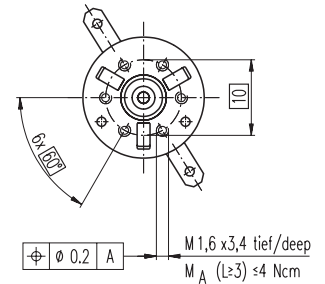
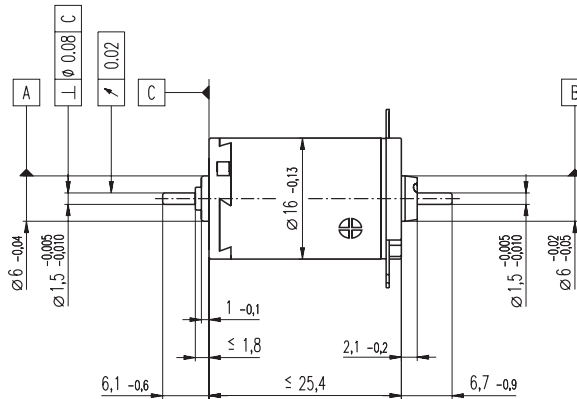
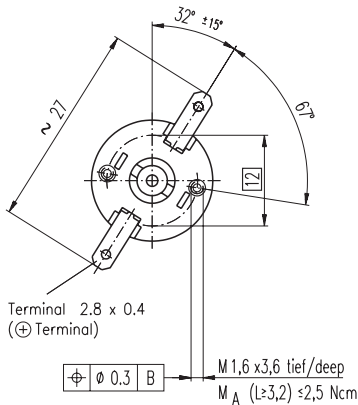


A-max 16 $\varnothing 16$ mm, Precious Metal Brushes CLL, 1.2 Watt, CE approved

maxon A-max



M 1:1

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

Order Number

Motor Data

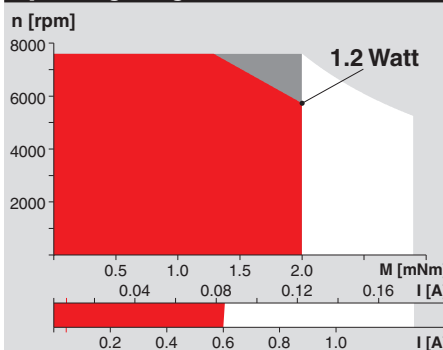
	110051	110052	110053	110054	110055	110056	110057	110058	110059	110060
1 Assigned power rating	W	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2 Nominal voltage	Volt	1.2	2.4	6.0	7.2	9.0	12.0	15.0	18.0	30.0
3 No load speed	rpm	8510	9700	10000	9710	9090	10400	11600	10300	11300
4 Stall torque	mNm	3.84	3.62	4.04	3.87	3.58	4.14	4.55	4.49	3.85
5 Speed / torque gradient	rpm / mNm	2270	2760	2540	2580	2610	2580	2620	2650	2740
6 No load current	mA	74	44	18	15	11	10	9	7	6
7 Starting current	mA	2930	1580	723	561	390	386	378	311	236
8 Terminal resistance	Ohm	0.410	1.52	8.30	12.8	23.1	31.1	39.7	57.9	76.2
9 Max. permissible speed	rpm	7600	7600	7600	7600	7600	7600	7600	7600	7600
10 Max. continuous current	mA	600	600	408	328	244	210	186	154	134
11 Max. continuous torque	mNm	0.788	1.38	2.27	2.26	2.25	2.26	2.24	2.23	2.19
12 Max. power output at nominal voltage	mW	841	902	1040	967	837	1110	1360	1340	1020
13 Max. efficiency	%	71	70	71	71	70	72	72	72	71
14 Torque constant	mNm / A	1.31	2.30	5.58	6.89	9.19	10.7	12.0	14.4	16.3
15 Speed constant	rpm / W	7270	4160	1710	1390	1040	890	793	661	586
16 Mechanical time constant	ms	24	22	22	22	22	22	22	22	22
17 Rotor inertia	gcm ²	1.01	0.779	0.817	0.805	0.795	0.802	0.793	0.783	0.761
18 Terminal inductance	mH	0.02	0.05	0.31	0.47	0.83	1.13	1.43	2.05	2.62
19 Thermal resistance housing-ambient	K / W	30	30	30	30	30	30	30	30	30
20 Thermal resistance rotor-housing	K / W	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
21 Thermal time constant winding	s	4	3	3	3	3	3	3	3	3

Specifications

- Axial play 0.05 - 0.15 mm
- Max. **sleeve bearing** loads
 - axial (dynamic) 0.8 N
 - radial (5 mm from flange) 1.4 N
 - Force for press fits (static) 35 N
 - (static, shaft supported) 280 N
- Max. **ball bearing** loads
 - axial (dynamic) 2.2 N
 - radial (5 mm from flange) 7.8 N
 - Force for press fits (static) 30 N
 - (static, shaft supported) 280 N
- Radial play **sleeve bearing** 0.012 mm
- Radial play **ball bearing** 0.025 mm
- Ambient temperature range -30 ... +85°C
- Max. rotor temperature +85°C
- Number of commutator segments 7
- Weight of motor 22 g
- 2 pole permanent magnet
- Values listed in the table are nominal. For applicable tolerances see page 43. For additional details please use the maxon selection program on the enclosed CD-Rom.
- CLL = Capacitor Long Life

- Options: Ball bearings in place of sleeve bearings, pigtailed in place of terminals, without CLL.

Operating Range

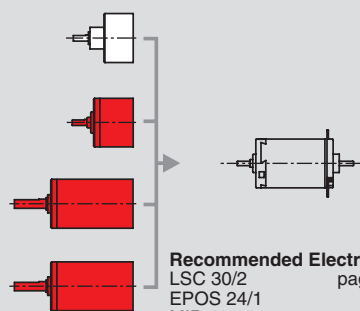


Comments

- Recommended operating range**
 - Continuous operation**
In observation of above listed thermal resistances (lines 19 and 20) the maximum permissible rotor temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.
 - Short term operation**
The motor may be briefly overloaded (recurring).
- 110060 Motor with high resistance winding
- 110051 Motor with low resistance winding

maxon Modular System

- Spur Gearhead**
 $\varnothing 16$ mm
0.015 Nm
Details page 196
- Spur Gearhead**
 $\varnothing 16$ mm
0.01 - 0.1 Nm
Details page 197 / 198 / 199
- Planetary Gearhead**
 $\varnothing 16$ mm
0.1 - 0.3 Nm
Details page 200
- Planetary Gearhead**
 $\varnothing 16$ mm
0.06 - 0.18 Nm
Details page 201



Notes

Overview on page 17 - 21

- Digital MR Encoder**
32 CPT,
2 / 3 channels
Details page 229
- Digital MR Encoder**
128 / 256 / 512 CPT,
2 / 3 channels
Details page 230
- Digital Magnetic Encoder** $\varnothing 13$ mm
16 CPT, 2 channels
Details page 245