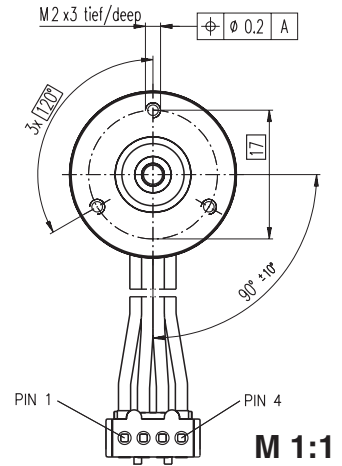
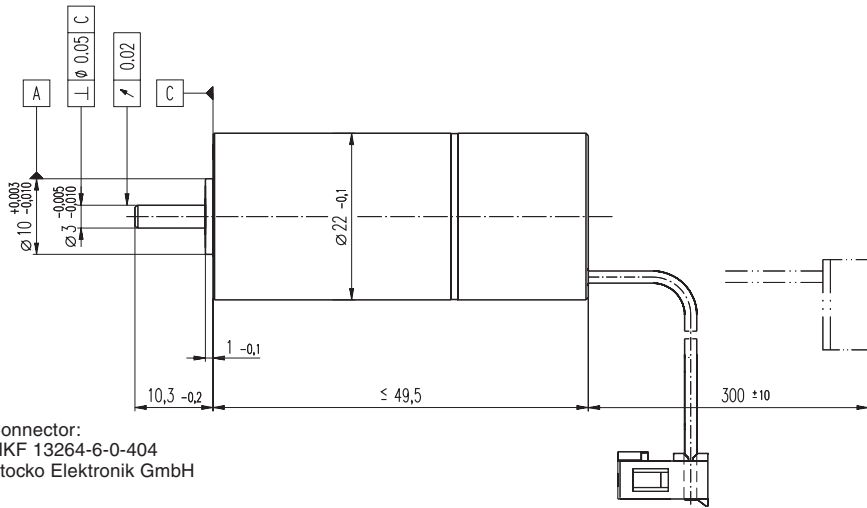


# EC 22 Ø22 mm, brushless, 20 Watt, with integrated electronics



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

### Order Number

201162	200863	201163	200864
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### Motor Data

Values at nominal voltage		201162	200863	201163	200864
1	Nominal voltage	V	24.0	24.0	24.0
2	No load speed	rpm	35400	20500	16700
3	No load current	mA	123	57.4	44.0
4	Nominal speed	rpm	32200	16500	12600
5	Nominal torque (max. continuous torque)	mNm	8.22	14.9	15.3
6	Nominal current (max. continuous current)	A	1.36	1.34	1.11
7	Stall torque	mNm	16.0	27.8	34.0
8	Starting current	A	2.50	2.50	2.50
9	Max. efficiency	%	85	85	83
<b>Characteristics</b>					
10	Terminal resistance phase to phase	Ω	n.i.	n.i.	n.i.
11	Terminal inductance phase to phase	mH	n.i.	n.i.	n.i.
12	Torque constant	mNm / A	6.41	11.1	13.6
13	Speed constant	rpm / V	1490	860	701
14	Speed / torque gradient	rpm / mNm	277	207	224
15	Mechanical time constant	ms	8.69	6.52	7.03
16	Rotor inertia	gcm <sup>2</sup>	3.00	3.00	3.00

### Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 10 K / W
  - 18 Thermal resistance winding-housing 2.0 K / W
  - 19 Thermal time constant winding 4.93 s
  - 20 Thermal time constant motor 300 s
  - 21 Ambient temperature -20 ... +100°C
  - 22 Max. permissible winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed 50000 rpm
  - 24 Axial play at axial load < 5 N 0 mm
  - 24 Axial play at axial load > 5 N max. 0.14 mm preloaded
  - 25 Radial play preloaded
  - 26 Max. axial load (dynamic) 4 N
  - 27 Max. force for press fits (static) (static, shaft supported) 60 N
  - 27 Max. force for press fits (static) (static, shaft supported) 250 N
  - 28 Max. radial loading, 5 mm from flange 16 N
  - Max. temperature of electronics (max. loading capacity of the motor is defined by the electronics.) +125°C
- Other specifications**
- 29 Number of pole pairs 1
  - 30 Number of phases 3
  - 31 Weight of motor 85 g

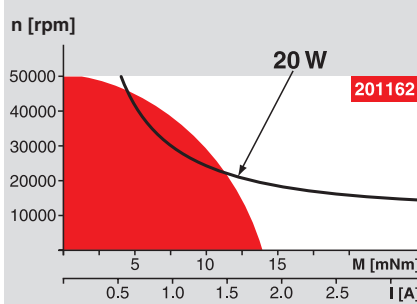
Values listed in the table are nominal.

- ⚠ **Caution**  
Wrong polarity will destroy the electronics
- ⚠ **Caution:** the direction of rotation (DIR) may only be changed when the motor is at standstill, otherwise the electronics can be damaged.

**Connection**

green	+V <sub>CC</sub> 10 ... 50 VDC	Pin 1
blue	GND	Pin 2
violet	Disable	Pin 3
grey	Direction	Pin 4

### 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

Overview on page 16 - 21

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