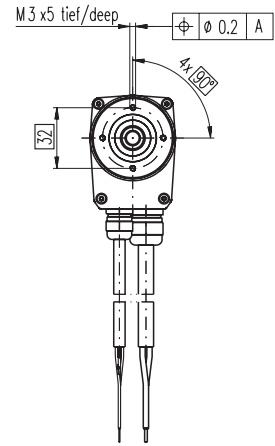
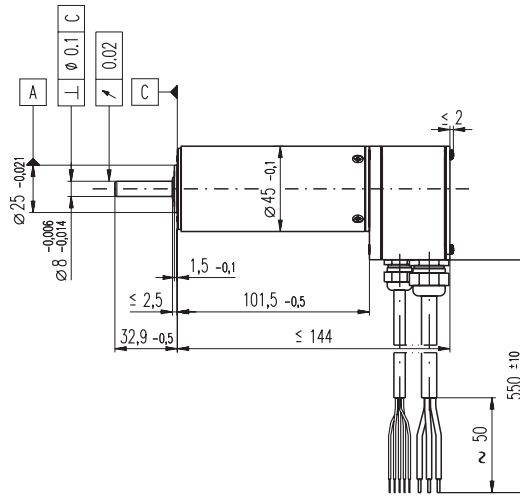
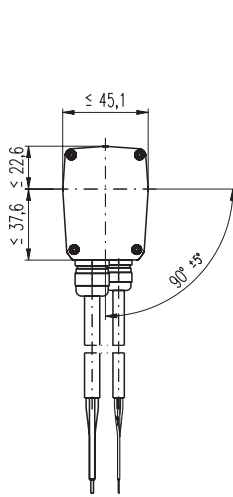


EC 45 Ø45 mm, brushless, 250 Watt, CE approved



M 1:4

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

Order Number

136210	136207	136211	136208	136212	136209
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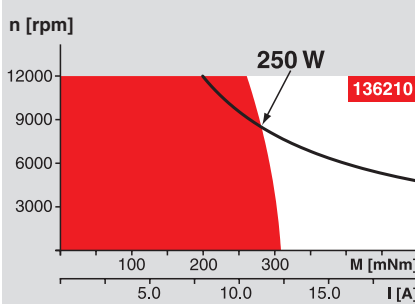
Motor Data

Values at nominal voltage			136210	136207	136211	136208	136212	136209
1	Nominal voltage	V	24.0	24.0	36.0	36.0	48.0	48.0
2	No load speed	rpm	9090	5250	10900	6300	11200	6460
3	No load current	mA	1140	435	1060	397	830	311
4	Nominal speed	rpm	8380	4520	10200	5590	10500	5760
5	Nominal torque (max. continuous torque)	mNm	285	310	283	318	280	316
6	Nominal current (max. continuous current)	A	12.3	7.47	9.95	6.16	7.59	4.72
7	Stall torque	mNm	4180	2420	5470	3160	5580	3220
8	Starting current	A	167	55.8	175	58.3	137	45.8
9	Max. efficiency	%	85	84	85	85	85	85
Characteristics								
10	Terminal resistance phase to phase	Ω	0.143	0.430	0.206	0.617	0.350	1.05
11	Terminal inductance phase to phase	mH	0.0565	0.170	0.0883	0.265	0.149	0.448
12	Torque constant	mNm / A	25.0	43.3	31.2	54.1	40.6	70.4
13	Speed constant	rpm / V	382	221	306	176	235	136
14	Speed / torque gradient	rpm / mNm	2.19	2.19	2.01	2.01	2.02	2.02
15	Mechanical time constant	ms	4.80	4.80	4.40	4.40	4.43	4.43
16	Rotor inertia	gcm ²	209	209	209	209	209	209

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 1.7 K / W
 - 18 Thermal resistance winding-housing 1.1 K / W
 - 19 Thermal time constant winding 30.8 s
 - 20 Thermal time constant motor 1570 s
 - 21 Ambient temperature -20 ... +100°C
 - 22 Max. permissible winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed 12000 rpm
 - 24 Axial play at axial load < 20 N 0 mm
 - 24 Axial play at axial load > 20 N max. 0.14 mm
 - 25 Radial play preloaded
 - 26 Max. axial load (dynamic) 20 N
 - 27 Max. force for press fits (static) 170 N
 - 27 Max. force for press fits (static) (static, shaft supported) 5000 N
 - 28 Max. radial loading, 5 mm from flange 180 N

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**

Other specifications

- 29 Number of pole pairs 1
- 30 Number of phases 3
- 31 Weight of motor 1150 g
- Protection to IP54

Values listed in the table are nominal.

Connection Motor (Cable AWG 16)

- Cable 1 Motor winding 1
- Cable 2 Motor winding 2
- Cable 3 Motor winding 3

Connection Sensoren (Cable AWG 24)

- white Hall sensor 3
- braun Hall sensor 2
- green Hall sensor 1
- gelb GND
- grey V_{Hall} 4.5 ... 24 VDC

Wiring diagram for Hall sensors see page 27

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
- motor connection with plug

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead

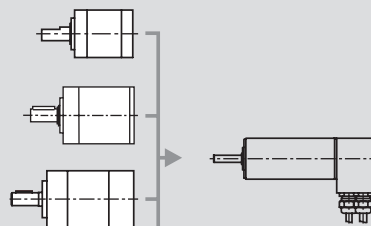
- Ø42 mm
- 3 - 15 Nm
- Page 245

Planetary Gearhead

- Ø52 mm
- 4 - 30 Nm
- Page 247

Planetary Gearhead

- Ø62 mm
- 8 - 50 Nm
- Page 249



Recommended Electronics:

- DECS 50/5 Page 284
- DEC 50/5 285
- DEC 70/10 286
- DES 50/5 287
- DES 70/10 287
- EPOS 70/10 295
- EPOS2 50/5 295
- Notes 20

Encoder HEDL 9140

- 500 CPT,
- 3 channels
- Page 267

Resolver Res 26

- Ø26 mm
- 10 V
- Page 272

Brake AB 28

- Ø28 mm, 24 VDC
- 0.4 Nm
- Page 309