

# Safety Instructions

## Cerabar PMC71B, PMP71B

Ex ta/tb IIIC T<sub>200</sub> xxx°C Da/Db

Ex tb IIIC T<sub>L</sub> xxx°C Db





# Cerabar PMC71B, PMP71B

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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:

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 -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

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

Certificate number:  
CML 21JPN1233X

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

- JNIO SH-TR-46-1:2015
- JNIO SH-TR-46-9:2018

**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.



Position 6 (Housing, Material)		
Selected option		Description
PMC71B	B	Single compartment; Alu, coated
PMP71B	J	Dual compartment; Alu, coated
	K	Dual compartment; 316L

Position 7 (Electrical Connection)		
Selected option		Description
PMC71B	B	Gland M20, brass nickel plated, IP66/68 NEMA Type 4X/6P
PMP71B	C	Gland M20, 316L, IP66/68 NEMA Type 4X/6P
	F	Thread M20, IP66/68 NEMA Type 4X/6P
	G	Thread G1/2, IP66/68 NEMA Type 4X/6P
	H	Thread NPT1/2, IP66/68 NEMA Type 4X/6P

Position 10 (Diaphragm Seal Type)		
Selected option		Description
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

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

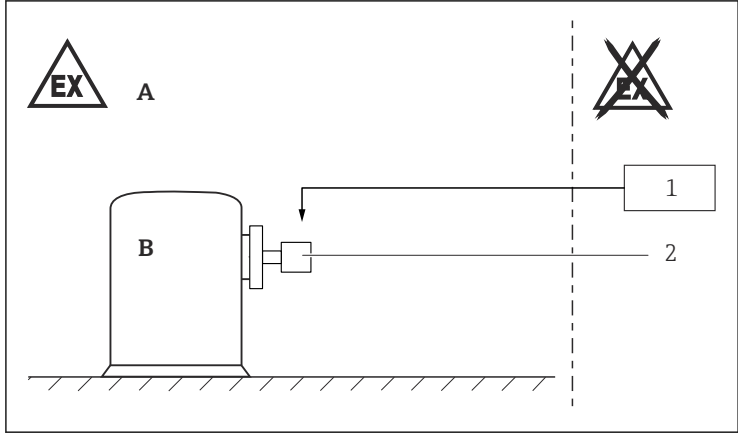
**Safety  
instructions:  
General**

- Devices suitable for zone separation (marked Ga/Gb or Da/Db) are always suitable for installation in the less critical zone (Gb or Db). Due to space limitations the corresponding marking maybe not indicated on the nameplate.
- 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**

- 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 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.

**Safety instructions:  
Installation**



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- A Zone 21, Electronic
- B Zone 20 or Zone 21, Process
- 1 Power supply
- 2 PMC71B, PMP71B

- After aligning (rotating) the housing, retighten the fixing screw.
- Do not open in a potentially explosive dust atmosphere.
- Seal the cable entry or piping tight (see ingress protection of housing in the "Temperature tables" chapter).
- Before operation:
  - Screw in the cover all the way.
  - Tighten the securing screw on the cover.

*Permitted ambient conditions*

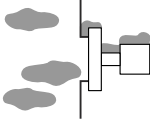
**Ex ta/tb IIIC T<sub>200</sub> xxx°C Da/Db**

Process Zone 20		Housing Zone 21
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 T<sub>L</sub> xxx°C Db**

Process Zone 21	Housing 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 housing.
- 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 housing.
- The process temperatures refer to the temperature at the separation membrane.

For detailed information see Technical Information.



*Basic specification, Position 6 = K*

When using the stainless steel housing: Reduce the admissible ambient temperature by 5 K.



Ingress protection of housing: IP66/67

**Device Type PMC71B**

Ex ta/tb IIIC T<sub>200</sub> 125°C Da/Db

Ex tb IIIC T<sub>L</sub> 125°C Db

Maximum surface temperature	Process temperature range	Ambient temperature range
T125 °C	-40 °C ≤ T <sub>p</sub> ≤ +70 °C	-40 °C ≤ T <sub>a</sub> ≤ +65 °C
	-40 °C ≤ T <sub>p</sub> ≤ +100 °C	-40 °C ≤ T <sub>a</sub> ≤ +60 °C
	-40 °C ≤ T <sub>p</sub> ≤ +125 °C	-40 °C ≤ T <sub>a</sub> ≤ +55 °C

Ex ta/tb IIIC T<sub>200</sub> 150°C Da/Db

Ex tb IIIC T<sub>L</sub> 150°C Db

*Optional specification, ID Ex = EC*

Maximum surface temperature	Process temperature range	Ambient temperature range
T150 °C	-40 °C ≤ T <sub>p</sub> ≤ +125 °C	-40 °C ≤ T <sub>a</sub> ≤ +60 °C
	-40 °C ≤ T <sub>p</sub> ≤ +150 °C	-40 °C ≤ T <sub>a</sub> ≤ +55 °C

Specific conditions of use:

- The surface temperature is
  - for equipment protection level (EPL) Da: T<sub>200</sub> 125 °C / 150 °C (with 200 mm dust deposit)
  - and equipment protection level (EPL) Db: T<sub>L</sub> 125 °C / 150 °C (with dust accumulation T<sub>L</sub>)
- The surface temperature is for equipment protection level (EPL) Db: T<sub>L</sub> 125 °C / 150 °C (with dust accumulation T<sub>L</sub>)



T<sub>L</sub> marking:

The assigned surface temperature without dust layer is the same.

### Device Type PMP71B

Ex ta/tb IIIC T<sub>200</sub> 125°C Da/Db

Ex tb IIIC T<sub>L</sub> 125°C Db

Maximum surface temperature	Process temperature range	Ambient temperature range
T125 °C	-40 °C ≤ T <sub>p</sub> ≤ +80 °C	-40 °C ≤ T <sub>a</sub> ≤ +65 °C
	-40 °C ≤ T <sub>p</sub> ≤ +100 °C	-40 °C ≤ T <sub>a</sub> ≤ +60 °C
	-40 °C ≤ T <sub>p</sub> ≤ +125 °C	-40 °C ≤ T <sub>a</sub> ≤ +50 °C

*Basic specification, Position 10 = G*

Maximum surface temperature	Process temperature range	Ambient temperature range
T125 °C	-40 °C ≤ T <sub>p</sub> ≤ +190 °C	-40 °C ≤ T <sub>a</sub> ≤ +60 °C
	-40 °C ≤ T <sub>p</sub> ≤ +290 °C	-40 °C ≤ T <sub>a</sub> ≤ +55 °C
	-40 °C ≤ T <sub>p</sub> ≤ +400 °C	-40 °C ≤ T <sub>a</sub> ≤ +50 °C

Basic specification, Position 10 = M, N, O, R, S, T

Maximum surface temperature	Process temperature range	Ambient temperature range
T125 °C	$-40\text{ °C} \leq T_p \leq +190\text{ °C}$	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$
	$-40\text{ °C} \leq T_p \leq +290\text{ °C}$	
	$-40\text{ °C} \leq T_p \leq +400\text{ °C}$	

Specific conditions of use:

- The surface temperature is
  - for equipment protection level (EPL) Da:  $T_{200}$  125 °C (with 200 mm dust deposit)
  - and equipment protection level (EPL) Db:  $T_L$  125 °C (with dust accumulation  $T_L$ )
- The surface temperature is for equipment protection level (EPL) Db:  $T_L$  125 °C (with dust accumulation  $T_L$ )



$T_L$  marking:

The assigned surface temperature without dust layer is the same.

## Connection data

Power supply
$U \leq 35\text{ V}_{DC}$ $P \leq 1\text{ W}$

## Cable entry: Connection compartment

### Ex tb

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


Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	$\varnothing 8$ to $10.5\text{ mm}$ <sup>1)</sup> $\varnothing 6.5$ to $13\text{ mm}$ <sup>2)</sup>	Ms, nickel-plated	Silicone	EPDM ( $\varnothing 17 \times 2$ )

1) Standard

2) Separate clamping inserts available

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

Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	$\varnothing 7$ to $12\text{ mm}$	1.4404	NBR	EPDM ( $\varnothing 17 \times 2$ )

-  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 housing: Install the housing cover, cable glands and blind plugs correctly.









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