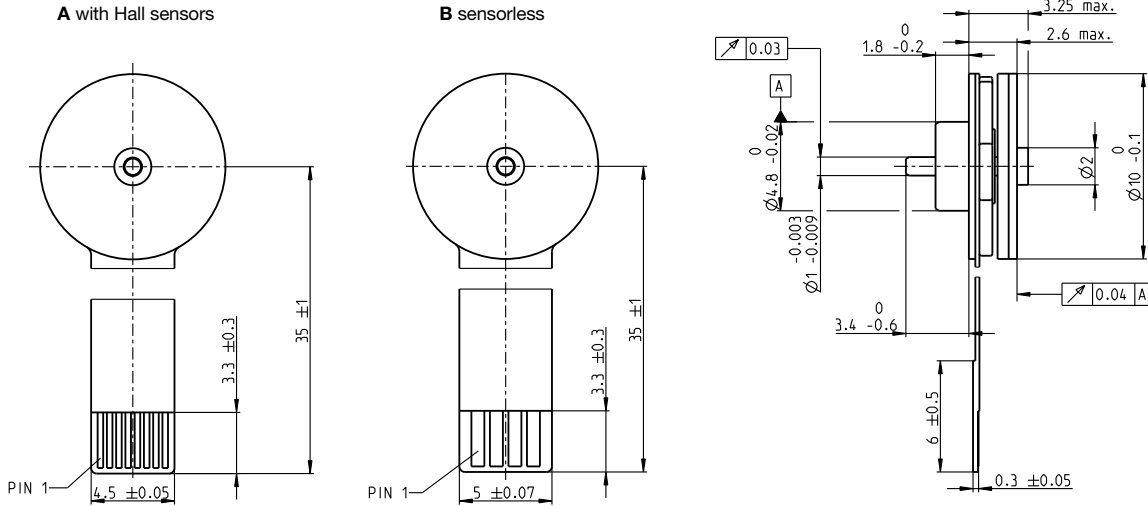


EC 10 flat $\varnothing 10$ mm, brushless, 0.2 Watt



M 5:2

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

Part Numbers

A with Hall sensors	302000
B sensorless	301999

Motor Data (provisional)

Values at nominal voltage		
1 Nominal voltage	V	4
2 No load speed	rpm	16600
3 No load current	mA	14.8
4 Nominal speed	rpm	-
5 Nominal torque	mNm	0.25
6 Nominal current	A	0.122
7 Stall torque ¹	mNm	0.202
8 Stall current	A	0.103
9 Max. efficiency	%	41
Characteristics		
10 Terminal resistance phase to phase	Ω	38.8
11 Terminal inductance phase to phase	mH	0.277
12 Torque constant	mNm/A	1.96
13 Speed constant	rpm/V	4870
14 Speed/torque gradient	rpm/mNm	96500
15 Mechanical time constant	ms	80.8
16 Rotor inertia	gcm ²	0.08

Specifications

Thermal data		
17 Thermal resistance housing-ambient	50 K/W	
18 Thermal resistance winding-housing	50 K/W	
19 Thermal time constant winding	2.22 s	
20 Thermal time constant motor	20.5 s	
21 Ambient temperature	-40...+85°C	
22 Max. winding temperature	+100°C	
Mechanical data (preloaded ball bearings)		
23 Max. speed	22000 rpm	
24 Axial play at axial load < 0.15 N	0 mm	
24 Axial play at axial load > 0.15 N	0.06 mm	
25 Radial play preloaded	1 N	
26 Max. axial load (dynamic)	6 N	
27 Max. force for press fits (static) (static, shaft supported)	20 N	
28 Max. radial load, 1 mm from flange	1 N	

Other specifications

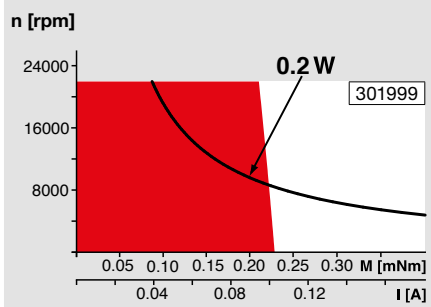
29 Number of pole pairs	4
30 Number of phases	3
31 Weight of motor	0.82 g

Values listed in the table are nominal.

Connection	with Hall sensors	sensorless
Pin 1	Motor winding 3	Motor winding 1
Pin 2	Motor winding 2	Motor winding 2
Pin 3	Hall sensor 3	Motor winding 3
Pin 4	V _{Hall} 3.8...24 VDC	N.C.
Pin 5	GND	
Pin 6	Hall sensor 1	
Pin 7	Hall sensor 2	
Pin 8	Motor winding 1	
Connector	Part number	Part number
Molex	52745-0897	52207-0433
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 p. 43
¹Calculation does not include saturation effect (p. 53/164)

Operating Range



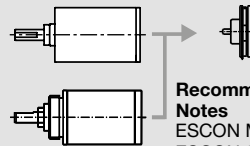
Comments

- 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 28–36

- Planetary Gearhead**
 $\varnothing 10$ mm
 0.005 - 0.1 Nm
 Page 319
- Planetary Gearhead**
 $\varnothing 10$ mm
 0.01 - 0.15 Nm
 Page 320



- Recommended Electronics:**
- | Notes | Page 32 |
|-------------------------|---------|
| ESCON Module 24/2 | 444 |
| ESCON 36/3 EC | 445 |
| ESCON Mod. 50/4 EC-S | 445 |
| DEC Module 24/2 | 449 |
| EPOS4 Mod./Comp. 24/1.5 | 452 |