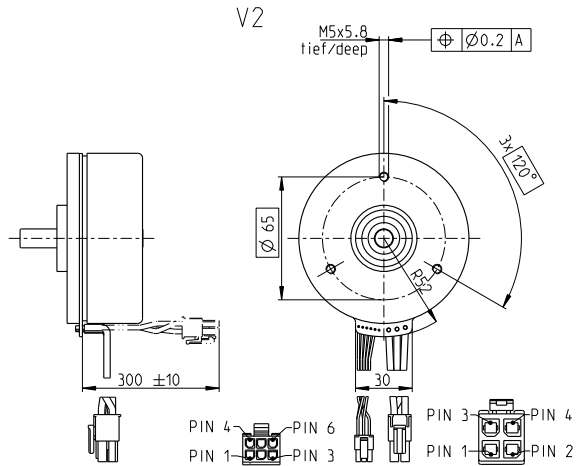
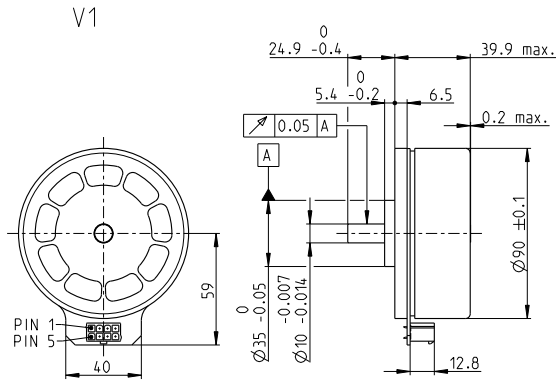


EC 90 flat Ø90 mm, brushless, 400 Watt

NEW

Open Rotor



M 1:4

- Stock program
- Standard program
- Special program (on request)

Part Numbers

V1 with Hall sensors	607930	607931	607932
V2 with Hall sensors and cables	607933	607934	607935
			607936

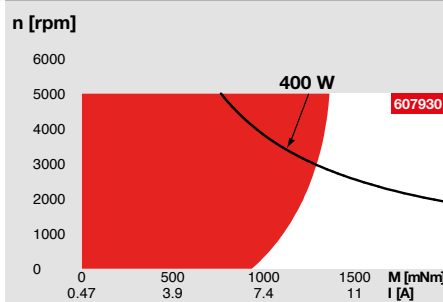
Motor Data

Values at nominal voltage		18	30	48	60
1 Nominal voltage	V	18	30	48	60
2 No load speed	rpm	2080	2080	1960	1980
3 No load current	mA	792	475	272	221
4 Nominal speed	rpm	1700	1700	1600	1620
5 Nominal torque (max. continuous torque)	mNm	1300	1260	1210	1220
6 Nominal current (max. continuous current)	A	14.9*	8.73	4.96	4.03
7 Stall torque ¹	mNm	14900	14600	13100	13300
8 Stall current	A	183	107	56.9	46.7
9 Max. efficiency	%	87.4	87.3	86.8	86.9
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	81.6	136	231	286
13 Speed constant	rpm/V	117	70.2	41.3	33.4
14 Speed/torque gradient	rpm/mNm	0.141	0.144	0.151	0.15
15 Mechanical time constant	ms	7.47	7.66	7.99	7.97
16 Rotor inertia	gcm ²	4765	4765	4765	4765

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 1.56 K/W
 - 18 Thermal resistance winding-housing 1.09 K/W
 - 19 Thermal time constant winding 34.2 s
 - 20 Thermal time constant motor 232 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
 - 28 Max. radial load, 10 mm from flange 8000 N
- Other specifications**
- 29 Number of pole pairs 11
 - 30 Number of phases 3
 - 31 Weight of motor 964 g
- Values listed in the table are nominal.

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**

- Connection V1**
- | | | | |
|-------|--------------------------------|-----------------------------|--------------------------------|
| Pin 1 | Hall sensor 1 | V2 (sensors, AWG 24) | 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 | | |
- Connection V2**
- | | | | |
|-------|-----------------|---------------------------|-----------------|
| Pin 1 | Motor winding 1 | V2 (motor, AWG 14) | 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. 47
- Connector**
- | | | |
|------------------|--------------------|-------------|
| Molex 46015-0806 | Part number | 43025-0600 |
| Molex | | 171692-0104 |
- Connection cable for V1**
- Connection cable Universal, L = 500 mm **339380**
 - Connection cable to EPOS4, L = 500 mm **354045**
- ¹Calculation does not include saturation effect (p. 57/162)

maxon Modular System

Details on catalog page 36



Encoder MILE
512 - 6400 CPT,
2 channels
Page 414

- Recommended Electronics:**
- | Notes | Page 36 |
|------------------------|---------|
| ESCON Mod. 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 |
| MAXPOS 50/5 | 473 |

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