Products   Solutions   Services

Safety Instructions
Deltapilot M
FMB50, FMB51, FMB52, FMB53

4-20 mA HART, PROFIBUS PA,
FOUNDATION Fieldbus

Ex ia IIC T6…T4 Ga/Gb
Ex ia IIC T6…T4 Gb

Segurança

OCP 0004 **INMETRO**

Endress+Hauser

People for Process Automation

Deltapilot M
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About this document

ℹ 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:

HART
BA00382P

PROFIBUS PA
BA00383P

FOUNDATION Fieldbus
BA00384P

Supplementary documentation

Explosion protection brochure: CP00021Z

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

Certificates and declarations

Certificate of Conformity

Certificate number:
TÜV 13.2008

Affixing the certificate number certifies conformity with the following standards (depending on the device version):
- ABNT NBR IEC 60079-0:2013
- ABNT NBR IEC 60079-11:2013
- ABNT NBR IEC 60079-26:2016

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

FMB5x	–	*************	+	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: Deltapilot M

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
FMB50, FMB51, FMB52, FMB53

Basic specifications

Position 1, 2 (Approval)		
Selected option		Description
FMB50-52	MA	INMETRO Ex ia IIC T6...T4 Ga/Gb
FMB5x	MA	INMETRO Ex ia IIC T6...T4 Gb

Position 3 (Output)		
Selected option		Description
FMB5x	2	4-20 mA HART
	3	PROFIBUS PA
	4	FOUNDATION Fieldbus

Optional specifications

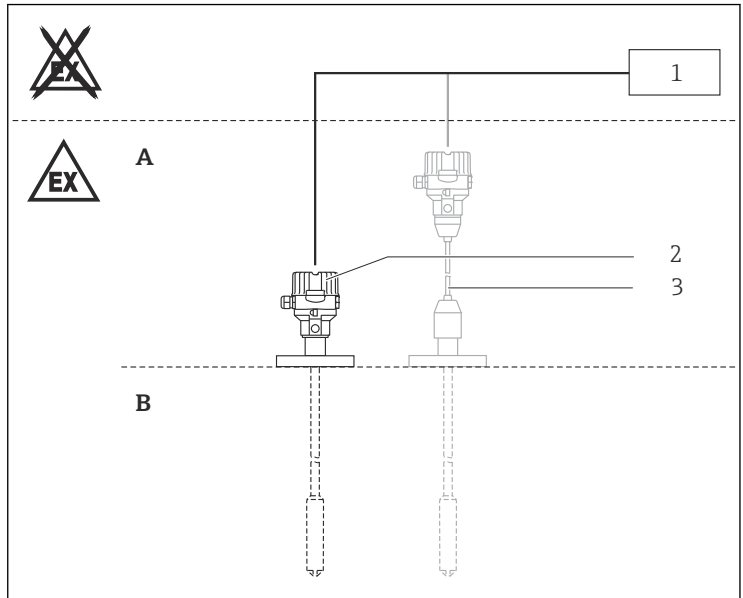No options specific to hazardous locations are available.

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.
- 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
- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and national regulations.
- 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)

Safety instructions: Special conditions

- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- For light metal flanges or flange faces (e.g. titanium, zirconium), avoid sparks caused by impact and friction.
- In the event of additional or alternative special varnishing on the enclosure or other metal parts:
  - Observe the danger of electrostatic charging and discharge.
  - Do not rub surfaces with a dry cloth.

Safety instructions: Installation

A0027575

A   Electronic; Zone 1
B   Process; Ga/Gb: Zone 0, Gb: Zone 1
1   Certified associated apparatus
2   FMB50, FMB51, FMB52, FMB53
3   Option: Separate enclosure

Device type FMB51
Mechanically fix probes which are more than 3 m (e.g. using guy ropes).

Device type FMB52, FMB53
- Avoid electrostatic charging of the cable.
- Secure probes against swinging.

Intrinsic safety

- When the device is connected to an intrinsically safe circuit Ex ib, the type of protection changes to Ex ib. Do not operate intrinsically safe circuits Ex ib in Zone 0.
- When the device is connected to an intrinsically safe circuit Ex ic, the type of protection changes to Ex ic. Do not operate intrinsically safe circuits Ex ic in Zone 0 or Zone 1.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 500 V_{rms}.

Service connection

Basic specification, Position 3 = 2
- For service operations: connect the Commubox FXA195 (from Endress+Hauser) to the display socket.
- Observe the safety instructions of the Commubox.

Temperature tables

- The specified ambient and process temperature ranges exclusively refer to the explosion protection and must not be exceeded. Operationally permitted ambient temperature ranges can be restricted depending on the version: See Operating Instructions.
- Do not exceed the max. ambient temperature at the enclosure.

Device type FMB50
The process temperatures refer to the temperature at the separation membrane.

Device type FMB51
The process temperatures refer to the temperature at the rod.

Device type FMB52, FMB53
The process temperatures refer to the temperature at the cable.

Device type FMB50

Temperature class	Process temperature T_p (process)	Ambient temperature range
T6	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +40 ℃
T4	≤ 100 ℃	−40 ℃ ≤ T_a ≤ +70 ℃

Device type FMB51

Temperature class	Process temperature T_p (process)	Ambient temperature range
T6	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +40 ℃
T4	≤ 85 ℃	−40 ℃ ≤ T_a ≤ +70 ℃

Device type FMB52

Temperature class	Process temperature T_p (process)	Ambient temperature range
T6	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +40 ℃
T4	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +70 ℃

only Ex ia IIC T6...T4 Gb

Device type FMB53

Temperature class	Process temperature T_p (process)	Ambient temperature range
T6	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +40 ℃
T4	≤ 80 ℃	−40 ℃ ≤ T_a ≤ +70 ℃

Connection data   *Basic specification, Position 3 = 2*

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 = 3, 4

Power supply	
FISCO U_i ≤ 17.5 V_{DC} I_i ≤ 500 mA P_i ≤ 5.5 W C_i ≤ 5 nF L_i ≤ 10 µH	Entity U_i ≤ 24 V_{DC} I_i ≤ 250 mA P_i ≤ 1.2 W C_i ≤ 5 nF L_i ≤ 10 µH

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