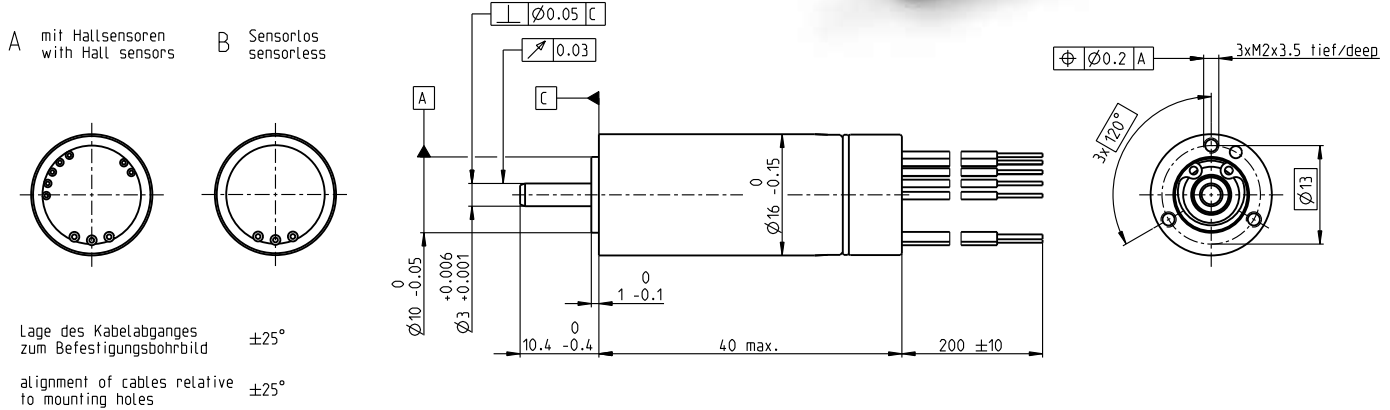


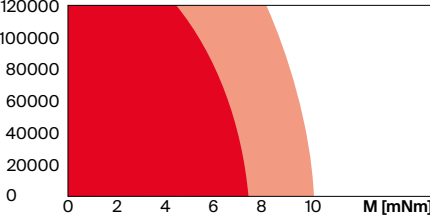
ECX SPEED 16 M $\varnothing 16$ mm, brushless, BLDC motor

Sterilizable, ceramic bearings

Key data: 40/60 W, 7.6 mNm, 120 000 rpm



M 1:1

Motor data																																																																																																																																																																																																																	
1_	Nominal voltage	V	18	24	36	48																																																																																																																																																																																																											
2_	No load speed	rpm	59900	63400	56200	57400																																																																																																																																																																																																											
3_	No load current	mA	200	163	90.5	70																																																																																																																																																																																																											
4_	Nominal speed	rpm	54600	58100	50900	52200																																																																																																																																																																																																											
5_	Nominal torque	mNm	7.63	7.29	7.37	7.4																																																																																																																																																																																																											
6_	Nominal current (max. continuous current)	A	2.83	2.16	1.28	0.987																																																																																																																																																																																																											
7_	Stall torque	mNm	100	102	89.8	93.6																																																																																																																																																																																																											
8_	Stall current	A	35.1	28.5	14.8	11.8																																																																																																																																																																																																											
9_	Max. efficiency	%	85.7	85.7	85.2	85.4																																																																																																																																																																																																											
10_	Terminal resistance	Ω	0.512	0.841	2.43	4.06																																																																																																																																																																																																											
11_	Terminal inductance	mH	0.033	0.0524	0.15	0.255																																																																																																																																																																																																											
12_	Torque constant	mNm/A	2.85	3.59	6.07	7.93																																																																																																																																																																																																											
13_	Speed constant	rpm/V	3350	2660	1570	1200																																																																																																																																																																																																											
14_	Speed/torque gradient	rpm/mNm	603	623	631	618																																																																																																																																																																																																											
15_	Mechanical time constant	ms	3.72	3.84	3.89	3.81																																																																																																																																																																																																											
16_	Rotor inertia	gcm ²	0.589	0.589	0.589	0.589																																																																																																																																																																																																											
Thermal data			Operating range		Sterilization information																																																																																																																																																																																																												
17_	Thermal resistance housing-ambient	K/W	16.1	n [rpm] winding 36 V 135°C SSS  18_		Thermal resistance winding-housing	K/W	1.8	Thermal time constant winding	s	2.16	Thermal time constant motor	s	400	Ambient temperature	°C	-40...+135	Max. winding temperature	°C	155	Mechanical data ball bearings							23_	Max. speed	rpm	120 000				24_	Axial play	mm	0.029					Preload	N	1.5					Direction of force		pull				25_	Radial play		preloaded				26_	Max. axial load (dynamic)	N	1.5				27_	Max. force for press fits (static)	N	60					(static, shaft supported)	N	2500				28_	Max. radial load [mm from flange]	N	10 [5]				Other specifications			Modular system		Details on catalog page 44		29_	Number of pole pairs	1	Gear	Stages [opt.]	Sensor	Motor Control	30_	Number of phases	3	384_GPX 16 HP	1-3	for motor type A:	547_DEC Module 24/2	31_	Weight of motor	g	385_GPX 16 SPEED	1-2	514_ENX 16 EASY INT	547_DEC Module 50/5	32_	Typical noise level [rpm]	dBA	389_GPX 19 SPEED	[3]	for motor type B:	550_ESCON Module 24/2						514_ENX 16 EASY INT Abs.	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							565_EPOS4 Compact 24/5 3-axes							567_EPOS4 Compact 50/5							569_EPOS4 50/5							570_EPOS4 Disk 60/8
Mechanical data ball bearings																																																																																																																																																																																																																	
23_	Max. speed	rpm	120 000																																																																																																																																																																																																														
24_	Axial play	mm	0.029																																																																																																																																																																																																														
	Preload	N	1.5																																																																																																																																																																																																														
	Direction of force		pull																																																																																																																																																																																																														
25_	Radial play		preloaded																																																																																																																																																																																																														
26_	Max. axial load (dynamic)	N	1.5																																																																																																																																																																																																														
27_	Max. force for press fits (static)	N	60																																																																																																																																																																																																														
	(static, shaft supported)	N	2500																																																																																																																																																																																																														
28_	Max. radial load [mm from flange]	N	10 [5]																																																																																																																																																																																																														
Other specifications			Modular system		Details on catalog page 44																																																																																																																																																																																																												
29_	Number of pole pairs	1	Gear	Stages [opt.]	Sensor	Motor Control																																																																																																																																																																																																											
30_	Number of phases	3	384_GPX 16 HP	1-3	for motor type A:	547_DEC Module 24/2																																																																																																																																																																																																											
31_	Weight of motor	g	385_GPX 16 SPEED	1-2	514_ENX 16 EASY INT	547_DEC Module 50/5																																																																																																																																																																																																											
32_	Typical noise level [rpm]	dBA	389_GPX 19 SPEED	[3]	for motor type B:	550_ESCON Module 24/2																																																																																																																																																																																																											
					514_ENX 16 EASY INT Abs.	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																																																																																																																																																																																																											
						565_EPOS4 Compact 24/5 3-axes																																																																																																																																																																																																											
						567_EPOS4 Compact 50/5																																																																																																																																																																																																											
						569_EPOS4 50/5																																																																																																																																																																																																											
						570_EPOS4 Disk 60/8																																																																																																																																																																																																											

Connection A and B, motor (Cable AWG 22)

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°C : 10 kOhm $\pm 1\%$, beta (25– 85°C): 3490 K

Configuration

Flange front: thread holes/center thread
Flange back: plastic ring/external thread/with opening
Shaft front: length/diameter
Electric connection: cable length/pin connection
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.