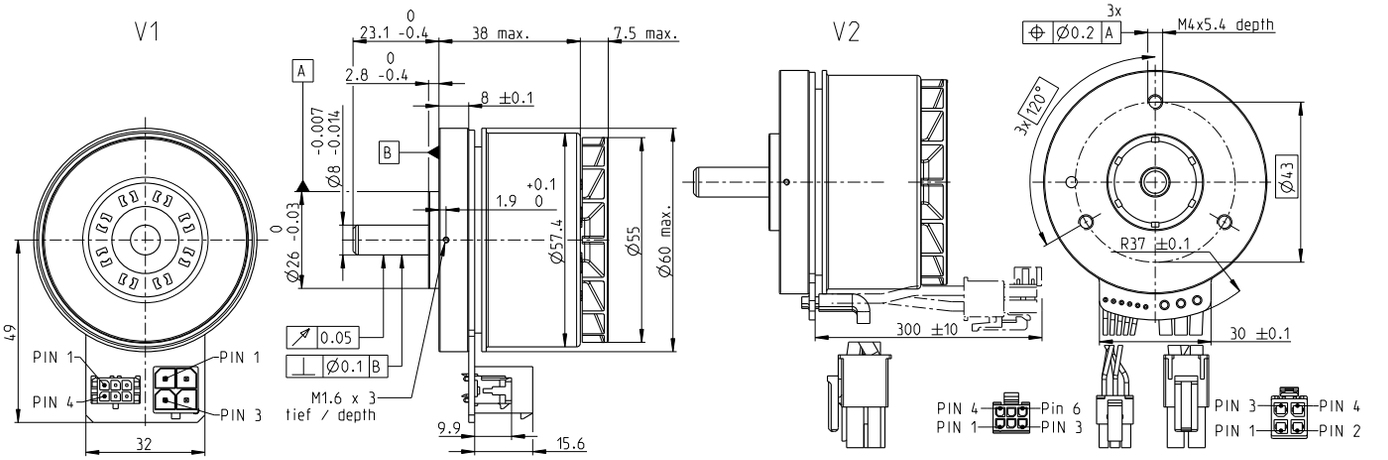
EC 60 flat ∅60 mm, brushless, 200 watt

Ventilated



M 1:2

Stock program
Standard program
Special program (on request)

Part numbers			
V1 with Hall sensors	625860	**614949**	625861
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	mNm	496	540	581					
6 Nominal current (max. continuous current)	A	15.2*	9.34	4.63					
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	9.8	8.69	7.17					
16 Rotor inertia	gcm²	832	832	832					

Specifications

Thermal data

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

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	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	GND
Pin 5	V_{Hall} 4.5...24 VDC	V_{Hall} 4.5...24 VDC
Pin 6	N.C.	N.C.
		V2 (Motor, AWG 14)
Pin 1	Motor winding 1	Motor winding 1
Pin 2	Motor winding 2	Motor winding 2
Pin 3	Motor winding 3	Motor winding 3
Pin 4		N.C.

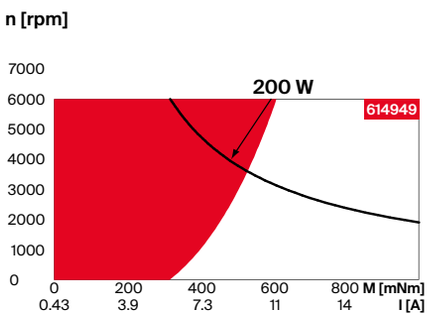
Wiring diagram for Hall sensors see p. 69

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**

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 80¹
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 70/10
557_ESCON2 Micro 60/5
558_ESCON2 Module 60/12
558_ESCON2 Module 60/30
559_ESCON2 Compact 60/12
559_ESCON2 Compact 60/30

¹on request
*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.