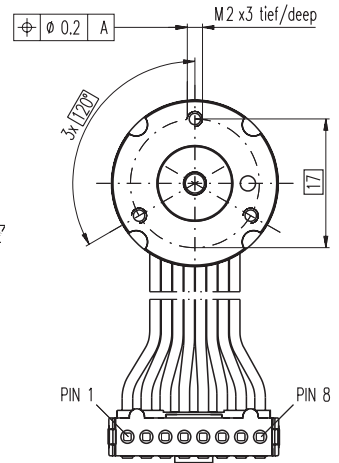
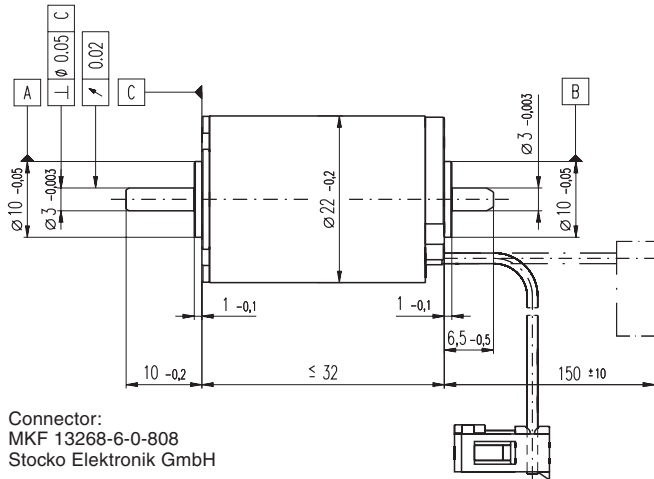
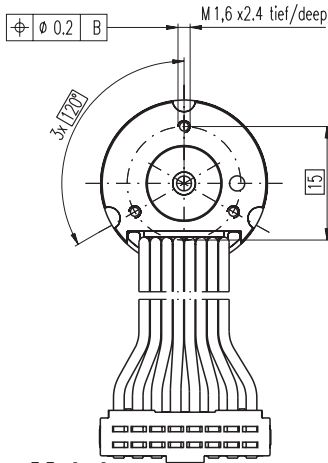


# EC-max 22 Ø22 mm, brushless, 12 Watt



M 1:1

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

### Order Number

283837	283838	283839	283840	283841
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### Motor Data

Values at nominal voltage		283837	283838	283839	283840	283841
1 Nennspannung	V	6.0	12.0	18.0	24.0	36.0
2 No load speed	rpm	10800	11500	11500	11500	11500
3 No load current	mA	221	123	81.1	61.0	40.7
4 Nominal speed	rpm	6840	7550	7740	7740	7690
5 Nominal torque (max. continuous torque)	mNm	11.4	11.2	11.9	11.9	11.7
6 Nominal current (max. continuous current)	A	2.38	1.25	0.884	0.661	0.435
7 Stall torque	mNm	31.9	33.3	37.7	37.4	36.2
8 Starting current	A	6.23	3.47	2.60	1.94	1.25
9 Max. efficiency	%	67	67	69	69	68
<b>Characteristics</b>						
10 Terminal resistance phase to phase	Ω	0.963	3.46	6.93	12.4	28.7
11 Terminal inductance phase to phase	mH	0.0343	0.121	0.275	0.488	1.09
12 Torque constant	mNm / A	5.12	9.60	14.5	19.3	28.9
13 Speed constant	rpm / V	1870	995	658	495	330
14 Speed / torque gradient	rpm / mNm	351	358	314	318	328
15 Mechanical time constant	ms	8.27	8.45	7.41	7.49	7.73
16 Rotor inertia	gcm <sup>2</sup>	2.25	2.25	2.25	2.25	2.25

### Specifications

<b>Thermal data</b>	
17 Thermal resistance housing-ambient	13.5 K / W
18 Thermal resistance winding-housing	1.72 K / W
19 Thermal time constant winding	1.82 s
20 Thermal time constant motor	567 s
21 Ambient temperature	-40 ... +100°C
22 Max. permissible winding temperature	+155°C
<b>Mechanical data (preloaded ball bearings)</b>	
23 Max permissible speed	18000 rpm
24 Axial play at axial load < 5.0 N	0 mm
24 Axial play at axial load > 5.0 N	0.14 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	4.5 N
27 Max. force for press fits (static)	60 N
27 Max. force for press fits (static)	1400 N
28 Max. radial loading, 5 mm from flange	16 N
<b>Other specifications</b>	
29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	67 g

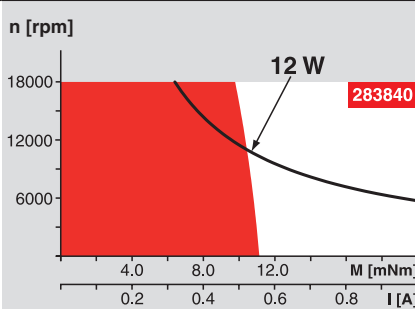
Values listed in the table are nominal.

### Connection (Cable AWG 24)

brown	Motor winding 1	Pin 1
red	Motor winding 2	Pin 2
orange	Motor winding 3	Pin 3
yellow	V <sub>Hall</sub> 4.5 ... 24 VDC	Pin 4
green	GND	Pin 5
blue	Hall sensor 1	Pin 6
violet	Hall sensor 2	Pin 7
grey	Hall sensor 3	Pin 8

Wiring diagram for Hall sensors see page 26

### Operating Range



### Comments

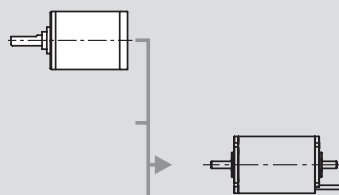
**Continuous operation**  
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.  
= Thermal limit.

**Short term operation**  
The motor may be briefly overloaded (recurring).

— Assigned power rating

### maxon Modular System

**Planetary Gearhead**  
Ø22 mm  
0.5 - 2.0 Nm  
Page 223



### Overview on page 16 - 21

**Encoder MR**  
128 / 256 / 512 CPT,  
2 / 3 channels  
Page 249

**Brake AB 20**  
Ø20 mm  
24 VDC, 0.1 Nm  
Page 298

**Recommended Electronics:**

DEC 24/1	Page 276
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EPOS 24/1	286
EPOS 24/5	286
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