Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions

Safety Instructions

Cerabar S
PMC71, PMP71, PMP72, PMP75

4...20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Ex ia IIC T6
NEPSI GYJ05165/GYJ05634

XC003P-B

en - Safety instructions for electrical apparatus for explosion-hazardous areas

zh - 爆炸环境中电气仪表的安全指南。

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People for Process Automation

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english

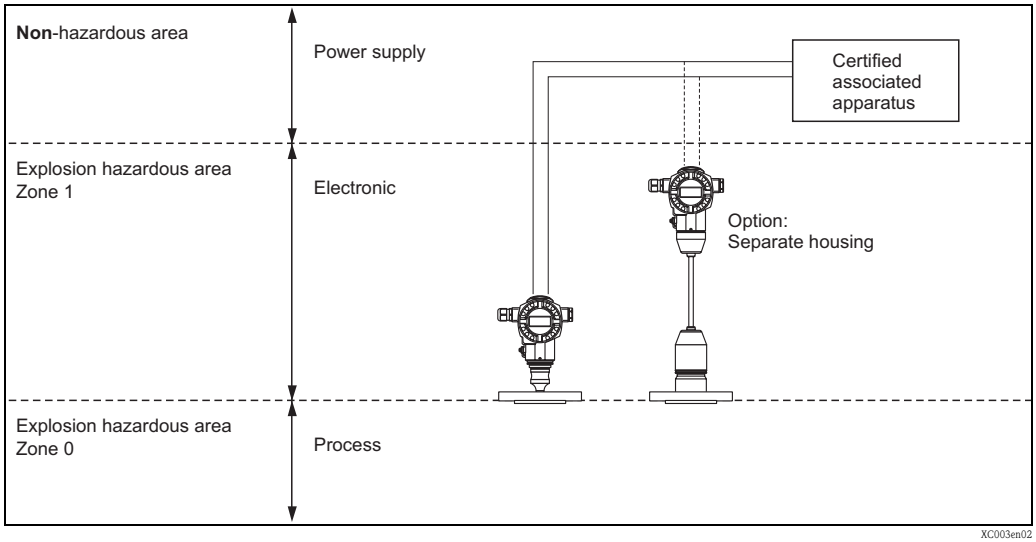
Associated Documentation

This document is an integral part of the following Operating Instructions:
– HART: BA271P/00 and BA274P/00
– PROFIBUS PA: BA295P/00 and BA296P/00
– FOUNDATION Fieldbus: BA302P/00 and BA303P/00

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

Designation

Designation of explosion protection	**Ex**	**ia**	**IIC**	**T6**



Electronic insert: 4...20 mA HART

Type	Type of protection	Electrical Data	Temperature class	Process temperature	Ambient temperature (Housing)
All	Ex ia IIC T6	Ui ≤ 30 V DC li ≤ 300 mA Pi ≤ 1 W Ci ≤ 11.8 nF Li ≤ 225 µH	T6	≤ 80 °C	–40 °C ≤ Ta ≤ +40 °C
PMC71, PMP71	Ex ia IIC T4...T2		T4	≤ 120 °C	–40 °C ≤ Ta ≤ +70 °C
PMC71 High temperature			T3	≤ 150 °C	
PMP72 High temperature			T2	≤ 280 °C	

The process temperatures refer to the temperature at the separation membrane of PMC71, PMP71 and PMP72.
For PMP75, higher temperatures are permitted depending on the type of diaphragm seal (do not exceed the max. ambient temperature at the housing).

Electronic insert: PROFIBUS PA, FOUNDATION Fieldbus

Type	Type of protection	Electrical Data	Temperature class	Process temperature	Ambient temperature (Housing)
All	Ex ia IIC T6	Ui ≤ 17.5 V DC li ≤ 500 mA Pi ≤ 5.5 W or Ui ≤ 24 V DC li ≤ 250 mA Pi ≤ 1.2 W Ci ≤ 5 nF Li ≤ 10 µH (suitable for connection to a field-bus system according to the FISCO model)	T6	≤ 80 °C	–40 °C ≤ Ta ≤ +40 °C
PMC71, PMP71	Ex ia IIC T4...T2		T4	≤ 120 °C	–40 °C ≤ Ta ≤ +70 °C
PMC71 High temperature			T3	≤ 150 °C	
PMP72 High temperature			T2	≤ 280 °C	

The process temperatures refer to the temperature at the separation membrane of PMC71, PMP71 and PMP72.
For PMP75, higher temperatures are permitted depending on the type of diaphragm seal (do not exceed the max. ambient temperature at the housing).

Safety instructions: General

- Only install the devices in media for which the wetted materials have sufficient durability.
- For plastic process connections or plastic coatings, avoid electrostatic charging of the plastic surfaces.
- The type of protection changes as follows when the devices are connected to certified intrinsically safe circuits of Category ib: Ex ib IIC T6 and Ex ib IIC T4. Do not operate the sensor in Zone 0 if the transmitter is connected to an intrinsically safe circuit of Category Ex ib.
- In hazardous areas, intrinsically safe equipment shall only be operated on certified intrinsically safe circuits. The intrinsic safety can be jeopardised if, prior to the installation in the Ex-area, the device is operated with circuits which did not guarantee the Ui, Ii and Pi values indicated in the table above.
- 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. For devices with integrated overvoltage protection (optional), the dielectric strength is min. 290 V_{rms} to earth.
- After aligning the housing (rotating), tighten the locking screw again.
- For installation, use and maintenance of the device, users must also observe the requirements stated in the Operating Instructions and the standards GB3836.13-2000, GB3836.15-2000 and GB50257-1996.
- The external earth connection facility should be connected reliably.
- The criteria for interconnection between the transmitter and the assiciated apparatus is: $Uo \leq Ui$, $Io \leq Ii$, $Po \leq Pi$, $Co \geq Ci + Cc$, $Lo \geq Li + Lc$ with Uo, Io, Po, Co, Lo: output parameter of the assiciated apparatus Cc, Lc: distributed capacitance and inductance of cable.
- Changes in electrical and mechanical parts of the equipment could harm the type of explosion protection and are not allowed for the user.

Safety instructions: Zone 0

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions: $-20°C \leq T \leq +60°C$ and $0.8 \text{ bar} \leq p \leq 1.1 \text{ bar}$
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

For PMC71 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.

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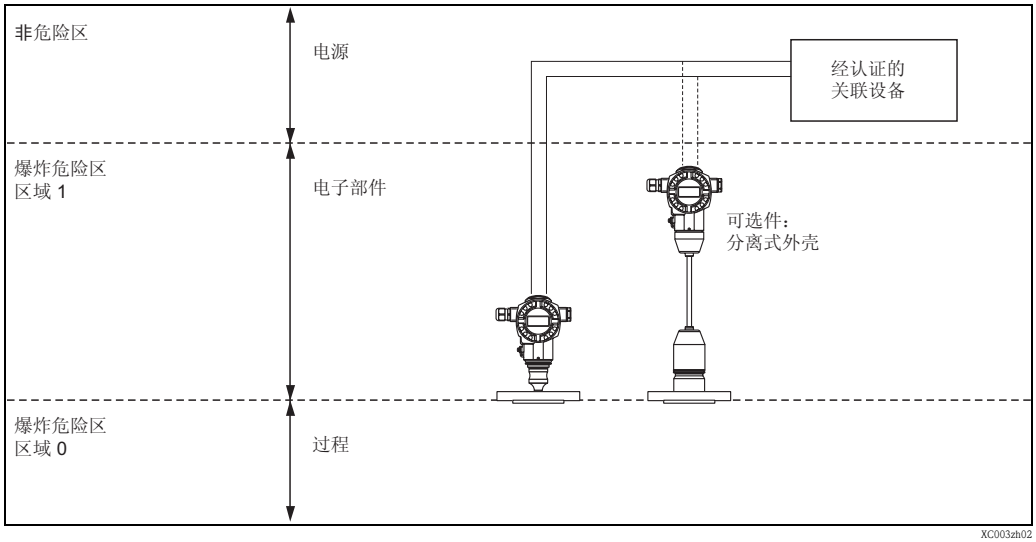
中文

相关资料

本文档是下列操作手册的组成部分：
– HART：BA271P/00 和 BA274P/00
– PROFIBUS PA：BA295P/00 和 BA296P/00
– FOUNDATION Fieldbus (基金会现场总线)：BA302P/00 和 BA303P/00
根据用户订购仪表的具体型号所提供的相应操作手册。

名称

防爆代号	**Ex ia IIC T6**



电子插件：4...20 mA HART

类型	防护类型	电气参数	温度组别	过程温度	环境温度 (外壳)
全部	Ex ia IIC T6	Ui ≤ 30 V DC Ii ≤ 300 mA Pi ≤ 1 W Ci ≤ 11.8 nF Li ≤ 225 µH	T6	≤ 80 °C	–40 °C ≤ Ta ≤ +40 °C
PMC71, PMP71	Ex ia IIC T4...T2		T4	≤ 120 °C	–40 °C ≤ Ta ≤ +70 °C
PMC71 高温			T3	≤ 150 °C	
PMP72 高温			T2	≤ 280 °C	

过程温度是指 PMC71、 PMP71 和 PMP72 分隔薄膜的温度。
对于 PMP75，允许更高的温度，这取决于膜片密封的类型 (不能超过外壳上的最高环境温度)。

电子插件：PROFIBUS PA, FOUNDATION Fieldbus (基金会现场总线)

类型	防护类型	电气参数	温度组别	过程温度	环境温度 (外壳)
全部	Ex ia IIC T6	Ui ≤ 17.5 V DC Ii ≤ 500 mA Pi ≤ 5.5 W 或 Ui ≤ 24 V DC Ii ≤ 250 mA Pi ≤ 1.2 W Ci ≤ 5 nF Li ≤ 10 µH (根据 FISCO 模型，适合与现场总线系统相连接)	T6	≤ 80 °C	–40 °C ≤ Ta ≤ +40 °C
PMC71, PMP71	Ex ia IIC T4...T2		T4	≤ 120 °C	–40 °C ≤ Ta ≤ +70 °C
PMC71 高温			T3	≤ 150 °C	
PMP72 高温			T2	≤ 280 °C	

过程温度是指 PMC71、 PMP71 和 PMP72 分隔薄膜的温度。
对于 PMP75，允许更高的温度，这取决于膜片密封的类型 (不能超过外壳上的最高环境温度)。

安全指南：
概述

- 当仪表的受潮部件对介质具有足够耐久性时，才可将仪表安装于介质中。
- 对于塑料过程连接件或塑料涂层，应避免塑料表面产生静电荷。
- 仪表与防爆类别为 ib 的本安型电路相连时，防护类型变为：Ex ib IIC T6 和 Ex ib IIC T4。如果变送器连接在 Ex ib 类的本安型电路中，则不要在区域 0 中使用传感器。
- 在危险区中使用时，只可在经认证的本安型电路中使用本安型仪表。在安装到防爆区中之前，若仪表的工作电路无法保证上表中给出的 Ui、 Ii 和 Pi 参数值，则系统的本质安全特性可能会有所降低。
- 设备的本安型输入电源电路与地电势是绝缘的，相对地电势至少有 500 V_{rms} 的绝缘强度。对于带有集成过电压保护装置 (可选) 的设备，对地的绝缘强度最小为 290 V_{rms}。
- 对准外壳后 (旋转)，再次拧紧锁紧螺钉。
- 在安装、使用和维护设备时，用户必须遵守操作手册和 GB3836.13-2000、 GB3836.15-2000 及 GB50257-1996 标准中规定的要求。
- 外部接地连接部件应可靠连接。
- 变送器与关联设备间的连接条件是：
  Uo ≤ Ui、Io ≤ Ii、Po ≤ Pi、Co ≥ Ci + Cc、Lo ≥ Li + Lc，其中，Uo、Io、Po、Co、Lo：关联设备的输出参数， Cc、 Lc：电缆的分布电容和电感。
- 改动设备的电气和机械部件会降低防爆保护的类型，用户请勿擅自改动。

安全指南：
区域 0

- 只有在下列大气条件下才能在有爆炸可能的蒸汽 / 空气混合物中操作设备：
  -20 °C ≤ T ≤ +60 °C 和 0.8 bar ≤ p ≤ 1.1 bar
- 在本安型和非本安型电路间最好采用电气隔离的关联设备。

对于 PMC71，下述原则也适用：

- 对于按照国家规定或标准要求进行过电压保护的安装，安装本设备时应使用过电压保护装置。

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