



M 1:1

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

Order Number	
320173	320174 320175 320176 320177 320178 320179

Motor Data (provisional)		320173	320174	320175	320176	320177	320178	320179	
<b>Values at nominal voltage</b>									
1	Nominal voltage	V	1.8	3.0	6.0	9.0	12.0	18.0	24.0
2	No load speed	rpm	8250	8350	8500	8250	8130	7960	7780
3	No load current	mA	29.1	17.7	9.09	5.81	4.27	2.77	2.01
4	Nominal speed	rpm	6080	4730	4830	4580	4340	4140	3850
5	Nominal torque (max. continuous torque)	mNm	1.43	2.39	2.38	2.39	2.31	2.29	2.23
6	Nominal current (max. continuous current)	A	0.720	0.720	0.365	0.237	0.170	0.110	0.0784
7	Stall torque	mNm	5.46	5.55	5.55	5.40	5.01	4.81	4.45
8	Starting current	A	2.65	1.64	0.833	0.524	0.359	0.226	0.153
9	Max. efficiency	%	80	81	81	80	80	79	79
<b>Characteristics</b>									
10	Terminal resistance	Ω	0.679	1.83	7.20	17.2	33.4	79.8	157
11	Terminal inductance	mH	0.0168	0.0456	0.176	0.421	0.77	1.80	3.35
12	Torque constant	mNm / A	2.06	3.39	6.66	10.3	13.9	21.3	29.1
13	Speed constant	rpm / V	4640	2810	1430	927	685	448	328
14	Speed / torque gradient	rpm / mNm	1530	1520	1550	1550	1640	1680	1770
15	Mechanical time constant	ms	10.3	9.91	9.81	9.82	9.92	9.87	10.1
16	Rotor inertia	gcm <sup>2</sup>	0.646	0.622	0.605	0.606	0.577	0.562	0.543

Specifications	Operating Range	Comments
<p><b>Thermal data</b></p> <p>17 Thermal resistance housing-ambient 40.6 K / W</p> <p>18 Thermal resistance winding-housing 9.5 K / W</p> <p>19 Thermal time constant winding 5.3 s</p> <p>20 Thermal time constant motor 268 s</p> <p>21 Ambient temperature -20 ... +85°C</p> <p>22 Max. permissible winding temperature +85°C</p> <p><b>Mechanical data (sleeve bearings)</b></p> <p>23 Max. permissible speed 11000 rpm</p> <p>24 Axial play 0.05 - 0.15 mm</p> <p>25 Radial play 0.014 mm</p> <p>26 Max. axial load (dynamic) 0.8 N</p> <p>27 Max. force for press fits (static) 15 N</p> <p>28 Max. radial loading, 5 mm from flange 1.5 N</p>	<p><b>Operating Range</b></p>	<p><b>Continuous operation</b></p> <p>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.</p> <p><b>Short term operation</b></p> <p>The motor may be briefly overloaded (recurring).</p> <p><b>Assigned power rating</b></p>

- Other specifications**
- 29 Number of pole pairs 1
- 30 Number of commutator segments 7
- 31 Weight of motor 21 g
- CLL = Capacitor Long Life
- Values listed in the table are nominal.  
Explanation of the figures on page 47.
- Option**
- Encoder on request

**maxon Modular System** Overview on page 16 - 21

**Planetary Gearhead**  
Ø16 mm  
0.06 - 0.18 Nm  
Page 214

**Planetary Gearhead**  
Ø16 mm  
0.1 - 0.3 Nm  
Page 215

**Recommended Electronics:**  
LSC 30/2 Page 268  
Notes 18