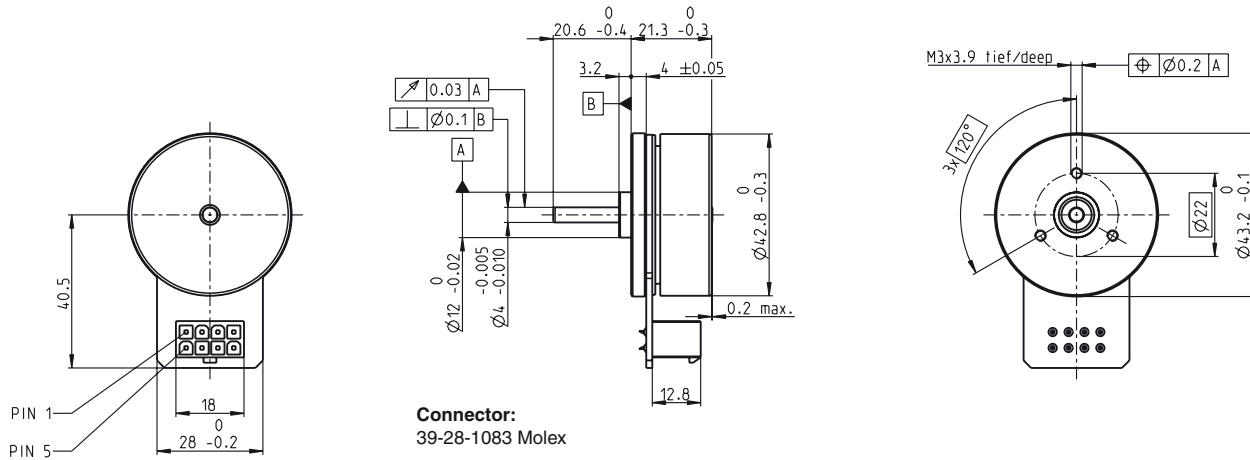


# EC 45 flat Ø42.8 mm, brushless, 50 Watt



Connector:  
39-28-1083 Molex

M 1:2

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

### Article Numbers

with Hall sensors

339285	251601	339286	339287
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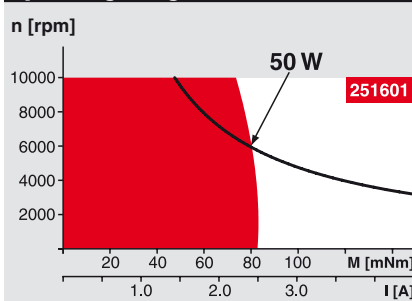
### Motor Data

Values at nominal voltage		18	24	24	36
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	5220	5250	3480	2360
5 Nominal torque (max. continuous torque)	mNm	95.2	82.7	69.5	90.5
6 Nominal current (max. continuous current)	A	3.46	2.32	1.41	0.828
7 Stall torque	mNm	925	741	382	459
8 Starting current	A	38.9	23.3	8.5	4.83
9 Max. efficiency	%	85	83	79	82
Characteristics					
10 Terminal resistance phase to phase	Ω	0.463	1.03	2.82	7.46
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	8.75	12	7.05
15 Mechanical time constant	ms	9.89	12.4	16.9	9.97
16 Rotor inertia	gcm <sup>2</sup>	135	135	135	135

### Specifications

Thermal data	
17 Thermal resistance housing-ambient	4.13 K/W
18 Thermal resistance winding-housing	4.95 K/W
19 Thermal time constant winding	18.4 s
20 Thermal time constant motor	207 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 < 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 loading, 7.5 mm from flange	1000 N
	21 N

### 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**

### 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 kΩ) on pin 3  
Wiring diagram for Hall sensors see p. 29

### Cable

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

### maxon Modular System

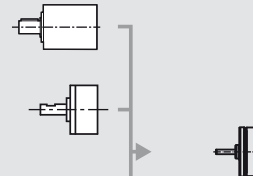
Overview on page 16 - 21

#### Planetary Gearhead

Ø42 mm  
3 - 15 Nm  
Page 243

#### Spur Gearhead

Ø45 mm  
0.5 - 2.0 Nm  
Page 244



### Recommended Electronics:

ESCON 50/5	Page 292
DECS 50/5	297
DEC 24/3	298
DEC Module 50/5	299
EPOS2 24/2	312
EPOS2 Module 36/2	312
EPOS2 24/5	313
EPOS2 P 24/5	316
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### Option

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

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