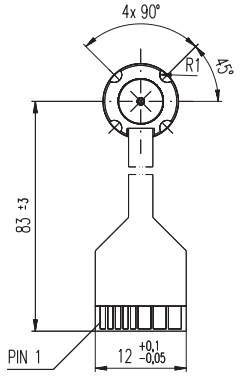
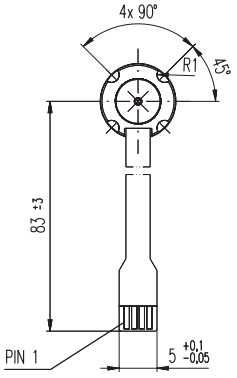
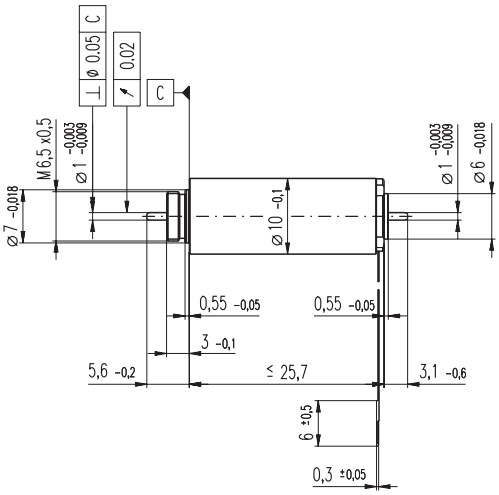
EC 10 ∅10 mm, brushless, 8 Watt

A with Hall sensors



B sensorless





M 1:1

Stock program
Standard program
Special program (on request)

			Order Number			
	A with Hall sensors		315170	**315171**	315172	**315173**
	B sensorless		315174	315175	315176	315177
Motor Data (provisional)						
	Values at nominal voltage					
1	Nominal voltage	V	9.0	12.0	18.0	24.0
2	No load speed	rpm	80200	76000	86700	82600
3	No load current	mA	181	124	103	71.1
4	Nominal speed	rpm	74300	69900	81400	77200
5	Nominal torque (max. continuous torque)	mNm	1.14	1.2	1.07	1.18
6	Nominal current (max. continuous current)	A	1.24	0.921	0.644	0.495
7	Stall torque	mNm	16.6	16.0	19.0	19.3
8	Starting current	A	15.7	10.7	9.69	7.02
9	Max. efficiency	%	80	80	81	81
	Characteristics					
10	Terminal resistance phase to phase	Ω	0.575	1.12	1.86	3.42
11	Terminal inductance phase to phase	mH	0.00998	0.0198	0.0342	0.0671
12	Torque constant	mNm / A	1.06	1.49	1.96	2.74
13	Speed constant	rpm / V	9020	6410	4870	3480
14	Speed / torque gradient	rpm / mNm	4900	4810	4620	4330
15	Mechanical time constant	ms	3.54	3.48	3.34	3.13
16	Rotor inertia	gcm²	0.0691	0.0691	0.0691	0.0691

Specifications

Thermal data

17	Thermal resistance housing-ambient	45 K / W
18	Thermal resistance winding-housing	2.21 K / W
19	Thermal time constant winding	0.65 s
20	Thermal time constant motor	250 s
21	Ambient temperature	-40 ... +100°C
22	Max. permissible winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed	80000 rpm
24	Axial play at axial load < 0.5 N	0 mm
	> 0.5 N	max. 0.07 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	0.5 N
27	Max. force for press fits (static)	40 N
	(static, shaft supported)	400 N
28	Max. radial loading, 5 mm from flange	2 N

Other specifications

29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	13 g

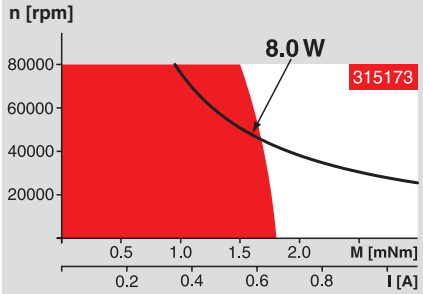
Values listed in the table are nominal.

Connection	with Hall sensors	sensorless
Pin 1	4.5 ... 24 VDC	Motor winding 1
Pin 2	Hall sensor 3	Motor winding 2
Pin 3	Hall sensor 1	Motor winding 3
Pin 4	Hall sensor 2	neutral point
Pin 5	GND	
Pin 6	Motor winding 3	
Pin 7	Motor winding 2	
Pin 8	Motor winding 1	

Adapter	Order Number	Order Number
see p. 299	220300	220310
Connector	**Article number**	**Article number**
TYCO	1-84953-1	84953-4
MOLEX	52207-1185	52207-0485
MOLEX	52089-1119	52089-0419

Pin for design with Hall sensors:
FPC, 11 pole, pitch 1.0 mm, top contact style
Option: Sterilisable version
Encoder MR on request

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 16 - 21

Planetary Gearhead
∅10 mm
0.01 - 0.15 Nm
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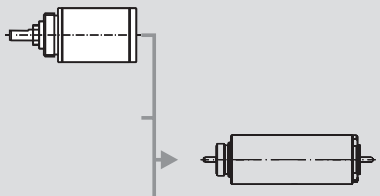

Recommended Electronics:

DECS 50/5	Page 284
DEC 24/1	284
DEC 50/5	285
DECV 50/5	286
Notes	**20**