Capacitive sensor
BC5-S18-Y1X

Type designation
BC5-S18-Y1X

Ident no.
20060

Rated switching distance (flush)
5 mm

Rated switching distance (non-flush)
7.5 mm

Secured operating distance
≤ (0.72 x Sn) mm

Hysteresis
1...20 %

Temperature drift
type 20 %

Repeat accuracy
≤ 2 % of full scale

Ambient temperature
-25...+70 °C

Voltage
Nom. 8.2 VDC

Current consumption non-actuated
≤ 1.2 mA

Actuated current consumption
≥ 2.1 mA

Switching frequency
0.1 kHz

Output function
2-wire, NAMUR

Approvals
TIIS
CSA
FM
IECEX
NEPSI
CE
INMETRO
KOSHA
GOST
ATEX

Approval acc. to
KEMA 02 ATEX 1090X

Internal capacitance (C), inductance (L)
150 nF/150 µH

Device marking
II 2 G Ex ia IIC T6 Gb / II 1 D Ex ia IIIC T115 °C
Da
(max. U = 20 V, I = 20 mA, P = 200 mW)

Design
Threaded barrel, M18 × 1

Dimensions
74 mm

Housing material
Plastic, PA12-GF30, PEI

Active area material
Plastic, PA12-GF30, yellow

Admissible pressure on front cap
≤ 6 bar

Max. tightening torque housing nut
2 Nm

Electrical connection
Cable

Cable quality
Ø 5.2, LIFYY, PVC, 2m

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

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-conductive metal objects.

ATEX category II 2 G, Ex zone 1
ATEX category II 1 D, Ex zone 20
SIL2 as per IEC 61508
M18 × 1 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
## Mounting instructions/Description

<table>
<thead>
<tr>
<th>Distance</th>
<th>Minimum distances</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>36 mm</td>
</tr>
<tr>
<td>W</td>
<td>15 mm</td>
</tr>
<tr>
<td>S</td>
<td>27 mm</td>
</tr>
<tr>
<td>G</td>
<td>30 mm</td>
</tr>
</tbody>
</table>

**Diameter active area B**: Ø 18 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.
### Accessories

<table>
<thead>
<tr>
<th>Type code</th>
<th>Ident no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 18</td>
<td>69471</td>
<td>Mounting bracket for threaded barrel devices; material: PA66-GF</td>
</tr>
<tr>
<td>BSN 18</td>
<td>69472</td>
<td>Fixing clamp; material: PA66-GF</td>
</tr>
<tr>
<td>BST-18B</td>
<td>6947214</td>
<td>Fixing clamp for threaded barrel devices, with dead-stop; material: PA6</td>
</tr>
<tr>
<td>MAP-M18</td>
<td>6950012</td>
<td>Mounting adapter; material: Polypropylene; sensor replacement with filled container possible (adapter remains in container during sensor replacement)</td>
</tr>
<tr>
<td>IMX12-DI01-2S-2T-0/24VDC</td>
<td>7580020</td>
<td>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</td>
</tr>
</tbody>
</table>
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)

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
-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.