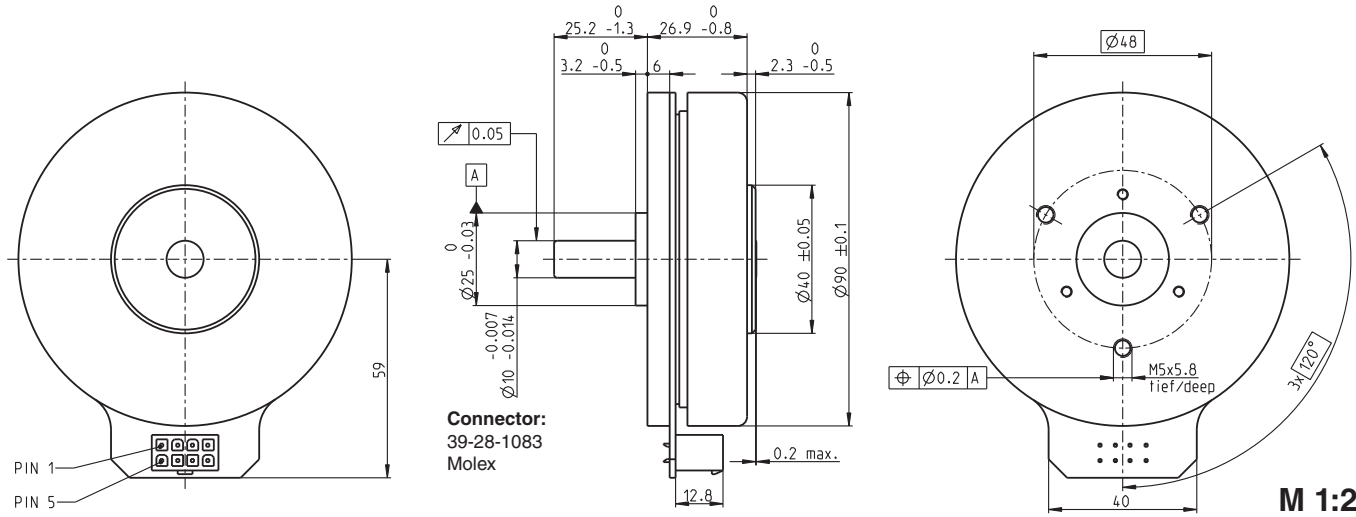


EC 90 flat $\varnothing 90$ mm, brushless, 90 Watt

maxon flat motor



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

Part Numbers

	with Hall sensors	323772	429271	244879
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Motor Data

Values at nominal voltage				
1 Nominal voltage	V	24	36	48
2 No load speed	rpm	3190	3120	2080
3 No load current	mA	544	348	135
4 Nominal speed	rpm	2590	2510	1610
5 Nominal torque (max. continuous torque)	mNm	444	560	533
6 Nominal current (max. continuous current)	A	6.06	4.76	2.27
7 Stall torque	mNm	4690	5730	4460
8 Starting current	A	70	69	21.1
9 Max. efficiency	%	84	87	85
Characteristics				
10 Terminal resistance phase to phase	Ω	0.343	0.522	2.28
11 Terminal inductance phase to phase	mH	0.264	0.625	2.5
12 Torque constant	mNm/A	70.5	109	217
13 Speed constant	rpm/V	135	88	44
14 Speed/torque gradient	rpm/mNm	0.659	0.423	0.462
15 Mechanical time constant	ms	21.1	13.6	14.8
16 Rotor inertia	gcm ²	3060	3060	3060

Specifications

Thermal data	
17 Thermal resistance housing-ambient	1.91 K/W
18 Thermal resistance winding-housing	2.6 K/W
19 Thermal time constant winding	46.6 s
20 Thermal time constant motor	283 s
21 Ambient temperature	-40...+100°C
22 Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)	
23 Max. permissible speed	5000 rpm
24 Axial play at axial load < 15 N	0 mm
24 Axial play at axial load > 15 N	0.14 mm
25 Radial play preloaded	0.14 mm
26 Max. axial load (dynamic)	12 N
27 Max. force for press fits (static) (static, shaft supported)	183 N
28 Max. radial loading, 7.5 mm from flange	8000 N
	60 N

Other specifications

- 29 Number of pole pairs
- 30 Number of phases
- 31 Weight of motor

Values listed in the table are nominal.

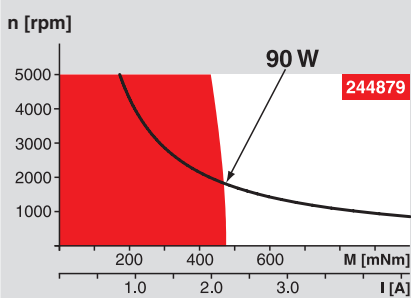
Connection

- Pin 1 Hall sensor 1
 - Pin 2 Hall sensor 2
 - Pin 3 V_{Hall} 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
- Wiring diagram for Hall sensors see p. 31

Cable

- Connection cable Universal, L = 500 mm **339380**
- Connection cable to EPOS2, L = 500 mm **354045**

Operating Range



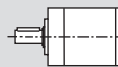
Comments

- 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**

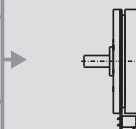
maxon Modular System

Overview on page 20 - 25

- 12 Planetary Gearhead
- 3 $\varnothing 52$ mm
- 600 g 4 - 30 Nm
- Page 274



- Encoder MILE
- 800 - 6400 CPT,
- 2 channels
- Page 294



- Recommended Electronics:**
- ESCON 50/5 Page 321
 - ESCON Module 50/5 321
 - ESCON 70/10 321
 - DECS 50/5 324
 - DEC Module 50/5 325
 - EPOS2 24/5, 50/5, 70/10 331
 - EPOS2 P 24/5 334
 - EPOS3 70/10 EtherCAT 337
 - Notes 24

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