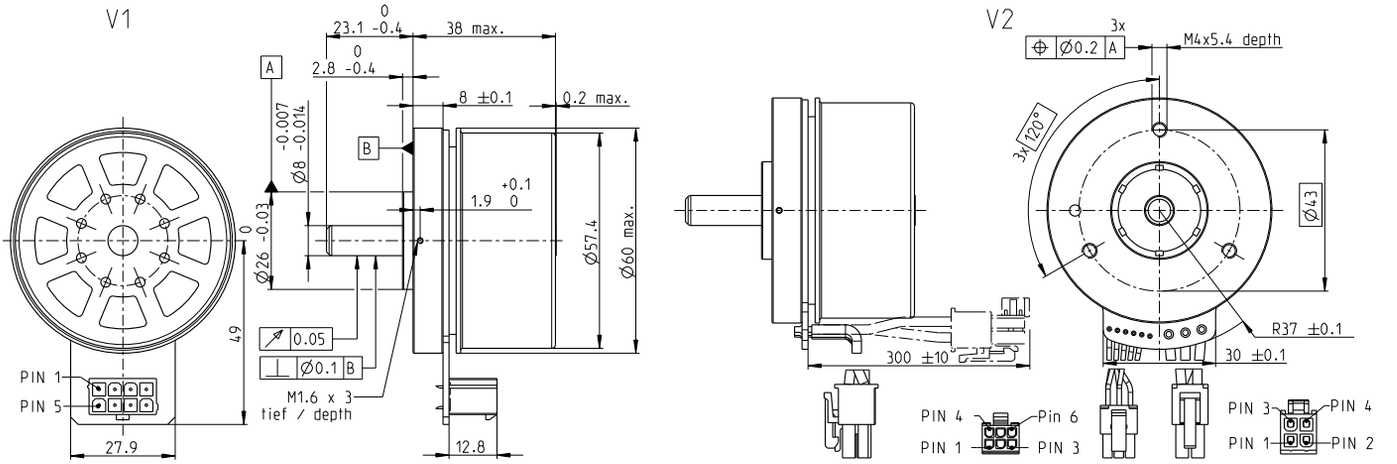
EC 60 flat ∅60 mm, brushless, 150 watt

Open Rotor



M 1:2

Stock program
Standard program
Special program (on request)

Part numbers			
V1 with Hall sensors	625857	**625858**	625859
V2 with Hall sensors and cables	647693	647694	647695

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	2990	3480	3230				
5	Nominal torque	mNm	381	405	441				
6	Nominal current (max. continuous current)	A	12.1*	7.29	3.66				
7	Stall torque	mNm	2210	2510	2650				
8	Stall current	A	113	83.2	43.9				
9	Max. efficiency	%	83.7	85.1	86.1				
	Characteristics								
10	Terminal resistance phase to phase	Ω	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	9.54	8.46	6.98				
16	Rotor inertia	gcm²	810	810	810				

Specifications

Thermal data

17	Thermal resistance housing-ambient	1.94 K/W
18	Thermal resistance winding-housing	1.48 K/W
19	Thermal time constant winding	16.1 s
20	Thermal time constant motor	69.9 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	350 g

Values listed in the table are nominal.

Connection V1		**V2** (sensors, AWG 24)
Pin 1	Hall sensor1	Hall sensor 1
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.

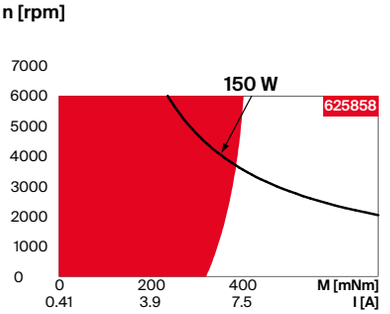
Wiring diagram for Hall sensors see p. 69

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

Connection cable for V1

Universal, L = 500 mm	**339380**
to EPOS4, L = 500 mm	**354045**

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

Modular system

Details on catalog page 56

Gear
444_GP 52 C
458_GB 80[1]
456_GSW 62 A

Sensor
530_Encoder MILE

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

[1]on request
*In combination with EPOS4 positioning controllers, the connector technology limits the nominal current (max. continuous current load) is limited to 11 A.