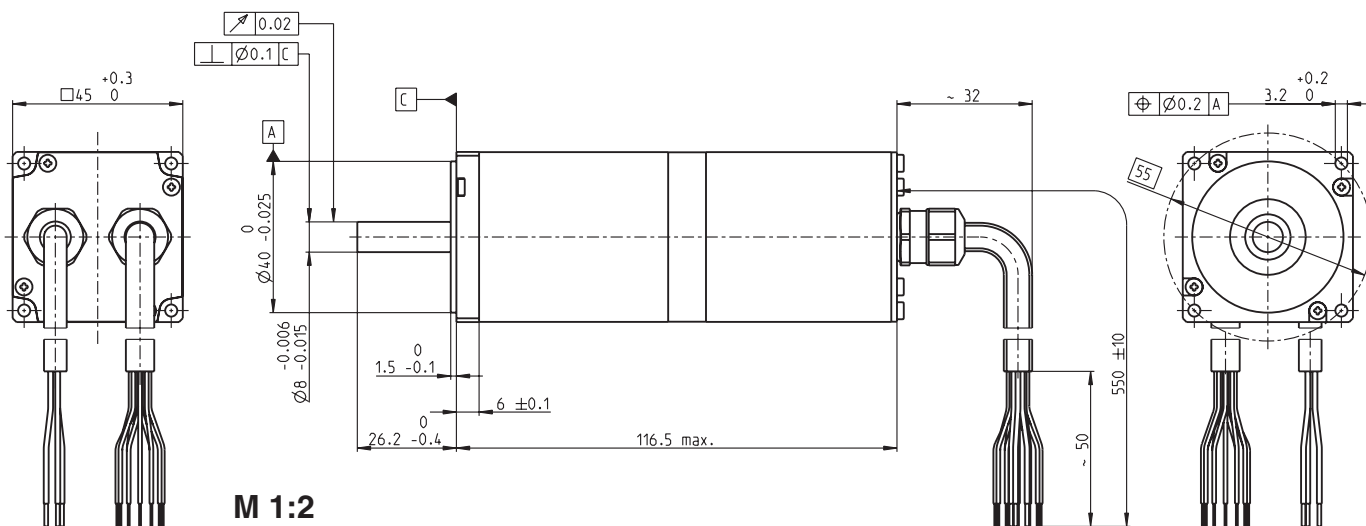


# EC-4pole 45 □45 mm, brushless, 200 Watt, CE approved



M 1:2

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

## Order Number

with encoder 266052 252463 252464

Motor Data (provisional)		266052	252463	252464
<b>Values at nominal voltage</b>				
1 Nominal voltage	V	48.0	48.0	48.0
2 No load speed	rpm	8730	6120	4370
3 No load current	mA	473	261	153
4 Nominal speed	rpm	8150	5580	3830
5 Nominal torque (max. continuous torque)	mNm	237	297	308
6 Nominal current (max. continuous current)	A	4.93	4.16	3.04
7 Stall torque	mNm	4420	4070	2890
8 Starting current	A	84.8	54.7	27.7
9 Max. efficiency	%	86	87	86
<b>Characteristics</b>				
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

<b>Thermal data</b>	
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
<b>Mechanical data (preloaded ball bearings)</b>	
23 Max. permissible speed	10000 rpm
24 Axial play at axial load < 20.0 N	0 mm
	> 20.0 N
	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
	5000 N
28 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.

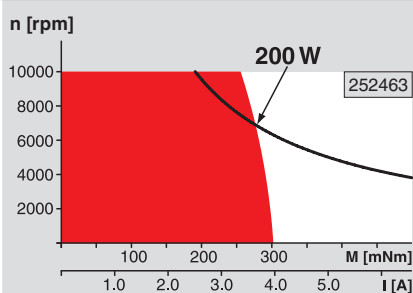
## Connection Motor (Cable AWG 18)

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 26)

green	(Pin 1)	Channel A
yellow	(Pin 2)	Channel $\bar{A}$
red	(Pin 3)	Channel B
blue	(Pin 4)	Channel $\bar{B}$
pink	(Pin 5)	Channel I (Index)
grey	(Pin 6)	Channel $\bar{I}$ (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
	(Pin 12)	n.c.
white	(Pin 13)	V <sub>CC</sub> 1
brown	(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 $\Phi$ (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:

DECS 50/5	Page 289
DEC 50/5, DEC Module 50/5	291
DEC 70/10	297
DES 50/5	298
DES 70/10	298
EPOS2 50/5	305
EPOS2 70/10	305
<b>Notes</b>	<b>20</b>