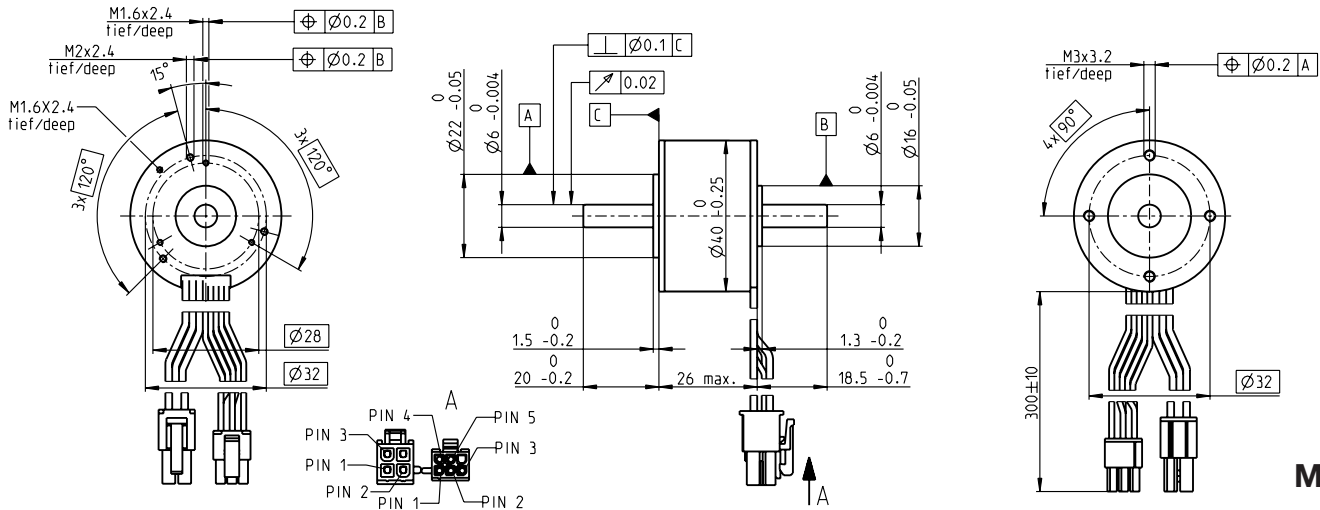


EC-i 40 Ø40 mm, brushless, 50 Watt

High Torque



M 1:2

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

Part Numbers

with Hall sensors

496650	496651	496652	496653
--------	--------	--------	--------

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	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	10000 rpm
24	Axial play at axial load < 9.0 N	0 mm
	> 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
28	Max. radial load, 5 mm from flange	6500 N
		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.

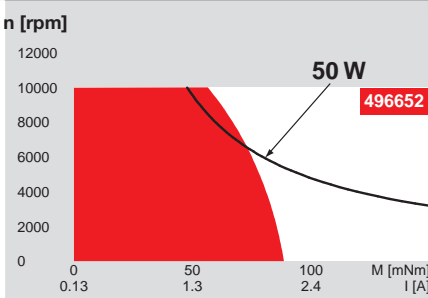
Connection (Cable AWG 20)		
red	Motor winding 1	Pin 1
black	Motor winding 2	Pin 2
white	Motor winding 3	Pin 3
	N.C.	Pin 4

Connector Article number		
Molex	39-01-2040	
Connection (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 Article number	
Molex	430-25-0600

Wiring diagram for Hall sensors see p. 37

Operating Range



Comments

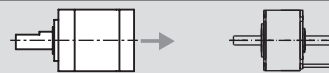
Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient. = Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Planetary Gearhead
Ø42 mm
3 - 15 Nm
Page 350



Recommended Electronics:

Notes	Page 26
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417
ESCON Module 50/5	417
ESCON 50/5	418
ESCON 70/10	418
DEC Module 50/5	420
EPOS2 Module 36/2	424
EPOS2 24/5	425
EPOS2 50/5	425
EPOS2 70/10	425
EPOS2 P 24/5	428
EPOS4 Module 50/8	431
EPOS4 Comp. 50/8 CAN	431
MAXPOS 50/5	435

Overview on page 20-27

	Encoder 16 EASY 128 - 1024 CPT, 3 channels Page 382
	Encoder 16 EASY Absolute 4096 steps Page 383
	Encoder 2RMHF 3000 - 5000 CTP, 3 channels Page 397
	Encoder HEDL 5540 500 CPT, 3 channels Page 404
	Encoder AEDL 5810 1024 - 5000 CPT, 3 channels Page 407