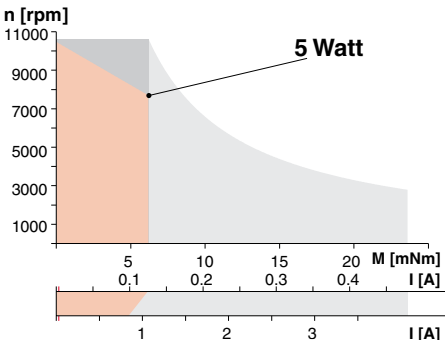


**Motor Data:** with CLL **Order Number:** 110117 110119 110120 110121 110122 110123 110124 110125 110126 110127 110128 110129

Motor Data:	with CLL	Order Number:	110117	110119	110120	110121	110122	110123	110124	110125	110126	110127	110128	110129
1 Assigned power rating	W	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2 Nominal voltage	Volt	6.0	9.0	9.0	12.0	12.0	15.0	18.0	24.0	30.0	36.0	48.0	48.0	
3 No load speed	rpm	9630	9970	8760	10400	9400	10300	9970	10700	10800	9800	9280	8370	
4 Stall torque	mNm	20.7	23.2	20.7	24.6	21.6	23.6	22.6	24.2	24.2	21.5	19.5	17.9	
5 Speed/torque gradient	rpm/mNm	469	433	426	428	438	438	444	445	451	460	480	472	
6 No load current	mA	30	21	17	17	14	13	10	9	7	5	3	3	
7 Starting current	mA	3510	2710	2130	2250	1790	1700	1320	1140	921	617	399	330	
8 Terminal resistance	Ohm	1.71	3.32	4.22	5.33	6.71	8.82	13.6	21.0	32.6	58.4	120	145	
9 Max. permissible speed	rpm	10600	10600	10600	10600	10600	10600	10600	10600	10600	10600	10600	10600	
10 Max. continuous current	mA	840	751	666	593	528	461	371	298	240	179	125	113	
11 Max. continuous torque	mNm	4.96	6.43	6.48	6.47	6.39	6.39	6.34	6.33	6.29	6.23	6.10	6.15	
12 Max. power output at nominal voltage	mW	5210	6030	4740	6680	5310	6320	5890	6780	6840	5490	4730	3910	
13 Max. efficiency	%	83	84	83	84	83	84	83	84	84	83	83	82	
14 Torque constant	mNm/A	5.90	8.55	9.73	10.9	12.1	13.9	17.1	21.2	26.3	34.8	49.0	54.3	
15 Speed constant	rpm/V	1620	1120	981	875	790	689	558	450	364	274	195	176	
16 Mechanical time constant	ms	19	19	19	19	19	18	18	18	18	18	19	19	
17 Rotor inertia	gcm <sup>2</sup>	3.88	4.10	4.16	4.13	4.04	4.03	3.97	3.96	3.91	3.84	3.70	3.75	
18 Terminal inductance	mH	0.11	0.22	0.29	0.36	0.45	0.59	0.89	1.37	2.10	3.69	7.30	8.98	
19 Thermal resistance housing-ambient	K/W	20	20	20	20	20	20	20	20	20	20	20	20	
20 Thermal resistance rotor-housing	K/W	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
21 Thermal time constant winding	s	9	10	10	10	9	9	9	9	9	9	8	9	

**Operating Range** **Comments** [Details on page 36](#)



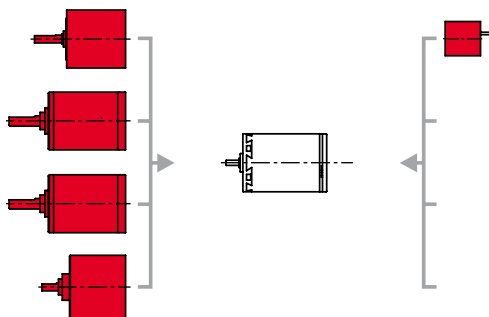
- Recommended operating range
  - Continuous operation  
In observation of above listed thermal resistances (lines 19 and 20) the maximum permissible rotor temperature will be reached during continuous operation at 25°C ambient. = Thermal limit.
  - Short term operation  
The motor may be briefly overloaded (recurring).
- 110128 Motor with high resistance winding
- 110117 Motor with low resistance winding

**Stock program**  
**Standard program**  
**Special program (on request!)**

- Axial play 0.07 - 0.15 mm
- Max. sleeve bearing loads  
axial (dynamic) 1.0 N  
radial (5 mm from flange) 2.8 N  
Press-fit force (static) 80 N
- Max. ball bearing loads  
axial (dynamic) 3.3 N  
radial (5 mm from flange) 12.3 N  
Press-fit force (static) 45 N
- Radial play sleeve bearings 0.012 mm
- Radial play ball bearings 0.025 mm
- Ambient temperature range -30/+85°C
- Max. rotor temperature +85°C
- Number of commutator segments 9
- Weight of motor 54 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

**maxon Modular System**

- Planetary Gearhead Ø22 mm 0.1-0.3 Nm Details page 153
- Planetary Gearhead Ø22 mm 0.5-1.0 Nm Details page 154
- Planetary Gearhead Ø22 mm 0.5-2.0 Nm Details page 155
- Spur Gearhead Ø24 mm 0.1 Nm Details page 156



Digital Magnetic Encoder Ø13 mm 16 CTP, 2 channels Details page 184

- Options: Ball bearings in place of sleeve bearings and pigtails in place of terminals, without CLL.