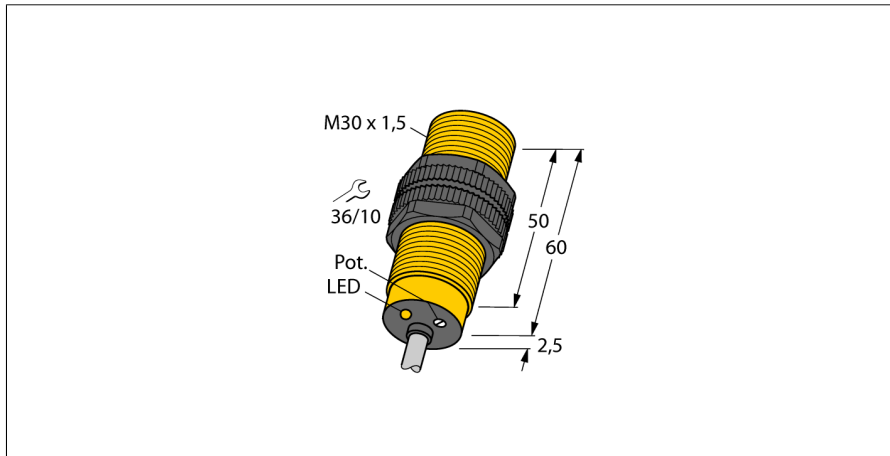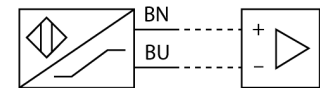# Capacitive sensor
BC10-S30-Y1X

- ATEX category II 2 G, Ex zone 1
- ATEX category II 1 D, Ex zone 20
- SIL2 (Low Demand Mode) acc. to IEC 61508, PL c acc. to ISO 13849-1 at HFT0
- SIL3 (All Demand Mode) acc. to IEC 61508, PL e acc. to ISO 13849-1 with re-dundant configuration HFT1
- M30 × 1.5 threaded barrel
- Plastic, PA12-GF30
- Fine adjustment via potentiometer
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NA-MUR)
- Cable connection

Wiring Diagram

Type designation	BC10-S30-Y1X
Ident-No.	20100

Rated switching distance Sn	15 mm
Mounting conditions	Flush
Secured operating distance	≤ (0.72 x Sn) mm
Repeat accuracy	≤ 2 % of full scale
Temperature drift	type 20 %
Hysteresis	1…20 %
Ambient temperature	-25…+70 °C

Output function	2-wire, NAMUR
Switching frequency	0.1 kHz
Voltage	Nom. 8.2 VDC
Current consumption non-actuated	≤ 1.2 mA
Actuated current consumption	≥ 2.1 mA

Approvals	TIIS
	CSA
	FM
	IECEx
	NEPSI
	CE
	INMETRO
	KOSHA
	GOST
	ATEX
Approval acc. to	KEMA 02 ATEX 1090X

Design	Threaded barrel,M30 × 1.5
Dimensions	62.5 mm
Housing material	Plastic, PA12-GF30, PEI
Active area material	Plastic, PA12-GF30, yellow
End cap	Plastic, PA
Admissible pressure on front cap	≤ 3 bar
Max. tightening torque housing nut	5 Nm
Electrical connection	Cable
Cable quality	5.2mm, LifYY, PVC, 2
Cable cross section	2 x 0.34 mm²
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
Packaging unit	1

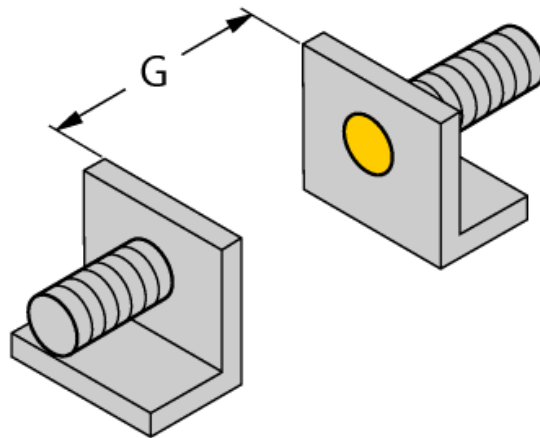|	
Switching state	LED,Yellow

Functional principle

Capacitive proximity switches are designed for non-contact and wear-free detection of electrically conductive as well as non-conduc-tive metal objects.
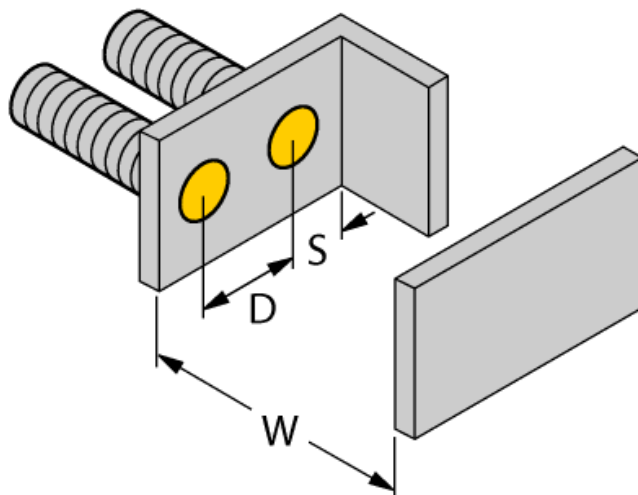
Capacitive sensor
BC10-S30-Y1X

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

Diameter active area B	Ø 30 mm

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

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Accessories

Type code	Ident-No.	Description	
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	
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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Capacitive sensor
BC10-S30-Y1X

Industrial
Automation

Operating manual

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 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 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.