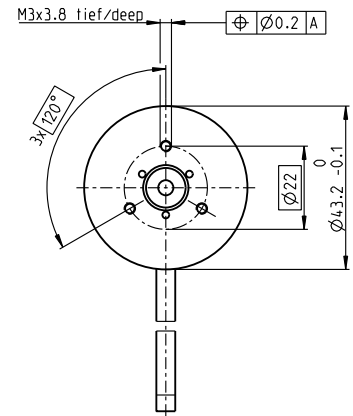
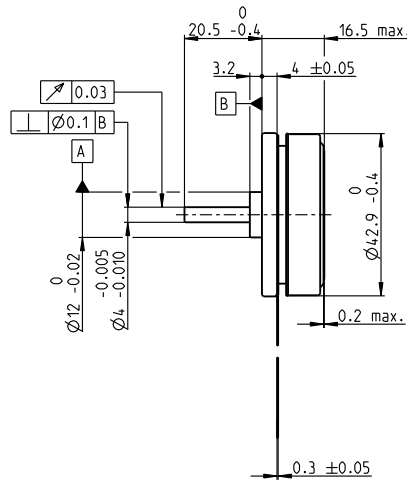
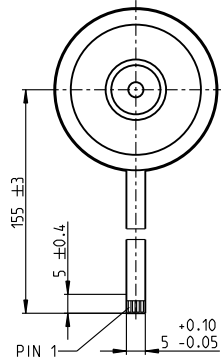
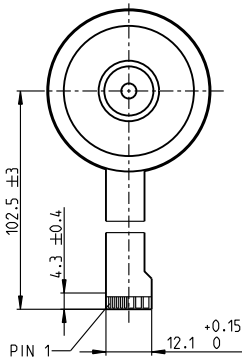


EC 45 flat $\varnothing 42.9$ mm, brushless, 30 watt

EC flat

A with Hall sensors
Option with cable and connector:
(Dimension drawings opt.)
Motor length +1.3 mm,
Ambient temperature -20...+100°C
Cable length 500 mm \pm 10 mm

B sensorless



M 1:2

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

Part Numbers

A with Hall sensors
Option with Cable and Connector
B sensorless

200142	339281	339282
668555	668556	668557
200189	339283	339284

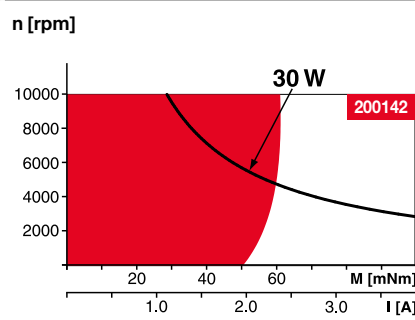
Motor Data

Values at nominal voltage		12	12	24	24	36	36
1 Nominal voltage	V	12	12	24	24	36	36
2 No load speed	rpm	4370	4350	4360	4380	4750	4760
3 No load current	mA	163	163	81.4	73	61.6	55.3
4 Nominal speed	rpm	2940	2800	2940	2900	3290	3270
5 Nominal torque (max. continuous torque)	mNm	55	54.7	54.8	55.2	66	66.6
6 Nominal current (max. continuous current)	A	2.02	2.02	1.01	1.01	0.847	0.849
7 Stall torque ¹	mNm	255	219	253	243	380	369
8 Stall current	A	10	8.58	4.97	4.77	5.38	5.22
9 Max. efficiency	%	76	75	76	77	80	81
Characteristics							
10 Terminal resistance phase to phase	Ω	1.2	1.4	4.83	5.03	6.69	6.89
11 Terminal inductance phase to phase	mH	0.56	0.56	2.24	2.24	4.29	4.29
12 Torque constant	mNm/A	25.5	25.5	51	51	70.6	70.6
13 Speed constant	rpm/V	374	374	187	187	135	135
14 Speed/torque gradient	rpm/mNm	17.6	20.5	17.7	18.5	12.8	13.2
15 Mechanical time constant	ms	17.1	19.9	17.2	17.9	12.4	12.8
16 Rotor inertia	gcm ²	92.5	92.5	92.5	92.5	92.5	92.5

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 6.69 K/W
 - 18 Thermal resistance winding-housing 3.92 K/W
 - 19 Thermal time constant winding 11.4 s
 - 20 Thermal time constant motor 295 s
 - 21 Ambient temperature -40...+100°C
 - 22 Max. winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. speed 10000 rpm
 - 24 Axial play at axial load < 5.0 N 0 mm
 - > 5.0 N typ. 0.14 mm
 - 25 Radial play preloaded 4.8 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 18 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 75 g

Values listed in the table are nominal.

Connection	with Hall sensors	sensorless
Pin 1	V _{Hall} 3.5...24 VDC	Motor winding 1
Pin 2	Hall sensor 3*	Motor winding 2
Pin 3	Hall sensor 1*	Motor winding 3
Pin 4	Hall sensor 2*	neutral point
Pin 5	GND	
Pin 6	Motor winding 3	
Pin 7	Motor winding 2	
Pin 8	Motor winding 1	

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

Wiring diagram for Hall sensors see p. 59

Adapter	Part number	Part number
see p. 529	220300	220310
Connector	Part number	Part number
TE	1-84953-1	84953-4
Molex	52207-1133	52207-0433

Pin for design with Hall sensors:
FPC, 11-pol, Pitch 1.0 mm, top contact style

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

maxon Modular System

Details on catalog page 46

Planetary Gearhead

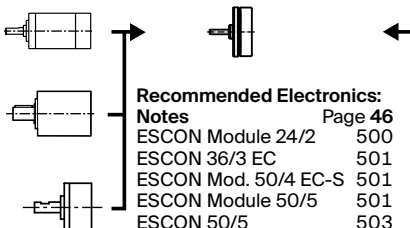
$\varnothing 32$ mm
0.75 - 6.0 Nm
Page 394/398

Planetary Gearhead

$\varnothing 42$ mm
3.0 - 15.0 Nm
Page 407

Spur Gearhead

$\varnothing 45$ mm
0.5 - 2.0 Nm
Page 409



for motor type A:
Encoder MILE
256 - 2048 CPT,
2 channels
Page 460

Recommended Electronics:

Notes	Page 460
ESCON Module 24/2	500
ESCON 36/3 EC	501
ESCON Mod. 50/4 EC-S	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. 24/1.5	510
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