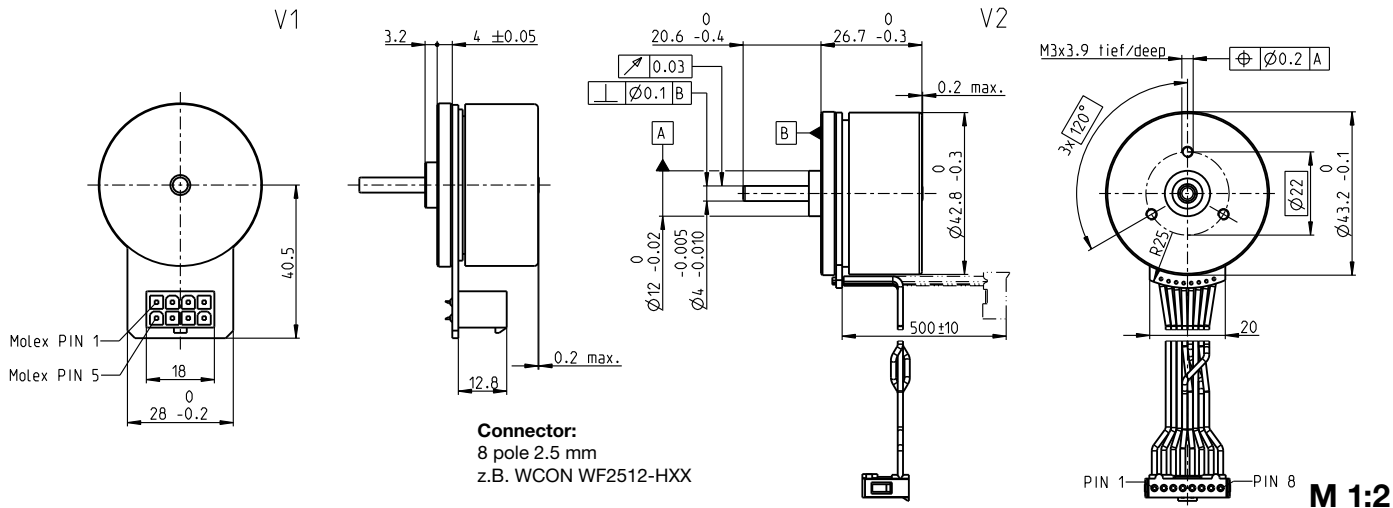


EC 45 flat $\varnothing 42.8$ mm, brushless, 70 Watt

maxon flat motor



Connector:
8 pole 2.5 mm
z.B. WCON WF2512-HXX

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

Part Numbers

	397172	402685	402686	402687
V1 with Hall sensors	411812	411814	411815	411816
V2 with Hall sensors and cables				

Motor Data (provisional)

Values at nominal voltage		24	30	36	48
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 ¹	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
24 Axial play at axial load > 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) (static, shaft supported)	50 N
27 Max. force for press fits (static) (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 V1		V2 (AWG 24)	
Pin 1	Hall sensor 1*	Motor winding 1	
Pin 2	Hall sensor 2*	Motor winding 2	
Pin 3	V _{hall} 4.5 ... 18 VDC	Motor winding 3	
Pin 4	Motor winding 3	V _{hall} 4.5 ... 18 VDC	
Pin 5	Hall sensor 3*	GND	
Pin 6	GND	Hall sensor 1*	
Pin 7	Motor winding 1	Hall sensor 2*	
Pin 8	Motor winding 2	Hall sensor 3*	

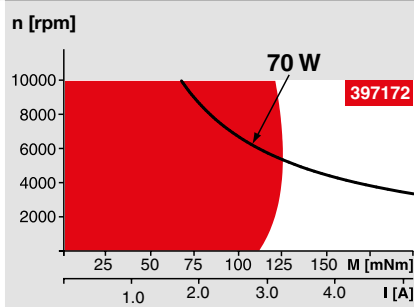
*Internal pull-up (7 ... 13 k Ω) on V_{hall}
Wiring diagram for Hall sensors see p. 43

Cable for V1	
Connection cable Universal, L = 500 mm	339380
Connection cable to EPOS, L = 500 mm	354045

V2	
21 Ambient temperature	-20 ... +100°C

¹Calculation does not include saturation effect (p. 53/164)

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

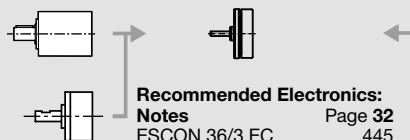
Overview on page 28–36

Planetary Gearhead

$\varnothing 42$ mm
3 - 15 Nm
Page 356

Spur Gearhead

$\varnothing 45$ mm
0.5 - 2.0 Nm
Page 358



Recommended Electronics:

Notes	Page 32
ESCON 36/3 EC	445
ESCON Mod. 50/4 EC-S	445
ESCON Module 50/5	445
ESCON 50/5	447
DEC Module 50/5	449
EPOS4 50/5	453
EPOS4 Mod./Comp. 50/5	453
EPOS2 P 24/5	464
MAXPOS 50/5	468

Encoder MILE

256 - 2048 CPT,
2 channels
Page 402