

# Safety Instructions

## Prosonic T FMU30

ATEX: II 1/2 G Ex ia IIC T5 Ga/Gb

IECEX: Ex ia IIC T5 Ga/Gb





# Prosonic T FMU30

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## About this document

 This document has been translated into several languages. Legally determined is solely the English source text.

The document translated into EU languages is available:

- In the download area of the Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: [www.endress.com](http://www.endress.com) -> Product tools -> Access device specific information -> Check device features

 If not yet available, the document can be ordered.

## Associated documentation

This document is an integral part of the following Operating Instructions:

BA00387F/00

## Supplementary documentation

Explosion-protection brochure: CP00021Z/11

The Explosion-protection brochure is available:

- In the download area of the Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

## Manufacturer's certificates

### EU Declaration of Conformity

Declaration Number:

EG13001

The EU Declaration of Conformity is available:

In the download area of the Endress+Hauser website:

[www.endress.com](http://www.endress.com) -> Downloads -> Declaration ->

Type: EU Declaration -> Product Code: ...

### EU type-examination certificate

Certificate number:

DEKRA 13 ATEX 0072 X

List of applied standards: See EU Declaration of Conformity.

## IEC Declaration of Conformity

Certificate number:  
IECEX DEK 13.0015X

Affixing the certificate number certifies conformity with the following standards (depending on the device version):

- IEC 60079-0 : 2017
- IEC 60079-11 : 2011
- IEC 60079-26 : 2014

### Manufacturer address

Endress+Hauser SE+Co. KG  
Hauptstraße 1  
79689 Maulburg, Germany  
Address of the manufacturing plant: See nameplate.

### Other standards

Among other things, the following standards shall be observed in their current version for proper installation:

- IEC/EN 60079-14: "Explosive atmospheres - Part 14: Electrical installations design, selection and erection"
- EN 1127-1: "Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology"

### Extended order code

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.

#### Structure of the extended order code

FMU30	-	*****	+	A*B*C*D*E*F*G*..
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>

\* = Placeholder

At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

#### *Basic specifications*

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.

### *Optional specifications*

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).

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: Prosonic T**



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*

FMU30

### *Basic specifications*

Position 1, 2 (Approval)		
Selected option		Description
FMU30	BB	ATEX II 1/2 G Ex ia IIC T5 Ga/Gb
	IB	IECEX Ex ia IIC T5 Ga/Gb

### *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.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. enclosure, sensor element, special varnishing, attached additional plates, ..)
  - Of isolated capacities (e.g. isolated metallic plates)
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

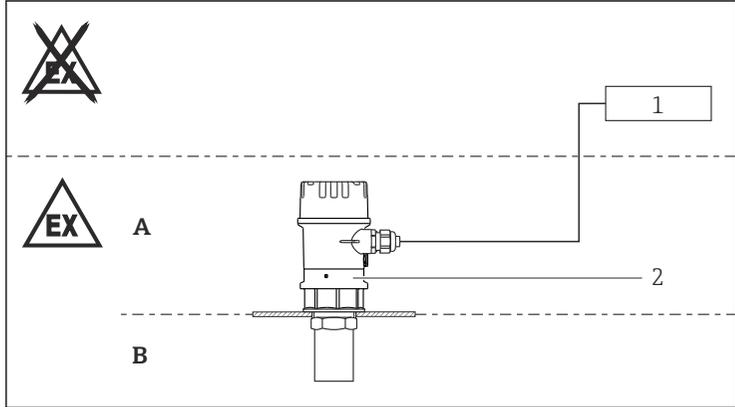
**Safety instructions:  
Special conditions**

Permitted ambient temperature range:

$$-20\text{ °C} \leq T_a \leq +60\text{ °C}$$

- Sensors can be used in gases of Group IIC if avoiding electrostatic charging (e.g. through friction, cleaning, maintenance, strong medium flow). These sensors are marked by the warning sign "Avoid Electrostatic Charge".
- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- To avoid electrostatic charging: Do not rub surfaces with a dry cloth.
- In the event of additional or alternative special varnishing on the enclosure or other metal parts or for adhesive plates:
  - Observe the danger of electrostatic charging and discharge.
  - Do not install in the vicinity of processes ( $\leq 0.5\text{ m}$ ) generating strong electrostatic charges.

## Safety instructions: Installation



 1

- A Zone 1; Electronic  
 B Zone 0; Process  
 1 Power supply  
 2 FMU30

- Connect the device using suitable cable and wire entries of protection type "Intrinsic safety (Ex i)".
- Continuous service temperature of the connecting cable:  $\geq T_a + 5 \text{ K}$ .
- To maintain the ingress protection of the enclosure IP68: Install the enclosure cover and cable glands correctly.
- Seal unused entry glands with sealing plugs.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.

### Intrinsic safety

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ia.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $500 \text{ V}_{\text{rms}}$ .

### Potential equalization

Integrate the device into the local potential equalization.

**Safety instructions:**  
**Zone 0**

- In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions.
  - Temperature: -20 to +60 °C
  - Pressure: 80 to 110 kPa (0.8 to 1.1 bar)
  - Air with normal oxygen content, usually 21 % (V/V)
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.
- Only use the device in media to which the wetted materials have sufficient durability (e.g. process connection seal).

**Connection data**

**Intrinsically safe power supply and signal circuit**

$U_i \leq 30 \text{ V}$   
 $I_i \leq 300 \text{ mA}$   
 $P_i \leq 1 \text{ W}$   
 $C_i = 13 \text{ nF}$   
 $L_i = 0$

**Intrinsically safe display circuit**

$U_o = 3.8 \text{ V}$ $I_o = 30.53 \text{ mA}$ $P_o = 29 \text{ mW}$ $C_o = 100 \text{ }\mu\text{F}$ $L_o = 1 \text{ mH}$	$U_i = 3.8 \text{ V}$ $I_i = 47 \text{ mA}$ $P_i = 66 \text{ mW}$ $C_i = 0$ $L_i = 0$
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