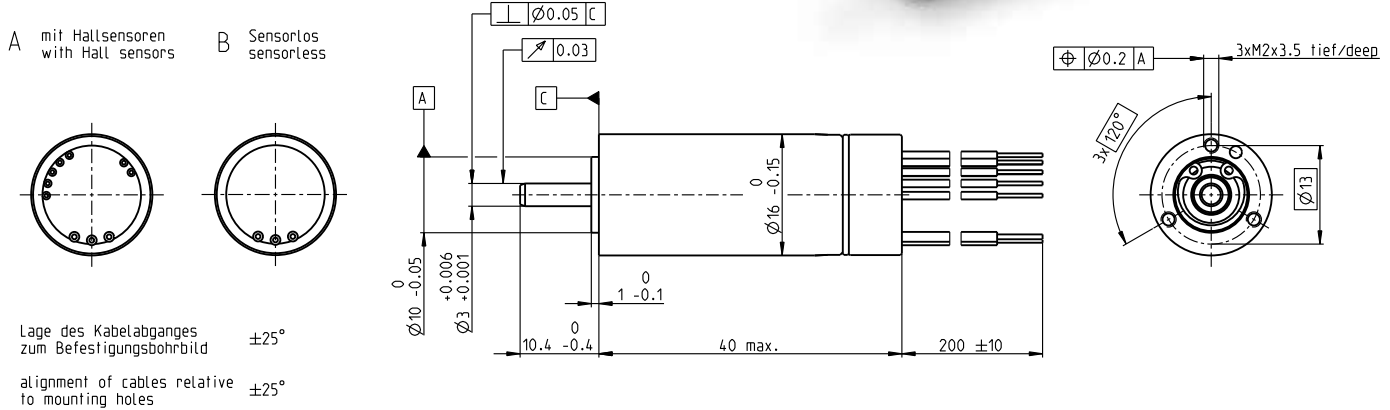


ECX SPEED 16 M Ø16 mm, brushless, BLDC motor

High Power

Key data: 40/50 W, 8.9 mNm, 70 000 rpm



M 1:1

Motor data					
1. Nominal voltage	V	18	24	36	48
2. No load speed	rpm	51900	54900	53100	53100
3. No load current	mA	103	83	52.9	39.7
4. Nominal speed	rpm	47300	50300	48600	48700
5. Nominal torque	mNm	8.95	8.56	8.79	8.83
6. Nominal current (max. continuous current)	A	2.78	2.11	1.4	1.05
7. Stall torque	mNm	116	119	121	123
8. Stall current	A	35.1	28.5	18.8	14.3
9. Max. efficiency	%	89.5	89.6	89.7	89.8
10. Terminal resistance	Ω	0.512	0.841	1.92	3.35
11. Terminal inductance	mH	0.0336	0.0534	0.129	0.229
12. Torque constant	mNm/A	3.3	4.16	6.46	8.61
13. Speed constant	rpm/V	2890	2300	1480	1110
14. Speed/torque gradient	rpm/mNm	449	464	439	432
15. Mechanical time constant	ms	3.82	3.95	3.74	3.67
16. Rotor inertia	gcm ²	0.812	0.812	0.812	0.812

Thermal data			Operating range	
17_	Thermal resistance housing-ambient	K/W	16.1	n [rpm] winding 36 V
18_	Thermal resistance winding-housing	K/W	1.8	
19_	Thermal time constant winding	s	2.16	
20_	Thermal time constant motor	s	398	
21_	Ambient temperature	°C	-20...+100	
22_	Max. winding temperature	°C	155	

Mechanical data ball bearings			
23.	Max. speed	rpm	70 000
24.	Axial play	mm	0...0.29
	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]

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

Modular system

Details on catalog page 44

Other specifications				Gear	Stages [opt.]	Sensor	Motor Control
29.	Number of pole pairs		1	381_GPX 16 A/C	1-2 [3-4]	for motor type A:	547_DEC Module 24/2
30.	Number of phases		3	382_GPX 16 LN/LZ	1-2 [3-4]	514_ENX 16 EASY INT	547_DEC Module 50/5
31.	Weight of motor	g	50	383_GPX 16 HP	2-3 [4]	for motor type B:	550_ESCON Module 24/2
32.	Typical noise level [rpm]	dBA	50 [50 000]	385_GPX 16 SPEED	1-2	514_ENX 16 EASY INT Abs.	551_ESCON 36/3 EC

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 ±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
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.