

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		Contin- uous speed, max.		Speed, max. ¹⁾		Rated power for star $n_{rated\gamma} = 1500$ rpm		Rated power for delta $n_{rated\Delta} = 4000$ rpm		1PM4 asynchronous motor with hollow shaft	1PM6 asynchronous motor with hollow shaft
SH	star	delta	n_{S1cont}	n_{max}	P_{rated}	P_{rated}	S1	S6-40%	S1	S6-40%	Order No. Standard type	Order No. Standard type
	rpm	rpm	rpm	rpm	kW (HP)	kW (HP)			kW (HP)	kW (HP)		
100	1500	4000	12000	12000	3.7 (4.96)	5.25 (7.04)	3.7 (4.96)	6 (8.05)	3.7 (4.96)	6 (8.05)	1PM4101 - 2 F86 - 1 S1	1PM6101 - 2 F8 - 1 S1
	1500	4000	18000	18000	3.7 (4.96)	5.25 (7.04)	3.7 (4.96)	6 (8.05)	3.7 (4.96)	6 (8.05)	1PM4101 - 2 L F86 - 1 S1³⁾	1PM6101 - 2 L F8 - 1 S1³⁾
	1500	4000	12000	12000	7.5 (10.1)	11 (14.8)	7.5 (10.1)	13 (17.4)	7.5 (10.1)	13 (17.4)	1PM4105 - 2 F86 - 1 S1	1PM6105 - 2 F8 - 1 S1
	1500	4000	18000	18000	7.5 (10.1)	11 (14.8)	7.5 (10.1)	13 (17.4)	7.5 (10.1)	13 (17.4)	1PM4105 - 2 L F86 - 1 S1³⁾	1PM6105 - 2 L F8 - 1 S1³⁾
132	1500	4000	10000	10500	11 (14.8)	16.5 (22.1)	11 (14.8)	19.5 (26.1)	11 (14.8)	19.5 (26.1)	1PM4133 - 2 F86 - 1 S1	1PM6133 - 2 F8 - 1 S1
	1500	4000	15000	15000	11 (14.8)	16.5 (22.1)	11 (14.8)	19.5 (26.1)	11 (14.8)	19.5 (26.1)	1PM4133 - 2 L F86 - 1 S1³⁾	1PM6133 - 2 L F8 - 1 S1³⁾
	1500	4000	10000	10500	18.5 (24.8)	28 (37.5)	18.5 (24.8)	32 (42.9)	18.5 (24.8)	32 (42.9)	1PM4137 - 2 F86 - 1 S1	1PM6137 - 2 F8 - 1 S1
	1500	4000	12000	12000	18.5 (24.8)	28 (37.5)	18.5 (24.8)	32 (42.9)	18.5 (24.8)	32 (42.9)	1PM4137 - 2 L F86 - 1 S1³⁾	1PM6137 - 2 L F8 - 1 S1³⁾
	1500	4000	10000	10500	22 (29.5)	33 (44.3)	22 (29.5)	39 (52.3)	22 (29.5)	39 (52.3)	—	1PM6138 - 2 F8 - 1 S1
	1500	4000	11000	11000	22 (29.5)	33 (44.3)	22 (29.5)	39 (52.3)	22 (29.5)	39 (52.3)	—	1PM6138 - 2 L F8 - 1 S1³⁾
	1500	4000	10000	10500	15 (20.1)	21 (28.2)	—	—	—	—	1PM4133 - 2 W26 - 1 S1	
	1500	4000	15000	15000	15 (20.1)	21 (28.2)	—	—	—	—	1PM4133 - 2 W26 - 1 S1³⁾	
100	1500		12000	12000	5 (6.71)	6.5 (8.72)	—	—	—	—	1PM4101 - 2 W26 - 1 S1	
	1500		18000	18000	5 (6.71)	6.5 (8.72)	—	—	—	—	1PM4101 - 2 W26 - 1 S1³⁾	
	1500		12000	12000	11 (14.8)	14.75 (19.8)	—	—	—	—	1PM4105 - 2 W26 - 1 S1	
	1500		18000	18000	11 (14.8)	14.75 (19.8)	—	—	—	—	1PM4105 - 2 W26 - 1 S1³⁾	
132	1500		10000	10500	15 (20.1)	21 (28.2)	—	—	—	—	1PM4133 - 2 W26 - 1 S1	
	1500		15000	15000	15 (20.1)	21 (28.2)	—	—	—	—	1PM4133 - 2 W26 - 1 S1³⁾	
	1500		10000	10500	27 (36.2)	38 (51.0)	—	—	—	—	1PM4137 - 2 W26 - 1 S1	
	1500		12000	12000	27 (36.2)	38 (51.0)	—	—	—	—	1PM4137 - 2 W26 - 1 S1³⁾	
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: Without fan combined with terminal box/metric cable entry					Top/right Top/DE Top/NDE Top/left					A B C D		
Axial fan/Blow-out direction below/Direction of air flow DE → NDE combined with terminal box/metric cable entry											Top/right Top/DE Top/NDE Top/left	A R B R C R D 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 D F D G 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:

- ZF gearbox mounting prepared
- Shaft seal.

Asynchronous motors

Main spindle motors for SINAMICS S120

1PM4/1PM6 standard type motors
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	Booksiz format
	M_{rated}		M_{rated}			m	m	I_{rated}		I_{rated}	Order No.
	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	
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											0
External air cooling											1
Motor Module:											
Single Motor Module											1
Double Motor Module											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)