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Safety Instructions
Gammapilot FMG50

ATEX, IECEx: Ex tb IIIC T85°C Db

Endress+Hauser
People for Process Automation

Gammapilot FMG50

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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).

If not yet available, a translation into EU languages can be ordered.

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

EU Declaration of Conformity

Declaration Number:
EU_01186

The EU Declaration of Conformity is available on the Internet:
www.endress.com/Downloads

EU type-examination certificate

Certificate number:
EPS 18 ATEX 1 194 X

List of applied standards: See EU Declaration of Conformity.

IEC Declaration of Conformity

Certificate number:
IECEx EPS 18.0098X

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

- IEC 60079-0 : 2017
- IEC 60079-31 : 2022

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

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	BS	ATEX II 2 D Ex tb IIIC T85°C Db IECEx Ex tb IIIC T85°C Db

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
	M	Prepared for display FHX50B + Gland M20
	N	Prepared for display FHX50B + Thread NPT1/2
	O	Prepared for display FHX50B + Thread M20

Position 6 (Housing, Material)		
Selected option		**Description**
FMG50	B	Single compartment; Alu, coated
	J	Dual compartment; Alu, coated
	K	Dual compartment; 316L
	M	Dual compartment L-shape; Alu, coated
	N	Dual compartment L-shape; 316L

Position 7 (Electrical Connection)		
Selected option		**Description**
FMG50	B	Gland M20, brass nickel plated
	C	Gland M20, 316L
	F	Thread M20
	G	Thread G1/2
	H	Thread NPT1/2

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

No options specific to hazardous locations are available.

Safety instructions: General

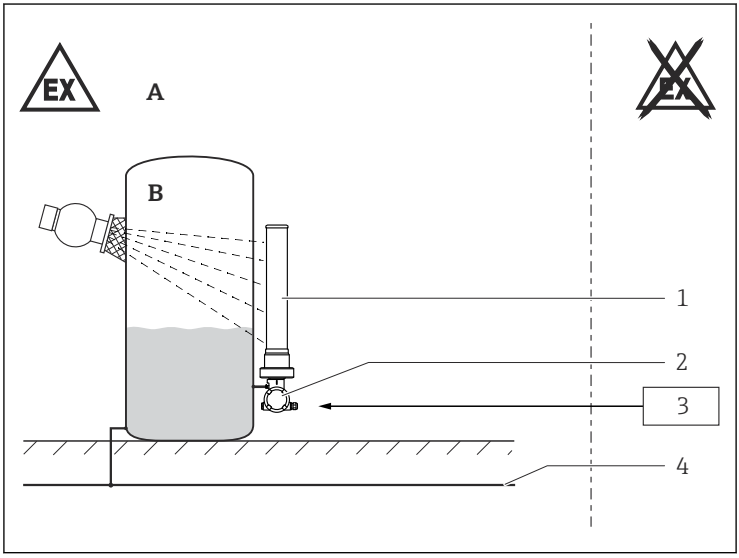
- The device is intended to be used in explosive atmospheres as defined in the scope of IEC 60079-0 or equivalent national standards. If no potentially explosive atmospheres are present or if additional protective measures have been taken: The device may be operated according to the manufacturer's specifications.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

- 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.

Safety instructions: Installation



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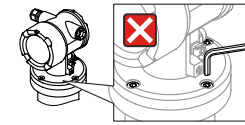
A Zone 21, Zone 22
B Zone 20, Zone 21, Zone 22
1 Detector pipe
2 Enclosure
3 Power supply
4 Local potential equalization

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



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- Do not open in a potentially explosive dust atmosphere.
- Seal the cable entry or piping tight (see protection type of enclosure in the "Temperature tables" chapter).
- Connect the device using suitable cable and wire entries of protection type "Equipment dust ignition protection by enclosure (Ex t)" (ingress protection of at least IP65). Lay connecting cable and secure.
- Before operation:
  - Screw in the cover all the way.
  - Tighten the securing clamp on the cover.
- Continuous service temperature of the connecting cable: ≥ T_a+20 K.

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.

Potential equalization

Integrate the device into the local potential equalization.

Temperature tables

with Basic specification, Position 8	Max. surface temperature with dust accumulation	Ambient temperature T_a (ambient)
= A	T85 °C	−40 °C ≤ T_a ≤ +60 °C
= B	T85 °C	−20 °C ≤ T_a ≤ +80 °C
= C	T85 °C	−40 °C ≤ T_a ≤ +80 °C

Specific conditions of use:
The surface temperature for equipment protection level (EPL) Db is: T_L 85 °C (with dust accumulation T_L)

T_L marking:
The assigned surface temperature without dust layer is the same.

Connection data

Basic specification, Position 3, 4 = BA

Power supply
U ≤ 35 V_{DC} P ≤ 1 W

Basic specification, Position 3, 4 = DA

Power supply
U ≤ 32 V_{DC} P ≤ 0.7 W

Basic specification, Position 3, 4 = FA

Power supply
U ≤ 15 V_{DC} P ≤ 0.7 W

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

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

Cable entry parameters

Ex tb IIIC

Cable gland: *Basic specification, Position 7 = B*

mandatory for Position 6 = B, J, M

Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	ø 8 to 10.5 mm	Ms, nickel-plated	Silicone	EPDM (ø 17x2)

Cable gland: *Basic specification, Position 7 = C*

preferably for Position 6 = B, J, M and possible for Position 6 = K, N

Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	ø 7 to 12 mm	1.4404	NBR	EPDM (ø 17x2)

- The tightening torque refers to cable glands installed by the manufacturer:
  - Recommended torque to connect the cable gland into the enclosure: 3.75 Nm
  - Recommended torque to tighten the cable into the cable gland: 3.5 Nm
  - Maximum torque to tighten the cable into the cable gland: 10 Nm
  - This value may be different depending on the type of cable. However, the maximum value must not be exceeded.
- Only suitable for fixed installation. The operator must pay attention to a suitable strain relief of the cable.
- The cable glands are suitable for a low risk of mechanical danger (4 Joule) and must be mounted in a protected position if larger impact energy levels are expected.
- To maintain the ingress protection of the enclosure: Install the enclosure cover, cable glands and blind plugs correctly.

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