

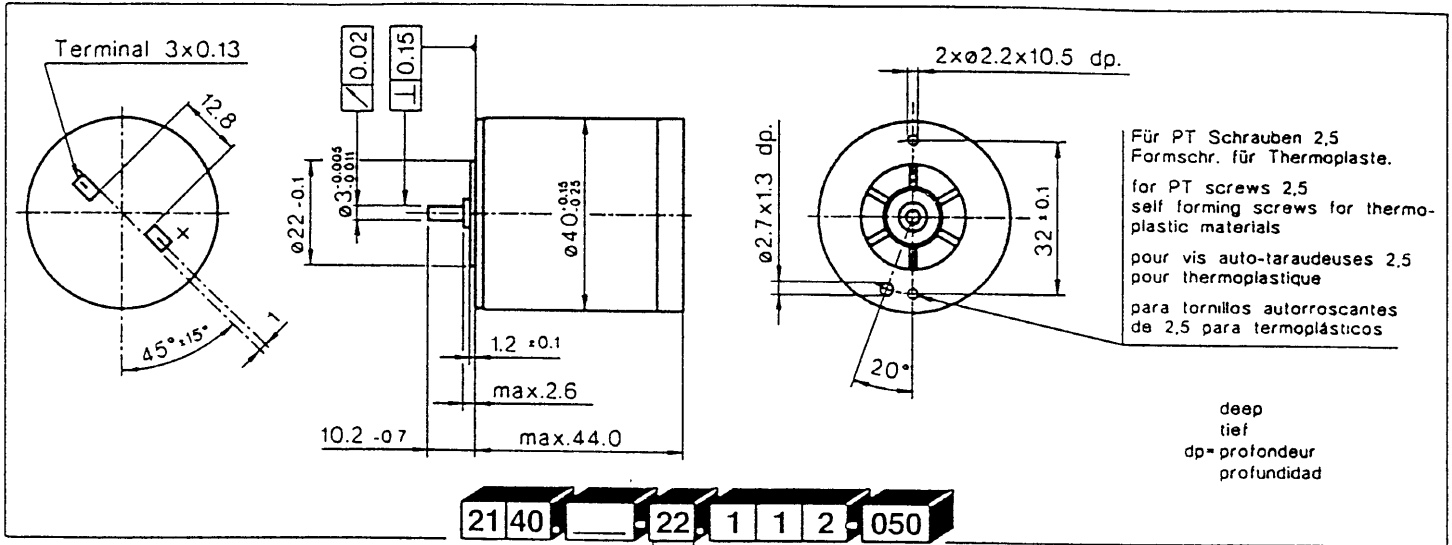
650-304/316

maxon motor

# CLL 4 Watt

F-Motor 21 40

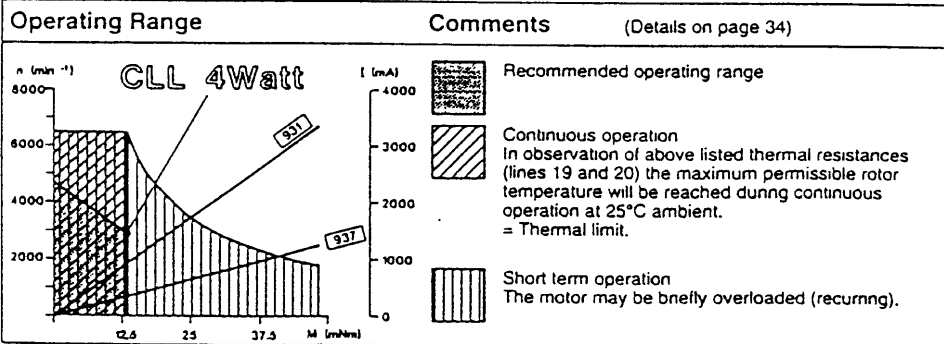
Precious Metal Brushes



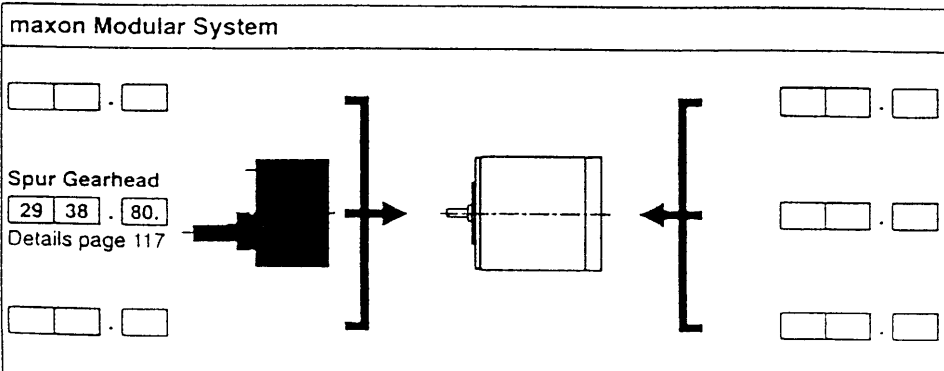
BECOMES

61 WHEN PINION FITTED

Motor Data	Winding Number (Order Number)	931	932	933	934	935	936	937	939										
1 Assigned power rating	W	4	4	4	4	4	4	4	4										
2 Nominal voltage	Volt	6.00	9.00	9.00	12.00	15.00	18.00	24.00	36.00										
3 No load speed	rpm	3950	4630	3740	4090	4080	3860	4110	4140										
4 Stall torque	mNm	30.4	36.9	29.5	31.9	31.6	29.1	30.9	29.7										
5 Speed/torque gradient	rpm/mNm	131	127	128	129	130	134	134	141										
6 No load current	mA	23.2	20.1	14.2	12.3	9.77	7.43	6.19	4.16										
7 Starting current	mA	2120	2010	1300	1150	910	660	561	362										
8 Terminal resistance	Ohm	2.83	4.48	6.93	10.4	16.5	27.3	42.8	99.5										
9 Max. permissible speed	rpm	6400	6400	6400	6400	6400	6400	6400	6400										
10 Max. continuous current	mA	947	752	605	493	392	305	243	159										
11 Max. continuous torque	mNm	13.64	13.84	13.73	13.66	13.60	13.45	13.39	13.05										
12 Max. power output at nominal voltage	mW	3130	4460	2880	3410	3360	2920	3320	3200										
13 Max. efficiency	%	80.7	81.5	80.7	81.0	80.9	80.5	80.7	80.3										
14 Torque constant	mNm/A	14.4	18.4	22.7	27.7	34.7	44.1	55.1	82.1										
15 Speed constant	rpm/V	665	520	421	345	275	217	173	116										
16 Mechanical time constant	ms	34.0	33.7	33.6	33.5	33.5	33.6	33.6	33.7										
17 Rotor inertia	gcm <sup>2</sup>	24.7	25.3	25.0	24.8	24.5	23.9	23.8	22.9										
18 Terminal inductance	mH	0.34	0.56	0.85	1.27	2.00	3.21	5.02	11.2										
19 Thermal resistance housing-ambient	K/W	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40										
20 Thermal resistance rotor-housing	K/W	8.80	8.80	8.80	8.80	8.80	8.80	8.80	8.80										



- Stock program
- Standard program
- Special program (on request)
- Axial play 0.2 - 0.3 mm
- Max. sleeve bearing loads
  - axial (dynamic) 0.5 N
  - radial (5 mm from flange) 2.5 N
  - Press-fit force (static) 50 N
- Radial play/sleeve bearings 0.014 mm
- Ambient temperature range -20/+65°C
- Max. rotor temperature +85°C
- Number of commutator segments 7
- Weight of motor 187 g
- Values listed in the table are nominal. For applicable tolerances (see page 33) and additional details please request our computer printout.
- CLL = Capacitor Long Life
- Special considerations may be required if motor is to be operated using a pulse-width-modulated power source



● Options: Our standard program includes ball bearings in place of sleeve bearings.