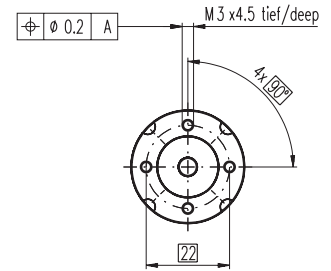
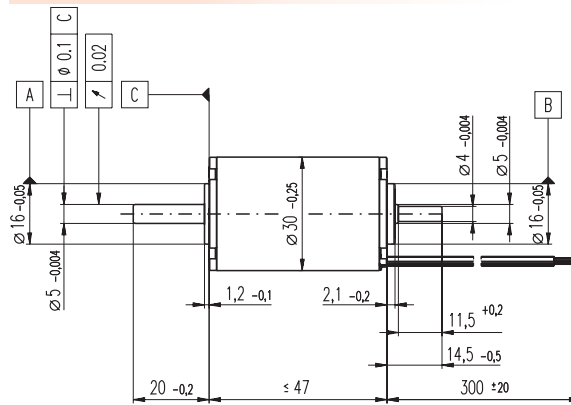
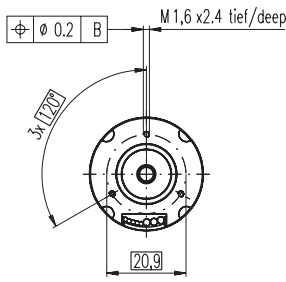


EC-powermax 30 Ø30 mm, brushless, 100 Watt

HighPower

maxon EC-powermax



M 1:2

- Stock program
- Standard program
- Special program (on request)

Order Number

309755	309756	309757	309758
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Motor Data (provisional)

		309755	309756	309757	309758	
Values at nominal voltage						
1	Nominal voltage	V	18.0	24.0	36.0	48.0
2	No load speed	rpm	17800	17800	17800	17800
3	No load current	mA	773	580	387	290
4	Nominal speed	rpm	16700	16700	16800	16800
5	Nominal torque (max. continuous torque)	mNm	64.4	63.3	69.7	69.4
6	Nominal current (max. continuous current)	A	7.38	5.45	3.96	2.96
7	Stall torque	mNm	1280	1240	1480	1470
8	Starting current	A	133	96.9	77.2	57.4
9	Max. efficiency	%	86	86	87	87
Characteristics						
10	Terminal resistance phase to phase	Ω	0.135	0.248	0.466	0.836
11	Terminal inductance phase to phase	mH	0.0166	0.0295	0.0664	0.118
12	Torque constant	mNm / A	9.58	12.8	19.2	25.5
13	Speed constant	rpm / V	997	748	499	374
14	Speed / torque gradient	rpm / mNm	14.1	14.5	12.1	12.2
15	Mechanical time constant	ms	2.70	2.78	2.33	2.35
16	Rotor inertia	gcm ²	18.3	18.3	18.3	18.3

Specifications

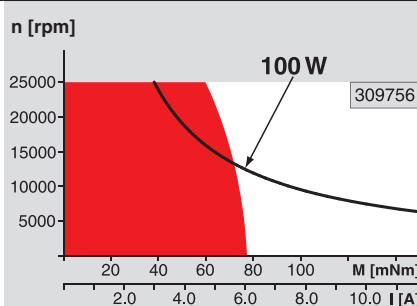
- Thermal data**
- 17 Thermal resistance housing-ambient 7.95 K / W
 - 18 Thermal resistance winding-housing 0.831 K / W
 - 19 Thermal time constant winding 4.28 s
 - 20 Thermal time constant motor 859 s
 - 21 Ambient temperature -20 ... +100°C
 - 22 Max. permissible winding temperature +155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max permissible speed 25000 rpm
 - 24 Axial play at axial load < 8.0 N 0 mm
 - > 8.0 N 0.14 mm preloaded
 - 25 Radial play 0.14 mm preloaded
 - 26 Max. axial load (dynamic) 5.5 N
 - 27 Max. force for press fits (static) (static, shaft supported) 100 N
 - 2000 N
 - 28 Max. radial loading, 5 mm from flange 25 N
- Other specifications**
- 29 Number of pole pairs 2
 - 30 Number of phases 3
 - 31 Weight of motor 165 g

Values listed in the table are nominal.

- Connection Motor** (Cable AWG 18)
- black Motor winding 2
 - white Motor winding 3
 - red Motor winding 1

- Connection Sensors** (Cable AWG 26)
- black/grey Hall sensor 2
 - blue GND
 - green V_{Hall} 4.5 ... 24 VDC
 - red/grey Hall sensor 1
 - white/grey Hall sensor 3

Operating Range



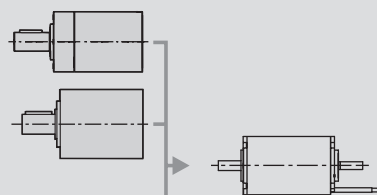
Comments

- 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**
Ø32 mm
8 Nm
Page 233
- Planetary Gearhead**
Ø42 mm
3 - 15 Nm
Page 236



- Encoder MR**
500 / 1000 CTP,
3 channels
Page 250
- Encoder HEDL 5540**
500 CTP,
3 channels
Page 258
- Brake AB 20**
Ø20 mm
24 VDC, 0.1 Nm
Page 298

- Recommended Electronics:**
- DEC 70/10 Page 278
 - DES 70/10 279
 - EPOS 70/10 287
 - MIP 100 289
 - Notes** 20