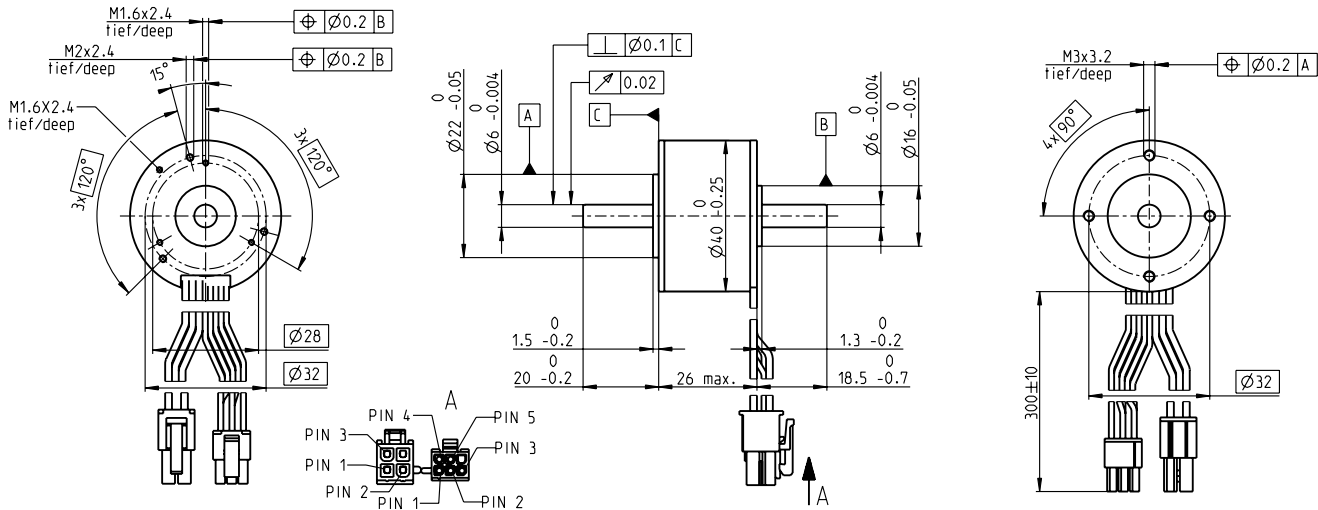


EC-i 40 Ø40 mm, brushless, 50 watt

High Torque

EC-i



M 1:2

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

Part Numbers

with Hall sensors

496650	496651	496652	496653
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Motor Data

Values at nominal voltage		9	18	36	48
1 Nominal voltage	V	9	18	36	48
2 No load speed	rpm	7770	7790	7350	7560
3 No load current	mA	577	289	131	103
4 Nominal speed	rpm	6390	6520	6080	6310
5 Nominal torque (max. continuous torque)	mNm	65.2	64.6	78.2	73.3
6 Nominal current (max. continuous current)	A	5.91	2.93	1.61	1.18
7 Stall torque ¹	mNm	716	858	1150	1090
8 Stall current	A	66	39.5	25	18.2
9 Max. efficiency	%	82	84	86	85
Characteristics					
10 Terminal resistance phase to phase	Ω	0.136	0.455	1.44	2.63
11 Terminal inductance phase to phase	mH	0.064	0.255	1.15	1.93
12 Torque constant	mNm/A	10.8	21.7	46.1	59.6
13 Speed constant	rpm/V	881	440	207	160
14 Speed/torque gradient	rpm/mNm	11.1	9.24	6.48	7.07
15 Mechanical time constant	ms	1.48	1.24	0.869	0.948
16 Rotor inertia	gcm ²	12.8	12.8	12.8	12.8

Specifications

Thermal data	
17 Thermal resistance housing-ambient	9.91 K/W
18 Thermal resistance winding-housing	3.77 K/W
19 Thermal time constant winding	25.6 s
20 Thermal time constant motor	892 s
21 Ambient temperature	-40...+100°C
22 Max. winding temperature	+155°C

Mechanical data (preloaded ball bearings)	
23 Max. speed	10 000 rpm
24 Axial play at axial load < 9.0 N	0 mm
24 Axial play at axial load > 9.0 N	0.15 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	7 N
27 Max. force for press fits (static) (static, shaft supported)	87 N
27 Max. force for press fits (static) (static, shaft supported)	6500 N
28 Max. radial load, 5 mm from flange	21 N

Other specifications

29 Number of pole pairs	7
30 Number of phases	3
31 Weight of motor	180 g

Values listed in the table are nominal.

Connection motor (Cable AWG 20)		
red	Motor winding 1	Pin 1
black	Motor winding 2	Pin 2
white	Motor winding 3	Pin 3
	N.C.	Pin 4

Connector		
Molex	Article number	
	39-01-2040	

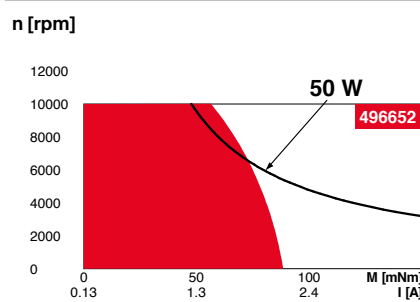
Connection sensor (Cable AWG 26)		
yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	V _{Hall} 4.5...24 VDC	Pin 5
	N.C.	Pin 6

Connector	
Molex	Article number
	430-25-0600

Wiring diagram for Hall sensors see p. 59

¹Calculation does not include saturation effect (p. 71/178)

Operating Range



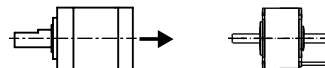
Comments

- 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

Details on catalog page 42

Planetary Gearhead
Ø42 mm
3-15 Nm
Page 407



Recommended Electronics:

Notes Page 42

ESCON 36/3 EC	501
ESCON Mod. 50/4 EC-S	501
ESCON Module 50/5	501
ESCON Mod. 50/8 (HE)	502
ESCON 50/5	503
ESCON 70/10	503
DEC Module 50/5	505
EPOS4 Micro 24/5	509
EPOS4 Mod./Comp. 50/5	510
EPOS4 Comp. 24/5 3-axes	511
EPOS4 Mod./Comp. 50/8	513
EPOS4 50/5	515
EPOS4 70/15	515
EPOS2 P 24/5	520

Encoder 16 EASY/XT
128-1024 CPT, 3 channels
Page 465/467
Encoder 16 EASY Absolute/XT
4096 steps
Page 469/471
Encoder 16 RIO
1024 - 32 768 CPT, 3 channels
Page 482
Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
Page 485
Encoder HEDL 5540
500 CPT, 3 channels
Page 492