

# Safety Instructions

## Cerabar PMP50

Ex ta IIIC T<sub>200</sub> 100 °C Da X

Ex tb IIIC T125 °C Db X



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# 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](http://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

**Supplementary documentation**

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:

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

**Certificates and declarations****Certificate of Conformity TP TC 012/2011**

Inspection authority:

LLP "T-Standard" (ТОО/ЖШС "Т-Стандарт")

Certificate number:

EAЭC KZ 7500525.01.01.01991

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

- GOST 31610.0-2019 (IEC 60079-0:2017)
- GOST IEC 60079-31-2013

**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<br>type) |   | (Basic<br>specifications) |   | (Optional<br>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                    | GG | EAC Ex ta IIIC T <sub>200</sub> 100 °C Da X<br>EAC Ex tb IIIC T <sub>125</sub> °C Db X |

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

| Position 7 (Electrical Connection) |   |   |
|------------------------------------|---|---|
| Selected option                    |   | Description   |
| PMP50                              | B | Gland M20, brass nickel plated, IP66/68 NEMA Type 4X/6P |
|                                    | C | Gland M20, 316L, IP66/68 NEMA Type 4X/6P                |

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

Optional specifications

No options specific to hazardous locations are available.

Safety instructions:  
General

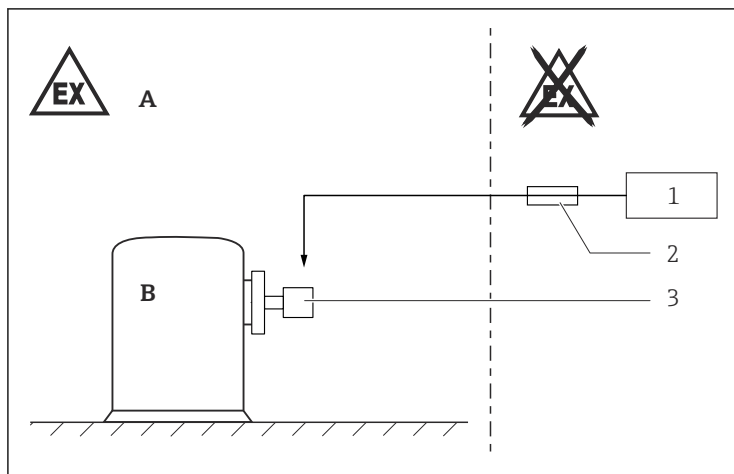
- The device is intended to be used in explosive atmospheres as defined in the scope of IEC 60079-0 or equivalent national standards. If no potentially explosive atmospheres are present or if additional protective measures have been taken: The device may be operated according to the manufacturer's specifications.
- 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 ( $\leq 0.5$  m) generating strong electrostatic charges.
- Avoid sparks caused by impact and friction.
- Refer to the temperature tables for various ambient and process temperature ranges.
- The device must be operated with a 100 mA fuse.

## Safety instructions: Installation



A0056307

- A Zone 20 or Zone 21, Electronic  
 B Zone 20 or Zone 21, Process  
 1 Power supply  
 2 Fuse  
 3 PMP50

- 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).
- Before operation:
  - Screw in the cover all the way.
  - Tighten the securing screw on the cover.

*Permitted ambient conditions*

**Ex ta IIIC T<sub>200</sub> 100 °C Da X**

| Process<br>Zone 20                                | Enclosure<br>Zone 20                                     |
|---|--|
| Continuous dust submersion                        | Dust accumulation or temporary explosive dust atmosphere |
| Continuous explosive dust atmosphere and deposits | Dust accumulation or temporary explosive dust atmosphere |

**Ex tb IIIC T125 °C Db X**

| Process<br>Zone 21  | Enclosure<br>Zone 21                                     |
|---|--|
| Continuous dust deposits or temporary explosive dust atmosphere | Dust accumulation or temporary explosive dust atmosphere |

### 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.



*Basic specification, Position 6 = K*  
 When using the stainless steel enclosure: Reduce the admissible ambient temperature by 5 K.

For detailed information see Technical Information.



Protection type of enclosure: IP66/67

Ex ta IIIC T<sub>200</sub> 100 °C Da X

| Maximum surface temperature | Process temperature range        | Ambient temperature range        | Temperature rise on the electronics |
|-----------------------------|----------------------------------|----------------------------------|-------------------------------------|
| T100 °C                     | -40 °C ≤ T <sub>p</sub> ≤ +60 °C | -40 °C ≤ T <sub>a</sub> ≤ +60 °C | 40 K                                |

Specific conditions of use:  
 The surface temperature for equipment protection level (EPL) Da is:  
 T<sub>200</sub> 100 °C (with 200 mm dust deposit)

Ex tb IIIC T<sub>L</sub> 125 °C Db X

| Maximum surface temperature | Process temperature range         | Ambient temperature range        |
|-----------------------------|-----------------------------------|----------------------------------|
| T125 °C                     | -40 °C ≤ T <sub>p</sub> ≤ +125 °C | -40 °C ≤ T <sub>a</sub> ≤ +60 °C |

*Basic specification, Position 10 = G*

| Maximum surface temperature | Process temperature range         | Ambient temperature range        |
|-----------------------------|-----------------------------------|----------------------------------|
| T125 °C                     | -40 °C ≤ T <sub>p</sub> ≤ +400 °C | -40 °C ≤ T <sub>a</sub> ≤ +70 °C |

Specific conditions of use:

The surface temperature for equipment protection level (EPL) Db is:  
T<sub>L</sub> 125 °C (with dust accumulation T<sub>L</sub>)



T<sub>L</sub> marking:

The assigned surface temperature without dust layer is the same.

**Connection data**

| Power supply                      |
|-----------------------------------|
| U ≤ 35 V <sub>DC</sub><br>P ≤ 1 W |

**Cable entry: Connection compartment****Ex tb**

Cable gland: *Basic specification, Position 7 = B*

| Thread  | Clamping range | Material          | Sealing insert | O-ring        |
|---------|----------------|-------------------|----------------|---------------|
| M20x1,5 | ø 8 to 10.5 mm | Ms, nickel-plated | Silicone       | EPDM (ø 17x2) |

Cable gland: *Basic specification, Position 7 = C*

| Thread  | Clamping range | Material | Sealing insert | O-ring        |
|---------|----------------|----------|----------------|---------------|
| M20x1,5 | ø 7 to 12 mm   | 1.4404   | NBR            | EPDM (ø 17x2) |



■ The tightening torque refers to cable glands installed by the manufacturer:

- Recommended: 3.5 Nm
- Maximum: 10 Nm

■ This value may be different depending on the type of cable. However, the maximum value must not be exceeded.

- Only suitable for fixed installation. The operator must pay attention to a suitable strain relief of the cable.
- The cable glands are suitable for a low risk of mechanical danger (4 Joule) and must be mounted in a protected position if larger impact energy levels are expected.
- To maintain the ingress protection of the enclosure: Install the enclosure cover, cable glands and blind plugs correctly.



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