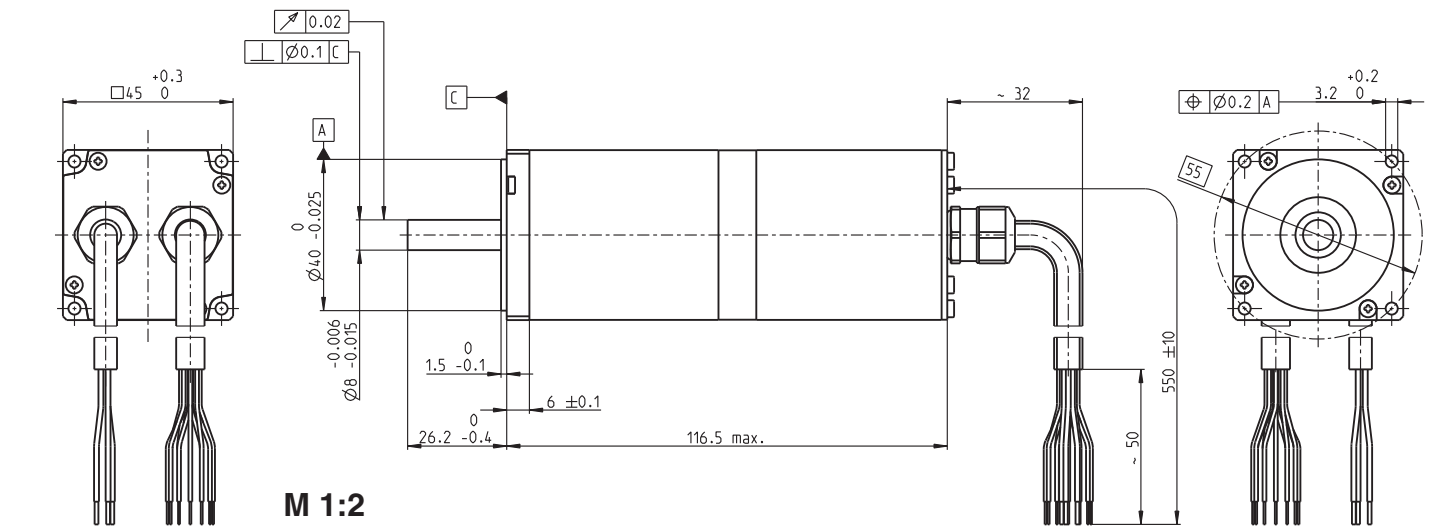


# **EC-4pole 45** □45 mm, brushless, 200 Watt, C€ approved



M 1:2

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

## Article Numbers

		with encoder	266052	252463	252464				
Motor Data (provisional)									
Values at nominal voltage									
1 Nominal voltage	V		48	48	48				
2 No load speed	rpm		8730	6120	4370				
3 No load current	mA		473	261	153				
4 Nominal speed	rpm		8110	5550	3820				
5 Nominal torque (max. continuous torque)	mNm		255	310	314				
6 Nominal current (max. continuous current)	A		5.26	4.34	3.1				
7 Stall torque	mNm		4420	4070	2890				
8 Starting current	A		84.8	54.7	27.7				
9 Max. efficiency	%		86	87	86				
Characteristics									
10 Terminal resistance phase to phase	Ω		0.566	0.878	1.73				
11 Terminal inductance phase to phase	mH		0.172	0.350	0.686				
12 Torque constant	mNm/A		52.2	74.5	104				
13 Speed constant	rpm/V		183	128	91.6				
14 Speed/torque gradient	rpm/mNm		1.99	1.51	1.52				
15 Mechanical time constant	ms		4.16	3.16	3.18				
16 Rotor inertia	gcm <sup>2</sup>		200	200	200				

## Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 3.1 K/W
  - 18 Thermal resistance winding-housing 1.0 K/W
  - 19 Thermal time constant winding 31.8 s
  - 20 Thermal time constant motor 1550 s
  - 21 Ambient temperature -10...+100°C
  - 22 Max. permissible winding temperature +125°C

### Mechanical data (preloaded ball bearings)

- 23 Max. permissible speed 10000 rpm
- 24 Axial play at axial load < 20.0 N 0 mm
- 25 Radial play 0.14 mm preloaded
- 26 Max. axial load (dynamic) 20 N
- 27 Max. force for press fits (static) 182 N
- 28 Max. radial loading, 5 mm from flange 5000 N
- 29 Max. radial loading, 5 mm from flange 140 N

### Other specifications

- 29 Number of pole pairs 2
- 30 Number of phases 3
- 31 Weight of motor 1000 g
- Protection to IP54

Values listed in the table are nominal.

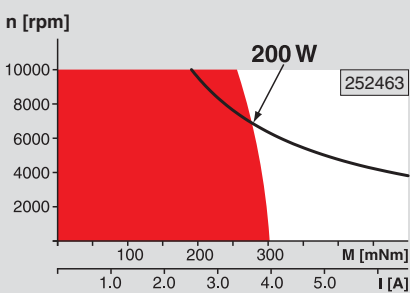
### Connection motor (Cable AWG 18)

- Cable 1 Motor winding 1
- Cable 2 Motor winding 2
- Cable 3 Motor winding 3

### Option

- Temperature monitoring, PTC resistance
- R 20°C < 0.3 kΩ
- R 130°C = 7.0...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

## Integrated encoder R35i

Overview on page 16 - 21

### Connection Encoder (Cable AWG 28)

- green (Pin 1) Channel A
- yellow (Pin 2) Channel A
- red (Pin 3) Channel B
- blue (Pin 4) Channel B
- pink (Pin 5) Channel I (Index)
- grey (Pin 6) Channel I (Index)
- violet (Pin 7) Commutation signal S 1
- red/blue (Pin 8) GND 2
- black (Pin 9) Commutation signal S 2
- white/green (Pin 10) V<sub>CC</sub> 2
- grey/pink (Pin 11) Commutation signal S 3
- white (Pin 12) n.c.
- brown (Pin 13) V<sub>CC</sub> 1
- (Pin 14) GND 1

- Counts per turn 2048
- Number of channels 3
- Max. operating frequency (kHz) 200
- Supply voltage 5 V ± 5 %
- Output signal RS 422
- Phase shift Φ (nominal) 90°e
- Logic state width s min. 45°e
- Index pulse width (nominal) 90° ± 45°
- Operating temperature range -10...+100°C
- Moment of inertia ≤ 3.11 gcm<sup>2</sup>

### Recommended Electronics:

- ESCON 50/5 Seite 292
- DECS 50/5 297
- DEC 50/5, DEC Module 50/5 299
- DEC 70/10 305
- DES 50/5 306
- DES 70/10 306
- EPOS2 50/5 313
- EPOS2 70/10 313
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