

Safety Instructions

Deltabar S

PMD75, FMD77, FMD78

4-20 mA HART, PROFIBUS PA,
FOUNDATION Fieldbus

ATEX: II 2 G Ex db IIC T6...T4/T1 Gb

IECEX: Ex db IIC T6...T4/T1 Gb



Document: XA00240P-F

Safety instructions for electrical apparatus for explosion-
hazardous areas →  3

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 8

Safety instructions: Special conditions 8

Safety instructions: Installation 9

Safety instructions: Ex d joints 10

Temperature tables 10

Connection data 12

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 -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: www.endress.com -> Product tools -> Access device specific information -> Check device features

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 -> 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:

EG04003

The EU Declaration of Conformity is available:

In the download area of the Endress+Hauser website:

www.endress.com -> Downloads -> Declaration -> Type: EU Declaration -> Product Code: ...

EU type-examination certificate

Certificate number:

KEMA 04 ATEX 2018

List of applied standards: See EU Declaration of Conformity.

IEC Declaration of Conformity

Certificate number:

IECEX KEM 10.0031

Affixing the certificate number certifies conformity with the following standards (depending on the device version):

- IEC 60079-0 : 2017
- IEC 60079-1 : 2014

**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*..
(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: 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	5	ATEX II 2 G Ex db IIC T6...T4 Gb
	M	IECEx Ex db IIC T6...T4 Gb
FMD7x	5	ATEX II 2 G Ex db IIC T6...T1 Gb
	M	IECEx Ex db IIC T6...T1 Gb

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

Position 3 (Housing, Cover Sealing, Cable Entry)		
Selected option		Description
PMD75 FMD7x	A, G, 1, 7	T14 IP66/67 NEMA6P; M20
	B, 2	T14 IP66/67 NEMA6P; G1/2
	C, H, 3, 8	T14 IP66/67 NEMA6P; NPT1/2
	J	T15 IP66/67 NEMA6P; M20
	K	T15 IP66/67 NEMA6P; G1/2
	L	T15 IP66/67 NEMA6P; NPT1/2

Optional specifications

ID Jx (Test, Certificate)		
Selected option		Description
PMD75 FMD7x	JN	Ambient temperature transmitter -50 °C/-58 °F
	JT	Ambient temperature transmitter -54 °C/-65 °F

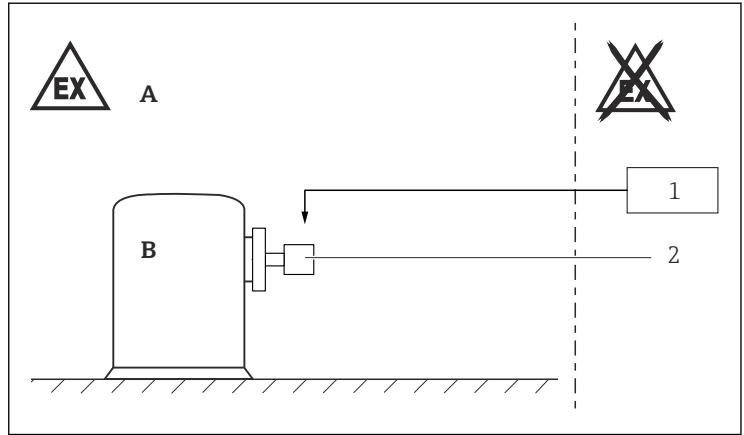
**Safety
instructions:
General**

- 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. housing, 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 housing or other metal parts:
 - Observe the danger of electrostatic charging and discharge.
 - Do not rub surfaces with a dry cloth.

Safety instructions: Installation



A0041997

- A Zone 1, Electronic
 B Zone 1, Process
 1 Power supply
 2 PMD75, FMD77, FMD78

- After aligning (rotating) the housing, retighten the fixing screw.
- In potentially explosive atmospheres: Do not open the connection compartment cover and the electronics compartment cover when energized.
- Before operation:
 - Screw in the cover all the way.
 - Tighten the securing clamp on the cover.
- Connect the device:
 - Using suitable cable and wire entries of protection type "Flameproof Enclosure (Ex d)".
 - Using piping systems of protection type "Flameproof Enclosure (Ex d)".
- When connecting through a conduit entry approved for this purpose, mount the associated sealing unit directly at the housing.
- For ambient temperatures higher than +70 °C, use suitable heat resisting cables or wires.
- Seal unused entry glands with approved sealing plugs that correspond to the type of protection. The plastic transport sealing plug does not meet this requirement and must therefore be replaced during installation.
- Only use certified cable entries or sealing plugs. The metal sealing plugs supplied meet this requirement.
- Only use genuine spare parts from Endress+Hauser which are specified for the device.

Basic specification, Position 3 (Housing, Cover Sealing, Cable Entry) = B, 2, K

Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations. Application of this equipment shall comply with the local installation requirements.

Safety instructions: Ex d joints

If required or if in doubt: ask manufacturer for specifications.

Temperature tables

Device type PMD75

Type of protection:

ATEX: II 2 G Ex db IIC T6...T4 Gb; IECEx: Ex db IIC T6...T4 Gb

Option: Process Connection	Temperature class	Process temperature T _p (process)	Ambient temperature T _a (ambient)
all	T6	-40 °C ≤ T _p ≤ +75 °C	-40 °C ≤ T _a ≤ +75 °C
	T4	-40 °C ≤ T _p ≤ +100 °C	-40 °C ≤ T _a ≤ +75 °C

 The process temperatures refer to the temperature at the separation membrane.

Device type FMD77, FMD78

Type of protection:

ATEX: II 2 G Ex db IIC T6...T1 Gb; IECEx: Ex db IIC T6...T1 Gb

Option: Process Connection	Temperature class	Process temperature T _p (process)	Ambient temperature T _a (ambient)
FMD77: all	T6	-40 °C ≤ T _p ≤ +75 °C	-40 °C ≤ T _a ≤ +75 °C
FMD78: ¹⁾	T4	-40 °C ≤ T _p ≤ +125 °C	-40 °C ≤ T _a ≤ +75 °C
FMD7x: ¹⁾	T3	-40 °C ≤ T _p ≤ +185 °C ²⁾	-40 °C ≤ T _a ≤ +75 °C
	T2	-40 °C ≤ T _p ≤ +285 °C ²⁾	-40 °C ≤ T _a ≤ +75 °C
	T1	-40 °C ≤ T _p ≤ +400 °C ²⁾	-40 °C ≤ T _a ≤ +75 °C

- 1) Depending on the selected design
- 2) Depending on the selected version; see Operating Instructions



- 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 housing.

Device type FMD77

Deratings between process temperature and ambient temperature at the housing depending on the way of installation as well as functional aspects: See Operating Instructions.

Device type FMD78

The external heat influence depends only on the mountig position of the transmitter itself. Therefore a sufficient capillary length to mount the housing at a position with an allowed ambient temperature must be ordered.

Optional specification, ID Jx (Test, Certificate) = JN

Lower limit of the ambient temperature for explosion protection changes to -50 °C.

Optional specification, ID Jx (Test, Certificate) = JT

Lower limit of the ambient temperature for explosion protection changes to -54 °C.

Connection data *Basic specification, Position 2 (Output, Operating) = A, B, C, D, E, F*

Power supply
$U \leq 45 \text{ V}_{\text{DC}}$ $P \leq 3 \text{ W}$

Basic specification, Position 2 (Output, Operating) = M, N, O, P, Q, R

Power supply
$U \leq 32 \text{ V}_{\text{DC}}$ $P \leq 3 \text{ W}$



71508536

www.addresses.endress.com
