

# Safety Instructions

## **Gammapilot FMG50**

4-20 mA HART

Ex db ia IIC T6...T1 Gb

Document: XA02015F-A  
Safety instructions for electrical apparatus for explosion-  
hazardous areas →  3



# Gammapilot FMG50

4-20 mA HART

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<b>Associated documentation</b>	<p>This document is an integral part of the following Operating Instructions:</p> <p>BA01966F/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: <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</b></p> <p>Certificate number: CML 20JPN1125X</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>■ JNIO SH-TR-46-1:2015</li><li>■ JNIO SH-TR-46-2:2018</li><li>■ JNIO SH-TR-46-6:2015</li></ul>
<b>Manufacturer address</b>	<p>Endress+Hauser SE+Co. KG Hauptstraße 1 79689 Maulburg, Germany 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>

## Structure of the extended order code

FMG50	–	*****	+	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: Gammapilot



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*

FMG50

*Basic specifications*

Position 1, 2 (Approval)		
Selected option		Description
FMG50	JP	JPN Ex db ia IIC T6...T1 Gb <sup>1)</sup>

1) Protection type "Ex db" only available inside the detector pipe

Position 8 (Application)		
Selected option		Description
FMG50	A	Ambient temperature -40...60°C/ -40...140°F (PVT)
	B	Ambient temperature -20...80°C/ -4...176°F (PVT HT)
	C	Ambient temperature -40...80°C/ -40...176°F (NaI)

Position 9 (Sensor Length, Material)		
Selected option		Description
FMG50	A, B, C	..... mm; NaI crystal
	G, H, I, J, K, L, M, N	..... mm; PVT

*Optional specifications*

ID Nx (Accessory Mounted)		
Selected option		Description
FMG50	NA	Overvoltage protection

**Safety  
instructions:  
General**

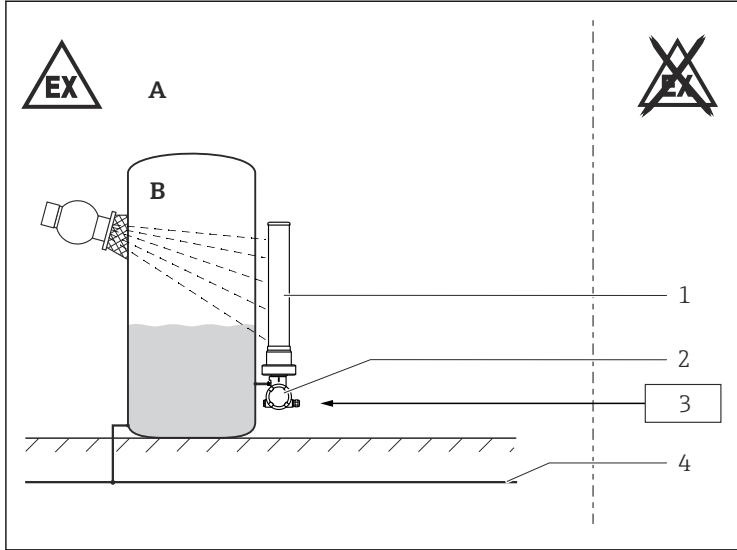
- Comply with the installation and safety instructions in the Operating Instructions.
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion 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.
- Do not install in the vicinity of processes generating strong electrostatic charges.

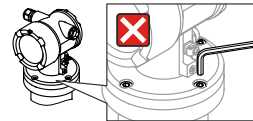
## Safety instructions: Installation



A0041167

- A Zone 1, Zone 2  
 B Zone 0, Zone 1, Zone 2  
 1 Detector pipe (in Ex d)  
 2 Housing  
 3 Certified associated apparatus  
 4 Local potential equalization

- After aligning (rotating) the housing, retighten the fixing screw.
- The safety screws at the pipe housing must not be loosened:



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Continuous service temperature of the connecting cable:  $\geq T_a + 20 \text{ K}$ .

### Intrinsic safety

- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $500 \text{ V}_{\text{rms}}$ .
- When the device is connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC and IIB, the type of protection changes to Ex ib IIC and Ex ib IIB.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.



### Potential equalization

Integrate the device into the local potential equalization.

### Overvoltage protection

*Optional specification, ID Nx (Accessory Mounted) = NA*

The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $290 V_{\text{rms}}$ .

### Safety instructions: Ex d joints

- If required or if in doubt: ask manufacturer for specifications.
- Flameproof joints are not intended to be repaired.

### Temperature tables

*Basic specification, Position 8 (Application) = A*

Temperature class	Ambient temperature $T_a$ (ambient)
T6...T1	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$

*Basic specification, Position 8 (Application) = B*

Temperature class	Ambient temperature $T_a$ (ambient)
T6	$-20\text{ °C} \leq T_a \leq +60\text{ °C}$
T4...T1	$-20\text{ °C} \leq T_a \leq +70\text{ °C}$

*Basic specification, Position 8 (Application) = C*

Temperature class	Ambient temperature $T_a$ (ambient)
T6	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$
T4...T1	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$

### Connection data

Power supply
$U_i \leq 30 V_{\text{DC}}$ $I_i \leq 300\text{ mA}$ $P_i \leq 1\text{ W}$ $C_i \leq 10\text{ nF}$ $L_i = 0$







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