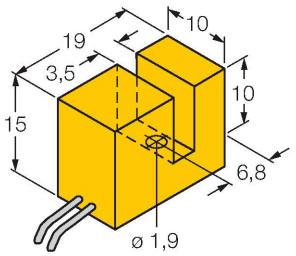
# SI3.5-K10-Y1
# Inductive Sensor – Slot-type



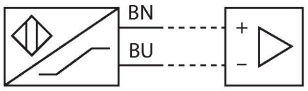

## Technical data

| | |
|---|---|
| Type | SI3.5-K10-Y1 |
| Ident. no. | 10090 |
| Slot width | 3.5 mm |
| Repeat accuracy | ≤ 2 % of full scale |
| Temperature drift | ≤ ± 10 % |
| Hysteresis | 1…10 % |
| Ambient temperature | -25…+70 °C |
| Output function | 2-wire, NAMUR |
| Switching frequency | 3 kHz |
| Voltage | Nom. 8.2 VDC |
| Non-actuated current consumption | ≥ 2.1 mA |
| Actuated current consumption | ≤ 1.2 mA |
| Approval acc. to | KEMA 02 ATEX 1090X |
| Internal capacitance ($C_i$)/inductance ($L_i$) | 250 nF/350 µH |
| Device marking | ⟨Ex⟩ II 2 G Ex ia IIC T6 Gb / II 1 D Ex ia IIIC T95 °C Da |
| | (max. $U_i$ = 20 V, $I_i$ = 60 mA, $P_i$ = 130 mW) |
| Design | Slot sensor, K10 |
| Dimensions | 19 x 15 x 10 mm |
| Housing material | Plastic, PBT-GF30-V0 |
| Active area material | Plastic, PBT-GF30-V0 |
| Electrical connection | Cable |
| Cable quality | Ø 1.1 mm, LiYV, PVC, 0.5 m |
| Litz wire | 2 x0.14 mm |

## Features

- Slot sensor, height 10 mm
- Plastic, PBT-GF30-V0
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Cable connection
- ATEX category II 2 G, Ex-zone 1
- ATEX category II 1 D, Ex-zone 20 for temperatures up to +70 °C
- SIL2 acc. to IEC 61508

## Wiring diagram




## Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

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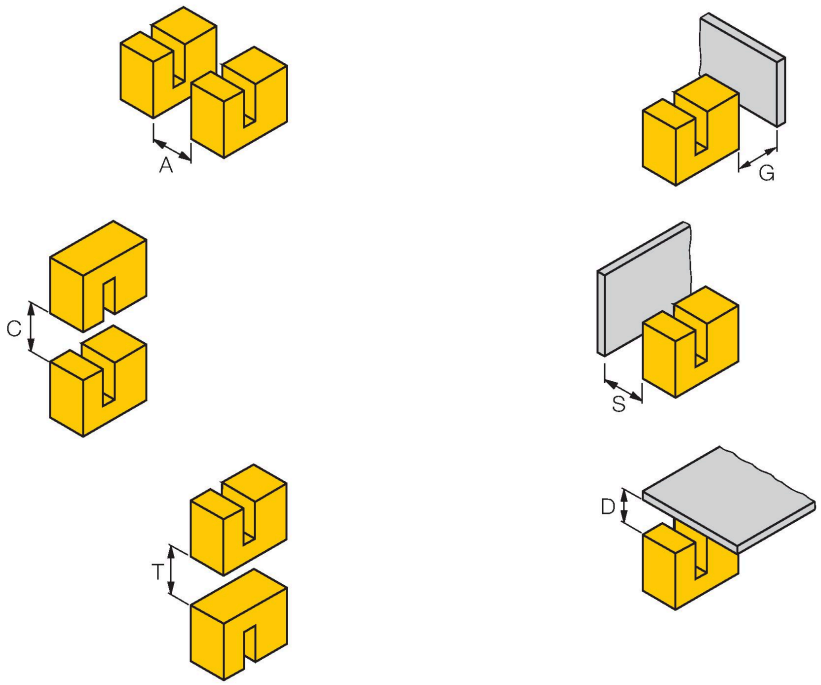
## Technical data

| | |
|---|---|
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP67 |
| MTTF | 6198 years acc. to SN 29500 (Ed. 99) 40 °C |
| Included in delivery | 1 x M1,8 x 10 (DIN963A) |

## Mounting instructions

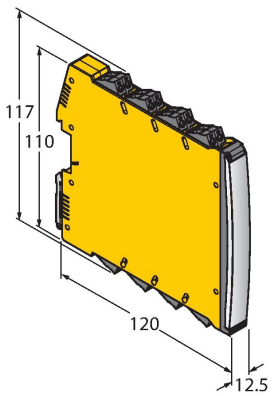
Mounting instructions/Description




| | |
|---|---|
| Distance D | 0 mm |
| Distance T | 5 mm |
| Distance S | 0 mm |
| Distance G | 0 mm |
| Distance A | 15 mm |
| Distance C | 15 mm |

## Accessories

| | |
|---|---|
| IMX12-DI01-2S-2T-0/24VDC | 7580020 |




Isolating switching amplifier, 2-channel; SIL2 acc. to IEC 61508; Ex-proof version; 2 transistor outputs; input Namur signal; ON/OFF switchable monitoring of wire-break and short-circuit; toggle between NO/NC mode; signal doubling; removable screw terminals; 12.5 mm wide; 24 VDC power supply

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# Operating Instructions

**Intended use**

**This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas according to EN 60079-0:2012 + A11 and EN 60079-11:2012.Further it is suited for use in safety-related systems, including SIL2 as per IEC 61508.In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.**

**For use in explosion hazardous areas conform to classification**

II 2 G and II 1 D (Group II, Category 2 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

**Marking (see device or technical data sheet)**

Ex II 2 G and Ex ia IIC T6 Gb acc. to EN60079-0 and -26 and Ex II 1 D Ex ia IIIC T95 °C Da IP67 acc. to EN60079-0

**Local admissible ambient temperature**

-25…+70 °C

**Installation/Commissioning**

**These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas.Please verify that the classification and the marking on the device comply with the actual application conditions.**

**This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values.After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).Attention! When used in safety systems, all content of the security manual must be observed.**

**Installation and mounting instructions**

**Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device.If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields.The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet.**

**Service/Maintenance**

**Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.**

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