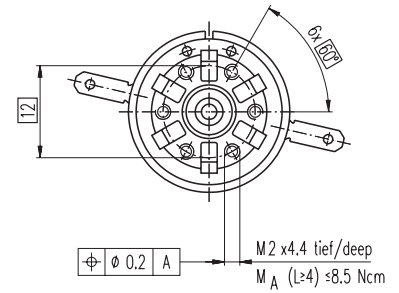
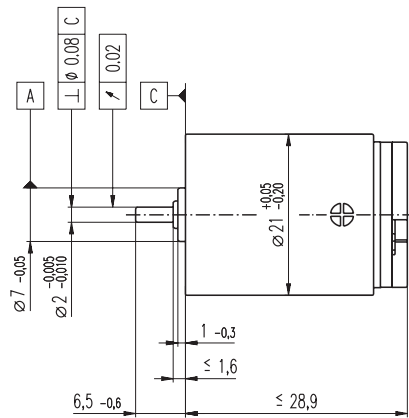
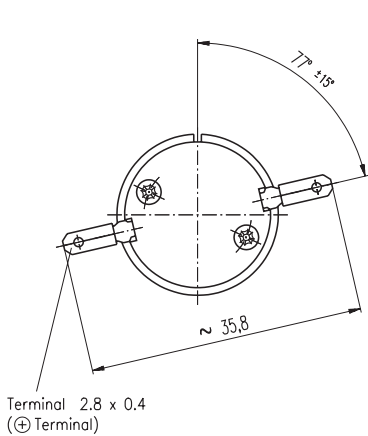


# RE-max 21 Ø21 mm, Precious Metal Brushes CLL, 5 Watt



## M 1:1

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

### Order Number

221009	221010	221011	221012	221013	221015	221016	221017	221019												
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Motor Data		221009	221010	221011	221012	221013	221015	221016	221017	221019	
<b>Values at nominal voltage</b>											
1	Nominal voltage	V	3.0	6.0	9.0	12.0	18.0	21.0	24.0	36.0	48.0
2	No load speed	rpm	8860	9960	10400	8610	10200	9960	9110	10300	9800
3	No load current	mA	43.6	26.6	19.1	10.4	9.20	7.61	5.71	4.69	3.24
4	Nominal speed	rpm	8090	8400	8480	6660	8250	8000	7130	8300	7770
5	Nominal torque (max. continuous torque)	mNm	2.57	4.67	6.21	6.22	6.22	6.10	6.11	6.03	5.90
6	Nominal current (max. continuous current)	A	0.840	0.840	0.771	0.479	0.378	0.311	0.249	0.185	0.130
7	Stall torque	mNm	29.7	29.9	33.6	27.5	33.0	31.0	28.3	31.4	28.5
8	Starting current	A	9.23	5.22	4.09	2.08	1.96	1.55	1.13	0.943	0.614
9	Max. efficiency	%	87	87	87	87	87	87	87	87	86
<b>Characteristics</b>											
10	Terminal resistance	Ω	0.325	1.15	2.20	5.77	9.17	13.6	21.3	38.2	78.2
11	Terminal inductance	mH	0.0130	0.041	0.0846	0.219	0.353	0.502	0.784	1.38	2.70
12	Torque constant	mNm / A	3.22	5.72	8.23	13.2	16.8	20.0	25.0	33.3	46.5
13	Speed constant	rpm / V	2970	1670	1160	721	568	477	381	287	205
14	Speed / torque gradient	rpm / mNm	299	335	311	315	310	323	324	329	345
15	Mechanical time constant	ms	7.94	7.26	7.08	7.04	7.00	7.05	7.06	7.08	7.17
16	Rotor inertia	gcm <sup>2</sup>	2.53	2.07	2.18	2.14	2.16	2.08	2.08	2.05	1.98

### Specifications

<b>Thermal data</b>		
17	Thermal resistance housing-ambient	28 K / W
18	Thermal resistance winding-housing	8.0 K / W
19	Thermal time constant winding	8.77 s
20	Thermal time constant motor	588 s
21	Ambient temperature	-30 ... +65°C
22	Max. permissible winding temperature	+85°C
<b>Mechanical data (sleeve bearings)</b>		
23	Max. permissible speed	16000 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)	80 N
28	Max. radial loading, 5 mm from flange	2.7 N

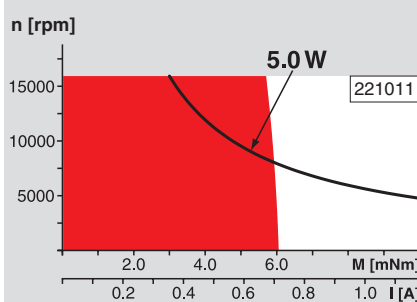
<b>Mechanical data (ball bearings)</b>		
23	Max. permissible speed	16000 rpm
24	Axial play	0.05 - 0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	3.3 N
27	Max. force for press fits (static)	45 N
28	Max. radial loading, 5 mm from flange	11.9 N
<b>Other specifications</b>		
29	Number of pole pairs	1
30	Number of commutator segments	9
31	Weight of motor	42 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
- Pigtails in place of terminals
- Without CLL

### Operating Range



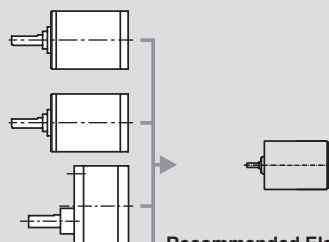
### Comments

- 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

- Planetary Gearhead**  
Ø22 mm  
0.5 - 1.0 Nm  
Page 230
- Planetary Gearhead**  
Ø22 mm  
0.5 - 2.0 Nm  
Page 231
- Spur Gearhead**  
Ø38 mm  
0.1 - 0.6 Nm  
Page 243



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