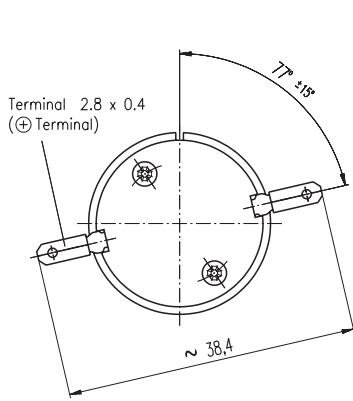
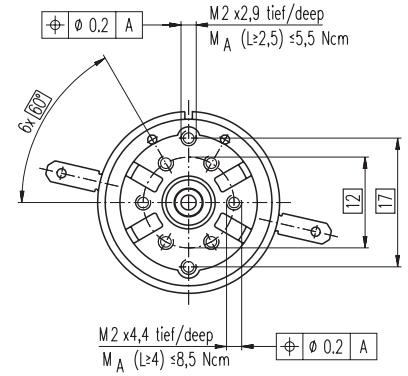
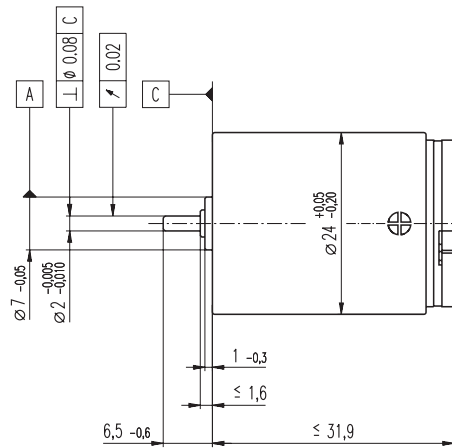


# RE-max 24 Ø24 mm, Precious Metal Brushes CLL, 10 Watt



**M 1:1**



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

**Order Number**

220404	220405	220406	220407	220408	220410	220415	220416	220418	220419	220422	220423
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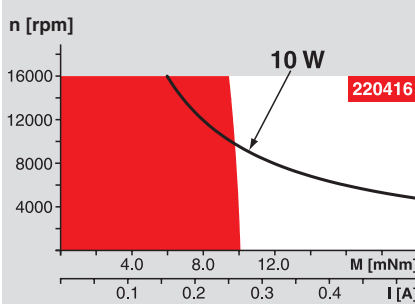
**Motor Data**

		220404	220405	220406	220407	220408	220410	220415	220416	220418	220419	220422	220423
<b>Values at nominal voltage</b>													
1	Nominal voltage	V	9.0	15.0	15.0	18.0	20.0	24.0	30.0	36.0	42.0	48.0	48.0
2	No load speed	rpm	8240	9470	8320	8910	8930	9350	9470	9160	8640	7450	5290
3	No load current	mA	18.8	14.1	11.5	10.7	9.64	8.65	7.06	5.57	4.35	3.01	1.79
4	Nominal speed	rpm	7000	8070	6920	7510	7510	7940	8050	7730	7200	5980	3780
5	Nominal torque (max. continuous torque)	mNm	8.55	10.5	10.7	10.6	10.5	10.5	10.4	10.4	10.3	10.3	10.2
6	Nominal current (max. continuous current)	A	0.840	0.709	0.631	0.561	0.500	0.436	0.350	0.282	0.227	0.170	0.119
7	Stall torque	mNm	56.9	70.7	63.3	67.4	66.0	69.1	69.0	66.6	62.0	52.4	35.8
8	Starting current	A	5.47	4.69	3.69	3.51	3.10	2.83	2.29	1.78	1.34	0.855	0.414
9	Max. efficiency	%	89	89	89	89	89	89	89	89	89	87	87
<b>Characteristics</b>													
10	Terminal resistance	Ω	1.64	3.20	4.07	5.13	6.46	8.48	13.1	20.2	31.3	56.2	116
11	Terminal inductance	mH	0.0735	0.154	0.200	0.251	0.309	0.406	0.618	0.952	1.45	2.56	5.06
12	Torque constant	mNm / A	10.4	15.1	17.2	19.2	21.3	24.4	30.1	37.4	46.3	61.3	86.3
13	Speed constant	rpm / V	919	634	557	497	448	391	317	255	206	156	111
14	Speed / torque gradient	rpm / mNm	145	134	132	133	136	136	138	138	140	143	149
15	Mechanical time constant	ms	6.16	6.04	6.01	6.01	6.02	6.03	6.02	6.04	6.06	6.07	6.14
16	Rotor inertia	gcm <sup>2</sup>	4.04	4.29	4.35	4.33	4.24	4.24	4.18	4.18	4.14	4.07	3.95

**Specifications**

- Thermal data**
- 17 Thermal resistance housing-ambient 24 K / W
  - 18 Thermal resistance winding-housing 5.1 K / W
  - 19 Thermal time constant winding 8.26 s
  - 20 Thermal time constant motor 840 s
  - 21 Ambient temperature -30 ... +65°C
  - 22 Max. permissible winding temperature +85°C
- Mechanical data (sleeve bearings)**
- 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 2.8 N

**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**

**Mechanical data (ball bearings)**

- 23 Max. permissible 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 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 70 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

**maxon Modular System**

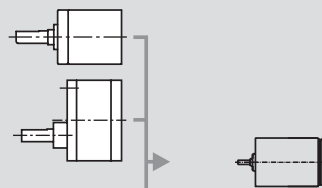
Overview on page 16 - 21

**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
- ADS 50/5 276
- ADS\_E 50/5 277
- Notes 18