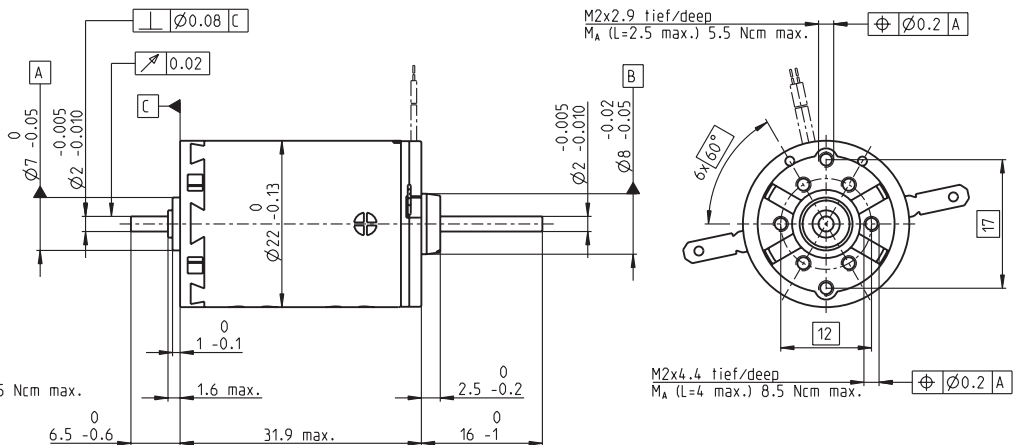
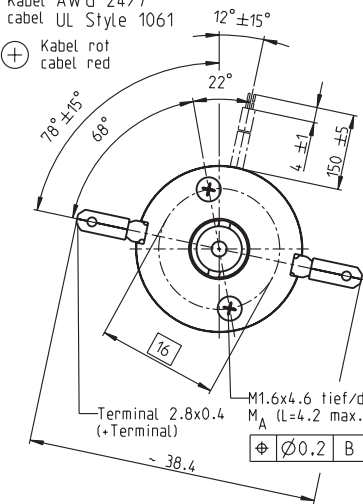


A-max 22 Ø22 mm, Graphite Brushes, 6 Watt

maxon A-max

Kabel AWG 24/7
Kabel UL Style 1061
Kabel rot
Kabel red



M 1:1

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

Order Number

with terminals	110156	110158	110159	110160	110161	110162	110163	110164	110165	110166	110167	110168
with cables	139848	353023	353024	231171	353025	353026	231174	353027	353028	353029	316659	353603

Motor Data

Values at nominal voltage															
1	Nominal voltage	V	6.0	9.0	9.0	12.0	12.0	15.0	18.0	24.0	24.0	36.0	48.0	48.0	
2	No load speed	rpm	9250	9710	8530	10200	9200	10100	9800	10500	8500	9650	9130	8220	
3	No load current	mA	83.2	57.9	49.7	45.9	40.5	36.0	29.0	23.7	18.4	14.2	10.0	8.85	
4	Nominal speed	rpm	5550	6370	5240	6990	5960	6880	6630	7430	5340	6500	5920	5020	
5	Nominal torque (max. continuous torque)	mNm	5.82	6.52	6.76	6.77	6.82	6.87	6.94	6.97	7.07	7.00	6.91	7.02	
6	Nominal current (max. continuous current)	A	1.06	0.816	0.741	0.664	0.602	0.529	0.433	0.350	0.287	0.214	0.150	0.138	
7	Stall torque	mNm	16.1	20.4	18.7	22.8	20.4	22.7	22.3	24.3	19.5	21.9	20.1	18.5	
8	Starting current	A	2.73	2.38	1.92	2.09	1.69	1.64	1.30	1.14	0.745	0.631	0.411	0.340	
9	Max. efficiency	%	65	70	69	72	71	72	72	73	71	72	71	70	
Characteristics															
10	Terminal resistance	Ω	2.20	3.78	4.69	5.74	7.12	9.15	13.8	21.0	32.2	57.1	117	141	
11	Terminal inductance	mH	0.106	0.222	0.288	0.362	0.445	0.584	0.890	1.37	2.10	3.68	7.29	8.95	
12	Torque constant	mNm / A	5.90	8.55	9.73	10.9	12.1	13.9	17.1	21.2	26.2	34.8	48.9	54.3	
13	Speed constant	rpm / V	1620	1120	981	875	790	689	558	450	364	274	195	176	
14	Speed / torque gradient	rpm / mNm	604	494	473	461	465	455	451	445	447	450	466	458	
15	Mechanical time constant	ms	25.2	21.8	21.2	20.6	20.3	19.9	19.4	19.1	19.0	18.9	18.9	18.8	
16	Rotor inertia	gcm ²	3.98	4.22	4.28	4.26	4.17	4.17	4.11	4.11	4.07	4.00	3.88	3.92	

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 20 K / W
 - 18 Thermal resistance winding-housing 6.0 K / W
 - 19 Thermal time constant winding 10.1 s
 - 20 Thermal time constant motor 540 s
 - 21 Ambient temperature -30 ... +85°C
 - 22 Max. permissible winding temperature +125°C
- Mechanical data (sleeve bearings)**
- 23 Max. permissible speed 9800 rpm
 - 24 Axial play 0.05 - 0.15 mm
 - 25 Radial play 0.012 mm
 - 26 Max. axial load (dynamic) 1 N
 - 27 Max. force for press fits (static) (static, shaft supported) 80 N / 440 N
 - 28 Max. radial loading, 5 mm from flange 2.8 N

- Mechanical data (ball bearings)**
- 23 Max. permissible speed 9800 rpm
 - 24 Axial play 0.05 - 0.15 mm
 - 25 Radial play 0.025 mm
 - 26 Max. axial load (dynamic) 3.3 N
 - 27 Max. force for press fits (static) (static, shaft supported) 45 N / 440 N
 - 28 Max. radial loading, 5 mm from flange 12.3 N

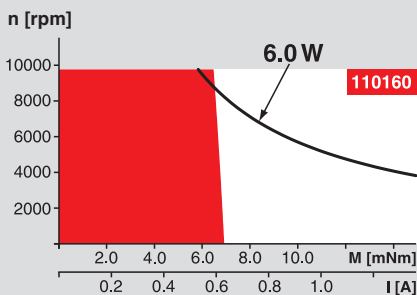
- Other specifications**
- 29 Number of pole pairs 1
 - 30 Number of commutator segments 9
 - 31 Weight of motor 54 g

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.

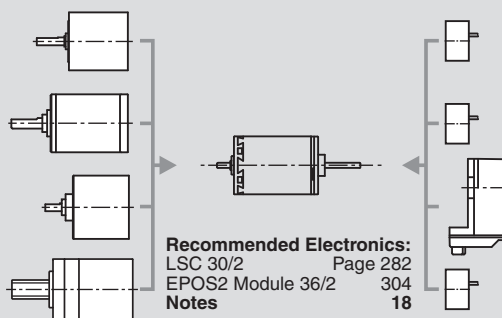
Short term operation
The motor may be briefly overloaded (recurring).

— Assigned power rating

maxon Modular System

Overview on page 16 - 21

- Planetary Gearhead**
Ø22 mm
0.1 - 0.6 Nm
Page 220 / 221
- Planetary Gearhead**
Ø22 mm
0.5 - 2.0 Nm
Page 222 / 223
- Spur Gearhead**
Ø24 mm
0.1 Nm
Page 227
- Spindle Drive**
Ø22 mm
Page 247 / 248



Recommended Electronics:
LSC 30/2 Page 282
EPOS2 Module 36/2 304
Notes 18

- Encoder MR**
32 Imp.,
2 / 3 channels
Page 258
- Encoder MR**
128 / 256 / 512 Imp.,
2 / 3 channels
Page 260
- Encoder Enc**
22 mm
100 Imp., 2 channels
Page 265
- Encoder MEnc**
Ø13 mm
16 Imp., 2 channels
Page 274