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Safety Instructions
Cerabar PMP50

Control Drawing IS
Class I, II, III, Div. 1, Groups A-G
Class I, Zone 0, AEx/Ex ia IIC

FM APPROVED

Endress+Hauser
People for Process Automation

Cerabar PMP50

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About this document

The document number of these Safety Instructions (XA) must match the information on the nameplate.

Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

To commission the device, please observe the Operating Instructions pertaining to the device:

BA02332P

Certificates and declarations

FM C/US certificate

Certificate number:

- FM24US0028X
- FM24CA0015X

Manufacturer address

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany

Address of the manufacturing plant: See nameplate.

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

PMP50	–	**********	+	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: Cerabar

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

PMP50

Basic specifications

Position 1, 2 (Approval)		
Selected option		**Description**
PMP50	FB	FM C/US IS Cl. I, II, III, Div. 1, Gp. A-G; Cl. I, Zone 0, AEx/Ex ia IIC Ga
	FC	FM C/US IS Cl. I, Div. 1, Gp. A-D; Cl. I, Zone 0, AEx/Ex ia IIC Ga

Position 6 (Housing, Material)		
Selected option		**Description**
PMP50	J	Dual compartment; Alu, coated
	K	Dual compartment; 316L

Position 10 (Diaphragm Seal Type)		
Selected option		**Description**
PMP50	G	Temperature isolator

Optional specifications

ID Nx, Ox (Accessory Mounted)		
Selected option		**Description**
PMP50	NA	Overvoltage protection

Safety instructions: General

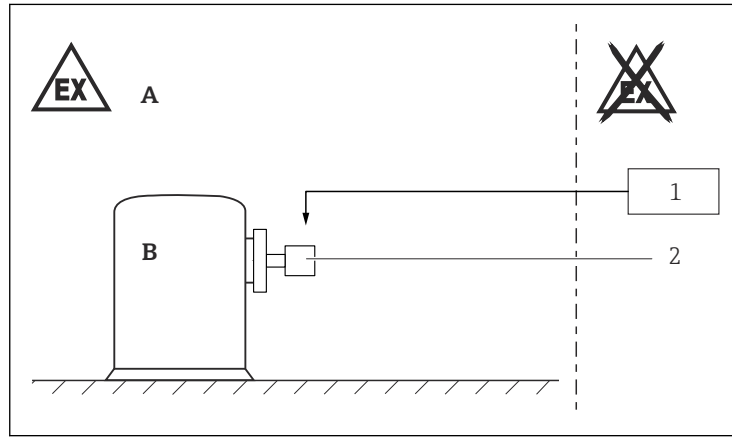
- Comply with the installation and safety instructions in the Operating Instructions.
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- 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)
- Alterations to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

Safety instructions: Specific conditions of use

- 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.
- 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 (≤ 0.5 m) generating strong electrostatic charges.
- Avoid sparks caused by impact and friction.
- Refer to the temperature tables for various ambient and process temperature ranges.

Safety instructions: Installation



A0041997

A Basic specification, Position 1, 2 = FB:
Zone 0; Class I, II, III, Div. 1, Groups A-G
Basic specification, Position 1, 2 = FC:
Zone 0; Class I, Div. 1, Groups A-D

B Process;
Basic specification, Position 1, 2 = FB:
Zone 0; Class I, II, III, Div. 1, Groups A-G
Basic specification, Position 1, 2 = FC:
Zone 0; Class I, Div. 1, Groups A-D

1 Associated apparatus [Ex ia], intrinsically safe power supply units

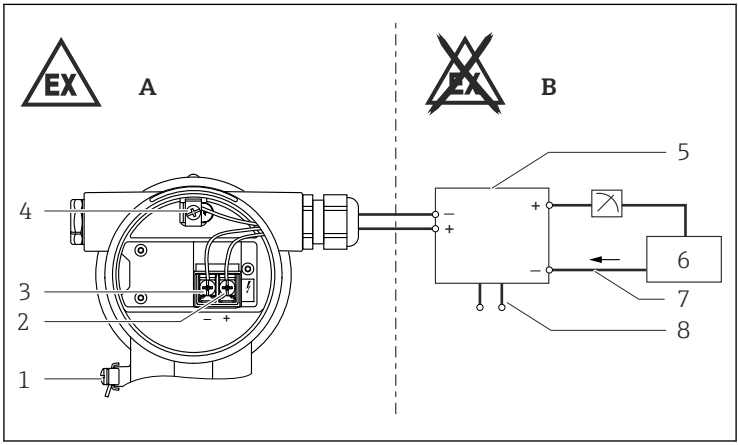
2 PMP50

- After aligning (rotating) the enclosure, retighten the fixing screw.
- Continuous service temperature of the connecting cable: ≥ T_a+20 K.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- Observe the maximum process conditions according to the manufacturer's Operating Instructions.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.

Potential equalization

Integrate the device into the local potential equalization.

Intrinsic safety



A Hazardous Location:
Basic specification, Position 1, 2 = FB:
Class I, Div. 1, Groups A-D; Class II, Div. 1, Groups E-G; Class III;
Class I, Zone 0, AEx/Ex ia IIC Ga
Basic specification, Position 1, 2 = FC:
Class I, Div. 1, Groups A-D; Class I, Zone 0, AEx/Ex ia IIC Ga
B Non-hazardous location
1 External ground terminal
2 Positive terminal
3 Negative terminal
4 Internal ground terminal
5 Barrier / Associated equipment
6 External load
8 4 to 20 mA loop
8 Supply

Entity installation

- Install per National Electrical Code (NFPA70) or Canadian Electrical Code, Part I (C22.1), as applicable.
- Use an intrinsic safety barrier or other associated equipment that is approved for the country in use and satisfies the following conditions: $U_o \leq U_i$, $I_o \leq I_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$ and $P_o \leq P_i$.
- For transmitter parameters: See "Connection data" section.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.
- Control room equipment may not use or generate over 250 V_{rms}.
- Always follow the installation instructions provided by the intrinsic safety barrier manufacturer when installing this equipment.
- WARNINGS: Substitution of components may impair intrinsic safety.
- The transmitter enclosure is to be connected to ground via internal or external ground terminals.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 500 V_{rms}.

Optional specification, ID Nx, Ox = NA
The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 290 V_{rms}.

Process seals

- The device is rated Single Seal in accordance with UL122701 and does not require the use of an external secondary process seal.
- The Single Seal rating is valid for a Maximum Working Pressure (MWP) of 0 to 400 bar and a maximum process temperature (T_p) up to 400 °C.

- Limitation of the Maximum Working Pressure (MWP) for each device is marked on the nameplate and must not be exceeded! This value may be less than the Single Seal rating.
- Limitation of the maximum process temperature (T_p) with regards to the device options, temperature code rating and maximum ambient temperature as specified in the "Temperature tables" section of this document must be considered!

Temperature tables

Class I, Div. 1 / Zone 0

Class II, III, Div. 1

- 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.

Temperature class	Process temperature T_p (process)	Ambient temperature range
T4	+80 °C	−40 °C ≤ T_a ≤ +65 °C
	+100 °C	−40 °C ≤ T_a ≤ +60 °C
	+125 °C	−40 °C ≤ T_a ≤ +50 °C

Basic specification, Position 10 = G

Temperature class	Process temperature T_p (process)	Ambient temperature range
T3	+190 °C	−40 °C ≤ T_a ≤ +60 °C
T2	+290 °C	−40 °C ≤ T_a ≤ +60 °C
T1	+300 °C	−40 °C ≤ T_a ≤ +60 °C
	+400 °C	−40 °C ≤ T_a ≤ +55 °C

Connection data

Power supply
U_i (or V_{max}) ≤ 30 V_{DC} I_i (or I_{max}) ≤ 100 mA P_i ≤ 0.7 W C_i ≤ 10 nF L_i = 0

www.addresses.endress.com

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