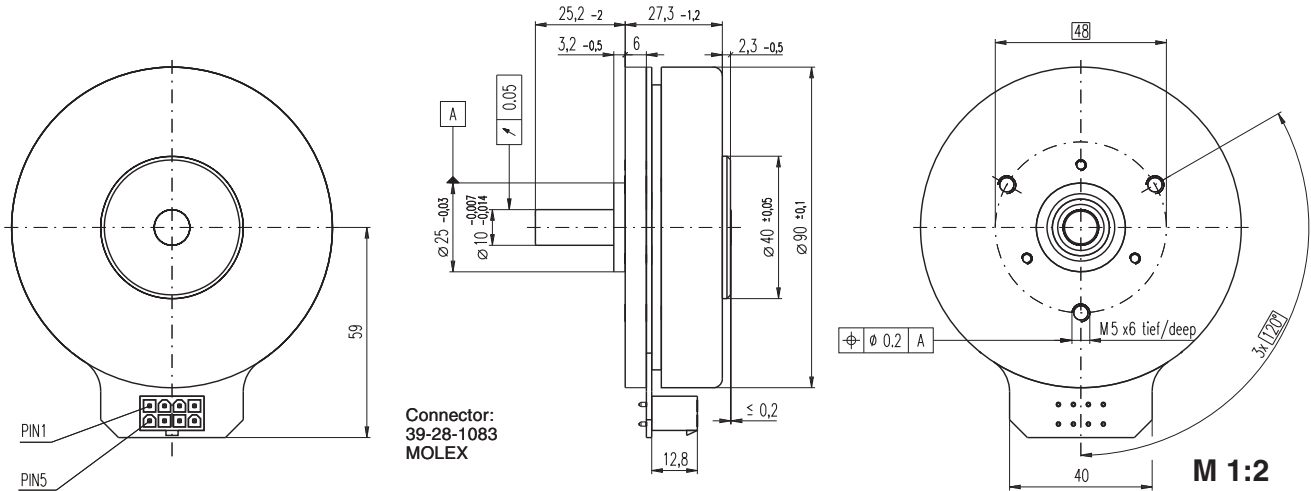


EC 90 flat $\varnothing 90$ mm, brushless, 90 Watt

maxon flat motor



Connector:
39-28-1083
MOLEX

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

Order Number

with Hall sensors

323772 244879

Motor Data

Values at nominal voltage

		24.0	48.0
1 Nominal voltage	V	24.0	48.0
2 No load speed	rpm	3190	2080
3 No load current	mA	539	130
4 Nominal speed	rpm	2650	1640
5 Nominal torque (max. continuous torque)	mNm	387	494
6 Nominal current (max. continuous current)	A	5.39	2.12
7 Stall torque	mNm	4670	4530
8 Starting current	A	66.2	20.9
9 Max. efficiency	%	83	85

Characteristics

		0.363	2.30
10 Terminal resistance phase to phase	Ω	0.363	2.30
11 Terminal inductance phase to phase	mH	0.264	2.50
12 Torque constant	mNm / A	70.5	217
13 Speed constant	rpm / V	135	44.0
14 Speed / torque gradient	rpm / mNm	0.697	0.466
15 Mechanical time constant	ms	22.3	14.9
16 Rotor inertia	gcm ²	3060	3060

Specifications

Thermal data

17 Thermal resistance housing-ambient	1.89 K / W
18 Thermal resistance winding-housing	2.99 K / W
19 Thermal time constant winding	52.6 s
20 Thermal time constant motor	281 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
26 Max. axial load (dynamic)	12 N
27 Max. force for press fits (static)	150 N
27 Max. force for press fits (static) (static, shaft supported)	8000 N
28 Max. radial loading, 7.5 mm from flange	30 N

Other specifications

29 Number of pole pairs	12
30 Number of phases	3
31 Weight of motor	648 g

Values listed in the table are nominal.

Connection

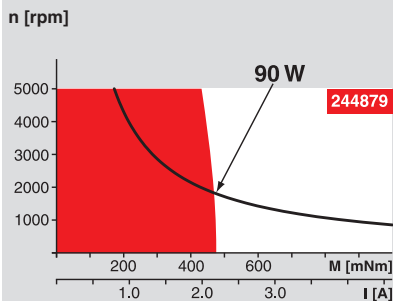
Pin 1	Hall sensor 1
Pin 2	Hall sensor 2
Pin 3	4.5 ... 24 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

Wiring diagram for Hall sensors see page 29

Cable

Connection cable Universal, L = 500 mm	339380
Connection cable zu 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).

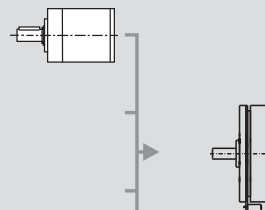
— Assigned power rating

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead

$\varnothing 52$ mm
4 - 30 Nm
Page 244



Recommended Electronics:

DECS 50/5	Page 288
DEC 50/5	289
DECV 50/5	295
DEC 70/10	295
EPOS 24/5	303
EPOS 70/10	303
EPOS P 24/5	306
Notes	20