

Safety Instructions

Deltabar S

PMD70, PMD75, FMD76, FMD77, FMD78

Zone 0/Zone 1 Ex ia IIC T6...T4

IECEX KEM06.0011

XB004P-C

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

Deltabar S

PMD70, PMD75, FMD76, FMD77, FMD78

HART, PROFIBUS PA, FOUNDATION Fieldbus

Associated Documentation

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

HART: BA270P/00, BA274P/00

PROFIBUS PA: BA294P/00, BA296P/00

FOUNDATION Fieldbus: BA301P/00, BA303P/00

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

Supplementary Documentation

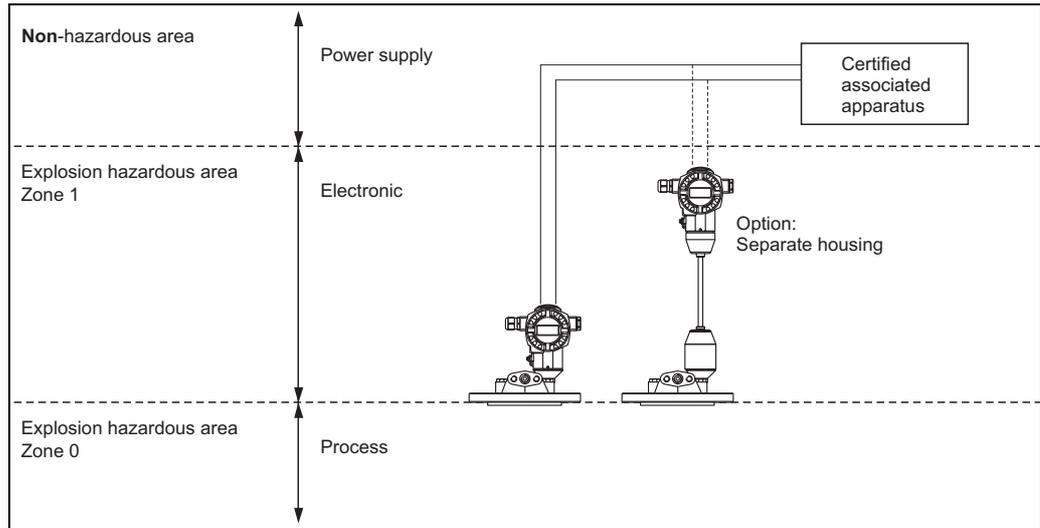
Explosion-protection brochure:

SD215F/00

Designation

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

Designation of explosion protection**Zone 0/Zone 1****Ex ia****IIC****T6...T4**



XA235en01

Electronic insert: 4...20 mA, HART

Type	Type of protection	Electrical data	Temperature class	Ambient temperature (Housing)	Process temperature
all	Zone 0/Zone 1 Ex ia IIC T6...T4	$U_i \leq 30 \text{ V DC}$ $I_i \leq 300 \text{ mA}$ $P_i \leq 1 \text{ W}$ $C_i \leq 11.8 \text{ nF}$ $L_i \leq 225 \text{ } \mu\text{H}$	T6	$-40^\circ\text{C} \leq T_a \leq +40^\circ\text{C}$	$\leq 80^\circ\text{C}$
PMD70, FMD76			T4	$-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$	$\leq 85^\circ\text{C}$
PMD75					$\leq 120^\circ\text{C}$

The process temperatures refer to the temperature at the separation membrane of PMD70, PMD75 and FMD76. For FMD77 and FMD78, higher temperatures are permitted depending on the type of diaphragm seal (do not exceed the max. ambient temperature at the housing).

Electronic insert: PROFIBUS PA, FOUNDATION Fieldbus (FISCO field device)

Type	Type of protection	Electrical data	Temperature class	Ambient temperature (Housing)	Process temperature
all	Zone 0/Zone 1 Ex ia IIC T6...T4	$U_i \leq 17.5 \text{ V DC}$ $I_i \leq 500 \text{ mA}$ $P_i \leq 5.5 \text{ W}$ or $U_i \leq 24 \text{ V DC}$ $I_i \leq 250 \text{ mA}$ $P_i \leq 1.2 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i \leq 10 \text{ } \mu\text{H}$ (suitable for connection to a fieldbus system according to the FISCO-model)	T6	$-40^\circ\text{C} \leq T_a \leq +40^\circ\text{C}$	$\leq 80^\circ\text{C}$
PMD70, FMD76			T4	$-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$	$\leq 85^\circ\text{C}$
PMD75				$\leq 120^\circ\text{C}$	

The process temperatures refer to the temperature at the separation membrane of PMD70, PMD75 and FMD76. For FMD77 and FMD78, higher temperatures are permitted depending on the type of diaphragm seal (do not exceed the max. ambient temperature at the housing).

**Safety instructions:
Installation**

- 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 (e.g. IEC 60079-14).
- 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.
- The type of protection changes as follows when the devices are connected to certified intrinsically safe circuits of Category ib: Ex ib IIC T6 or Ex ib IIB T4.
When connecting an intrinsically safe ib circuit, do not operate the sensor at Zone 0.
- In hazardous areas, intrinsically safe equipment may only be operated on certified intrinsically safe circuits. The intrinsic safety can be jeopardised if, prior to the installation in the Ex-area, the device is operated with circuits which did not guarantee the Ui, Ii and Pi values indicated in the table above.
- 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. For devices with integrated overvoltage protection (optional), the dielectric strength is min. 290 V_{rms} to earth.
- After aligning (rotating) the housing, retighten the fixing screw.

**Safety instructions:
Zone 0**

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions: $-20^{\circ}\text{C} \leq T \leq +60^{\circ}\text{C}$ and $0.8 \text{ bar} \leq p \leq 1.1 \text{ bar}$
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, e.g. according to IEC 60079-14 or EN 1127-1, the transmitters may be operated under other than 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.

For PMD70 and FMD76, the following also applies:

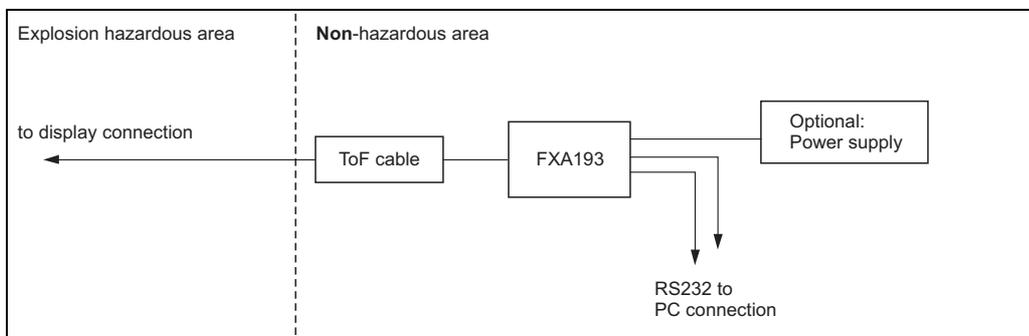
- On installations requiring overvoltage protection to comply with national regulations or standards (e.g. IEC 60079-14), this device shall be installed using an overvoltage protector.

For PMD75 and FMD77, FMD78, the following also applies:

- Overvoltage protection is not required depending on the design of this device.

**Option:
Endress+Hauser
service interface FXA193
with ToF cable**

Connection of service interface FXA193 with ToF cable



XA235en02

- Do not use the FXA193 with ToF cable in hazardous locations.
- Connecting the FXA193 without ToF cable may impair intrinsic safety.
- Use only Endress+Hauser prefabricated cables for connection.

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