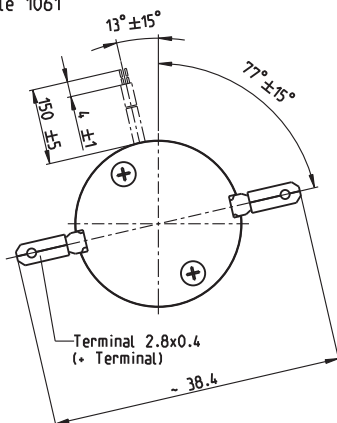


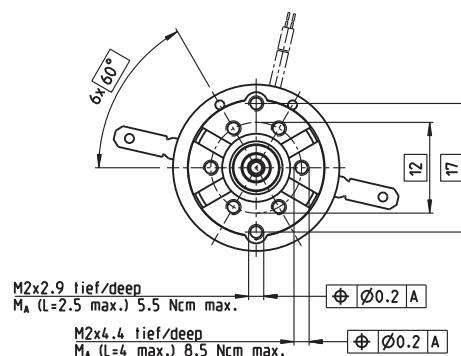
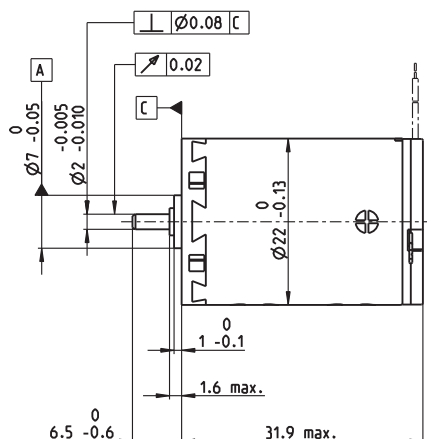
A-max 22 Ø22 mm, Precious Metal Brushes CLL, 5 Watt, C€ approved

Kabel AWG 28/7
cable UL Style 1061

● Kabel rot
cable red



M 1:1



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

Article Numbers

with terminals
with cables

110117	110119	110120	110121	110122	110123	110124	110125	110126	110127	110128	110129
139838	218799	238798	202413	258367	137255	134267	134666	267423	137476	310003	342390

Motor Data

Values at nominal voltage																	
1	Nominal voltage	V	6	9	9	12	12	15	18	24	30	36	48	48			
2	No load speed	rpm	9630	9970	8760	10400	9400	10300	9970	10700	10800	9800	9280	8370			
3	No load current	mA	29.5	20.8	16.8	16.8	14.2	13.1	10.4	8.81	7.18	5.06	3.47	2.93			
4	Nominal speed	rpm	7390	7300	6100	7770	6700	7530	7220	7970	8070	7000	6420	5520			
5	Nominal torque (max. continuous torque)	mNm	4.81	6.22	6.3	6.24	6.18	6.1	6.05	6.02	5.98	5.94	5.83	5.9			
6	Nominal current (max. continuous current)	A	0.84	0.745	0.661	0.586	0.523	0.451	0.362	0.291	0.234	0.175	0.122	0.111			
7	Stall torque	mNm	20.1	22.9	20.5	24.3	21.4	22.9	22	23.5	23.5	20.8	19	17.4			
8	Starting current	A	3.42	2.68	2.11	2.23	1.77	1.65	1.28	1.11	0.894	0.599	0.387	0.32			
9	Max. efficiency	%	83	84	83	84	83	83	83	83	83	83	82	82			
Characteristics																	
10	Terminal resistance	Ω	1.76	3.36	4.27	5.39	6.78	9.07	14	21.6	33.5	60.1	124	150			
11	Terminal inductance	mH	0.106	0.222	0.288	0.362	0.445	0.584	0.89	1.37	2.1	3.68	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	482	438	430	432	443	451	458	459	465	474	494	486			
15	Mechanical time constant	ms	20.5	19.8	19.7	19.7	19.8	20.2	20.1	20.2	20.3	20.3	20.5	20.4			
16	Rotor inertia	gcm ²	4.07	4.32	4.37	4.36	4.26	4.27	4.2	4.2	4.16	4.09	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. 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

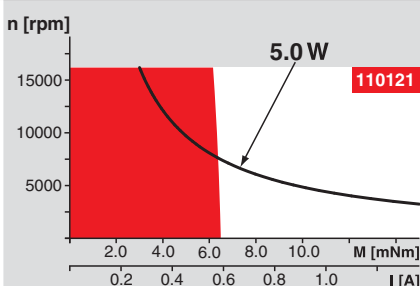
- Mechanical data (ball bearings)**
- 23 Max. permissible speed 16000 rpm
 - 24 Axial play 0.05 - 0.15 mm
 - 25 Radial play 0.025 mm
 - 26 Max. axial load (dynamic) 3.3 N
 - 27 Max. force for press fits (static) 45 N
 - 28 Max. radial loading, 5 mm from flange 12.3 N

- Other specifications**
- 29 Number of pole pairs 1
 - 30 Number of commutator segments 9
 - 31 Weight of motor 54 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
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

Ø22 mm
0.1 - 0.6 Nm
Page 222/223

Planetary Gearhead

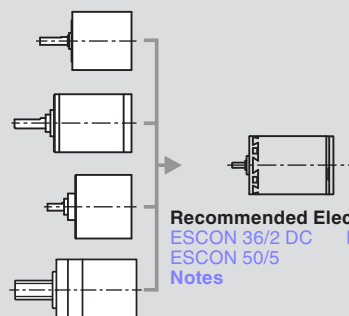
Ø22 mm
0.5 - 2.0 Nm
Page 224/225

Spur Gearhead

Ø24 mm
0.1 Nm
Page 230

Spindle Drive

Ø22 mm
Page 253/254

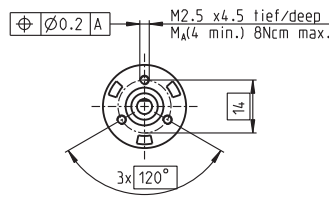
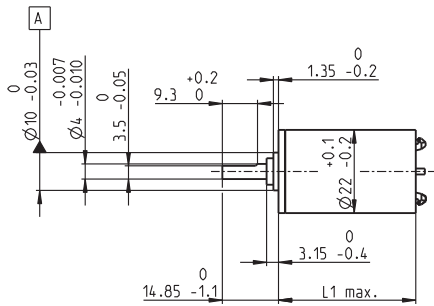


Recommended Electronics:

ESCON 36/2 DC Page 292
ESCON 50/5 292
Notes 18

Planetary Gearhead GP 22 L Ø22 mm, 0.2–0.6 Nm

Plastic Version



M 1:2

Technical Data

Planetary Gearhead	straight teeth
Housing	plastic
Output shaft	stainless steel, hardened
Bearing at output	sleeve bearing
Radial play, 10 mm from flange	max. 0.1 mm
Axial play	max. 0.15 mm
Max. permissible axial load	20 N
Max. permissible force for press fits	100 N
Sense of rotation, drive to output	=
Recommended input speed	< 6000 rpm
Recommended temperature range	-15...+80°C
Number of stages	1 2 3 4 5
Max. radial load, 10 mm from flange	15 N 20 N 25 N 30 N 30 N

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

Article Numbers

Gearhead Data

	232763	232766	232772	232778	232782	232788	232794	232796	232803	232809	232815
1 Reduction	3.8 : 1	14 : 1	53 : 1	104 : 1	198 : 1	370 : 1	590 : 1	742 : 1	1386 : 1	1996 : 1	3189 : 1
2 Reduction absolute	15/4	225/16	3375/64	87723/845	50625/256	29198/79	59049/100	759375/1024	158340015/114244	285012027/142805	1594323/500
3 Max. motor shaft diameter mm	4	4	4	3.2	4	3.2	4	4	3.2	3.2	4
Article Numbers	232764	232767	232773	232779	232783	232789	232795	232798	232804	232810	232816
1 Reduction	4.4 : 1	16 : 1	62 : 1	109 : 1	231 : 1	389 : 1	690 : 1	867 : 1	1460 : 1	2102 : 1	3728 : 1
2 Reduction absolute	57/13	855/52	12825/208	2187/20	192375/832	263169/676	1121931/1625	2885625/3328	3947535/2704	7105563/3380	30292137/8125
3 Max. motor shaft diameter mm	3.2	3.2	3.2	4	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Article Numbers	232765	232768	232774	232780	232784	232790	232797	232799	232805	232811	232817
1 Reduction	5.4 : 1	19 : 1	72 : 1	128 : 1	270 : 1	410 : 1	850 : 1	1014 : 1	1538 : 1	2214 : 1	4592 : 1
2 Reduction absolute	27/5	3249/169	48735/676	41553/325	731025/2704	6561/16	531441/625	10965375/10816	98415/64	177147/80	14348907/3125
3 Max. motor shaft diameter mm	2.5	3.2	3.2	3.2	3.2	4	2.5	3.2	4	4	2.5
Article Numbers		232769	232775	232781	232785	232791		232800	232806	232812	
1 Reduction		20 : 1	76 : 1	157 : 1	285 : 1	455 : 1		1068 : 1	1621 : 1	2458 : 1	
2 Reduction absolute		81/4	1215/16	19683/125	18225/64	1701938/3739		273375/256	601692057/371293	135005697/54925	
3 Max. motor shaft diameter mm		4	4	2.5	4	3.2		4	3.2	3.2	
Article Numbers		232770	232776		232786	232792		232801	232807	232813	
1 Reduction		24 : 1	84 : 1		316 : 1	479 : 1		1185 : 1	1707 : 1	2589 : 1	
2 Reduction absolute		1539/65	185193/219		2777895/8788	124659/260		41668425/35152	15000633/8788	3365793/1300	
3 Max. motor shaft diameter mm		3.2	3.2		3.2	3.2		3.2	3.2	3.2	
Article Numbers		232771	232777		232787	232793		232802	232808	232814	
1 Reduction		29 : 1	89 : 1		333 : 1	561 : 1		1249 : 1	1798 : 1	3027 : 1	
2 Reduction absolute		729/25	4617/52		69258/208	2368521/4225		1038825/832	373977/208	63950067/21125	
3 Max. motor shaft diameter mm		2.5	3.2		3.2	3.2		3.2	3.2	3.2	
4 Number of stages	1	2	3	3	4	4	4	5	5	5	5
5 Max. continuous torque Nm	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6
6 Intermittently permissible torque at gear output Nm	0.3	0.4	0.5	0.5	0.7	0.7	0.7	0.8	0.8	0.8	0.8
7 Max. efficiency %	84	70	59	59	49	49	49	42	42	42	42
8 Weight g	28	35	43	43	51	51	51	59	59	59	59
9 Average backlash no load °	1.0	1.2	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0
10 Mass inertia gcm ²	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
11 Gearhead length L1 mm	22.7	29.5	36.3	36.3	43.1	43.1	43.1	49.9	49.9	49.9	49.9



maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts							
A-max 22	97-100			54.7	61.5	68.3	68.3	75.1	75.1	81.9	81.9
A-max 22	98/100	MR	268/270	59.7	66.5	73.3	73.3	80.1	80.1	86.9	86.9
A-max 22	98/100	Enc 22	275	69.1	75.9	82.7	82.7	89.5	89.5	96.3	96.3
A-max 22	98/100	MEnc 13	284	61.8	68.6	75.4	75.4	82.2	82.2	89.0	89.0