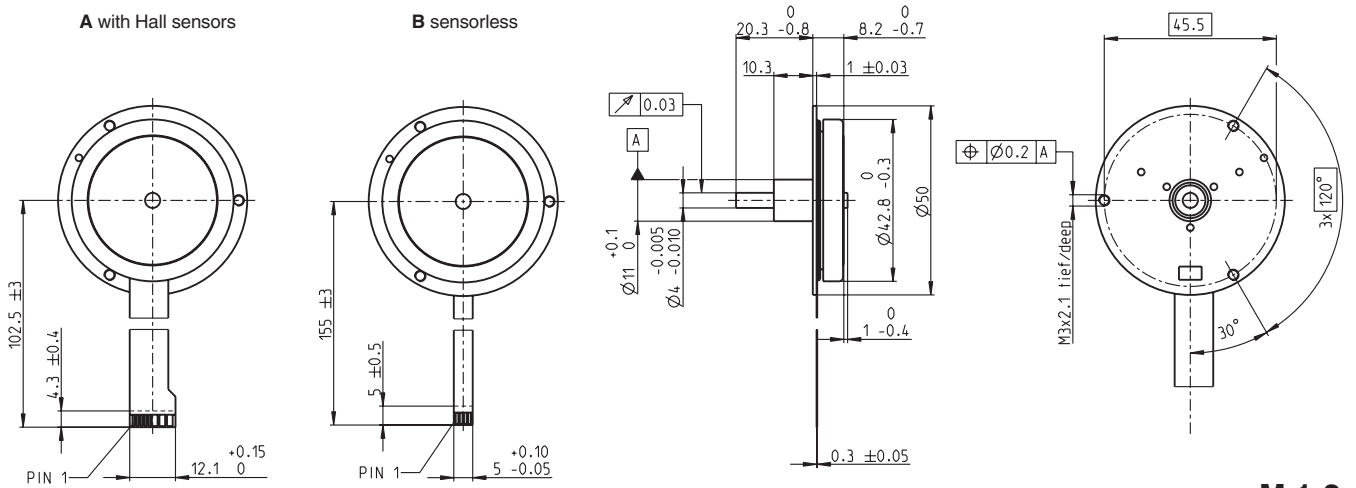
EC 45 flat ∅45 mm, brushless, 12 Watt



M 1:2

Stock program
Standard program
Special program (on request)

		Order Number							
	A with Hall sensors	200188		339275		339276			
	B sensorless		200141		339277		339278		
Motor Data									
	Values at nominal voltage								
1	Nominal voltage	V	9.0	9.0	12.0	12.0	24.0	24.0	
2	No load speed	rpm	8030	8010	8190	8180	7320	7320	
3	No load current	mA	128	128	99.0	99.0	42.2	42.2	
4	Nominal speed	rpm	4840	4350	4840	4790	4380	4370	
5	Nominal torque (max. continuous torque)	mNm	22.8	23.9	19.1	18.3	25.8	25.4	
6	Nominal current (max. continuous current)	A	1.96	2.07	1.31	1.27	0.739	0.730	
7	Stall torque	mNm	89.1	74.9	66.3	61.3	106	103	
8	Starting current	A	8.57	7.20	4.90	4.53	3.46	3.37	
9	Max. efficiency	%	77	76	74	73	79	79	
	Characteristics								
10	Terminal resistance phase to phase	Ω	1.05	1.25	2.45	2.65	6.93	7.13	
11	Terminal inductance phase to phase	mH	0.320	0.320	0.541	0.541	2.75	2.75	
12	Torque constant	mNm / A	10.4	10.4	13.5	13.5	30.5	30.5	
13	Speed constant	rpm / V	918	918	706	706	313	313	
14	Speed / torque gradient	rpm / mNm	92.7	110	128	138	71.1	73.2	
15	Mechanical time constant	ms	50.8	60.4	70.1	75.8	38.9	40.1	
16	Rotor inertia	gcm²	52.3	52.3	52.3	52.3	52.3	52.3	

Specifications

Thermal data

17	Thermal resistance housing-ambient	5.17 K / W
18	Thermal resistance winding-housing	5.05 K / W
19	Thermal time constant winding	8.24 s
20	Thermal time constant motor	147 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. 0.6 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		4.8 N
27	Max. force for press fits (static)		50 N
	(static, shaft supported)		1000 N
28	Max. radial loading, 7.5 mm from flange		5.5 N

Other specifications

29	Number of pole pairs	8
30	Number of phases	3
31	Weight of motor	57 g

Values listed in the table are nominal.

Connection	with Hall sensors	sensorless
Pin 1	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	

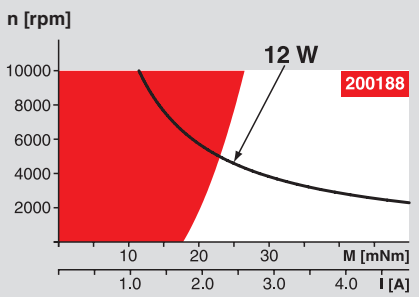
*Internal pull-up (7 … 13 kΩ) on pin 1

Wiring diagram for Hall sensors see p. 29

Adapter	**Order number**	**Order number**
see p. 310	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-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 16 - 21

Recommended Electronics:

May 2010 edition / subject to change