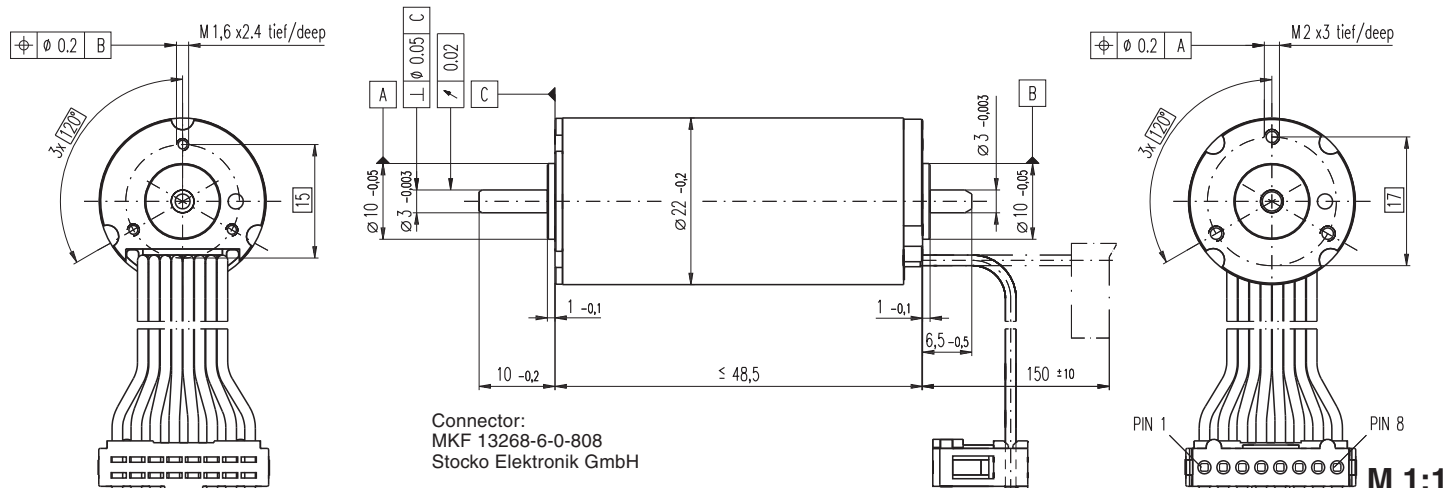


# EC-max 22 Ø22 mm, brushless, 25 Watt



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

## Order Number

283856 283857 283858 283859 283860

## Motor Data

Values at nominal voltage						
1	Nominal voltage	V	12.0	18.0	24.0	36.0
2	No load speed	rpm	12400	12900	12900	12200
3	No load current	mA	214	153	115	69.7
4	Nominal speed	rpm	9820	10300	10400	9610
5	Nominal torque (max. continuous torque)	mNm	22.9	21.9	22.9	22.7
6	Nominal current (max. continuous current)	A	2.69	1.80	1.41	0.877
7	Stall torque	mNm	114	112	121	111
8	Starting current	A	12.6	8.55	6.97	4.00
9	Max. efficiency	%	76	76	77	76
Characteristics						
10	Terminal resistance phase to phase	Ω	0.955	2.10	3.44	9.01
11	Terminal inductance phase to phase	mH	0.0499	0.103	0.182	0.462
12	Torque constant	mNm / A	9.10	13.0	17.4	27.7
13	Speed constant	rpm / V	1050	732	549	345
14	Speed / torque gradient	rpm / mNm	110	118	109	112
15	Mechanical time constant	ms	5.14	5.50	5.06	5.23
16	Rotor inertia	gcm <sup>2</sup>	4.45	4.45	4.45	4.45

## Specifications

Thermal data	
17	Thermal resistance housing-ambient 10.2 K / W
18	Thermal resistance winding-housing 1.02 K / W
19	Thermal time constant winding 1.97 s
20	Thermal time constant motor 628 s
21	Ambient temperature -20 ... +100°C
22	Max. permissible winding temperature +155°C

Mechanical data (preloaded ball bearings)	
23	Max. permissible speed 18000 rpm
24	Axial play at axial load < 5.0 N 0 mm
	> 5.0 N 0.14 mm
25	Radial play preloaded 4.5 N
26	Max. axial load (dynamic) 60 N
27	Max. force for press fits (static) (static, shaft supported) 1000 N
28	Max. radial loading, 5 mm from flange 16 N

## Other specifications

29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	110 g

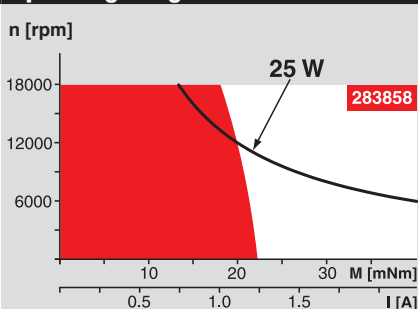
Values listed in the table are nominal.

## 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 27

## 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

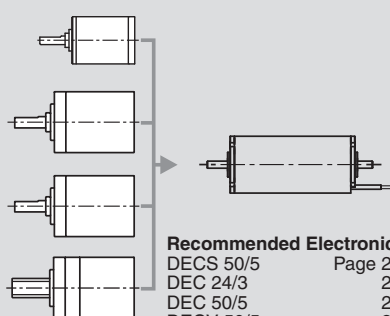
## maxon Modular System

**Planetary Gearhead**  
Ø22 mm  
2.0 - 3.4 Nm  
Page 227

**Planetary Gearhead**  
Ø32 mm  
1.0 - 6.0 Nm  
Page 236

**Koaxdrive**  
Ø32 mm  
1.0 - 4.5 Nm  
Page 238

**Spindle Drive**  
Ø32 mm  
Page 251 / 252 / 253



## Recommended Electronics:

DECS 50/5	Page 288
DEC 24/3	289
DEC 50/5	289
DECV 50/5	295
DES 50/5	296
EPOS2 24/5	303
EPOS2 50/5	303
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## Overview on page 16 - 21

**Encoder MR**  
128 / 256 / 512 CPT,  
2 / 3 channels  
Page 263

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