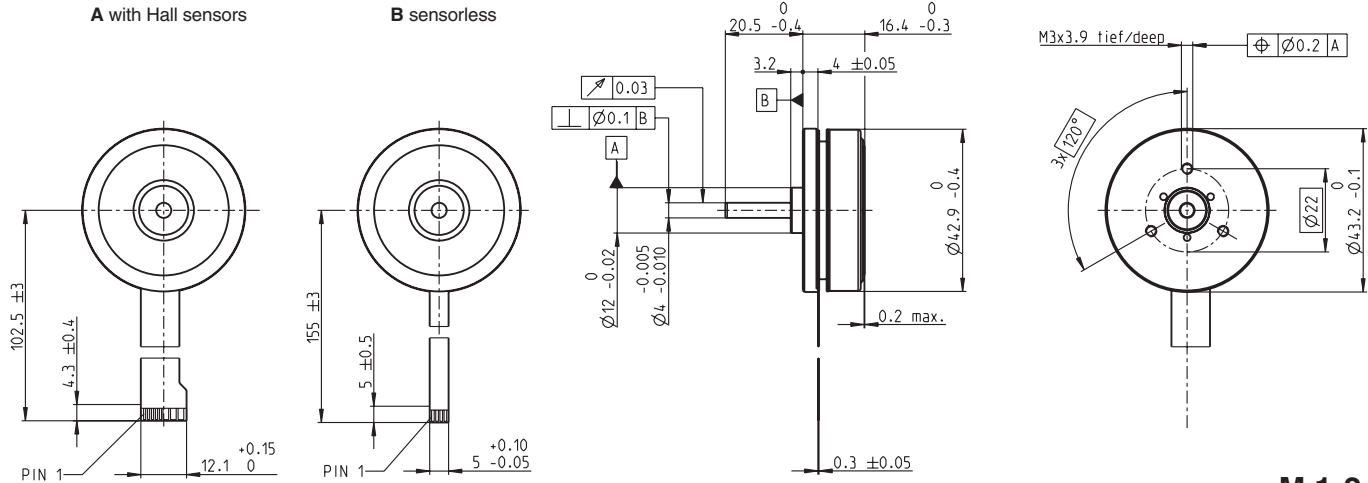


EC 45 flat Ø42.9 mm, brushless, 30 Watt



M 1:2

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

Part Numbers

A with Hall sensors
B sensorless

200142		339281		339282	
	200189		339283		339284

Motor Data

Values at nominal voltage							
1 Nominal voltage	V	12	12	24	24	36	36
2 No load speed	rpm	4380	4370	4380	4380	4760	4760
3 No load current	mA	144	144	73	73	55.4	55.3
4 Nominal speed	rpm	2940	2800	2940	2900	3290	3270
5 Nominal torque (max. continuous torque)	mNm	55.5	55.2	55.3	55.2	66.6	66.6
6 Nominal current (max. continuous current)	A	2.03	2.02	1.01	1.01	0.849	0.849
7 Stall torque	mNm	55.5	219	253	243	380	369
8 Starting current	A	10	8.58	4.97	4.77	5.38	5.22
9 Max. efficiency	%	78	76	78	77	81	81
Characteristics							
10 Terminal resistance phase to phase	Ω	1.2	1.4	4.83	5.03	6.69	6.89
11 Terminal inductance phase to phase	mH	0.56	0.56	2.24	2.24	4.29	4.29
12 Torque constant	mNm/A	25.5	25.5	51	51	70.6	70.6
13 Speed constant	rpm/V	374	374	187	187	135	135
14 Speed/torque gradient	rpm/mNm	17.6	20.5	17.7	18.5	12.8	13.2
15 Mechanical time constant	ms	17.1	19.9	17.2	17.9	12.4	12.8
16 Rotor inertia	gcm ²	92.5	92.5	92.5	92.5	92.5	92.5

Specifications

Thermal data		
17 Thermal resistance housing-ambient	5.41 K/W	
18 Thermal resistance winding-housing	3.97 K/W	
19 Thermal time constant winding	11.5 s	
20 Thermal time constant motor	251 s	
21 Ambient temperature	-40...+100°C	
22 Max. winding temperature	+125°C	

Mechanical data (preloaded ball bearings)		
23 Max. permissible speed	10000 rpm	
24 Axial play at axial load < 5.0 N	0 mm	
	> 5.0 N	typ. 0.14 mm
25 Radial play	preloaded	
26 Max. axial load (dynamic)	4.8 N	
27 Max. force for press fits (static) (static, shaft supported)	53 N	
	1000 N	
28 Max. radial load, 8 mm from flange	21 N	

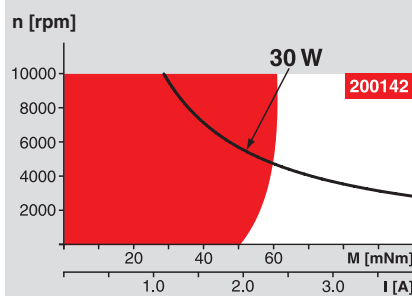
Other specifications

29 Number of pole pairs	8
30 Number of phases	3
31 Weight of motor	75 g

Values listed in the table are nominal.

Connection	with Hall sensors	sensorless
Pin 1	V _{hall} 4.5...18 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	
*Internal pull-up (7...13 kΩ) on pin 1		
Wiring diagram for Hall sensors see p. 35		
Adapter	Part number	Part number
see p. 362	220300	220310
Connector	Part number	Part number
Tyco	1-84953-1	84953-4
Molex	52207-1133	52207-0433
Molex	52089-1119	52089-0419
Pin for design with Hall sensors:		
FPC, 11-pol, Pitch 1.0 mm, top contact style		

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

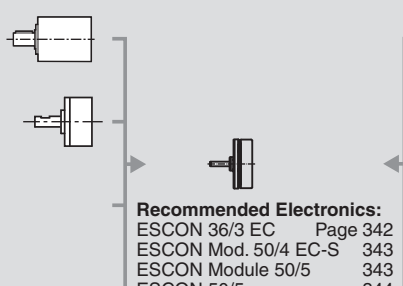
Overview on page 20–25

Planetary Gearhead

Ø42 mm
3 - 15 Nm
Page 285

Spur Gearhead

Ø45 mm
0.5 - 2.0 Nm
Page 286



Recommended Electronics:

ESCON 36/3 EC	Page 342
ESCON Mod. 50/4 EC-S	343
ESCON Module 50/5	343
ESCON 50/5	344
DEC Module 24/2	346
DEC Module 50/5	346
EPOS2 24/2, Module 36/2	350
EPOS2 24/5, 50/5	351
EPOS2 P 24/5	354
EPOS3 70/10 EtherCAT	357
MAXPOS 50/5	360
Notes	24

Encoder MILE

256 - 2048 CPT,
2 channels
Page 308

Option
With Cable and Connector
(Motor length +1.3 mm,
Ambient temperature -20...+100°C)