

# Safety Instructions

## Prosonic T FMU30

Ex ia IIC T5 Ga/Gb





# Prosonic T FMU30

## Table of contents

About this document .....	4
Associated documentation .....	4
Supplementary documentation .....	4
Certificates and declarations .....	4
Certificate holder .....	4
Extended order code .....	4
Safety instructions: General .....	6
Safety instructions: Special conditions .....	7
Safety instructions: Installation .....	7
Safety instructions: Zone 0 .....	8
Connection data .....	8

**About this document**

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

**Associated documentation**

To commission the device, please observe the Operating Instructions pertaining to the device:

BA00387F

**Supplementary documentation**

Explosion protection brochure: CP00021Z

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

**Certificates and declarations****NEPSI Declaration of Conformity**

Certificate number:

GYJ23.1061X

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

- GB/T 3836.1-2021
- GB/T 3836.4-2021

**Certificate holder**

Endress+Hauser SE+Co. KG

Hauptstraße 1

79689 Maulburg, Germany

Address of the manufacturing plant: See nameplate.

**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	NB	NEPSI 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
- For installation, use and maintenance of the device, users must also observe the requirements stated in the Operating Instructions and the standards:
  - GB 50257-2014: "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
  - GB/T 3836.13-2021: "Explosive atmospheres, Part 13: Equipment repair, overhaul, reclamation and modification".
  - GB/T 3836.15-2017: "Explosive atmospheres, Part 15: Electrical installations design, selection and erection".
  - GB/T 3836.16-2022: "Explosive atmospheres, Part 16: Electrical installations inspection and maintenance".
  - GB/T 3836.18-2017: "Explosive atmospheres, Part 18: Intrinsically safe electrical systems".
- 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)
- Alterations 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

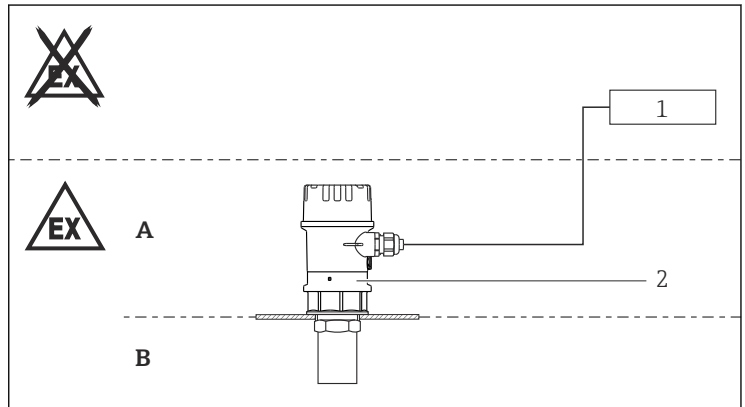
Permitted ambient temperature range:

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

- 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



A0035782

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  $500 V_{\text{rms}}$ .

### 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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