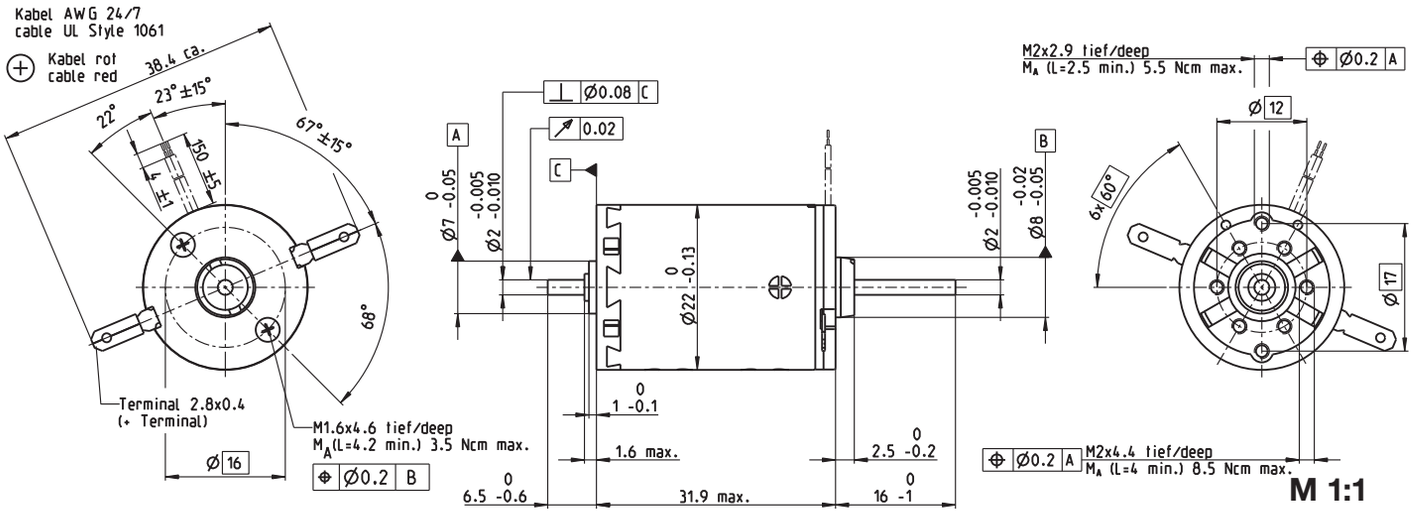
A-max 22 ∅22 mm, Precious Metal Brushes CLL, 3.5 Watt



Stock program
Standard program
Special program (on request)

Part Numbers

	with terminals	110130	110132	110133	110134	110135	110136	110137	110138	110139	110140	110141	110142
	with cables	139846	352986	352987	352988	352989	352990	352991	352992	352993	352994	352995	352996
Motor Data													
	Values at nominal voltage												
1	Nominal voltage	V	4.5	6	7.2	7.2	7.2	9	12	15	18	24	36	42
2	No load speed	rpm	7210	6630	7000	6240	5620	6140	6630	6680	6480	6520	6950	7320
3	No load current	mA	26.7	17.8	16	13.6	11.8	10.6	8.88	7.17	5.73	4.33	3.16	2.92
4	Nominal speed	rpm	5010	3940	4330	3550	2890	3400	3890	3930	3710	3720	4100	4490
5	Nominal torque (max. continuous torque)	mNm	4.82	6.27	6.31	6.31	6.24	6.21	6.16	6.15	6.11	6.05	5.91	5.95
6	Nominal current (max. continuous current)	A	0.84	0.749	0.662	0.589	0.525	0.457	0.368	0.296	0.237	0.177	0.123	0.112
7	Stall torque	mNm	15.4	15.3	16.4	14.6	12.8	14	14.9	15	14.4	14.2	14.5	15.5
8	Stall current	A	2.61	1.79	1.69	1.34	1.06	1.01	0.872	0.706	0.547	0.407	0.296	0.286
9	Max. efficiency	%	81	81	82	81	80	81	81	81	81	81	81	81
	Characteristics													
10	Terminal resistance	Ω	1.72	3.36	4.27	5.39	6.78	8.9	13.8	21.2	32.9	59	122	147
11	Terminal inductance	mH	0.106	0.222	0.288	0.362	0.445	0.585	0.89	1.37	2.1	3.69	7.29	8.95
12	Torque constant	mNm/A	5.9	8.55	9.73	10.9	12.1	13.9	17.1	21.2	26.2	34.8	48.9	54.3
13	Speed constant	rpm/V	1620	1120	981	875	790	689	558	450	364	274	195	176
14	Speed / torque gradient	rpm/mNm	474	438	430	432	443	443	449	450	456	465	485	477
15	Mechanical time constant	ms	20.2	19.8	19.7	19.7	19.8	19.8	19.8	19.8	19.9	19.9	20.2	20
16	Rotor inertia	gcm²	4.07	4.32	4.38	4.36	4.26	4.27	4.2	4.21	4.16	4.1	3.97	4.01

Specifications

Thermal data

17	Thermal resistance housing-ambient	20 K/W
18	Thermal resistance winding-housing	6.0 K/W
19	Thermal time constant winding	10.2 s
20	Thermal time constant motor	313 s
21	Ambient temperature	-30…+65°C
22	Max. winding temperature	+85°C

Mechanical data (sleeve bearings)

23	Max. 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)	440 N
28	Max. radial load, 5 mm from flange	2.8 N

Mechanical data (ball bearings)

23	Max. 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)	440 N
28	Max. radial load, 5 mm from flange	12.3 N

Other specifications

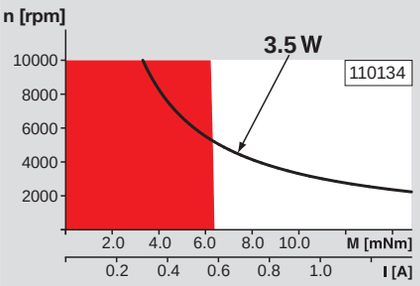
29	Number of pole pairs	1
30	Number of commutator segments	9
31	Weight of motor	54 g

CLL = Capacitor Long Life

Values listed in the table are nominal.
Explanation of the figures on page 151.

Option
Ball bearings in place of sleeve bearings
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

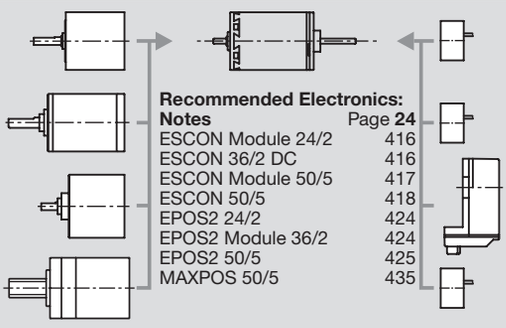
Overview on page 20–27

Planetary Gearhead
∅22 mm
0.1 - 0.6 Nm
Page 327/328

Planetary Gearhead
∅22 mm
0.5 - 2.0 Nm
Page 329/331

Spur Gearhead
∅24 mm
0.1 Nm
Page 335

Spindle Drive
∅22 mm
Page 368/369



Recommended Electronics:

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ESCON Module 24/2	416
ESCON 36/2 DC	416
ESCON Module 50/5	417
ESCON 50/5	418
EPOS2 24/2	424
EPOS2 Module 36/2	424
EPOS2 50/5	425
MAXPOS 50/5	435

Encoder MR
32 CPT,
2 / 3 channels
Page 388

Encoder MR
128 / 256 / 512 CPT,
2 / 3 channels
Page 390

Encoder Enc
22 mm
100 CPT, 2 channels
Page 398

Encoder MEnc
∅13 mm
16 CPT, 2 channels
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