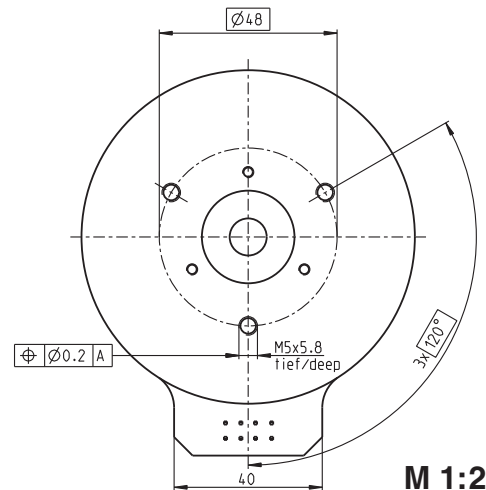
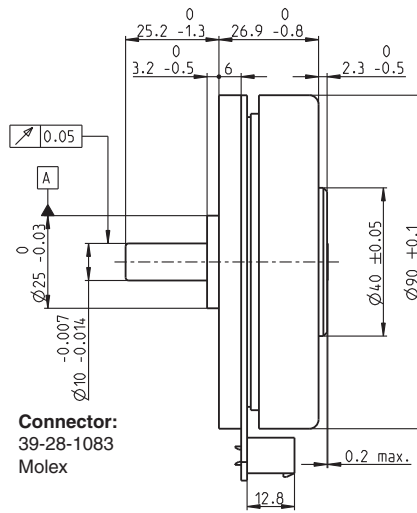
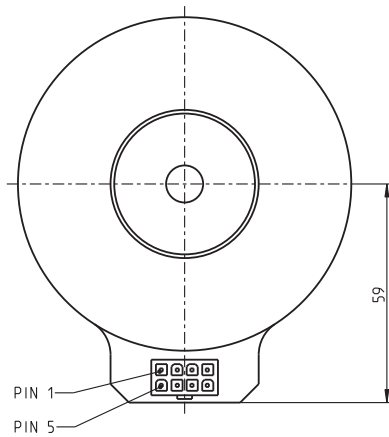


EC 90 flat Ø90 mm, brushless, 90 Watt



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

Part Numbers

with Hall sensors

323772 429271 244879

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	4940	7480	4570
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 s
20 Thermal time constant motor	283 s
21 Ambient temperature	-40...+100°C
22 Max. 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
> 15 N	0.14 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	12 N
27 Max. force for press fits (static)	183 N
(static, shaft supported)	8000 N
28 Max. radial load, 7.5 mm from flange	60 N

Other specifications

29 Number of pole pairs	12
30 Number of phases	3
31 Weight of motor	600 g

Values listed in the table are nominal.

Connection

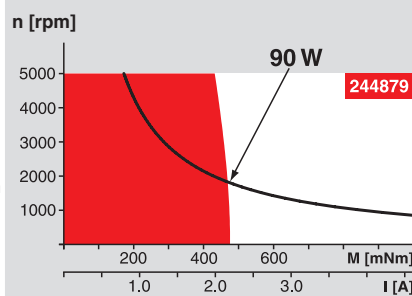
Pin 1	Hall sensor 1
Pin 2	Hall sensor 2
Pin 3	V _{Hall} 4.5...18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

Wiring diagram for Hall sensors see p. 35

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).

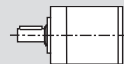
Assigned power rating

maxon Modular System

Overview on page 20–25

Planetary Gearhead

Ø52 mm
4 - 30 Nm
Page 288



Recommended Electronics:

ESCON Mod. 50/5	Page 343
ESCON Mod. 50/4 EC-S	343
ESCON 50/5	344
ESCON 70/10	344
DEC Module 50/5	346
EPOS2 24/5, 50/5, 70/10	351
EPOS2 P 24/5	354
EPOS3 70/10 EtherCAT	357
MAXPOS 50/5	360
Notes	24

Encoder MILE
512 - 6400 CPT,
2 channels
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