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Safety Instructions
Gammapilot FMG50

4-20 mA HART

Ex db ia IIC T6...T1 Gb

Endress+Hauser
People for Process Automation

Gammapilot FMG50

4-20 mA HART

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About this document

The document number of these Safety Instructions (XA) must match the information on the nameplate.

Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

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

BA01966F

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

Certificates and declarations

NEPSI Declaration of Conformity

Certificate number:
GYJ24.1221X

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

- GB/T 3836.1-2021
- GB/T 3836.2-2021
- GB/T 3836.4-2021

Manufacturer address

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

FMG50	–	**********	+	A*B*C*D*E*F*G*..
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = 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	NP	NEPSI Ex db ia IIC T6...T1 Gb [1]

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

Position 3, 4 (Output)		
Selected option		**Description**
FMG50	BA	2-wire, 4-20 mA HART
	DA	2-wire, PROFIBUS PA
	FA	2-wire, PROFINET, 10Mbit/s (APL)

Position 5 (Display, Operation)		
Selected option		**Description**
FMG50	A	W/o; via communication
	C	Segment display w/o buttons
	D	Segment display w/o buttons + Bluetooth
	E	Graphic display
	F	Graphic display + Bluetooth
	L	Prepared for display FHX50B + M12 connection
	M	Prepared for display FHX50B + Gland M20
	N	Prepared for display FHX50B + Thread NPT1/2
	O	Prepared for display FHX50B + Thread M20

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)

Optional specifications

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

ID Px, Rx (Accessory Enclosed)		
Selected option		**Description**
FMG50	PA	Weather protection cover, 316L

Safety instructions: General

- The device is intended to be used in explosive atmospheres as defined in the scope of IEC 60079-0 or equivalent national standards. If no potentially explosive atmospheres are present or if additional protective measures have been taken: The device may be operated according to the manufacturer's specifications.
- 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.

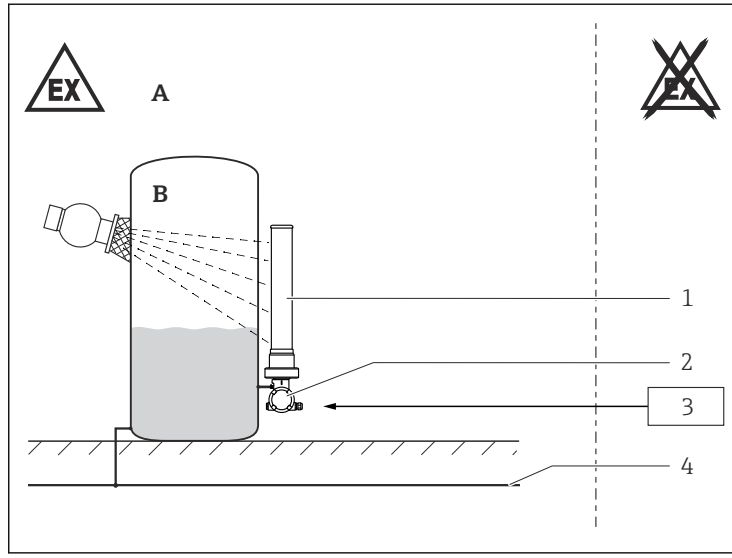
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. enclosure, sensor element, special varnishing, attached additional plates, ...)
  - Of isolated capacities (e.g. isolated metallic plates)
- Alterations 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: Specific conditions of use

- 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 generating strong electrostatic charges.

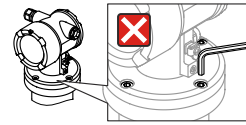
Optional specification, ID Px, Rx = PA
Connect the weather protection cover to the local potential equalization.

Safety instructions: Installation



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

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



- Continuous service temperature of the connecting cable: ≥ T_a+20 K.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.

Basic specification, Position 5 = N
Observe the requirements according to IEC/EN 60079-14 for conduit systems and the wiring and installation instructions of the suitable Safety Instructions (XA). In addition, observe national regulations and standards for conduit systems.

Intrinsic safety

- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 500 V_{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 = NA
The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 290 V_{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 3, 4 = BA

with Basic specification, Position 8	Temperature class	Ambient temperature T_a (ambient) with Basic specification	
		Position 5 = A, L, M, N, O	Position 5 = C, D, E, F
= A	T6...T1	−40 °C ≤ T_a ≤ +60 °C	−40 °C ≤ T_a ≤ +60 °C
= B	T6	−20 °C ≤ T_a ≤ +70 °C	−20 °C ≤ T_a ≤ +60 °C
	T5...T1	−20 °C ≤ T_a ≤ +75 °C	−20 °C ≤ T_a ≤ +65 °C
= C	T6	−40 °C ≤ T_a ≤ +70 °C	−40 °C ≤ T_a ≤ +60 °C
	T5...T1	−40 °C ≤ T_a ≤ +75 °C	−40 °C ≤ T_a ≤ +65 °C

Basic specification, Position 3, 4 = DA

with Basic specification, Position 8	Temperature class	Ambient temperature T_a (ambient) with Basic specification	
		Position 5 = A, L, M, N, O	Position 5 = C, D, E, F
= A	T6...T1	−40 °C ≤ T_a ≤ +60 °C	−40 °C ≤ T_a ≤ +60 °C
= B	T6	−20 °C ≤ T_a ≤ +60 °C	−20 °C ≤ T_a ≤ +60 °C
	T5...T1	−20 °C ≤ T_a ≤ +65 °C	−20 °C ≤ T_a ≤ +65 °C
= C	T6	−40 °C ≤ T_a ≤ +60 °C	−40 °C ≤ T_a ≤ +60 °C
	T5...T1	−40 °C ≤ T_a ≤ +65 °C	−40 °C ≤ T_a ≤ +65 °C

Basic specification, Position 3, 4 = FA

with Basic specification, Position 8	Temperature class	Ambient temperature T_a (ambient) with Basic specification	
		Position 5 = A, L, M, N, O	Position 5 = C, D, E, F
= A	T6...T1	−40 °C ≤ T_a ≤ +60 °C	−40 °C ≤ T_a ≤ +60 °C
= B	T6	−20 °C ≤ T_a ≤ +70 °C	−20 °C ≤ T_a ≤ +60 °C
	T5...T1	−20 °C ≤ T_a ≤ +75 °C	−20 °C ≤ T_a ≤ +65 °C
= C	T6	−40 °C ≤ T_a ≤ +70 °C	−40 °C ≤ T_a ≤ +60 °C
	T5...T1	−40 °C ≤ T_a ≤ +75 °C	−40 °C ≤ T_a ≤ +65 °C

Connection data

Basic specification, Position 3, 4 = BA

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

Basic specification, Position 3, 4 = DA

Power supply	
FISCO	Entity
U_i ≤ 17.5 V_{DC} I_i ≤ 380 mA P_i ≤ 5.32 W C_i ≤ 5 nF L_i = 0	U_i ≤ 24 V_{DC} I_i ≤ 300 mA P_i ≤ 1.2 W C_i ≤ 5 nF L_i = 0

Basic specification, Position 3, 4 = FA

Power supply	
2-WISE $U_i \leq 17.5\ V_{DC}$ $I_i \leq 380\ mA$ $P_i \leq 5.32\ W$ $C_i \leq 5\ nF$ $L_i = 0$	Entity $U_i \leq 17.5\ V_{DC}$ $I_i \leq 300\ mA$ $P_i \leq 1.2\ W$ $C_i \leq 5\ nF$ $L_i = 0$

In connection with: *Basic specification, Position 5 = L, M, N, O*
Installation according to the specifications of FHX50B.

Only the type of protection suitable for the device shall be connected!

www.addresses.endress.com

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