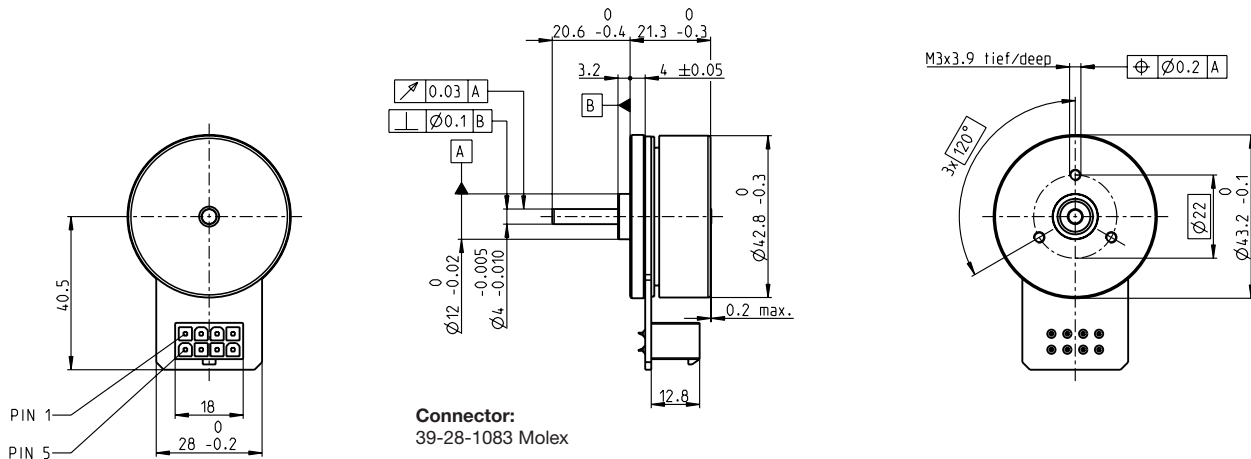


# EC 45 flat $\varnothing 42.8$ mm, brushless, 50 Watt



M 1:2

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

### Part Numbers

	with Hall sensors	339285	251601	339286	339287
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### Motor Data

Values at nominal voltage						
1	Nominal voltage	V	18	24	24	36
2	No load speed	rpm	6720	6710	4730	3360
3	No load current	mA	247	185	106	42.3
4	Nominal speed	rpm	5190	5240	3480	2360
5	Nominal torque (max. continuous torque)	mNm	97.1	83.4	69.6	90.5
6	Nominal current (max. continuous current)	A	3.52	2.33	1.41	0.828
7	Stall torque	mNm	975	780	402	484
8	Stall current	A	38.8	23.3	8.47	4.81
9	Max. efficiency	%	85	83	79	82
Characteristics						
10	Terminal resistance phase to phase	$\Omega$	0.464	1.03	2.83	7.48
11	Terminal inductance phase to phase	mH	0.322	0.572	1.15	5.15
12	Torque constant	mNm/A	25.1	33.5	47.5	101
13	Speed constant	rpm/V	380	285	201	95
14	Speed/torque gradient	rpm/mNm	7.02	8.77	12	7.07
15	Mechanical time constant	ms	9.92	12.4	17	10
16	Rotor inertia	gcm <sup>2</sup>	135	135	135	135

### Specifications

Thermal data		
17	Thermal resistance housing-ambient	4.53 K/W
18	Thermal resistance winding-housing	4.75 K/W
19	Thermal time constant winding	17.7 s
20	Thermal time constant motor	227 s
21	Ambient temperature	-40...+100°C
22	Max. winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. speed	10000 rpm
24	Axial play at axial load < 4.0 N	0 mm
	> 4.0 N	0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	3.8 N
27	Max. force for press fits (static) (static, shaft supported)	53 N
28	Max. radial load, 5 mm from flange	1000 N
		20 N

### Other specifications

29	Number of pole pairs	8
30	Number of phases	3
31	Weight of motor	110 g

Values listed in the table are nominal.

### Connection

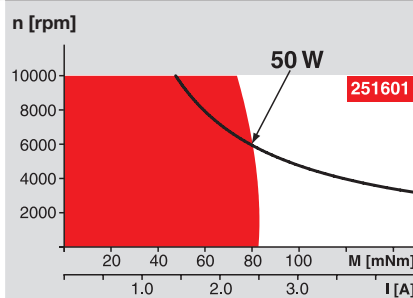
Pin 1	Hall sensor 1*
Pin 2	Hall sensor 2*
Pin 3	V <sub>Hall</sub> 4.5...18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3*
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

\*Internal pull-up (7...13 k $\Omega$ ) on pin 3  
Wiring diagram for Hall sensors see p. 37

### Cable

Connection cable Universal, L = 500 mm	339380
Connection cable to EPOS, L = 500 mm	354045

### 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

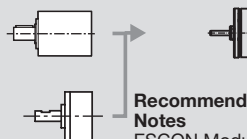
Overview on page 20-27

#### Planetary Gearhead

$\varnothing 42$  mm  
3 - 15 Nm  
Page 351

#### Spur Gearhead

$\varnothing 45$  mm  
0.5 - 2.0 Nm  
Page 353



#### Recommended Electronics:

Notes	Page 26
ESCON Module 24/2	416
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417
ESCON Module 50/5	417
ESCON 50/5	418
DEC Module 24/2	420
DEC Module 50/5	420
EPOS2 24/2	424
EPOS2 Module 36/2	424
EPOS2 24/5, 50/5	425
EPOS2 P 24/5	428
EPOS4 Module 50/8	431
EPOS4 Comp. 50/8 CAN	431
MAXPOS 50/5	435

#### Encoder MILE

256 - 2048 CPT,  
2 channels  
Page 379

#### Option

With Cable and Connector  
(Ambient temperature -20...+100°C)