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Safety Instructions
Cerabar PMC51B, PMP51B

ATEX, IECEx: Ex ia IIC T6...T1 Ga/Gb
Ex ia IIC T6...T1 Gb



Endress+Hauser
People for Process Automation

Cerabar PMC51B, PMP51B

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Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

If not yet available, a translation into EU languages can be ordered.

To commission the device, please observe the Operating Instructions pertaining to the device:

PMC51B

HART
BA02009P, TI01506P

PROFINET
BA02226P, TI01506P

PMP51B

HART
BA02011P, TI01508P

PROFINET
BA02228P, TI01508P

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

Certificates and declarations

EU Declaration of Conformity

Declaration Number:
EU_01088

The EU Declaration of Conformity is available on the Internet:
www.endress.com/Downloads

EU type-examination certificate

Certificate number:
SEV 20ATEX0387 X

List of applied standards: See EU Declaration of Conformity.

IEC Declaration of Conformity

Certificate number:
IECEx SEV 20.0009 X

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

- IEC 60079-0 : 2017
- IEC 60079-11 : 2023
- IEC 60079-26 : 2021
- IEC TS 60079-47 : 2021

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

PMx51B	–	**********	+	A*B*C*D*E*F*G*..
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = 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

PMC51B, PMP51B

Basic specifications

Position 1, 2 (Approval)		
Selected option		**Description**
PMC51B PMP51B	BB	ATEX II 1/2 G Ex ia IIC T6...T1 Ga/Gb ATEX II 2 G Ex ia IIC T6...T1 Gb IECEx Ex ia IIC T6...T1 Ga/Gb IECEx Ex ia IIC T6...T1 Gb

Position 3, 4 (Output)		
Selected option		**Description**
PMC51B PMP51B	BA	2-wire, 4-20 mA HART
	Fx	2-wire, Ethernet-APL, 10 Mbit/s

Position 6 (Housing, Material)		
Selected option		**Description**
PMC51B PMP51B	B	Single compartment; Alu, coated
	J	Dual compartment; Alu, coated

Position 10 (Diaphragm Seal Type)		
Selected option		**Description**
PMP51B	A	W/o
	D	Compact
	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 Mx (Sensor Design)		
Selected option		**Description**
PMC51B PMP51B	MA - MD	Sensor remote, cable PE, ... mm/in + mounting bracket, wall/pipe, 316L
	MH	Sensor remote, cable FEP, ... mm/in IP69 + mounting bracket, wall/pipe, 316L

ID Px, Rx (Accessory Enclosed)		
Selected option		**Description**
PMC51B PMP51B	PA	Weather protection cover, 316L [1)]
	PB	Weather protection cover, plastic [2)]

1) Only in connection with Position 6 = J
2) Only in connection with Position 6 = B

Safety instructions: General

- The device is intended to be used in explosive atmospheres as defined in the scope of IEC 60079-0 or equivalent national standards. If no potentially explosive atmospheres are present or if additional protective measures have been taken: The device may be operated according to the manufacturer's specifications.
- 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. enclosure, sensor element, special varnishing, attached additional plates, ...)
  - Of isolated capacities (e.g. isolated metallic plates)
- Alterations to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

Optional specification, ID Mx = MA - MD, MH

- The remote sensor does not contain a qualified separating element in accordance with IEC 60079-26:2021. Therefore, zone separation in accordance with the current IEC standard is not provided.
- The zone separation marking "/" is to be interpreted in accordance with ATEX EN 60079-26:2015.

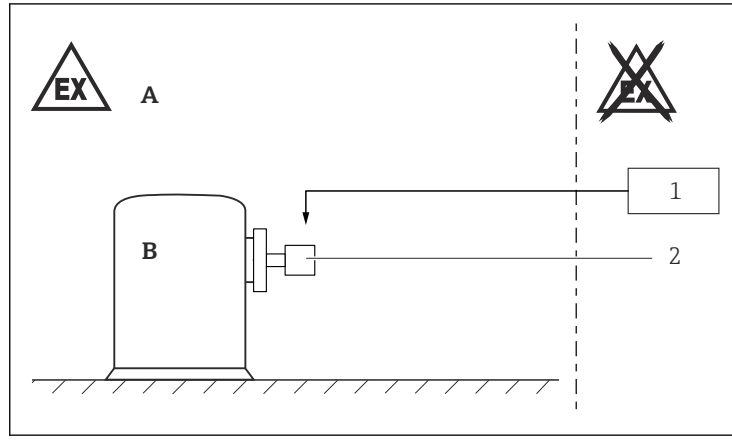
Safety instructions: Specific conditions of use

- 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.
- Avoid sparks caused by impact and friction.

Optional specification, ID Px, Rx = PA

Connect the weather protection cover to the local potential equalization.

Safety instructions: Installation



A Zone 1, Electronic
B Zone 0 or Zone 1, Process
1 Associated intrinsically safe power supply units
2 PMC51B, PMP51B

- After aligning (rotating) the enclosure, retighten the fixing screw.
- 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.
- Continuous service temperature of the connecting cable: $\geq T_a+20$ K.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- Observe the maximum process conditions according to the manufacturer's Operating Instructions.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.

Intrinsic safety

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ia / Ex ib.
- The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least 500 V_{rms}.

Potential equalization

Integrate the device into the local potential equalization.

Overvoltage protection

Only device type PMC51B
For installations which require overvoltage protection to comply with national regulations or standards, install the device with suitable external overvoltage protection (e.g. HAW56x from Endress+Hauser).

Temperature tables

- 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 maximum ambient temperature at the enclosure.
- The process temperatures refer to the temperature at the separation membrane.

Optional specification, ID Px, Rx = PB
When using the weather protection cover: Reduce the admissible ambient temperature by 10 K.

Device Type PMC51B

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
T6	+40 °C	−40 to +60 °C
	+80 °C	−40 to +55 °C
T4...T1	+60 °C	−40 to +60 °C
	+80 °C	−40 to +60 °C
	+100 °C	−40 to +55 °C
	+125 °C	−40 to +45 °C

Device Type PMP51B

Basic specification, Position 10 = A, D

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
T6	+60 °C	−40 to +60 °C
	T4...T1	−40 to +55 °C
	+80 °C	−40 to +55 °C
T4...T1	+70 °C	−40 to +65 °C
	+80 °C	−40 to +60 °C
	+100 °C	−40 to +55 °C
	+125 °C	−40 to +45 °C

Basic specification, Position 10 = G

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
T6	+80 °C	−40 to +60 °C
T4	+130 °C	−40 to +60 °C
T3	+190 °C	−40 to +60 °C
T2	+290 °C	−40 to +55 °C
T1	+300 °C	−40 to +55 °C
	+400 °C	−40 to +50 °C

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

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
T6	+80 °C	−40 to +60 °C
T4	+130 °C	−40 to +65 °C
T3	+190 °C	−40 to +65 °C
T2	+290 °C	−40 to +65 °C
T1	+400 °C	−40 to +65 °C

Version with separate enclosure

Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
T6	+80 °C	–20 to +60 °C
T4...T1	+100 °C	–20 to +60 °C

Connection data

Basic specification, Position 3, 4 = BA

Power supply
$U_i \leq 30\ V_{DC}$ $I_i \leq 300$ mA $P_i \leq 1$ W $C_i \leq 10$ nF $L_i = 0$

Basic specification, Position 3, 4 = Fx

Power supply	
2-WISE	Entity
$U_i \leq 17.5\ V_{DC}$ $I_i \leq 380$ mA $P_i \leq 5.32$ W $C_i \leq 5$ nF $L_i = 0$	$U_i \leq 17.5\ V_{DC}$ $I_i \leq 300$ mA $P_i \leq 1.2$ W $C_i \leq 5$ nF $L_i = 0$



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