

ECX SPEED 22 L brushless BLDC motor Ø22 mm

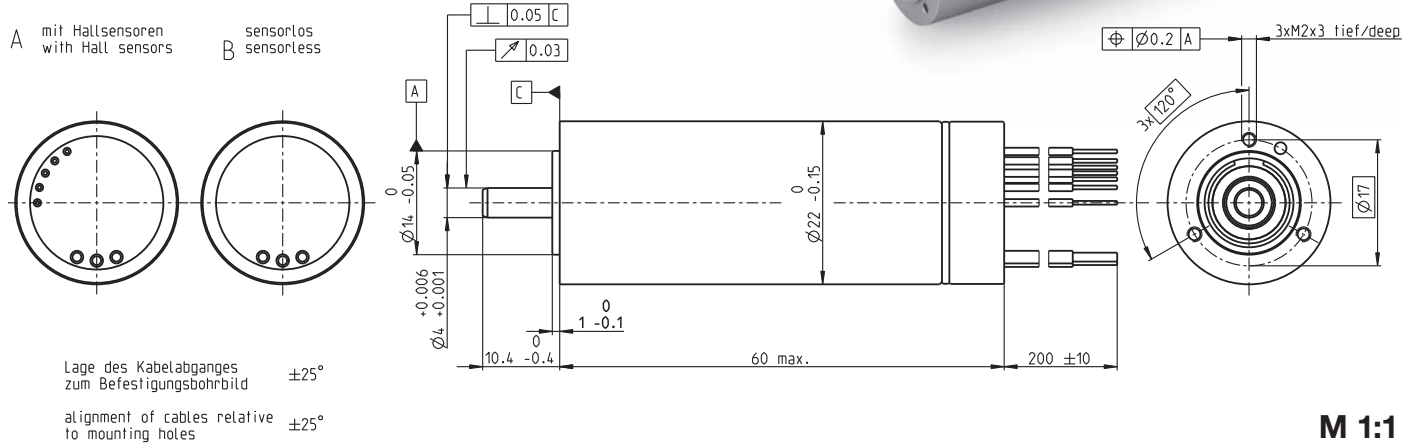
High Power

120/216 W 35 mNm 60000 rpm

NEW



maxon X drives



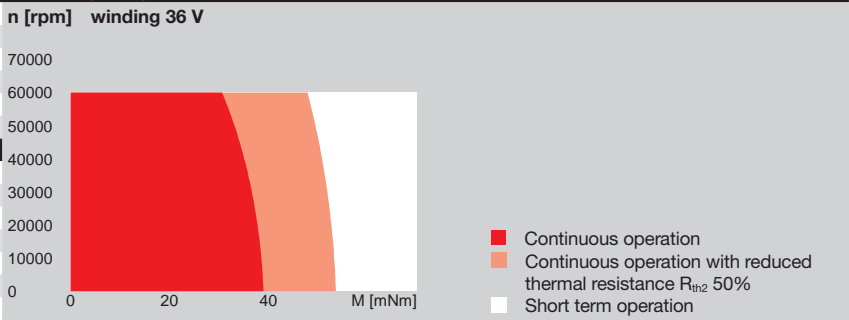
Motor Data

1_	Nominal voltage	V	24	36	48
2_	No load speed	rpm	49500	51400	52400
3_	No load current	mA	393	280	217
4_	Nominal speed	rpm	47500	49600	50600
5_	Nominal torque (max. continuous torque)	mNm	34.8	35.5	33.4
6_	Nominal current (max. continuous current)	A	7.86	5.55	4.01
7_	Stall torque	mNm	1080	1290	1230
8_	Stall current	A	233	193	141
9_	Max. efficiency	%	92.1	92.6	92.4
10_	Terminal resistance	Ω	0.103	0.187	0.341
11_	Terminal inductance	mH	0.009	0.0188	0.0321
12_	Torque constant	mNm/A	4.63	6.68	8.74
13_	Speed constant	rpm/V	2060	1430	1090
14_	Speed/torque gradient	rpm/mNm	45.9	40	42.6
15_	Mechanical time constant	ms	1.9	1.65	1.76
16_	Rotor inertia	gcm ²	3.94	3.94	3.94

Thermal data

17_	Thermal resistance housing-ambient	K/W	10
18_	Thermal resistance winding-housing	K/W	0.841
19_	Thermal time constant winding	s	3.77
20_	Thermal time constant motor	s	507
21_	Ambient temperature ¹	°C	-20...+100
22_	Max. winding temperature	°C	155

Operating Range



Mechanical data ball bearings

23_	Max. speed	rpm	60000
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 [50000]

maxon Modular System

maxon gear	Stages	maxon sensor	maxon motor control
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_{Hall} 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