**Features**
- EC-Type Examination Certificate TÜV 17
- Usable up to SIL 2 acc. to IEC 61508
- IP 67 rugged plastic housing
- Hermetically sealed
- Vibration, shock and corrosion resistant
- Compact design
- High visibility LED for power and switch status

**Technical Data**

### General Specifications
- Switching function: 2 x normally closed (NC)
- Output type: NAMUR
- Rated operating distance: $s_n \geq 3$ mm
- Installation: Flush mountable
- Assured operating distance: $s_a = 0 \ldots 2.4$ mm
- Actual operating distance: $s_r = 2.7 \ldots 3.3$ mm typ.
- Actuating element: 304 Stainless Steel

### Nominal Ratings
- Nominal voltage: $U_o \geq 8$ V
- Switching frequency: $f = 0 \ldots 3$ kHz
- Hysteresis: $H \text{ Typ.} = 5\%$
- Reverse polarity protection: Reverse polarity protected
- Short-circuit protection: Yes
- Suitable for 2:1 technology: Yes, reverse polarity protection diode not required
- Current consumption:
  - Measuring plate not detected: $\geq 3$ mA
  - Measuring plate detected: $\leq 1$ mA
- Time delay before availability: $t_v \leq 1.1$ ms
- Switching state indicator: LED, yellow

### Functional Safety Related Parameters
- MTTFd: $1470$ a
- Mission Time: $T_M = 20$ a
- Diagnostic Coverage: DC $0\%$

### Ambient Conditions
- Ambient temperature: $T_a = -25 \ldots 100{\degree}C (-13 \ldots 212{\degree}F)$
- Storage temperature: $-40 \ldots 100{\degree}C (-40 \ldots 212{\degree}F)$

### Mechanical Specifications
- Connection (system side): 4-pin, M12 x 1 connector
- Housing material: PBT
- Sensing face: PBT
- Degree of protection: IP67

### General Information
- Use in hazardous area - ATEX: See instruction manuals for categories 1G & 2G
- Use in hazardous area - N.A.: See control drawing: WD-000455

### Compliance with Standards and Directives
- Standard conformity:
  - EN 60947-5-6:2000
  - IEC 60947-5-6:1999
  - EN/IEC 60947-5-2:2007

### Approvals and Certificates
- UL approval: cULus Listed, General Purpose (E248934)
- FM approval: FM 18 US0014X
- TÜV NORD approval: IECE TÜV 17 0035X
## ACTIVATOR AND MOUNTING KITS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>54063A-14800536</td>
<td>Fits Bray S92/93 Sizes 63 to 128 - Imperial</td>
</tr>
<tr>
<td>54063A-14850536</td>
<td>Fits Bray S92/93 Sizes 63 to 128 and Series 98 - Metric</td>
</tr>
<tr>
<td>54160A-14800536</td>
<td>Fits Bray S92/93 Sizes 160 to 210 - Imperial</td>
</tr>
<tr>
<td>54160A-14850536</td>
<td>Fits Bray S92/93 Sizes 160 to 255 - Metric</td>
</tr>
<tr>
<td>54063C-14800536</td>
<td>Fits Bray S92/93 Sizes 63 to 128 - Imperial</td>
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<tr>
<td>54063C-14850536</td>
<td>Fits Bray S92/93 Sizes 63 to 128 and Series 98 - Metric</td>
</tr>
<tr>
<td>54160C-14800536</td>
<td>Fits Bray S92/93 Size 160 - Imperial</td>
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<tr>
<td>54160C-14850536</td>
<td>Fits Bray S92/93 Size 160 - Metric</td>
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<tr>
<td>54210C-14800536</td>
<td>Fits Bray S92/93 Size 210 - Imperial</td>
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<tr>
<td>54210C-14850536</td>
<td>Fits Bray S92/93 Size 210 to 255 - Metric</td>
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</table>

## ACCESSORIES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>090005-76158882</td>
<td>Sensor Cordset - M12 female straight connector (4-pin) to flying leads, 5 meters, zinc, intrinsically safe</td>
</tr>
<tr>
<td>600250-23662536</td>
<td>Y-Connector Cordset (S60) - M12 female straight connector (4-pin sensor side) to M12 male straight connector (6-pin system side) AND Form A solenoid connector (DIN 43650)</td>
</tr>
<tr>
<td>600250-21526536</td>
<td>Series 60 - Solenoid Valve, NAMUR mount 3/2 or 5/2, Form A connector (DIN 43560), intrinsically safe</td>
</tr>
</tbody>
</table>

## WIRING DIAGRAM

![Wiring Diagram](image)

## CONNECTOR PINOUT

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BN (brown)</td>
</tr>
<tr>
<td>2</td>
<td>WH (white)</td>
</tr>
<tr>
<td>3</td>
<td>BU (blue)</td>
</tr>
<tr>
<td>4</td>
<td>BK (black)</td>
</tr>
</tbody>
</table>

Wire colors in accordance with EN 60947-5-2
### INSTRUCTION MANUAL - ATEX (1G)

#### Equipment protection level Ga (ia)

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Manual electrical apparatus for hazardous areas - gas group IIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device category</td>
<td>1G, for use in hazardous areas with gas, vapour and mist</td>
</tr>
<tr>
<td>Protection concept</td>
<td>Intrinsic safety</td>
</tr>
<tr>
<td>CE marking</td>
<td>CE 0518</td>
</tr>
<tr>
<td>ATEX marking</td>
<td>II 1G Ex ia IIC T6…T1 Ga</td>
</tr>
<tr>
<td>EU-Type Examination Certificate</td>
<td>TÜV17 ATEX 203727X</td>
</tr>
<tr>
<td>Effective internal capacitance</td>
<td>$C\leq100\ \text{nF}$. A cable length of 10 m is considered. The value is applicable for one sensor circuit.</td>
</tr>
<tr>
<td>Effective internal inductance</td>
<td>$L\leq100\ \text{μH}$. A cable length of 10 m is considered. The value is applicable for one sensor circuit.</td>
</tr>
</tbody>
</table>

#### General

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EU-type examination certificate has to be observed. Special conditions must be adhered to. The ATEX directive and therefore the EU-type examination certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of $>60^\circ\text{C}$ was tested with regard to hot surfaces by the mentioned certification authority. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

#### Ambient temperature

$T_a$

The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate. The maximum permissible ambient temperature of the data sheet must be noted, in addition, the lower of the two values must be maintained. Note: Use the temperature table for category 1. The 20% reduction in accordance with EN 1127-1:2007 has already been accounted for in the temperature table for category 1.

#### Installation, commissioning

Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The associated apparatus must satisfy the requirements of category ia. Due to the possible danger of ignition, which can arise due to faults and/or transient currents in the equipotential bonding system, galvanic isolation of the power supply and signal circuit is preferable. Associated apparatus without electrical isolation must only be used if the appropriate requirements of IEC 60079-14 are met. Install the device in such a way that the resin surface is not exposed to mechanical hazards.

#### Maintenance

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

#### Special conditions

**Protection from mechanical danger**

When used in the temperature range below $-20^\circ\text{C}$ the sensor should be protected from knocks by the provision of an additional housing.

**Electrostatic charge**

Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding. Avoid electrostatic charges that can cause electrostatic discharge when installing or operating the device. Additional requirements for gas group IIC. Information on electrostatic hazards can be found in the technical specification IEC/TS 60079-32-1.
### INSTRUCTION MANUAL - ATEX (2G)

<table>
<thead>
<tr>
<th>Equipment protection level Gb (ia)</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Manual electrical apparatus for hazardous areas - gas group IIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device category</td>
<td>2G, for use in hazardous areas with gas, vapour and mist</td>
</tr>
<tr>
<td>Protection concept</td>
<td>Intrinsic safety</td>
</tr>
<tr>
<td>Standards</td>
<td>EN 60079-0:2012, EN 60079-11:2012</td>
</tr>
<tr>
<td>CE marking</td>
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#### Effective internal capacitance

\[ C_i \leq 100 \text{ nF} \]

A cable length of 10 m is considered. The value is applicable for one sensor circuit.

#### Effective internal inductance

\[ L_i \leq 100 \mu \text{H} \]

A cable length of 10 m is considered. The value is applicable for one sensor circuit.

### General

- The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.
- The EU-type examination certificate has to be observed.
- Special conditions must be adhered to.
- The ATEX directive and therefore the EU-type examination certificates apply in general only to the use of electrical apparatus under atmospheric conditions.
- The use in ambient temperatures of > 60°C was tested with regard to hot surfaces by the mentioned certification authority.
- If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

#### Ambient temperature

\[ T_A \]

The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.

The maximum permissible ambient temperature of the data sheet must be noted, in addition, the lower of the two values must be maintained.

### Installation, commissioning

- Laws and/or regulations and standards governing the use or intended usage goal must be observed.
- The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety.
- Install the device in such a way that the resin surface is not exposed to mechanical hazards.

### Maintenance

No changes can be made to apparatus, which are operated in hazardous areas.

Repairs to these apparatus are not possible.

### Special conditions

#### Protection from mechanical danger

- No changes can be made to apparatus, which are operated in hazardous areas.
- Repairs to these apparatus are not possible.
- When used in the temperature range below -20°C the sensor should be protected from knocks by the provision of an additional housing.

#### Electrostatic charge

- Electrostatic charges must be avoided on the mechanical housing components.
- Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.