

Asynchronous motors

Main spindle motors for SINAMICS S120

1PM4/1PM6 standard type motors
SH 100/SH 132

Selection and Ordering Data

Shaft height	Rated speed		Con- tinu- ous speed, max.	Speed, max. ¹⁾ n_{max}	Rated power for star $n_{\text{ratedY}} = 1\,500\text{ rpm}$		Rated power for delta $n_{\text{rated}\Delta} = 4\,000\text{ rpm}$		1PM4 asynchronous motor with hollow shaft Standard type	1PM6 asynchronous motor with hollow shaft Standard type					
SH	star	delta			n_{S1cont}	P_{rated} S1 kW (HP)	P_{rated} S6-40 % kW (HP)	P_{rated} S1 kW (HP)			P_{rated} S6-40 % kW (HP)				
	rpm	rpm	rpm	rpm					Order No.	Order No.					
										<i>Oil cooling²⁾</i>	<i>Forced ventilation</i>				
100	1 500	4 000	12 000	12 000	3.7 (4.96)	5.25 (7.04)	3.7 (4.96)	6 (8.05)	1PM4101 - 2 F86 - 1 S1	1PM6101 - 2 F8 - 1 - 1 - 1					
	1 500	4 000	18 000	18 000	3.7 (4.96)	5.25 (7.04)	3.7 (4.96)	6 (8.05)	1PM4101 - 2L F86 - 1 S1 ³⁾	1PM6101 - 2L F8 - 1 - 1 - 1 ³⁾					
	1 500	4 000	12 000	12 000	7.5 (10.1)	11 (14.8)	7.5 (10.1)	13 (17.4)	1PM4105 - 2 F86 - 1 S1	1PM6105 - 2 F8 - 1 - 1 - 1					
	1 500	4 000	18 000	18 000	7.5 (10.1)	11 (14.8)	7.5 (10.1)	13 (17.4)	1PM4105 - 2L F86 - 1 S1 ³⁾	1PM6105 - 2L F8 - 1 - 1 - 1 ³⁾					
132	1 500	4 000	10 000	10 500	11 (14.8)	16.5 (22.1)	11 (14.8)	19.5 (26.1)	1PM4133 - 2 F86 - 1 S1	1PM6133 - 2 F8 - 1 - 1 - 1					
	1 500	4 000	15 000	15 000	11 (14.8)	16.5 (22.1)	11 (14.8)	19.5 (26.1)	1PM4133 - 2L F86 - 1 S1 ³⁾	1PM6133 - 2L F8 - 1 - 1 - 1 ³⁾					
	1 500	4 000	10 000	10 500	18.5 (24.8)	28 (37.5)	18.5 (24.8)	32 (42.9)	1PM4137 - 2 F86 - 1 S1	1PM6137 - 2 F8 - 1 - 1 - 1					
	1 500	4 000	12 000	12 000	18.5 (24.8)	28 (37.5)	18.5 (24.8)	32 (42.9)	1PM4137 - 2L F86 - 1 S1 ³⁾	1PM6137 - 2L F8 - 1 - 1 - 1 ³⁾					
	1 500	4 000	10 000	10 500	22 (29.5)	33 (44.3)	22 (29.5)	39 (52.3)	–	1PM6138 - 2 F8 - 1 - 1 - 1					
	1 500	4 000	11 000	11 000	22 (29.5)	33 (44.3)	22 (29.5)	39 (52.3)	–	1PM6138 - 2L F8 - 1 - 1 - 1 ³⁾					
										<i>Water cooling⁴⁾</i>					
100	1 500		12 000	12 000	5 (6.71)	6.5 (8.72)	–	–	1PM4101 - 2 W26 - 1 S1						
	1 500		18 000	18 000	5 (6.71)	6.5 (8.72)	–	–	1PM4101 - 2 W26 - 1 S1 ³⁾						
	1 500		12 000	12 000	11 (14.8)	14.75 (19.8)	–	–	1PM4105 - 2 W26 - 1 S1						
	1 500		18 000	18 000	11 (14.8)	14.75 (19.8)	–	–	1PM4105 - 2 W26 - 1 S1 ³⁾						
132	1 500		10 000	10 500	15 (20.1)	21 (28.2)	–	–	1PM4133 - 2 W26 - 1 S1						
	1 500		15 000	15 000	15 (20.1)	21 (28.2)	–	–	1PM4133 - 2 W26 - 1 S1 ³⁾						
	1 500		10 000	10 500	27 (36.2)	38 (51.0)	–	–	1PM4137 - 2 W26 - 1 S1						
	1 500		12 000	12 000	27 (28.2)	38 (51.0)	–	–	1PM4137 - 2 W26 - 1 S1 ³⁾						
Encoder system for motors without DRIVE-CLiQ interface:					Incremental encoder sin/cos 1 V _{pp} , 256 S/R				L			L			
Encoder system for motors with DRIVE-CLiQ interface:					Incremental encoder 19 bit				V			V			
Type:					IM B35, IM V15, IM V35							IM B5 IM V1 IM V3	1 4 5		
Fans:									A B C D						
Without fan combined with terminal box/metric cable entry					Top/right Top/DE Top/NDE Top/left										
Axial fan/Blow-out direction below/Direction of air flow DE → NDE combined with terminal box/metric cable entry													Top/from right Top/from DE Top/from NDE Top/from left	A B C D	R R R R
Radial fan/Blow-out direction NDE/Direction of air flow DE → NDE combined with terminal box/metric cable entry													Right side/below Right side/DE Right side/NDE ⁵⁾	E F G	D D D

To select the type and the degree of protection, see Selection guides.

¹⁾ For continuous duty (with 30 % n_{max} , 60 % $\frac{2}{3} n_{max}$, 10 % standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see 1PM Motors Configuration Manual.

²⁾ Star/delta changeover.

³⁾ With option L37: Version for increased maximum speed.

⁴⁾ Only star connection possible.

⁵⁾ For 1PM6101 and 1PM6105 only.

⁶⁾ Version for increased maximum speeds includes vibration magnitude grade SR. The following options are not possible:

- Shaft seal.

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SH 100/SH 132

Selection and Ordering Data

Motor type (continued)	Rated torque for star		Rated torque for delta		Moment of inertia	Weight, approx.		Rated current for star		SINAMICS S120 Motor Module	
						1PM4	1PM6			Required rated output current	Booksize format
	M_{rated}		M_{rated}		J	m	m	I_{rated}		I_{rated}	
	S1	S6-40 %	S1	S6-40 %				S1	S6-40 %	S1	
	Nm (lb _f -ft)	Nm (lb _f -ft)	Nm (lb _f -ft)	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	kg (lb)	A	A	A	Order No.

1PM .101- ...	24 (17.7)	33 (24.3)	9 (6.64)	14 (10.3)	0.011 (0.10)	42 (92.6)	45 (99.2)	13	17.5	18	6SL312 - TE21-8AA3
1PM .101-2L... ³⁾	24 (17.7)	33 (24.3)	9 (6.64)	14 (10.3)	0.011 (0.10)	42 (92.6)	45 (99.2)	13	17.5	18	6SL312 - TE21-8AA3
1PM .105- ...	48 (35.4)	70 (51.6)	18 (13.3)	31 (22.9)	0.024 (0.21)	67 (148)	70 (154)	23	31	30	6SL312 - 1TE23-0AA3
1PM .105-2L... ³⁾	48 (35.4)	70 (51.6)	18 (13.3)	31 (22.9)	0.024 (0.21)	67 (148)	70 (154)	23	31	30	6SL312 - 1TE23-0AA3
1PM .133- ...	70 (51.6)	105 (77.4)	26 (19.2)	47 (34.7)	0.046 (0.41)	90 (198)	94 (207)	41	58	45	6SL312 - 1TE24-5AA3
1PM .133-2L... ³⁾	70 (51.6)	105 (77.4)	26 (19.2)	47 (34.7)	0.046 (0.41)	90 (198)	94 (207)	41	58	45	6SL312 - 1TE24-5AA3
1PM .137- ...	118 (87.0)	178 (131)	44 (32.5)	76 (56.1)	0.085 (0.75)	130 (287)	135 (298)	56	79	60	6SL312 - 1TE26-0AA3
1PM .137-2L... ³⁾	118 (87.0)	178 (131)	44 (32.5)	76 (56.1)	0.085 (0.75)	130 (287)	135 (298)	56	79	60	6SL312 - 1TE26-0AA3
1PM6138- ...	140 (103)	210 (155)	53 (39.1)	93 (68.6)	0.104 (0.92)	–	156 (344)	58	80	60	6SL312 - 1TE26-0AA3
1PM6138-2L... ³⁾	140 (103)	210 (155)	53 (39.1)	93 (68.6)	0.104 (0.92)	–	156 (344)	58	80	60	6SL312 - 1TE26-0AA3

1PM4101- ...	32 (23.6)	41 (30.2)	–	–	0.011 (0.10)	42 (92.6)	–	18	22.5	18	6SL312 - TE21-8AA3
1PM4101- ... ³⁾	32 (23.6)	41 (30.2)	–	–	0.011 (0.10)	42 (92.6)	–	18	22.5	18	6SL312 - TE21-8AA3
1PM4105- ...	70 (51.6)	94 (69.3)	–	–	0.024 (0.21)	67 (148)	–	38	47	45	6SL312 - 1TE24-5AA3
1PM4105- ... ³⁾	70 (51.6)	94 (69.3)	–	–	0.024 (0.21)	67 (148)	–	38	47	45	6SL312 - 1TE24-5AA3
1PM4133- ...	95 (70.1)	134 (98.8)	–	–	0.046 (0.41)	90 (198)	–	55	74	60	6SL312 - 1TE26-0AA3
1PM4133- ... ³⁾	95 (70.1)	134 (98.8)	–	–	0.046 (0.41)	90 (198)	–	55	74	60	6SL312 - 1TE26-0AA3
1PM4137- ...	172 (127)	242 (178)	–	–	0.085 (0.75)	130 (287)	–	85	114	85	6SL312 - 1TE28-5AA3
1PM4137- ... ³⁾	172 (127)	242 (178)	–	–	0.085 (0.75)	130 (287)	–	85	114	85	6SL312 - 1TE28-5AA3

Cooling:

Internal air cooling
External air cooling

0
1

Motor Module:

Single Motor Module
Double Motor Module

1
2

Options

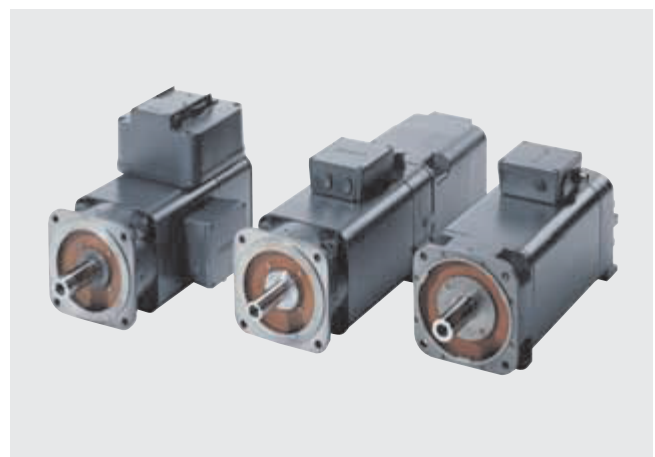
Designation	Order code
Speed⁶⁾ • With increased maximum speed	L37

When ordering a motor with options, **-Z** should be added to the order number and the order code should also be specified for each additional required version.

Order codes must not be repeated in plain text in the order.

Order No. **1PM4101-2LF86-1AS1-Z**

Order code **L37**



1PM6 motor (radial fan), 1PM6 motor (axial fan) and 1PM4 motor (liquid-cooled)