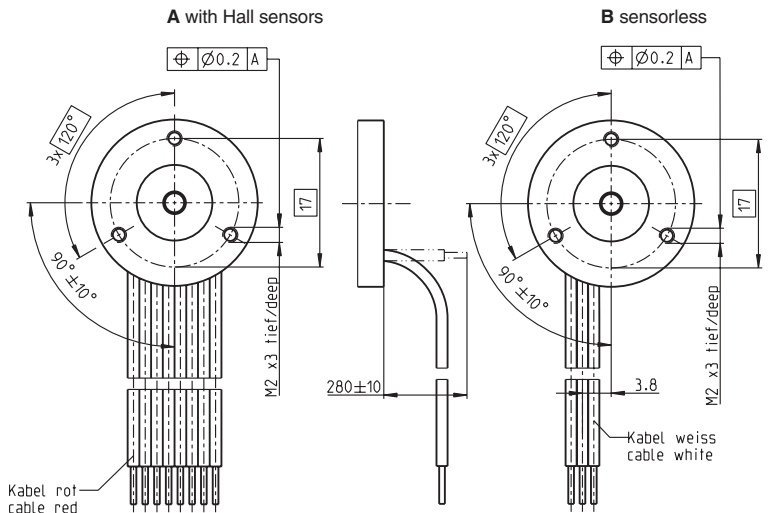
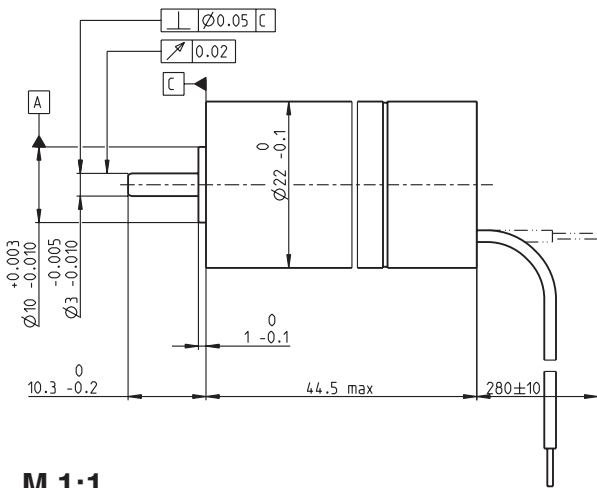


# EC 22 Ø22 mm, brushless, 40 Watt, sterilizable

**NEW**



M 1:1

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

## Order Number

A with Hall sensors	386665	386666	386667	386668
B sensorless	386669	386670	386671	386672

## Motor Data (provisional)

Values at nominal voltage		12	24	36	48
1 Nominal voltage	V	12	24	36	48
2 No load speed	rpm	34200	39500	39500	42400
3 No load current	mA	282	180	120	102
4 Nominal speed	rpm	30800	36200	36300	39200
5 Nominal torque (max. continuous torque)	mNm	15.2	16	16.3	15.8
6 Nominal current (max. continuous current)	A	4.78	2.91	1.97	1.55
7 Stall torque	mNm	171	227	234	243
8 Starting current	A	51.2	39.2	27	22.6
9 Max. efficiency	%	86	87	87	87
Characteristics		0.235	0.612	1.33	2.12
10 Terminal resistance phase to phase	Ω	0.235	0.612	1.33	2.12
11 Terminal inductance phase to phase	mH	0.0182	0.0546	0.123	0.189
12 Torque constant	mNm / A	3.33	5.78	8.66	10.7
13 Speed constant	rpm / V	2860	1650	1100	889
14 Speed / torque gradient	rpm / mNm	201	175	170	175
15 Mechanical time constant	ms	4.45	3.87	3.75	3.87
16 Rotor inertia	gcm <sup>2</sup>	2.11	2.11	2.11	2.11

## Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient: 10 K / W
  - 18 Thermal resistance winding-housing: 2 K / W
  - 19 Thermal time constant winding: 4.61 s
  - 20 Thermal time constant motor: 278 s
  - 21 Ambient temperature: -40 ... +135°C
  - 22 Max. permissible winding temperature: 155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed: 60000 rpm
  - 24 Axial play at axial load < 5 N: 0 mm
  - > 5 N: max. 0.14 mm
  - 25 Radial play: preloaded
  - 26 Max. axial load (dynamic): 4 N
  - 27 Max. force for press fits (static) (static, shaft supported): 53 N
  - 250 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: 85 g

Values listed in the table are nominal.

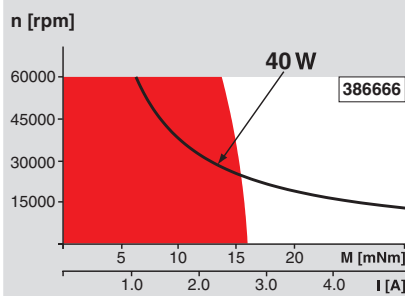
### Connection A and B, motor (Cable AWG 22)

- red Motor winding 1
- black Motor winding 2
- white Motor winding 3

### Connection A, sensors (Cable AWG 26)

- green V<sub>Hall</sub> 4.5 ... 24 VDC
  - blue GND
  - red / grey Hall sensor 1
  - black / grey Hall sensor 2
  - white / grey Hall sensor 3
- Wiring diagram for Hall sensors see p. 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**

## Application

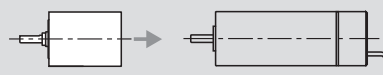
- Medicine / surgery / chemicals**
- Hand tools that can be sterilized, such as bone saw, bone drilling and grinding machine
- Dermatological and dental tools
- Infusion pumps
- ECCG
- Therapy aid, analysis and dialysis equipment

## Sterilization information

- In normal use, the motor can be sterilized 100 times in an autoclave. No need to dismantle.
- Sterilization with steam
- Temperature: +134°C ± 4°C
- Compression pressure up to: 2.3 bar
- Rel. humidity: 100 %
- Cycle length: 20 minutes

## maxon modular system

- Planetary Gearhead**
- sterilizable
- Ø22 mm
- 0.5 - 2.0 Nm
- Page 226



## Overview on page 16 - 21

- Recommended Electronics:**
- DECS 50/5 Page 289
  - DEC Module 24/2 290
  - DEC 24/3 290
  - DEC Module 50/5 291
  - DEC 50/5 291
  - DECV 50/5 297
  - Notes** 20