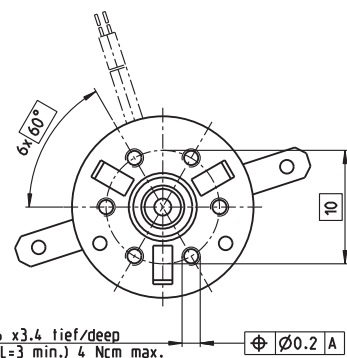
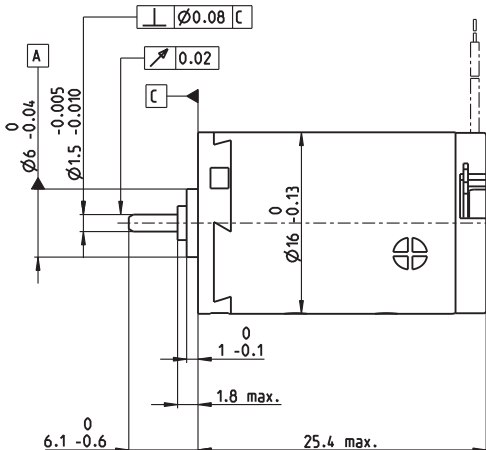
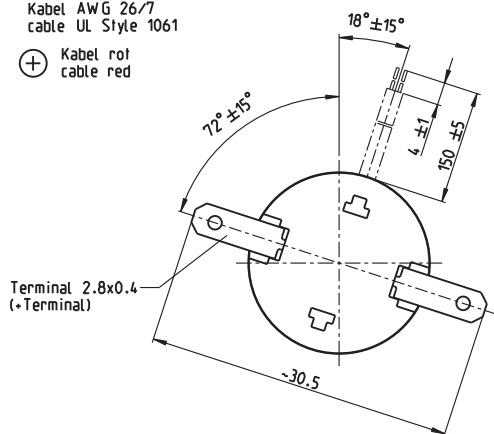


# A-max 16 Ø16 mm, Graphite Brushes, 2 Watt

Kabel AWG 26/7  
cable UL Style 1061

⊕ Kabel rot  
cable red



**M 1.5:1**

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

## Article Numbers

	110061	110062	110063	110064	110065	110066	110067	110068	110069	110070
with terminals										
with cables	139821	352853	352854	352855	325083	352856	205903	352857	266076	352858

## Motor Data

Values at nominal voltage		1.5	3	6	9	12	14	15	18	21	30
1 Nominal voltage	V	1.5	3	6	9	12	14	15	18	21	30
2 No load speed	rpm	10200	11600	9520	11700	11700	11700	11100	11100	11500	10800
3 No load current	mA	226	129	53.3	43.1	32.3	27.7	24.7	20.6	18.2	12
4 Nominal speed	rpm	8670	7860	3240	5470	5430	5470	4840	4790	5080	4170
5 Nominal torque (max. continuous torque)	mNm	0.646	1.35	2.45	2.41	2.39	2.41	2.4	2.38	2.33	2.29
6 Nominal current (max. continuous current)	A	0.72	0.72	0.494	0.393	0.293	0.253	0.224	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	0.7	0.519	0.45	0.377	0.31	0.275	0.164
9 Max. efficiency	%	54	54	52	56	56	56	55	55	55	53
<b>Characteristics</b>											
10 Terminal resistance	Ω	0.399	1.52	8.32	12.8	23.1	31.1	39.8	58	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	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	24.6	23.8	23.3	23.3	23.4	23.4	23.5	23.4	23.5	23.9
16 Rotor inertia	gcm <sup>2</sup>	1.06	0.82	0.868	0.859	0.849	0.859	0.852	0.838	0.816	0.793

## Specifications

<b>Thermal data</b>	
17 Thermal resistance housing-ambient	29.8 K/W
18 Thermal resistance winding-housing	5.5 K/W
19 Thermal time constant winding	3.55 s
20 Thermal time constant motor	165 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)	35 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)	30 N
28 Max. radial loading, 5 mm from flange	7.8 N

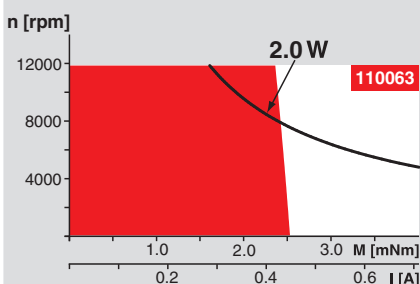
<b>Other specifications</b>	
29 Number of pole pairs	1
30 Number of commutator segments	7
31 Weight of motor	21 g

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

Overview on page 16 - 21

### Spur Gearhead

Ø16 mm  
0.01 - 0.1 Nm  
Page 212 - 215

### Planetary Gearhead

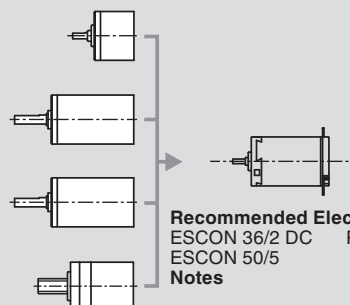
Ø16 mm  
0.06 - 0.18 Nm  
Page 216

### Planetary Gearhead

Ø16 mm  
0.1 - 0.6 Nm  
Page 217/218

### Spindle Drive

Ø16 mm  
Page 251/252



**Recommended Electronics:**  
ESCON 36/2 DC Page 292  
ESCON 50/5 Page 292

**Notes** 18