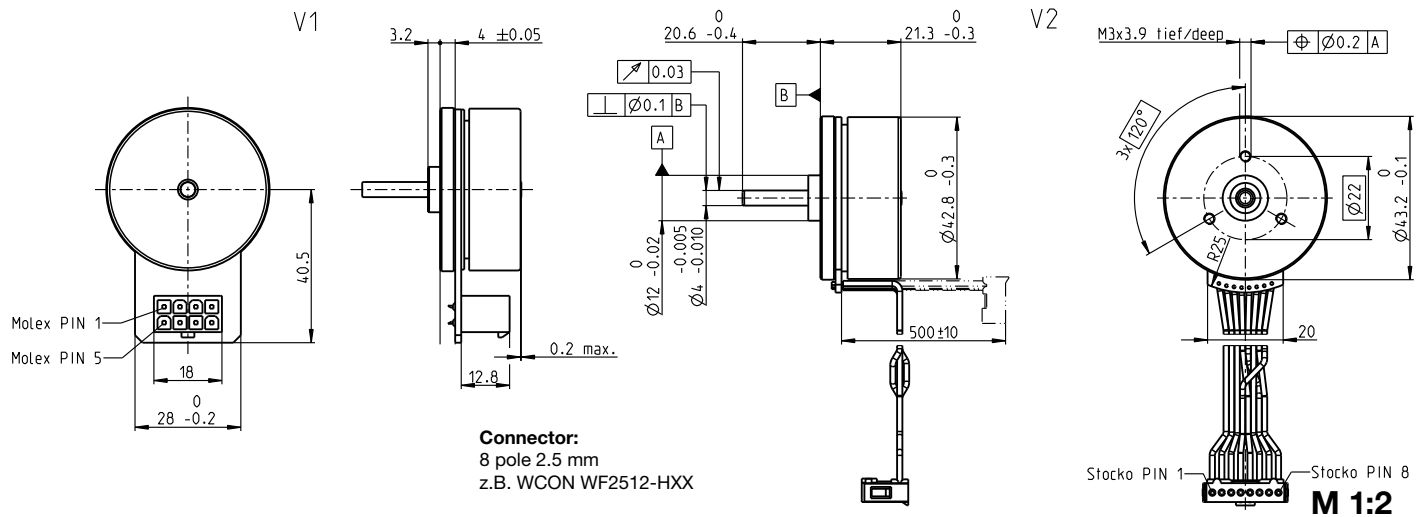


EC 45 flat $\varnothing 42.8$ mm, brushless, 50 Watt

maxon flat motor



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

Part Numbers				
V1 with Hall sensors	339285	251601	339286	339287
V2 with Hall sensors and cables	400106	387250	400107	400108

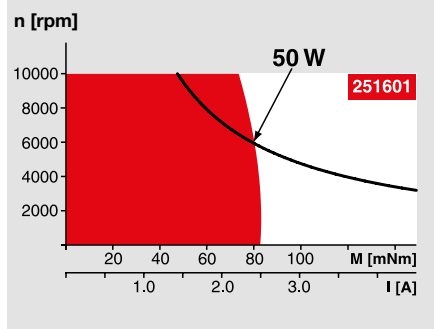
Motor Data

Values at nominal voltage					
1 Nominal voltage	V	18	24	24	36
2 No load speed	rpm	6720	6710	4730	3360
3 No load current	mA	247	185	106	42.3
4 Nominal speed	rpm	5190	5240	3480	2360
5 Nominal torque (max. continuous torque)	mNm	97.1	83.4	69.6	90.5
6 Nominal current (max. continuous current)	A	3.52	2.33	1.41	0.828
7 Stall torque ¹	mNm	975	780	402	484
8 Stall current	A	38.8	23.3	8.47	4.81
9 Max. efficiency	%	85	83	79	82
Characteristics					
10 Terminal resistance phase to phase	Ω	0.464	1.03	2.83	7.48
11 Terminal inductance phase to phase	mH	0.322	0.572	1.15	5.15
12 Torque constant	mNm/A	25.1	33.5	47.5	101
13 Speed constant	rpm/V	380	285	201	95
14 Speed/torque gradient	rpm/mNm	7.02	8.77	12	7.07
15 Mechanical time constant	ms	9.92	12.4	17	10
16 Rotor inertia	gcm ²	135	135	135	135

Specifications

Thermal data	
17 Thermal resistance housing-ambient	4.53 K/W
18 Thermal resistance winding-housing	4.75 K/W
19 Thermal time constant winding	17.7 s
20 Thermal time constant motor	227 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) (static, shaft supported)	53 N
	1000 N
28 Max. radial load, 5 mm from flange	20 N

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

Other specifications

29 Number of pole pairs	8
30 Number of phases	3
31 Weight of motor	110 g

Values listed in the table are nominal.

Connection V1

Pin	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. 27

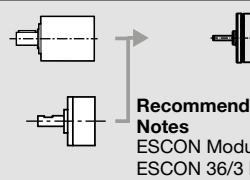
Cable for V1

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

maxon Modular System

Planetary Gearhead
 $\varnothing 42$ mm
3 - 15 Nm
Page 363

Spur Gearhead
 $\varnothing 45$ mm
0.5 - 2.0 Nm
Page 365



Recommended Electronics:

Notes	Page 36
ESCON Module 24/2	454
ESCON 36/3 EC	455
ESCON Mod. 50/4 EC-S	455
ESCON Module 50/5	455
ESCON 50/5	457
DEC Module 24/2	459
DEC Module 50/5	459
EPOS4 Mod./Comp. 24/1.5	462
EPOS4 50/5	463
EPOS4 Mod./Comp. 50/5	463
EPOS2 P 24/5	470
MAXPOS 50/5	473

Details on catalog page 36

Encoder MILE
256 - 2048 CPT,
2 channels
Page 412

V2

21 Ambient temperature	-20...+100°C
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¹Calculation does not include saturation effect (p. 57/162)