

AC motors

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⁾	Max. permissible continuous speed ²⁾	Max. speed ³⁾	1PH4 asynchronous motor ⁴⁾
n_{rated} rpm		P_{rated} kW/HP	M_{rated} Nm/lb _r -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	35	350	2200	5200	6700	1PH4133-4 ■ F 5 6
		22/29.5	140/103.2	52	350	2600	5200	6700	1PH4135-4 ■ F 5 6
		27/36.2	172/126.8	62	350	2450	5200	6700	1PH4137-4 ■ F 5 6
	160	37/49.6	236/173.9	89	350	3000	4000	5300	1PH4163-4 ■ F 5 6
		46/61.7	293/215.9	107	350	2850	4000	5300	1PH4167-4 ■ F 5 6
		52/69.7	331/243.9	117	350	2700	4000	5300	1PH4168-4 ■ F 5 6
Encoder systems for motors without DRIVE-CLiQ interface:								E H J M N	
Absolute encoder EnDat 2048 pulses/revolution									
Incremental encoder HTL 1024 pulses/revolution									
Incremental encoder HTL 2048 pulses/revolution									
Incremental encoder sin/cos 1 V _{pp} with C and D tracks									
Incremental encoder sin/cos 1 V _{pp} without C and D tracks								F D Q	
Encoder systems for motors with DRIVE-CLiQ interface:									
Absolute encoder EnDat 2048 pulses/revolution									
Incremental encoder sin/cos 1 V _{pp} with C and D tracks									
Incremental encoder sin/cos 1 V _{pp} without C and D tracks									

Selection and ordering data

Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia of	Weight, approx.	1PH4 asynchronous motor ⁴⁾	SINAMICS S120 Motor Module Rated output current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² / lb _F -in-s ²	kg/lb	Order No.	I_{rated} A	Order No.
400 V 3 AC line voltage, Servo Control								
0.74	12	0.820	52.8	0.017/0.15	52/114.66	1PH4103-4 . F 5 6	18 ⁵⁾	6SL3120-1 T E21-8AA 1
0.78	13.5	0.836	52.9	0.024/0.212	67/147.74	1PH4105-4 . F 5 6	30	6SL3120-1 T E23-0AA 1
0.77	18.5	0.851	52.5	0.031/0.274	80/176.4	1PH4107-4 . F 5 6	45	6SL3120-1 T E24-5AA 1
0.81	13	0.877	51.8	0.046/0.407	90/198.45	1PH4133-4 . F 5 6	45	6SL3120-1 T E24-5AA 1
0.79	24	0.890	51.4	0.071/0.628	112/246.96	1PH4135-4 . F 5 6	60	6SL3120-1 T E26-0AA 1
0.81	24	0.895	51.5	0.085/0.752	130/286.65	1PH4137-4 . F 5 6	60 ⁵⁾	6SL3120-1 T E26-0AA 1
0.77	45	0.905	50.9	0.10/1.505	175/385.88	1PH4163-4 . F 5 6	85 ⁵⁾	6SL3120-1 T E28-5AA 1
0.79	48	0.910	51.0	0.206/1.823	210/463.05	1PH4167-4 . F 5 6	132	6SL3120-1 T E31-3AA 0
0.81	48	0.913	51.0	0.220/1.947	240/529.2	1PH4168-4 . F 5 6	132	6SL3120-1 T E31-3AA 0
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 0

- 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 design with duplex bearing.
- ⁵⁾ The rated output current of the Motor Module is lower than the motor rated current.
- ⁶⁾ Speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × 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⁾	Max. permissible continuous speed ²⁾	Max. speed 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	139/102.4	52	400	3000	5200	6700	1PH4135-4 ■ F 5 6
		31.5/42.2	172/126.8	63	400	2800	5200	6700	1PH4137-4 ■ F 5 6
	160	43/57.7	235/173.2	88	400	3400	4000	5300	1PH4163-4 ■ F 5 6
		54/72.4	295/217.4	107	400	3200	4000	5300	1PH4167-4 ■ F 5 6
		61/81.8	333/245.4	117	400	3050	4000	5300	1PH4168-4 ■ F 5 6
Encoder systems for motors without DRIVE-CLiQ interface:			Absolute encoder EnDat 2048 pulses/revolution Incremental encoder HTL 1024 pulses/revolution Incremental encoder HTL 2048 pulses/revolution 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:			Absolute encoder EnDat 2048 pulses/revolution Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks						F D Q

Selection and ordering data

Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia of	Weight, approx.	1PH4 asynchronous motor 1PH4 ⁴⁾	SINAMICS S120 Motor Module Rated output current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² / lb _T -in-s ²	kg/lb	Order No.	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	52/114.66	1PH4103-4 . F 5 6	18 ⁵⁾	6SL3120-1 TE21-8AA 1
0.78	13.5	0.854	61.3	0.024/0.212	67/147.74	1PH4105-4 . F 5 6	30	6SL3120-1 TE23-0AA 1
0.78	18	0.867	61.0	0.031/0.274	80/176.4	1PH4107-4 . F 5 6	45	6SL3120-1 TE24-5AA 1
0.82	12	0.887	60.2	0.046/0.407	90/198.45	1PH4133-4 . F 5 6	45	6SL3120-1 TE24-5AA 1
0.79	22	0.901	59.8	0.071/0.628	112/246.96	1PH4135-4 . F 5 6	60	6SL3120-1 TE26-0AA 1
0.81	23	0.905	59.9	0.085/0.752	130/286.65	1PH4137-4 . F 5 6	60 ⁵⁾	6SL3120-1 TE26-0AA 1
0.78	42	0.914	59.3	0.170/1.505	175/385.88	1PH4163-4 . F 5 6	85 ⁵⁾	6SL3120-1 TE28-5AA 1
0.80	44	0.920	59.4	0.206/1.823	210/463.05	1PH4167-4 . F 5 6	132	6SL3120-1 TE31-3AA 0
0.82	43	0.921	59.4	0.220/1.947	240/529.2	1PH4168-4 . F 5 6	132	6SL3120-1 TE31-3AA 0
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 0

- 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 design with duplex bearing.
- 5) The rated output current of the Motor Module is lower than the motor rated current.
- 6) Speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.

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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	45/33.2	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	162/119.4	59	450	3600	5200	6700	1PH4137-4 ■ F 5 6
	160	47/63.0	224/165.1	84	450	4300	4000	5300	1PH4163-4 ■ F 5 6
		58/77.8	277/204.1	101	450	3980	4000	5300	1PH4167-4 ■ F 5 6
		65/87.2	310/228.5	110	450	3750	4000	5300	1PH4168-4 ■ F 5 6
Encoder systems for motors without DRIVE-CLiQ interface:			Absolute encoder EnDat 2048 pulses/revolution Incremental encoder HTL 1024 pulses/revolution Incremental encoder HTL 2048 pulses/revolution 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:			Absolute encoder EnDat 2048 pulses/revolution Incremental encoder sin/cos 1 V _{pp} with C and D tracks Incremental encoder sin/cos 1 V _{pp} without C and D tracks						F D Q

Selection and ordering data

Power factor	Magnetizing current	Efficiency	Rated frequency	Moment of inertia of	Weight, approx.	1PH4 asynchronous motor 1PH4 ⁴⁾	SINAMICS S120 Motor Module Rated output current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² /lb _F -in-s ²	kg/lb	Order No.	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	52/114.66	1PH4 103- 4 . F 5 6	18 ⁵⁾	6SL3120-■TE21-8AA ■
0.79	12.9	0.870	69.4	0.024/0.212	67/147.74	1PH4 105- 4 . F 5 6	30	6SL3120-1 TE23-0AA 1
0.78	17.1	0.879	69.1	0.031/0.274	80/176.4	1PH4 107- 4 . F 5 6	45	6SL3120-1 TE24-5AA 1
0.83	11.9	0.899	68.4	0.046/0.407	90/198.45	1PH4 133- 4 . F 5 6	45	6SL3120-1 TE24-5AA 1
0.80	21.5	0.909	68.1	0.071/0.628	112/246.96	1PH4 135- 4 . F 5 6	60	6SL3120-1 TE26-0AA 1
0.83	22.1	0.914	68.1	0.085/0.752	130/286.65	1PH4 137- 4 . F 5 6	60	6SL3120-1 TE26-0AA 1
0.79	39.7	0.923	67.6	0.170/1.505	175/385.88	1PH4 163- 4 . F 5 6	85	6SL3120-1 TE28-5AA 1
0.81	42.6	0.926	67.6	0.206/1.823	210/463.05	1PH4 167- 4 . F 5 6	132	6SL3120-1 TE31-3AA 0
0.83	41	0.928	67.6	0.220/1.947	240/529.2	1PH4 168- 4 . F 5 6	132	6SL3120-1 TE31-3AA 0
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 0

- ¹⁾ n_2 : Max. permissible thermal speed at constant output or speed, which is at the voltage limit when $P = P_{\text{rated}}$.
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- ⁶⁾ Speed is limited to lower values in some cases. The following restriction applies: Max. output frequency < 5 × motor rated frequency.