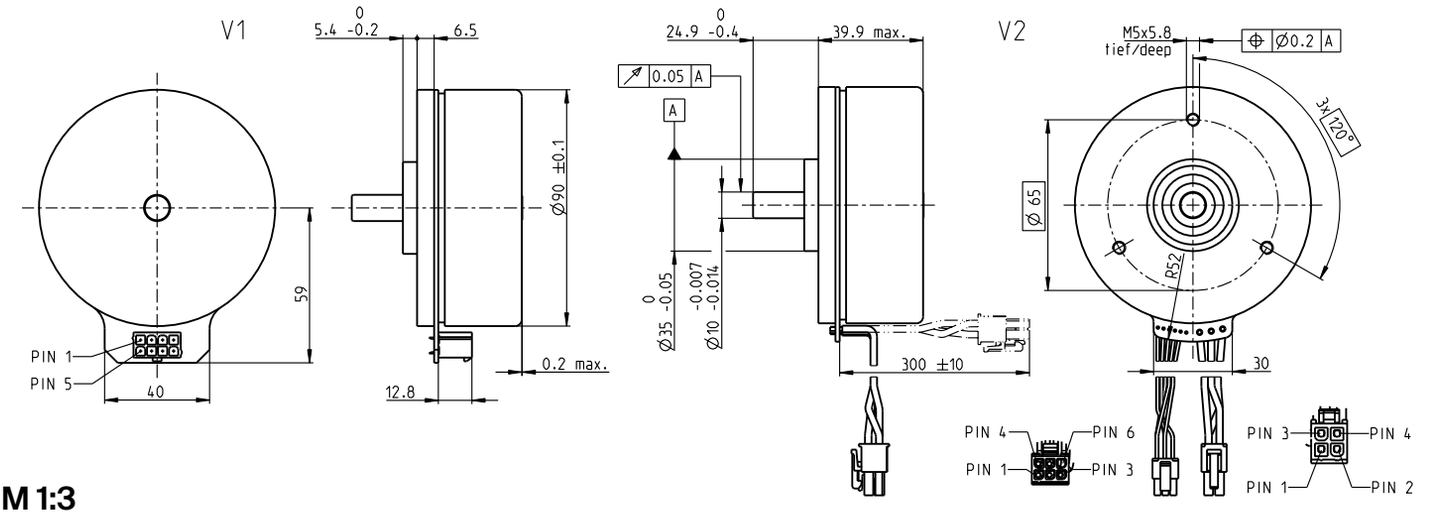
EC 90 flat ∅90 mm, brushless, 260 watt



M 1:3

Stock program
Standard program
Special program (on request)

Part numbers

V1 with Hall sensors	**500269**	500266	**500267**	500268
V2 with Hall sensors and cables	607325	607326	607327	607328

Motor data								
Values at nominal voltage								
1 Nominal voltage	V	18	30	48	60			
2 No load speed	rpm	2110	2080	1960	1980			
3 No load current	mA	830	490	278	227			
4 Nominal speed	rpm	1790	1780	1670	1690			
5 Nominal torque	mNm	1020	997	972	972			
6 Nominal current (max. continuous current)	A	12.2*	7.11	4.09	3.31			
7 Stall torque	mNm	10100	10000	9490	9570			
8 Stall current	A	186	109	57.8	47.5			
9 Max. efficiency	%	87.1	87	86.6	86.7			
Characteristics								
10 Terminal resistance phase to phase	Ω	0.0968	0.275	0.831	1.26			
11 Terminal inductance phase to phase	mH	0.133	0.369	1.07	1.63			
12 Torque constant	mNm/A	80.7	136	231	286			
13 Speed constant	rpm/V	118	70.2	41.3	33.4			
14 Speed/torque gradient	rpm/mNm	0.142	0.142	0.148	0.148			
15 Mechanical time constant	ms	7.51	7.54	7.86	7.84			
16 Rotor inertia	gcm²	5060	5060	5060	5060			

Specifications

Thermal data

17	Thermal resistance housing-ambient	1.74 K/W
18	Thermal resistance winding-housing	1.82 K/W
19	Thermal time constant winding	57 s
20	Thermal time constant motor	258 s
21	Ambient temperature	-40...+100°C
22	Max. winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. speed	5000 rpm
24	Axial play at axial load	0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	34 N
27	Max. force for press fits (static)	440 N
	(static, shaft supported)	8000 N
28	Max. radial load, 10 mm from flange	130 N

Other specifications

29	Number of pole pairs	11
30	Number of phases	3
31	Weight of motor	980 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	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	

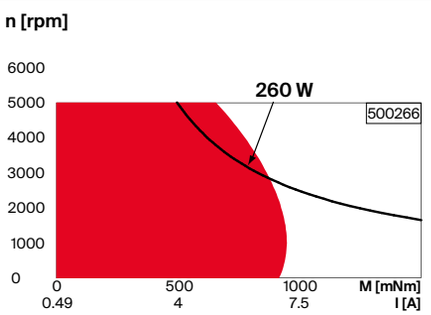
	V2 (motor, AWG 16)
Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

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



Note: The cable alignment relative to the mounting holes of the gearhead is not defined.
¹on request
*In combination with EPOS4 positioning controllers, the connector technology limits the nominal current (max. continuous current load) is limited to 11 A.

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
459_GB 12¹
460_GB 9¹
461_GB 65¹

Sensor
531_Encoder MILE

Motor Control
547_DEC Module 50/5
551_ESCON Module 50/4 EC-S
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
558_ESCON2 Module 60/30
559_ESCON2 Compact 60/12
559_ESCON2 Compact 60/30
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, 70/15
571_EPOS4 Disk 60/12