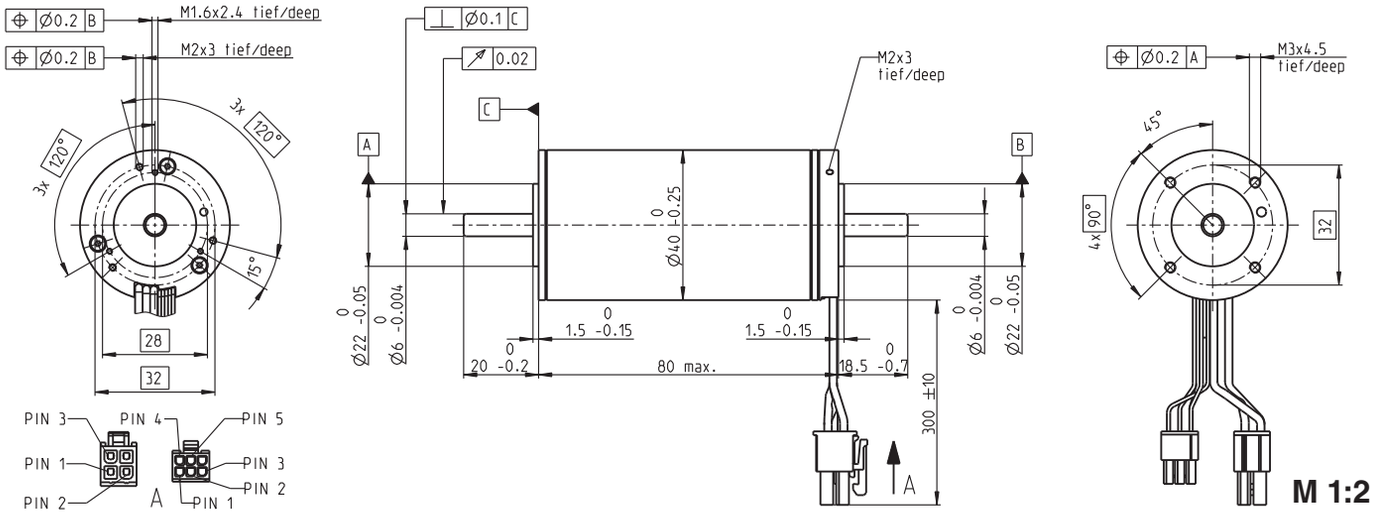
EC 40 ∅40 mm, brushless, 170 Watt



Stock program
Standard program
Special program (on request)

Part Numbers

	369146	393023	393024	393025
Motor Data (provisional)				
Values at nominal voltage				
1 Nominal voltage V	15	24	42	48
2 No load speed rpm	9840	9840	10100	9840
3 No load current mA	617	386	230	193
4 Nominal speed rpm	9090	9120	9380	9150
5 Nominal torque (max. continuous torque) mNm	171	165	161	165
6 Nominal current (max. continuous current) A	12.2	7.39	4.24	3.69
7 Stall torque mNm	2620	2660	2740	2760
8 Starting current A	181	115	69.1	59.6
9 Max. efficiency %	89	89	89	89
Characteristics				
10 Terminal resistance phase to phase Ω	0.0829	0.209	0.608	0.806
11 Terminal inductance phase to phase mH	0.0329	0.0843	0.246	0.337
12 Torque constant mNm/A	14.5	23.2	39.6	46.4
13 Speed constant rpm/V	659	412	241	206
14 Speed/torque gradient rpm/mNm	3.77	3.71	3.7	3.57
15 Mechanical time constant ms	2.12	2.09	2.08	2.01
16 Rotor inertia gcm²	53.8	53.8	53.8	53.8

Specifications

Thermal data

17	Thermal resistance housing-ambient	5.21 K/W
18	Thermal resistance winding-housing	1.05 K/W
19	Thermal time constant winding	18.7 s
20	Thermal time constant motor	1910 s
21	Ambient temperature	-40…+100°C
22	Max. permissible winding temperature	+155°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed		18000 rpm
24	Axial play at axial load	< 9 N	0 mm
		> 9 N	max. 0.14 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		23 N
27	Max. force for press fits (static)		106 N
	(static, shaft supported)		5500 N
28	Max. radial loading, 5 mm from flange		75 N

Other specifications

29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	580 g

Values listed in the table are nominal.

Connection motor (Cable AWG 16)

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

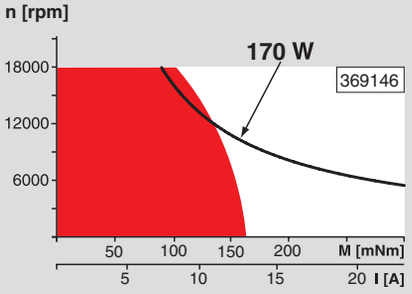
Connection Sensors (Cable AWG 26)

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} 3…24 VDC	Pin 5
	N.C.	Pin 6

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

Wiring diagram for Hall sensors see p. 35

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
∅42 mm
3 - 15 Nm
Page 270

Planetary Gearhead
∅52 mm
4 - 30 Nm
Page 273

Encoder HED_5540
500 CPT,
3 channels
Page 306/308

Resolver Res 26
∅26 mm
10 V
Page 316

Brake AB 32
24 VDC
0.4 Nm
Page 350

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 24/2, Module 36/2	330
EPOS2 24/5, 50/5, 70/10	331
EPOS2 P 24/5	334
EPOS3 70/10 EtherCAT	337
Notes	**24**