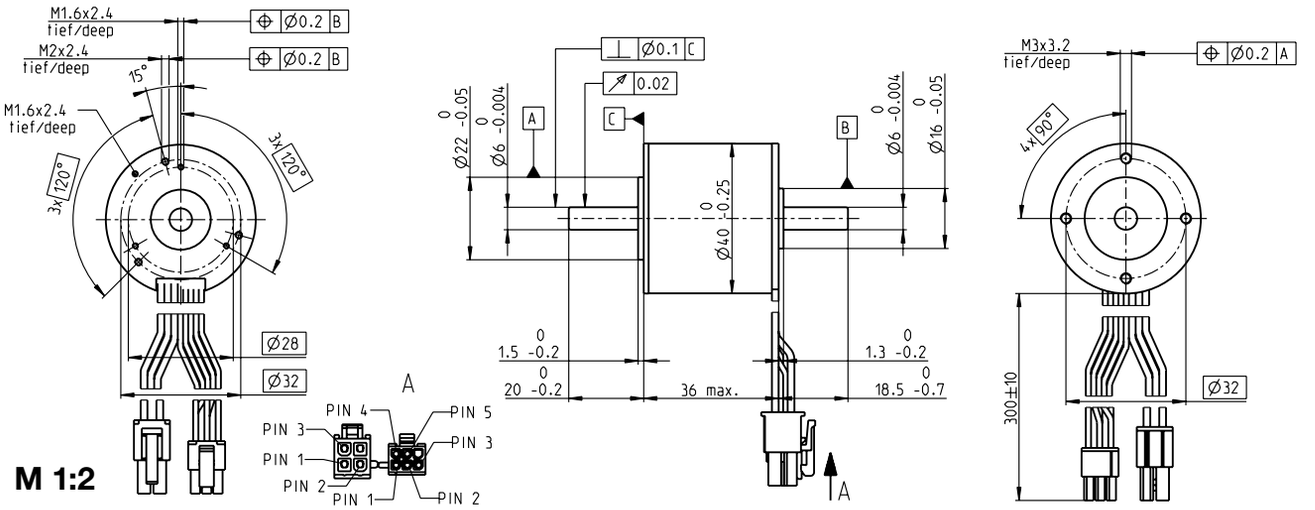
EC-i 40 ∅40 mm, brushless, 70 Watt



Stock program
Standard program
Special program (on request)

Part Numbers

	with Hall sensors	449469	449470
Motor Data			
	Values at nominal voltage		
1	Nominal voltage	V	18	36
2	No load speed	rpm	10100	10700
3	No load current	mA	354	192
4	Nominal speed	rpm	8230	8740
5	Nominal torque (max. continuous torque)	mNm	68.7	83.4
6	Nominal current (max. continuous current)	A	3.93	2.43
7	Stall torque	mNm	876	1460
8	Stall current	A	52.5	46.3
9	Max. efficiency	%	84	87
	Characteristics			
10	Terminal resistance phase to phase	Ω	0.343	0.778
11	Terminal inductance phase to phase	mH	0.18	0.644
12	Torque constant	mNm/A	16.7	31.5
13	Speed constant	rpm/V	572	303
14	Speed/torque gradient	rpm/mNm	11.7	7.47
15	Mechanical time constant	ms	2.98	1.89
16	Rotor inertia	gcm²	24.2	24.2

Specifications

Thermal data

17	Thermal resistance housing-ambient	7.8 K/W
18	Thermal resistance winding-housing	2.6 K/W
19	Thermal time constant winding	28.1 s
20	Thermal time constant motor	936 s
21	Ambient temperature	-40…+100°C
22	Max. winding temperature	+155°C

Mechanical data (preloaded ball bearings)

23	Max. speed		15000 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)		5 N
27	Max. force for press fits (static)		87 N
	(static, shaft supported)		5000 N
28	Max. radial load, 5 mm from flange		15 N

Other specifications

29	Number of pole pairs	7
30	Number of phases	3
31	Weight of motor	240 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

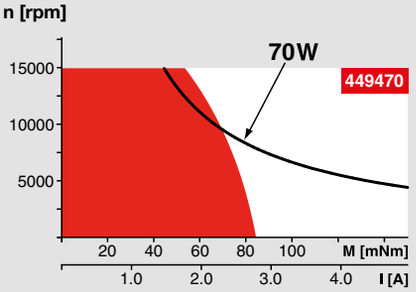
Connection (Cable AWG 26)

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. 43

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

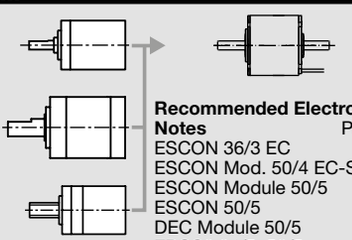
maxon Modular System

Overview on page 28–36

Planetary Gearhead
∅32 mm
1.0 - 6.0 Nm
Page 339

Planetary Gearhead
∅42 mm
3 - 15 Nm
Page 346

Spindle Drive
∅32 mm
Page 366–368



Recommended Electronics:

Notes	Page **32**
ESCON 36/3 EC	427
ESCON Mod. 50/4 EC-S	427
ESCON Module 50/5	427
ESCON 50/5	428
DEC Module 50/5	430
EPOS2 24/5, 50/5	435
EPOS2 P 24/5	438
EPOS4 Module/CB 50/5	442
MAXPOS 50/5	447

Encoder 16 EASY
128 - 1024 CPT, 3 channels
Page 395

Encoder 16 EASY Absolute
4096 steps
Page 396

Encoder 16 RIO
1024 - 32768 CPT, 3 channels
Page 408

Encoder 2RMHF
3000 - 5000 CTP, 3 channels
Page 410

Encoder HEDL 5540
500 CPT, 3 channels
Page 418

Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
Page 412