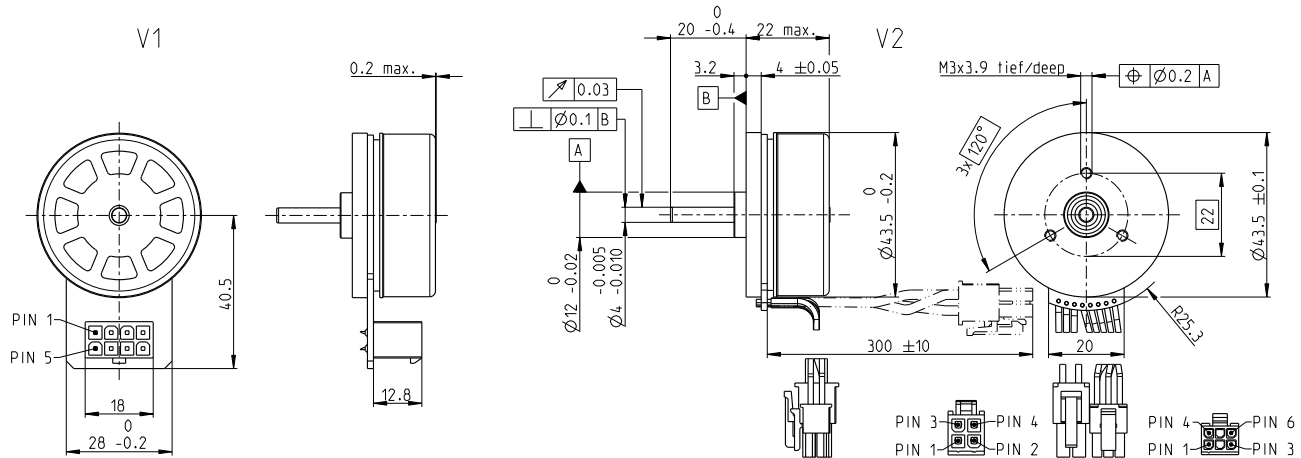


EC 45 flat $\varnothing 43.5$ mm, brushless, 60 watt

Open Rotor



EC flat

M 1:2

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

Part Numbers

V1 with Hall sensors	591476	591477	591478	591479
V2 with Hall sensors and cables	608131	608132	608133	608134

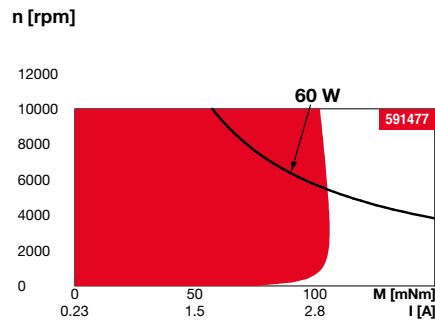
Motor Data

Values at nominal voltage		18	24	36	48
1 Nominal voltage	V	18	24	36	48
2 No load speed	rpm	5740	6250	6060	5740
3 No load current	mA	277	238	151	104
4 Nominal speed	rpm	4510	4970	4810	4530
5 Nominal torque (max. continuous torque)	mNm	134	110	109	122
6 Nominal current (max. continuous current)	A	4.29	2.97	1.91	1.48
7 Stall torque ¹	mNm	1190	918	895	1040
8 Stall current	A	40	26	16	13
9 Max. efficiency	%	84.4	82	81.9	83.4
Characteristics					
10 Terminal resistance phase to phase	Ω	0.447	0.942	2.240	3.610
11 Terminal inductance phase to phase	mH	0.243	0.363	0.868	1.730
12 Torque constant	mNm/A	29.5	36	55.7	78.6
13 Speed constant	rpm/V	324	265	171	121
14 Speed/torque gradient	rpm/mNm	4.910	6.920	6.890	5.580
15 Mechanical time constant	ms	6.940	9.790	9.750	7.890
16 Rotor inertia	gcm ²	135	135	135	135

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 0,268 K/W
 - 18 Thermal resistance winding-housing 7,05 K/W
 - 19 Thermal time constant winding 26,7 s
 - 20 Thermal time constant motor 13,4 s
 - 21 Ambient temperature -40...+100°C
 - 22 Max. winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. speed 10 000 rpm
 - 24 Axial play at axial load < 8.0 N 0 mm
 - > 8.0 N 0,14 mm
 - 25 Radial play preloaded 7,2 N
 - 26 Max. axial load (dynamic) 53 N
 - 27 Max. force for press fits (static) (static, shaft supported) 1000 N
 - 28 Max. radial load, 5 mm from flange 14,5 N

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**

Other specifications

- 29 Number of pole pairs 8
- 30 Number of phases 3
- 31 Weight of motor 113,1 g

Values listed in the table are nominal.

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} 3.5...24 VDC	Pin 3	Hall sensor 3*
Pin 4	Motor winding 3	Pin 4	GND
Pin 5	Hall sensor 3*	Pin 5	V _{Hall} 3.5...24 VDC
Pin 6	GND	Pin 6	N.C.
Pin 7	Motor winding 1	V2 (motor, AWG 22)	
Pin 8	Motor winding 2	Pin 1	Motor winding 1
		Pin 2	Motor winding 2
		Pin 3	Motor winding 3
		Pin 4	N.C.

*Internal pull-up (7...13 k Ω) on V_{Hall}

Wiring diagram for Hall sensors see p. 59

Connector	Part number	Part number
Molex	39-28-1083	43025-0600
Molex		39-01-2040

Connection cable for V1

Universal, L = 500 mm **339380**

to EPOS, L = 500 mm **354045**

21 V2 Ambient temperature -20...+100°C

¹Calculation does not include saturation effect (p. 71/178)

maxon Modular System

Planetary Gearhead

$\varnothing 32$ mm

0.75 - 6.0 Nm

Page 394/398

Planetary Gearhead

$\varnothing 42$ mm

3.0 - 15.0 Nm

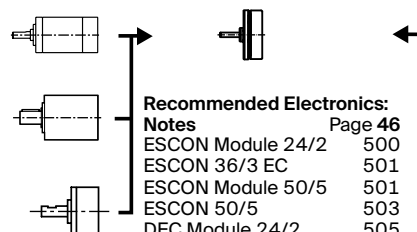
Page 407

Spur Gearhead

$\varnothing 45$ mm

0.5 - 2.0 Nm

Page 409



Recommended Electronics:

Notes Page 46

ESCON Module 24/2	500
ESCON 36/3 EC	501
ESCON Module 50/5	501
ESCON 50/5	503
DEC Module 24/2	505
DEC Module 50/5	505
EPOS4 Micro 24/5	509
EPOS4 Mod./Comp. 50/5	510
EPOS4 Comp. 24/5 3-axes	511
EPOS4 50/5	515
EPOS4 Disk 60/8	516
EPOS2 P 24/5	520

Encoder MILE
256 - 2048 CPT,
2 channels
Page 460