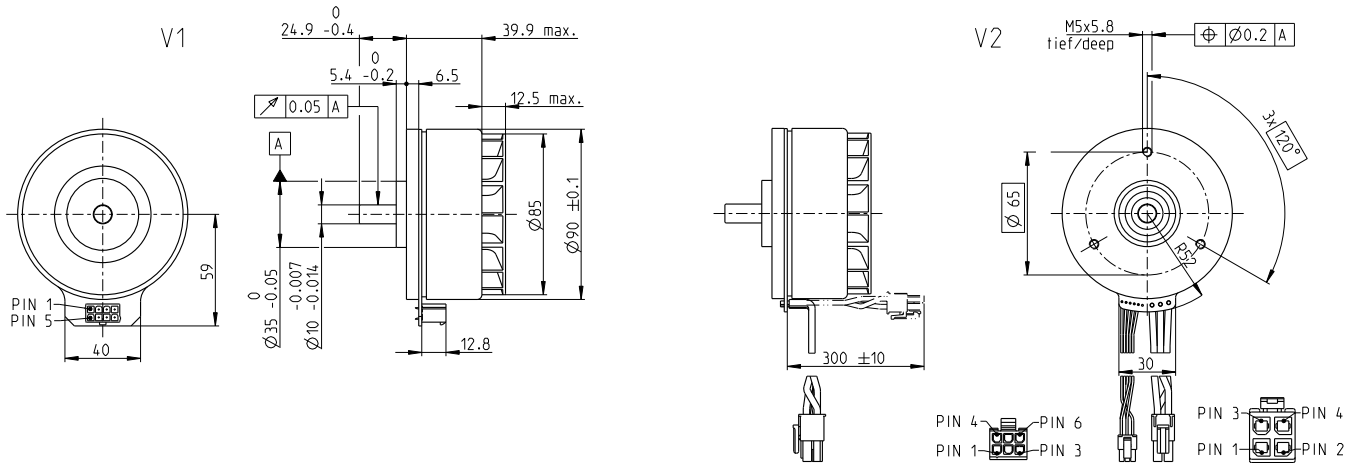


# EC 90 flat Ø90 mm, brushless, 600 watt

Ventilated

EC flat



## M 1:4

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

### Part Numbers

	V1 with Hall sensors	597974	597975	597976
V2 with Hall sensors and cables	607937	607938	607939	607940

Motor Data					
Values at nominal voltage					
1 Nominal voltage	V	18	30	48	60
2 No load speed	rpm	2080	2080	1960	1980
3 No load current	mA	821	493	283	230
4 Nominal speed	rpm	1620	1620	1520	1540
5 Nominal torque (max. continuous torque)	mNm	1610	1560	1490	1500
6 Nominal current (max. continuous current)	A	18*	10.5	5.95	4.83
7 Stall torque <sup>1</sup>	mNm	14900	14600	13100	13300
8 Stall current	A	183	107	56.9	46.7
9 Max. efficiency	%	87.2	87	86.5	86.6
Characteristics					
10 Terminal resistance phase to phase	Ω	0.0983	0.28	0.844	1.28
11 Terminal inductance phase to phase	mH	0.133	0.369	1.07	1.63
12 Torque constant	mNm/A	81.6	136	231	286
13 Speed constant	rpm/V	117	70.2	41.3	33.4
14 Speed/torque gradient	rpm/mNm	0.141	0.144	0.151	0.15
15 Mechanical time constant	ms	7.47	7.66	7.99	7.97
16 Rotor inertia	gcm <sup>2</sup>	5100	5100	5100	5060

Specifications	Operating Range	Comments
17 Thermal resistance housing-ambient		<p><span style="color: red;">■</span> <b>Continuous operation</b> 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.</p> <p><span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> <b>Short term operation</b> The motor may be briefly overloaded (recurring).</p> <p><span style="color: red;">—</span> <b>Assigned power rating</b></p>
18 Thermal resistance winding-housing		
19 Thermal time constant winding		
20 Thermal time constant motor		
21 Ambient temperature		
22 Max. winding temperature		
23 Max. speed		
24 Axial play at axial load		
25 Radial play		
26 Max. axial load (dynamic)		
27 Max. force for press fits (static) (static, shaft supported)		
28 Max. radial load, 10 mm from flange		
29 Number of pole pairs	11	
30 Number of phases	3	
31 Weight of motor	988 g	

- 29 Number of pole pairs 11
  - 30 Number of phases 3
  - 31 Weight of motor 988 g
- Values listed in the table are nominal.

Connection V1		V2 (sensors, AWG 24)	
Pin 1	Hall sensor 1	Pin 1	Hall sensor 1
Pin 2	Hall sensor 2	Pin 2	Hall sensor 2
Pin 3	V <sub>Hall</sub> 4.5...24 VDC	Pin 3	Hall sensor 3
Pin 4	Motor winding 3	Pin 4	GND
Pin 5	Hall sensor 3	Pin 5	V <sub>Hall</sub> 4.5...24 VDC
Pin 6	GND	Pin 6	N.C.
Pin 7	Motor winding 1		
Pin 8	Motor winding 2		

V2 (motor, AWG 14)	
Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

Wiring diagram for Hall sensors see p. 59

Connector	Part number
Molex 46015-0806	43025-0600
Molex	171692-0104

Connection cable for V1 Universal, L = 500 mm **339380**

<sup>1</sup>Calculation does not include saturation effect (p. 71/178)

### maxon Modular System

**Planetary Gearhead**  
Ø52 mm  
4 - 30 Nm  
Page 411



Details on catalog page 46

**Encoder MILE**  
512 - 6400 CPT,  
2 channels  
Page 463

Recommended Electronics:	
Notes	Page 46
ESCON Mod. 50/5	501
ESCON Mod. 50/8 (HE)	502
ESCON 50/5	503
ESCON 70/10	503
DEC Module 50/5	505

Note: The cable alignment relative to the mounting holes of the gearhead is not defined.

\*607937 cannot be combined with the MILE encoder, because the current limit of the connectors of the MILE circuit board is 13 A.