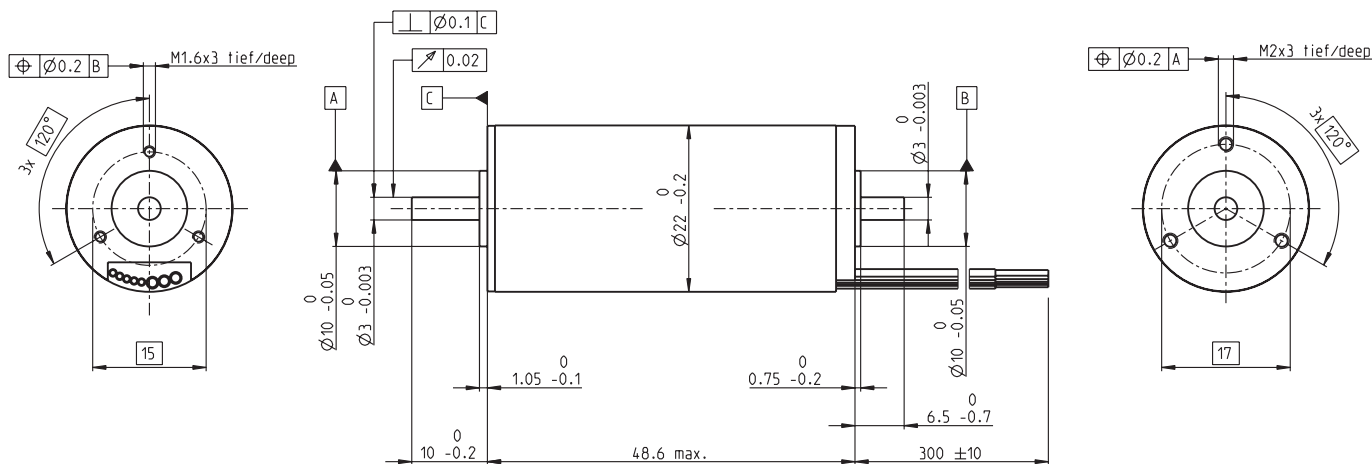


EC-4pole 22 Ø22 mm, brushless, 90 Watt

High Power



M 1:1

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

Order Number

323217 323218 **323219** 323220 327739

Motor Data (provisional)

Values at nominal voltage

	V	18.0	24.0	36.0	48.0	48.0
1 Nominal voltage	V	18.0	24.0	36.0	48.0	48.0
2 No load speed	rpm	16200	16200	16200	16200	6900
3 No load current	mA	275	206	137	103	21.5
4 Nominal speed	rpm	14700	14800	14700	14700	5330
5 Nominal torque (max. continuous torque)	mNm	49.4	51.6	50.5	49.4	51.2
6 Nominal current (max. continuous current)	A	4.89	3.82	2.50	1.83	0.786
7 Stall torque	mNm	588	639	612	586	234
8 Starting current	A	55.8	45.5	29.1	20.9	3.55
9 Max. efficiency	%	87	87	87	87	85

Characteristics

	Ω	0.323	0.527	1.24	2.3	13.5
10 Terminal resistance phase to phase	Ω	0.323	0.527	1.24	2.3	13.5
11 Terminal inductance phase to phase	mH	0.0283	0.0503	0.113	0.201	1.11
12 Torque constant	mNm / A	10.5	14.0	21.1	28.1	66.0
13 Speed constant	rpm / V	907	680	453	340	145
14 Speed / torque gradient	rpm / mNm	27.8	25.5	26.7	27.9	29.7
15 Mechanical time constant	ms	1.61	1.48	1.55	1.62	1.72
16 Rotor inertia	gcm ²	5.54	5.54	5.54	5.54	5.54

Specifications

Thermal data

17 Thermal resistance housing-ambient	9.08 K / W
18 Thermal resistance winding-housing	0.904 K / W
19 Thermal time constant winding	3.98 s
20 Thermal time constant motor	358 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) (static, shaft supported)	53 N	
	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	125 g

Values listed in the table are nominal.

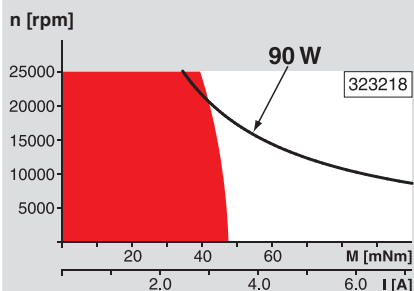
Connection Motor (Cable AWG 20)

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

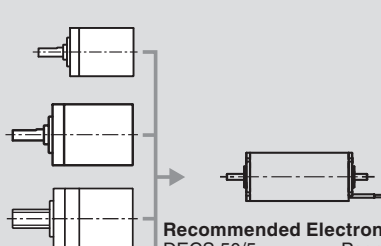
Ø22 mm
2.0 - 3.4 Nm
Page 225

Planetary Gearhead

Ø32 mm
1.0 - 6.0 Nm
Page 234

Spindle Drive

Ø32 mm
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Recommended Electronics:

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DEC Module 50/5	291
DECV 50/5	297
DEC 70/10	297
DES 50/5, DES 70/10	298
EPOS2 24/5	305
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Encoder HEDL 5540

500 Imp.,
3 channels
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