

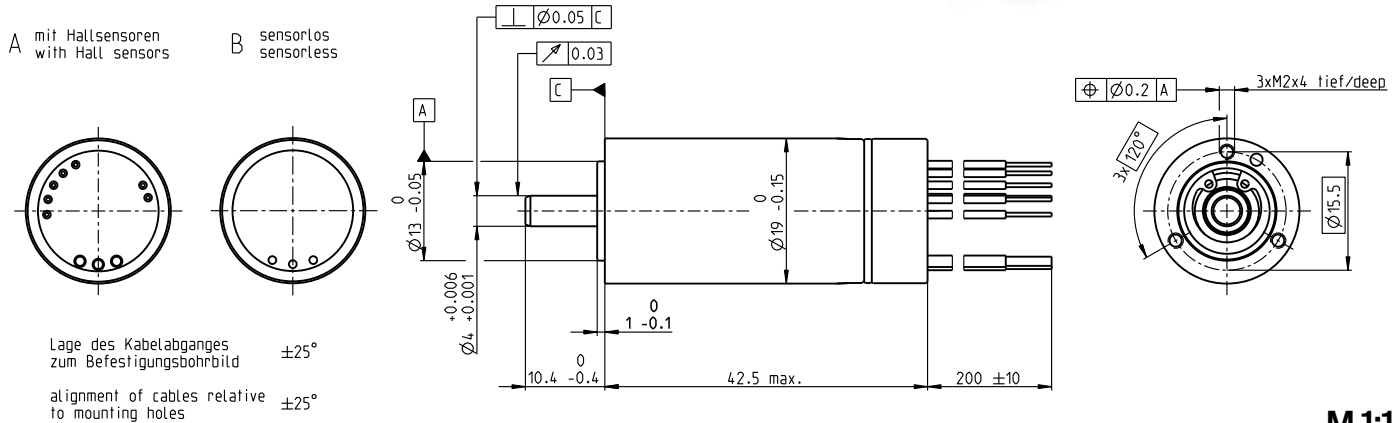
ECX SPEED 19 M $\varnothing 19$ mm, brushless, BLDC motor

High Power

Key data: 60/79 W, 13.7 mNm, 65 000 rpm



ECX SPEED



M 1:1

Motor data

1_	Nominal voltage	V	18	24	36	48
2_	No load speed	rpm	57200	55700	55700	54700
3_	No load current	mA	169	124	82.4	60.6
4_	Nominal speed	rpm	52400	50900	51100	50200
5_	Nominal torque	mNm	13.7	12.5	12.9	13.2
6_	Nominal current (max. continuous current)	A	4.65	3.12	2.14	1.61
7_	Stall torque	mNm	203	174	190	196
8_	Stall current	A	67.7	42.4	31	23.5
9_	Max. efficiency	%	90.2	89.4	89.9	90
10_	Terminal resistance	Ω	0.266	0.566	1.16	2.04
11_	Terminal inductance	mH	0.0259	0.0486	0.109	0.202
12_	Torque constant	mNm/A	2.99	4.1	6.15	8.35
13_	Speed constant	rpm/V	3190	2330	1550	1140
14_	Speed/torque gradient	rpm/mNm	283	322	294	279
15_	Mechanical time constant	ms	3.88	4.41	4.03	3.83
16_	Rotor inertia	gcm ²	1.31	1.31	1.31	1.31

Thermal data

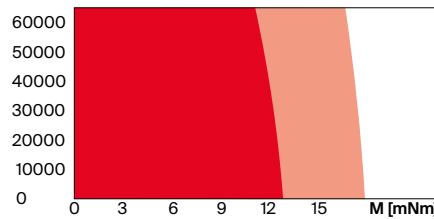
17_	Thermal resistance housing-ambient	K/W	12.4
18_	Thermal resistance winding-housing	K/W	0.75
19_	Thermal time constant winding	s	1.27
20_	Thermal time constant motor	s	513
21_	Ambient temperature	$^{\circ}$ C	-20...+100
22_	Max. winding temperature	$^{\circ}$ C	155

Mechanical data ball bearings

23_	Max. speed	rpm	65 000
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)	N	70
	(static, shaft supported)	N	5000
28_	Max. radial load [mm from flange]	N	12 [5]

Operating range

n [rpm] winding 36 V



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

Other specifications

29_	Number of pole pairs	1
30_	Number of phases	3
31_	Weight of motor	71 g
32_	Typical noise level [rpm]	dBA 48 [50 000]

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

Modular system

Gear	Stages [opt.]	Sensor	Motor Control
386_GPX 19 A/C	1-2 [3-4]	for motor type A: 515_ENX 19 EASY INT	547_DEC Module 50/5 551_ESCON 36/3 EC
387_GPX 19 LN/LZ	1-2 [3-4]		551_ESCON Module 50/4 EC-S
388_GPX 19 HP	2-3 [4]	for motor type B: 515_ENX 19 EASY INT Abs.	551_ESCON Module 50/5 553_ESCON 50/5
389_GPX 19 SPEED	1-2		557_ESCON2 Micro 60/5 563_EPOS4 Micro 24/5
390_GPX 22 A/C	3-4		564_EPOS4 Module 50/5 565_EPOS4 Compact 24/5 3-axes
391_GPX 22 LN/LZ	3-4		567_EPOS4 Compact 50/5
392_GPX 22 HP	4		569_EPOS4 50/5
395_GPX 22 SPEED [3]			570_EPOS4 Disk 60/8

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.