



# SEL52-HNA0-K02

SEK/SEL52

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE®

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type           | Part no. |
|----------------|----------|
| SEL52-HNA0-K02 | 1037373  |

Other models and accessories → [www.sick.com/SEK\\_SEL52](http://www.sick.com/SEK_SEL52)

### Detailed technical data

#### Performance

|   |  |
|---|--|
| <b>Number of 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>           | 512 via RS485  |
| <b>Total number of steps</b>                            | 2,097,152  |
| <b>Measuring step</b>                                   | 20 Winkelsekunden For interpolation of the sine/cosine signals with, e. g., 12 bits  |
| <b>Integral non-linearity typ.</b>                      | ± 288 Winkelsekunden, Error limits for evaluating sine/cosine period, Typical values for nominal position ± 0.1 mm and + 20 °C |
| <b>Differential non-linearity</b>                       | ± 72 Winkelsekunden, Non-linearity within a sine/cosine period, Typical values for nominal position ± 0.1 mm and + 20 °C       |
| <b>Operating speed</b>                                  | 6,000 min <sup>-1</sup> , up to which the absolute position can be reliably produced   |

#### Interfaces

|  |   |
|--|---|
| <b>Type of code for the absolute value</b> | Binary  |
| <b>Code sequence</b>                       | 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) |
| <b>Communication interface</b>             | HIPERFACE®  |
| <b>Available memory area</b>               | 1,792 Byte  |

#### Electrical data

|  |                       |
|--|-----------------------|
| <b>Supply voltage range</b>                  | 7 V DC ... 12 V DC    |
| <b>Recommended supply voltage</b>            | 8 V DC                |
| <b>Operating power consumption (no load)</b> | < 50 mA <sup>1)</sup> |

<sup>1)</sup> Without load.

#### Mechanical data

|                                       |  |
|---------------------------------------|--|
| <b>Shaft version</b>                  | Blind hollow shaft, through hollow shaft |
| <b>Dimensions</b>                     | See dimensional drawing                  |
| <b>Weight</b>                         | 0.07 kg                                  |
| <b>Moment of inertia of the rotor</b> | 7 gcm <sup>2</sup>                       |
| <b>Operating speed</b>                | 10,000 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>  | ± 0.5 mm                         |
| <b>Connection type</b>                   | Male connector M12, 8-pin, axial |

#### 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, 10 ms (according to EN 60068-2-27)   |
| <b>Frequency range of resistance to vibrations</b> | 50 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)   |
| <b>EMC</b>   | According to EN 61000-6-2 and EN 61000-6-3 <sup>1)</sup>   |
| <b>Enclosure rating</b>                            | IP20, built-on version, with mating connector inserted and closed cover 2048234 (according to IEC 60529)<br>IP20, built-on version, with mating connector inserted and opened cover 2048232 (according to IEC 60529) |

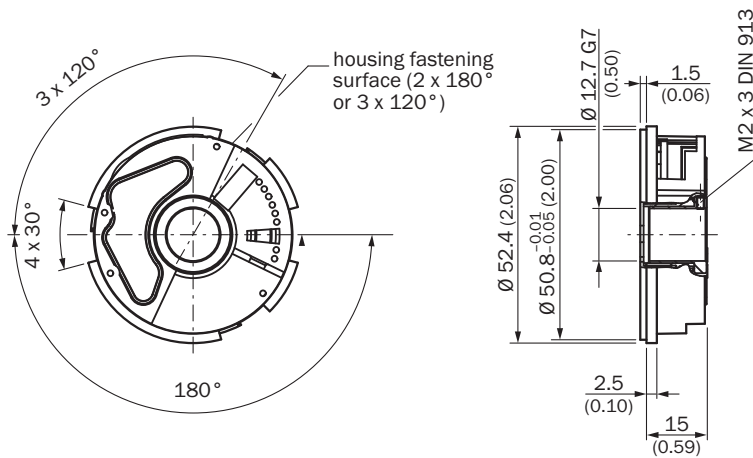
<sup>1)</sup> The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen and with the cover (order number 2048234) in use. If other screening concepts are used, users must perform their own tests.

#### 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>ETIM 5.0</b>       | EC001486 |
| <b>ETIM 6.0</b>       | EC001486 |
| <b>UNSPSC 16.0901</b> | 41112113 |

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

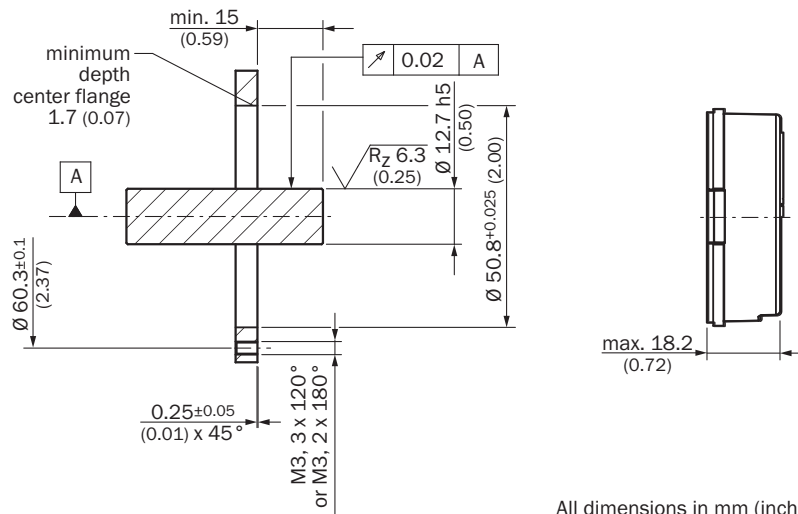
General tolerances according to DIN ISO 2768-mk



Hollow shaft

**Proposed fitting**

General tolerances according to DIN ISO 2768-mk

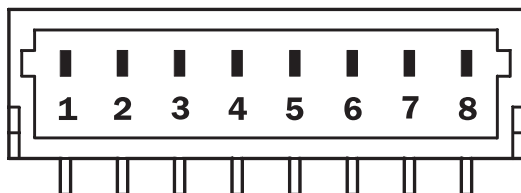


All dimensions in mm (inch)

Hollow shaft

**PIN assignment**

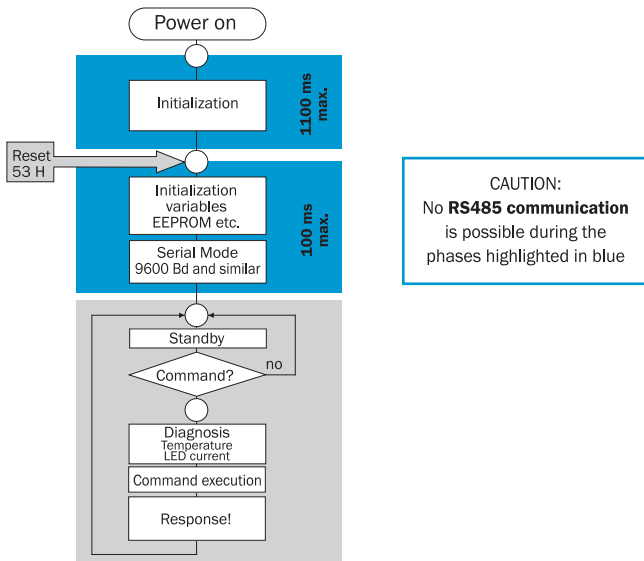
View of the plug-in face



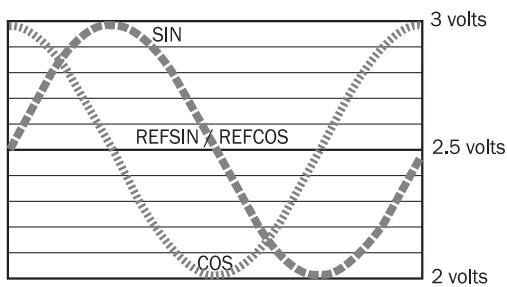
| PIN | Signal         | Colour of wires (cable outlet) | Explanation              |
|-----|----------------|--------------------------------|--------------------------|
| 1   | U <sub>s</sub> | Red                            | Supply voltage           |
| 2   | + SIN          | White                          | 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 (0 V) connection of the supply voltage has no connection to the housing

Diagram









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



Recommended accessories

Other models and accessories → [www.sick.com/SEK\\_SEL52](http://www.sick.com/SEK_SEL52)

|   | Brief description  | Type             | Part no. |
|---|--|------------------|----------|
| Device protection (mechanical)  |  |                  |          |
|   | Open cover for SEK/SEL52 with hollow shaft   | BEF-GA-SEY52TS1  | 2048232  |
| Other mounting accessories  |  |                  |          |
|   | Assembly tool SEK52/SEL52  | BEF-MW-SEY52     | 2048235  |
|    | Servo clamps, small, for servo flange (clamping claws, mounting eccentric), 3 pcs, without mounting hardware, without mounting hardware        | BEF-WK-RESOL     | 2039082  |
| Plug connectors and cables  |  |                  |          |
|   | Head A: cable<br>Head B: cable<br>Cable: HIPERFACE®, HIPERFACE®, drag chain use, PUR, halogen-free, shielded                                   | LTG-2708-MW      | 6028361  |
|    | Head A: female connector, JST, 8-pin, straight<br>Head B: cable<br>Cable: HIPERFACE®, unshielded, 0.2 m  | DOL-0J08-G0M2XB6 | 2031086  |
|    | Head A: female connector, M23, 12-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: HIPERFACE®, unshielded, 1 m         | DSL-2317-G01MJB2 | 2071328  |
|    | Head A: female connector, JST, 8-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: HIPERFACE®, unshielded, 1 m          | DSL-2317-G01MJB6 | 2071327  |
|   | Head A: female connector, M12, 8-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: HIPERFACE®, unshielded, 1 m          | DSL-2317-G01MJC1 | 2071329  |
|  | Head A: female connector, terminal box, 8-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: HIPERFACE®, unshielded, 1 m | DSL-2317-G01MJC6 | 2071330  |

## 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)