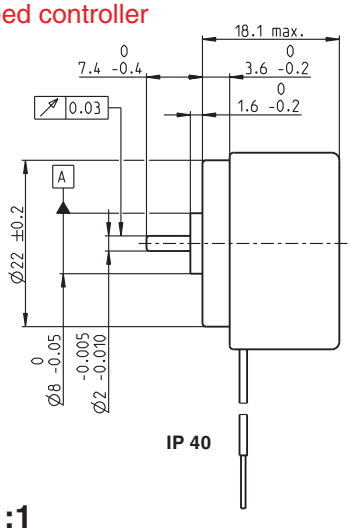
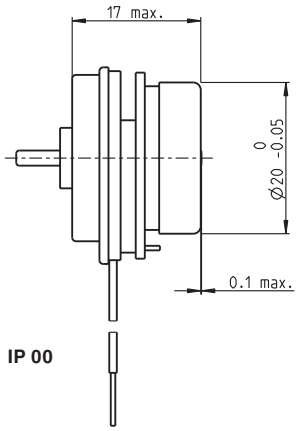
EC 20 flat brushless, 2 Watt, with integrated electronics

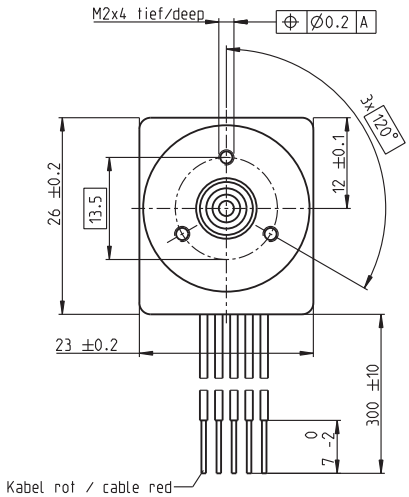
1-Q-speed controller



IP 40



IP 00



M 1:1

Stock program
Standard program
Special program (on request)

Order Number				
	2 wire version		5 wire version	
			Enable	Direction
IP 40 (with cover)	350795	350796	350794	370413
IP 00 (without cover)	350776	350778	349694	370412

Motor Data						
	Values at nominal voltage					
1	Nominal voltage	V	24.0	24.0	24.0	24.0
2	No load speed	rpm	3000	6000	6000	6000
3	No load current	mA	14.5	19.8	19.8	19.8
4	Nominal speed	rpm	3000	6000	6000	6000
5	Nominal torque (max. continuous torque)	mNm	3.74	3.74	3.74	3.74
6	Nominal current (max. continuous current)	A	0.196	0.278	0.278	0.278
33	Max. torque	mNm	5	5	5	5
34	Max. current	A	0.33	0.33	0.33	0.33
9	Max. efficiency	%	25	37	37	37
	Characteristics					
35	Control variable		Speed	Speed	Speed	Speed
36	Supply voltage + V_{CC}	V	10 ... 28	10 ... 28	10 ... 28	10 ... 28
37	Speed set value input	V	= V_{CC}	= V_{CC}	0.33 ... 10.8	0.33 ... 10.8
38	Scale speed set value input	rpm/V	125	250	600	600
39	Speed range	rpm	1250 ... 3500	2500 ... 7000	200 ... 6480	200 ... 6480
40	Max. acceleration	rpm/s	3000	6000	6000	6000

Specifications

Thermal data

17	Thermal resistance housing-ambient	13 K / W
18	Thermal resistance winding-housing	10 K / W
19	Thermal time constant winding	2.28 s
20	Thermal time constant motor	133 s
21	Ambient temperature	-40 ... +85°C
22	Max. permissible winding temperature	+125°C
41	Max. temperature of electronics	+105°C

Mechanical data (preloaded ball bearings)

16	Rotor inertia		3.2 gcm²
24	Axial play at axial load	< 2.0 N	0 mm
		> 2.0 N	0.14 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		1.8 N
27	Max. force for press fits (static)		20 N
	(static, shaft supported)		200 N
28	Max. radial loading, 5 mm from flange		11 N

Other specifications

31	Weight of motor	30 g
32	Direction of rotation	Clockwise (CW)

Values listed in the table are nominal.

Protective functions
Overload protection, blockage protection, inverse-polarity protection, thermal overload protection, low/high voltage cut-off

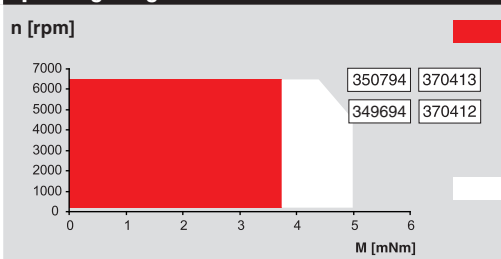
Connection 2 wire version (Cable AWG 28)

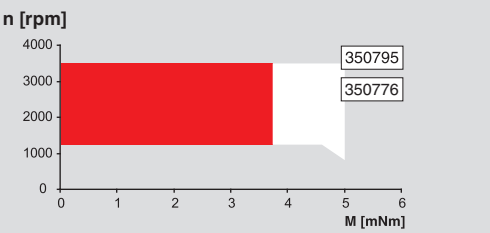
red	+ V_{CC} 10 ... 28 VDC
black	GND

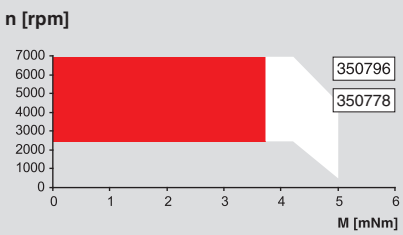
Connection 5 wire version (Cable AWG 28)

red	+ V_{CC} 10 ... 28 VDC
black	GND
white	Speed set value input
green	Monitor n (6 pulses per revolution)
grey	Disable (Enable) or sense of direction change over (Direction)

Operating Range







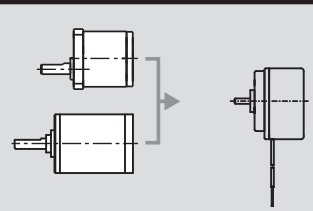
Comments

Continuous operation
The drive can be operated with a speed controller and, taking account of the given thermal resistance (fig. 17 and 18) at an ambient temperature of 25°C, does not exceed the maximum permissible operating temperatures.

Overload range
The drive reaches these operating points. Speed may vary from the set value. The overload protection shuts down the drive in the event of sustained overload.

maxon Modular System

Overview on page 16 - 21

Spur Gearhead
Ø20.3 mm
0.06 - 0.25 Nm
Page 219

Planetary Gearhead
Ø22 mm
0.5 - 2.0 Nm
Page 222 / 224