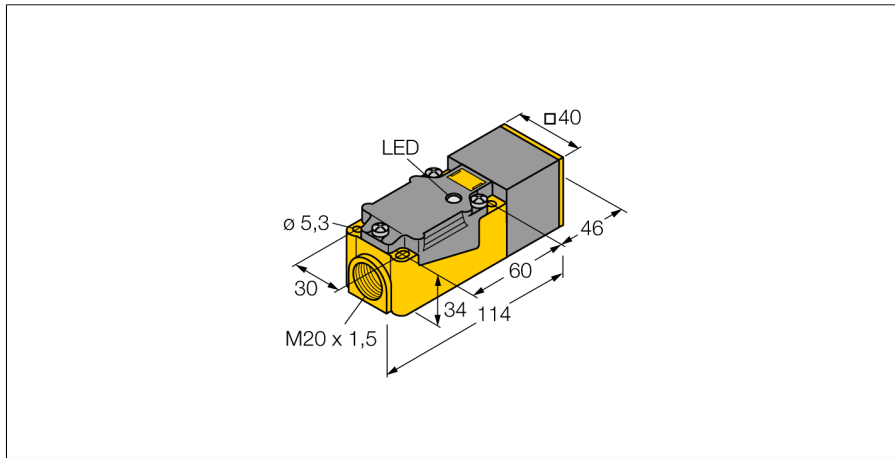


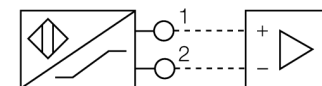
**Inductive sensor  
with extended temperature range  
BI15-CP40-Y1X/S100**



- ATEX category II 2 G, Ex zone 1
- ATEX category II 1 D, Ex zone 20 at temperatures up to +70°C
- SIL2 according to IEC 61508
- Rectangular, height 40 mm
- Variable orientation of active face in 9 directions
- Plastic, PBT-GF30-V0
- For temperatures up to +100 °C
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Terminal chamber

|   |   |
|---|---|
| <b>Type code</b>  | BI15-CP40-Y1X/S100  |
| Ident no.   | 10396   |
| <b>Rated operating distance Sn</b>                                    | 15 mm   |
| Mounting condition  | flush   |
| Assured sensing range   | ≤ (0,81 x Sn) mm  |
| Correction factors  | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4   |
| Repeatability   | ≤ 2 % of full scale   |
| Temperature drift   | 10 %  |
|   | ≤ ± 20 %, ≥ +70 °C  |
| Hysteresis  | 1...10 %  |
| Ambient temperature   | -25...+100 °C   |
|   | in the explosion hazardous area see instruction leaflet   |
| <b>Output function</b>  | 2-wire, NAMUR   |
| Switching frequency   | 0.15 kHz  |
| Voltage   | Nom. 8.2 VDC  |
| Non-actuated current consumption                                      | ≥ 2.1 mA  |
| Actuated current consumption  | ≤ 1.2 mA  |
| <b>Approval acc. to</b>   | KEMA 02 ATEX 1090X  |
| Internal capacitance (C <sub>i</sub> ) / inductance (L <sub>i</sub> ) | 250 nF / 350 μH   |
| Device designation  | ⊕ II 2 G Ex ia IIC T6 Gb / II 1 D Ex ia IIIC T95 °C Da<br>(max. U <sub>i</sub> = 20 V, I <sub>i</sub> = 60 mA, P <sub>i</sub> = 200 mW) |
| Warning   | avoid static charging   |
| <b>Design</b>   | rectangular, CP40   |
| Dimensions  | 114 x 40 x 40 mm  |
| Housing material  | plastic, PBT, black   |
| Connection  | terminal chamber  |
| Clamping ability  | ≤ 2.5 mm <sup>2</sup>   |
| 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  |
| <b>Switching state</b>  | LED yellow  |

**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.

Special versions are available for ambient temperatures between -60°C and +250°C.

**Inductive sensor  
with extended temperature range  
BI15-CP40-Y1X/S100**

|                            |        |
|----------------------------|--------|
| Distance D                 | 2 x B  |
| Distance W                 | 3 x Sn |
| Distance S                 | 1 x B  |
| Distance G                 | 6 x Sn |
| <hr/>                      |        |
| Width of the active face B | 40 mm  |

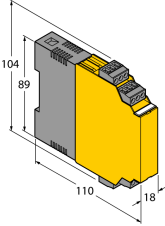
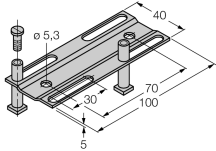
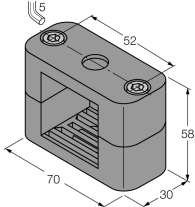


**Inductive sensor  
with extended temperature range  
BI15-CP40-Y1X/S100**

**TURCK**

Industrial  
Automation

**Accessories**

| Type code                | Ident no. | Description  | Dimension drawing   |
|--------------------------|-----------|--|---|
| IM1-22EX-R               | 7541231   | Isolating switching amplifier, dual-channel; 2 relay outputs NO; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable signal flow (NO/ NC mode); removable terminal blocks; 18 mm width; universal voltage supply unit |    |
| Adjusting bar JS 025/037 | 69429     | Adjusting bar for rectangular housings CK/CP40; material: VA 1.4301  |    |
| BSS-CP40                 | 6901318   | Mounting bracket for rectangular devices; material: Polypropylene  |  |

# Inductive sensor with extended temperature range BI15-CP40-Y1X/S100

## Operating manual

### Intended use

This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2012, -11:2012, -26:2007. 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)

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

### Local admissible ambient temperature

as ATEX category II 2 G electrical equipment -25...+100 °C, as category II 1 D -25...+70 °C. The corresponding temperature classes are provided in the ATEX type-examination certificate.

### 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 compliant to EN60079-0 and -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).

When employed in safety systems to IEC 51408 it is required to assess the failure probability (PFD) of the complete circuitry.

### 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.

In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

### Special conditions for safe operation

avoid static charging

### 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.