Safety Instructions

Deltabar S
PMD70, PMD75, FMD76, FMD77, FMD78
4‑20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Ex ia IIC T6...T4 Ga/Gb

IECEx KEM06.0011

XA00695P-D

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

Endress+Hauser

People for Process Automation

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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:
CP021Z/00

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**
Designation of explosion protection	**Ex ia IIC T6...T4 Ga/Gb**

Applied standards

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

**Safety instructions:
Installation**

⊠● *1*

A	*Zone 1*
B	*Zone 0*
C	*Power supply*
D	*Electronic*
E	*Process*

1   Certified associated apparatus
2   PMD70, PMD75, FMD76, FMD77, FMD78;
*   Option: 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 (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.
- 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:
  $-20°C \leq T \leq +60°C$ and 0.8 bar $\leq p \leq$ 1.1 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.

Temperature tables

Type of protection/ level of protection	Type	Temperature class	Process temperature	Ambient temperature (Housing)
Ex ia IIC T6...T4 Ga/Gb	all	T6	≤ 80 °C	–40 °C ≤ Ta ≤ +40 °C
	PMD70, FMD76	T4	≤ 85 °C	–40 °C ≤ Ta ≤ +70 °C
	PMD75		≤ 120 °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).

Connection data

Electronic insert: 4–20 mA HART
$U_i \leq 30$ V DC $I_i \leq 300$ mA $P_i \leq 1$ W $C_i \leq 11.8$ nF $L_i \leq 225$ µH (Order code, Position 2 "Output; Operation": A, B, C) or $L_i = 0$ (Order code, Position 2 "Output; Operation": D, E, F)

Electronic insert: PROFIBUS PA, FOUNDATION Fieldbus
$U_i \leq 17.5$ V DC $I_i \leq 500$ mA $P_i \leq 5.5$ W or $U_i \leq 24$ V DC $I_i \leq 250$ mA $P_i \leq 1.2$ W $C_i \leq 5$ nF $L_i \leq 10$ µH (suitable for connection to a fieldbus system according to the FISCO model)

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