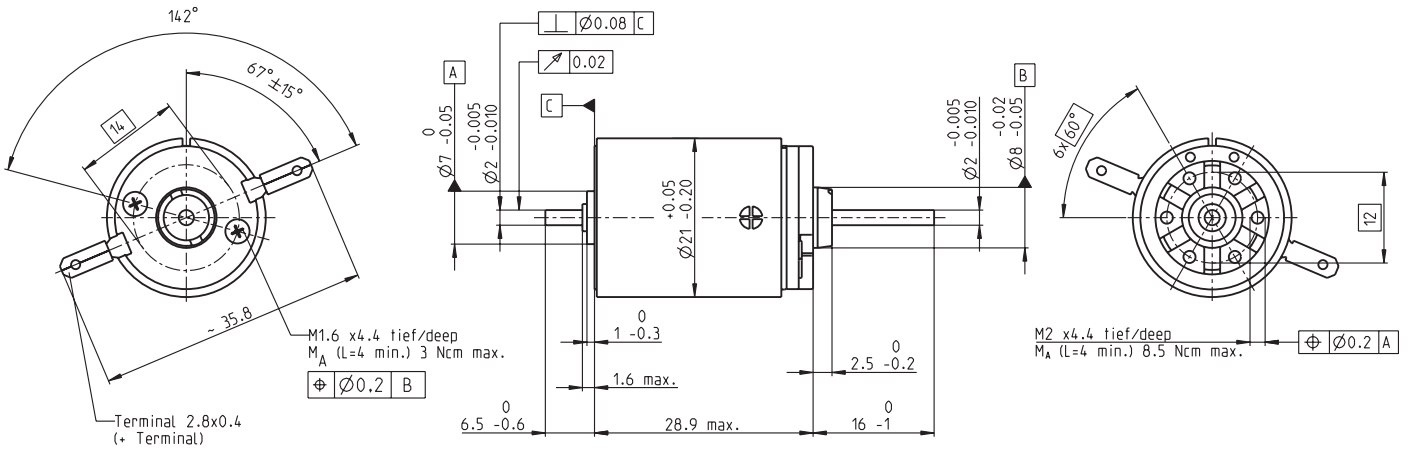
RE-max 21 ∅21 mm, Precious Metal Brushes CLL, 3.5 Watt



M 1:1

Stock program
Standard program
Special program (on request)

Article Numbers

		221020	221023	221024	221025	221026	221028	221030	221031	221032
Motor Data										
	Values at nominal voltage									
1	Nominal voltage	V	2	3.6	5	8.4	10	12	15	21	30
2	No load speed	rpm	5890	5950	5760	6010	5630	5670	5670	5970	6100
3	No load current	mA	54.5	30.8	21.1	13.4	10.2	8.61	6.88	5.31	3.84
4	Nominal speed	rpm	5220	4410	3830	4060	3690	3680	3680	3940	4050
5	Nominal torque (max. continuous torque)	mNm	2.54	4.65	6.25	6.16	6.21	6.07	6.06	5.91	5.85
6	Nominal current (max. continuous current)	A	0.84	0.84	0.778	0.477	0.378	0.311	0.248	0.182	0.129
7	Stall torque	mNm	19	17.3	18.3	18.9	18	17.3	17.3	17.4	17.5
8	Starting current	A	5.91	3.02	2.23	1.43	1.07	0.867	0.692	0.525	0.376
9	Max. efficiency	%	82	81	82	82	82	81	81	81	81
	Characteristics										
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	0.0846	0.219	0.353	0.502	0.784	1.38	2.7
12	Torque constant	mNm/A	3.22	5.72	8.22	13.2	16.8	20	25	33.2	46.5
13	Speed constant	rpm/V	2970	1670	1160	722	569	477	382	287	206
14	Speed / torque gradient	rpm/mNm	312	348	317	321	316	330	331	346	353
15	Mechanical time constant	ms	8.32	7.57	7.25	7.22	7.18	7.23	7.25	7.46	7.35
16	Rotor inertia	gcm²	2.54	2.08	2.18	2.15	2.17	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	8.83 s
20	Thermal time constant motor	502 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

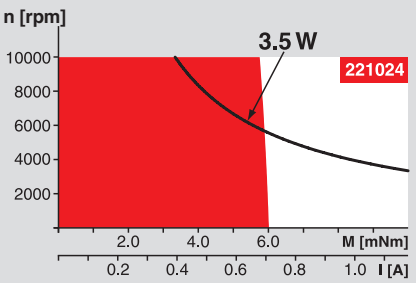
29	Number of pole pairs	1
30	Number of commutator segments	9
31	Weight of motor	43 g

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

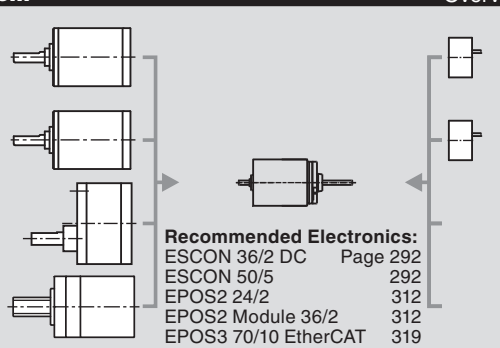
Overview on page 16 - 21

Planetary Gearhead
∅22 mm
0.5 - 1.0 Nm
Page 224

Planetary Gearhead
∅22 mm
0.5 - 2.0 Nm
Page 225

Spur Gearhead
∅38 mm
0.1 - 0.6 Nm
Page 241

Spindle Drive
∅22 mm
Page 253/254



Recommended Electronics:

ESCON 36/2 DC	Page 292
ESCON 50/5	292
EPOS2 24/2	312
EPOS2 Module 36/2	312
EPOS3 70/10 EtherCAT	319
Notes	**18**

Encoder MR
32 CPT,
2 / 3 channels
Page 269

Encoder MR
128 / 256 / 512 CPT,
2 / 3 channels
Page 271