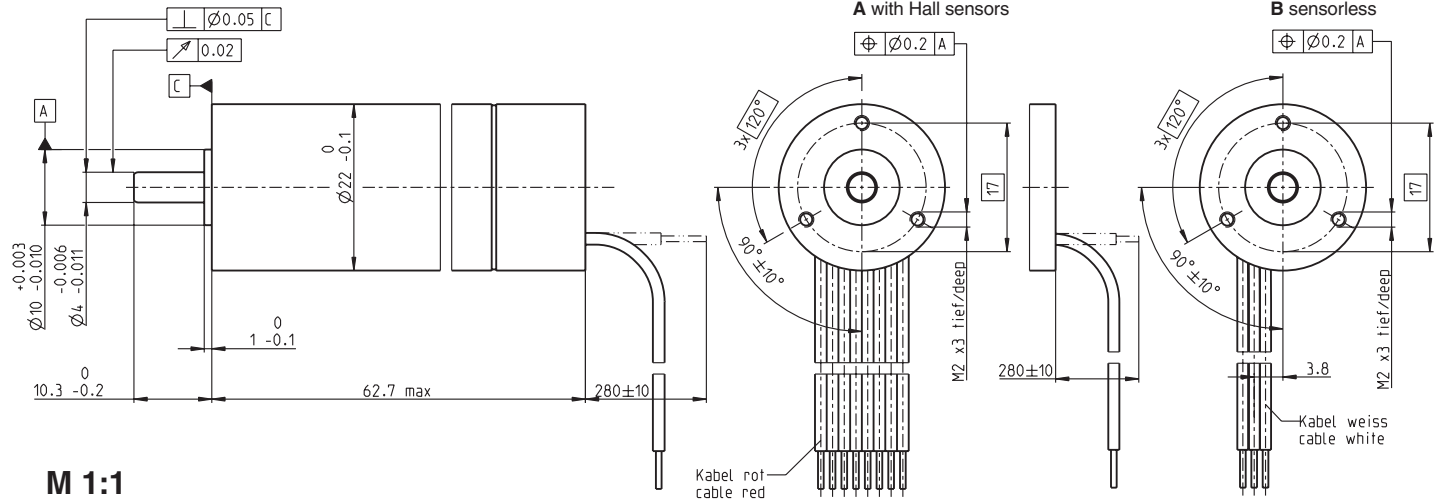


# EC 22 Ø22 mm, brushless, 100 Watt

sterilizable



M 1:1

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

## Part Numbers

A with Hall sensors	386679	386680
B sensorless	386681	386682

## Motor Data

Values at nominal voltage		24	42
1 Nominal voltage	V	24	42
2 No load speed	rpm	32400	32700
3 No load current	mA	195	113
4 Nominal speed	rpm	29400	30000
5 Nominal torque (max. continuous torque)	mNm	41.9	41.8
6 Nominal current (max. continuous current)	A	6.03	3.48
7 Stall torque	mNm	546	612
8 Stall current	A	77.4	50.1
9 Max. efficiency	%	90	91
Characteristics			
10 Terminal resistance phase to phase	Ω	0.31	0.839
11 Terminal inductance phase to phase	mH	0.0438	0.131
12 Torque constant	mNm/A	7.06	12.2
13 Speed constant	rpm/V	1350	781
14 Speed/torque gradient	rpm/mNm	59.4	53.6
15 Mechanical time constant	ms	2.55	2.29
16 Rotor inertia	gcm <sup>2</sup>	4.09	4.09

## Specifications

Thermal data	
17 Thermal resistance housing-ambient	7 K/W
18 Thermal resistance winding-housing	1 K/W
19 Thermal time constant winding	5.01 s
20 Thermal time constant motor	355 s
21 Ambient temperature	-40...+135°C
22 Max. winding temperature	155°C
Mechanical data (preloaded ball bearings)	
23 Max. speed	60000 rpm
24 Axial play at axial load < 4.5 N	0 mm
> 4.5 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)	45 N
28 Max. radial load, 5 mm from flange	250 N
	16 N
Other specifications	
29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	128 g

Values listed in the table are nominal.

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

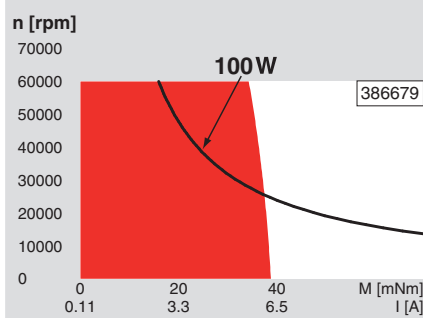
red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

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

green	VHall 3...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. 33

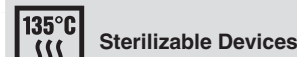
## Operating Range



## 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



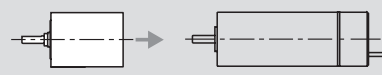
- Orthopedic Drills & Saws
- Surgical Reamers
- Arthroscopic Shavers
- Surgical Staplers
- Dental Tools

## Sterilization information

Sensorless: typically 1000 autoclave cycles	
Hall sensor: typically 500 autoclave cycles	
Sterilization with steam	
Temperature	+134°C ± 4°C
Compression pressure up to	2.3 bar
Rel. humidity	100 %
Cycle length	18 minutes

## maxon modular system

**Planetary Gearhead**  
sterilizable  
Ø22 mm  
0.5 - 2.0 Nm  
Page 299



Overview on page 20-25

Recommended Electronics:	
Notes	Page 24
ESCON Mod. 50/4 EC-S	379
ESCON Module 50/5	379
ESCON 50/5	380
ESCON 70/10	380
DEC Module 50/5	382