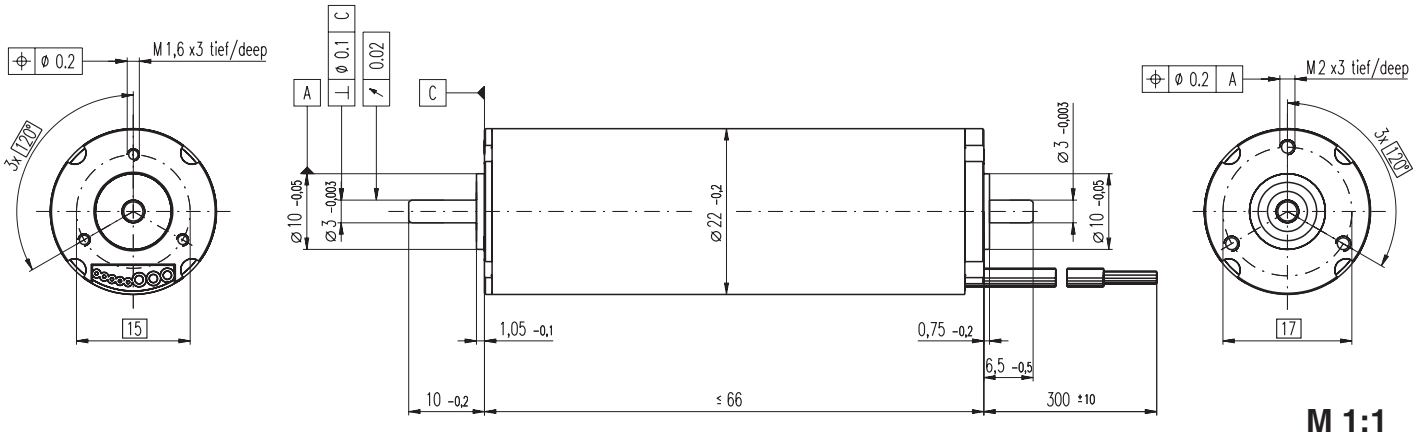
EC-powermax 22 ∅22 mm, brushless, 120 Watt

High*Power*



Stock program
Standard program
Special program (on request)

			Order Number			
			311535	311536	311537	311538
Motor Data (provisional)						
	Values at nominal voltage					
1	Nominal voltage	V	18.0	24.0	36.0	48.0
2	No load speed	rpm	16800	16500	17800	16900
3	No load current	mA	330	248	183	124
4	Nominal speed	rpm	15600	15700	16700	15700
5	Nominal torque (max. continuous torque)	mNm	59.0	61.8	63.1	64.1
6	Nominal current (max. continuous current)	A	6.06	4.75	3.43	2.46
7	Stall torque	mNm	904	990	1130	1060
8	Starting current	A	88.9	73.1	59.0	39.2
9	Max. efficiency	%	88	89	89	89
	Characteristics					
10	Terminal resistance phase to phase	Ω	0.202	0.329	0.610	1.22
11	Terminal inductance phase to phase	mH	0.0173	0.0308	0.0618	0.123
12	Torque constant	mNm / A	10.2	13.5	19.2	27.1
13	Speed constant	rpm / V	940	705	497	352
14	Speed / torque gradient	rpm / mNm	18.7	17.1	15.8	15.9
15	Mechanical time constant	ms	1.75	1.59	1.47	1.49
16	Rotor inertia	gcm²	8.91	8.91	8.91	8.91

Specifications

	Thermal data	
17	Thermal resistance housing-ambient	8.01 K / W
18	Thermal resistance winding-housing	1 K / W
19	Thermal time constant winding	6.36 s
20	Thermal time constant motor	476 s
21	Ambient temperature	-20 ... +100°C
22	Max. permissible winding temperature	+155°C
	Mechanical data (preloaded ball bearings)	
23	Max permissible speed	25000 rpm
24	Axial play at axial load < 5.0 N	0 mm
	> 5.0 N	0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	4.5 N
27	Max. force for press fits (static)	60 N
	(static, shaft supported)	1000 N
28	Max. radial loading, 5 mm from flange	16 N
	Other specifications	
29	Number of pole pairs	2
30	Number of phases	3
31	Weight of motor	160 g

Values listed in the table are nominal.

Connection Motor (Cable AWG 18)

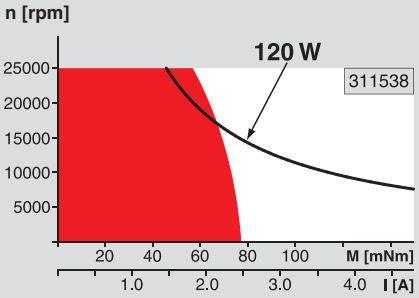
red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

Connection Sensors (Cable AWG 26)

green	V_{Hall} 4.5 … 24 VDC
blue	GND
red/grey	Hall sensor 1
black/grey	Hall sensor 2
white/grey	Hall sensor 3

Option
Encoder MR on request

Operating Range



Comments

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
∅32 mm
1.0 - 6.0 Nm
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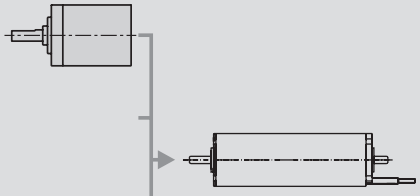

Recommended Electronics:

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