ⁶⁾	1PH4107- 4 ■ F 5 6
	132	19 (25.5)	91 (67.1)	33.5	450	3300	5200	6700	1PH4133- 4 ■ F 5 6
		28 (37.6)	134 (98.8)	50	450	3720	5200	6700	1PH4135- 4 ■ F 5 6
		34 (45.6)	162 (120)	59	450	3600	5200	6700	1PH4137- 4 ■ F 5 6
	160	47 (63.0)	224 (165)	84	450	4300	4000	5300	1PH4163- 4 ■ F 5 6
		58 (77.8)	277 (204)	101	450	3980	4000	5300	1PH4167- 4 ■ F 5 6
		65 (87.2)	310 (289)	110	450	3750	4000	5300	1PH4168- 4 ■ F 5 6
Encoder systems for motors without DRIVE-CLiQ interface:			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						E H J M N
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						F D Q

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Selection and ordering data

Power factor	Magne- tizing current	Efficiency	Rated fre- quency	Moment of inertia	Weight, approx.	1PH4 asynchronous motor ⁴⁾	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 output current I_{rated} A	Order No.
480 V 3 AC line voltage, Servo/Vector Control								
0.74	11.2	0.856	69.3	0.017 (0.15)	52 (115)	1PH4 103- 4 . F 5 6	18 ⁵⁾	6SL3120- ■ TE21-8AA3
0.79	12.9	0.870	69.4	0.024 (0.21)	67 (148)	1PH4 105- 4 . F 5 6	30	6SL3120-1 TE23-0AA3
0.78	17.1	0.879	69.1	0.031 (0.27)	80 (176)	1PH4 107- 4 . F 5 6	45	6SL3120-1 TE24-5AA3
0.83	11.9	0.899	68.4	0.046 (0.41)	90 (198)	1PH4 133- 4 . F 5 6	45	6SL3120-1 TE24-5AA3
0.80	21.5	0.909	68.1	0.071 (0.63)	112 (247)	1PH4 135- 4 . F 5 6	60	6SL3120-1 TE26-0AA3
0.83	22.1	0.914	68.1	0.085 (0.75)	130 (287)	1PH4 137- 4 . F 5 6	60	6SL3120-1 TE26-0AA3
0.79	39.7	0.923	67.6	0.170 (1.5)	175 (386)	1PH4 163- 4 . F 5 6	85	6SL3120-1 TE28-5AA3
0.81	42.6	0.926	67.6	0.206 (1.82)	210 (463)	1PH4 167- 4 . F 5 6	132	6SL3120-1 TE31-3AA3
0.83	41	0.928	67.6	0.220 (1.95)	240 (529)	1PH4 168- 4 . F 5 6	132	6SL3120-1 TE31-3AA3
Special versions:						Specify supplementary order code and plain text if applicable (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.

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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.