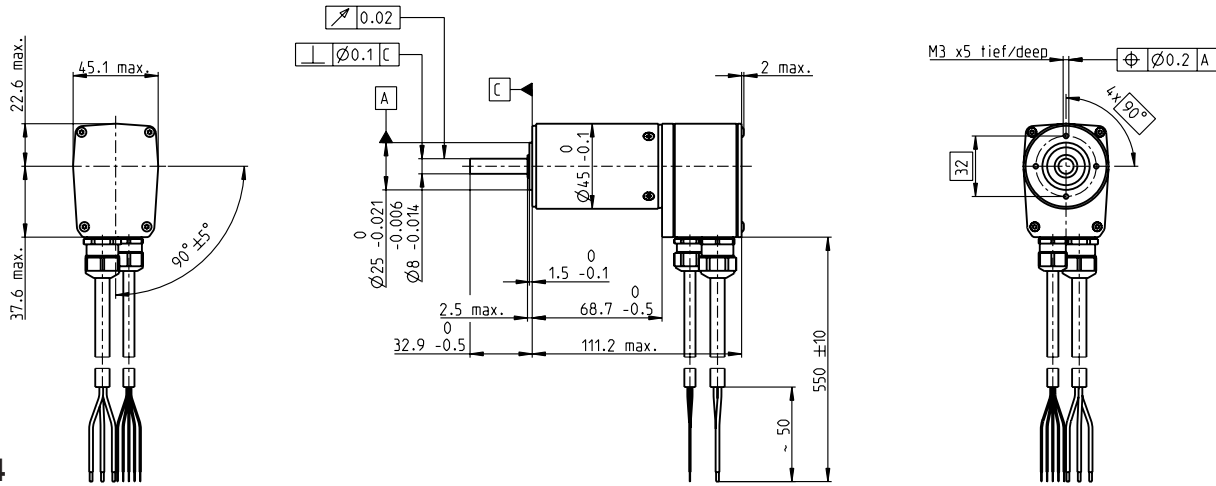


# EC 45 Ø45 mm, brushless, 150 Watt



M 1:4

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

## Part Numbers

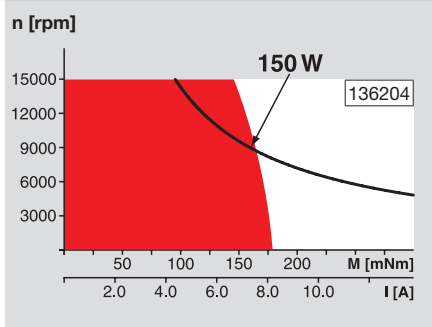
### Motor Data

		136202	136196	136203	136197	136204	136198	136205	136200	136206	136201
<b>Values at nominal voltage</b>											
1 Nominal voltage	V	12	12	18	18	24	24	36	36	48	48
2 No load speed	rpm	9780	5650	10300	5930	10500	6090	9360	5400	10200	5860
3 No load current	mA	1530	577	1120	419	879	328	471	177	411	154
4 Nominal speed	rpm	8410	4370	9000	4680	9290	4840	8150	4190	8960	4640
5 Nominal torque (max. continuous torque)	mNm	174	186	171	184	169	183	179	191	174	187
6 Nominal current (max. continuous current)	A	16.2	9.65	11.2	6.72	8.55	5.13	5.29	3.14	4.21	2.52
7 Stall torque	mNm	1380	872	1540	931	1600	952	1560	911	1650	962
8 Stall current	A	119	43.6	93.3	32.6	74.8	25.6	43.1	14.5	37.2	12.5
9 Max. efficiency	%	79	79	80	79	80	79	81	80	81	80
<b>Characteristics</b>											
10 Terminal resistance phase to phase	Ω	0.101	0.275	0.193	0.552	0.321	0.936	0.836	2.48	1.29	3.85
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	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	7.22	6.58	6.78	6.46	6.67	6.49	6.07	6	6.22	6.18
15 Mechanical time constant	ms	8.99	8.19	8.44	8.05	8.32	8.08	7.56	7.48	7.75	7.7
16 Rotor inertia	gcm <sup>2</sup>	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 15.4 s
  - 20 Thermal time constant motor 1600 s
  - 21 Ambient temperature -20...+100°C
  - 22 Max. winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. 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) 16 N
  - 27 Max. force for press fits (static) 182 N
  - (static, shaft supported) 5000 N
  - 28 Max. radial load, 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 sensors (Cable AWG 24)<sup>1)</sup>**
- white Hall sensor 3
  - brown Hall sensor 2
  - green Hall sensor 1
  - yellow GND
  - grey V<sub>Hall</sub> 4.5 ... 24 VDC
- Wiring diagram for Hall sensors see p. 35
- <sup>1)</sup> 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

### maxon Modular System

**Planetary Gearhead**  
 Ø42 mm  
 3 - 15 Nm  
 Page 349

**Planetary Gearhead**  
 Ø52 mm  
 4 - 30 Nm  
 Page 355

**Recommended Electronics:**  
**Notes** Page 26

- ESCON 36/3 EC 417
- ESCON Mod. 50/5 417
- ESCON Mod. 50/4 EC-S 417
- ESCON 50/5 418
- ESCON 70/10 418
- DEC Module 50/5 420
- EPOS2 24/5, 50/5, 70/10 425
- EPOS2 P 24/5 428
- EPOS4 Module 50/8 431
- EPOS4 Comp. 50/8 CAN 431
- EPOS4 Module 50/15 432
- EPOS4 Comp. 50/15 CAN 432
- MAXPOS 50/5 435

**Encoder HEDL 9140**  
 500 CPT,  
 3 channels  
 Page 405

**Resolver Res 26**  
 Ø26 mm  
 10 V  
 Page 412

**Brake AB 28**  
 24 VDC  
 0.4 Nm  
 Page 447

\*Protection level only when installed with flange-side seal.