

# SEL34-HFB0K02

SEK/SEL

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE®

**SICK**  
Sensor Intelligence.

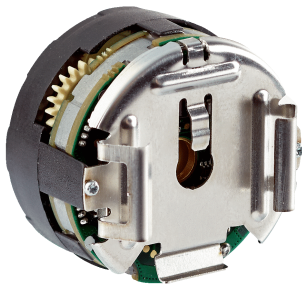


Illustration may differ



### Ordering information

Type	Part no.
SEL34-HFB0K02	1053403

Other models and accessories → [www.sick.com/SEK\\_SEL](http://www.sick.com/SEK_SEL)

### Detailed technical data

#### Performance

<b>Sine/cosine periods per revolution</b>	16
<b>Number of the absolute ascertainable revolutions</b>	4,096
<b>Maximum number of steps per revolution</b>	2,097,152 via RS485
<b>Total number of steps</b>	512
<b>Measuring step</b>	20 " For interpolation of the sine/cosine signals with, e. g., 12 bits
<b>Integral non-linearity</b>	± 288 ", Error limits for evaluating sine/cosine period Typical values at nominal position ± 0.1 mm und +20 °C
<b>Differential non-linearity</b>	± 144 ", Error limits for evaluating sine/cosine period, typical values at nominal position ± 0.1 mm und +20 °C
<b>Operating speed</b>	≤ 6,000 min <sup>-1</sup> , up to which the absolute position can be reliably produced
<b>Available memory area</b>	1,792 Byte
<b>System accuracy</b>	± 432 "

#### Interfaces

<b>Type of code for the absolute value</b>	Binary
<b>Code sequence</b>	For clockwise shaft rotation, looking in direction "A" (see dimensional drawing)
<b>Communication interface</b>	HIPERFACE®

#### Electrical data

<b>Connection type</b>	Male connector, 8-pin, radial
<b>Supply voltage</b>	7 V DC ... 12 V DC
<b>Recommended supply voltage</b>	8 V DC
<b>Current consumption</b>	≤ 50 mA
<b>MTTF: mean time to dangerous failure</b>	275 years (EN ISO 13849) <sup>1)</sup>

<sup>1)</sup> 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

<b>Shaft version</b>	Tapered shaft
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<b>Weight</b>	≤ 0.04 kg
<b>Moment of inertia of the rotor</b>	1 gcm <sup>2</sup>
<b>Operating speed</b>	12,000 min <sup>-1</sup> , 12,000 U/min
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>
<b>Permissible radial shaft movement</b>	± 0.15 mm
<b>Permissible axial shaft movement</b>	± 0.3 mm

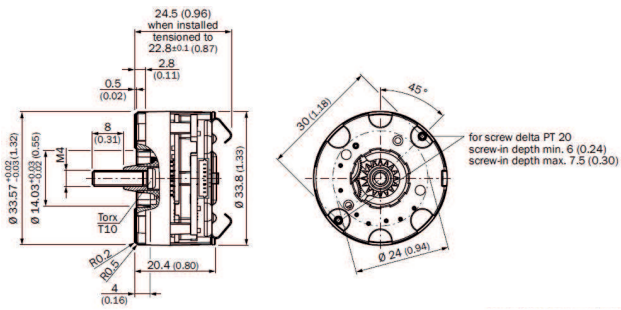
## Ambient data

<b>Operating temperature range</b>	-20 °C ... +115 °C
<b>Storage temperature range</b>	-50 °C ... +125 °C, without package
<b>Relative humidity/condensation</b>	90 %, Condensation not permitted
<b>Resistance to shocks</b>	100 g, 10 ms (EN 60068-2-27)
<b>Frequency range of resistance to vibrations</b>	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating</b>	IP20, built-on version, with mating connector inserted and closed cover (IEC 60529)

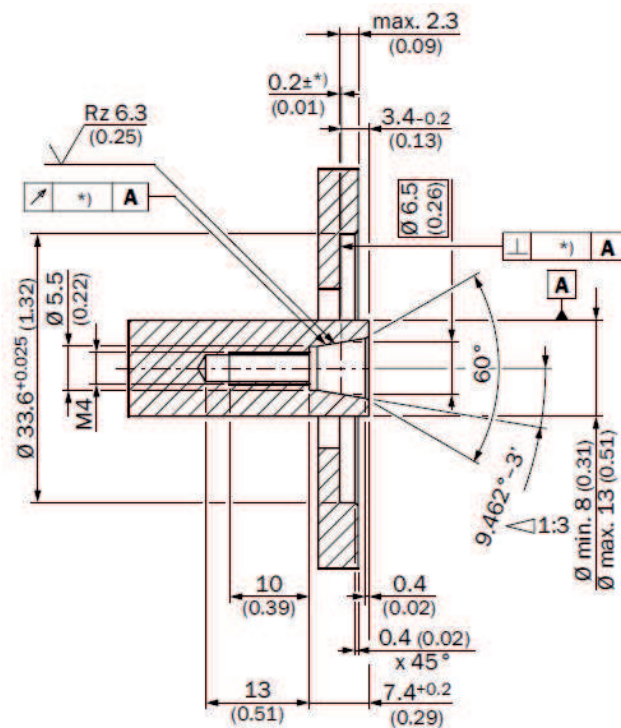
## Classifications

<b>eCl@ss 5.0</b>	27270590
<b>eCl@ss 5.1.4</b>	27270590
<b>eCl@ss 6.0</b>	27270590
<b>eCl@ss 6.2</b>	27270590
<b>eCl@ss 7.0</b>	27270590
<b>eCl@ss 8.0</b>	27270590
<b>eCl@ss 8.1</b>	27270590
<b>eCl@ss 9.0</b>	27270590
<b>eCl@ss 10.0</b>	27273805
<b>eCl@ss 11.0</b>	27273901
<b>eCl@ss 12.0</b>	27273901
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>ETIM 8.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

### Dimensional drawing (Dimensions in mm (inch))



### Attachment specifications

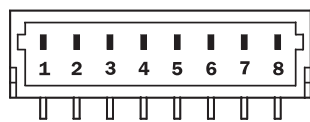


\*) Size of tolerance reduce the allowed movement of the shaft, see data sheet.

All dimensions in mm (inch)

### PIN assignment

View of the plug-in face



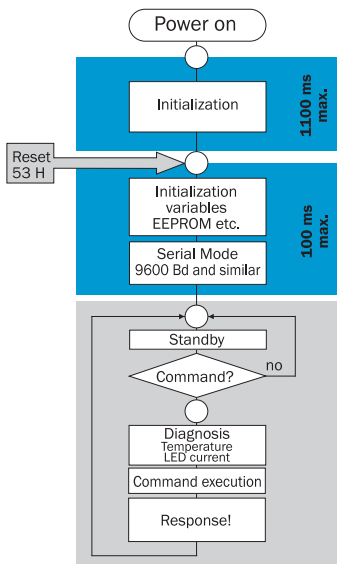
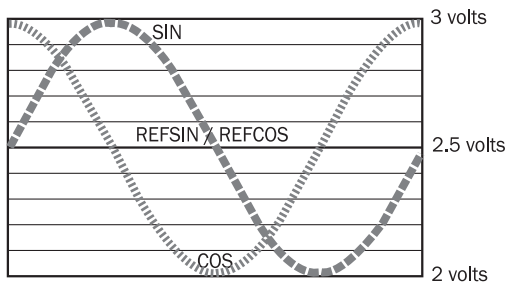
PIN	Signal	Wire colors (cable connection)	Explanation
1	U <sub>S</sub>	Red	Supply voltage

PIN	Signal	Wire colors (cable connection)	Explanation
2	+ SIN	White	Process data channel
3	REFSIN	Brown	Process data channel
4	+ COS	Pink	Process data channel
5	REFCOS	Black	Process data channel
6	GND	Blue	Ground connection
7	Data +	Gray or yellow	Parameter channel RS 485
8	Data -	Green or purple	Parameter channel RS 485

The GND connection (0 V) of the supply voltage is not connected to the housing

Diagrams

Signal diagram for clockwise shaft rotation, looking in direction "A" (see dimensional drawing) 1 period = 360° : 16



CAUTION:  
No **RS485 communication**  
is possible during the  
phases highlighted in blue

### Recommended accessories

Other models and accessories → [www.sick.com/SEK\\_SEL](http://www.sick.com/SEK_SEL)

Brief description	Type	Part no.
Other mounting accessories		
Test gauge for SEK/SEL34, SEK/SEL37, and EES/EEM37	BEF-MW-PL	2084768
Plug connectors and cables		
Head A: cable Head B: Flying leads Cable: HIPERFACE®, HIPERFACE®, PUR, halogen-free, shielded	LTG-2708-MW	6028361

## 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](http://www.sick.com)