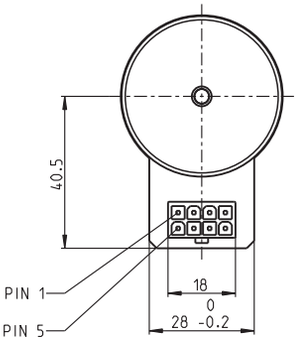
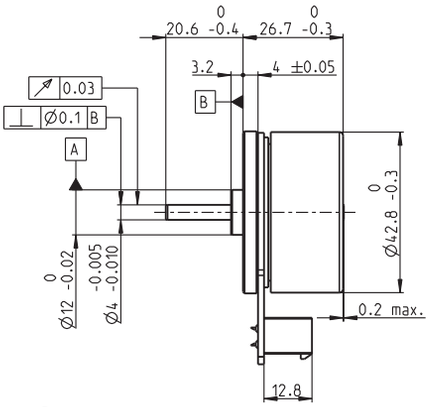
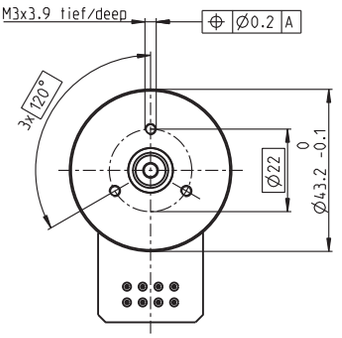
EC 45 flat ∅42.8 mm, brushless, 70 Watt





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 gcm²	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
26	Max. axial load (dynamic)		3.8 N
27	Max. force for press fits (static)		50 N
	(static, shaft supported)		1000 N
28	Max. radial load, 5 mm from flange		21 N

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

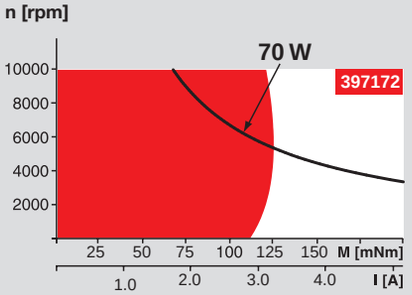
Pin 1	Hall sensor 1*
Pin 2	Hall sensor 2*
Pin 3	V_{Hall} 4.5 ... 18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3*
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

*Internal pull-up (7 … 13 kΩ) on pin 3
Wiring diagram for Hall sensors see p. 37

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).

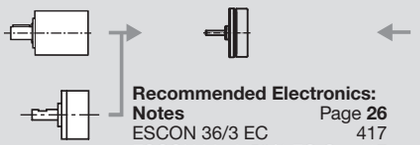
Assigned power rating

maxon Modular System

Overview on page 20–27

Planetary Gearhead
∅42 mm
3 - 15 Nm
Page 351

Spur Gearhead
∅45 mm
0.5 - 2.0 Nm
Page 353



Encoder MILE
256 - 2048 CPT,
2 channels
Page 379

Recommended Electronics:

Notes	Page **26**
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417
ESCON Module 50/5	417
ESCON 50/5	418
DEC Module 50/5	420
EPOS2 Module 36/2	424
EPOS2 24/5, 50/5	425
EPOS2 P 24/5	428
EPOS4 Module 50/8	431
EPOS4 Comp. 50/8 CAN	431
MAXPOS 50/5	435

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