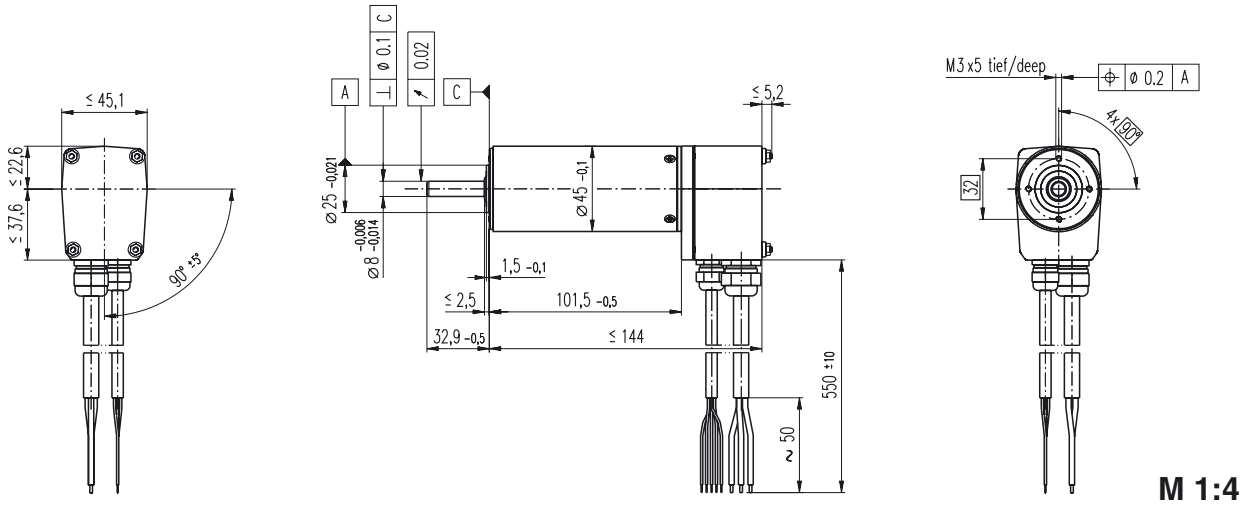
EC 45 ∅45 mm, brushless, 250 Watt, CE approved



M 1:4

Stock program
Standard program
Special program (on request!)

Order Number

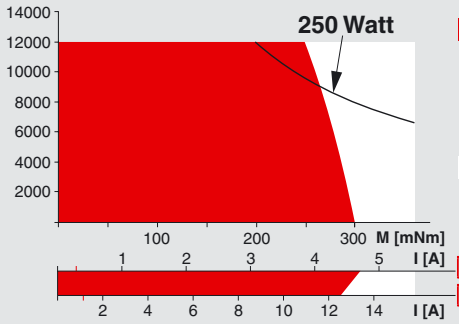
			136210	136207	136211	136208	136212	136209
Motor Data								
1	Assigned power rating	W	250	250	250	250	250	250
2	Nominal voltage	Volt	24.0	24.0	36.0	36.0	48.0	48.0
3	No load speed	rpm	9100	5300	11000	6300	11100	6500
4	Stall torque	mNm	3910	2250	5260	3000	5670	3250
5	Speed / torque gradient	rpm / mNm	2.34	2.40	2.10	2.10	1.97	2.00
6	No load current	mA	1139	435	1062	370	818	290
7	Terminal resistance phase to phase	Ohm	0.15	0.46	0.21	0.64	0.35	1.04
8	Max. permissible speed	rpm	12000	12000	12000	12000	12000	12000
9	Max. continuous current at 5000 rpm	A	12.50	7.10	10.60	6.00	8.20	4.70
10	Max. continuous torque at 5000 rpm	mNm	286	283	303	300	304	306
11	Max. efficiency	%	84	83	85	85	86	85
12	Torque constant	mNm / A	25.0	43.3	31.2	54.0	41.0	71.0
13	Speed constant	rpm / V	382	220	306	175	233	135
14	Mechanical time constant	ms	5	5	5	5	5	5
15	Rotor inertia	gcm²	209	209	209	209	209	209
16	Terminal inductance phase to phase	mH	0.060	0.170	0.090	0.260	0.150	0.440
17	Thermal resistance housing-ambient	K / W	1.7	1.7	1.7	1.7	1.7	1.7
18	Thermal resistance winding-housing	K / W	1.1	1.1	1.1	1.1	1.1	1.1
19	Thermal time constant winding	s	16	16	16	16	16	16
20	Thermal time constant stator	s	850	850	850	850	850	850

Specifications

- Motor connection Screw fitting for cable PG7
- Axial play at axial load < 20 N 0 mm
  > 20 N max. 0.14 mm
- Preloaded **ball bearings**
- Max. **ball bearing** loads
  axial (dynamic) 20 N
  radial (5 mm from flange) 180 N
  Force for press fits (static) 170 N
  (static, shaft supported) 5000 N
- Radial play **ball bearing** 0.02 mm
- Ambient temperature range -20 ... +125°C
- Max. permissible winding temperature +125°C
- Weight of motor 1150 g
- Protection IP54
- 2 pole permanent magnet
- Values listed in the table are nominal.
- **Connection** (Cable AWG 16)
  Cable 1 Motor winding 1
  Cable 2 Motor winding 2
  Cable 3 Motor winding 3
  Connection (Cable AWG 24)
  Cable white Hall sensor 3
  Cable brown Hall sensor 2
  Cable green Hall sensor 1
  Cable yellow GND
  Cable grey V_{Hall} 4.5 ... 24 VDC
- Option: Temperature monitoring
  PTC resistance micropille 110°C
  R 25°C < 0.5 kΩ
  R 105°C = 1.2 ... 1.5 kΩ
  R 115°C = 7 ... 13 kΩ
  R 120°C = 18 ... 35 kΩ
- For wiring diagram for Hall sensors, see p. 26
- Options: motor connection with plug

Operating Range

Comments Details on page 149



Curve of constant assigned power rating

Continuous operation
In observation of above listed thermal resistances (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).

136209 Motor with high resistance winding
136210 Motor with low resistance winding

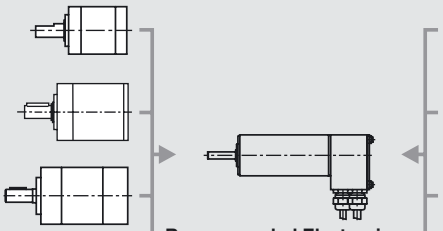
maxon Modular System

Overview on page 17 - 21

Planetary Gearhead
∅42 mm
3 - 15 Nm
Details page 225

Planetary Gearhead
∅52 mm
4 - 30 Nm
Details page 227

Planetary Gearhead
∅62 mm
8 - 50 Nm
Details page 229



Recommended Electronics:

DEC 50/5	page 264
DEC 70/10	266
DES 50/5, 70/10	267/268
EPOS 70/10	271
MIP 50, MIP 100	273
Notes	**17**

Encoder HEDL 9140
500 CPT,
3 channels
Details page 247

Resolver Res
∅26 mm
10 V
Details page 253

Brake AB
∅28 mm, 24 VDC
0.4 Nm
Details page 280

April 2005 edition / subject to change