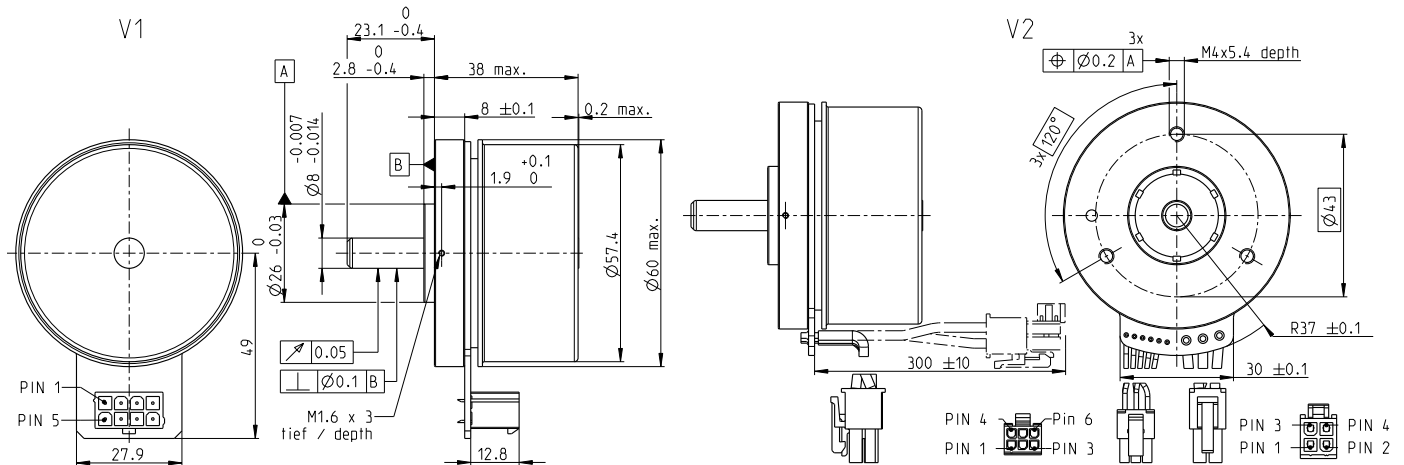


# EC 60 flat $\varnothing 60$ mm, brushless, 100 watt

EC flat



## M 1:2

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

### Part Numbers

V1 with Hall sensors	625854	625855	625856
V2 with Hall sensors and cables	647691	645604	647692

### Motor Data

Values at nominal voltage		12	24	48
1 Nominal voltage	V	12	24	48
2 No load speed	rpm	3760	4300	4020
3 No load current	mA	797	493	221
4 Nominal speed	rpm	3210	3730	3460
5 Nominal torque (max. continuous torque)	mNm	261	269	298
6 Nominal current (max. continuous current)	A	8.72	5.14	2.61
7 Stall torque <sup>1</sup>	mNm	3340	4300	4870
8 Stall current	A	111	81.9	43.2
9 Max. efficiency	%	84.1	85.3	86.4
Characteristics				
10 Terminal resistance phase to phase	$\Omega$	0.108	0.293	1.11
11 Terminal inductance phase to phase	mH	0.0911	0.279	1.28
12 Torque constant	mNm/A	30	52.5	113
13 Speed constant	rpm/V	318	182	84.8
14 Speed/torque gradient	rpm/mNm	1.14	1.01	0.837
15 Mechanical time constant	ms	9.99	8.86	7.32
16 Rotor inertia	gcm <sup>2</sup>	835	835	835

### Specifications

- 17 Thermal resistance housing-ambient 2.5 K/W
- 18 Thermal resistance winding-housing 3.8 K/W
- 19 Thermal time constant winding 41.4 s
- 20 Thermal time constant motor 90 s
- 21 Ambient temperature -40...+100°C
- 22 Max. winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. speed 6000 rpm
- 24 Axial play at axial load < 12.0 N 0 mm
- > 12.0 N 0.14 mm
- 25 Radial play preloaded 12 N
- 26 Max. axial load (dynamic) 170 N
- 27 Max. force for press fits (static) (static, shaft supported) 8000 N
- 28 Max. radial load, 5 mm from flange 112 N

### Other specifications

- 29 Number of pole pairs 7
- 30 Number of phases 3
- 31 Weight of motor 355 g

Values listed in the table are nominal.

Connection V1		V2 (sensors, AWG 24)	
Pin 1	Hall sensor 1	Pin 1	Hall sensor 1
Pin 2	Hall sensor 2	Pin 2	Hall sensor 2
Pin 3	V <sub>Hall</sub> 4.5...24 VDC	Pin 3	Hall sensor 3
Pin 4	Motor winding 3	Pin 4	GND
Pin 5	Hall sensor 3	Pin 5	V <sub>Hall</sub> 4.5...24 VDC
Pin 6	GND	Pin 6	N.C.
Pin 7	Motor winding 1		
Pin 8	Motor winding 2		

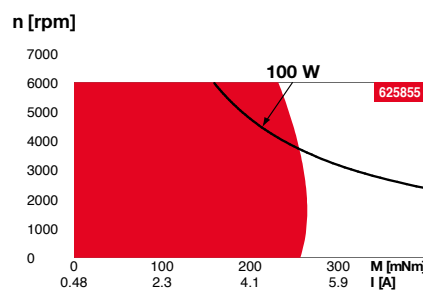
V2 (Motor, AWG 16)	
Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

Connector	Part number
Molex 46015-0806	43025-0600
Molex	39-01-2040

Connection cable for V1	
Universal, L = 500 mm	339380
zu EPOS4, L = 500 mm	354045

<sup>1</sup>Calculation does not include saturation effect (p. 71/178)

### Operating Range



### Comments

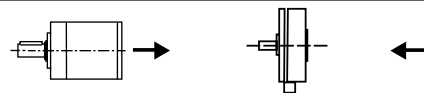
- Continuous operation**  
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.  
= Thermal limit.
- Short term operation**  
The motor may be briefly overloaded (recurring).
- Assigned power rating**

### maxon Modular System

Details on catalog page 46

### Planetary Gearhead

$\varnothing 52$  mm  
4-30 Nm  
Page 411



**Encoder MILE**  
512-4096 CPT,  
2 channels  
Page 462

### Recommended Electronics:

Notes	Page 46
ESCON Module 50/5	501
ESCON Mod. 50/8 (HE)	502
ESCON 50/5	503
ESCON 70/10	503
DEC Module 50/5	505
EPOS4 Mod./Comp. 50/5	510
EPOS4 Mod./Comp. 50/8	511
EPOS4 Mod./Comp. 50/15	514
EPOS4 50/5	515
EPOS4 70/15	515
EPOS4 Disk 60/8	516
EPOS4 Disk 60/12	517
EPOS2 P 24/5	520