

# Safety Instructions

## **Cerabar M PMP51, PMP55**

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

1Ex d IIC T6/T4 Gb



Document: XA01401P-C

Safety instructions for electrical apparatus for explosion-hazardous areas →  3

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# Cerabar M PMP51, PMP55

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<b>Associated documentation</b>	<p>This document is an integral part of the following Operating Instructions:</p> <p>HART BA00382P/00</p> <p>PROFIBUS PA BA00383P/00</p> <p>FOUNDATION Fieldbus BA00384P/00</p>										
<b>Supplementary documentation</b>	<p>Explosion-protection brochure: CP00021Z/11</p> <p>The Explosion-protection brochure is available:</p> <ul style="list-style-type: none"> <li>■ In the download area of the Endress+Hauser website:  <a href="http://www.endress.com">www.endress.com</a> -&gt; Downloads -&gt; Media Type: Documentation -&gt;  Documentation Type: Brochures and catalogs -&gt; Text Search: CP00021Z</li> <li>■ On the CD for devices with CD-based documentation</li> </ul>										
<b>Manufacturer's certificates</b>	<p><b>Certificate of Conformity TP TC 012/2011</b></p> <p>Inspection authority: LLC NANIO CCVE (ООО «НАННО ЦСВЭ»)</p> <p>Certificate number: EAЭC RU C-DE.AA87.B.00320/20</p> <p>Affixing the certificate number certifies conformity with the following standards (depending on the device version):</p> <ul style="list-style-type: none"> <li>■ GOST IEC 60079-1-2011</li> <li>■ GOST 31610.0-2014 (IEC 60079-0:2011)</li> </ul>										
<b>Manufacturer address</b>	<p>Endress+Hauser SE+Co. KG Hauptstraße 1 79689 Maulburg, Germany Address of the manufacturing plant: See nameplate.</p>										
<b>Extended order code</b>	<p>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.</p> <p><b>Structure of the extended order code</b></p> <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">PMP5x</td> <td style="text-align: center;">–</td> <td style="text-align: center;">*****</td> <td style="text-align: center;">+</td> <td style="text-align: center;">A*B*C*D*E*F*G*..</td> </tr> <tr> <td style="text-align: center;"><i>(Device type)</i></td> <td></td> <td style="text-align: center;"><i>(Basic specifications)</i></td> <td></td> <td style="text-align: center;"><i>(Optional specifications)</i></td> </tr> </table> <p>* = Placeholder At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.</p> <p><i>Basic specifications</i></p> <p>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.</p>	PMP5x	–	*****	+	A*B*C*D*E*F*G*..	<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>
PMP5x	–	*****	+	A*B*C*D*E*F*G*..							
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>							

*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 M**

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*

PMP51, PMP55

*Basic specifications*

Position 1, 2 (Approval)		
Selected option		Description
PMP5x	GC	EAC 1Ex d IIC T6/T4 Gb

Position 3 (Output)		
Selected option		Description
PMP5x	2	4-20 mA HART
	3	PROFIBUS PA
	4	FOUNDATION Fieldbus

*Optional specifications*

No options specific to hazardous locations are available.

**Safety instructions: General**

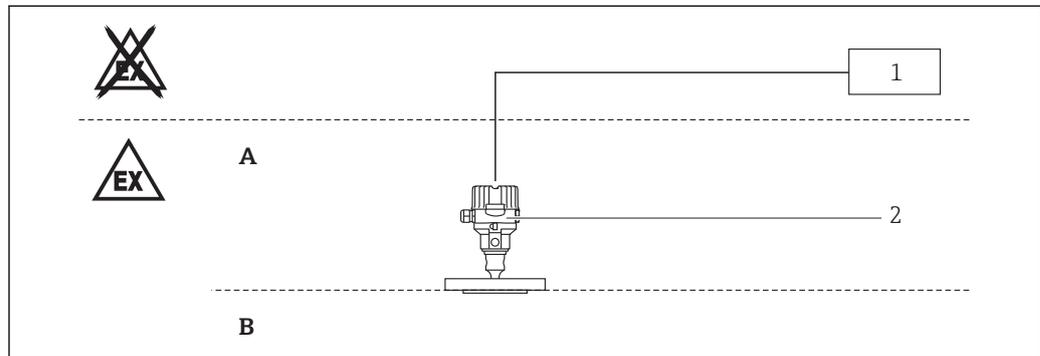
- Comply with the installation and safety instructions in the Operating Instructions.
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- 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)

**Safety instructions:  
Special conditions**

Permitted ambient temperature range at the electronics housing:  
 $-40\text{ °C} \leq T_a \leq +75\text{ °C}$

- Observe the information in the temperature tables.
- 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.
- In the event of additional or alternative special varnishing on the housing or other metal parts:
  - Observe the danger of electrostatic charging and discharge.
  - Do not rub surfaces with a dry cloth.

### Safety instructions: Installation



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- A Zone 1, Electronic  
 B Zone 1, Process  
 1 Power supply  
 2 PMP51, PMP55

- In potentially explosive atmospheres: Do not open the connection compartment cover and the electronics compartment cover when energized.
- Before operation:
  - Screw in the cover all the way.
  - Tighten the securing clamp on the cover.
- Connect the device:
  - Using suitable cable and wire entries of protection type "Flameproof Enclosure (Ex d)".
  - Using piping systems of protection type "Flameproof Enclosure (Ex d)".
- When connecting through a conduit entry approved for this purpose, mount the associated sealing unit directly at the housing.
- For ambient temperatures higher than +70 °C, use suitable heat resisting cables or wires.
- Seal unused entry glands with approved sealing plugs that correspond to the type of protection. The plastic transport sealing plug does not meet this requirement and must therefore be replaced during installation.
- Only use certified cable entries or sealing plugs. The metal sealing plugs supplied meet this requirement.
- After aligning (rotating) the housing, retighten the fixing screw (see Operating Instructions).

### Temperature tables

Type of protection	Temperature class	Process temperature T <sub>p</sub> (process)	Ambient temperature T <sub>a</sub> (ambient): housing
1Ex d IIC T6/T4 Gb	T6	≤ 80 °C	-40 °C ≤ T <sub>a</sub> ≤ +75 °C
	T4	≤ 120 °C	-40 °C ≤ T <sub>a</sub> ≤ +75 °C

Do not exceed the max. ambient temperature at the housing.

*Device type PMP51*

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

*Device type PMP55*

Higher temperatures are permitted depending on the type of diaphragm seal.

**Connection data***Basic specification, Position 3 (Output) = 2*

<b>Power supply</b>
$U \leq 45 \text{ V}_{\text{DC}}$ $P \leq 1.1 \text{ W}$

*Basic specification, Position 3 (Output) = 3, 4*

<b>Power supply</b>
$U \leq 32 \text{ V}_{\text{DC}}$ $P \leq 1.25 \text{ W}$



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