

Safety Instructions

Cerabar M

PMC51, PMP51, PMP55

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Ex ia IIC T6...T4 Ga/Gb

Ex ia IIC T6...T3 Ga/Gb

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Safety instructions for electrical apparatus for explosion-hazardous areas

Cerabar M

PMC51, PMP51, PMP55

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Associated Documentation

This document is an integral part of the following Operating Instructions:
 HART: BA00382P/00
 PROFIBUS PA: BA00383P/00
 FOUNDATION Fieldbus: BA00384P/00

The Operating Instructions which are supplied and correspond to the device type apply.

Supplementary Documentation

Explosion-protection brochure:
 CP00021Z/11

Designation

Explanation of the labelling and type of protection can be found in the explosion protection brochure.

Designation of type of protection

Ex ia	IIC	T6...T4	Ga/Gb
Ex ia	IIC	T6...T3	Ga/Gb

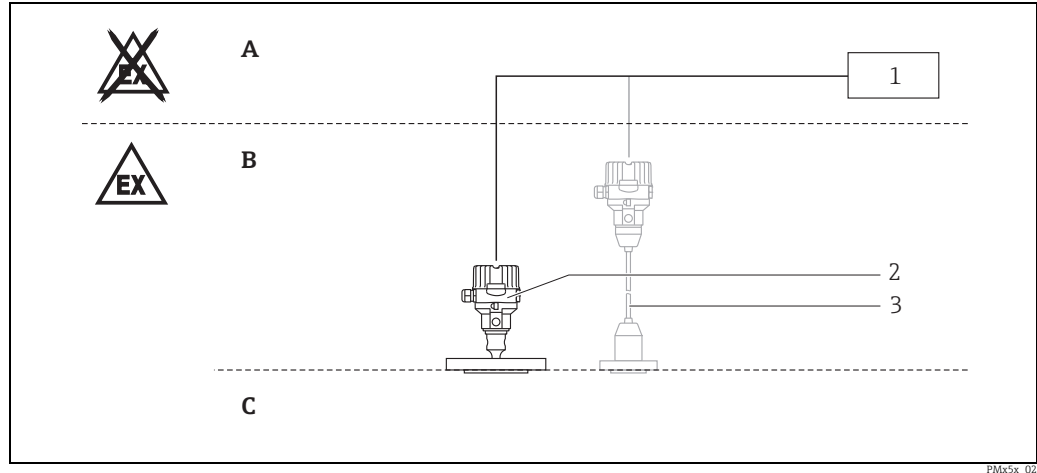
Applied standards

ABNT NBR IEC 60079-0 :2008
 ABNT NBR IEC 60079-11:2009
 ABNT NBR IEC 60079-26:2008

Safety instructions:
General

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations.
- Only install the devices in media for 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:
Installation



- A** Power supply
B Zone 1, Electronic
C Zone 0, Process
- 1 Certified associated apparatus
 2 PMC51, PMP51 or PMP55
 3 Option: Separate housing

- When the device is connected to an intrinsically safe circuit Ex ib, the level of protection changes to Ex ib. Do not operate intrinsically safe circuits Ex ib in zone 0.
When the device is connected to an intrinsically safe circuit Ex ic, the level of protection changes to Ex ic. Do not operate intrinsically safe circuits Ex ic in zone 0 or zone 1.
- The intrinsically safe input power circuit of the device is isolated from ground potential and has a dielectric strength of at least 500 V_{rms} with respect to it.
- After aligning (rotating) the housing, retighten the fixing screw.
- Avoid electrostatic charging of the plastic surfaces, for plastic process connections or plastic coatings.
- Avoid impact or friction sparks for light metal flanges or flange faces (e.g. titanium, zirconium).
- In case of additional or alternative special varnishing of the enclosure or other metallic parts the danger of an electrostatic charging must be observed. Do not rub surfaces with dry cloth.

Safety instructions:
Zone 0

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions:
 - 20 °C ≤ T ≤ +60 °C
 - 0.8 bar ≤ p ≤ 1.1 bar
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, the transmitters may be operated under other atmospheric conditions in accordance with the manufacturer's specifications.
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

For PMC51, the following also applies:

- On installations requiring overvoltage protection to comply with national regulations or standards, this device shall be installed using an overvoltage protector (e.g. HAW560Z and HAW562Z from Endress+Hauser).

Temperature tables

Electronic insert	Type of protection	Temperature class	Process temperature	Ambient temperature (Housing)
4-20 mA HART	Ex ia IIC T6...T4/T3 Ga/Gb	T6	≤ 80 °C	-40 °C ≤ T _a ≤ +40 °C
		T4	≤ 125 °C	-40 °C ≤ T _a ≤ +70 °C
		T3 (at PMC51, PMP51 acc. nameplate)	≤ 150 °C	-40 °C ≤ T _a ≤ +70 °C
PROFIBUS PA, FOUNDATION Fieldbus	Ex ia IIC T6...T4 /T3 Ga/Gb	T6	≤ 80 °C	-40 °C ≤ T _a ≤ +40 °C
		T4	≤ 125 °C	-40 °C ≤ T _a ≤ +70 °C
		T3 (at PMC51, PMP51 acc. nameplate)	≤ 150 °C	-40 °C ≤ T _a ≤ +70 °C

The process temperatures refer to the temperature at the separation membrane of PMC51 and PMP51.
For PMP55, higher temperatures are permitted depending on the type of diaphragm seal
(do not exceed the max. ambient temperature at the housing).

Connection data

Electronic insert	Electrical data
4-20 mA HART	$U_i \leq 30 \text{ V DC}$ $I_i \leq 300 \text{ mA}$ $P_i \leq 1 \text{ W}$ $C_i \leq 10 \text{ nF}$ $L_i = 0$
PROFIBUS PA, FOUNDATION Fieldbus	$U_i \leq 17.5 \text{ V DC}$ $I_i \leq 500 \text{ mA}$ $P_i \leq 5.5 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i \leq 10 \text{ } \mu\text{H}$ (FISCO field device) or $U_i \leq 24 \text{ V DC}$ $I_i \leq 250 \text{ mA}$ $P_i \leq 1.2 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i \leq 10 \text{ } \mu\text{H}$



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