

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

IECEX KEM 09.0016

Document: XA00478P-B

Safety instructions for electrical apparatus for explosion-hazardous areas
according to IEC standards

Deltapilot M

FMB50, FMB51, FMB52, FMB53

english

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Associated Documentation

This document is an integral part of the following Operating Instructions:
BA00382P/00

The Operating Instructions which are supplied and correspond to the device type apply.

Supplementary Documentation

Explosion-protection brochure:
CP00021Z/11

Designation

Explanation of the labelling and type of protection can be found in the explosion protection brochure.

Designation according to IECEx
Equipment protection level (EPL)

Ga/Gb
Gb

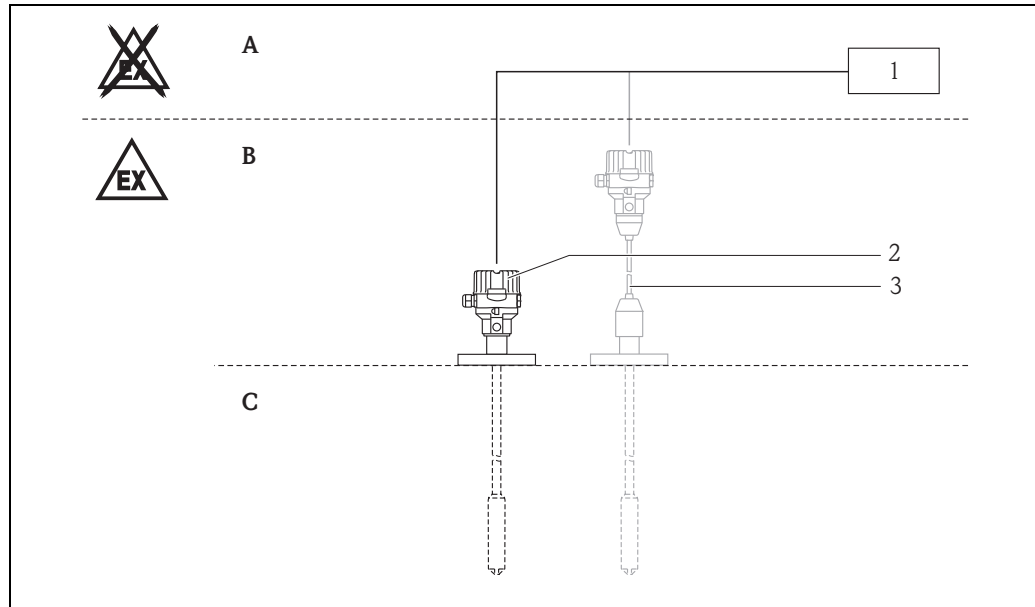
Designation of type of protection/
level of protection

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

Applied standards

IEC 60079-0 :2011
IEC 60079-11 :2011
IEC 60079-26 :2006

**Safety instructions:
Installation**



II 1/2 G

- A** Power supply
B Zone 1, Electronic
C Zone 0, Process

- 1 Certified associated apparatus
 2 FMB50, FMB51 or FMB52
 3 Option FMB50, FMB51, FMB52: Separate housing

II 2 G

- A** Power supply
B Zone 1, Electronic
C Zone 1, Process

- 1 Certified associated apparatus
 2 FMB51, FMB52 or FMB53
 3 Option FMB51, FMB52: Separate housing

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations.
- Only install the devices in media for which the wetted materials have sufficient durability.
- Avoid electrostatic charging of the plastic surfaces, for plastic process connections or plastic coatings.
- When the device is connected to an intrinsically safe circuit Ex ib, the level 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 level 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 potential and has a dielectric strength of at least 500 V_{rms} with respect to it.
- Avoid impact or friction sparks for light metal flanges or flange faces (e.g. titanium, zirconium).
- In case of additional or alternative special varnishing of the enclosure or other metallic parts the danger of an electrostatic charging must be observed. Do not rub surfaces with dry cloth.

FMB51

- Mechanically fix rod probes which are more than 3 m (e.g. using guy ropes).

FMB52, FMB53

- Avoid electrostatic charging of the cable.
- Secure probes against swinging.

Safety instructions:
Zone 0

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions:
 $-20\text{ °C} \leq T \leq +60\text{ °C}$
 $0.8\text{ bar} \leq p \leq 1.1\text{ bar}$
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, according to EN 1127-1, the transmitters may be operated under other atmospheric conditions in accordance with the manufacturer's specifications.
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

Temperature tables

Type	Type of protection/ level of protection	Temperature class	Process temperature	Ambient temperature (Housing)
FMB50	Ex ia IIC T6...T4 Ga/Gb, Ex ia IIC T6...T4 Gb	T6	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
		T4	$\leq 100\text{ °C}$	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$

The process temperatures refer to the temperature at the separation membrane
(do not exceed the max. ambient temperature at the housing).

Type	Type of protection/ level of protection	Temperature class	Process temperature	Ambient temperature (Housing)
FMB51	Ex ia IIC T6...T4 Ga/Gb, Ex ia IIC T6...T4 Gb	T6	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
		T4	$\leq 85\text{ °C}$	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$

The process temperatures refer to the temperature at the rod
(do not exceed the max. ambient temperature at the housing).

Type	Type of protection/ level of protection	Temperature class	Process temperature	Ambient temperature (Housing)
FMB52	Ex ia IIC T6...T4 Ga/Gb, Ex ia IIC T6...T4 Gb	T6	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
		T4	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$

The process temperatures refer to the temperature at the cable
(do not exceed the max. ambient temperature at the housing).

Type	Type of protection/ level of protection	Temperature class	Process temperature	Ambient temperature (Housing)
FMB53	Ex ia IIC T6...T4 Gb	T6	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
		T4	$\leq 80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$

The process temperatures refer to the temperature at the cable
(do not exceed the max. ambient temperature at the housing).

Connection data

Electronic insert	Electrical data
4-20 mA HART	$U_i \leq 30 \text{ V DC}$ $i_i \leq 300 \text{ mA}$ $P_i \leq 1 \text{ W}$ $C_i \leq 10 \text{ nF}$ $L_i = 0$
PROFIBUS PA, FOUNDATION Fieldbus	$U_i \leq 17.5 \text{ V DC}$ $i_i \leq 500 \text{ mA}$ $P_i \leq 5.5 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i \leq 10 \text{ } \mu\text{H}$ (FISCO field device) or $U_i \leq 24 \text{ V DC}$ $i_i \leq 250 \text{ mA}$ $P_i \leq 1.2 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i \leq 10 \text{ } \mu\text{H}$



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