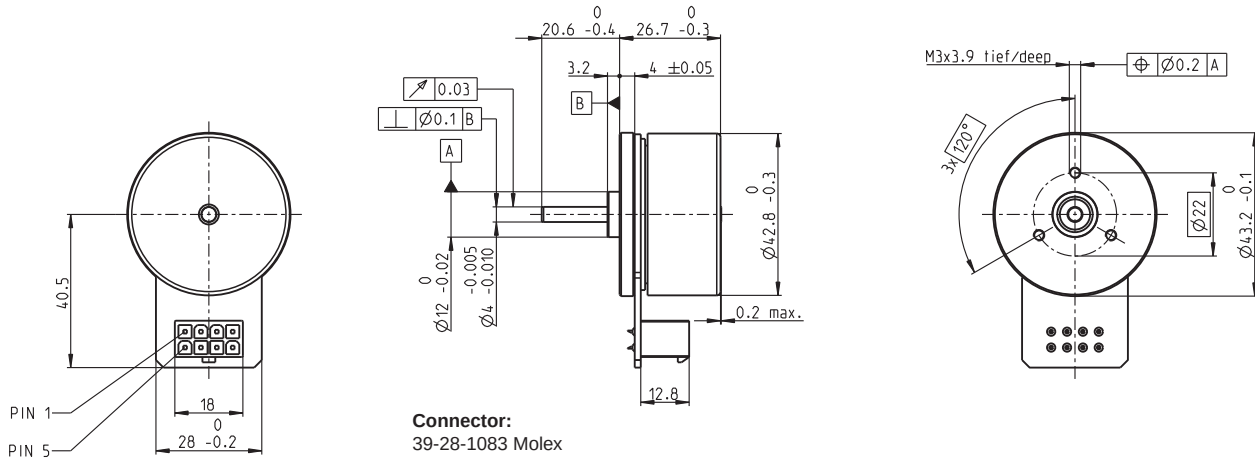


EC 45 flat Ø42.8 mm, brushless, 70 Watt



Connector:
39-28-1083 Molex

M 1:2

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

Part Numbers

		with Hall sensors			
		397172	402685	402686	402687
Motor Data (provisional)					
Values at nominal voltage					
1 Nominal voltage	V	24	30	36	48
2 No load speed	rpm	6110	6230	6330	3440
3 No load current	mA	234	194	166	48.1
4 Nominal speed	rpm	4860	4990	5080	2540
5 Nominal torque (max. continuous torque)	mNm	128	112	108	134
6 Nominal current (max. continuous current)	A	3.21	2.36	1.93	0.936
7 Stall torque	mNm	1460	1170	1100	915
8 Stall current	A	39.5	25.8	20.7	6.97
9 Max. efficiency	%	85	84	83	84
Characteristics					
10 Terminal resistance phase to phase	Ω	0.608	1.16	1.74	6.89
11 Terminal inductance phase to phase	mH	0.463	0.691	0.966	5.85
12 Torque constant	mNm / A	36.9	45.1	53.3	131
13 Speed constant	rpm / V	259	212	179	72.7
14 Speed / torque gradient	rpm / mNm	4.26	5.44	5.85	3.82
15 Mechanical time constant	ms	8.07	10.3	11.1	7.24
16 Rotor inertia	gcm ²	181	181	181	181

Specifications

Thermal data	
17 Thermal resistance housing-ambient	3.56 K/W
18 Thermal resistance winding-housing	4.1 K/W
19 Thermal time constant winding	29.6 s
20 Thermal time constant motor	178 s
21 Ambient temperature	-40 ... +100°C
22 Max. winding temperature	+125°C

Mechanical data (preloaded ball bearings)	
23 Max. speed	10000 rpm
24 Axial play at axial load	< 4.0 N 0 mm
	> 4.0 N 0.14 mm
25 Radial play	preloaded 3.8 N
26 Max. axial load (dynamic)	50 N
27 Max. force for press fits (static)	1000 N
(static, shaft supported)	21 N
28 Max. radial load, 5 mm from flange	

Other specifications

29 Number of pole pairs	8
30 Number of phases	3
31 Weight of motor	141 g

Values listed in the table are nominal.

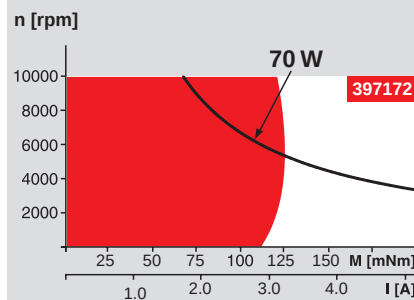
Connection

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
*Internal pull-up (7 ... 13 kΩ) on pin 3	
Wiring diagram for Hall sensors see p. 35	

Cable

Connection cable Universal, L = 500 mm	339380
Connection cable to 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

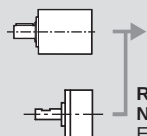
Overview on page 20–25

Planetary Gearhead

Ø42 mm
3 - 15 Nm
Page 316

Spur Gearhead

Ø45 mm
0.5 - 2.0 Nm
Page 317



Recommended Electronics:

Notes	Page 24
ESCON 36/3 EC	379
ESCON Mod. 50/4 EC-S	379
ESCON Module 50/5	379
ESCON 50/5	380
DEC Module 50/5	382
EPOS2 Module 36/2	386
EPOS2 24/5, 50/5	387
EPOS2 P 24/5	390
EPOS3 70/10 EtherCAT	393
MAXPOS 50/5	396

Encoder MILE
256 - 2048 CPT,
2 channels
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Option

With Cable and Connector
(Ambient temperature -20 ... +100°C)