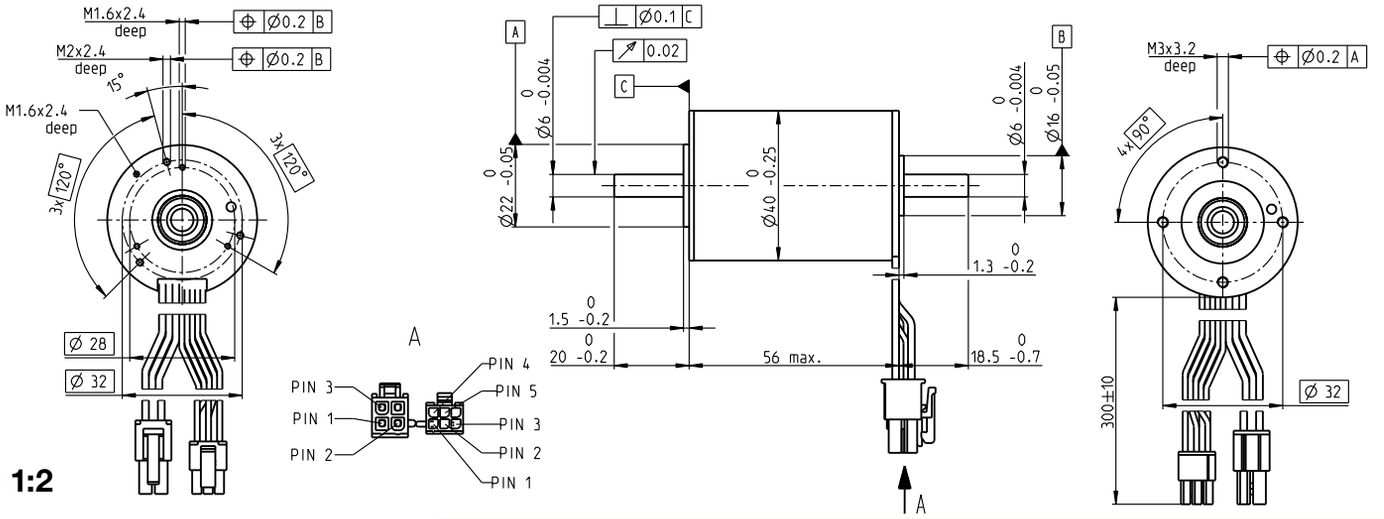
EC-i 40 ∅40 mm, brushless, 100 Watt

High Torque



M 1:2

Stock program
Standard program
Special program (on request)

with Hall sensors	496660	496661	488607
Motor Data			
Values at nominal voltage			
1 Nominal voltage V	18	36	48
2 No load speed rpm	4540	4550	5000
3 No load current mA	352	176	150
4 Nominal speed rpm	3920	3950	4390
5 Nominal torque (max. continuous torque) mNm	207	207	222
6 Nominal current (max. continuous current) A	5.46	2.72	2.39
7 Stall torque[1] mNm	2860	3160	4330
8 Stall current A	76.3	42.2	47.5
9 Max. efficiency %	87	87	89
Characteristics			
10 Terminal resistance phase to phase Ω	0.236	0.853	1.01
11 Terminal inductance phase to phase mH	0.169	0.675	0.995
12 Torque constant mNm/A	37.5	74.9	91
13 Speed constant rpm/V	255	127	105
14 Speed/torque gradient rpm/mNm	1.6	1.45	1.16
15 Mechanical time constant ms	0.739	0.669	0.537
16 Rotor inertia gcm²	44	44	44

Specifications

Thermal data

17	Thermal resistance housing-ambient	7.17 K/W
18	Thermal resistance winding-housing	1.35 K/W
19	Thermal time constant winding	20.7 s
20	Thermal time constant motor	1400 s
21	Ambient temperature	-40…+100°C
22	Max. winding temperature	+155°C

Mechanical data (preloaded ball bearings)

23	Max. speed		8000 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)		87 N
	(static, shaft supported)		3000 N
28	Max. radial load, 5 mm from flange		29.9 N

Other specifications

29	Number of pole pairs	7
30	Number of phases	3
31	Weight of motor	390 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	**Article number**
Molex	39-01-2040

Connection sensor (Cable AWG 26)

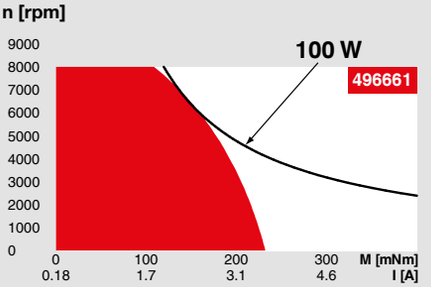
yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	V_{Hall} 4.5…24 VDC	Pin 5
	N.C.	Pin 6

Connector	**Article number**
Molex	430-25-0600

Wiring diagram for Hall sensors see p. 47

[1]Calculation does not include saturation effect (p. 57/162)

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 34

Planetary Gearhead
∅42 mm
3 - 15 Nm
Page 362

Recommended Electronics:

Notes	Page **34**
ESCON 36/3 EC	455
ESCON Mod. 50/4 EC-S	455
ESCON Module 50/5	455
ESCON Mod. 50/8 (HE)	456
ESCON 50/5	457
ESCON 70/10	457
DEC Module 50/5	459
EPOS4 50/5	463
EPOS4 Mod./Comp. 50/5	463
EPOS4 Mod./Comp. 50/8	465
EPOS4 70/15	467
EPOS2 P 24/5	470
MAXPOS 50/5	473

Encoder 16 EASY
128 - 1024 CPT, 3 channels
Page 418
Encoder 16 EASY Absolute
4096 steps
Page 422
Encoder 16 RIO
1024 - 32768 CPT, 3 channels
Page 436
Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
Page 438
Encoder HEDL 5540
500 CPT, 3 channels
Page 446