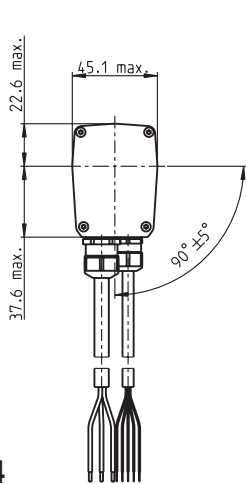
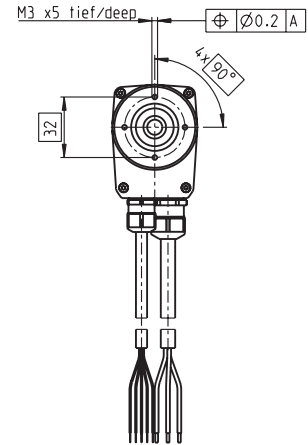
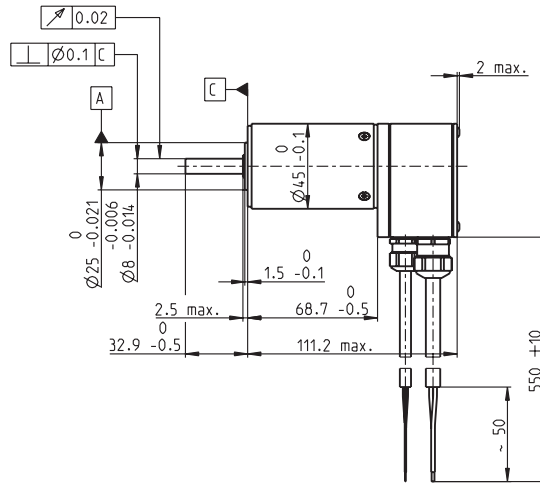


EC 45 Ø45 mm, brushless, 150 Watt, CE approved



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		136202	136196	136203	136197	136204	136198	136205	136200	136206	136201
Values at nominal voltage											
1 Nominal voltage	V	12.0	12.0	18.0	18.0	24.0	24.0	36.0	36.0	48.0	48.0
2 No load speed	rpm	9770	5630	10300	5920	10500	6070	9340	5380	10100	5850
3 No load current	mA	1860	722	1350	522	1060	409	572	223	496	192
4 Nominal speed	rpm	8610	4430	9100	4710	9360	4860	8180	4200	8980	4650
5 Nominal torque (max. continuous torque)	mNm	168	182	165	181	163	179	174	188	168	183
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	2.51
7 Stall torque	mNm	1590	916	1650	955	1670	965	1590	916	1670	965
8 Starting current	A	138	45.8	100	33.4	78.0	26.0	43.8	14.6	37.6	12.5
9 Max. efficiency	%	79	77	79	77	79	77	79	77	79	77
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	3.83
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	1.19
12 Torque constant	mNm / A	11.5	20.0	16.5	28.6	21.4	37.1	36.3	62.8	44.5	77.1
13 Speed constant	rpm / V	827	478	579	334	445	257	263	152	214	124
14 Speed / torque gradient	rpm / mNm	6.25	6.25	6.30	6.30	6.39	6.39	5.97	5.97	6.16	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	7.67
16 Rotor inertia	gcm ²	119	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) (static, shaft supported) 182 N
 - 28 Max. radial loading, 5 mm from flange 500 N
 - 140 N

- 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

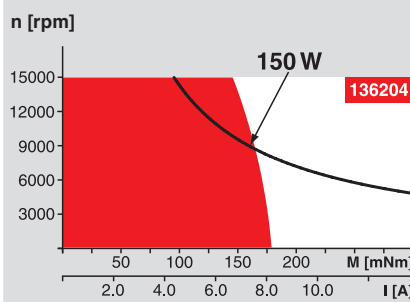
Connection sensors (Cable AWG 24)¹⁾

- white Hall sensor 3
 - brown Hall sensor 2
 - green Hall sensor 1
 - yellow GND
 - grey V_{Hall} 4.5 ... 24 VDC
- Wiring diagram for Hall sensors see p. 27
- ¹⁾ Not lead through in combination with resolver.

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,

Operating Range



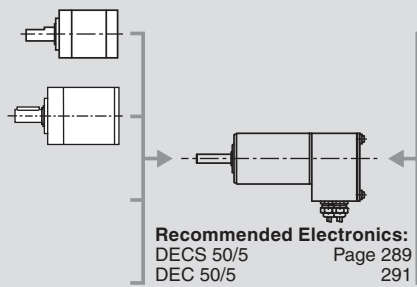
Comments

- 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**

maxon Modular System

Overview on page 16 - 21

- Planetary Gearhead**
Ø42 mm
3 - 15 Nm
Page 238
- Planetary Gearhead**
Ø52 mm
4 - 30 Nm
Page 241



- Recommended Electronics:**
- DECS 50/5 Page 289
 - DEC 50/5 291
 - DEC Module 50/5 291
 - DECV 50/5, DEC 70/10 297
 - DES 50/5 298
 - DES 70/10 298
 - EPOS2 50/5 305
 - EPOS2 70/10 305
 - Notes** 20

- Encoder HEDL 9140**
500 Imp.,
3 channels
Page 271
- Resolver Res 26**
Ø26 mm
10 V
Page 277
- Brake AB 28**
24 VDC
0.4 Nm
Page 319