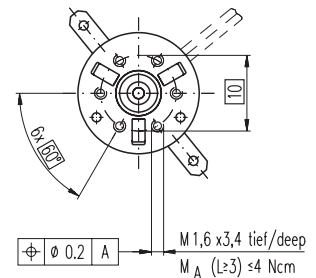
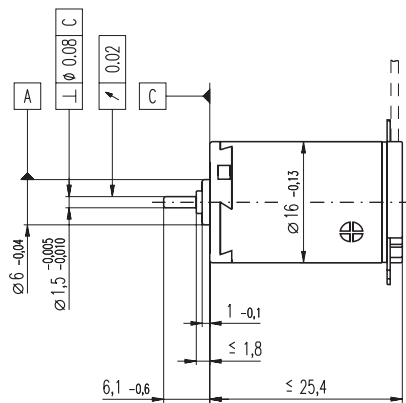
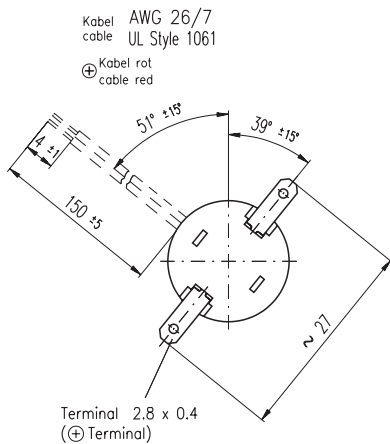


A-max 16 $\varnothing 16$ mm, Precious Metal Brushes CLL, 2 Watt, $\text{C}\epsilon$ approved



M 1:1

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

Order Number

with terminals	110041	110042	110043	110044	110045	110046	110047	110048	110049	110050
with cables	139820	352815	134844	231379	220514	304672	352823	352816	260678	352817

Motor Data

Values at nominal voltage			1.5	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	30.0
1	Nominal voltage	V	1.5	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	30.0
2	No load speed	rpm	10800	12300	10100	12300	12300	13200	14100	13700	13800	11400
3	No load current	mA	61.3	38.1	13.9	12.7	9.54	8.57	7.99	6.53	5.83	3.37
4	Nominal speed	rpm	9140	8690	4510	6690	6650	7580	8480	8040	8120	5480
5	Nominal torque (max. continuous torque)	mNm	0.713	1.30	2.21	2.18	2.17	2.17	2.15	2.14	2.10	2.08
6	Nominal current (max. continuous current)	A	0.600	0.600	0.406	0.326	0.243	0.209	0.185	0.153	0.134	0.0864
7	Stall torque	mNm	4.79	4.51	4.03	4.82	4.77	5.16	5.44	5.22	5.12	4.04
8	Starting current	A	3.66	1.97	0.723	0.702	0.520	0.482	0.453	0.362	0.315	0.164
9	Max. efficiency	%	76	75	75	76	76	76	76	76	75	74
Characteristics												
10	Terminal resistance	Ω	0.410	1.52	8.30	12.8	23.1	31.1	39.7	57.9	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	2280	2770	2560	2590	2620	2600	2630	2670	2750	2880
15	Mechanical time constant	ms	25.2	23.7	23.1	23.2	23.2	23.2	23.3	23.3	23.4	23.8
16	Rotor inertia	gcm ²	1.05	0.816	0.864	0.854	0.844	0.854	0.848	0.834	0.811	0.788

Specifications

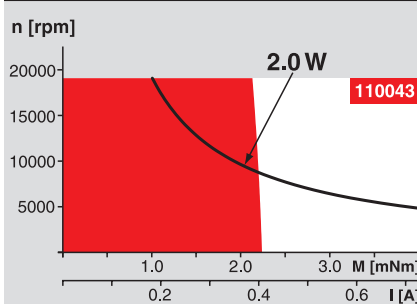
Thermal data		
17	Thermal resistance housing-ambient	29.8 K / W
18	Thermal resistance winding-housing	5.5 K / W
19	Thermal time constant winding	3.53 s
20	Thermal time constant motor	313 s
21	Ambient temperature	-30 ... +65°C
22	Max. permissible winding temperature	+85°C
Mechanical data (sleeve bearings)		
23	Max. permissible speed	19000 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
Mechanical data (ball bearings)		
23	Max. permissible speed	19000 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
Other specifications		
29	Number of pole pairs	1
30	Number of commutator segments	7
31	Weight of motor	21 g
CLL = Capacitor Long Life		

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

Option

Ball bearings in place of sleeve bearings
Without CLL

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.

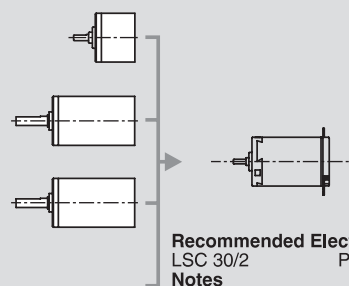
Short term operation
The motor may be briefly overloaded (recurring).

— Assigned power rating

maxon Modular System

Overview on page 16 - 21

- Spur Gearhead**
 $\varnothing 16$ mm
0.01 - 0.1 Nm
Page 219 / 220 / 221 / 222
- Planetary Gearhead**
 $\varnothing 16$ mm
0.06 - 0.18 Nm
Page 223
- Planetary Gearhead**
 $\varnothing 16$ mm
0.1 - 0.3 Nm
Page 224



Recommended Electronics:
LSC 30/2 Page 276
Notes 18