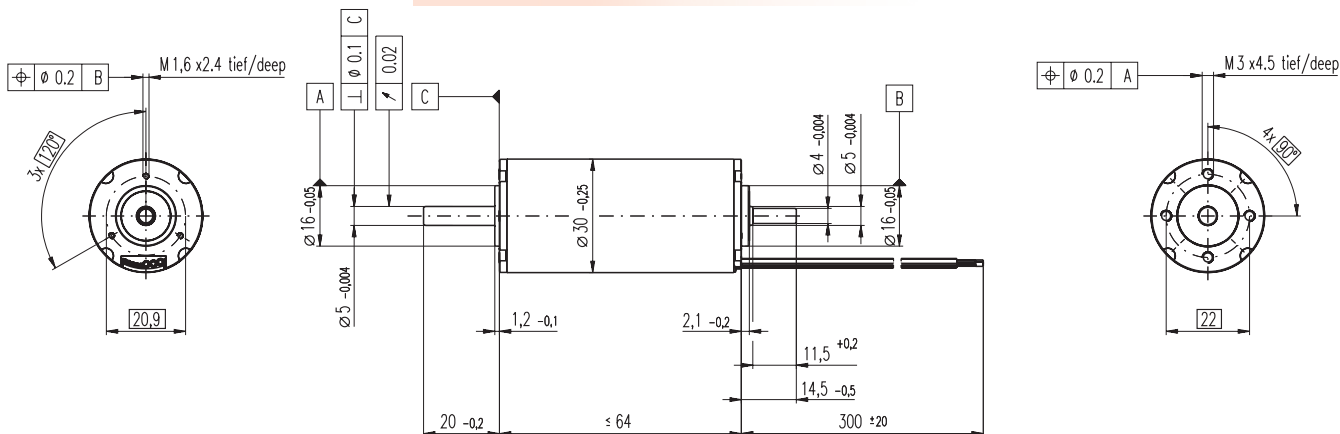


EC-powermax 30 Ø30 mm, brushless, 200 Watt

HighPower

maxon EC-powermax



M 1:2

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

Order Number

305013	305014	305015
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Motor Data (provisional)

Values at nominal voltage		305013	305014	305015	
1	Nominal voltage	V	24.0	36.0	48.0
2	No load speed	rpm	17000	17000	16500
3	No load current	mA	885	590	422
4	Nominal speed	rpm	16200	16200	15800
5	Nominal torque (max. continuous torque)	mNm	114	119	120
6	Nominal current (max. continuous current)	A	9.21	6.39	4.70
7	Stall torque	mNm	3180	3460	3430
8	Starting current	A	236	171	124
9	Max. efficiency	%	88	89	89
Characteristics					
10	Terminal resistance phase to phase	Ω	0.102	0.210	0.386
11	Terminal inductance phase to phase	mH	0.0163	0.0368	0.0653
12	Torque constant	mNm / A	13.5	20.2	27.6
13	Speed constant	rpm / V	710	473	346
14	Speed / torque gradient	rpm / mNm	5.36	4.92	4.83
15	Mechanical time constant	ms	1.87	1.72	1.68
16	Rotor inertia	gcm ²	33.3	33.3	33.3

Specifications

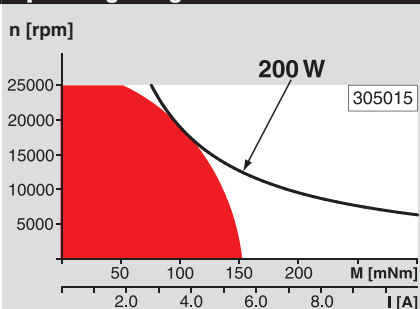
Thermal data	
17 Thermal resistance housing-ambient	5.3 K / W
18 Thermal resistance winding-housing	0.0785 K / W
19 Thermal time constant winding	0.738 s
20 Thermal time constant motor	848 s
21 Ambient temperature	-20 ... +100°C
22 Max. permissible winding temperature	+155°C
Mechanical data (preloaded ball bearings)	
23 Max permissible speed	25000 rpm
24 Axial play at axial load < 6.0 N	0 mm
24 Axial play at axial load > 6.0 N	0.14 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	5.5 N
27 Max. force for press fits (static) (static, shaft supported)	100 N
27 Max. force for press fits (static) (static, shaft supported)	1300 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	271 g

Values listed in the table are nominal.

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

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

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

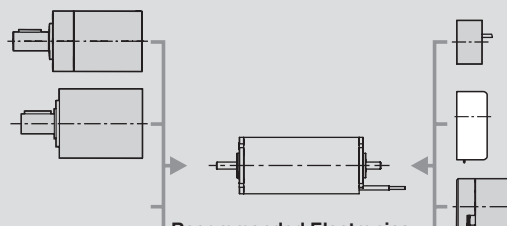
Overview on page 16 - 21

Planetary Gearhead

Ø32 mm
 8 Nm
 Page 233

Planetary Gearhead

Ø42 mm
 3 - 15 Nm
 Page 236



Recommended Electronics:

DEC 70/10	Page 278
DES 70/10	279
EPOS 70/10	287
MIP 100	289
Notes	20

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
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