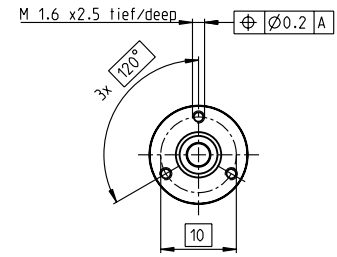
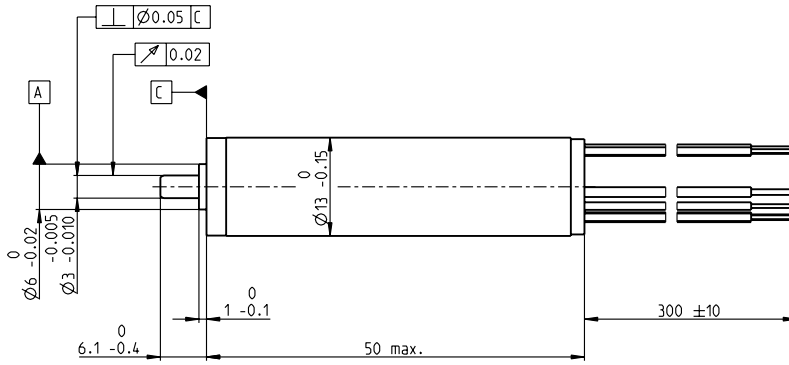


EC 13 Ø13 mm, brushless, 50 Watt

sterilizable



M 1:1

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

Part Numbers

A with Hall sensors	448828	448829	448830
B sensorless	448834	448835	448836

Motor Data (provisional)

Values at nominal voltage		12 V	24 V	48 V
1 Nominal voltage	V	12	24	48
2 No load speed	rpm	73400	73400	73500
3 No load current	mA	270	135	67.6
4 Nominal speed	rpm	68500	69200	69400
5 Nominal torque (max. continuous torque)	mNm	6.91	7.17	7.17
6 Nominal current (max. continuous current)	A	4.67	2.42	1.21
7 Stall torque	mNm	116	146	152
8 Stall current	A	74.8	46.8	24.5
9 Max. efficiency	%	88	90	90
Characteristics		0.16 Ω	0.513 mH	1.96 mNm/A
10 Terminal resistance phase to phase	Ω	0.16	0.513	1.96
11 Terminal inductance phase to phase	mH	0.007	0.026	0.104
12 Torque constant	mNm/A	1.55	3.11	6.22
13 Speed constant	rpm/V	6140	3070	1540
14 Speed/torque gradient	rpm/mNm	633	506	484
15 Mechanical time constant	ms	2.39	1.91	1.83
16 Rotor inertia	gcm ²	0.36	0.36	0.36

Specifications

Thermal data	
17 Thermal resistance housing-ambient	19.2 K/W
18 Thermal resistance winding-housing	2.44 K/W
19 Thermal time constant winding	2.5 s
20 Thermal time constant motor	422 s
21 Ambient temperature	-40...+135°C
22 Max. winding temperature	+155°C
Mechanical data (preloaded ball bearings)	
23 Max. speed	90000 rpm
24 Axial play at axial load < 7 N	0 mm
24 Axial play at axial load > 7 N	max. 0.85 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	6 N
27 Max. force for press fits (static)	7 N
28 Max. radial load, 5 mm from flange	4 N
Other specifications	
29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	44 g

Alignment of the electronic connections not specified.

Values listed in the table are nominal.

Connection A and B, motor (cable AWG 22)

red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

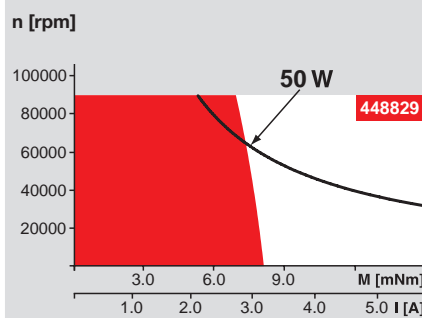
Connection A, sensors (cable AWG 26)

green	V _{Hall} 3.8...24 VDC
blue	GND
red/grey	Hall sensor 1
black/grey	Hall sensor 2
white/grey	Hall sensor 3

Option: Inch-version size 5 available as standard version.

Wiring diagram for Hall sensors see page 35

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**

Application



- Saws
- Surgical Reamers
- Arthroscopic Shavers
- Surgical Staplers
- Dental Tools

Sterilization information

Sensorless: typically 2000 autoclave cycles	
Hall sensor: typically 1000 autoclave cycles	
Sterilization with steam	
Temperature	+134°C ± 4°C
Compression pressure up to	2.3 bar
Rel. humidity	100 %
Cycle length	18 minutes

maxon Modular System

Planetary Gearhead
sterilizable
Ø13 mm
0.05 - 0.275 Nm
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Overview on page 20-27

Recommended Electronics:	Notes	Page 26
ESCON 36/3 EC		417
ESCON Mod. 50/4 EC-S		417
ESCON Module 50/5		417
ESCON 50/5		418
ESCON 70/10		418
DEC Module 50/5		420
Choke may be required		