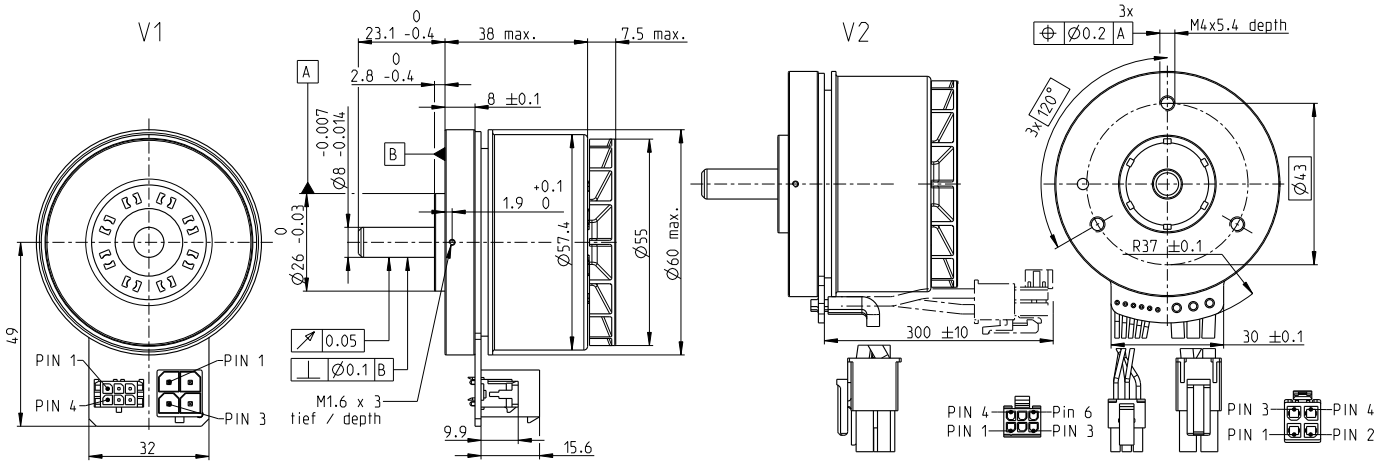


# EC 60 flat $\varnothing 60$ mm, brushless, 200 Watt

Ventilated

EC flat



M 1:2

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

## Part Numbers

	625860	614949	625861
V1 with Hall sensors			
V2 with Hall sensors and cables	647696	642221	647697

## Motor Data

Values at nominal voltage				
1 Nominal voltage	V	12	24	48
2 No load speed	rpm	3760	4300	4020
3 No load current	mA	815	497	224
4 Nominal speed	rpm	2790	3240	3020
5 Nominal torque (max. continuous torque)	mNm	492	536	577
6 Nominal current (max. continuous current)	A	15.1*	9.28	4.6
7 Stall torque <sup>1</sup>	mNm	3340	4300	4870
8 Stall current	A	111	81.9	43.2
9 Max. efficiency	%	83.8	85.2	86.3
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	9.95	8.83	9.29
16 Rotor inertia	gcm <sup>2</sup>	832	832	832

## Specifications

<b>Thermal data</b>	
17 Thermal resistance housing-ambient	1.22 K/W
18 Thermal resistance winding-housing	0.843 K/W
19 Thermal time constant winding	9.19 s
20 Thermal time constant motor	44 s
21 Ambient temperature	-40...+100°C
22 Max. winding temperature	+125°C
<b>Mechanical data (preloaded ball bearings)</b>	
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
26 Max. axial load (dynamic)	12 N
27 Max. force for press fits (static)	170 N
(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	360 g

Values listed in the table are nominal.

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

V2 (Motor, AWG 14)	
Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

Wiring diagram for Hall sensors see p. 49

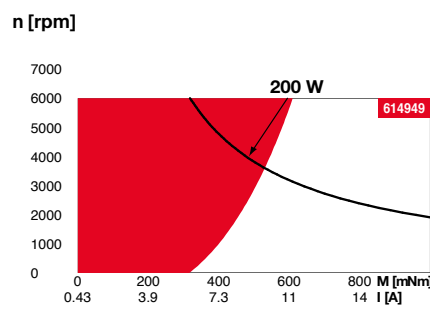
Connector	Part number	
Molex Micro-Fit	43045-0627	43025-0600
Molex	76829-0104	171692-0104

## Connection cable for V1

for windings, L = 3 m	520851
for Hall sensors, L = 3 m	275878

<sup>1</sup>Calculation does not include saturation effect (p. 61/168)

## 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).

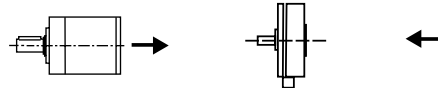
**Assigned power rating**

## maxon Modular System

Details on catalog page 38

## Planetary Gearhead

$\varnothing 52$  mm  
4 - 30 Nm  
Page 402



**Recommended Electronics:**  
Notes Page 38  
ESCON Module 50/5 487  
ESCON Mod. 50/8 (HE) 488  
ESCON 70/10 489  
DEC Module 50/5 491

**Encoder MILE**  
512 - 4096 CPT,  
2 channels  
Page 447

\*625860 and 647696 cannot be combined with the MILE encoder, because the current limit of the connectors of the MILE circuit board is 13 A.