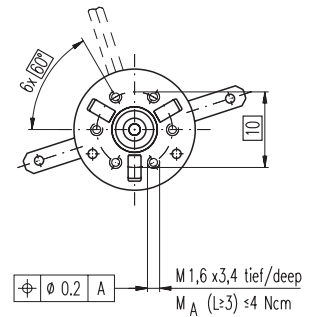
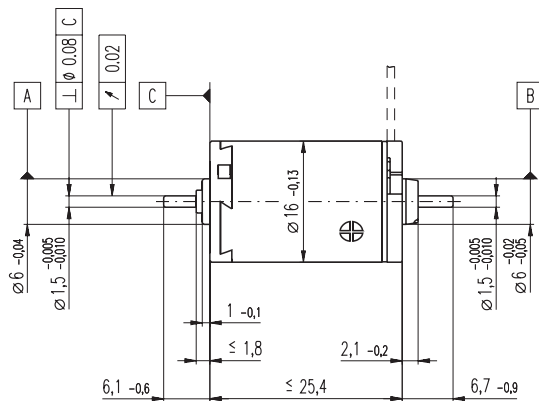
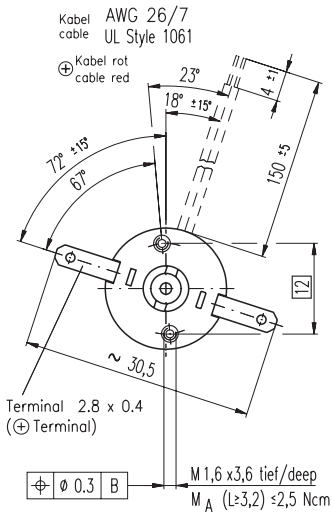


# A-max 16 Ø16 mm, Graphite Brushes, 2 Watt



**M 1:1**

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

## Order Number

with terminals	110071	110072	110073	110074	110075	110076	110077	110078	110079	110080
with cables	139825	352870	352871	352872	352873	352874	352875	352876	352877	352878

## Motor Data

Values at nominal voltage			1.5	3.0	6.0	9.0	12.0	14.0	15.0	18.0	21.0	30.0
1	Nominal voltage	V	1.5	3.0	6.0	9.0	12.0	14.0	15.0	18.0	21.0	30.0
2	No load speed	rpm	10200	11700	9620	11800	11800	11200	11200	11600	10800	
3	No load current	mA	201	117	46.7	39.1	29.3	25.1	22.2	18.5	16.5	10.7
4	Nominal speed	rpm	8670	7860	3240	5460	5410	5450	4820	4780	5070	4160
5	Nominal torque (max. continuous torque)	mNm	0.686	1.40	2.51	2.47	2.45	2.46	2.46	2.44	2.39	2.35
6	Nominal current (max. continuous current)	A	0.720	0.720	0.494	0.394	0.294	0.253	0.225	0.186	0.162	0.105
7	Stall torque	mNm	4.93	4.51	4.02	4.82	4.76	4.81	4.53	4.47	4.48	4.03
8	Starting current	A	3.76	1.97	0.721	0.700	0.519	0.45	0.377	0.31	0.275	0.164
9	Max. efficiency	%	58	57	56	58	58	58	58	57	57	55
<b>Characteristics</b>												
10	Terminal resistance	Ω	0.399	1.52	8.32	12.8	23.1	31.1	39.8	58.0	76.2	183
11	Terminal inductance	mH	0.017	0.0519	0.306	0.467	0.831	1.13	1.42	2.05	2.61	6.01
12	Torque constant	mNm / A	1.31	2.29	5.57	6.88	9.17	10.7	12.0	14.4	16.3	24.7
13	Speed constant	rpm / V	7290	4170	1720	1390	1040	893	795	663	587	387
14	Speed / torque gradient	rpm / mNm	2220	2770	2560	2600	2630	2600	2630	2670	2750	2880
15	Mechanical time constant	ms	24.5	23.7	23.2	23.2	23.2	23.2	23.4	23.3	23.4	23.8
16	Rotor inertia	gcm <sup>2</sup>	1.05	0.816	0.864	0.854	0.844	0.854	0.848	0.834	0.811	0.788

## Specifications

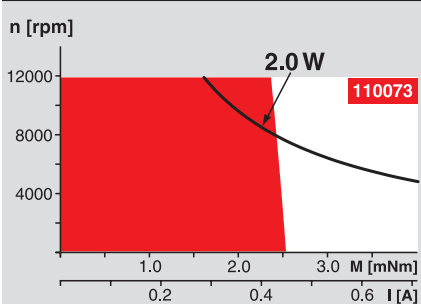
Thermal data		
17	Thermal resistance housing-ambient	29.8 K / W
18	Thermal resistance winding-housing	5.5 K / W
19	Thermal time constant winding	3.53 s
20	Thermal time constant motor	328 s
21	Ambient temperature	-30 ... +85°C
22	Max. permissible winding temperature	+125°C
<b>Mechanical data (sleeve bearings)</b>		
23	Max. permissible speed	11900 rpm
24	Axial play	0.05 - 0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static) (static, shaft supported)	35 N / 280 N
28	Max. radial loading, 5 mm from flange	1.4 N
<b>Mechanical data (ball bearings)</b>		
23	Max. permissible speed	11900 rpm
24	Axial play	0.05 - 0.15 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	2.2 N
27	Max. force for press fits (static) (static, shaft supported)	30 N / 280 N
28	Max. radial loading, 5 mm from flange	7.8 N
<b>Other specifications</b>		
29	Number of pole pairs	1
30	Number of commutator segments	7
31	Weight of motor	22 g

Values listed in the table are nominal.  
Explanation of the figures on page 49.

### Option

Ball bearings in place of sleeve bearings

## Operating Range

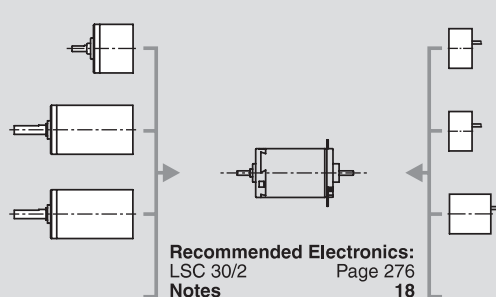


## Comments

- 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

- Spur Gearhead**  
Ø16 mm  
0.01 - 0.1 Nm  
Page 219 / 220 / 221 / 222
- Planetary Gearhead**  
Ø16 mm  
0.06 - 0.18 Nm  
Page 223
- Planetary Gearhead**  
Ø16 mm  
0.1 - 0.3 Nm  
Page 224



## Overview on page 16 - 21

- Encoder MR**  
32 CPT,  
2 / 3 channels  
Page 255
- Encoder MR**  
128 / 256 / 512 CPT,  
2 / 3 channels  
Page 256
- Encoder MEnc**  
Ø13 mm  
16 CPT, 2 channels  
Page 270

**Recommended Electronics:**  
LSC 30/2 Page 276  
**Notes** 18