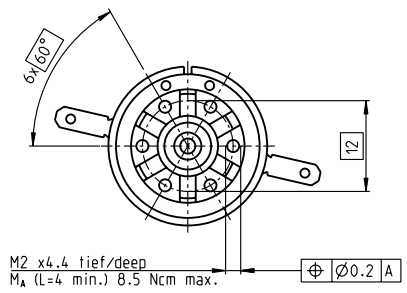
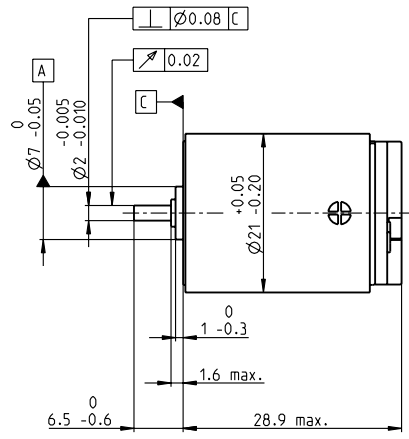
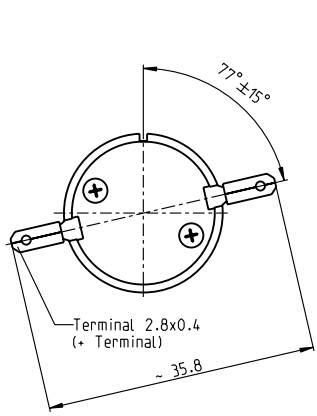


# RE-max 21 Ø21 mm, Precious Metal Brushes CLL, 5 Watt



M 1:1

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

## Part Numbers

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	6	9	12	18	21	24	36	48
2 No load speed	rpm	8420	9440	9880	8160	9660	9450	8620	9750	9290
3 No load current	mA	176	101	70.7	42.5	34.5	28.8	22.7	17.4	12.4
4 Nominal speed	rpm	7870	8090	8280	6500	8050	7800	6950	8070	7580
5 Nominal torque (max. continuous torque)	mNm	2.23	4.41	5.59	5.66	5.56	5.45	5.51	5.28	5.26
6 Nominal current (max. continuous current)	A	0.84	0.84	0.722	0.452	0.352	0.29	0.234	0.17	0.121
7 Stall torque	mNm	29.7	30	34.3	28.1	33.7	31.6	28.8	31.1	29.1
8 Stall current	A	8.87	5.03	4.01	2.04	1.93	1.52	1.11	0.9	0.602
9 Max. efficiency	%	74	74	75	73	75	74	74	74	74
<b>Characteristics</b>										
10 Terminal resistance	Ω	0.338	1.19	2.24	5.88	9.34	13.8	21.7	40	79.7
11 Terminal inductance	mH	0.013	0.041	0.085	0.22	0.354	0.503	0.786	1.39	2.71
12 Torque constant	mNm/A	3.35	5.95	8.55	13.8	17.5	20.8	26	34.6	48.3
13 Speed constant	rpm/V	2850	1600	1120	694	546	459	367	276	198
14 Speed / torque gradient	rpm/mNm	288	322	293	297	292	305	305	319	326
15 Mechanical time constant	ms	7.67	6.98	6.69	6.65	6.62	6.66	6.68	6.88	6.77
16 Rotor inertia	gcm <sup>2</sup>	2.54	2.07	2.18	2.14	2.16	2.09	2.09	2.06	1.99

## Specifications

**Thermal data**

17 Thermal resistance housing-ambient	28 K/W
18 Thermal resistance winding-housing	8.0 K/W
19 Thermal time constant winding	10.5 s
20 Thermal time constant motor	502 s
21 Ambient temperature	-30...+65°C
22 Max. winding temperature	+85°C

**Mechanical data (sleeve bearings)**

23 Max. speed	16000 rpm
24 Axial play	0.05 - 0.15 mm
25 Radial play	0.025 mm
26 Max. axial load (dynamic)	1 N
27 Max. force for press fits (static)	80 N
28 Max. radial load, 5 mm from flange	2.7 N

**Mechanical data (ball bearings)**

23 Max. speed	16000 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)	45 N
28 Max. radial load, 5 mm from flange	11.9 N

**Other specifications**

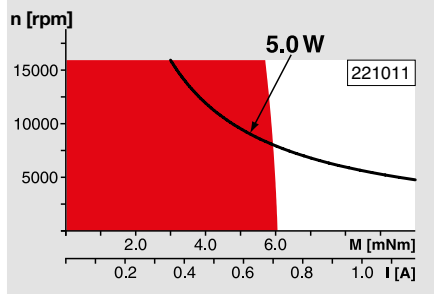
29 Number of pole pairs	1
30 Number of commutator segments	9
31 Weight of motor	42 g

CLL = Capacitor Long Life

Values listed in the table are nominal.  
Explanation of the figures on page 64.

- 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

<p><b>Planetary Gearhead</b> Ø22 mm 0.5 - 1.0 Nm Page 325</p> <p><b>Planetary Gearhead</b> Ø22 mm 0.5 - 2.0 Nm Page 327</p> <p><b>Spur Gearhead</b> Ø38 mm 0.1 - 0.6 Nm Page 344</p> <p><b>Spindle Drive</b> Ø22 mm Page 364/365</p>		<p><b>Recommended Electronics:</b> Notes Page 30</p> <p>ESCON Module 24/2 426</p> <p>ESCON 36/2 DC 426</p> <p>ESCON Module 50/5 427</p> <p>ESCON 50/5 428</p>
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Overview on page 28-36