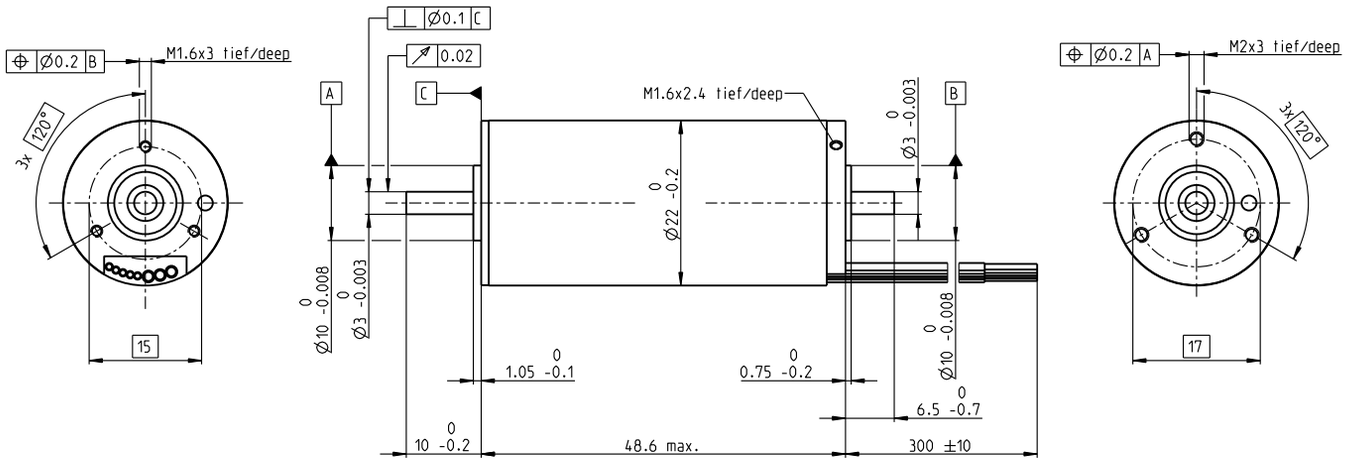
EC-4pole 22 ∅22 mm, brushless, 90 Watt

High Power



M 1:1

Stock program
Standard program
Special program (on request)

Part Numbers

	323217	323218	323219	323220	327739
Motor Data					
Values at nominal voltage					
1 Nominal voltage	18	24	36	48	48
2 No load speed	16300	16300	16300	16300	6900
3 No load current	218	164	109	81.8	20.7
4 Nominal speed	14900	15000	14900	14900	5550
5 Nominal torque (max. continuous torque)	43.7	45.1	43.7	42.6	43.9
6 Nominal current (max. continuous current)	4.32	3.34	2.16	1.58	0.679
7 Stall torque	588	639	612	586	234
8 Stall current	55.8	45.5	29.1	20.9	3.55
9 Max. efficiency	88	89	88	88	85
Characteristics					
10 Terminal resistance phase to phase	0.323	0.527	1.24	2.3	13.5
11 Terminal inductance phase to phase	0.0283	0.0503	0.113	0.201	1.11
12 Torque constant	10.5	14	21.1	28.1	66
13 Speed constant	907	680	453	340	145
14 Speed/torque gradient	27.8	25.5	26.7	27.9	29.7
15 Mechanical time constant	1.61	1.48	1.55	1.62	1.72
16 Rotor inertia	5.54	5.54	5.54	5.54	5.54

Values at nominal voltage		
1 Nominal voltage	V	
2 No load speed	rpm	
3 No load current	mA	
4 Nominal speed	rpm	
5 Nominal torque (max. continuous torque)	mNm	
6 Nominal current (max. continuous current)	A	
7 Stall torque	mNm	
8 Stall current	A	
9 Max. efficiency	%	
Characteristics		
10 Terminal resistance phase to phase	Ω	
11 Terminal inductance phase to phase	mH	
12 Torque constant	mNm/A	
13 Speed constant	rpm/V	
14 Speed/torque gradient	rpm/mNm	
15 Mechanical time constant	ms	
16 Rotor inertia	gcm²	

Specifications

Thermal data

17 Thermal resistance housing-ambient		12.2 K/W
18 Thermal resistance winding-housing		1.19 K/W
19 Thermal time constant winding		5.12 s
20 Thermal time constant motor		482 s
21 Ambient temperature		-20…+100°C
22 Max. winding temperature		+155°C

Mechanical data (preloaded ball bearings)

23 Max. speed		25000 rpm
24 Axial play at axial load	< 3.0 N	0 mm
	> 3.0 N	0.14 mm
25 Radial play		preloaded
26 Max. axial load (dynamic)		4 N
27 Max. force for press fits (static)		53 N
(static, shaft supported)		1000 N
28 Max. radial load, 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

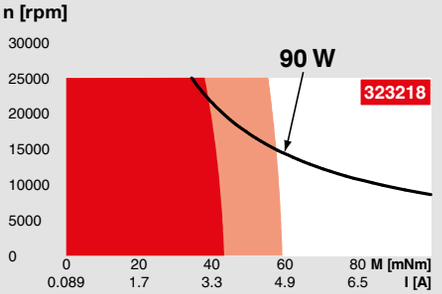
Connection sensors (Cable AWG 26)

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

Wiring diagram for Hall sensors see p. 45

Operating Range

Comments



Continuous operation
Continuous operation with reduced thermal resistance R_{th2} 50%
Intermittent operation

Assigned power rating

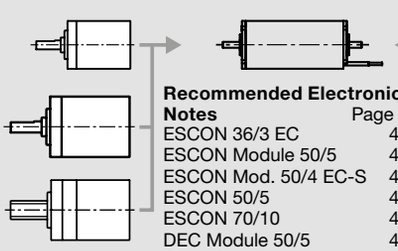
maxon Modular System

Details on catalog page 34

Planetary Gearhead
∅22 mm
2.0 - 3.4 Nm
Page 343

Planetary Gearhead
∅32 mm
1.0 - 6.0 Nm
Page 353

Screw Drive
∅32 mm
Page 382–387



Recommended Electronics:

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ESCON 36/3 EC	455
ESCON Module 50/5	455
ESCON Mod. 50/4 EC-S	455
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EPOS4 50/5	463
EPOS4 Mod./Comp. 50/5	463
EPOS2 P 24/5	470
MAXPOS 50/5	473

Encoder 16 EASY
128 - 1024 CPT, 3 channels
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Encoder 16 EASY XT
128 - 1024 CPT, 3 channels
Page 420

Encoder 16 EASY Absolute
4096 steps, Single Turn
Page 422

Encoder 16 EASY Absolute XT
4096 steps, Single Turn
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Encoder 16 RIO
1024 - 32768 CPT, 3 channels
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Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
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Encoder HEDL 5540
500 CPT, 3 channels
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