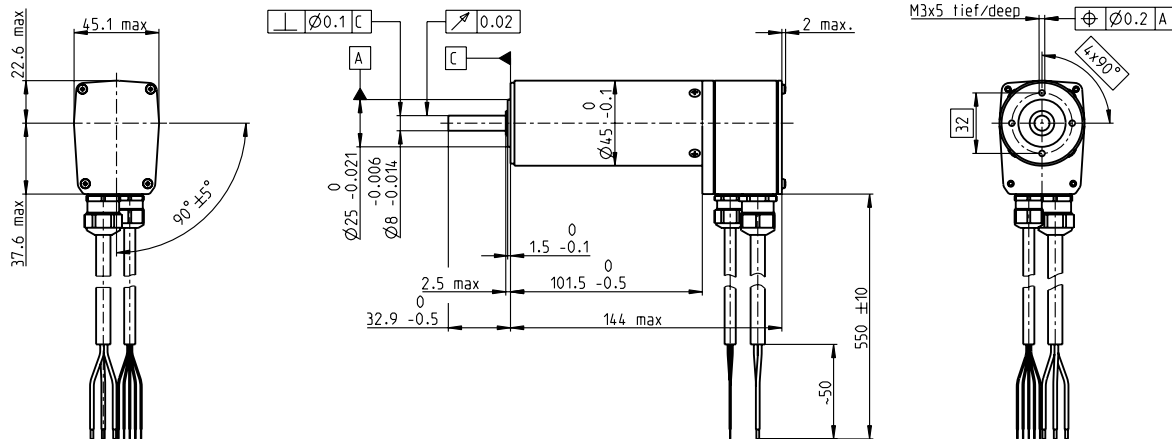


EC 45 Ø45 mm, brushless, 250 Watt



M 1:4

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

Part Numbers

136210 136207 136211 136208 136212 136209

Motor Data

Values at nominal voltage							
1 Nominal voltage	V	24	24	36	36	48	48
2 No load speed	rpm	8670	5000	10400	6010	10700	6160
3 No load current	mA	897	341	834	312	656	244
4 Nominal speed	rpm	7970	4300	9730	5320	10000	5490
5 Nominal torque (max. continuous torque)	mNm	311	331	312	341	316	347
6 Nominal current (max. continuous current)	A	12.5	7.51	10.2	6.21	7.94	4.86
7 Stall torque	mNm	4400	2540	5750	3320	6110	3530
8 Stall current	A	167	55.8	175	58.3	143	47.7
9 Max. efficiency	%	86	85	87	86	87	87
Characteristics							
10 Terminal resistance phase to phase	Ω	0.143	0.43	0.206	0.617	0.336	1.01
11 Terminal inductance phase to phase	mH	0.0565	0.17	0.0883	0.265	0.149	0.448
12 Torque constant	mNm/A	26.3	45.5	32.8	56.9	42.7	73.9
13 Speed constant	rpm/V	364	210	291	168	224	129
14 Speed/torque gradient	rpm/mNm	1.98	1.98	1.82	1.82	1.76	1.76
15 Mechanical time constant	ms	4.34	4.34	3.99	3.99	3.85	3.85
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	31 s	
20 Thermal time constant motor	1570 s	
21 Ambient temperature	-20...+100°C	
22 Max. winding temperature	+125°C	

Mechanical data (preloaded ball bearings)		
23 Max. speed	12000 rpm	
24 Axial play at axial load < 20 N	0 mm	
24 Axial play at axial load > 20 N	max. 0.15 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	180 N	

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 sensors (Cable AWG 24)¹⁾

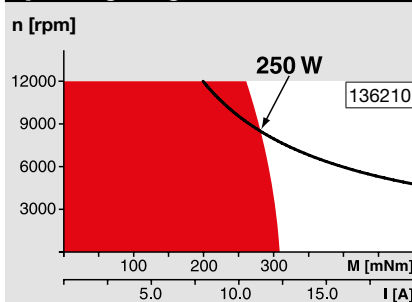
- white Hall sensor 3
- brown Hall sensor 2
- green Hall sensor 1
- yellow GND
- grey V_{Hall} 4.5...24 VDC

Wiring diagram for Hall sensors see p. 41

¹⁾ Not lead through in combination with resolver.

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

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 28–36

Planetary Gearhead

Ø42 mm
3 - 15 Nm
Page 354

Planetary Gearhead

Ø52 mm
4 - 30 Nm
Page 360

Planetary Gearhead

Ø62 mm
8 - 50 Nm
Page 361

Recommended Electronics:		
Notes	Page 32	
ESCON Mod. 50/5	445	
ESCON Mod. 50/4 EC-S	445	
ESCON Mod. 50/8 (HE)	446	
ESCON 50/5	447	
ESCON 70/10	447	
DEC Module 50/5	449	
EPOS4 50/5	453	
EPOS4 Mod./Comp. 50/5	453	
EPOS4 Mod./Comp. 50/8	454	
EPOS4 Mod./Comp. 50/15	455	
EPOS4 70/15	456	
MAXPOS 50/5	468	

Encoder HEDL 9140

500 CPT,
3 channels
Page 436

Resolver Res 26

Ø26 mm
10 V
Page 439

Brake AB 28

24 VDC
0.4 Nm
Page 481