Data sheet

SEL52-H1A0-K02

SEK/SEL52

MOTOR FEEDBACK SYSTEMS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
SEL52-H1A0-K02	1037372

Other models and accessories ➜ www.sick.com/SEK_SEL52

Detailed technical data

Performance

Sine/cosine periods per revolution	16
Number of the absolute ascertainable revolutions	4,096
Maximum number of steps per revolution	512 via RS485
Total number of steps	2,097,152
Measuring step	20 Winkelsekunden For interpolation of the sine/cosine signals with, e. g., 12 bits
Integral non-linearity	± 288 Winkelsekunden, Error limits for evaluating sine/cosine period, typical values at nominal position ± 0.1 mm und +20 °C
Differential non-linearity	± 72 Winkelsekunden, Non-linearity within a sine/cosine period, typical values at nominal position ± 0.1 mm und +20 °C
Operating speed	≤ 6,000 min^{-1}, up to which the absolute position can be reliably produced
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, 8-pin, axial
Supply voltage	7 V DC ... 12 V DC
Recommended supply voltage	8 V DC
Power consumption	< 50 mA [1]

[1] Without load.

Mechanical data

Shaft version	Blind hollow shaft
Shaft diameter	12.7 mm
Dimensions	See dimensional drawing

Weight	≤ 0.07 kg
Moment of inertia of the rotor	6 gcm²
Operating speed	10,000 min⁻¹, 12,000 U/min
Angular acceleration	≤ 500,000 rad/s²
Permissible radial shaft movement	± 0.15 mm
Permissible axial shaft movement	± 0.5 mm
Permissible movement of the drive element, static	± 0.25 mm
Permissible movement of the drive element, dynamic	± 0.1 mm

Ambient data

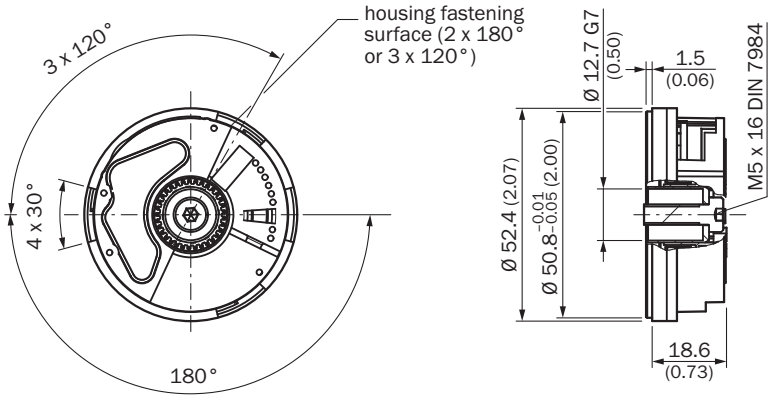
Operating temperature range	–20 °C ... +115 °C
Storage temperature range	–50 °C ... +125 °C, without package
Relative humidity/condensation	90 %, Condensation not permitted
Resistance to shocks	100 g, 10 ms, 10 ms (according to EN 60068-2-27)
Frequency range of resistance to vibrations	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
EMC	According to EN 61000-6-2 and EN 61000-6-3 [1)]
Enclosure rating	IP20, built-on version, with mating connector inserted and closed cover (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 screen and with the cover (order number 2048232) in use. If other screening concepts are used, users must perform their own tests.

Classifications

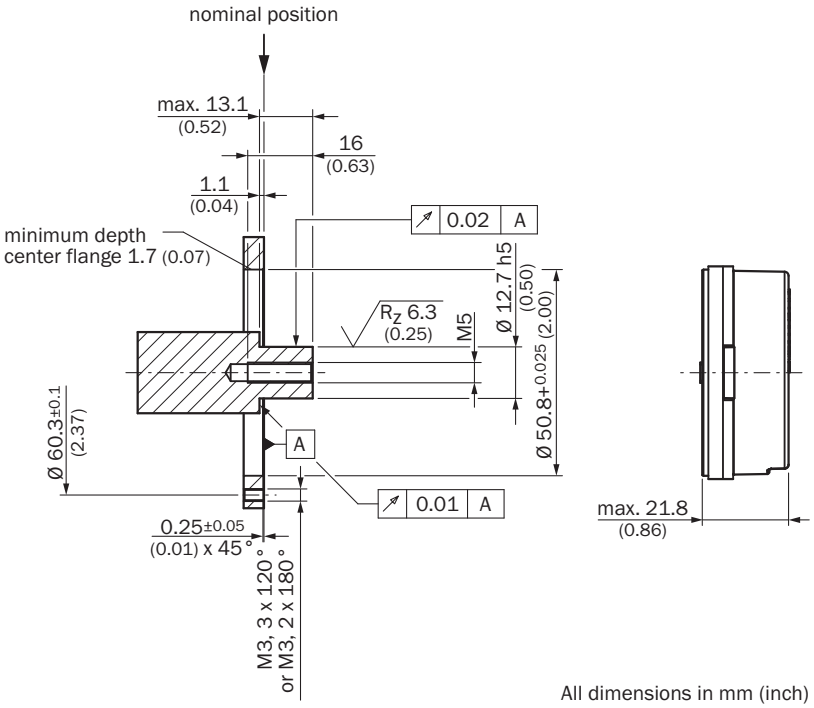
ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27273805
ECLASS 11.0	27273901
ECLASS 12.0	27273901
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing General tolerances according to DIN ISO 2768-mk



Dimensions in mm (inch)
Hollow shaft with Shoulder Clamping

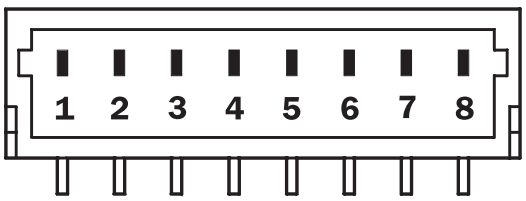
Attachment specifications General tolerances according to DIN ISO 2768-mk



All dimensions in mm (inch)

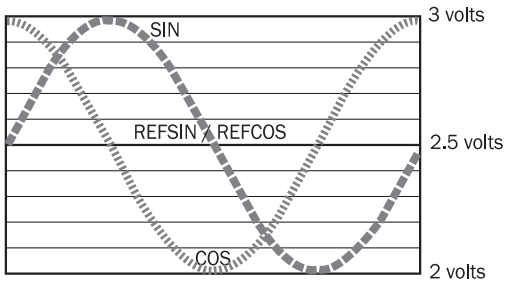
Hollow shaft with Shoulder Clamping

PIN assignment View of the plug-in face

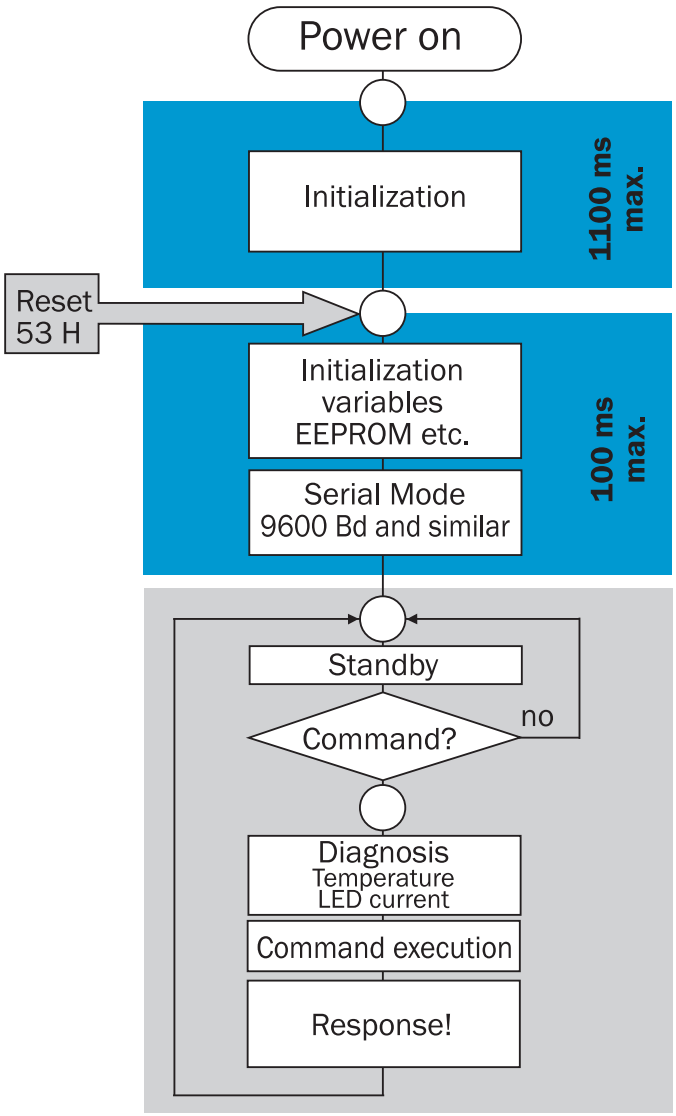


PIN	Signal	Wire colors (cable connection)	Explanation
1	U_S	Red	Supply voltage
2	+ SIN	White	Process data channel
3	REFSIN	Brown	Process data channel
4	+ COS	Pink	Process data channel
5	REFCOS	Black	Process data channel
6	GND	Blue	Ground connection
7	Data +	Gray or yellow	Parameter channel RS 485
8	Data -	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° : 16



Diagrams



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

Recommended accessories

Other models and accessories ➜ www.sick.com/SEK_SEL52

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Assembyl tool SEK52/SEL52	BEF-MW-SEY52	2048235
	• **Description:** Servo clamp for shoulder clamping • **Items supplied:** Without mounting hardware	BEF-WK-RESOL1	2048827

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, JST, 8-pin, straight • **Connection type head B:** Flying leads • **Signal type:** HIPERFACE® • **Cable:** 0.2 m, 8-wire • **Description:** HIPERFACE®, unshielded	DOL-0J08-G0M2XB6	2031086
	• **Connection type head A:** Flying leads • **Connection type head B:** Flying leads • **Signal type:** HIPERFACE®, HIPERFACE® • **Items supplied:** By the meter • **Cable:** 8-wire, PUR, halogen-free • **Description:** HIPERFACE®, shieldedHIPERFACE®	LTG-2708-MW	6028361
device protection and care			
	• **Product family:** Protective housing • **Description:** Cover, closed	BEF-GA-SEY52BS1	2048234

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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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