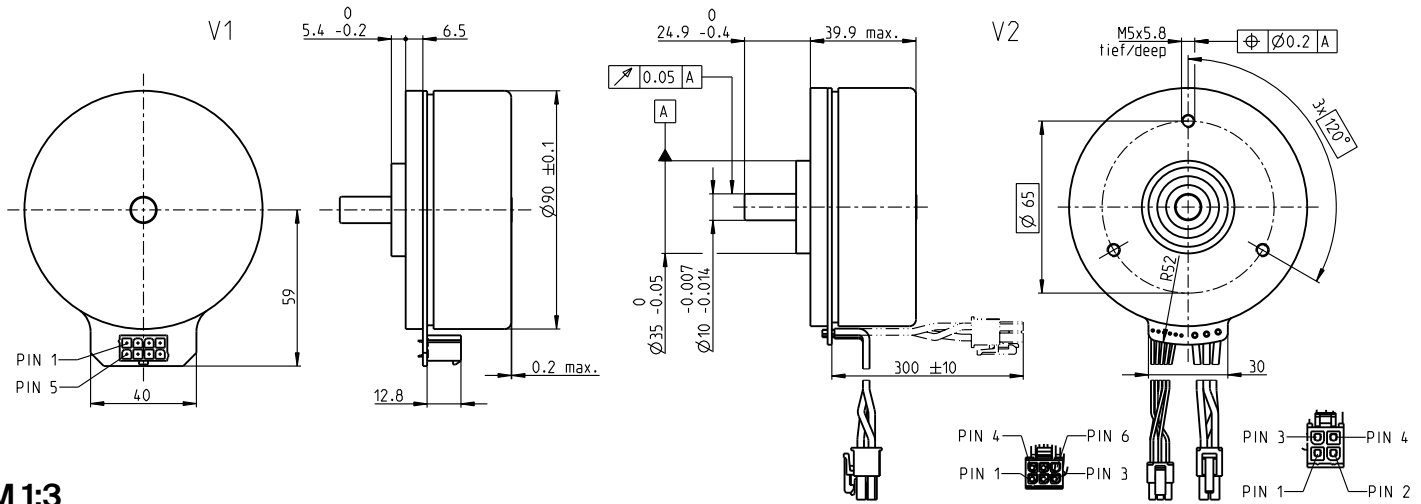


EC 90 flat $\varnothing 90$ mm, brushless, 260 watt

EC flat



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

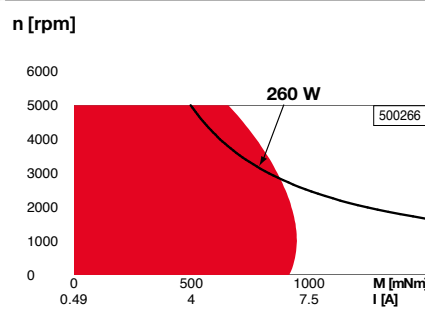
Motor Data

Values at nominal voltage		18	30	48	60
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 (max. continuous torque)	mNm	1010	988	964	963
6 Nominal current (max. continuous current)	A	12.1*	7.06	4.06	3.28
7 Stall torque ¹	mNm	14800	14600	13100	13300
8 Stall current	A	183	107	56.9	46.7
9 Max. efficiency	%	87	87	86	87
Characteristics					
10 Terminal resistance phase to phase	Ω	0.0983	0.28	0.844	1.28
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	0.144	0.144	0.151	0.15
15 Mechanical time constant	ms	7.63	7.66	7.99	7.97
16 Rotor inertia	gcm ²	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) (static, shaft supported) 440 N / 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

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**

Values listed in the table are nominal.

Connection V1		V2 (sensors, AWG 24)	
Pin 1	Hall sensor 1	Hall sensor 1	Hall sensor 1
Pin 2	Hall sensor 2	Hall sensor 2	Hall sensor 2
Pin 3	V _{Hall} 4.5...24 VDC	Hall sensor 3	Hall sensor 3
Pin 4	Motor winding 3	GND	GND
Pin 5	Hall sensor 3	V _{Hall} 4.5...24 VDC	V _{Hall} 4.5...24 VDC
Pin 6	GND	N.C.	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. 59

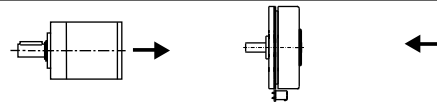
Connector	Part number
Molex 46015-0806	43025-0600
Molex	39-01-2040

Connection cable for V1

- Universal, L = 500 mm **339380**
 - to EPOS4, L = 500 mm **354045**
- ¹Calculation does not include saturation effect (p. 71/178)

maxon Modular System

Planetary Gearhead
 $\varnothing 52$ mm
 4 - 30 Nm
 Page 411



Encoder MILE
 512 - 6400 CPT,
 2 channels
 Page 463

Recommended Electronics:

Notes	Page 46
ESCON Mod. 50/4 EC-S	501
ESCON Mod. 50/5	501
ESCON Mod. 50/8 (HE)	502
ESCON 50/5	503
ESCON 70/10	503
DEC Module 50/5	505
EPOS4 Mod./Comp. 50/5	510
EPOS4 Mod./Comp. 50/8	511
EPOS4 Mod./Comp. 50/15	514
EPOS4 50/5	515
EPOS4 70/15	515
EPOS4 Disk 60/12	517

Note: The cable alignment relative to the mounting holes of the gearhead is not defined.

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