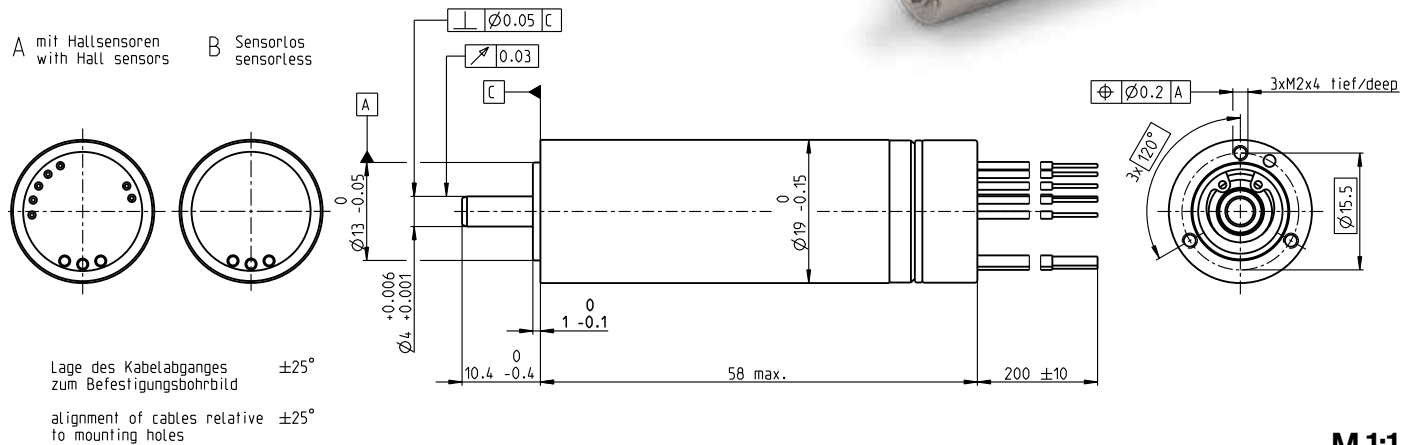


ECX SPEED 19 L \varnothing 19 mm, brushless, BLDC motor

Key Data: 60/73 W, 15.3 mNm, 50 000 rpm



ECX SPEED



M 1:1

Motor Data

1_ Nominal voltage	V	18	24	36
2_ No load speed	rpm	47500	48400	49200
3_ No load current	mA	348	269	184
4_ Nominal speed	rpm	43800	44900	45900
5_ Nominal torque (max. continuous torque)	mNm	14.4	15.2	15.3
6_ Nominal current (max. continuous current)	A	4.29	3.45	2.36
7_ Stall torque	mNm	214	251	270
8_ Stall current	A	59.6	53.3	39
9_ Max. efficiency	%	86	87	87
10_ Terminal resistance	Ω	0.302	0.45	0.924
11_ Terminal inductance	mH	0.0217	0.0373	0.0811
12_ Torque constant	mNm/A	3.59	4.71	6.94
13_ Speed constant	rpm/V	2660	2030	1380
14_ Speed/torque gradient	rpm/mNm	223	194	183
15_ Mechanical time constant	ms	3.91	3.39	3.2
16_ Rotor inertia	gcm ²	1.67	1.67	1.67

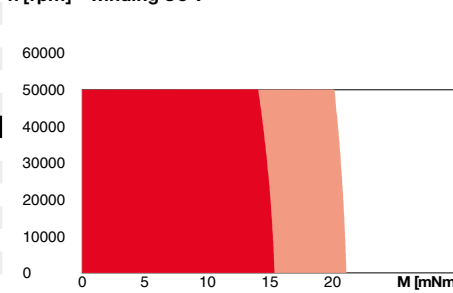
Thermal data

17_ Thermal resistance housing-ambient	K/W	13.6
18_ Thermal resistance winding-housing	K/W	1.2
19_ Thermal time constant winding	s	3.62
20_ Thermal time constant motor	s	563
21_ Ambient temperature	$^\circ\text{C}$	-20...+100
22_ Max. winding temperature	$^\circ\text{C}$	155

Mechanical data ball bearings

23_ Max. speed	rpm	50 000
24_ Axial play	mm	0...0.29
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) (static, shaft supported)	N	70
28_ Max. radial load [mm from flange]	N	5000

Operating Range



Other specifications

29_ Number of pole pairs	1	maxon gear	Stages [opt.]	maxon sensor	maxon motor control
30_ Number of phases	3	345_GPX 19 A/C	1-2 [3-4]	for motor type A:	501_ESCON 36/3 EC
31_ Weight of motor	g 108	346_GPX 19 LN/LZ	1-2 [3-4]	455_ENX 19 EASY INT	501_ESCON Module 50/4 EC-S
32_ Typical noise level [rpm]	dBA 51 [50 000]	347_GPX 19 HP	2-3 [4]	for motor type B:	501_ESCON Module 50/5
		348_GPX 19 SPEED	1-2	455_ENX 19 EASY INT Abs.	503_ESCON 50/5
		349_GPX 22 A/C	3-4		505_DEC Module 50/5
		350_GPX 22 LN/LZ	3-4		509_EPOS4 Micro 24/5
		351_GPX 22 HP	4		510_EPOS4 Module/Comp. 50/5
		353_GPX 22 SPEED [3]			511_EPOS4 Comp. 24/5 3-axes
					515_EPOS4 50/5
					516_EPOS4 Disk 60/8
					520_EPOS2 P 24/5

Connection A and B, motor (Cable AWG 20)

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 57. 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 $^\circ\text{C}$: 10 kOhm $\pm 1\%$, beta (25-85 $^\circ\text{C}$): 3490 K

maxon Modular System

maxon gear	Stages [opt.]
345_GPX 19 A/C	1-2 [3-4]
346_GPX 19 LN/LZ	1-2 [3-4]
347_GPX 19 HP	2-3 [4]
348_GPX 19 SPEED	1-2
349_GPX 22 A/C	3-4
350_GPX 22 LN/LZ	3-4
351_GPX 22 HP	4
353_GPX 22 SPEED [3]	

maxon sensor
for motor type A:
455_ENX 19 EASY INT
for motor type B:
455_ENX 19 EASY INT Abs.

maxon motor control
501_ESCON 36/3 EC
501_ESCON Module 50/4 EC-S
501_ESCON Module 50/5
503_ESCON 50/5
505_DEC Module 50/5
509_EPOS4 Micro 24/5
510_EPOS4 Module/Comp. 50/5
511_EPOS4 Comp. 24/5 3-axes
515_EPOS4 50/5
516_EPOS4 Disk 60/8
520_EPOS2 P 24/5

Configuration

Flange front: thread holes/center thread
Flange back: plastic ring/external thread/with opening
Shaft front: length/diameter
Shaft rear: length
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.

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