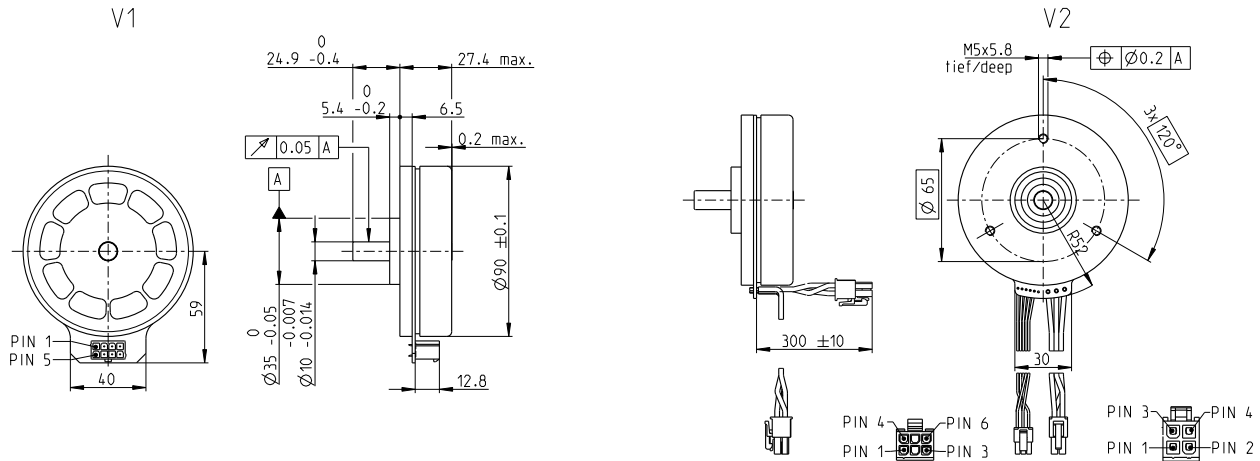


EC 90 flat $\varnothing 90$ mm, brushless, 220 watt

Open Rotor

EC flat



M 1:4

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

Part Numbers

V1 with Hall sensors	607942	607943	607944
V2 with Hall sensors and cables	607946	607947	607948

Motor Data

Values at nominal voltage		24	36	60
1 Nominal voltage	V	24	36	60
2 No load speed	rpm	3170	3070	2600
3 No load current	mA	658	420	197
4 Nominal speed	rpm	2490	2420	2020
5 Nominal torque (max. continuous torque)	mNm	729	715	692
6 Nominal current (max. continuous current)	A	9.44	6.01	2.96
7 Stall torque ¹	mNm	7910	7580	6410
8 Stall current	A	111	68.9	29.6
9 Max. efficiency	%	85.4	85.2	84.6
Characteristics				
10 Terminal resistance phase to phase	Ω	0.216	0.523	2.03
11 Terminal inductance phase to phase	mH	0.232	0.554	2.15
12 Torque constant	mNm/A	71.2	110	217
13 Speed constant	rpm/V	134	86.8	44.1
14 Speed/torque gradient	rpm/mNm	0.407	0.412	0.412
15 Mechanical time constant	ms	13.5	13.7	13.7
16 Rotor inertia	gcm ²	2875	2875	2875

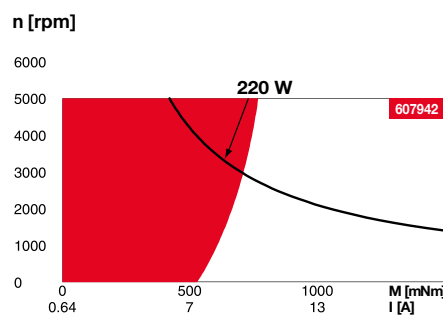
Specifications

Thermal data	
17 Thermal resistance housing-ambient	1.87 K/W
18 Thermal resistance winding-housing	1.43 K/W
19 Thermal time constant winding	27.7 s
20 Thermal time constant motor	278 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
	100 N

Other specifications	
29 Number of pole pairs	11
30 Number of phases	3
31 Weight of motor	624 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**

Connection V1		V2 (sensors, AWG 24)	
Pin 1	Hall sensor 1	Pin 1	Hall sensor 1
Pin 2	Hall sensor 2	Pin 2	Hall sensor 2
Pin 3	V _{Hall} 4.5...24 VDC	Pin 3	Hall sensor 3
Pin 4	Motor winding 3	Pin 4	GND
Pin 5	Hall sensor 3	Pin 5	V _{Hall} 4.5...24 VDC
Pin 6	GND	Pin 6	N.C.
Pin 7	Motor winding 1		
Pin 8	Motor winding 2		

Wiring diagram for Hall sensors see p. 59	
Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

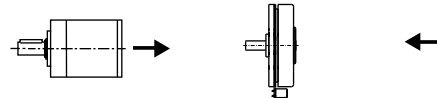
Connector		Part number	
Molex 46015-0806		43025-0600	
Molex		39-01-2040	

Connection cable for V1		Part number	
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. 50/5	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.