

ECX SPEED 22 M brushless

BLDC motor Ø22 mm

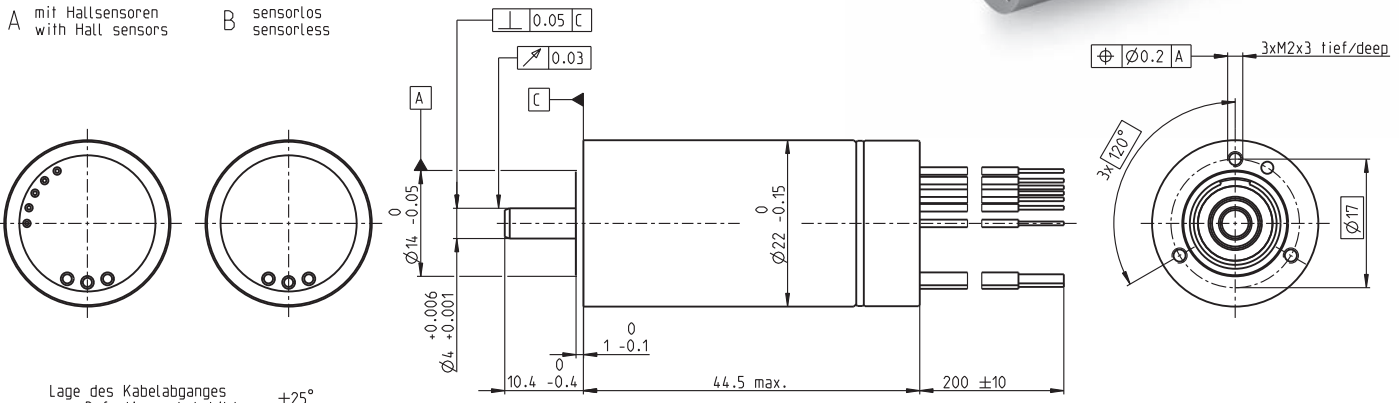
High Power

80/133 W 23.3 mNm 60000 rpm

NEW



maxon X drives



M 1:1

Motor Data

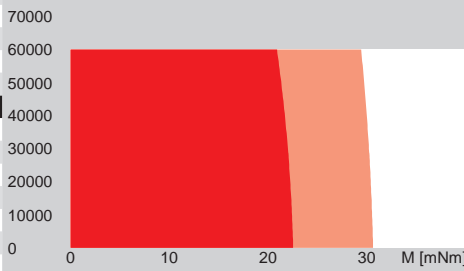
1_	Nominal voltage	V	18	24	36
2_	No load speed	rpm	50800	58100	55500
3_	No load current	mA	363	342	211
4_	Nominal speed	rpm	47800	55200	52600
5_	Nominal torque (max. continuous torque)	mNm	23.3	23.2	23.1
6_	Nominal current (max. continuous current)	A	7.21	6.18	3.91
7_	Stall torque	mNm	454	549	537
8_	Stall current	A	135	140	87
9_	Max. efficiency	%	90	90.5	90.5
10_	Terminal resistance	Ω	0.133	0.172	0.414
11_	Terminal inductance	mH	0.00978	0.0133	0.0329
12_	Torque constant	mNm/A	3.37	3.93	6.18
13_	Speed constant	rpm/V	2830	2430	1550
14_	Speed/torque gradient	rpm/mNm	112	106	104
15_	Mechanical time constant	ms	2.53	2.39	2.33
16_	Rotor inertia	gcm ²	2.15	2.15	2.15

Thermal data

17_	Thermal resistance housing-ambient	K/W	10.8
18_	Thermal resistance winding-housing	K/W	1.34
19_	Thermal time constant winding	s	2.73
20_	Thermal time constant motor	s	300
21_	Ambient temperature ¹	°C	-20...+100
22_	Max. winding temperature	°C	155

Operating Range

n [rpm] winding 36 V



■ Continuous operation
■ Continuous operation with reduced thermal resistance R_{th2} 50%
■ Short term operation

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	98
32_	Typical noise level [rpm]	dBA	53 [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

xdrives.maxonmotor.com