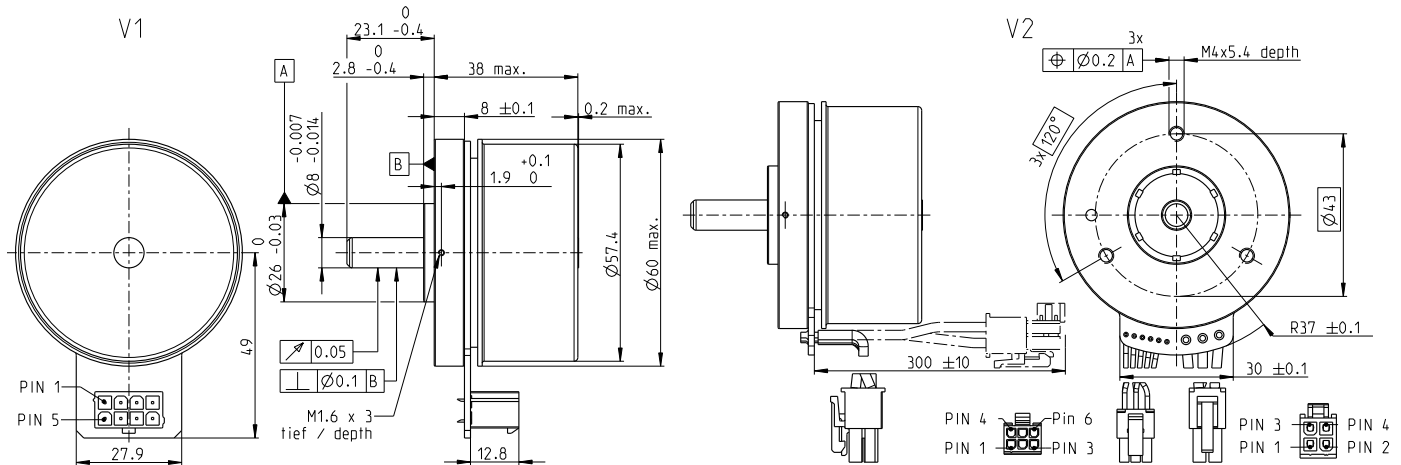


# EC 60 flat $\varnothing 60$ mm, brushless, 100 watt

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

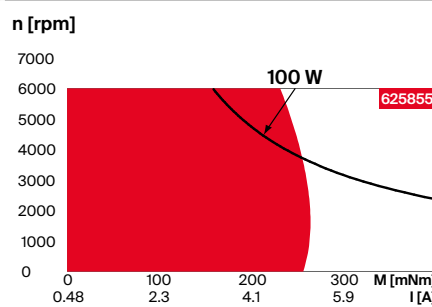
### Motor data

Values at nominal voltage				
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	mNm	263	272	301
6 Nominal current (max. continuous current)	A	8.79	5.18	2.63
7 Stall torque	mNm	2210	2510	2650
8 Stall current	A	113	83.2	43.9
9 Max. efficiency	%	84	85.2	86.3
Characteristics				
10 Terminal resistance phase to phase	$\Omega$	0.106	0.288	1.09
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	1.13	0.998	0.823
15 Mechanical time constant	ms	9.84	8.72	7.2
16 Rotor inertia	gcm <sup>2</sup>	835	835	835

### Specifications

Thermal data		
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	

### Operating range



### Comments

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

### Other specifications

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

Details on catalog page 56

Values listed in the table are nominal.

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

Pin	V2 (Motor, AWG 16)
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. 69

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

**Connection cable for V1**

Universal, L = 500 mm	Part number
zu EPOS4, L = 500 mm	339380
	354045

### Modular system

Gear	Sensor
444_GP 52 C	530_Encoder MILE
458_GB 80'	
456_GSW 62 A	

Motor Control
547_DEC Module 50/5
551_ESCON Module 50/5
552_ESCON Module 50/8 HE
553_ESCON 50/5
553_ESCON 70/10
557_ESCON2 Micro 60/5
558_ESCON2 Module 60/12
559_ESCON2 Compact 60/12
564_EPOS4 Module 50/5
565_EPOS4 Module 50/8
565_EPOS4 Module 50/15
567_EPOS4 Compact 50/5
567_EPOS4 Compact 50/8
568_EPOS4 Compact 50/15
569_EPOS4 50/5
569_EPOS4 70/15
570_EPOS4 Disk 60/8
571_EPOS4 Disk 60/12