

# Safety Instructions

## Cerabar S PMC71

4-20 mA HART, PROFIBUS PA,  
FOUNDATION Fieldbus

Ex ia IIIC Txxx°C Da/Db





# Cerabar S PMC71

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

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**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:

HART

- BA00271P/00
- BA00274P/00

PROFIBUS PA

- BA00295P/00
- BA00296P/00

FOUNDATION Fieldbus

- BA00302P/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****Certificate of Conformity**

Certificate number:  
TÜV 13.2007

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

**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**

PMC71      -      \*\*\*\*\*      +      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 S**

*Device type*

PMC71

*Basic specifications*

Position 1 (Approval)	
Selected option	Description
PMC71      Z	INMETRO Ex ia IIC Txxx°C Da/Db

Position 2 (Output, Operating)		
Selected option		Description
PMC71	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 10 (Additional Option 1)		
Selected option		Description
PMC71	M	Overvoltage protection
	T	High temperature version max 150°C/300°F

Position 11 (Additional Option 2)		
Selected option		Description
PMC71	M	Overvoltage protection
	T	High temperature version max 150°C/300°F

### *Optional specifications*

No options specific to hazardous locations are available.

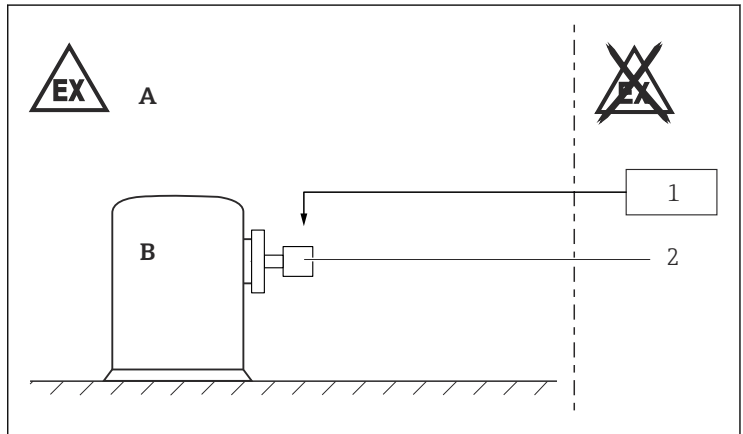
## **Safety instructions:** **General**

- 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.
- 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, Electronic  
 B Zone 20, Process  
 1 Certified associated apparatus  
 2 PMC71

- After aligning (rotating) the enclosure, retighten the fixing screw.
- Seal the cable entry or piping tight (see protection type of enclosure in the "Temperature tables" chapter).
- Only use cable glands which are suited for dust-Ex protection.
- 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.

### Intrinsic safety

The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $500 V_{\text{rms}}$ .

### Overvoltage protection

*Basic specification, Position 10 + 11 = M*

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

## 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.

Maximum surface temperature	Process temperature range	Ambient temperature range
T135 °C	$-40\text{ °C} \leq T_p \leq +80\text{ °C}$	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$
	$-40\text{ °C} \leq T_p \leq +100\text{ °C}$	$-40\text{ °C} \leq T_a \leq +50\text{ °C}$
	$-40\text{ °C} \leq T_p \leq +125\text{ °C}$	$-40\text{ °C} \leq T_a \leq +45\text{ °C}$

Specific conditions of use:

The surface temperature is

- for equipment protection level (EPL) Da:  $T_{200}$  135 °C (with 200 mm dust deposit)
- and equipment protection level (EPL) Db:  $T_L$  135 °C (with dust accumulation  $T_L$ )



$T_L$  marking:

The assigned surface temperature without dust layer is the same.

*Basic specification, Position 10 + 11 = T*

Maximum surface temperature	Process temperature range	Ambient temperature range
T150 °C	$-40\text{ °C} \leq T_p \leq +100\text{ °C}$	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$
	$-40\text{ °C} \leq T_p \leq +125\text{ °C}$	$-40\text{ °C} \leq T_a \leq +50\text{ °C}$
	$-40\text{ °C} \leq T_p \leq +150\text{ °C}$	$-40\text{ °C} \leq T_a \leq +45\text{ °C}$



Specific conditions of use:

The surface temperature is

- for equipment protection level (EPL) Da:  $T_{200}$  150 °C (with 200 mm dust deposit)
- and equipment protection level (EPL) Db:  $T_L$  150 °C (with 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
$U_1 \leq 30 V_{DC}$ $I_1 \leq 300 \text{ mA}$ $P_1 \leq 1 \text{ W}$ $C_1 \leq 11.8 \text{ nF}$ $L_1 \leq 225 \mu\text{H}^{1)}$ or $L_1 = 0^{2)}$

- 1) Basic specification, Position 2 = A, B, C
- 2) Basic specification, Position 2 = D, E, F

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

Power supply	
FISCO  $U_1 \leq 17.5 V_{DC}$ $I_1 \leq 500 \text{ mA}$ $P_1 \leq 5.5 \text{ W}$ $C_1 \leq 5 \text{ nF}$ $L_1 \leq 10 \mu\text{H}$	Entity  $U_1 \leq 24 V_{DC}$ $I_1 \leq 250 \text{ mA}$ $P_1 \leq 1.2 \text{ W}$ $C_1 \leq 5 \text{ nF}$ $L_1 \leq 10 \mu\text{H}$







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