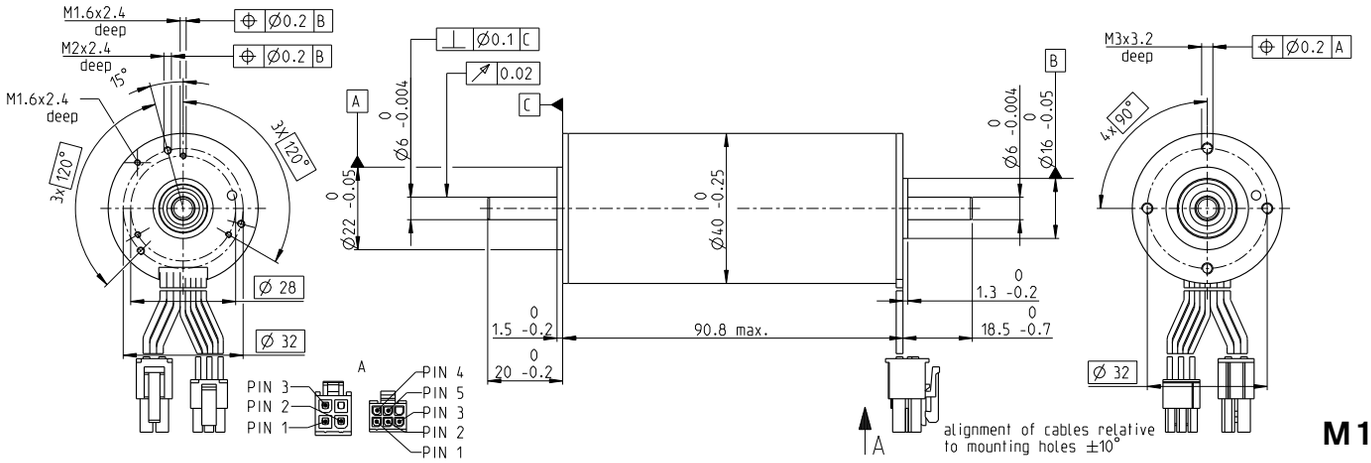
EC-i 40 ∅40 mm, brushless, 130 Watt

NEW

High Torque



M 1:2

Stock program
Standard program
Special program (on request)

		Part Numbers							
	with Hall sensors	666601	676600	666602	666603				
Motor Data									
	Values at nominal voltage								
1	Nominal voltage	V	18	24	36	48			
2	No load speed	rpm	4670	4730	4670	4640			
3	No load current	mA	496	379	248	185			
4	Nominal speed	rpm	3920	3990	3940	3910			
5	Nominal torque (max. continuous torque)	mNm	276	299	327	340			
6	Nominal current (max. continuous current)	A	7.38	6.01	4.27	3.29			
7	Stall torque[1]	mNm	3320	4090	4950	5360			
8	Stall current	A	91	85	68	55			
9	Max. efficiency	%	85.9	87.2	88.4	88.8			
	Characteristics								
10	Terminal resistance phase to phase	Ω	0.198	0.281	0.529	0.876			
11	Terminal inductance phase to phase	mH	0.128	0.222	0.512	0.922			
12	Torque constant	mNm/A	36.4	47.9	72.8	97.8			
13	Speed constant	rpm/V	262	199	131	97.7			
14	Speed/torque gradient	rpm/mNm	1.420	1.170	0.953	0.875			
15	Mechanical time constant	ms	1.16	0.956	0.778	0.715			
16	Rotor inertia	gcm²	78	78	78	78			

Specifications

Thermal data

17	Thermal resistance housing-ambient		5.08 K/W
18	Thermal resistance winding-housing		0.6 K/W
19	Thermal time constant winding		18.5 s
20	Thermal time constant motor		1490 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	8
30	Number of phases	3
31	Weight of motor	587 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)

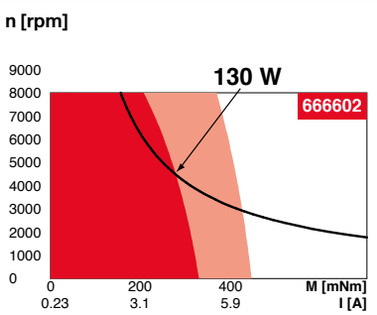
yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	V_{Hall} 4.5...24 VDC	Pin 5
	N.C.	Pin 6

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

Wiring diagram for Hall sensors see p. 49

[1]Calculation does not include saturation effect (p. 61/168)

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 36

Planetary Gearhead
∅42 mm
3 - 15 Nm
Page 398

Recommended Electronics:

Notes	Page **36**
ESCON Mod. 50/4 EC-S	487
ESCON Module 50/5	487
ESCON Mod. 50/8 (HE)	488
ESCON 50/5	489
ESCON 70/10	489
DEC Module 50/5	491
EPOS4 Mod./Comp. 50/5	499
EPOS4 Mod./Comp. 50/8	499
EPOS4 50/5	501
EPOS4 70/15	501
EPOS2 P 24/5	504

Encoder 16 EASY/XT
128 - 1024 CPT, 3 channels
Page 450/452
Encoder 16 EASY Absolute/XT
4096 steps
Page 454/456
Encoder 16 RIO
1024 - 32768 CPT, 3 channels
Page 467
Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
Page 470
Encoder HEDL 5540
500 CPT, 3 channels
Page 477