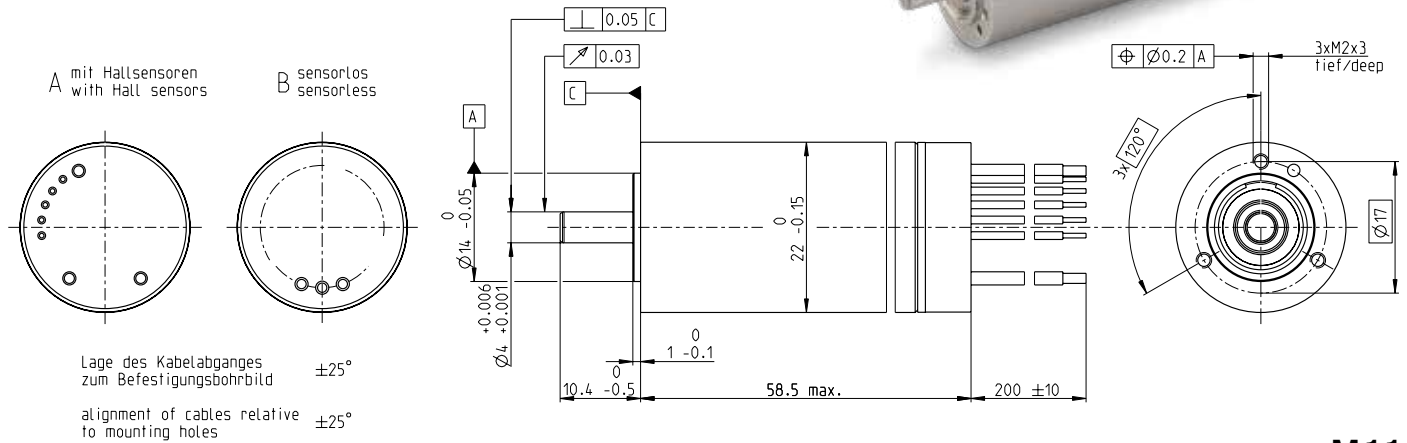


ECX TORQUE 22 L Ø22 mm, brushless, BLDC motor

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



ECX TORQUE



M 1:1

Motor Data

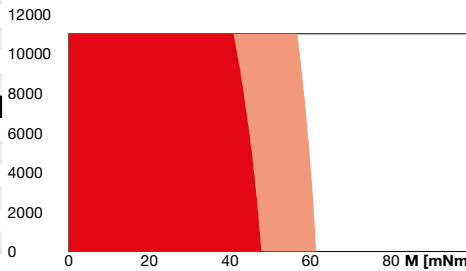
1_	Nominal voltage	V	12	18	24	36	48
2_	No load speed	rpm	9380	10300	10300	10700	10900
3_	No load current	mA	224	172	129	90.7	69.9
4_	Nominal speed	rpm	7930	8840	8850	9190	9380
5_	Nominal torque (max. continuous torque)	mNm	45.7	46.2	48.1	45.2	48.8
6_	Nominal current (max. continuous current)	A	3.7	2.74	2.13	1.39	1.14
7_	Stall torque	mNm	528	629	684	644	766
8_	Stall current	A	43.6	38.1	31.1	20.2	18.3
9_	Max. efficiency	%	86.4	87.2	87.7	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	gcm ²	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	25
20_	Thermal time constant motor	s	757
21_	Ambient temperature	°C	-40...+100
22_	Max. winding temperature	°C	155

Operating Range

n [rpm] winding 24 V



Mechanical data ball bearings

23_	Max. speed	rpm	11 000
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) (static, shaft supported)	N	110
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 [9 000]

maxon Modular System

maxon gear	Stages [opt.]
349_GPX 22 A/C	1-2
350_GPX 22 LN/LZ	1-2
351_GPX 22 HP	2-3
352_GPX 22 UP	1-4
354_GPX 26 A/C	3
355_GPX 26 LN/LZ	3
356_GPX 26 HP	4

maxon sensor

for motor type A:
456_ENX 22 EASY INT
for motor type B:
456_ENX 22 EASY INT Abs.

maxon motor control

500_ESCON Module 24/2
501_ESCON 36/3 EC
501_ESCON Module 50/4 EC-S
501_ESCON Module 50/5
503_ESCON 50/5
505_DEC Module 24/2, 50/5
509_EPOS4 Micro 24/5
510_EPOS4 Module/Comp. 50/5
520_EPOS2 P 24/5

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 _{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: 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.