



# IN40-E0109K

IN4000 Direct

NON-CONTACT SAFETY SWITCHES

**SICK**  
Sensor Intelligence.

### Ordering information



Type	Part no.
IN40-E0109K	6050281

The devices conform to Category 3 as well as PFH<sub>D</sub>  $1.0 \times 10^{-8}$ . Please check whether the device meets the safety requirements of your application as a result. If you have any questions, please consult your sales organization.

Other models and accessories → [www.sick.com/IN4000\\_Direct](http://www.sick.com/IN4000_Direct)



### Detailed technical data

#### Features

<b>Sensor principle</b>	Inductive
<b>Number of safe outputs</b>	2
<b>Switching delay from state change</b>	Max. 50 ms <sup>1)</sup>
<b>Enable zone</b>	4 mm ... 20 mm <sup>2)</sup>
<b>Safe switch off distance S<sub>ar</sub></b>	45 mm <sup>2)</sup>
<b>Actuation directions</b>	5
<b>Active sensor surfaces</b>	1
<b>Monitoring time minimum dwell time</b>	≥ 0.2 s

<sup>1)</sup> During this time the output is switched off (Logical "0"), see response range.

<sup>2)</sup> Dependent on material. The indicated values refer to steel ST37.

#### Safety-related parameters

<b>Safety integrity level</b>	SIL3 (IEC 61508)
<b>Category</b>	Category 3 (EN ISO 13849)
<b>Performance level</b>	PL e (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$1.0 \times 10^{-8}$
<b>T<sub>M</sub> (mission time)</b>	10 years (EN ISO 13849) <sup>1)</sup> 20 years <sup>2)</sup>
<b>Type</b>	Type 3 (EN ISO 14119)
<b>Actuator coding level</b>	Uncoded (EN ISO 14119)
<b>Classification in compliance with IEC/EN 60947-5-3</b>	PDF-M

<sup>1)</sup> At -25 °C ... +70 °C and 5 % ... 95 % relative air humidity.

<sup>2)</sup> At +10 °C ... +40 °C and 5 % ... 70 % relative air humidity.

#### Functions

<b>Safe series connection</b>	With Flexi Loop (with diagnostics)
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## Interfaces

<b>Connection type</b>	Plug connector, M12, 4-pin
Coupling nut material	Brass
<b>Power indication</b>	✓
<b>Status display</b>	✓

## Electrical data

<b>Protection class</b>	III (EN 50178)
<b>Supply voltage <math>V_s</math></b>	24 V DC (19.2 V DC ... 30 V DC)
<b>Power consumption</b>	30 mA
<b>Type of output</b>	Self-monitoring semiconductor outputs (OSSDs)

## Mechanical data

<b>Design</b>	Rectangular
<b>Weight</b>	0.22 kg
<b>Material</b>	
Housing	Zinc die cast (housing), PPE (cover)
<b>Installation type</b>	Non-flush

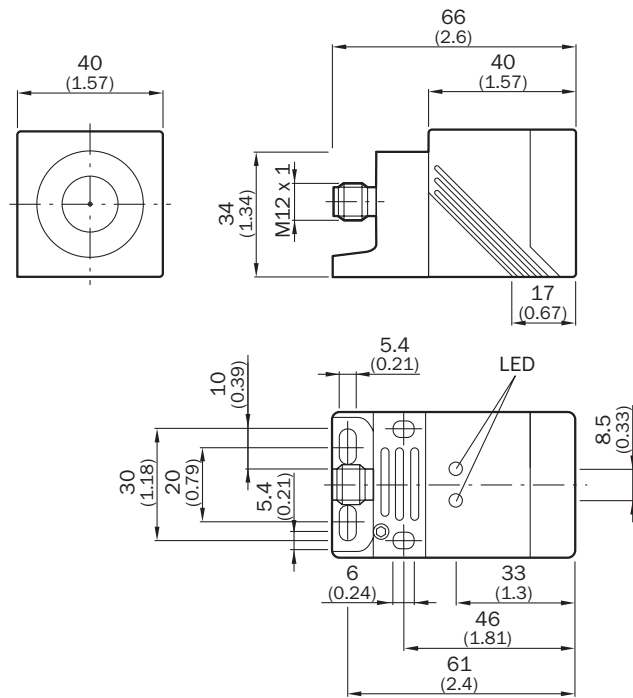
## Ambient data

<b>Enclosure rating</b>	IP67 (IEC 60529)
<b>Ambient operating temperature</b>	-25 °C ... +60 °C
<b>Storage temperature</b>	-25 °C ... +70 °C
<b>Vibration resistance</b>	10 Hz ... 55 Hz, 1 mm (EN 60947-5-3)
<b>Shock resistance</b>	30 g, 11 ms (EN 60947-5-3)

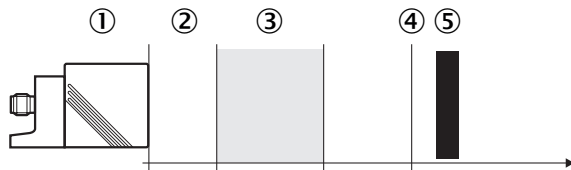
## Classifications

<b>eCl@ss 5.0</b>	27272401
<b>eCl@ss 5.1.4</b>	27272401
<b>eCl@ss 6.0</b>	27272401
<b>eCl@ss 6.2</b>	27272401
<b>eCl@ss 7.0</b>	27272401
<b>eCl@ss 8.0</b>	27272401
<b>eCl@ss 8.1</b>	27272401
<b>eCl@ss 9.0</b>	27272401
<b>eCl@ss 10.0</b>	27272401
<b>eCl@ss 11.0</b>	27272401
<b>eCl@ss 12.0</b>	27274101
<b>ETIM 5.0</b>	EC001818
<b>ETIM 6.0</b>	EC001818
<b>ETIM 7.0</b>	EC001818
<b>ETIM 8.0</b>	EC001818
<b>UNSPSC 16.0901</b>	39122205

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

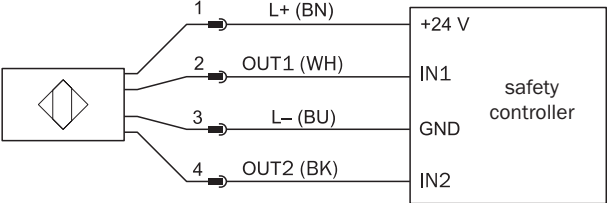
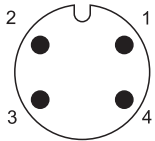


### Response range



- ① Sensor
- ② Close range
- ③ Enable zone
- ④ Safe switch off distance  $S_{ar}$
- ⑤ Actuator

Pin assignment



## 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)