

Safety Instructions

Cerabar

PMC21, PMP21, PMP23

ATEX: II 1/2 G Ex ia IIC T4 Ga/Gb
II 2 G Ex ia IIC T4 Gb
IECEX: Ex ia IIC T4 Ga/Gb



Cerabar PMC21, PMP21, PMP23

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About this document



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

The document translated into EU languages is available:

- In the download area of the Endress+Hauser website:
www.endress.com -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: www.endress.com -> Product tools -> Access device specific information -> Check device features



If not yet available, the document can be ordered.

Associated documentation

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

BA01271P/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 -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

Manufacturer's certificates

EU Declaration of Conformity

Declaration Number:
EC_00069

The EU Declaration of Conformity is available:

In the download area of the Endress+Hauser website:
www.endress.com -> Downloads -> Declaration -> Type: EU Declaration -> Product Code: ...

EU type-examination certificate

Certificate number:
SEV 14 ATEX 0134

List of applied standards: See EU Declaration of Conformity.

IEC Declaration of Conformity

Certificate number:
IECEX SEV 14.0008

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

- IEC 60079-0 : 2017
- IEC 60079-11 : 2011
- IEC 60079-26 : 2014

Manufacturer address

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany
Address of the manufacturing plant: See nameplate.

Other standards

Among other things, the following standards shall be observed in their current version for proper installation:

- IEC/EN 60079-14: "Explosive atmospheres - Part 14: Electrical installations design, selection and erection"
- EN 1127-1: "Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology"

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

PMC21, PMP2x	-	*****	+	A*B*C*D*E*F*G*..
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>

* = 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

PMC21, PMP21, PMP23

Basic specifications

Position 1, 2 (Approval)		
Selected option		Description
PMC21 PMP2x	BA	ATEX II 1/2 G Ex ia IIC T4 Ga/Gb
	BB	ATEX II 2 G Ex ia IIC T4 Gb
	IA	IECEx Ex ia IIC T4 Ga/Gb

Position 3 (Output)		
Selected option		Description
PMC21 PMP2x	1	4 to 20 mA

Position 4 (Electrical Connection)		
Selected option		Description
PMC21 PMP2x	A	Cable 5 m, IP66/68 NEMA Type 4X/6P Encl.
	B	Cable 10 m, IP66/68 NEMA Type 4X/6P Encl.
	C	Cable 25 m, IP66/68 NEMA Type 4X/6P Encl.
	M	Plug M12, IP65/67 NEMA Type 4X Encl.
	U	Valve plug ISO4400 M16, IP65 NEMA Type 4X Encl.
	V	Valve plug ISO4400 NPT1/2, IP65 NEMA Type 4X Encl.
PMP23	N	Plug M12, IP66/69 NEMA Type 4X Encl.

Optional specifications

No options specific to hazardous locations are available.

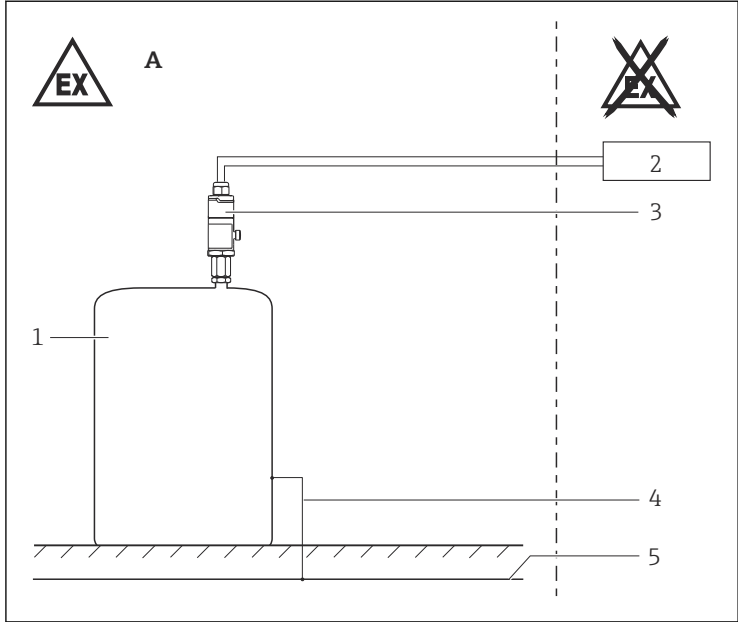
Safety instructions: General

- 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. 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 (≤ 0.5 m) generating strong electrostatic charges.

Safety instructions: Installation



A0031218



- 1 Tank; Zone 0
- 2 Certified associated apparatus
- 3 Transmitter enclosure
- 4 Potential equalization line
- 5 Potential equalization

Intrinsic safety

- When the device is connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC and IIB, the type of protection changes to Ex ib IIC and Ex ib IIB. Do not operate the sensor in Zone 0 if connecting to an intrinsically safe circuit of Category Ex ib.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least $500 V_{\text{rms}}$.

Potential equalization

If the potential equalization cannot be guaranteed by the installation: In order to avoid electrostatic charging, integrate metallic parts of the enclosure into the 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.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

Temperature tables

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient): enclosure
T4	≤ 100 °C	-40 °C $\leq T_a \leq +70$ °C

Connection data

Electrical data
$U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 0.8$ W $C_i \leq 11.6$ nF $L_i = 0$



71528016

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