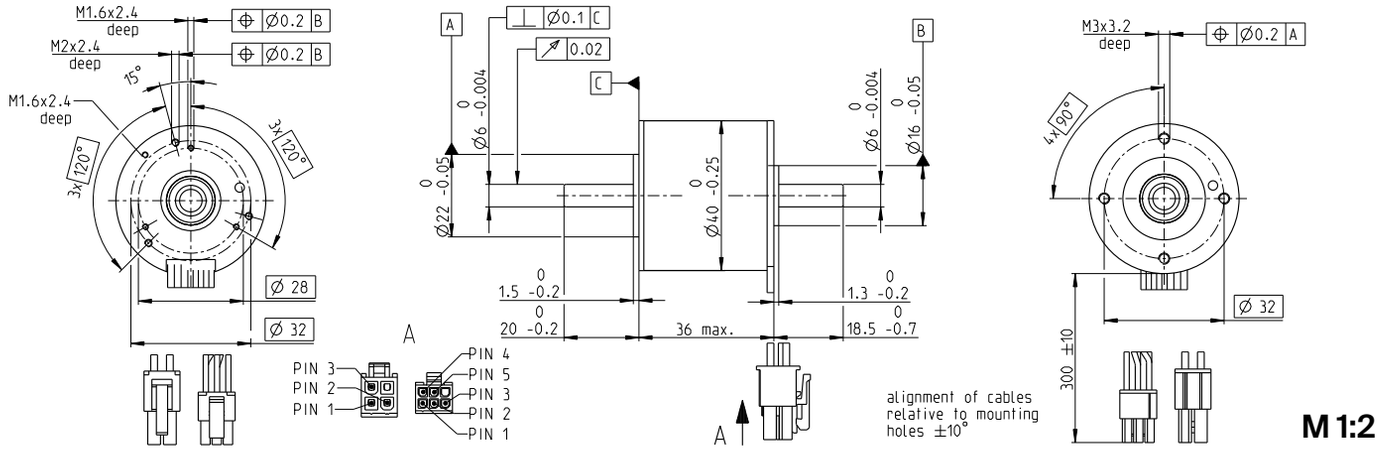
EC-i 40 ∅40 mm, brushless, 70 watt



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	8220	8720
5 Nominal torque mNm	69.8	84.8
6 Nominal current (max. continuous current) A	3.98	2.47
7 Stall torque mNm	632	728
8 Stall current A	53.2	47
9 Max. efficiency %	84.1	87.3
Characteristics		
10 Terminal resistance phase to phase Ω	0.338	0.766
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	11.6	7.36
15 Mechanical time constant ms	2.93	1.86
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	28.5 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 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

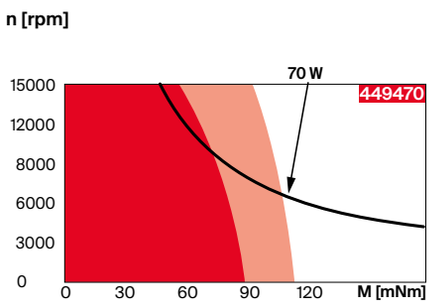
Connection sensor (Cable AWG 26)

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. 69

Operating range



Comments

Continuous operation
Continuous operation with reduced thermal resistance R_{th2} 50%
Intermittent operation

Assigned power rating

Modular system

Details on catalog page 52

Gear
431_GP 32 C
436-438_GP 42 A
439-441_GP 42 C
455_GSW 55 A
456_GSW 62 A
474–482_GP 32 S

Sensor
509_ENX 16 EASY
510_ENX 16 EASY XT
511_ENX 16 EASY Absolute
512_ENX 16 EASY Absolute XT
518_ENX 22 EMT
519_ENX 16 RIO
526_TSX 40 MAG
527_TSX 40 RIO

Motor Control
547_DEC Module 50/5
551_ESCON 36/3 EC
551_ESCON Module 50/4 EC-S
551_ESCON Module 50/5
553_ESCON 50/5
558_ESCON2 Module 60/12
563_EPOS4 Micro 24/5
564_EPOS4 Module 50/5
565_EPOS4 Compact 24/5 3-axes
567_EPOS4 Compact 50/5
569_EPOS4 50/5
570_EPOS4 Disk 60/8
571_EPOS4 Disk 60/12

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