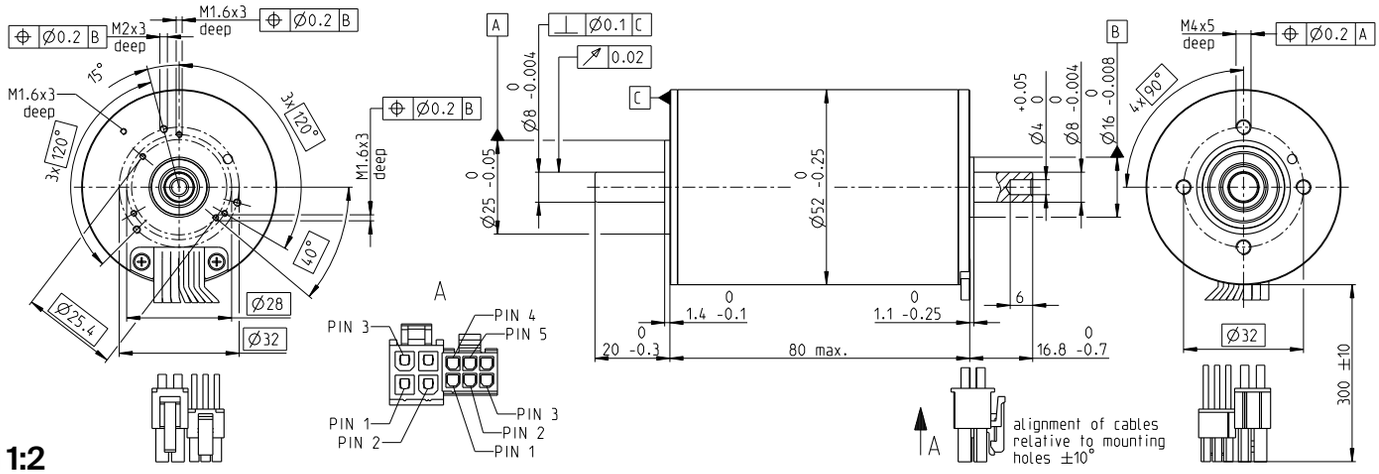
EC-i 52 ∅52 mm, brushless, 180 watt

High Torque



M 1:2

Stock program
Standard program
Special program (on request)

Part Numbers

with Hall sensors	574740	574741	579164	579165
Motor Data (provisional)				
Values at nominal voltage				
1 Nominal voltage V	18	24	36	48
2 No load speed rpm	4820	4680	4820	4900
3 No load current mA	1010	726	507	390
4 Nominal speed rpm	4360	4200	4360	4450
5 Nominal torque (max. continuous torque) mNm	388	428	438	412
6 Nominal current (max. continuous current) A	11.1	8.81	6.18	4.47
7 Stall torque[1] mNm	11500	13000	15900	15700
8 Stall current A	325	268	225	169
9 Max. efficiency %	89.3	90	90.8	90.7
Characteristics				
10 Terminal resistance phase to phase Ω	0.0555	0.0894	0.16	0.284
11 Terminal inductance phase to phase mH	0.0643	0.122	0.257	0.443
12 Torque constant mNm/A	35.3	48.6	70.6	92.7
13 Speed constant rpm/V	270	197	135	103
14 Speed/torque gradient rpm/mNm	0.425	0.362	0.306	0.316
15 Mechanical time constant ms	0.756	0.645	0.544	0.562
16 Rotor inertia gcm²	170	170	170	170

Specifications

Thermal data

17	Thermal resistance housing-ambient	4.32 K/W
18	Thermal resistance winding-housing	0.63 K/W
19	Thermal time constant winding	10.2 s
20	Thermal time constant motor	1780 s
21	Ambient temperature	-40...+100°C
22	Max. winding temperature	+155°C

Mechanical data (preloaded ball bearings)

23	Max. speed	6000 rpm
24	Axial play at axial load < 15 N	0 mm
	> 15 N	0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	12 N
27	Max. force for press fits (static)	150 N
	(static, shaft supported)	6000 N
28	Max. radial load, 5 mm from flange	110 N

Other specifications

29	Number of pole pairs	8
30	Number of phases	3
31	Weight of motor	823 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	**Article number**
Molex	39-01-2040

Connection sensor (Cable AWG 26)

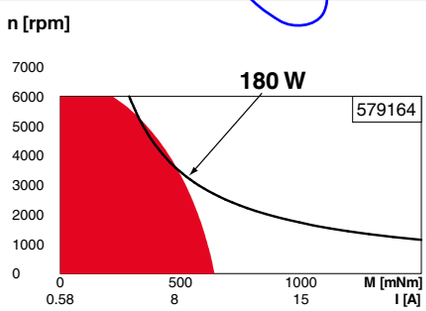
yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	V_{Hall} 4.5...24 VDC	Pin 5
	N.C.	Pin 6

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

Wiring diagram for Hall sensors see p. 59

[1]Calculation does not include saturation effect (p. 71/178)

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.

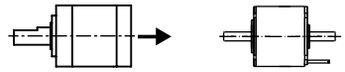
Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Details on catalog page 42

Planetary Gearhead
∅52 mm
4 - 30 Nm
Page 411



Recommended Electronics:

Notes	Page **42**
ESCON Mod. 50/8 (HE)	502
ESCON 70/10	503
EPOS4 Mod./Comp. 50/8	511
EPOS4 Mod./Comp. 50/15	511
EPOS4 70/15	515

Encoder 16 EASY/XT
128 - 1024 CPT, 3 channels
Page 465/467

Encoder 16 EASY Absolute/XT
4096 steps
Page 469/471

Encoder 16 RIO
1024 - 32768 CPT, 3 channels
Page 482

Encoder AEDL 5810
1024 - 5000 CPT, 3 channels
Page 485

Encoder HEDL 5540
500 CPT, 3 channels
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