

Asynchronous motors

Main spindle motors for SINAMICS S120

1PH2 built-in motors for direct drive

Selection and Ordering Data

Rated speed	Speed, max.	Rated power for duty type in accordance with IEC 60034-1 ¹⁾				1PH2 asynchronous built-in motor for direct drive Water cooling Order No. Standard type	Rated torque ¹⁾	
n_{rated}	n_{max}	P_{rated}					M_{rated}	$\Delta T=105\text{ K}$
		S1	S1 $\Delta T=105\text{ K}$	S6-60%	S6-40%			
rpm	rpm	kW (HP)	kW (HP)	kW (HP)	kW (HP)		Nm (lb _f -ft)	Nm (lb _f -ft)
1500	10000	7.5 (10.1)	9.4 (12.6)	8.2 (11.0)	9 (12.1)	1PH2093 - 6WF4 	48 (35.4)	60 (44.3)
		10.1 (13.5)	13 (17.4)	11 (14.8)	12 (16.1)	1PH2095 - 6WF4 	64 (47.2)	83 (61.2)
1500	10000	15.1 (20.2)	18.5 (24.8)	17 (22.8)	19 (25.5)	1PH2113 - 6WF4 	95 (70.1)	118 (87.0)
		16.5 (22.1)	21.5 (28.8)	18.5 (24.8)	21 (28.2)	1PH2115 - 6WF4 	105 (77.4)	137 (101)
		18.1 (24.3)	23.7 (31.8)	20.5 (27.5)	23 (30.8)	1PH2117 - 6WF4 	115 (84.8)	151 (111)
		23.6 (31.6)	30.9 (41.4)	26 (34.9)	29.5 (39.6)	1PH2118 - 6WF4 	146 (108)	197 (145)

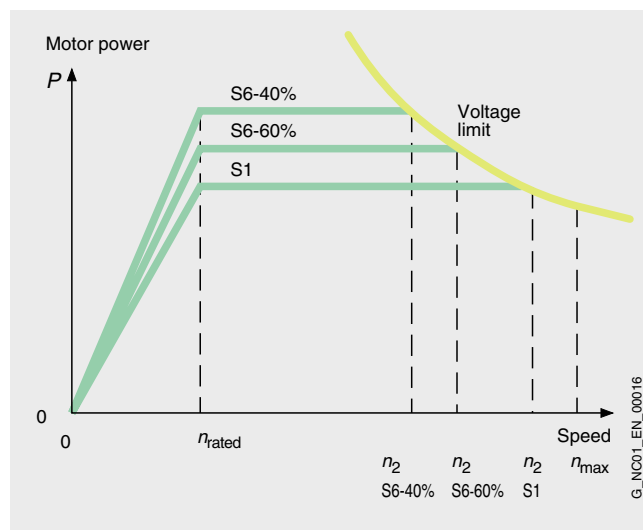
Free cable ends:

Length: 1.5 m (59.1 in)

Length: 0.5 m (19.7 in) (preferred type)

1
2

Characteristic curves



Typical speed/power graph for AC motors ²⁾

The graph shows the typical relationship between motor speed and drive power for 1PH2 motors for the following duty types in accordance with IEC 60034-1:

S1: Continuous duty

S6: Continuous duty with intermittent loading and a relative duty factor of 60% (S6-60%) or 40% (S6-40%) with a maximum duty cycle time of 10 minutes.

1PH2 motor	Rated speed	Attainable speed for rated power in duty type in accordance with IEC 60034-1		
Type	n_{rated}	$n_2^{3)}$		
	rpm	S1 rpm	S6-60% rpm	S6-40% rpm
1PH2093	1500	4700	4200	3900
1PH2095	1500	4000	3600	3300
1PH2113	1500	5400	4800	4400
1PH2115	1500	4500	4100	3700
1PH2117	1500	4700	4200	3800
1PH2118	1500	5300	4700	4300

¹⁾ Data for $\Delta T = 70\text{ K}$, unless specified otherwise.

²⁾ For further configuration information, see the 1PH Motors Configuration Manual.

³⁾ Values taken from the speed/power graph when using an Active Line Module on a 400 V 3 AC supply system. If you are using a Smart Line Module, proceed in accordance with the 1PH Motors Configuration Manual.

Asynchronous motors

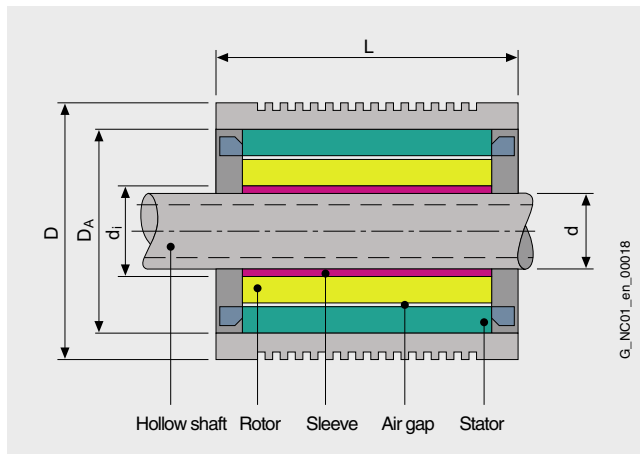
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1PH2 built-in motors for direct drive

Selection and Ordering Data

Motor type (continued)	Moment of inertia of rotor J kgm^2 ($\text{lb}_f\text{-in-s}^2$)	Weight (rotor and stator), approx. kg (lb)	Rated current for duty type in accordance with IEC 60034 -1 ¹⁾			SINAMICS S120 Motor Module	
			I_{rated}			Required rated output current	Booksize format
			S1	S6-60%	S6-40%	I_{rated} S1	Order No.
			A	A	A	A	
1PH2093-6W...	0.028 (0.25)	33 (72.8)	24	26	28	30	6SL312 - 1TE23-0AA3
1PH2095-6W...	0.036 (0.32)	42 (92.6)	30	32	34	30	6SL312 - 1TE23-0AA3
1PH2113-6W...	0.066 (0.58)	51 (112)	56	61	67	60	6SL312 - 1TE26-0AA3
1PH2115-6W...	0.073 (0.65)	56 (123)	55	60	66	60	6SL312 - 1TE26-0AA3
1PH2117-6W...	0.079 (0.70)	62 (137)	60	67	74	60	6SL312 - 1TE26-0AA3
1PH2118-6W...	0.100 (0.89)	78 (172)	82	90	100	85	6SL312 - 1TE28-5AA3
Cooling: Internal air cooling External air cooling							0 1
Motor Module: Single Motor Module							1

Dimension drawing



1PH2 motor	Standard spindle diameter	Rotor internal diameter	Stator outer diameter	Total outer diameter	Total length
Type	d mm (in)	d_i mm (in)	D_A mm (in)	D mm (in)	L mm (in)
1PH2093	67 (2.64)	85 (3.35)	180 (7.09)	205 (8.07)	250 (9.84)
1PH2095					300 (11.8)
1PH2113	82 (3.23)	100 (3.94)	220 (8.66)	250 (9.84)	290 (11.4)
1PH2115					310 (12.2)
1PH2117					330 (13.0)
1PH2118					390 (15.3)