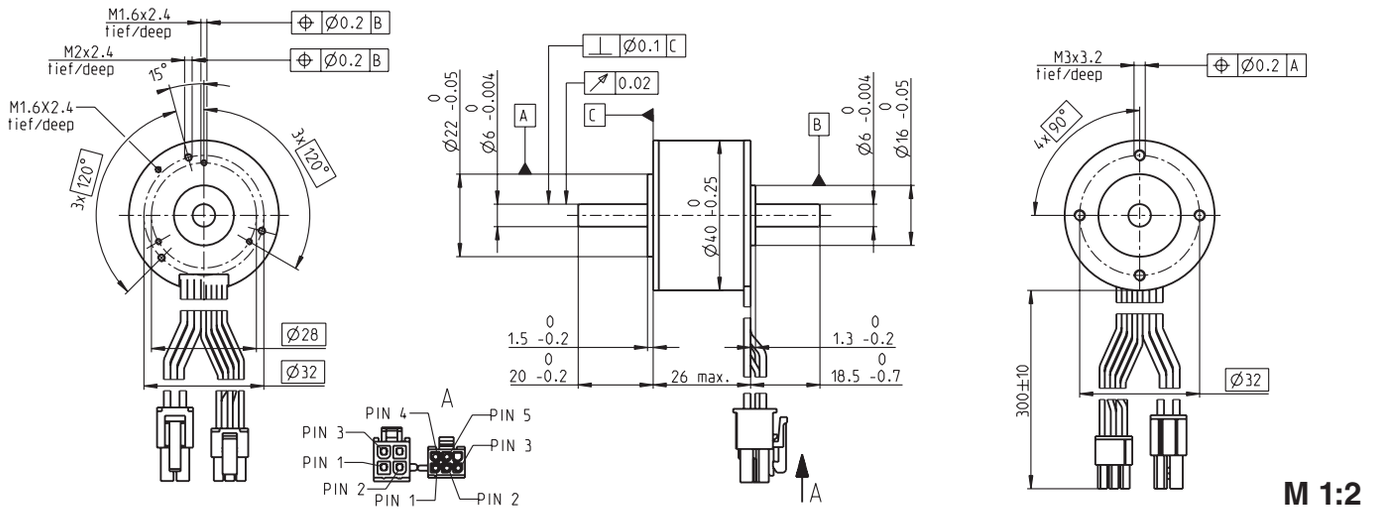
EC-i 40 ∅40 mm, brushless, 50 Watt

NRND See page 13
Not recommended for New Design



Stock program
Standard program
Special program (on request)

Part Numbers

with Hall sensors	339241	313320

Motor Data

	Values at nominal voltage			
1	Nominal voltage	V	12	24
2	No load speed	rpm	12300	13100
3	No load current	mA	726	402
4	Nominal speed	rpm	9840	10400
5	Nominal torque (max. continuous torque)	mNm	36.8	46.6
6	Nominal current (max. continuous current)	A	4.1	2.6
7	Stall torque	mNm	432	773
8	Starting current	A	48.3	45.8
9	Max. efficiency	%	78	83
	Characteristics			
10	Terminal resistance phase to phase	Ω	0.248	0.524
11	Terminal inductance phase to phase	mH	0.109	0.39
12	Torque constant	mNm/A	8.95	16.9
13	Speed constant	rpm/V	1070	565
14	Speed/torque gradient	rpm/mNm	29.6	17.5
15	Mechanical time constant	ms	3.26	1.93
16	Rotor inertia	gcm²	10.5	10.5

Specifications

Thermal data

17	Thermal resistance housing-ambient	9.66 K/W
18	Thermal resistance winding-housing	2.57 K/W
19	Thermal time constant winding	17.6 s
20	Thermal time constant motor	821 s
21	Ambient temperature	-40…+100°C
22	Max. permissible winding temperature	+155°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed		15000 rpm
24	Axial play at axial load	< 7.0 N	0 mm
		> 7.0 N	0.15 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		5 N
27	Max. force for press fits (static)		87 N
	(static, shaft supported)		2000 N
28	Max. radial loading, 5 mm from flange		15 N

Other specifications

29	Number of pole pairs	7
30	Number of phases	3
31	Weight of motor	170 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

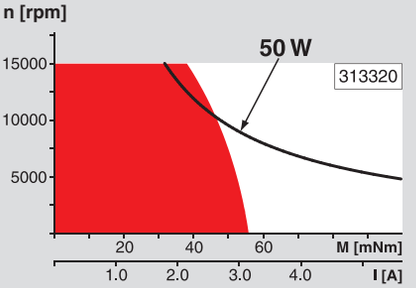
Connector	**Part number**
Molex	39-01-2040

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	**Part number**
Molex	430-25-0600

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).

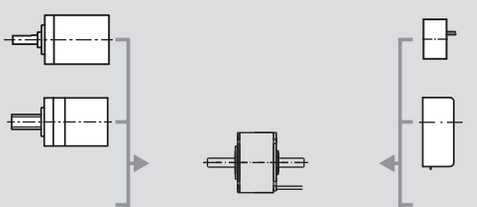
Assigned power rating

maxon Modular System

Overview on page 20 - 25

Planetary Gearhead
∅32 mm
1.0 - 6.0 Nm
Page 264

Spindle Drive
∅32 mm
Page 286–288



Encoder MR
256 - 1024 CPT,
3 channels
Page 303

Encoder HEDL 5540
500 CPT,
3 channels
Page 309

Recommended Electronics:

ESCON 50/5	Page 321
ESCON Module 50/5	321
ESCON 70/10	321
DECS 50/5	324
DEC Module 50/5	325
EPOS2 Module 36/2	330
EPOS2 24/5	331
EPOS2 P 24/5	334
EPOS3 70/10 EtherCAT	337
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