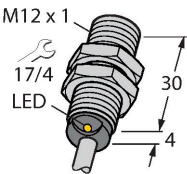


# BI2-G12-Y2X 7M

## Inductive Sensor



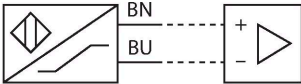
### Technical data

|                                                                     |                                                                                                 |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Type                                                                | BI2-G12-Y2X 7M                                                                                  |
| ID                                                                  | 4010501                                                                                         |
| General data                                                        |                                                                                                 |
| Rated switching distance                                            | 2 mm                                                                                            |
| Mounting conditions                                                 | Flush                                                                                           |
| Secured operating distance                                          | ≤ (0.81 × S <sub>n</sub> ) mm                                                                   |
| Correction factors                                                  | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4                                             |
| Repeat accuracy                                                     | ≤ 2 % of full scale                                                                             |
| Temperature drift                                                   | ≤ ±10 %                                                                                         |
| Hysteresis                                                          | 1...10 %                                                                                        |
| Electrical data                                                     |                                                                                                 |
| Output function                                                     | 2-wire, NAMUR                                                                                   |
| Switching frequency                                                 | 5 kHz                                                                                           |
| Voltage                                                             | Nom. 8.2 VDC                                                                                    |
| Non-actuated current consumption                                    | ≥ 2.1 mA                                                                                        |
| Actuated current consumption                                        | ≤ 1.2 mA                                                                                        |
| Approval acc. to                                                    | BVS 04 ATEX E 202                                                                               |
| Internal capacitance (C <sub>i</sub> )/inductance (L <sub>i</sub> ) | 150 nF/150 μH                                                                                   |
| Device marking                                                      | EX IM1 Ex ia I<br>(max. U <sub>i</sub> = 15 V, I <sub>i</sub> = 60 mA, P <sub>i</sub> = 200 mW) |
| Mechanical data                                                     |                                                                                                 |
| Design                                                              | Threaded barrel, M12 x 1                                                                        |
| Dimensions                                                          | 34 mm                                                                                           |
| Housing material                                                    | Metal, CuZn, Chrome-plated                                                                      |
| Active area material                                                | Plastic, PA12-GF30                                                                              |
| End cap                                                             | Plastic, EPTR                                                                                   |

### Features

- Threaded barrel, M12 x 1
- Chrome-plated brass
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Cable connection
- ATEX category I M1, mining

### Wiring diagram



### Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

Technical data

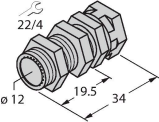
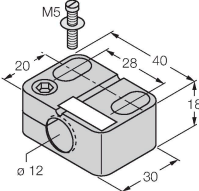
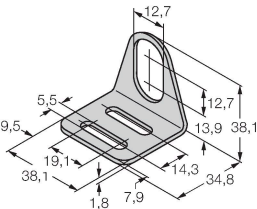
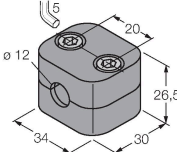
|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Max. tightening torque of housing nut | 10 Nm                                      |
| Electrical connection                 | Cable                                      |
| Cable quality                         | Ø 5.2 mm, Blue, LifYY, PVC, 7 m            |
| Core cross-section                    | 2 x 0.34 mm <sup>2</sup>                   |
| Environmental conditions              |                                            |
| Ambient temperature                   | -25...+70 °C                               |
| 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 |
| Switching state                       | LED, Yellow                                |

Mounting instructions

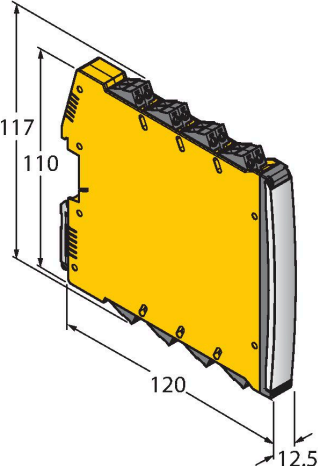
Mounting instructions/Description

|                        |         |
|------------------------|---------|
| Distance D             | 2 x B   |
| Distance W             | 3 x Sn  |
| Distance T             | 3 x B   |
| Distance S             | 1.5 x B |
| Distance G             | 6 x Sn  |
| Diameter active area B | Ø 12 mm |

Accessories

|                                                                                   |         |                                                                                                                                                                                            |                                                                                    |         |                                                                                |
|-----------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|
| QM-12                                                                             | 6945101 | Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets. | BST-12B                                                                            | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6      |
|  |         |                                                                                                                                                                                            |  |         |                                                                                |
| MW12                                                                              | 6945003 | Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)                                                                                               | BSS-12                                                                             | 6901321 | Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene |
|  |         |                                                                                                                                                                                            |  |         |                                                                                |

Accessories

| Dimension drawing                                                                   | Type                     | ID      |                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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 |

Instructions for use

|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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), EN 60079-11 (2012) and EN 50303 (2000).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 | I M 1 (Group I, Category M 1, electrical equipment for mining).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Marking (see device or technical data sheet)                   |  I M 1 and Ex ia I acc. to EN 60079-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 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).                                                                                                                                                                                                                                                                                                |
| 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. |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |