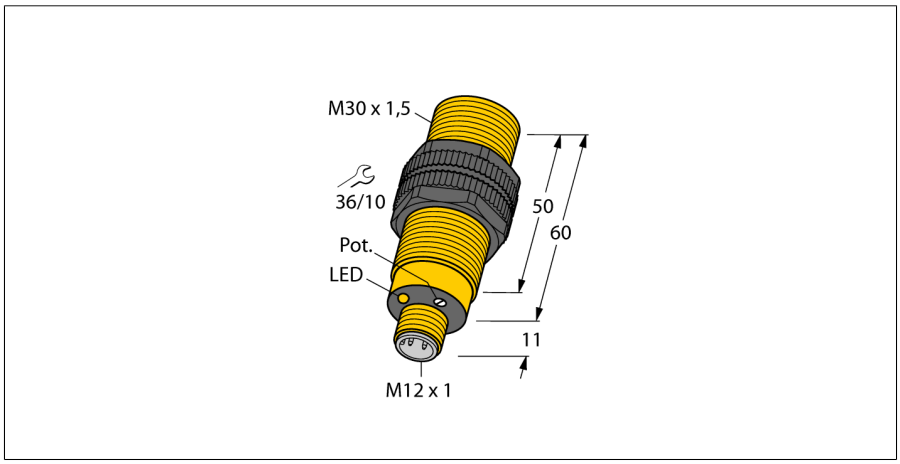
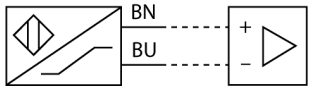
Capacitive sensor
BC10-S30-Y1X-H1141



- **ATEX category II 2 G, Ex zone 1**
- **ATEX category II 1 D, Ex zone 20**
- **SIL2 as per IEC 61508**
- **Threaded barrel, M30 x 1.5**
- **Plastic, PA12-GF30**
- **Fine adjustment via potentiometer**
- **DC 2-wire, nom. 8.2 VDC**
- **Output acc. to DIN EN 60947-5-6 (NAMUR)**
- **M12 x 1 connector**

Type code	BC10-S30-Y1X-H1141
Ident no.	2010000
Rated switching distance (flush)	10 mm
Rated switching distance (non-flush)	15 mm
Assured sensing range	≤ (0.72 x Sn) mm
Hysteresis	1…20 %
Temperature drift	type ≤ ± 20 %
Repeatability	≤ 2 % of full scale
Ambient temperature	-25…+70 °C
Voltage	Nom. 8.2 VDC
Non-actuated current consumption	≤ 1.2 mA
Actuated current consumption	≥ 2.1 mA
Switching frequency	0.1 kHz
Output function	2-wire, NAMUR
Approval acc. to	KEMA 02 ATEX 1090X
Internal capacitance (C_i) / inductance (L_i)	150 nF / 150 µH
Device designation	Ex II 2 G Ex ia IIC T6 Gb / II 1 D Ex ia IIIC T115 °C Da (max. U_i = 20 V, I_i = 20 mA, P_i = 200 mW)
Design	threaded barrel, M30 x 1.5
Dimensions	60 mm
Housing material	plastic, PA
Material active area	Plastic, PA
Admissible pressure on front cap	≤ 3 bar
Max. tightening torque housing nut	5 Nm
Connection	cable, M12 x 1
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
MTTF	448 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

Wiring diagram



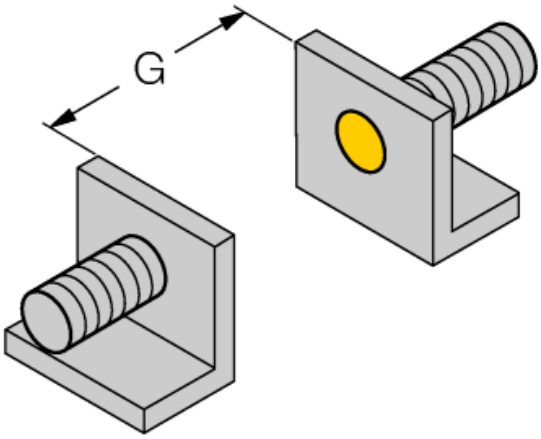
Functional principle

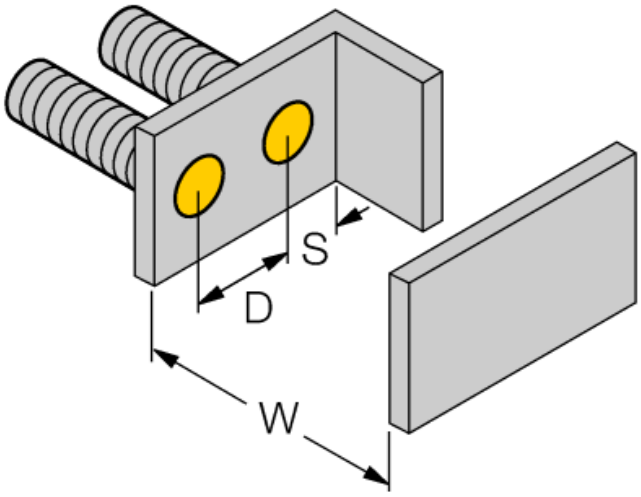
Capacitive proximity switches are designed for non-contact and wear-free detection of electrically conductive as well as non-conductive metal objects.

Edition • 2014-04-11T23:29:43+02:00

Mounting instructions / Description	minimum distances
Distance D	60 mm
Distance W	30 mm
Distance S	45 mm
Distance G	60 mm

Diameter of the active area B	Ø 30 mm

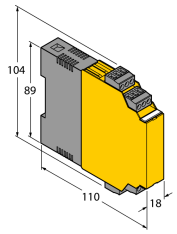
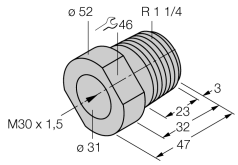
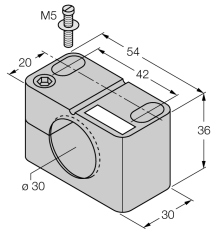




The given minimum distances have been checked in compliance with the standard switching distance. Should the sensitivity of the sensors be changed via potentiometer, the data sheet specifications no longer apply.

Edition • 2014-04-11T23:29:43+02:00

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	
MAP-M30	6950013	Mounting adapter; material: Polypropylene; sensor replacement with filled container possible (adapter remains in container during sensor replacement)	
BST-30B	6947216	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	

Edition • 2014-04-11T23:29:43+02:00

Industrial Automation

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)

Ex II 2 G and Ex ia IIC T6 Gb acc. to EN60079-0 and -26 und Ex II 1 D Ex ia IIIC T115°C Da 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 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.

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.

Edition • 2014-04-11T23:29:43+02:00