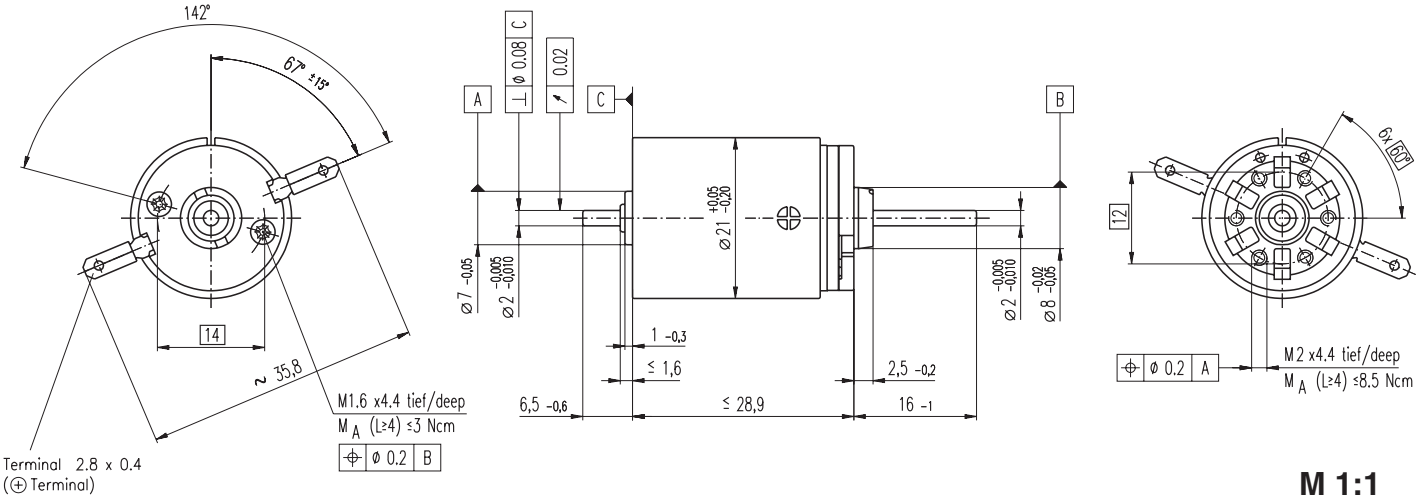
RE-max 21 ∅21 mm, Precious Metal Brushes CLL, 3.5 Watt



M 1:1

Stock program
Standard program
Special program (on request)

Order Number

	221020	221023	221024	221025	221026	221028	221030	221031	221032
Motor Data									
Values at nominal voltage									
1 Nominal voltage V	2.0	3.6	5.0	8.4	10.0	12.0	15.0	21.0	30.0
2 No load speed rpm	5870	5940	5740	6000	5620	5660	5660	5960	6090
3 No load current mA	54.4	30.8	21.1	13.4	10.2	8.59	6.87	5.3	3.83
4 Nominal speed rpm	5120	4390	3810	4060	3690	3690	3690	3980	4060
5 Nominal torque (max. continuous torque) mNm	2.54	4.66	6.25	6.20	6.27	6.13	6.12	6.06	5.91
6 Nominal current (max. continuous current) A	0.840	0.840	0.777	0.480	0.381	0.313	0.250	0.187	0.130
7 Stall torque mNm	19.8	17.9	18.7	19.3	18.4	17.7	17.7	18.3	17.9
8 Starting current A	6.16	3.13	2.27	1.46	1.09	0.884	0.705	0.550	0.384
9 Max. efficiency %	82	81	82	82	82	82	82	82	81
Characteristics									
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	0.0410	0.0846	0.219	0.353	0.502	0.784	1.38	2.70
12 Torque constant mNm / A	3.22	5.73	8.23	13.2	16.8	20.0	25.1	33.3	46.5
13 Speed constant rpm / V	2960	1670	1160	721	567	476	381	287	205
14 Speed / torque gradient rpm / mNm	299	335	310	314	309	323	323	329	345
15 Mechanical time constant ms	7.94	7.26	7.08	7.04	7.00	7.05	7.07	7.08	7.17
16 Rotor inertia gcm²	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	8.77 s
20	Thermal time constant motor	602 s
21	Ambient temperature	-30 ... +65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)

23	Max. permissible speed	10000 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
	(static, shaft supported)	480 N
28	Max. radial loading, 5 mm from flange	2.7 N

Mechanical data (ball bearings)

23	Max. permissible speed	10000 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
	(static, shaft supported)	480 N
28	Max. radial loading, 5 mm from flange	11.9 N

Other specifications

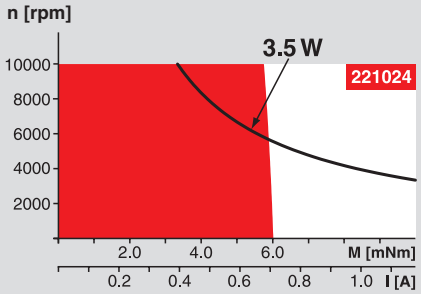
29	Number of pole pairs	1
30	Number of commutator segments	9
31	Weight of motor	43 g

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

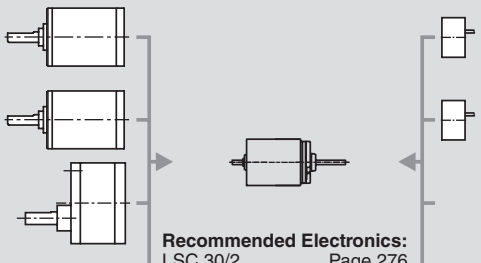
Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

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

Assigned power rating

maxon Modular System

Overview on page 16 - 21



Planetary Gearhead
∅22 mm
0.5 - 1.0 Nm
Page 230

Planetary Gearhead
∅22 mm
0.5 - 2.0 Nm
Page 231

Spur Gearhead
∅38 mm
0.1 - 0.6 Nm
Page 243

Encoder MR
32 CPT,
2 / 3 channels
Page 255

Encoder MR
128 / 256 / 512 CPT,
2 / 3 channels
Page 256

Recommended Electronics:

LSC 30/2	Page 276
EPOS 24/1	294
Notes	**18**