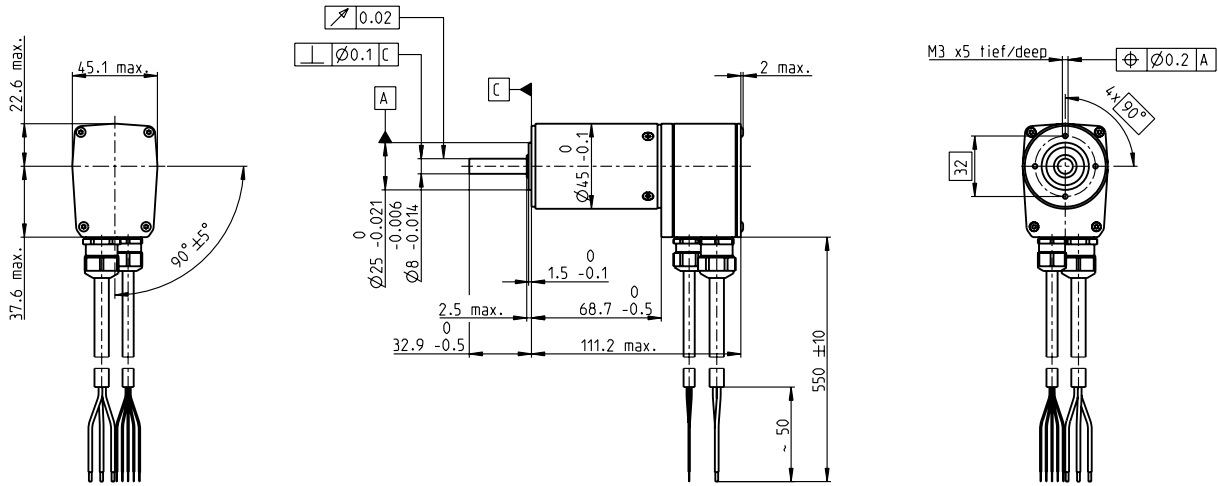


EC 45 Ø45 mm, brushless, 150 watt

EC



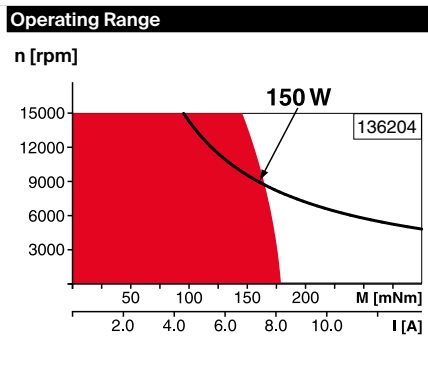
M 1:4

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

Part Numbers

Motor Data	136202	136196	136203	136197	136204	136198	136205	136200	136206	136201	
Values at nominal voltage											
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
Characteristics											
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 ²	119	119	119	119	119	119	119	119	119	119

Specifications	Operating Range	Comments
Thermal data		
17 Thermal resistance housing-ambient	1.9 K/W	<div style="background-color: red; width: 15px; height: 10px; display: inline-block; margin-right: 5px;"></div> 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.
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	15 000 rpm	<div style="border: 1px solid black; width: 15px; height: 10px; display: inline-block; margin-right: 5px;"></div> Short term operation The motor may be briefly overloaded (recurring).
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)	16 N	
27 Max. force for press fits (static) (static, shaft supported)	182 N	
27 Max. force for press fits (static) (static, shaft supported)	5000 N	
28 Max. radial load, 5 mm from flange	140 N	



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
 - 30 Number of phases
 - 31 Weight of motor
 - Protection to
- 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. 57
- ¹⁾ Not lead through in combination with resolver.

maxon Modular System Details on catalog page 42

- 1 **Planetary Gearhead**
- 3 Ø42 mm
- 850 g
- IP54*
- 3-15 Nm
- Page 405
- Planetary Gearhead
- Ø52 mm
- 4-30 Nm
- Page 411

Recommended Electronics: Page 42

- Notes
- ESCON 36/3 EC 501
- ESCON Module 50/5 501
- ESCON Mod. 50/4 EC-S 501
- ESCON Mod. 50/8 (HE) 502
- ESCON 50/5 503
- DEC Module 50/5 505
- EPOS4 Mod./Comp. 50/5 510
- EPOS4 Mod./Comp. 50/8 511
- EPOS4 Mod./Comp. 50/15 511
- EEPOS4 50/5 515
- EPOS4 Disk 60/8 516
- EPOS4 Disk 60/12 517
- EPOS2 P 24/5 520

- Encoder HEDL 9140**
- 500 CPT,
- 3 channels
- Page 493
- Resolver Res 26**
- Ø26 mm
- 10 V
- Page 496
- Brake AB 28**
- 24 VDC
- 0.4 Nm
- Page 536

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