

# Safety Instructions

## Deltabar S

### PMD75, FMD77, FMD78

4-20 mA HART, PROFIBUS PA,  
FOUNDATION Fieldbus

II 1/2 D Ex ta/tb IIIC T<sub>200</sub> 100°C Da/Db  
II 1/3 D Ex ta/tc IIIC T<sub>200</sub> 100°C Da/Dc





# Deltabar S PMD75, FMD77, FMD78

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

## Table of contents

About this document .....	4
Associated documentation .....	4
Supplementary documentation .....	4
Manufacturer's certificates .....	4
Manufacturer address .....	5
Other standards .....	5
Extended order code .....	5
Safety instructions: General .....	7
Safety instructions: Special conditions .....	7
Safety instructions: Installation .....	8
Temperature tables .....	9
Connection data .....	10

## About this document



This document has been translated into several languages. Legally determined is solely the English source text.

The document translated into EU languages is available:

- In the download area of the Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: [www.endress.com](http://www.endress.com) -> Product tools -> Access device specific information -> Check device features



If not yet available, the document can be ordered.

## Associated documentation

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

HART

- BA00270P/00
- BA00274P/00

PROFIBUS PA

- BA00294P/00
- BA00296P/00

FOUNDATION Fieldbus

- BA00301P/00
- BA00303P/00

## Supplementary documentation

Explosion-protection brochure: CP00021Z/11

The Explosion-protection brochure is available:

- In the download area of the Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

## Manufacturer's certificates

### EU Declaration of Conformity

Declaration Number:  
EG03034

The EU Declaration of Conformity is available:

In the download area of the Endress+Hauser website:  
[www.endress.com](http://www.endress.com) -> Downloads -> Declaration -> Type: EU Declaration -> Product Code: ...

## EU type-examination certificate

Certificate number:  
KEMA 03 ATEX 1561 X

List of applied standards: See EU Declaration of Conformity.

### 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

PMD75, FMD7x	–	*****	+	A*B*C*D*E*F*G*..
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>

\* = 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: Deltabar S



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

PMD75, FMD77, FMD78

### Basic specifications

Position 1 (Approval)		
Selected option		Description
PMD75	2	ATEX II 1/2 D Ex ta/tb IIIC T <sub>200</sub> 100°C Da/Db
FMD7x	4	ATEX II 1/3 D Ex ta/tc IIIC T <sub>200</sub> 100°C Da/Dc

Position 2 (Output, Operating)		
Selected option		Description
PMD75	A, B, C	4-20 mA HART
FMD7x	D, E, F	4-20 mA HART, L <sub>1</sub> = 0
	M, N, O	PROFIBUS PA
	P, Q, R	FOUNDATION Fieldbus

*Optional specifications*

ID Jx (Test, Certificate)		
Selected option		Description
PMD75	JN	Ambient temperature transmitter -50 °C/-58 °F
FMD7x		

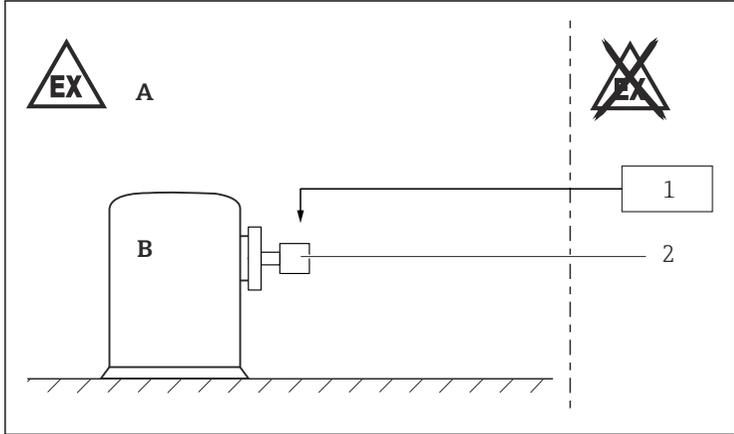
**Safety instructions:**  
**General**

- 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.
- 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**

- 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 ( $\leq 0.5$  m) generating strong electrostatic charges.

**Safety  
instructions:  
Installation**



A0041997

- A Zone 21 or Zone 22, Electronic  
 B Zone 20, Process  
 1 Power supply  
 2 PMD75, FMD77, FMD78

- After aligning (rotating) the enclosure, retighten the fixing screw.
- 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)" or "Increased safety (Ex e)" (ingress protection of at least IP65). Lay connecting cable and secure.

## Temperature tables



- The specified surface temperature takes into account all direct heat influences from process heat and self-heating at the enclosure.
- Surface temperatures at the process side maybe higher and must be considered by the user (e.g. at high temperature process connections).
- The T-marking is based on the process temperature of the compact designs.
- 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.
- The process temperatures refer to the temperature at the separation membrane.



*Optional specification, ID JX = JN*

Lower limit of the ambient temperature for explosion protection changes to  $-50\text{ }^{\circ}\text{C}$ .

### Device Type PMD75

Maximum surface temperature	Process temperature range	Ambient temperature range
T100 °C	$-40\text{ }^{\circ}\text{C} \leq T_p \leq +80\text{ }^{\circ}\text{C}$	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$
	$-40\text{ }^{\circ}\text{C} \leq T_p \leq +100\text{ }^{\circ}\text{C}$	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +55\text{ }^{\circ}\text{C}$

### Device Type FMD77, FMD78

Maximum surface temperature	Process temperature range	Ambient temperature range
T100 °C	$-40\text{ }^{\circ}\text{C} \leq T_p \leq +200\text{ }^{\circ}\text{C}$	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +65\text{ }^{\circ}\text{C}$
	$-40\text{ }^{\circ}\text{C} \leq T_p \leq +300\text{ }^{\circ}\text{C}$	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$
	$-40\text{ }^{\circ}\text{C} \leq T_p \leq +400\text{ }^{\circ}\text{C}$	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +55\text{ }^{\circ}\text{C}$

Specific conditions of use:

The surface temperature is

- for equipment protection level (EPL) Da:  $T_{200}$  100 °C (with 200 mm dust deposit)
- and equipment protection level (EPL) Db or Dc:  $T_L$  100 °C (Db with dust accumulation  $T_L$ , Dc without dust accumulation  $T_L$ )



$T_L$  marking:

The assigned surface temperature without dust layer is the same.

**Connection data***Basic specification, Position 2 = A, B, C, D, E, F***Power supply**

$$U \leq 45 V_{DC}$$

*Basic specification, Position 2 = M, N, O, P, Q, R***Power supply**

$$U \leq 32 V_{DC}$$





71532876

[www.addresses.endress.com](http://www.addresses.endress.com)

---