

# Safety Instructions

## Cerabar PMC71B, PMP71B

Ex ia IIC T6...T1 Ga





# Cerabar PMC71B, PMP71B

## Table of contents

|   |    |
|---|----|
| About this document .....                     | 4  |
| Associated documentation .....                | 4  |
| Supplementary documentation .....             | 4  |
| Manufacturer's certificates .....             | 4  |
| Manufacturer address .....                    | 4  |
| Extended order code .....                     | 4  |
| Safety instructions: General .....            | 7  |
| Safety instructions: Special conditions ..... | 7  |
| Safety instructions: Installation .....       | 8  |
| Safety instructions: Zone 0 .....             | 9  |
| Temperature tables .....                      | 9  |
| Connection data .....                         | 11 |

**About this document**

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

**Associated documentation**

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

PMC71B  
BA02010P/00, TI01507P/00  
PMP71B  
BA02012P/00, TI01509P/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 -> Media Type:  
Documentation -> Documentation Type: Brochures and catalogs ->  
Text Search: CP00021Z
- On the CD for devices with CD-based documentation

**Manufacturer's certificates****Certificate of Conformity**

Certificate number:  
TÜV 20.1909 X

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

- ABNT NBR IEC 60079-0:2013
- ABNT NBR IEC 60079-11:2013
- ABNT NBR IEC 60079-26:2016

**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

PMx71B      -      \*\*\*\*\*      +      A\*B\*C\*D\*E\*F\*G\*..  
 (*Device*                      (*Basic*                      (*Optional*  
                   *type*)                      *specifications*)                      *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

#### Device type

PMC71B, PMP71B

#### Basic specifications

| Position 1, 2 (Approval) |                              |
|--------------------------|------------------------------|
| Selected option          | Description                  |
| PMC71B      MA<br>PMP71B | INMETRO Ex ia IIC T6...T1 Ga |

| <b>Position 6 (Housing, Material)</b> |   |                                 |
|---------------------------------------|---|---------------------------------|
| <b>Selected option</b>                |   | <b>Description</b>              |
| PMC71B                                | B | Single compartment; Alu, coated |
| PMP71B                                | J | Dual compartment; Alu, coated   |
|                                       | K | Dual compartment; 316L          |

| <b>Position 10 (Diaphragm Seal Type)</b> |   |                               |
|--|---|-------------------------------|
| <b>Selected option</b>                   |   | <b>Description</b>            |
| PMP71B                                   | G | Temperature isolator          |
|  | M | ..... m capillary, 316L       |
|  | N | ..... m capillary, PVC>316L   |
|  | O | ..... m capillary, PTFE>316L  |
|  | R | ..... ft capillary, 316L      |
|  | S | ..... ft capillary, PVC>316L  |
|  | T | ..... ft capillary, PTFE>316L |

### *Optional specifications*

| <b>ID Ex (Application Package)</b> |    |   |
|------------------------------------|----|---|
| <b>Selected option</b>             |    | <b>Description</b>                            |
| PMC71B                             | EC | High temperature version, 150°C/302°F process |

| <b>ID Jx, Kx (Test, Certificate, Declaration)</b> |    |   |
|---|----|---|
| <b>Selected option</b>                            |    | <b>Description</b>  |
| PMP71B  | JL | Ambient temp. transmitter -50°C/-58°F, sensor see specification |

| <b>ID Nx, Ox (Accessory Mounted)</b> |    |                        |
|--------------------------------------|----|------------------------|
| <b>Selected option</b>               |    | <b>Description</b>     |
| PMC71B                               | NA | Overvoltage protection |
| PMP71B                               |    |                        |

| ID Px, Rx (Accessory Enclosed) |    |   |
|--------------------------------|----|---|
| Selected option                |    | Description                                     |
| PMC71B                         | PA | Weather protection cover, 316L <sup>1)</sup>    |
| PMP71B                         | PB | Weather protection cover, plastic <sup>2)</sup> |

- 1) Only in connection with Position 6 (Housing; Material) = J, K  
 2) Only in connection with Position 6 (Housing; Material) = B

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

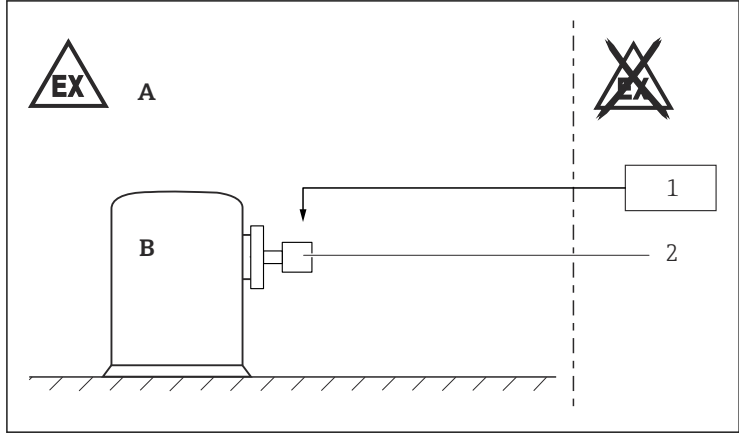
- Comply with the installation and safety instructions in the Operating Instructions.
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion 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. housing, sensor element, special varnishing, attached additional plates, ..)
  - Of isolated capacities (e.g. isolated metallic plates)
- Modifications 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:**  
**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 housing 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.

*Optional specification, ID Px, Rx (Accessory Enclosed) = PA*  
 Connect the weather protection cover to the local potential equalization.

## Safety instructions: Installation



A0041997

- A Zone 0, Electronic  
 B Zone 0, Process  
 1 Associated intrinsically safe power supply units  
 2 PMC71B, PMP71B

- After aligning (rotating) the housing, retighten the fixing screw.
- Continuous service temperature of the connecting cable:  $\geq T_a + 20$  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.

### Intrinsic safety

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ia.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $500 V_{\text{rms}}$ .

*Optional specification, ID Nx, Ox (Accessory Mounted) = NA*

The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $290 V_{\text{rms}}$ .

### Potential equalization


Integrate the device into the local potential equalization.




## Safety instructions: Zone 0

- In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions.
  - Temperature:  $-20$  to  $+60$  °C
  - Pressure: 80 to 110 kPa (0.8 to 1.1 bar)
  - Air with normal oxygen content, usually 21 % (V/V)
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.
- Only use the device in media to which the wetted materials have sufficient durability (e.g. process connection seal).

## Temperature tables

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

 *Optional specification, ID Jx, Kx (Test, Certificate, Declaration) = JL*  
Lower limit of the ambient temperature for explosion protection changes to  $-50$  °C.

*Optional specification, ID Px, Rx (Accessory Enclosed) = PB*  
When using the weather protection cover: Reduce the admissible ambient temperature by 10 K.

## Device Type PMC71B

| Temperature class | Process temperature range                    | Ambient temperature range                   |
|-------------------|--|---|
| T6                | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +45\text{ °C}$ |
|                   | $-40\text{ °C} \leq T_p \leq +60\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |
| T4                | $-40\text{ °C} \leq T_p \leq +100\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |
| T4...T1           | $-40\text{ °C} \leq T_p \leq +125\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +45\text{ °C}$ |

*Optional specification, ID Ex (Application Package) = EC*

| Temperature class | Process temperature range                    | Ambient temperature range                   |
|-------------------|--|---|
| T6                | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |
| T4                | $-40\text{ °C} \leq T_p \leq +100\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ |
| T4                | $-40\text{ °C} \leq T_p \leq +125\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +55\text{ °C}$ |
| T3...T1           | $-40\text{ °C} \leq T_p \leq +150\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |

**Device Type PMP71B**

| Temperature class | Process temperature range                    | Ambient temperature range                   |
|-------------------|--|---|
| T6                | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +45\text{ °C}$ |
|                   | $-40\text{ °C} \leq T_p \leq +70\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |
| T4...T1           | $-40\text{ °C} \leq T_p \leq +125\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +45\text{ °C}$ |
|                   | $-40\text{ °C} \leq T_p \leq +100\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +55\text{ °C}$ |
|                   | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ |

*Basic specification, Position 10 (Diaphragm Seal Type) = G*

| Temperature class | Process temperature range                    | Ambient temperature range                   |
|-------------------|--|---|
| T6                | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +50\text{ °C}$ |
| T4                | $-40\text{ °C} \leq T_p \leq +130\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ |
| T3                | $-40\text{ °C} \leq T_p \leq +190\text{ °C}$ |   |
| T2                | $-40\text{ °C} \leq T_p \leq +285\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +55\text{ °C}$ |
| T1                | $-40\text{ °C} \leq T_p \leq +400\text{ °C}$ |   |

*Basic specification, Position 10 (Diaphragm Seal Type) = M, N, O, R, S, T*

| Temperature class | Process temperature range                    | Ambient temperature range                   |
|-------------------|--|---|
| T6                | $-40\text{ °C} \leq T_p \leq +80\text{ °C}$  | $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ |
| T4                | $-40\text{ °C} \leq T_p \leq +130\text{ °C}$ | $-40\text{ °C} \leq T_a \leq +65\text{ °C}$ |
| T3                | $-40\text{ °C} \leq T_p \leq +190\text{ °C}$ |   |
| T2                | $-40\text{ °C} \leq T_p \leq +285\text{ °C}$ |   |
| T1                | $-40\text{ °C} \leq T_p \leq +400\text{ °C}$ |   |

**Connection data****Power supply**

$$U_i \leq 30 \text{ V}_{\text{DC}}$$

$$I_i \leq 300 \text{ mA}$$

$$P_i \leq 1 \text{ W}$$

$$C_i \leq 10 \text{ nF}$$

$$L_i = 0$$



71492580

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

---