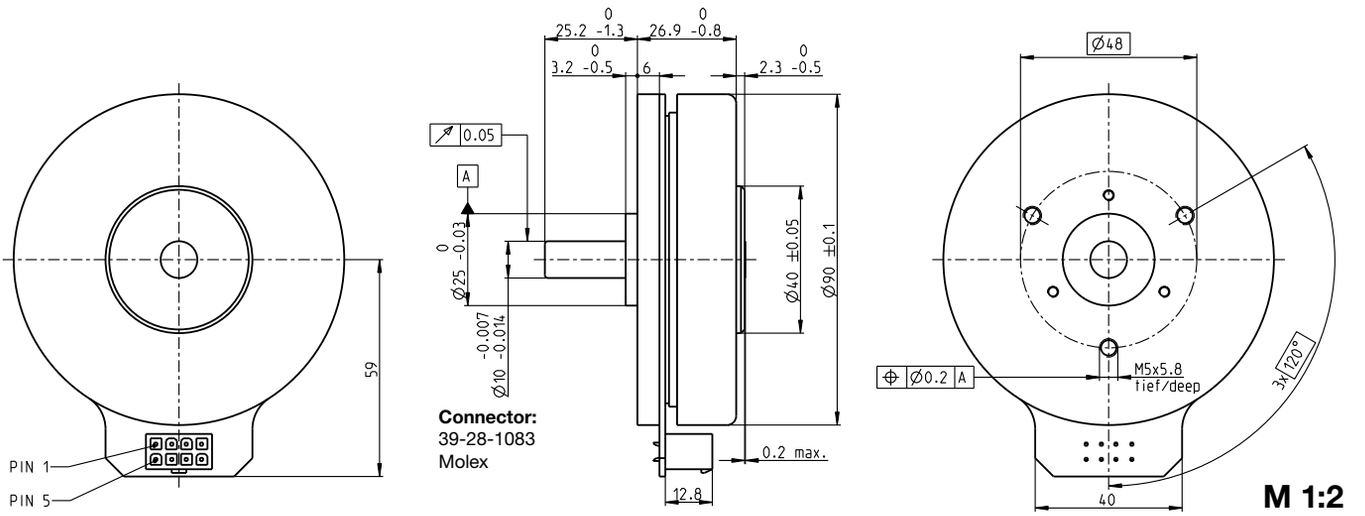
EC 90 flat ∅90 mm, brushless, 90 Watt



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	Stall 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	gcm²	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. 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, 5 mm from flange		68 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

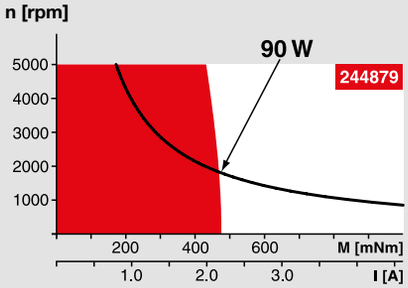
Pin 1	Hall sensor 1
Pin 2	Hall sensor 2
Pin 3	V_{Hall} 4.5…18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

Wiring diagram for Hall sensors see p. 43

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.

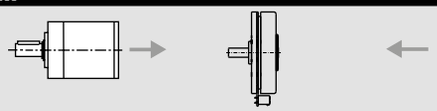
Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Overview on page 28–36

Planetary Gearhead
∅52 mm
4 - 30 Nm
Page 351



Encoder MILE
512 - 6400 CPT,
2 channels
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Recommended Electronics:

Notes	Page **32**
ESCON Mod. 50/4 EC-S	427
ESCON Mod. 50/5	427
ESCON 50/5	428
ESCON 70/10	428
DEC Module 50/5	430
EPOS2 24/5, 50/5, 70/10	435
EPOS2 P 24/5	438
EPOS4 Module/CB 50/5	442
EPOS4 Module 50/8	443
EPOS4 Comp. 50/8 CAN	443
MAXPOS 50/5	447