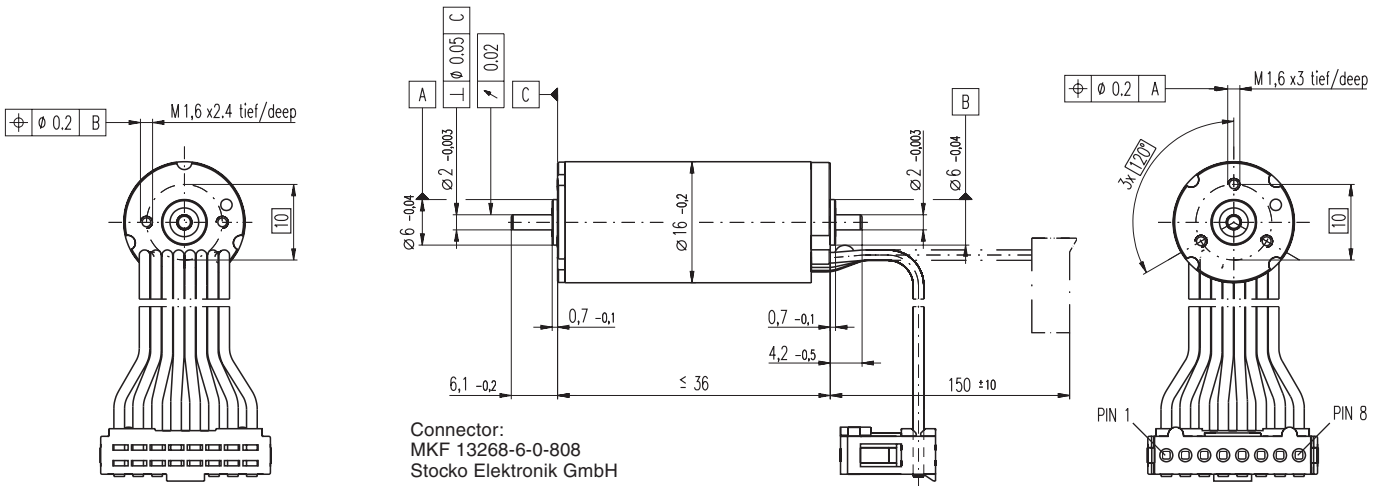


EC-max 16 \varnothing 16 mm, brushless, 8 Watt



M 1:1

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

Order Number

283831 283832 283833 283834 283835

Motor Data

Values at nominal voltage		283831	283832	283833	283834	283835	
1	Nominal voltage	V	6.0	9.0	12.0	18.0	24.0
2	No load speed	rpm	12100	11900	12000	11900	11900
3	No load current	mA	119	77.5	58.5	38.8	29.0
4	Nominal speed	rpm	7170	7110	7310	7180	7350
5	Nominal torque (max. continuous torque)	mNm	7.62	7.80	8.04	7.90	8.23
6	Nominal current (max. continuous current)	A	1.74	1.17	0.907	0.593	0.461
7	Stall torque	mNm	19.2	19.8	21.1	20.3	22.0
8	Starting current	A	4.17	2.82	2.27	1.45	1.17
9	Max. efficiency	%	70	70	71	71	72
Characteristics							
10	Terminal resistance phase to phase	Ω	1.44	3.19	5.30	12.4	20.5
11	Terminal inductance phase to phase	mH	0.0343	0.0793	0.140	0.317	0.566
12	Torque constant	mNm / A	4.61	7.02	9.32	14.0	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 ²	0.850	0.850	0.850	0.850	0.850

Specifications

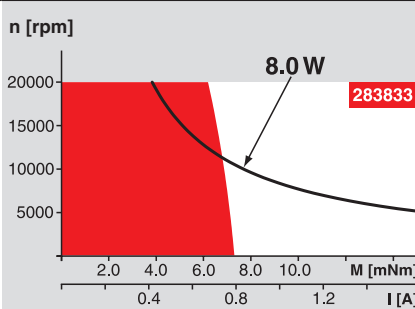
- Thermal data**
- 17 Thermal resistance housing-ambient 17.7 K / W
 - 18 Thermal resistance winding-housing 1.41 K / W
 - 19 Thermal time constant winding 0.983 s
 - 20 Thermal time constant motor 427 s
 - 21 Ambient temperature -40 ... +100°C
 - 22 Max. permissible winding temperature +155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max permissible speed 20000 rpm
 - 24 Axial play at axial load < 2.0 N 0 mm
 - > 2.0 N 0.14 mm preloaded
 - 25 Radial play preloaded
 - 26 Max. axial load (dynamic) 1.5 N
 - 27 Max. force for press fits (static) (static, shaft supported) 40 N
 - 28 Max. radial loading, 5 mm from flange 6 N
- Other specifications**
- 29 Number of pole pairs 1
 - 30 Number of phases 3
 - 31 Weight of motor 45 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 _{Hall} 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 26

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.

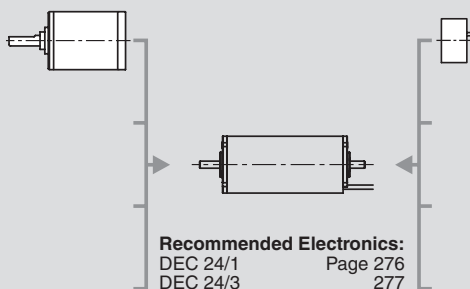
Short term operation
The motor may be briefly overloaded (recurring).

— **Assigned power rating**

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
 \varnothing 22 mm
0.5 - 2.0 Nm
Page 223



Encoder MR
128 / 256 / 512 CPT,
2 / 3 channels
Page 249

- Recommended Electronics:**
- | | |
|-----------|----------|
| DEC 24/1 | Page 276 |
| DEC 24/3 | 277 |
| DECV 50/5 | 278 |
| DES 50/5 | 279 |
| EPOS 24/1 | 286 |
| Notes | 20 |