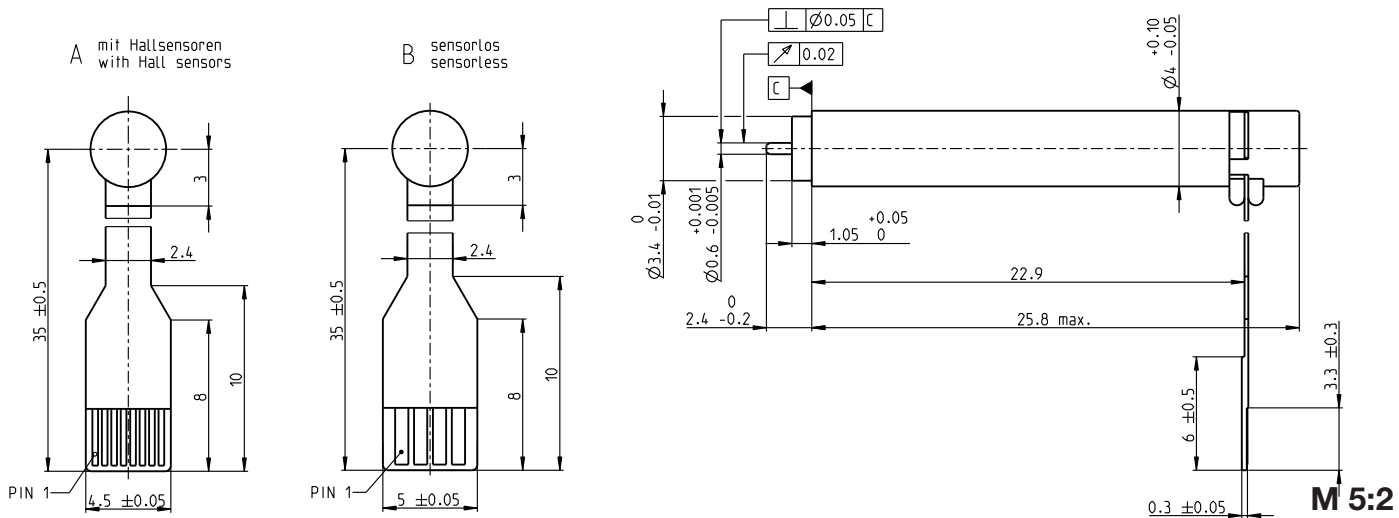


# EC 4 Ø4 mm, brushless, 1.0 Watt

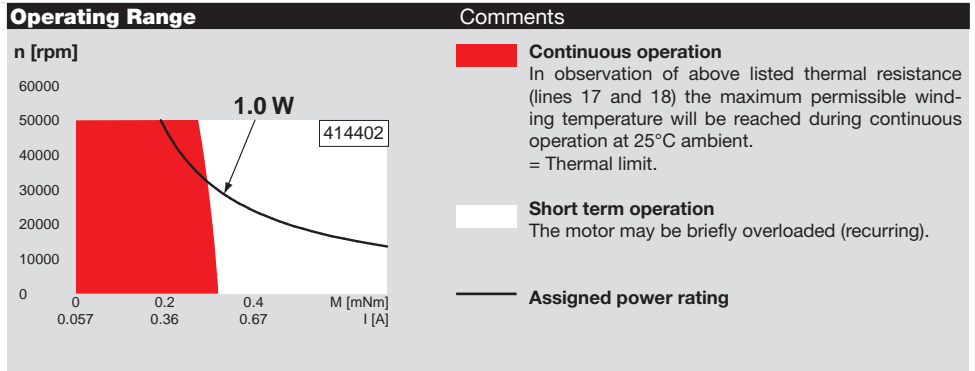


- Stock program
- Standard program
- Special program (on request)

Part Numbers	
A with Hall sensors	431182 431284
B sensorless	414402 423511

Motor Data (provisional)			
Values at nominal voltage			
1 Nominal voltage	V	3	6
2 No load speed	rpm	39800	29900
3 No load current	mA	77.6	24.8
4 Nominal speed	rpm	22900	13300
5 Nominal torque (max. continuous torque)	mNm	0.319	0.341
6 Nominal current (max. continuous current)	A	0.532	0.209
7 Stall torque	mNm	0.774	0.639
8 Stall current	A	1.15	0.358
9 Max. efficiency	%	56	56
Characteristics			
10 Terminal resistance phase to phase	Ω	2.6	16.7
11 Terminal inductance phase to phase	mH	0.00946	0.0668
12 Torque constant	mNm/A	0.671	1.78
13 Speed constant	rpm/V	14200	5360
14 Speed/torque gradient	rpm/mNm	55200	50300
15 Mechanical time constant	ms	0.953	0.868
16 Rotor inertia	gcm <sup>2</sup>	0.00165	0.00165

Specifications	
Thermal data	
17 Thermal resistance housing-ambient	97.4 K/W
18 Thermal resistance winding-housing	1.46 K/W
19 Thermal time constant winding	0.114 s
20 Thermal time constant motor	88.6 s
21 Ambient temperature	-20...+80°C
22 Max. winding temperature	+125°C
Mechanical data	
23 Max. speed	50000 rpm
24 Axial play at axial load	max. 0.06 mm
25 Radial play	0.012 mm
26 Max. axial load (dynamic)	0.1 N
27 Max. force for press fits (static)	10 N
28 Max. radial load, 2 mm from flange	0.2 N
Other specifications	
29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	1.8 g



Values listed in the table are nominal.

Connection	with hall sensors	sensorless
Pin 1	Motor winding 1	Motor winding 1
Pin 2	Motor winding 2	Motor winding 2
Pin 3	Motor winding 3	Motor winding 3
Pin 4	V <sub>Hall</sub> 3.8...24 VDC	N.C.
Pin 5	GND	
Pin 6	Hall sensor 1	
Pin 7	Hall sensor 2	
Pin 8	Hall sensor 3	
Connector	Part number	Part number
MOLEX	52745-0897	52207-0460
FCI	SFV8R-2STBE1HLF	SFW4R-2STGE1LF

Pin for design with Hall sensors:  
FPC, 8 pole, pitch 0.5 mm, top contact style  
Wiring diagram for Hall sensors see page 35

**maxon Modular System** Overview on page 20-27

**Planetary Gearhead**  
Ø4 mm  
0.002 - 0.015 Nm  
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**Recommended Electronics:**  
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ESCON Module 24/2	416
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417