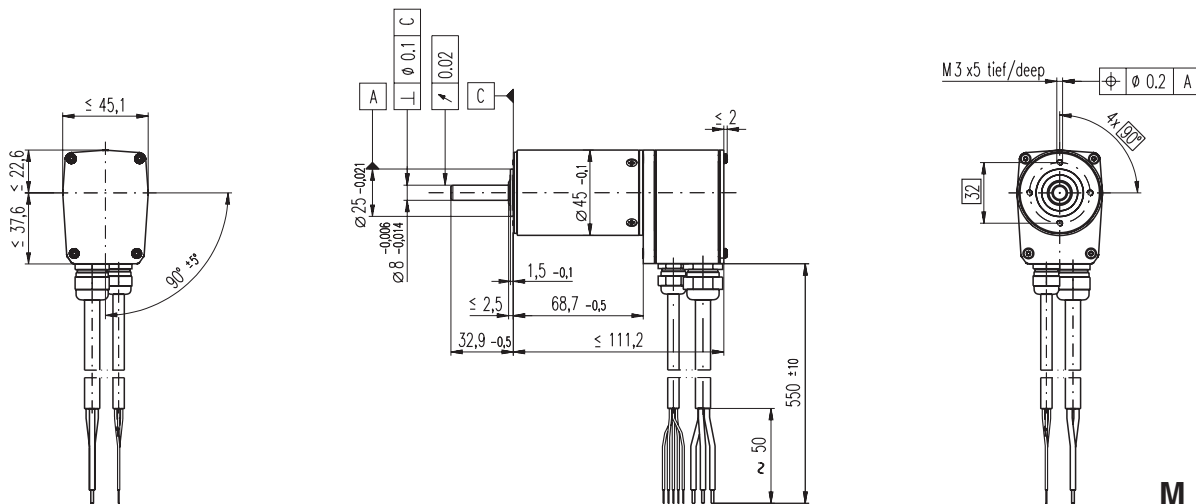


EC 45 Ø45 mm, brushless, 150 Watt, CE approved



M 1:4

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

Order Number

136202	136196	136203	136197	136204	136198	136205	136200	136206	136201
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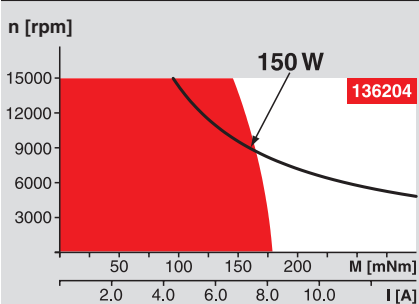
Motor Data

Values at nominal voltage		136202	136196	136203	136197	136204	136198	136205	136200	136206	136201
1	Nominal voltage	V	12.0	12.0	18.0	18.0	24.0	24.0	36.0	36.0	48.0
2	No load speed	rpm	9770	5630	10300	5920	10500	6070	9340	5380	10100
3	No load current	mA	1860	722	1350	522	1060	409	572	223	496
4	Nominal speed	rpm	8610	4430	9100	4710	9360	4860	8180	4200	8980
5	Nominal torque (max. continuous torque)	mNm	168	182	165	181	163	179	174	188	168
6	Nominal current (max. continuous current)	A	16.0	9.61	11.1	6.69	8.45	5.10	5.24	3.13	4.16
7	Stall torque	mNm	1590	916	1650	955	1670	965	1590	916	1670
8	Starting current	A	138	45.8	100	33.4	78.0	26.0	43.8	14.6	37.6
9	Max. efficiency	%	79	77	79	77	79	77	79	77	79
Characteristics											
10	Terminal resistance phase to phase	Ω	0.0873	0.262	0.180	0.539	0.308	0.923	0.823	2.47	1.28
11	Terminal inductance phase to phase	mH	0.0266	0.0797	0.0542	0.163	0.0917	0.275	0.263	0.788	0.395
12	Torque constant	mNm / A	11.5	20.0	16.5	28.6	21.4	37.1	36.3	62.8	44.5
13	Speed constant	rpm / V	827	478	579	334	445	257	263	152	214
14	Speed / torque gradient	rpm / mNm	6.25	6.25	6.30	6.30	6.39	6.39	5.97	5.97	6.16
15	Mechanical time constant	ms	7.79	7.79	7.86	7.86	7.97	7.97	7.44	7.44	7.67
16	Rotor inertia	gcm ²	119	119	119	119	119	119	119	119	119

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 1.9 K / W
 - 18 Thermal resistance winding-housing 0.9 K / W
 - 19 Thermal time constant winding 15 s
 - 20 Thermal time constant motor 1600 s
 - 21 Ambient temperature -20 ... +100°C
 - 22 Max. permissible winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed 15000 rpm
 - 24 Axial play at axial load < 20 N 0 mm
 - > 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
 - (static, shaft supported) 5000 N
 - 28 Max. radial loading, 5 mm from flange 140 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 850 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

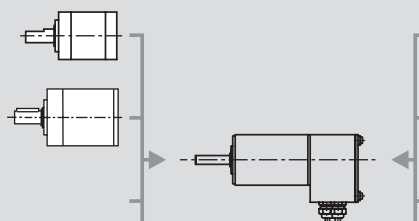
Overview on page 16 - 21

Planetary Gearhead

- Ø42 mm
- 3 - 15 Nm
- Page 244

Planetary Gearhead

- Ø52 mm
- 4 - 30 Nm
- Page 247



Recommended Electronics:

- DECS 50/5 Page 284
- DEC 50/5 285
- DECV 50/5 286
- 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