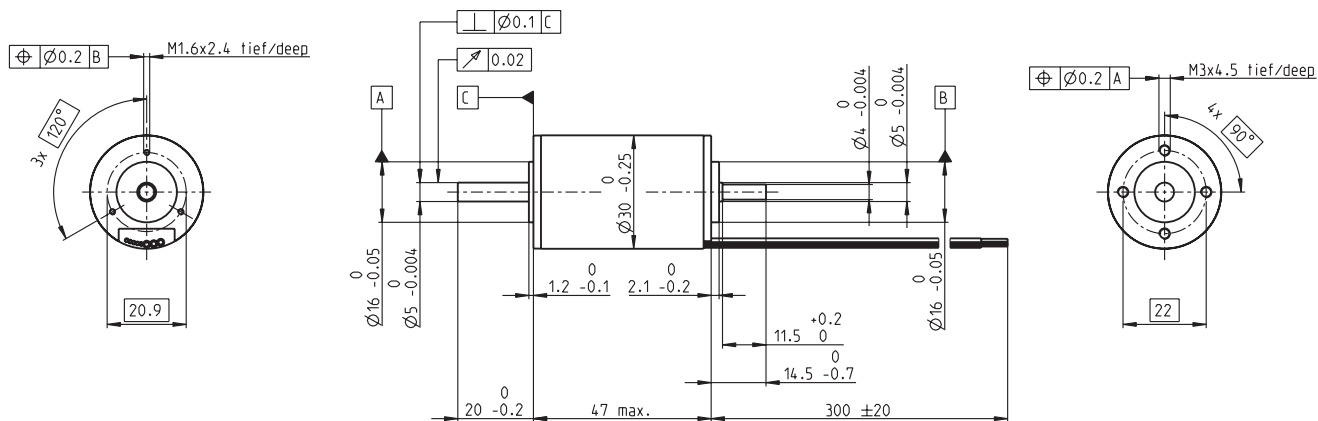


EC-4pole 30 $\varnothing 30$ mm, brushless, 100 Watt

High Power



M 1:2

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

Order Number

309755 **309756** 309757 **309758**

Motor Data (provisional)

Values at nominal voltage		18.0	24.0	36.0	48.0
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
25 Radial play	preloaded	
26 Max. axial load (dynamic)	5.5 N	
27 Max. force for press fits (static) (static, shaft supported)	73 N	
28 Max. radial loading, 5 mm from flange	2000 N	
	25 N	

Other specifications

29 Number of pole pairs	2
30 Number of phases	3
31 Weight of motor	210 g

Values listed in the table are nominal.

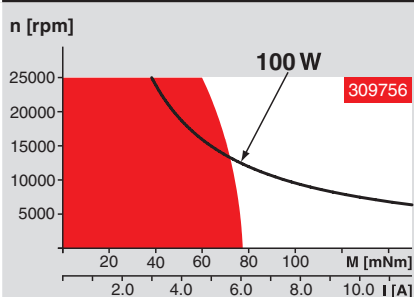
Connection Motor (Cable AWG 18)

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

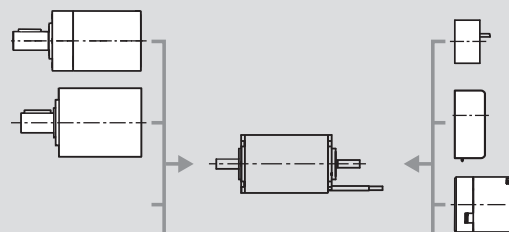
Overview on page 16 - 21

Planetary Gearhead

$\varnothing 32$ mm
8 Nm
Page 235

Planetary Gearhead

$\varnothing 42$ mm
3 - 15 Nm
Page 239



Recommended Electronics:

DECS 50/5	Page 289
DEC 70/10	297
DES 70/10	298
EPOS2 70/10	305
EPOS2 50/5	305
Notes	20

Encoder MR

128 - 1000 Imp.,
3 channels
Page 262

Encoder HEDL 5540

500 Imp.,
3 channels
Page 270

Brake AB 20

24 VDC
0.1 Nm
Page 316