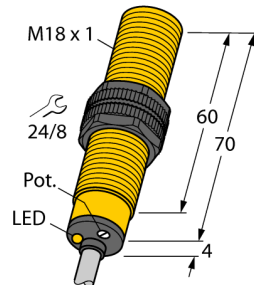


# Capacitive sensor with extended temperature range BC5-S18-Y1X/S100

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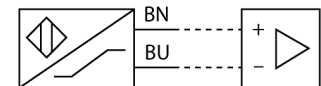
Industrial  
Automation



- 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
- Threaded barrel, M18 x 1
- Plastic, PA12-GF30
- Fine adjustment via potentiometer
- For temperatures up to 100 °C
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Cable connection

<b>Type code</b>	BC5-S18-Y1X/S100
Ident no.	2006021
<b>Rated switching distance (flush)</b>	5 mm
Rated switching distance (non-flush)	7.5 mm
Assured switching distance	≤ (0.72 x S <sub>n</sub> ) mm
Hysteresis	1...20 %
Temperature drift	type 20 %
Repeatability	≤ 2 % of full scale
Ambient temperature	-25...+100 °C in the explosion hazardous area see instruction leaflet
<b>Voltage</b>	Nom. 8.2 VDC
Non-actuated current consumption	≤ 1.2 mA
Actuated current consumption	≥ 2.1 mA
Rated operational current	see derating curve
Switching frequency	0.1 kHz
Output function	2-wire, NAMUR
<b>Approval acc. to</b>	KEMA 02 ATEX 1090X
Internal capacitance (C) / inductance (L)	150 nF / 150 µH
Device designation	⊕ II 2 G Ex ia IIC T6 Gb / II 1 D Ex ia IIIC T115 °C Da (max. U <sub>i</sub> = 20 V, I <sub>i</sub> = 20 mA, P <sub>i</sub> = 200 mW)
<b>Construction</b>	threaded barrel, M18 x 1
Dimensions	74 mm
Housing material	plastic, PA12-GF30, PEI
Material active area	plastic, PA12-GF30, yellow
Admissible pressure on front cap	≤ 6 bar
Max. tightening torque housing nut	2 Nm
Connection	cable
Cable quality	Ø 5.2, SiHSi, Silicone, 2m
Cable cross section	2 x 0.5 mm <sup>2</sup>
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
IP Rating	IP67
MTTF	448 years acc. to SN 29500 (Ed. 99) 40 °C
<b>Switching state</b>	LED yellow

## Wiring diagram

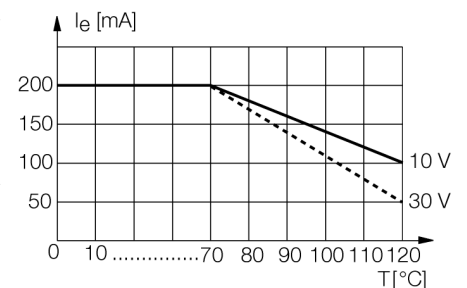


## Functional principle

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

Special capacitive sensor versions can be used at temperatures of up to +100°C.

## Derating curve



# Capacitive sensor with extended temperature range BC5-S18-Y1X/S100

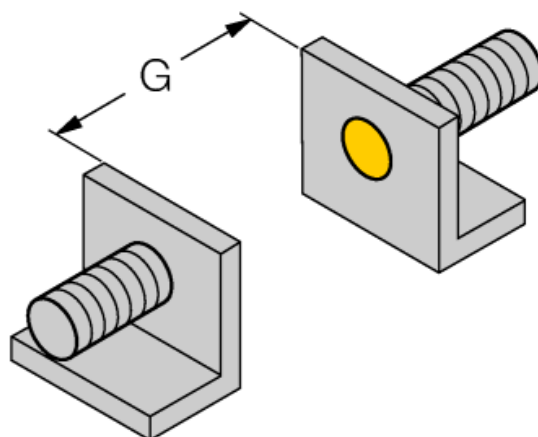
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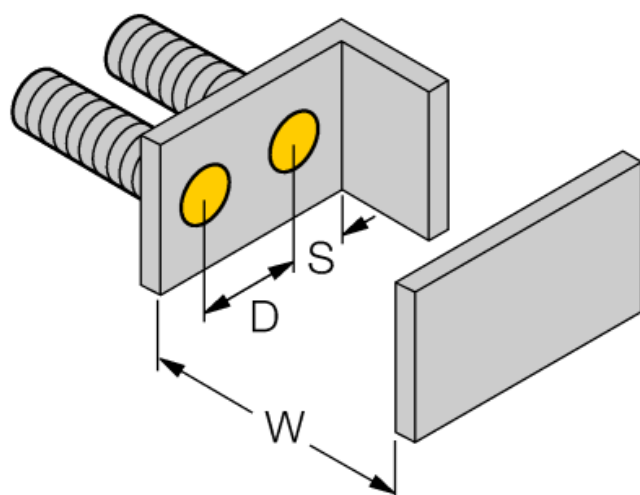
Mounting instructions / Description	minimum distances
Distance D	36 mm
Distance W	15 mm
Distance S	27 mm
Distance G	30 mm

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Diameter of the active area B	Ø 18 mm
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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.

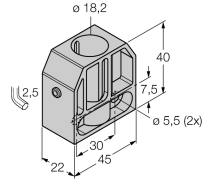
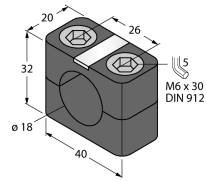
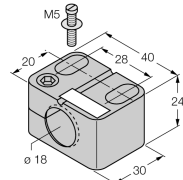
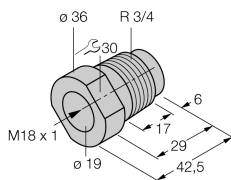
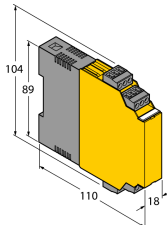


**Capacitive sensor  
with extended temperature range  
BC5-S18-Y1X/S100**

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**Accessories**

Type code	Ident no.	Description	Design
BS 18	69471	Mounting bracket for threaded barrel devices; material: PA66-GF	
BSN 18	69472	Fixing clamp; material: PA66-GF	
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MAP-M18	6950012	Mounting adapter; material: Polypropylene; sensor replacement with filled container possible (adapter remains in container during sensor replacement)	
IM1-22EX-R	7541231	Isolating switching amplifier, 2-channel; 2 relay outputs; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable output mode (NO / NC mode); removable terminal blocks; width 18 mm; universal power supply unit	

# Capacitive sensor with extended temperature range BC5-S18-Y1X/S100

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

### 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.