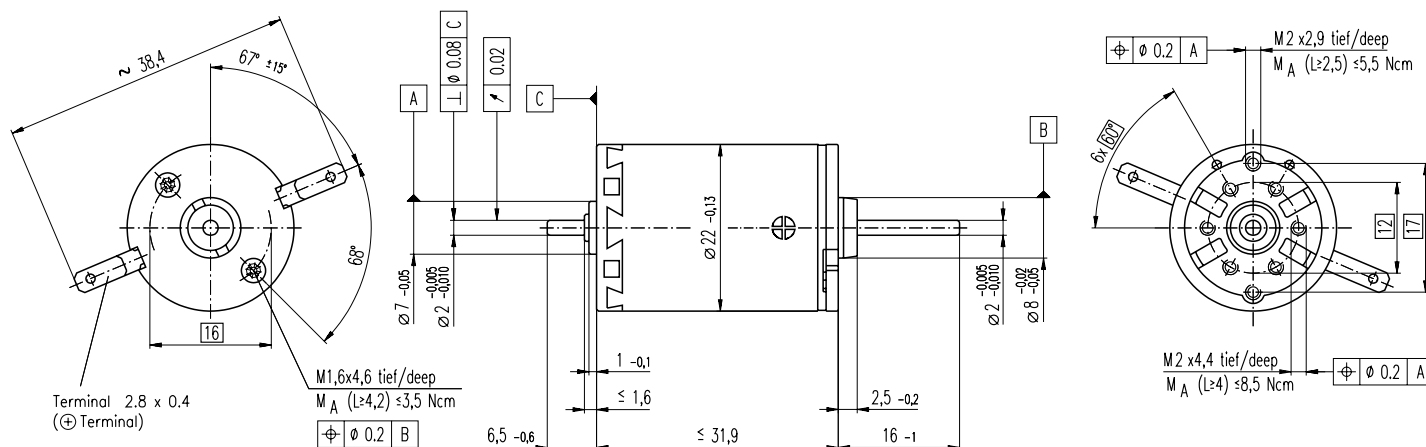


A-max 22 Ø22 mm, Precious Metal Brushes CLL, 3.5 Watt, CE approved



M 1:1

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

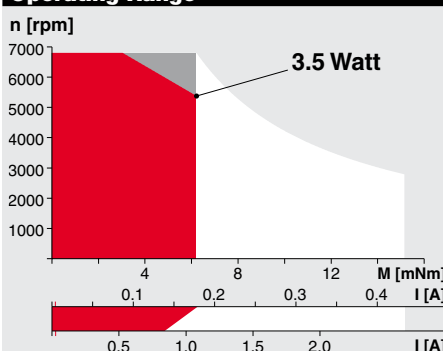
Order Number

Motor Data		110130	110132	110133	110134	110135	110136	110137	110138	110139	110140	110141	110142				
1 Assigned power rating	W	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5				
2 Nominal voltage	Volt	4.5	6.0	7.2	7.2	7.2	9.0	12.0	15.0	18.0	24.0	36.0	42.0				
3 No load speed	rpm	7210	6630	7000	6240	5620	6130	6630	6680	6480	6520	6950	7320				
4 Stall torque	mNm	15.5	15.5	16.6	14.7	13.0	14.2	15.1	15.1	14.5	14.3	14.6	15.7				
5 Speed / torque gradient	rpm / mNm	469	433	426	428	438	438	444	445	451	460	480	472				
6 No load current	mA	27	18	16	14	12	11	9	7	6	4	3	3				
7 Starting current	mA	2640	1810	1700	1350	1070	1020	881	713	552	411	299	289				
8 Terminal resistance	Ohm	1.71	3.32	4.22	5.33	6.71	8.82	13.6	21.0	32.6	58.4	120	145				
9 Max. permissible speed	rpm	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800				
10 Max. continuous current	mA	840	751	666	593	528	461	371	298	240	179	125	113				
11 Max. continuous torque	mNm	4.96	6.43	6.48	6.47	6.39	6.39	6.34	6.33	6.29	6.23	6.10	6.15				
12 Max. power output at nominal voltage	mW	2920	2670	3020	2390	1900	2260	2600	2630	2450	2430	2650	2980				
13 Max. efficiency	%	81	81	82	81	80	81	81	81	81	81	81	81				
14 Torque constant	mNm / A	5.90	8.55	9.73	10.9	12.1	13.9	17.1	21.2	26.3	34.8	49.0	54.3				
15 Speed constant	rpm / V	1620	1120	981	875	790	689	558	450	364	274	195	176				
16 Mechanical time constant	ms	19	19	19	19	19	19	18	18	18	19	19	19				
17 Rotor inertia	gcm ²	3.88	4.11	4.16	4.14	4.04	4.03	3.98	3.96	3.91	3.84	3.70	3.76				
18 Terminal inductance	mH	0.11	0.22	0.29	0.36	0.45	0.59	0.89	1.37	2.10	3.69	7.30	8.98				
19 Thermal resistance housing-ambient	K / W	20	20	20	20	20	20	20	20	20	20	20	20				
20 Thermal resistance rotor-housing	K / W	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
21 Thermal time constant winding	s	9	10	10	10	9	9	9	9	9	9	8	9				

Specifications

- Axial play 0.05 - 0.15 mm
- Max. **sleeve bearing** loads
 - axial (dynamic) 1.0 N
 - radial (5 mm from flange) 2.8 N
 - Force for press fits (static) 80 N
 - (static, shaft supported) 440 N
- Max. **ball bearing** loads
 - axial (dynamic) 3.3 N
 - radial (5 mm from flange) 12.3 N
 - Force for press fits (static) 45 N
 - (static, shaft supported) 440 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 9
- Weight of motor 54 g
- 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

Operating Range

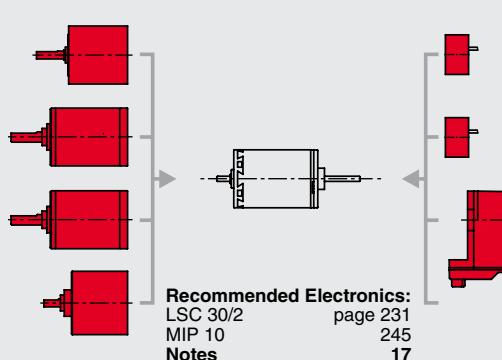


Comments

- **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).
- **110140** Motor with high resistance winding
- **110130** Motor with low resistance winding

maxon Modular System

- Planetary Gearhead** Ø22 mm
0.1 - 0.6 Nm
Details page 188 / 189
- Planetary Gearhead** Ø22 mm
0.5 - 1.0 Nm
Details page 190
- Planetary Gearhead** Ø22 mm
0.5 - 2.0 Nm
Details page 191
- Spur Gearhead** Ø24 mm
0.1 Nm
Details page 192



Overview on page 17 - 21

- Digital MR Encoder** 32 CPT, 2 / 3 channels
Details page 210
- Digital MR Encoder** 128 / 256 / 512 CPT, 2 / 3 channels
Details page 211
- Digital Encoder** 22 mm, 100 CPT, 2 channels
Details page 215