EES37-0KF0A0S02
EES/EEM37

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE DSL®

SICK
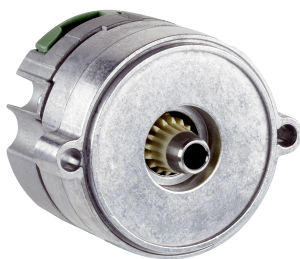Sensor Intelligence.

EES37-0KF0A0S02 | EES/EEM37

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE DSL®

Ordering information

Type	Part no.
EES37-0KF0A0S02	1101196

Other models and accessories ➜ www.sick.com/EES_EEM37

Illustration may differ

CE

Detailed technical data

Features

Special device	✓
Specialty	RID 201h, (resource name MANAGEIO): "KTY emulation" from PT1000 to KTY83. It means that the measured resistance is a PT1000 resistance. With the emulation function ON this PT1000 resistance is emulated into KTY83 resistance values.
Standard reference device	EES37-0KF0A015A, 1068810

Performance

Position	
Resolution per revolution	15 bit
System accuracy	± 280 ″, ± 190 ″, nominal position, 25 °C, filter setting 21 kHz, Nominal position, 25 °C, filter setting 1 kHz [1] [1]
Signal noise (σ)	± 20 ″ (nominal position, 25 °C, filter setting 21 kHz)
Number of the absolute ascertainable revolutions	1
Available memory area	8,192 Byte
Measurement step per revolution	32,768

[1] See diagram for error limits (default filter setting: 21 kHz).

Interfaces

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 [2]

[1] From reaching a permitted operating voltage.

[2] Without sensor tolerance; at −17 °C ... +167 °C: NTC +-2K (103 GT); PTC+-3K (KTY84/130/PT1000).

Electrical data

Connection type	Male connector, 4-pin
Supply voltage	7 V … 12 V
Warm-up time voltage ramp	Max. 180 ms [1]
Current consumption	≤ 150 mA [2]
MTTF: mean time to dangerous failure	170 years (EN ISO 13849) [3]

[1] Duration of the voltage ramp between 0 and 7.0 V, see diagram "Current consumption" in the diagram section.

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

[3] This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 60°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

Mechanical data

Shaft version	Tapered shaft
Dimensions	See dimensional drawing
Weight	≤ 0.1 kg
Moment of inertia of the rotor	1 gcm²
Operating speed	≤ 12,000 min⁻¹
Angular acceleration	≤ 500,000 rad/s²
Permissible radial shaft movement	± 0.15 mm
Permissible axial shaft movement	± 0.5 mm

Ambient data

Operating temperature range	–40 °C … +115 °C [1]
Storage temperature range	–40 °C … +120 °C, without package
Relative humidity/condensation	85 %, Condensation not permitted
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: 2016, EN 61000-6-4: 2006, IEC 6100-6-7: 2014 [2]
Enclosure rating	IP30, When cover is closed and mating connector is attached (IEC 60529-1) [3]

[1] For typical values for self-heating, see diagram "Electrical self-heating" in the diagram section. see section "Mounting" in the operating instructions (8021414/8021265).

[2] According to the listed standards, EMC is guaranteed if the motor feedback system with mating connector inserted is connected to the central grounding point of the motor controller via a cable shield. If other shielding concepts are used, users must perform their own tests. Class A device.

[3] When using the strands (2079920).

Classifications

ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590

| ECLASS 10.0	27273805
ECLASS 11.0	27273901
ECLASS 12.0	27273901
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing (Dimensions in mm (inch))
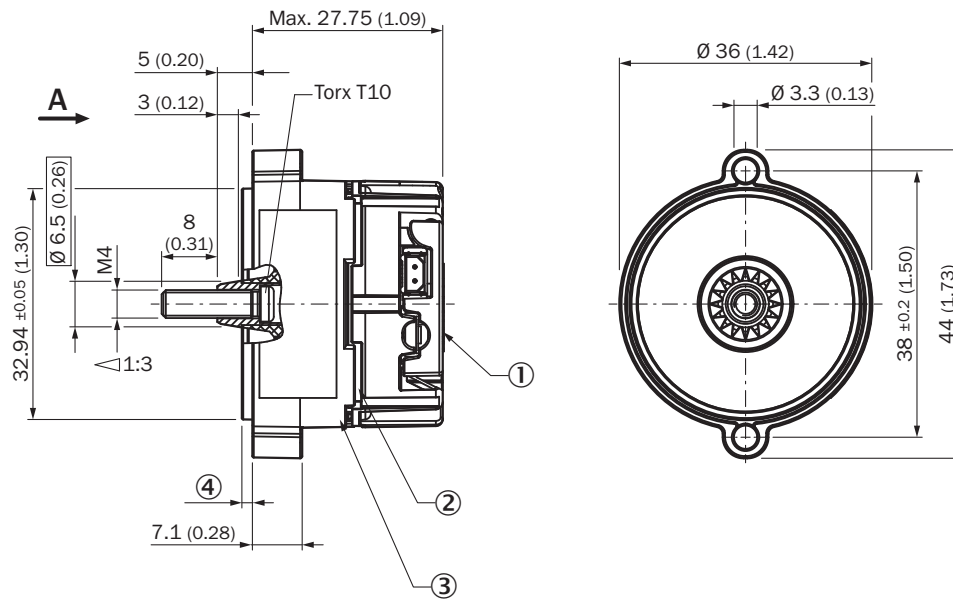
Screw M4 not included (see under accessories)
① Measuring point for vibrations
② Design-related gap
③ Measuring point for operating temperature
④ Centering collar: Standard 1.5 mm; reduced 0.7 mm

Attachment specifications
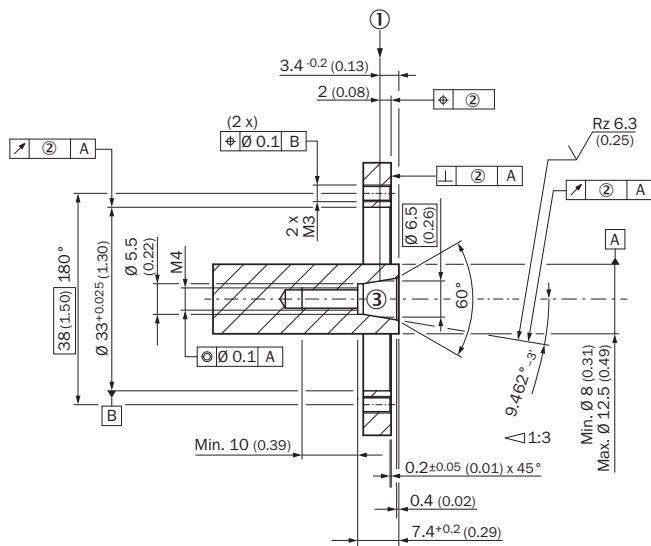
Read out axial position: positive value shows movement of rotor away from the motor flange; negative value shows movement of rotor towards the motor flange

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
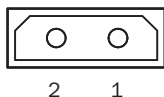
PIN assignment

Supply / Communication pin assignment
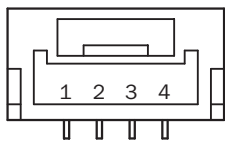
Integrated in motor cable = J, K

| PIN	Signal	Explanation
1		Not connected - no function
2	+U_S/DSL+	Supply 7 V ... 12 V
3	GND/DSL-	Ground connection
4		Not connected - no function
Recommended outer diameter of set of stranded wires: 4 mm +0/-1.5 mm		
Recommended mating connector: JST (GHR-04V-S)		

Temperature sensor pin assignment

| PIN	Signal	Explanation
1	T+	Thermistor connection
2	T-	Thermistor connection (to ground)
Recommended outer diameter of set of stranded wires: 2.2 mm ± 0.1 mm		

PIN	Signal	Explanation
Recommended mating connector: Harwin M80-8990205		

Diagrams

Power consumption

Max. current in A

Time after power-on in µs

— 7 V
— 8 V
— 12 V
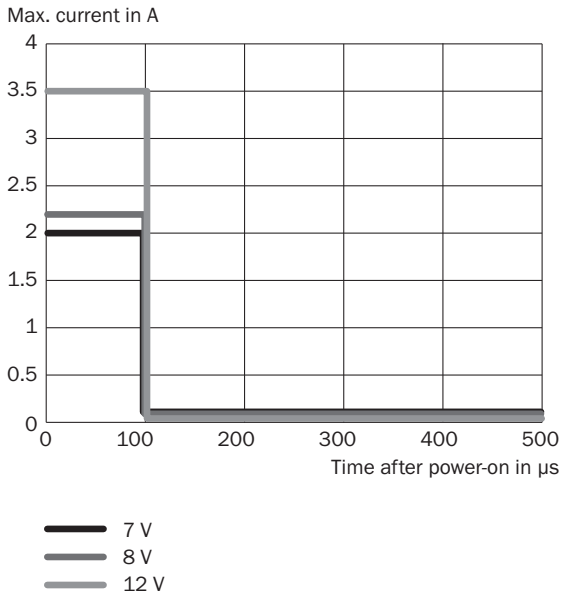
This diagram shows the switch-on current
Latency vs. filter frequency

Latency in µs

Filter frequency in Hz
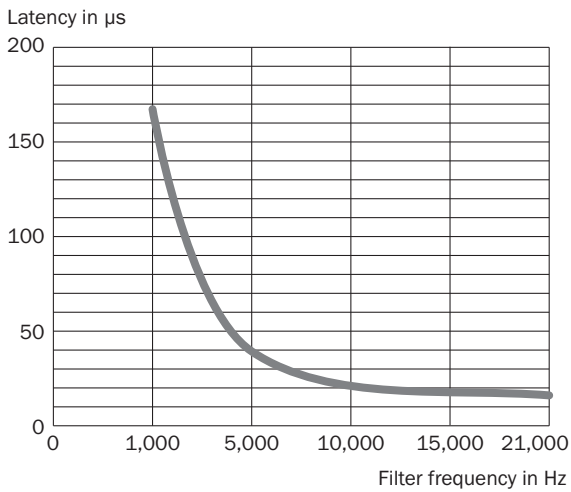
Adjustable filter frequencies 21 kHz, 15 kHz, 10 kHz, 5 kHz und 1 kHz - Default setting 21 kHz
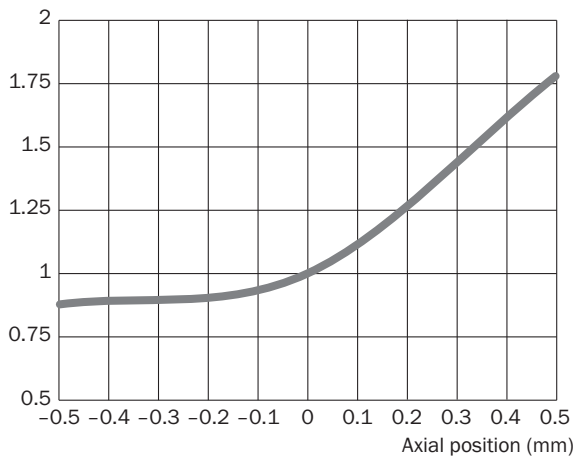
Error limits

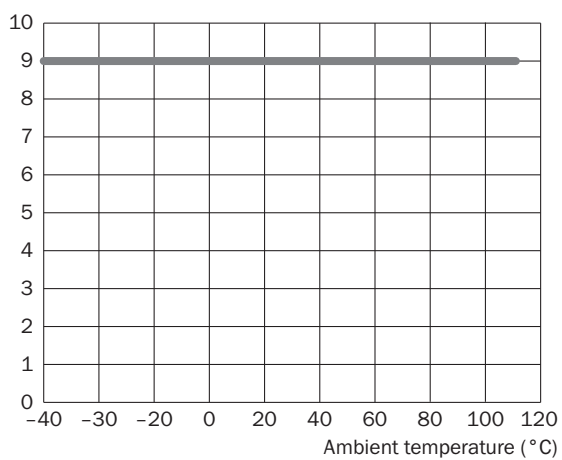Typ. effect of temperature on accuracy, normed
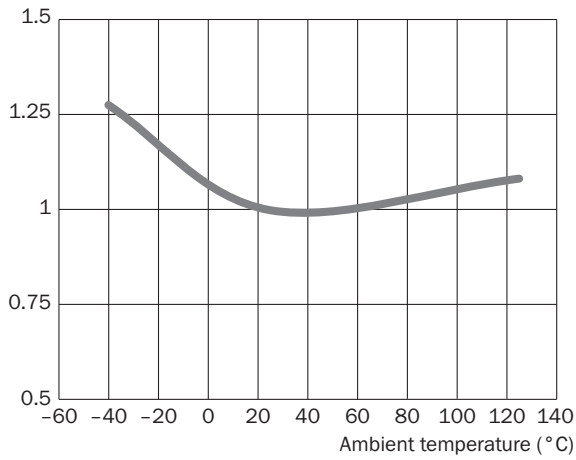
Error limits

Typ. effect of axial position on accuracy, normed

Electrical self-heating

Typ. electrical self-heating, kelvin (K)

Recommended accessories

Other models and accessories ➜ www.sick.com/EES_EEM37

	Brief description	Type	Part no.
Nuts and screws			
	100 pieces, Screws with Precote 85-8 coating; M4*14	BEF-MK-S03	2077358
	10 pieces, Screws with Precote 85-8 coating; M4*14	BEF-MK-S07	2088239
	500 pieces, Screws with Precote 85-8 coating; M4*14	BEF-MK-S08	2088240
Other mounting accessories			
	BEF-MW-PL	BEF-MW-PL	2084768
Plug connectors and cables			
	• **Connection type head A:** Female connector, stranded wire, 4-pin, straight • **Connection type head B:** Flying leads • **Signal type:** HIPERFACE DSL® • **Cable:** 0.2 m, 2-wire • **Description:** HIPERFACE DSL®, unshielded	DOL-0B02-G0M2XC2	2079920

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

WORLDWIDE PRESENCE:

Contacts and other locations –**www.sick.com**

SICK AG | Waldkirch | Germany | www.sick.com

SICK
Sensor Intelligence.