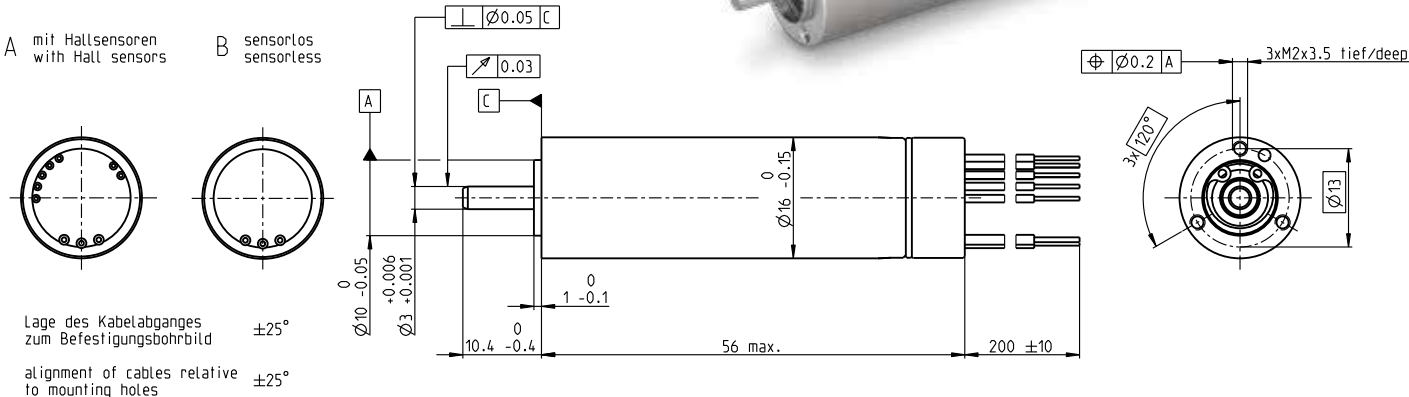


ECX SPEED 16 L Ø16 mm, brushless, BLDC motor

High Power

Key data: 80/93 W, 16.1 mNm, 70 000 rpm



M 1:1

Motor data

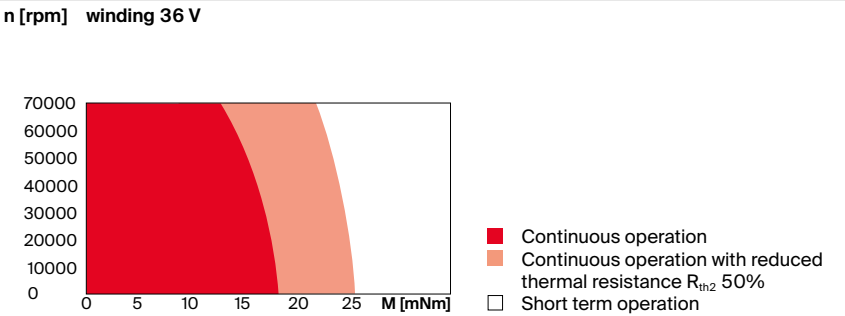
1.	Nominal voltage	V	18	24	36	48
2.	No load speed	rpm	61200	61200	61200	61200
3.	No load current	mA	219	164	110	82.1
4.	Nominal speed	rpm	58000	58300	58400	58400
5.	Nominal torque	mNm	15.5	16.1	15.4	14.8
6.	Nominal current (max. continuous current)	A	5.69	4.41	2.83	2.05
7.	Stall torque	mNm	366	431	438	419
8.	Stall current	A	131	115	78.1	56
9.	Max. efficiency	%	92	92.6	92.7	92.5
10.	Terminal resistance	Ω	0.138	0.208	0.461	0.858
11.	Terminal inductance	mH	0.0114	0.0202	0.0454	0.0808
12.	Torque constant	mNm/A	2.8	3.74	5.61	7.48
13.	Speed constant	rpm/V	3410	2550	1700	1280
14.	Speed/torque gradient	rpm/mNm	167	142	140	146
15.	Mechanical time constant	ms	2.1	1.79	1.76	1.84
16.	Rotor inertia	gcm ²	1.2	1.2	1.2	1.2

Thermal data

17.	Thermal resistance housing-ambient	K/W	13.5
18.	Thermal resistance winding-housing	K/W	0.58
19.	Thermal time constant winding	s	137
20.	Thermal time constant motor	s	483
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]



Other specifications

29.	Number of pole pairs	1
30.	Number of phases	3
31.	Weight of motor	g 72
32.	Typical noise level [rpm]	dBA 52 [50 000]

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

Modular system

Gear	Stages [opt.]	Sensor	Motor Control
381_GPX 16 A/C	1-2 [3-4]	for motor type A:	547_DEC Module 50/5
382_GPX 16 LN/LZ	1-2 [3-4]	514_ENX 16 EASY INT	551_ESCON 36/3 EC
383_GPX 16 HP	2-3 [4]	for motor type B:	551_ESCON Module 50/4 EC-S
385_GPX 16 SPEED	1-2	514_ENX 16 EASY INT Abs.	551_ESCON Module 50/5
386_GPX 19 A/C	3-4		552_ESCON Module 50/8 HE
387_GPX 19 LN/LZ	3-4		553_ESCON 50/5
388_GPX 19 HP	4		553_ESCON 70/10
389_GPX 19 SPEED [3]			557_ESCON2 Micro 60/5

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.

Details on catalog page 44

559_ESCON2 Compact 60/12
563_EPOS4 Micro 24/5
564_EPOS4 Module 50/5
565_EPOS4 Module 50/8
565_EPOS4 Compact 24/5 3-axes
567_EPOS4 Compact 50/5
567_EPOS4 Compact 50/8
569_EPOS4 50/5
569_EPOS4 70/15
570_EPOS4 Disk 60/8
571_EPOS4 Disk 60/12