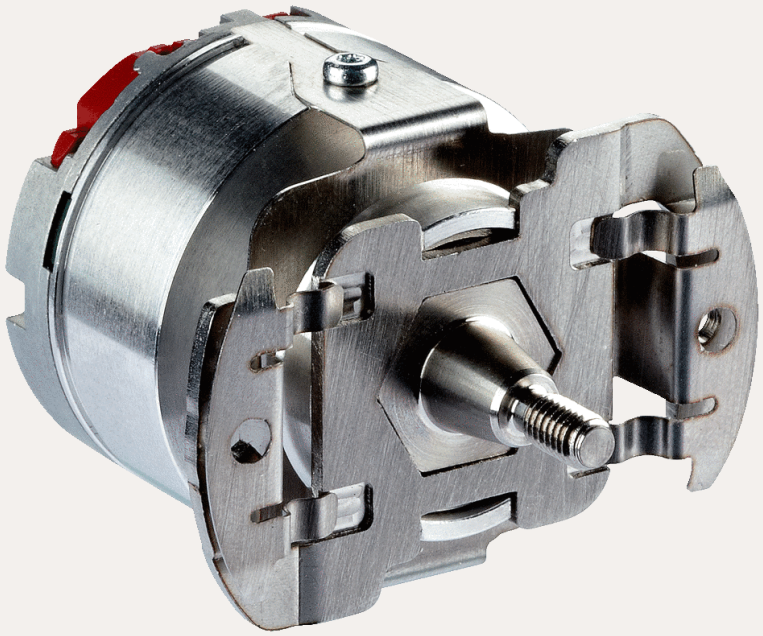
SICK.COM



DATA SHEET

EKM36-0KF0A018A

EKS/EKM36
Motor feedback systems

SICK Sensor Intelligence



Illustration may differ

MOTOR FEEDBACK SYSTEMS

EKM36-0KF0A018A

ORDERING INFORMATION

Type	part no.
EKM36-0KF0A018A	1053849

Further device versions and accessories at www.sick.com/EKS_EKM36

DETAILED TECHNICAL DATA

PERFORMANCE

Resolution per revolution	18 bit
Number of the absolute ascertainable revolutions	4,096
Measuring step per revolution	262,144
Signal noise (σ)	± 5° [1]
Error limits positional values integral non-linearity in angular seconds	± 80
Error limits positional values differential non-linearity in angular seconds	± 40
Max. speed when switching on and resettingthe motor feedback system	≤ 6,000 min^{-1}
Available memory area	8,192 Byte

[1] See diagrams 1 and 2.

INTERFACES

Type of code for the absolute value	Binary
Code sequence	Increasing, when turning the shaft For clockwise rotation, looking in direction “A” (see dimensional drawing)
Communication interface	HIPERFACE DSL®
Initialization time	Max. 500 ms [1]
Measurement external temperature resistance	32 bit value, without prefix (1 Ω) 0 ... 209.600 Ω At –40 °C ... +160 °C: NTC +-2K; PTC+-3K
Available memory area	8,192 Byte

[1] From reaching a permitted operating voltage.

ELECTRICAL DATA

Supply voltage range	7 V ... 12 V
Warm-up time voltage ramp	Max. 180 ms [1]
Operating current	Max. 150 mA (see diagram 3) [2] 150 mA
Output frequency for the digital positionvalue	0 kHz ... 75 kHz

[1] Duration of voltage ramp between 0 and 7.0 V.

[2] Current rating applies when using interface circuit suggestions as shown in HIPERFACE DSL ® manual (8017595).

MECHANICAL DATA

Shaft version	Tapered shaft
Flange type / stator coupling	Stator coupling
Dimensions	See dimensional drawing
Weight	0.1 kg
Moment of inertia of the rotor	4.5 gcm²
Operating speed	12,000 U/min
Operating torque	0.2 Ncm
Start up torque	0.3 Ncm
Permissible shaft movement, radial static/dynamic	± 0.1 mm / ± 0.05 mm
Permissible shaft movement, axial static/dynamic	± 0.1 mm
Life of ball bearings	3.6 x 10^9 revolutions
Connection type	Connector, 4-pin

AMBIENT DATA

Operating temperature range	–20 °C ... +115 °C [1]
Storage temperature range	–40 °C ... +125 °C
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27)
Frequency range of resistance to vibrations	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
EMC	According to EN 61000-6-2, EN 61000-6-4 and IEC 61326-3 [2]
Enclosure rating	IP50, with mating connector inserted and closed cover (acc. to EN 60529-1) [3]

[1] Given typical thermal connection between motor flange and encoder stator coupling. The max. internal sensor temperature may not exceed 125 °C.

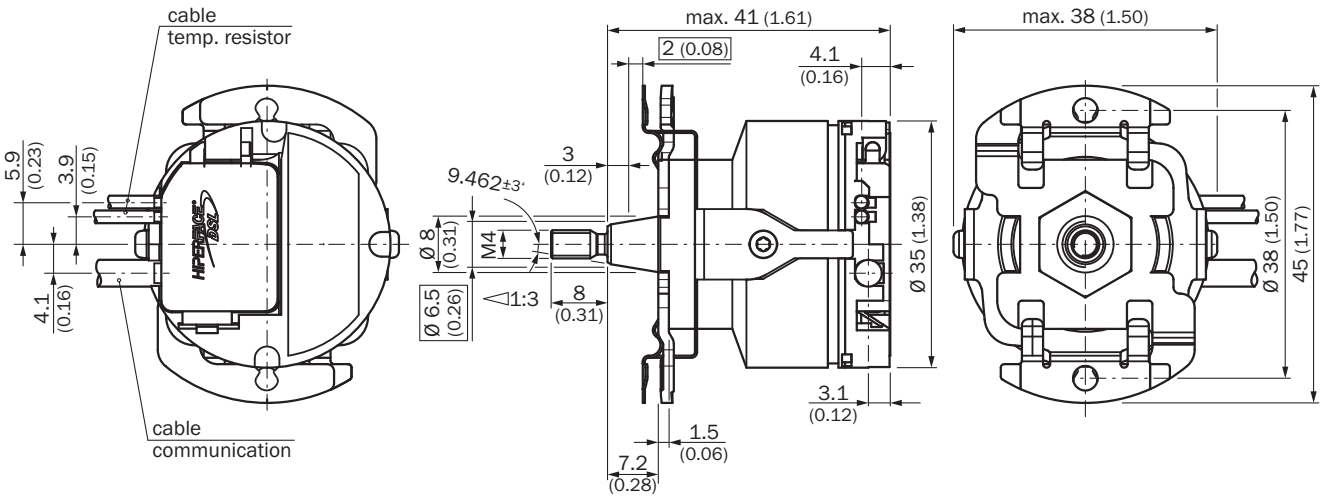
[2] The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. The GND-(0 V) connection of the supply voltage is also grounded here. If other shielding concepts are used, users must perform their own tests.

[3] With mating connector inserted and closed cover.

CLASSIFICATIONS

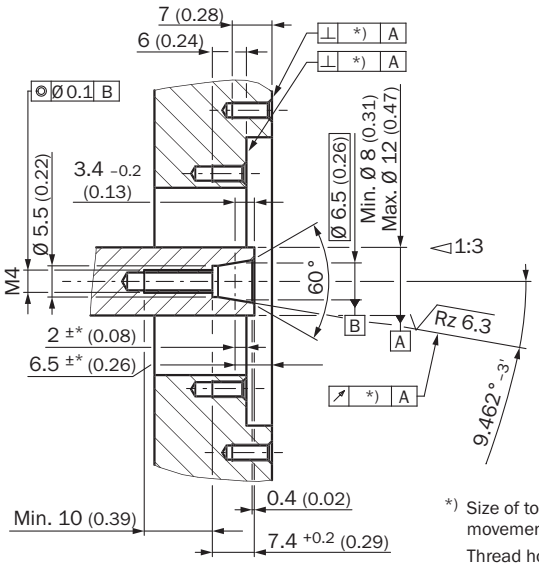
ECl@ss 5.0	27270590
ECl@ss 5.1.4	27270590
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ECl@ss 6.2	27270590
ECl@ss 7.0	27270590
ECl@ss 8.0	27270590
ECl@ss 8.1	27270590
ECl@ss 9.0	27270590
ETIM 5.0	EC001486
ETIM 6.0	EC001486
UNSPSC 16.0901	41112113

DIMENSIONAL DRAWING EKX36-XXF0A0XXA



Dimensions in mm (inch)

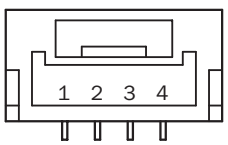
ATTACHMENT SPECIFICATIONS



*) Size of tolerance reduce the allowed movement of the shaft, see data sheet.
Thread holes according DIN 13 with counterbore according DIN 76 min. 1.05 x diameter of thread.

① Nominal position
② The size of the tolerance reduces the permissible wave movement, see data sheet
③ Threaded holes in accordance with DIN 13 with recesses in accordance with DIN 76 min. 1.05 x thread diameter

ANSCHLUSSBELEGUNG SUPPLY/COMMUNICATION PIN ASSIGNMENT

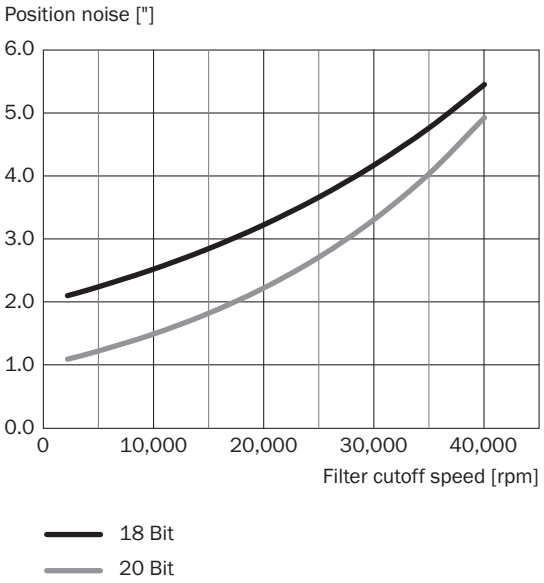


integrated in motor cable = J, K

PIN	Signal	Explanation
1	–	Not connected - no function
2	+U_s/DSL+	Supply 7 V ... 12 V
3	GND/DSL-	Ground connection

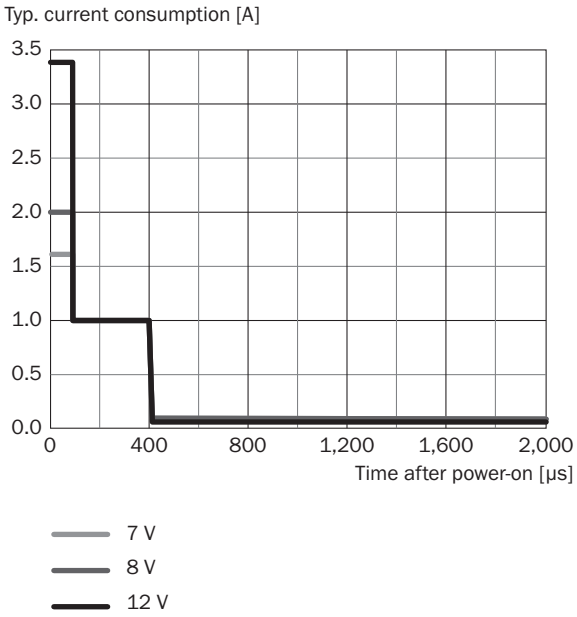
PIN	Signal	Explanation
4	–	Not connected - no function
	Recommended outer diameter of set of stranded wires: 4 mm +0/-0.3 mm	
	Recommended mating connector: JST (GHR-04V-S)	

DIAGRAMS

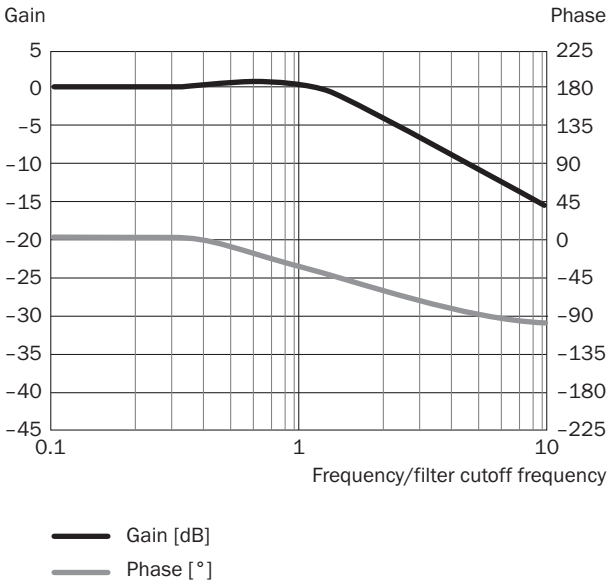


Signal noise is measured as 1 standard deviation (σ) of the value distribution. Position filter cutoff speed is set by ressource 10Ah, see page 11.

DIAGRAMS



DIAGRAMS



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1053849

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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