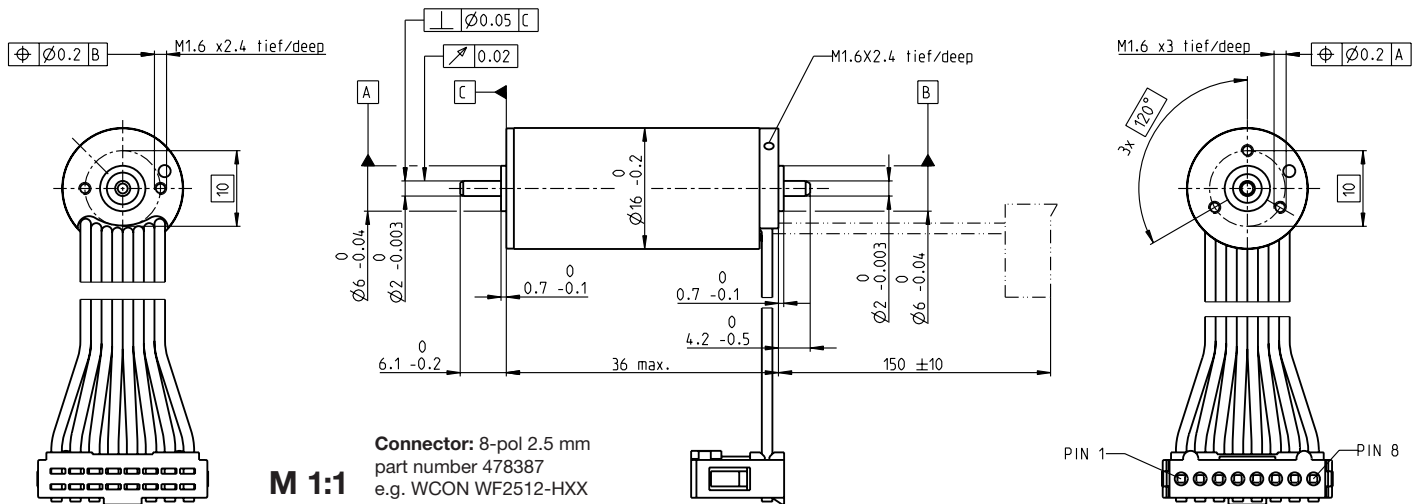


# EC-max 16 Ø16 mm, brushless, 8 Watt



**Connector:** 8-pol 2.5 mm part number 478387 e.g. WCON WF2512-HXX

**M 1:1**

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

### Part Numbers

283831	283832	283833	283834	283835
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### Motor Data

Values at nominal voltage		6	9	12	18	24
1 Nominal voltage	V	6	9	12	18	24
2 No load speed	rpm	12000	11900	11900	11900	11900
3 No load current	mA	130	85.1	64.2	42.6	31.9
4 Nominal speed	rpm	7120	7090	7300	7170	7350
5 Nominal torque (max. continuous torque)	mNm	7.66	7.8	8.02	7.87	8.19
6 Nominal current (max. continuous current)	A	1.76	1.17	0.909	0.593	0.461
7 Stall torque	mNm	19.2	19.8	21.1	20.3	22
8 Stall current	A	4.17	2.82	2.27	1.45	1.17
9 Max. efficiency	%	69	69	70	70	71
Characteristics						
10 Terminal resistance phase to phase	Ω	1.44	3.19	5.3	12.4	20.5
11 Terminal inductance phase to phase	mH	0.034	0.079	0.14	0.317	0.566
12 Torque constant	mNm/A	4.61	7.02	9.32	14	18.7
13 Speed constant	rpm/V	2070	1360	1020	681	510
14 Speed/torque gradient	rpm/mNm	646	619	582	602	556
15 Mechanical time constant	ms	5.75	5.51	5.18	5.36	4.95
16 Rotor inertia	gcm <sup>2</sup>	0.85	0.85	0.85	0.85	0.85

### Specifications

Thermal data	
17 Thermal resistance housing-ambient	17.7 K/W
18 Thermal resistance winding-housing	1.41 K/W
19 Thermal time constant winding	0.9 s
20 Thermal time constant motor	427 s
21 Ambient temperature	-40...+100°C
22 Max. winding temperature	+155°C
Mechanical data (preloaded ball bearings)	
23 Max. speed	20000 rpm
24 Axial play at axial load < 1.5 N	0 mm
	> 1.5 N
25 Radial play	0.14 mm
26 Max. axial load (dynamic)	1 N
27 Max. force for press fits (static) (static, shaft supported)	18 N
28 Max. radial load, 5 mm from flange	400 N
	6 N

### Other specifications

29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	52 g

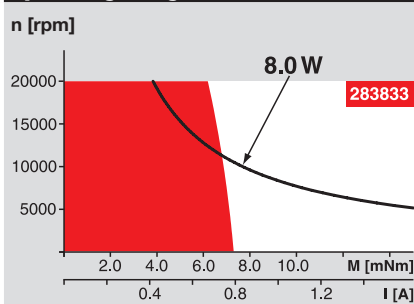
Values listed in the table are nominal.

**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> 3...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 p. 35

### 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 20-27

#### Planetary Gearhead

Ø16 mm  
0.2 - 0.6 Nm  
Page 324

#### Planetary Gearhead

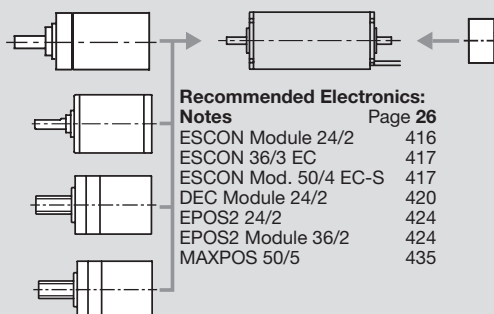
Ø22 mm  
0.5 - 2.0 Nm  
Page 332

#### Spindle Drive

Ø16 mm  
Page 365-367

#### Spindle Drive

Ø22 mm  
Page 368/369



#### Recommended Electronics:

Notes Page 26

ESCON Module 24/2	416
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417
DEC Module 24/2	420
EPOS2 24/2	424
EPOS2 Module 36/2	424
MAXPOS 50/5	435

#### Encoder MR

128/256/512 CPT,  
2/3 channels  
Page 391