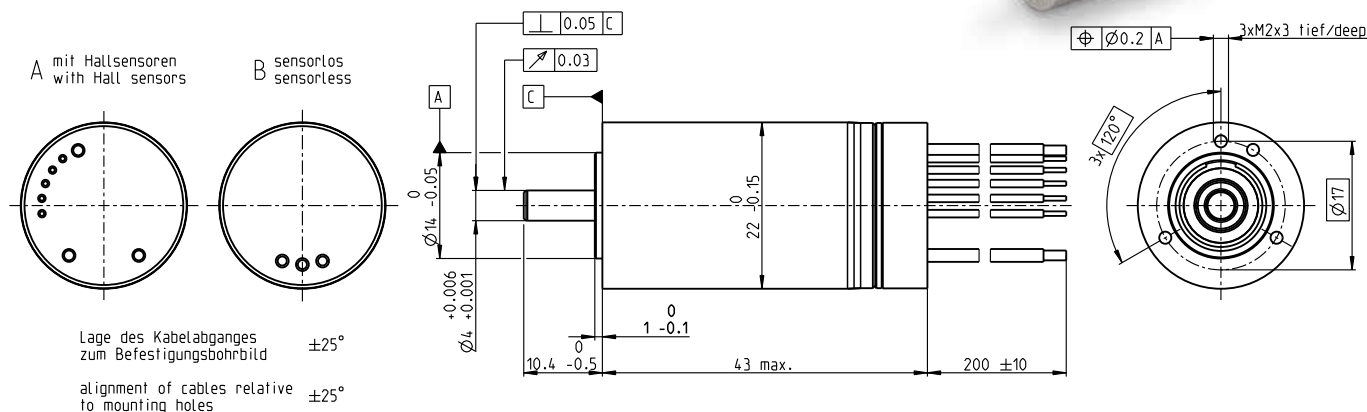


ECX TORQUE 22 M Ø22 mm, brushless, BLDC motor

Key data: 30/43 W, 32.4 mNm, 16 000 rpm



ECX TORQUE



M 1:1

Motor data						
1. Nominal voltage	V	12	18	24	36	48
2. No load speed	rpm	12700	14300	15300	15100	13000
3. No load current	mA	220	175	145	94.8	56.5
4. Nominal speed	rpm	10700	12200	13100	12900	10900
5. Nominal torque	mNm	29.1	29.4	28.5	29.7	32.4
6. Nominal current (max. continuous current)	A	3.18	2.41	1.88	1.28	0.885
7. Stall torque	mNm	222	245	253	260	251
8. Stall current	A	40.1	37.1	31.5	21.9	13.2
9. Max. efficiency	%	85.7	86.6	86.8	87.2	87.2
10. Terminal resistance	Ω	0.299	0.486	0.763	1.64	3.63
11. Terminal inductance	mH	0.154	0.274	0.428	0.988	2.38
12. Torque constant	mNm/A	8.88	11.8	14.8	22.5	34.9
13. Speed constant	rpm/V	1080	806	645	424	273
14. Speed/torque gradient	rpm/mNm	36.2	33.1	33.2	31	28.4
15. Mechanical time constant	ms	0.652	0.596	0.599	0.558	0.512
16. Rotor inertia	gcm ²	1.72	1.72	1.72	1.72	1.72

Thermal data			Operating range	
17_ Thermal resistance housing-ambient	K/W	15.7	n [rpm]	winding 24 V
18_ Thermal resistance winding-housing	K/W	4.48		
19_ Thermal time constant winding	s	14.1		
20_ Thermal time constant motor	s	644		
21_ Ambient temperature	°C	-40...+100		
22_ Max. winding temperature	°C	155		

Mechanical data ball bearings		
23_	Max. speed	rpm 16 000
24_	Axial play	mm 0...0.24
	Preload	N 4.0
	Direction of force	pull
25_	Radial play	preloaded
26_	Max. axial load (dynamic)	N 4.0
27_	Max. force for press fits (static)	N 110
	(static, shaft supported)	N
28_	Max. radial load [mm from flange]	N 22 [5]

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

Modular system

Details on catalog page 44

Other specifications			Modular system	
29. Number of pole pairs		4	Gear	Stages [opt.]
30. Number of phases		3		
31. Weight of motor	g	82.1		
32. Typical noise level [rpm]	dBA	54 [12 000]		

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_{CC} 5 ±0.5 V
blue GND
yellow Hall sensor 1
brown Hall sensor 2
grey Hall sensor 3

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

Connection Temperature sensor (Cable AWG 26)
purple NTC
purple NTC
Resistance 25°C: 10 kOhm ±5%, beta (25–85°C): 3434 K

Configuration

Flange front: thread holes/center thread
Flange back: plastic ring/center thread
Shaft front: length/diameter
Electric connection (only for motor type A): cable length/
pin connection/connector
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.