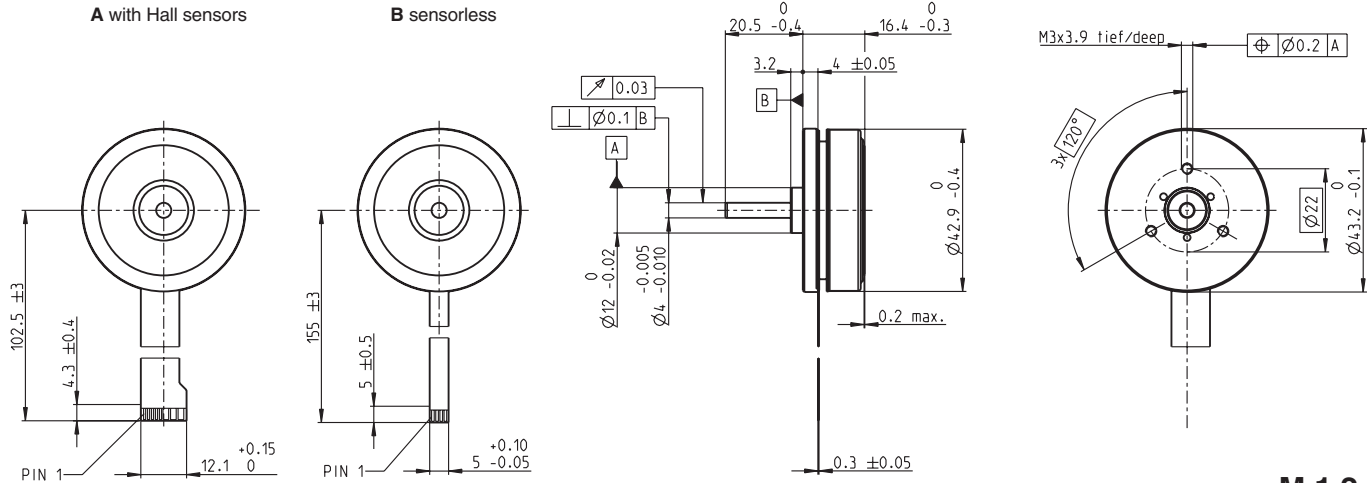


EC 45 flat Ø42.9 mm, brushless, 30 Watt



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	146	146	73	73	55.4	55.3
4 Nominal speed	rpm	2940	2850	2940	2910	3290	3270
5 Nominal torque (max. continuous torque)	mNm	55.5	53.2	55.3	54.7	66.6	66.1
6 Nominal current (max. continuous current)	A	2.03	1.96	1.01	1	0.849	0.844
7 Stall torque	mNm	241	206	239	230	337	330
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	5.7 K/W	
18 Thermal resistance winding-housing	3.96 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. permissible 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)	53 N	
(static, shaft supported)	1000 N	
28 Max. radial loading, 7.5 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

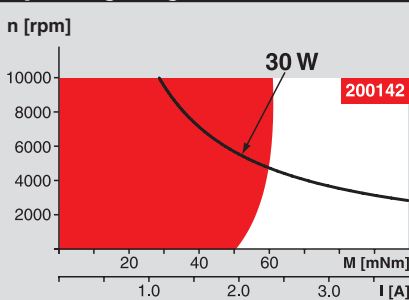
Wiring diagram for Hall sensors see p. 31

Adapter	Part number	Part number
see p. 339	220300	220310

Connector	Part number	Part 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-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

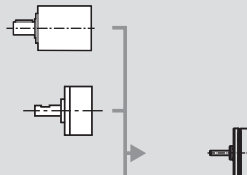
Overview on page 20 - 25

Planetary Gearhead

Ø42 mm
3 - 15 Nm
Page 271

Spur Gearhead

Ø45 mm
0.5 - 2.0 Nm
Page 272



Recommended Electronics:

ESCON 36/3 EC	Page 320
ESCON Module 50/5	321
ESCON 50/5	321
DECS 50/5	324
DEC Module 24/2	325
DEC Module 50/5	325
EPOS2 24/2, Module 36/2	330
EPOS2 24/5	331
EPOS2 P 24/5	334
EPOS3 70/10 EtherCAT	337
Notes	24

Option

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