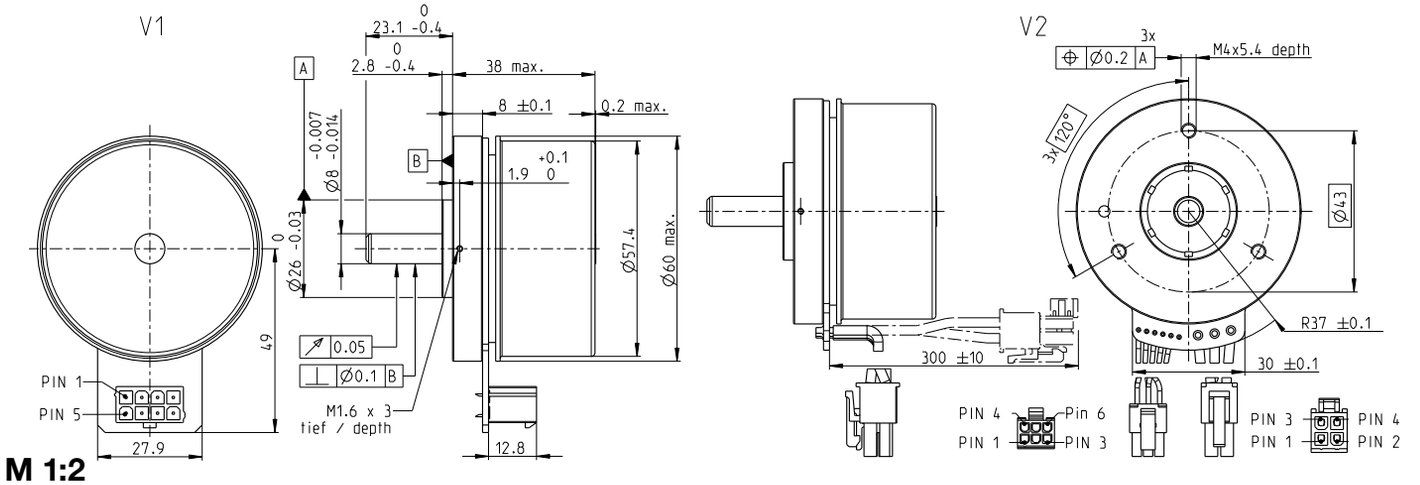
EC 60 flat ∅60 mm, brushless, 100 Watt

NEW



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 (max. continuous torque)	mNm	261	269	298				
6	Nominal current (max. continuous current)	A	8.72	5.14	2.61				
7	Stall torque[1]	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	Ω	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	gcm²	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
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	355 g

Values listed in the table are nominal.

Connection V1		**V2** (sensors, AWG 24)
Pin 1	Hall sensor1	Hall sensor1
Pin 2	Hall sensor 2	Hall sensor 2
Pin 3	V_{Hall} 4.5…24 VDC	Hall sensor 3
Pin 4	Motor winding 3	GND
Pin 5	Hall sensor 3	V_{Hall} 4.5…24 VDC
Pin 6	GND	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.

Wiring diagram for Hall sensors see p. 47

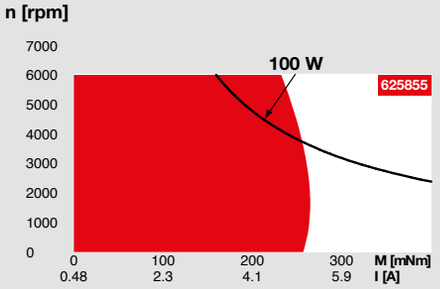
Connector	**Part number**	
Molex	46015-0806	43025-0600
Molex		39-01-2040

Connection cable for V1

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

[1]Calculation does not include saturation effect (p. 57/162)

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 36

Planetary Gearhead
∅52 mm
4 - 30 Nm
Page 367

Encoder MILE
512 - 4096 CPT,
2 channels
Page 413

Recommended Electronics:

Notes	Page **36**
ESCON Module 50/5	455
ESCON Mod. 50/8 (HE)	456
ESCON 50/5	457
ESCON 70/10	457
DEC Module 50/5	459
EPOS4 50/5	463
EPOS4 Mod./Comp. 50/5	463
EPOS4 Mod./Comp. 50/8	465
EPOS4 Mod./Comp. 50/15	466
EPOS4 70/15	467
EPOS2 P 24/5	470
MAXPOS 50/5	473