

# Safety Instructions

## Minicap FTC260

EAC: Ex ta/tc IIC T105°C Da/Dc



Document: XA01651F-B

Safety instructions for electrical apparatus for explosion-hazardous areas →  3

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# Minicap FTC260

## Table of contents

|   |   |
|---|---|
| Associated documentation . . . . .                | 4 |
| Supplementary documentation . . . . .             | 4 |
| Manufacturer's certificates . . . . .             | 4 |
| Manufacturer address . . . . .                    | 4 |
| Extended order code . . . . .                     | 4 |
| Safety instructions: General . . . . .            | 6 |
| Safety instructions: Special conditions . . . . . | 6 |
| Safety instructions: Installation . . . . .       | 6 |
| Temperature tables . . . . .                      | 6 |
| Connection data . . . . .                         | 7 |

|                                    |  |                               |   |                                  |   |                  |                      |  |                               |  |                                  |
|------------------------------------|--|-------------------------------|---|----------------------------------|---|------------------|----------------------|--|-------------------------------|--|----------------------------------|
| <b>Associated documentation</b>    | <p>This document is an integral part of the following Operating Instructions:<br/>TI00287F/00, KA00093F/00</p>   |                               |   |                                  |   |                  |                      |  |                               |  |                                  |
| <b>Supplementary documentation</b> | <p>Explosion-protection brochure: CP00021Z/11</p> <p>The Explosion-protection brochure is available:</p> <ul style="list-style-type: none"> <li>■ In the download area of the Endress+Hauser website:<br/><a href="http://www.endress.com">www.endress.com</a> -&gt; Downloads -&gt; Media Type: Documentation -&gt; Documentation Type: Brochures and catalogs -&gt; Text Search: CP00021Z</li> <li>■ On the CD for devices with CD-based documentation</li> </ul>  |                               |   |                                  |   |                  |                      |  |                               |  |                                  |
| <b>Manufacturer's certificates</b> | <p><b>Certificate of Conformity TP TC 012/2011</b></p> <p>Inspection authority:<br/>LLC NANIO CCVE (ООО «НАНИО ЦСВЭ»)</p> <p>Certificate number:<br/>TC RU C-DE.AA87.B.00912</p> <p>Affixing the certificate number certifies conformity with the following standards (depending on the device version):</p> <ul style="list-style-type: none"> <li>■ GOST IEC 60079-31-2010</li> <li>■ GOST 31610.0-2014 (IEC 60079-0:2011)</li> </ul>  |                               |   |                                  |   |                  |                      |  |                               |  |                                  |
| <b>Manufacturer address</b>        | <p>Endress+Hauser SE+Co. KG<br/>Hauptstraße 1<br/>79689 Maulburg, Germany<br/>Address of the manufacturing plant: See nameplate.</p>   |                               |   |                                  |   |                  |                      |  |                               |  |                                  |
| <b>Extended order code</b>         | <p>The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.</p> <p><b>Structure of the extended order code</b></p> <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">FTC260</td> <td style="text-align: center;">–</td> <td style="text-align: center;">*****</td> <td style="text-align: center;">+</td> <td style="text-align: center;">A*B*C*D*E*F*G*..</td> </tr> <tr> <td style="text-align: center;"><i>(Device type)</i></td> <td></td> <td style="text-align: center;"><i>(Basic specifications)</i></td> <td></td> <td style="text-align: center;"><i>(Optional specifications)</i></td> </tr> </table> <p>* = Placeholder<br/>At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.</p> <p><i>Basic specifications</i></p> <p>The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available. The selected option of a feature can consist of several positions.</p> <p><i>Optional specifications</i></p> <p>The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).</p> | FTC260                        | – | *****                            | + | A*B*C*D*E*F*G*.. | <i>(Device type)</i> |  | <i>(Basic specifications)</i> |  | <i>(Optional specifications)</i> |
| FTC260                             | –  | *****                         | + | A*B*C*D*E*F*G*..                 |   |                  |                      |  |                               |  |                                  |
| <i>(Device type)</i>               |  | <i>(Basic specifications)</i> |   | <i>(Optional specifications)</i> |   |                  |                      |  |                               |  |                                  |

More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.

#### Extended order code: Minicap



The following specifications reproduce an extract from the product structure and are used to assign:

- This documentation to the device (using the extended order code on the nameplate).
- The device options cited in the document.

#### Device type

FTC260

#### Basic specifications

| Position 1 (Approval) |   |                                |
|-----------------------|---|--------------------------------|
| Selected option       |   | Description                    |
| FTC260                | F | EAC Ex ta/tc IIIC T105°C Da/Dc |

| Position 3 (Switch Output) |   |                          |
|----------------------------|---|--------------------------|
| Selected option            |   | Description              |
| FTC260                     | 2 | 3-wire PNP 10.8-45VDC    |
|                            | 4 | Relay 20-253VAC/20-55VDC |

| Position 4 (Housing; Cable Entry) |   |  |
|-----------------------------------|---|--|
| Selected option                   |   | Description                                    |
| FTC260                            | H | F34 Alu IP66; thread NPT1/2, NEMA Type 4 Encl. |
|                                   | I | F34 Alu IP66; thread G1/2, NEMA Type 4 Encl.   |
|                                   | J | F34 Alu IP66; gland M20, NEMA Type 4 Encl.     |

| Position 5 (Additional Option) |   |                                   |
|--------------------------------|---|-----------------------------------|
| Selected option                |   | Description                       |
| FTC260                         | 1 | Basic version                     |
|                                | 3 | Glas inspection window, aluminium |

#### Optional specifications

No options specific to hazardous locations are available.

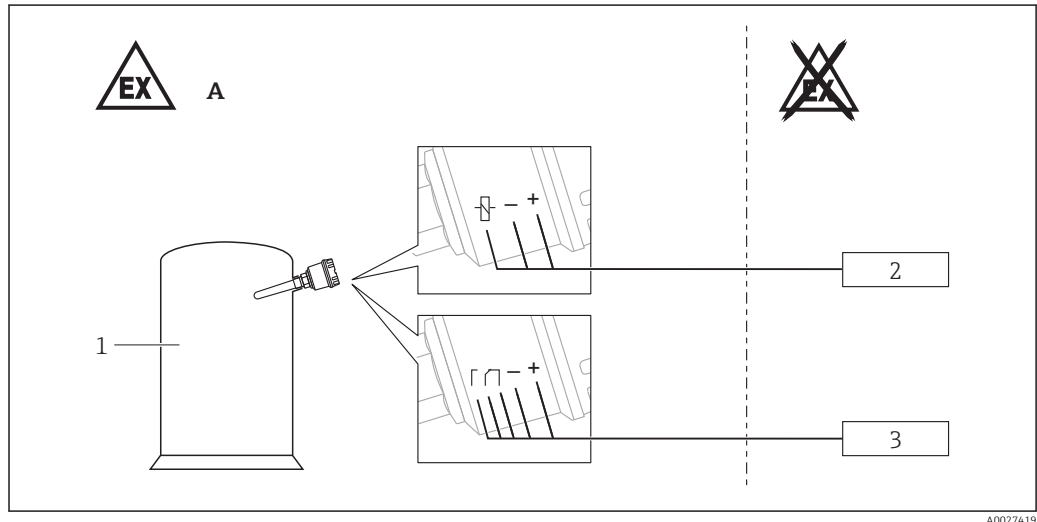
**Safety instructions: General**

- Comply with the installation and safety instructions in the Operating Instructions.
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. housing, sensor element, special varnishing, attached additional plates, ..)
  - Of isolated capacities (e.g. isolated metallic plates)

**Safety instructions: Special conditions**

In the event of additional or alternative special varnishing on the housing or other metal parts:  
 - Observe the danger of electrostatic charging and discharge.  
 - Do not rub surfaces with a dry cloth.

**Safety instructions: Installation**



- 1 Tank; Hazardous area Zone 20
- A Zone 22
- 2 Power supply or switching unit: DC version or
- 3 Power supply or switching unit: Relay version

**Temperature tables**

| Thermal performance limits                          |                                      |               |
|---|--------------------------------------|---------------|
| Temperature of the sensor<br>(Zone 20)              | Permissible process temperature      | -40 to +80 °C |
|   | Maximum surface temperature          |               |
|   | - at an ambient temperature of 40 °C | 65 °C         |
|   | - at an ambient temperature of 80 °C | 105 °C        |
| Temperature of the electronics<br>housing (Zone 22) | Permissible ambient temperature      | -40 to +60 °C |
|   | Maximum surface temperature          |               |
|   | - at an ambient temperature of 40 °C | 70 °C         |
|   | - at an ambient temperature of 60 °C | 90 °C         |

| Degree of ingress protection  |           |
|-------------------------------|-----------|
| Sensor (Zone 20)              | IP66      |
| Electronics housing (Zone 22) | Min. IP5X |

## Connection data

| Electrical performance limits  |  |   |
|--|--|---|
| <i>Basic specification, Position 3<br/>(Switch Output) = 4<br/>(AC/DC relay version)</i> | Maximum operating voltage                                | 20 to 253 V <sub>AC</sub> , 50/60 Hz or<br>20 to 55 V <sub>DC</sub>   |
|  | Current consumption                                      | max. 2 W  |
|  | Relay circuit  | 253 V <sub>AC</sub> / 4 A / 1000 VA or<br>253 V <sub>DC</sub> / 0.2 A / 50 W or<br>30 V <sub>DC</sub> / 4 A / 120 W |
|  | Fuse   | 500 mA  |
| <i>Basic specification, Position 3<br/>(Switch Output) = 2<br/>(DC PNP version)</i>      | Maximum operating voltage                                | 10.8 to 45 V <sub>DC</sub>  |
|  | Current consumption                                      | max. 1.5 W  |
|  | Switch output (PNP)<br>– Current<br>– Switching capacity | max. 200 mA<br>9 W  |



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