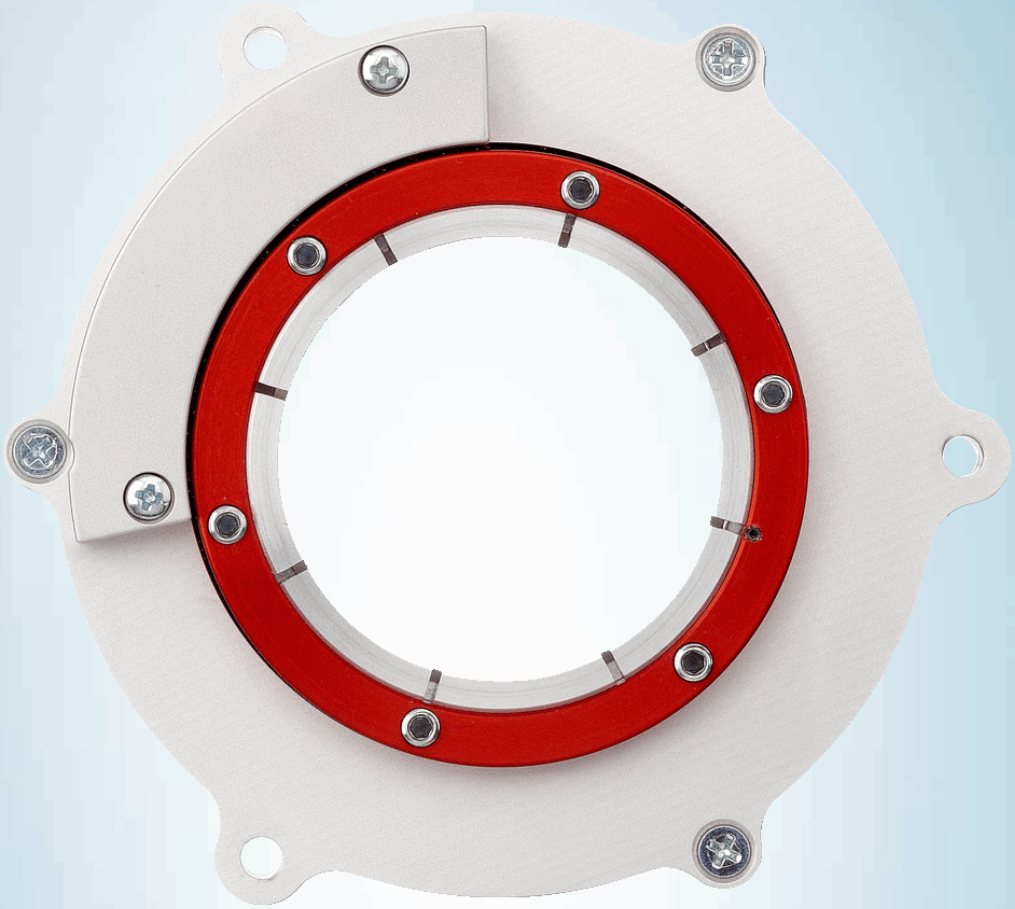
Online data sheet



SEK90-HN050AK02

SEK90

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE®

SICK
Sensor Intelligence.

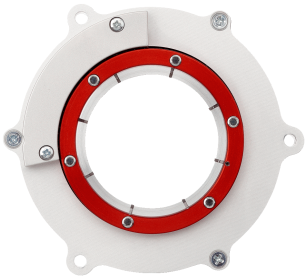


Illustration may differ

Ordering information

Type	Part no.
SEK90-HN050AK02	1038271

Other models and accessories ➜ www.sick.com/SEK90

Detailed technical data

Features

Specialty	Stranded cable with strain relief not included in scope of delivery, please order separately (partnumer 2051662), resolver support, plug-in shaft

Performance

Sine/cosine periods per revolution	64
Number of the absolute ascertainable revolutions	1
Total number of steps	2,048 via RS485
Measuring step	5 Winkelsekunden For interpolation of the sine/cosine signals with, e. g., 12 bits
Integral non-linearity	± 72 Winkelsekunden, Error limits for evaluating sine/cosine period, typical values at nominal position ± 0.1 mm und +20 °C
Differential non-linearity	± 45 Winkelsekunden, Non-linearity within a sine/cosine period, typical values at nominal position ± 0.1 mm und +20 °C
Operating speed	≤ 3,000 min^{-1}, up to which the absolute position can be reliably produced
Latency period	100 µs
Available memory area	1,792 Byte

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), For clockwise shaft rotation, looking in direction “A” (see dimensional drawing)
Communication interface	HIPERFACE®

Electrical data

Connection type	Male connector, M12, 8-pin
Supply voltage	7 V DC ... 12 V DC
Recommended supply voltage	8 V DC
Power consumption	150 mA [1]

[1] Without load.

Mechanical data

Shaft version	Through hollow shaft

Shaft diameter	50 mm
Dimensions	See dimensional drawing
Weight	≤ 0.13 kg
Moment of inertia of the rotor	340 gcm²
Operating speed	3,000 min⁻¹
Angular acceleration	≤ 50,000 rad/s²

Ambient data

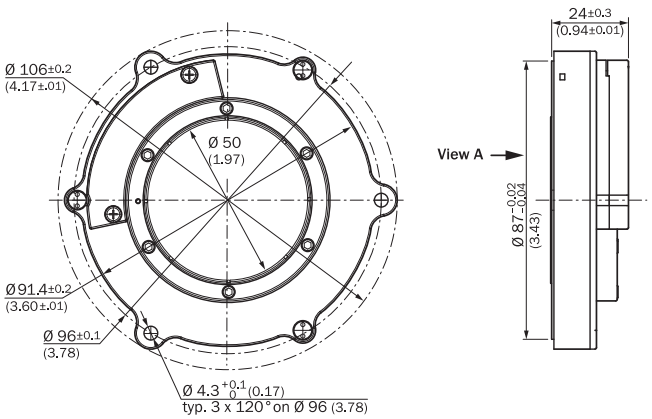
Operating temperature range	–30 °C ... +115 °C
Storage temperature range	–50 °C ... +125 °C, without package
Relative humidity/condensation	90 %, Condensation not permitted
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27)
Frequency range of resistance to vibrations	30 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)
EMC	According to EN 61000-6-2 and EN 61000-6-3 [1)]
Enclosure rating	IP40, with mating connector inserted and closed cover (according to IEC 60529)

[1)] 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 shield. Users must perform their own tests when other shield designs are used.

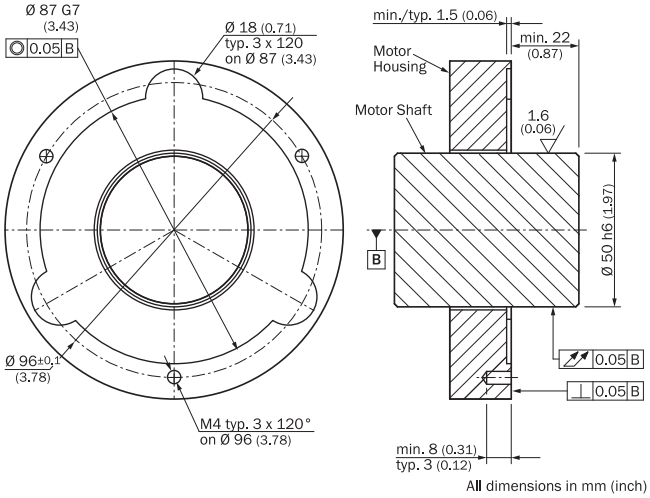
Classifications

ECl@ss 5.0	27270590
ECl@ss 5.1.4	27270590
ECl@ss 6.0	27270590
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 (Dimensions in mm (inch))



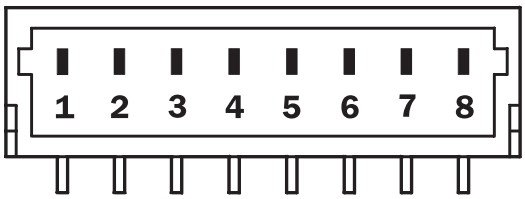
Proposed fitting



All dimensions in mm (inch)

PIN assignment

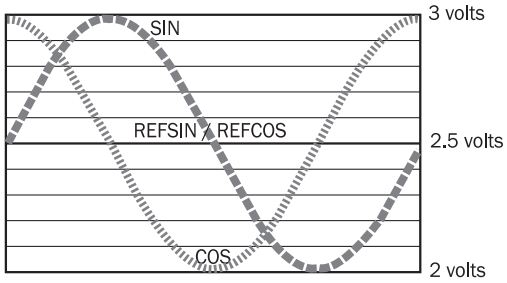
View of the plug-in face

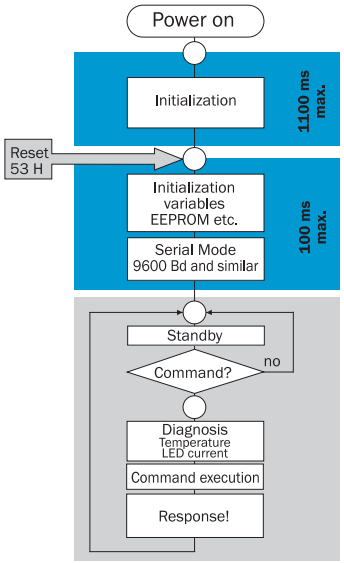


PIN	Signal	Wire colors (cable connection)	Explanation
1	U_S	Red	Supply voltage
2	+ SIN	White	Process data channel
3	REFSIN	Brown	Process data channel
4	+ COS	Pink	Process data channel
5	REFCOS	Black	Process data channel
6	GND	Blue	Ground connection
7	Data +	Gray or yellow	Parameter channel RS 485
8	Data -	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° : 64/128/256





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

After a software reset, it will take approx. 150 ms until the SIN/COS signals reach an amplitude of 1 Vpp ± 20 %.

Recommended accessories

Other models and accessories ➜ www.sick.com/SEK90

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: cable Head B: Flying leads Cable: HIPERFACE®, HIPERFACE®, PUR, halogen-free, shielded	LTG-2708-MW	6028361
	Head A: female connector, JST, 8-pin, straight Head B: Flying leads Cable: HIPERFACE®, unshielded, 0.2 m	DOL-0J08-G0M2XB6	2031086
	Head A: female connector, JST, 8-pin, straight Head B: Flying leads Cable: HIPERFACE®, shielded, 0.5 m	DOL-0J08-G0M5XB6	2056250

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.”

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