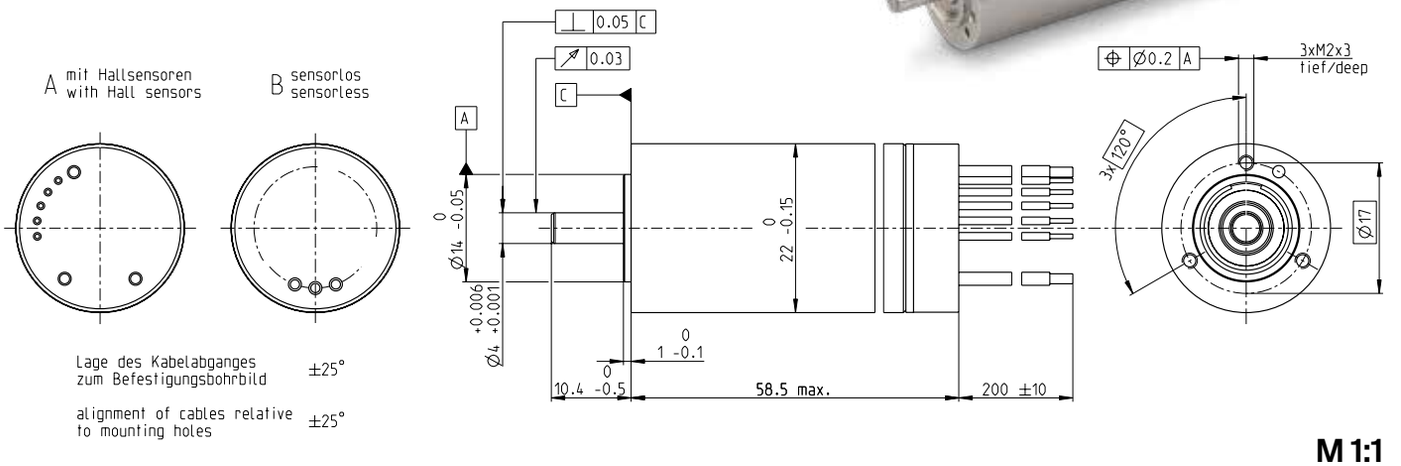
ECX TORQUE 22 L ∅22 mm, brushless, BLDC motor

Key data: 40/48 W, 48.8 mNm, 11000 rpm



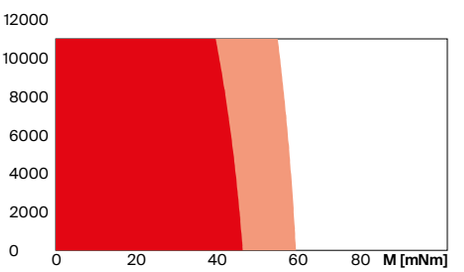
M 1:1

	Motor data						
1_	Nominal voltage	V	12	18	24	36	48
2_	No load speed	rpm	9380	10300	10300	10700	10900
3_	No load current	mA	224	172	129	90.7	69.9
4_	Nominal speed	rpm	7930	8840	8850	9190	9380
5_	Nominal torque	mNm	45.7	46.2	48.1	45.2	48.8
6_	Nominal current (max. continuous current)	A	3.7	2.74	2.13	1.39	1.14
7_	Stall torque	mNm	440	486	509	492	539
8_	Stall current	A	43.6	38.1	31.1	20.2	18.3
9_	Max. efficiency	%	86.2	87.2	87.5	87.2	88.2
10_	Terminal resistance	Ω	0.275	0.473	0.771	1.78	2.62
11_	Terminal inductance	mH	0.148	0.275	0.49	1.03	1.77
12_	Torque constant	mNm/A	12.1	16.5	22	31.9	41.8
13_	Speed constant	rpm/V	789	579	434	299	228
14_	Speed/torque gradient	rpm/mNm	17.9	16.6	15.2	16.7	14.3
15_	Mechanical time constant	ms	0.575	0.531	0.488	0.536	0.459
16_	Rotor inertia	gcm²	3.06	3.06	3.06	3.06	3.06

	Thermal data		
17_	Thermal resistance housing-ambient	K/W	13.4
18_	Thermal resistance winding-housing	K/W	3.8
19_	Thermal time constant winding	s	19.4
20_	Thermal time constant motor	s	757
21_	Ambient temperature	°C	-40...+100
22_	Max. winding temperature	°C	155
	Mechanical data ball bearings		
23_	Max. speed	rpm	11000
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	29 [5]
	Other specifications		
29_	Number of pole pairs		4
30_	Number of phases		3
31_	Weight of motor	g	113
32_	Typical noise level [rpm]	dBA	56 [9000]

Operating range

n [rpm] winding 24 V



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

Modular system Details on catalog page 44

Gear	Stages [opt.]
390_GPX 22 A/C	1–2
391_GPX 22 LN/LZ	1–2
392_GPX 22 HP	2–3
394_GPX 22 UP	1–4
396_GPX 26 A/C	3
397_GPX 26 LN/LZ	3
398_GPX 26 HP	4

Sensor
for motor type A:
516_ENX 22 EASY INT
for motor type B:
516_ENX 22 EASY INT Abs.

Motor Control
547_DEC Module 24/2
547_DEC Module 50/5
550_ESCON Module 24/2
551_ESCON 36/3 EC
551_ESCON Module 50/4 EC-S
551_ESCON Module 50/5
553_ESCON 50/5
557_ESCON2 Nano 24/2
557_ESCON2 Micro 60/5
563_EPOS4 Micro 24/5
564_EPOS4 Module 50/5
567_EPOS4 Compact 50/5

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.

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