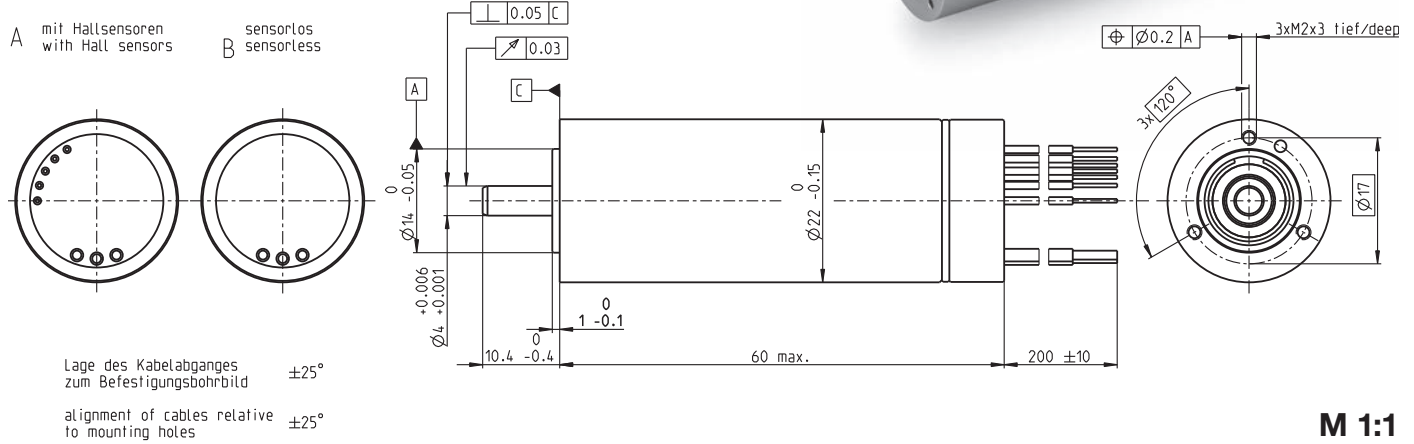


# ECX SPEED 22 L brushless BLDC motor Ø22 mm

**NEW**



80/111 W 24 mNm 45000 rpm



**M 1:1**

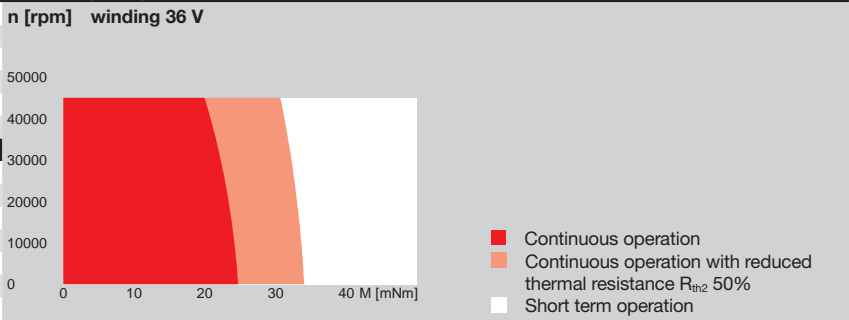
**Motor Data**

1_	Nominal voltage	V	24	36	48
2_	No load speed	rpm	38300	37100	37700
3_	No load current	mA	299	189	145
4_	Nominal speed	rpm	35800	34700	35400
5_	Nominal torque (max. continuous torque)	mNm	22.4	23.5	24.7
6_	Nominal current (max. continuous current)	A	4.02	2.71	2.16
7_	Stall torque	mNm	381	404	458
8_	Stall current	A	64	43.8	37.8
9_	Max. efficiency	%	87	87.5	88.2
10_	Terminal resistance	Ω	0.375	0.823	1.27
11_	Terminal inductance	mH	0.0234	0.0563	0.0967
12_	Torque constant	mNm/A	5.95	9.23	12.1
13_	Speed constant	rpm/V	1610	1030	789
14_	Speed/torque gradient	rpm/mNm	101	92.2	82.7
15_	Mechanical time constant	ms	4.12	3.75	3.37
16_	Rotor inertia	gcm <sup>2</sup>	3.89	3.89	3.89

**Thermal data**

17_	Thermal resistance housing-ambient	K/W	10
18_	Thermal resistance winding-housing	K/W	0.871
19_	Thermal time constant winding	s	2.74
20_	Thermal time constant motor	s	507
21_	Ambient temperature <sup>1</sup>	°C	-20...+100
22_	Max. winding temperature	°C	155

**Operating Range**



**Mechanical data ball bearings**

23_	Max. speed	rpm	45000
24_	Axial play	mm	0...0.24
	Preload	N	4
	Direction of force		pull
25_	Radial play		preloaded
26_	Max. axial load (dynamic)	N	4
27_	Max. force for press fits (static)	N	110
	(static, shaft supported)	N	6000
28_	Max. radial load [mm from flange]	N	16 [5]

**Other specifications**

29_	Number of pole pairs		1
30_	Number of phases		3
31_	Weight of motor	g	140
32_	Typical noise level [rpm]	dBA	54 [45000]

**maxon Modular System**

<b>maxon gear</b>	Stages	<b>maxon sensor</b>	<b>maxon motor control</b>
133_GPX 22 SPEED	1-2		417_ESCON Module 50/4 EC-S 417_ESCON Module 50/5 418_ESCON 50/5 418_ESCON 70/10 420_DEC Module 50/5

**Connection A and B, motor** (Cable AWG 18)

- red Motor winding 1
- black Motor winding 2
- white Motor winding 3

**Connection A, sensors** (Cable AWG 26)

- orange V<sub>Hall</sub> 3...24 VDC
- blue GND
- yellow Hall sensor 1
- brown Hall sensor 2
- grey Hall sensor 3

Wiring diagram for Hall sensors see page 35

**Connection NTC** (Cable AWG 26)

- purple NTC
  - purple NTC
- Resistance 25°C: 10 kOhm ±1%, beta (25-85°C): 3490 K

**Configuration**

- Flange front: thread in flange/center thread
- Flange back: plastic ring/center thread
- Shaft front: length
- Electric connection: cable length/pin connection
- Temperature Sensor: NTC-Thermistor