

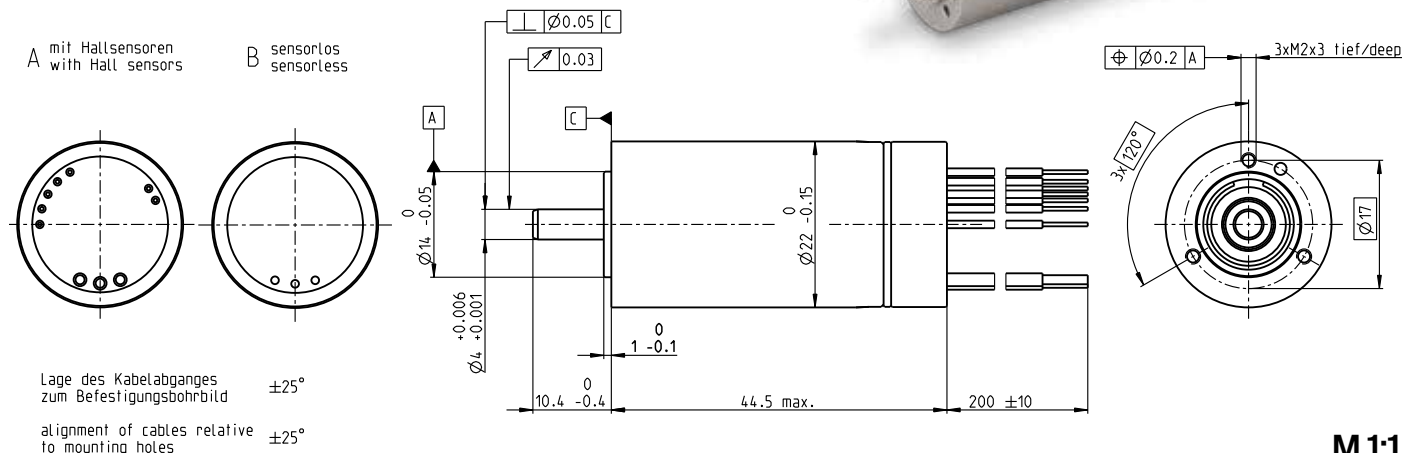
ECX SPEED 22 M Ø22 mm, brushless, BLDC motor

Sterilizable, ceramic bearings

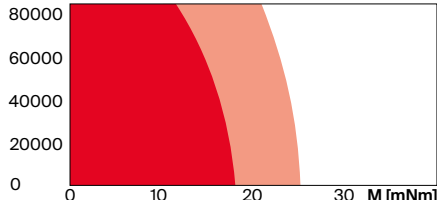
Key data: 80/107 W, 18 mNm, 85 000 rpm



ECX SPEED



M 1:1

Motor data							
1_	Nominal voltage	V	18	24	36	48	
2_	No load speed	rpm	52700	54700	56800	54700	
3_	No load current	mA	254	201	142	101	
4_	Nominal speed	rpm	49300	51400	53500	51500	
5_	Nominal torque	mNm	18	17.8	17	17.4	
6_	Nominal current (max. continuous current)	A	5.72	4.4	2.92	2.16	
7_	Stall torque	mNm	341	366	368	365	
8_	Stall current	A	105	87.5	60.9	43.7	
9_	Max. efficiency	%	90.5	90.7	90.7	90.7	
10_	Terminal resistance	Ω	0.172	0.274	0.591	1.1	
11_	Terminal inductance	mH	0.0164	0.0272	0.0567	0.109	
12_	Torque constant	mNm/A	3.25	4.18	6.04	8.36	
13_	Speed constant	rpm/V	2940	2290	1580	1140	
14_	Speed/torque gradient	rpm/mNm	155	150	155	150	
15_	Mechanical time constant	ms	3.1	3	3.1	3	
16_	Rotor inertia	gcm ²	1.91	1.91	1.91	1.91	
Thermal data			Operating range		Sterilization information		
17_	Thermal resistance housing-ambient	K/W	11.3	n [rpm] winding 36 V		Sterilization cycles	
18_	Thermal resistance winding-housing	K/W	0.6			Sensorless: typical 2000	
19_	Thermal time constant winding	s	1.25			Hall sensors: typical 1000	
20_	Thermal time constant motor	s	314				
21_	Ambient temperature	°C	-40...+135				
22_	Max. winding temperature	°C	155			Sterilization with steam	
Mechanical data ball bearings							
23_	Max. speed	rpm	85 000		Temperature +134 °C ±4 °C		
24_	Axial play	mm	0...0.24		Compression pressure up to 2.3 bar		
	Preload	N	4		Rel. humidity 100%		
	Direction of force		pull		Cycle length 18 min		
25_	Radial play		preloaded				
26_	Max. axial load (dynamic)	N	4		Continuous operation		
27_	Max. force for press fits (static)	N	110		Continuous operation with reduced thermal resistance R_{th2} 50%		
	(static, shaft supported)	N	6000		Short term operation		
28_	Max. radial load [mm from flange]	N	16 [5]				
Other specifications			Modular system		Details on catalog page 44		
29_	Number of pole pairs		1	Gear	Stages [opt.]	Sensor	Motor Control
30_	Number of phases		3	393_GPX 22 HP	1-3	for motor type A:	547_DEC Module 50/5
31_	Weight of motor	g	105	395_GPX 22 SPEED	1-2	516_ENX 22 EASY INT	551_ESCON Module 50/4 EC-S
32_	Typical noise level [rpm]	dBA	54 [50 000]			for motor type B:	551_ESCON Module 50/5
						516_ENX 22 EASY INT Abs.	552_ESCON Module 50/8 HE

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 67. In combination with the ENX EASY INT, the orange (V_{CC}) and blue (GND) connections are not used. Hall signals are then generated by an ENX EASY-INT sensor (no pull-up resistor required; output signals: CMOS compatible push-pull stage).

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 holes/center thread
Flange back: plastic ring/external thread/with opening
Shaft front: length/diameter
Electric connection: cable length/pin connection
Temperature sensor: NTC-Thermistor (only for motor type A and only when not combined with an encoder).
Appropriate connectors and connecting cables are available for the configuration of the pin connection together with the external thread: see catalog, Accessories section.