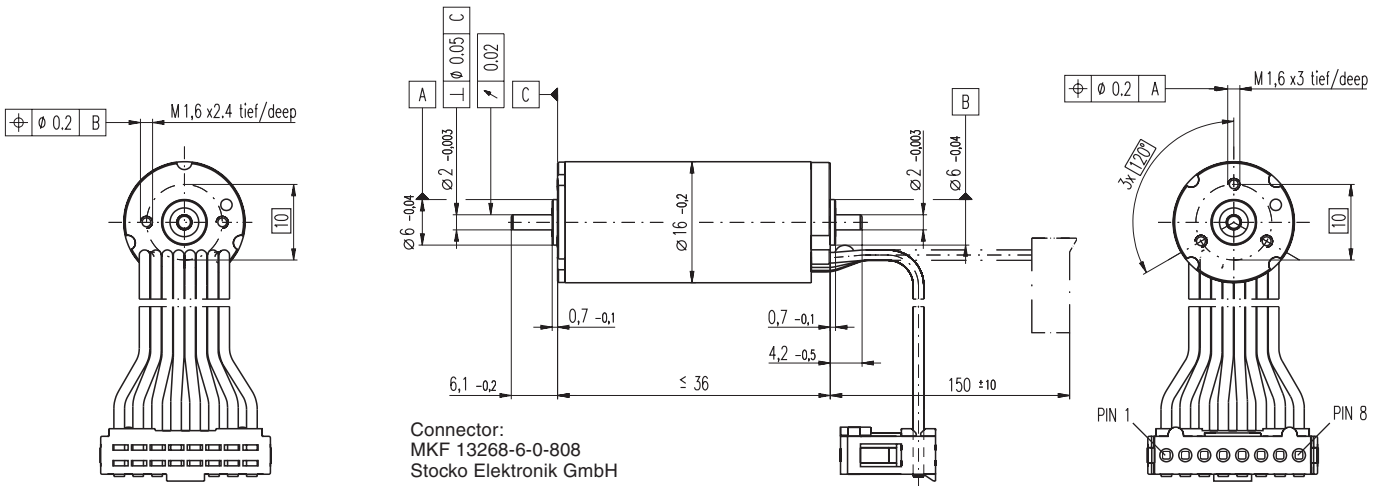


EC-max 16 \varnothing 16 mm, brushless, 8 Watt



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

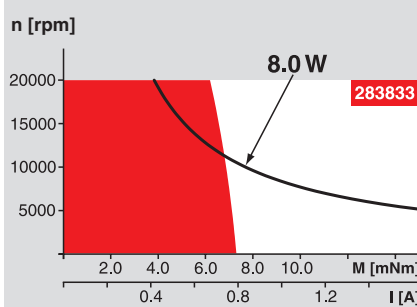
- Thermal data**
- 17 Thermal resistance housing-ambient 17.7 K / W
 - 18 Thermal resistance winding-housing 1.41 K / W
 - 19 Thermal time constant winding 0.983 s
 - 20 Thermal time constant motor 427 s
 - 21 Ambient temperature -20 ... +100°C
 - 22 Max. permissible winding temperature +155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max permissible speed 20000 rpm
 - 24 Axial play at axial load < 2.0 N 0 mm
 - 24 Axial play at axial load > 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 27

Operating Range



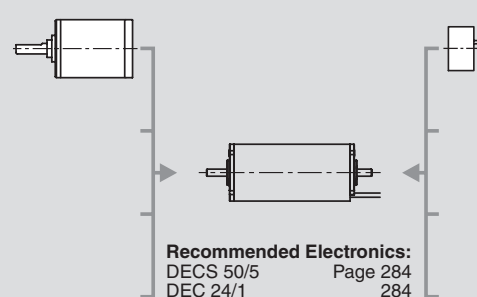
Comments

- 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**

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
 \varnothing 22 mm
 0.5 - 2.0 Nm
 Page 232



Encoder MR
 128 / 256 / 512 CPT,
 2 / 3 channels
 Page 257

- Recommended Electronics:**
- | | |
|-----------|----------|
| DECS 50/5 | Page 284 |
| DEC 24/1 | 284 |
| DEC 24/3 | 285 |
| DECV 50/5 | 286 |
| DES 50/5 | 287 |
| EPOS 24/1 | 294 |
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