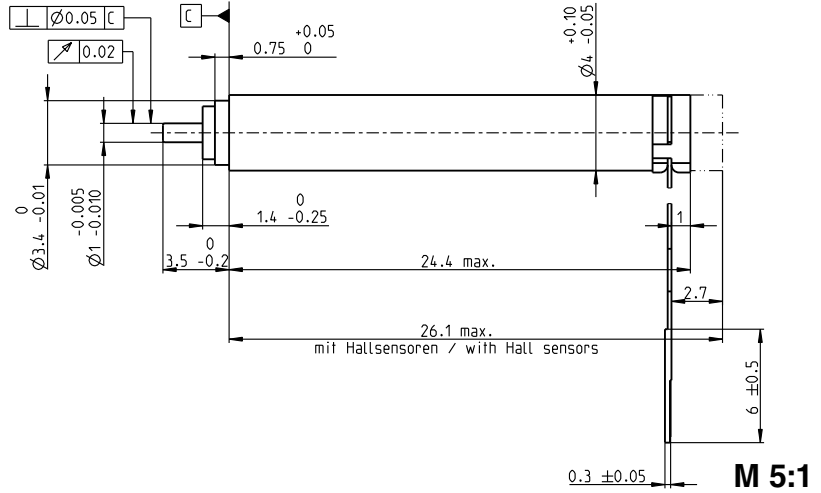
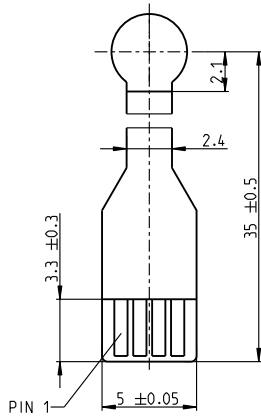
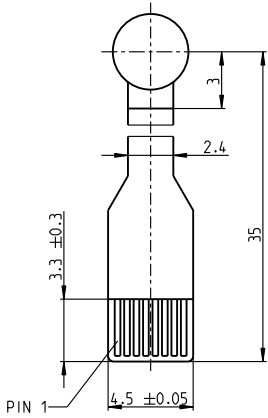


EC 4 Ø4 mm, brushless, 1.0 Watt

A with Hall sensors

B sensorless



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

Part Number

	431182	431284
A with Hall sensors		
B sensorless	414402	423511

Motor Data (provisional)

Values at nominal voltage

	V	3.0	6.0
1 Nominal voltage	V	3.0	6.0
2 No load speed	rpm	39900	29900
3 No load current	mA	40.6	14.1
4 Nominal speed	rpm	20200	11200
5 Nominal torque	mNm	0.383	0.400
6 Nominal current	A	0.587	0.229
7 Stall torque	mNm	0.799	0.660
8 Starting current	A	1.15	0.358
9 Max. efficiency	%	66	65

Characteristics

	Ω	2.6	16.7
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	0.693	1.84
13 Speed constant	rpm/V	13800	5190
14 Speed/torque gradient	rpm/mNm	51800	47200
15 Mechanical time constant	ms	0.992	0.840
16 Rotor inertia	gcm ²	0.00170	0.00170

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. permissible winding temperature	+125°C

Mechanical data	
23 Max. permissible speed	80000 rpm
24 Axial play	max. 0.06 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	0.1 N
27 Max. force for press fits (static)	3 N
28 Max. radial loading, 1 mm from flange	2 N

Other specifications	
29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	2 g

Values listed in the table are nominal.

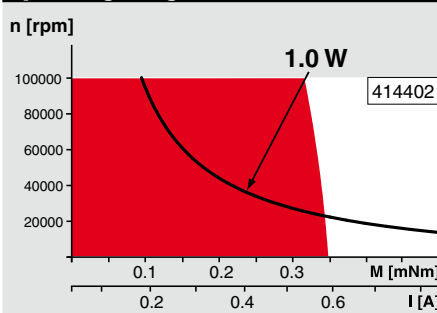
Connection with Hall sensors sensorless

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 _{Hall} 4.5...18 VDC	Y
Pin 5	GND	
Pin 6	Hall sensor 1	
Pin 7	Hall sensor 2	
Pin 8	Hall sensor 3	

Connector	Part number	Part number
MOLEX	52745-0896	52207-0485
MOLEX		52089-0419
TYCO		84953-4

Pin for design with Hall sensors:
FPC, 8-pol, Pitch 0.5 mm, top contact style
Wiring diagram for Hall sensors see catalogue p. 27

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.

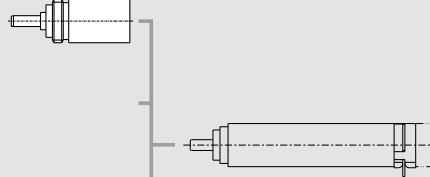
Short term operation
The motor may be briefly overloaded (recurring).

— Assigned power rating

maxon Modular System

Planetary Gearhead

Ø4 mm
0.002–0.015 Nm
Page 6



Recommended Electronics:
DECS 50/5 Page 6
ESCON 36/3 6