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Safety Instructions
Cerabar S PMC71

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

Ex db ia IIC T6 Gb
Ex db ia IIC T4 Gb

Endress+Hauser
People for Process Automation

Cerabar S PMC71

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Associated documentation

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

HART
- BA00271P/00
- BA00274P/00

PROFIBUS PA
- BA00295P/00
- BA00296P/00

FOUNDATION Fieldbus
- BA00302P/00
- BA00303P/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

Certificate of Conformity

Certificate number:

HART
- DEK18.0043 (Temperature class T6)
- DEK20.0025 (Temperature class T4)

PROFIBUS PA
- DEK18.0044 (Temperature class T6)
- DEK20.0026 (Temperature class T4)

FOUNDATION Fieldbus
- DEK18.0045 (Temperature class T6)
- DEK20.0027 (Temperature class T4)

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

- JNIOSH-TR-46-1 : 2015
- JNIOSH-TR-46-2 : 2018
- JNIOSH-TR-46-6 : 2015

Manufacturer address

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

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

PMC71	–	**********	+	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 S

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

PMC71

Basic specifications

Position 1 (Approval)		
Selected option		**Description**
PMC71	L	JPN Ex db ia IIC T6 Gb
	M	JPN Ex db ia IIC T4 Gb

Position 2 (Output, Operating)		
Selected option		**Description**
PMC71	A	4-20 mA HART
	M	PROFIBUS PA
	P	FOUNDATION Fieldbus

Position 3 (Housing, Cover Sealing, Cable Entry)		
Selected option		**Description**
PMC71	A	T14 IP66/67 NEMA6P; M20

Optional specifications

No options specific to hazardous locations are available.

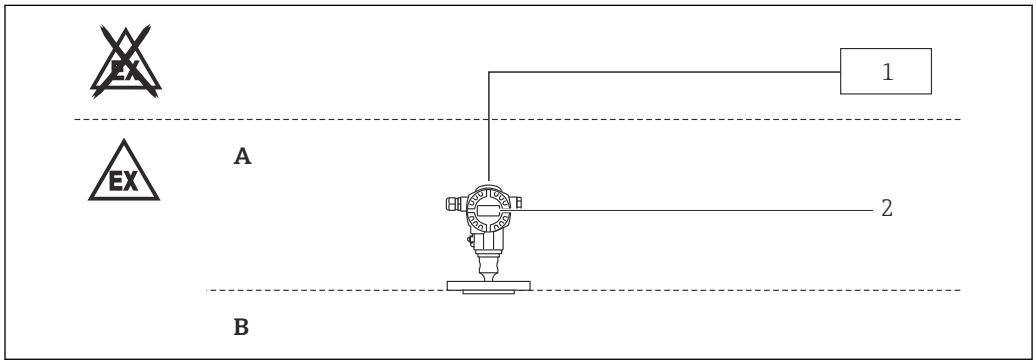
Safety instructions: General

- 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

- 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



A Zone 1, Electronic
B Zone 1, Process
1 Power supply
2 PMC71

- After aligning (rotating) the housing, retighten the fixing screw.
- 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.
- 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.
- Only use genuine spare parts from Endress+Hauser which are specified for the device.

Safety instructions: Ex d joints

If required or if in doubt: ask manufacturer for specifications.

Temperature tables

Type of protection	Temperature class	Process temperature T_p (process)	Ambient temperature T_a (ambient)
Ex db ia IIC T6 Gb	T6	−40 °C ≤ T_p ≤ +75 °C	−20 °C ≤ T_a ≤ +40 °C
Ex db ia IIC T4 Gb	T4	−40 °C ≤ T_p ≤ +125 °C	−20 °C ≤ T_a ≤ +55 °C

- 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 max. ambient temperature at the housing.

Connection data

Basic specification, Position 2 (Output, Operating) = A

Power supply
U ≤ 45 V_{DC} P ≤ 3 W U_m = 250 V

Basic specification, Position 2 (Output, Operating) = M, P

Power supply
U ≤ 32 V_{DC} P ≤ 3 W U_m = 250 V

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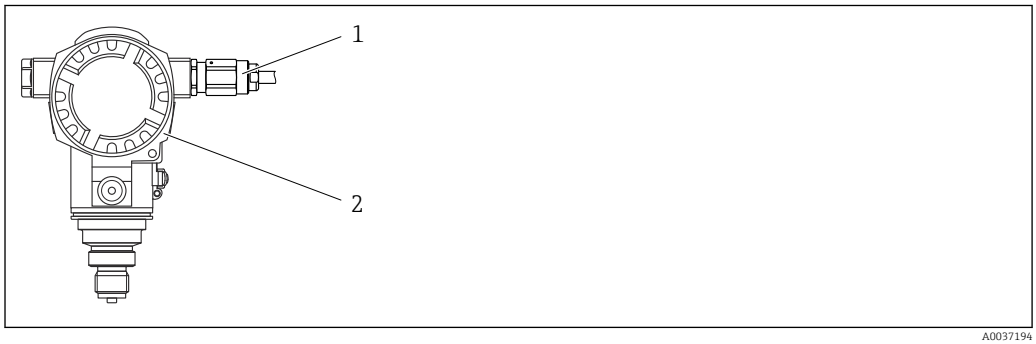
Attachment: Cable gland

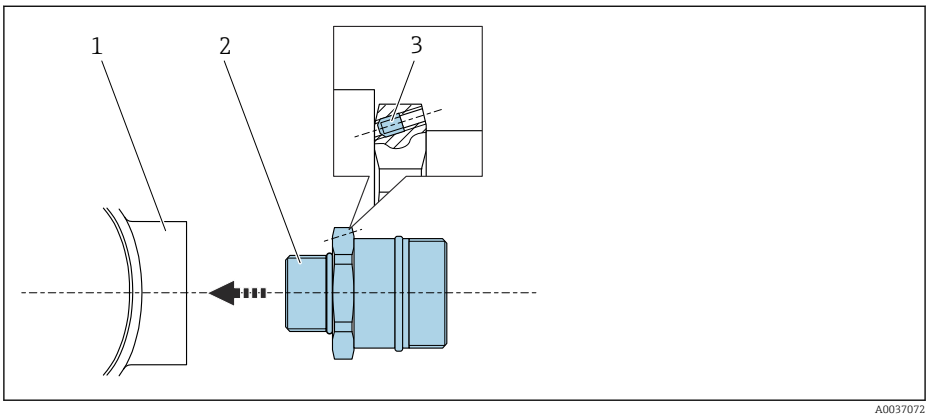
If the cable gland has to be replaced, use the following packing proof cable gland from the manufacturer Shimada Electric Co. Ltd.: EXTC-16MG (IECEx DEK 18.0029).



1 Cable gland: EXTC-16MG
2 Cerabar S

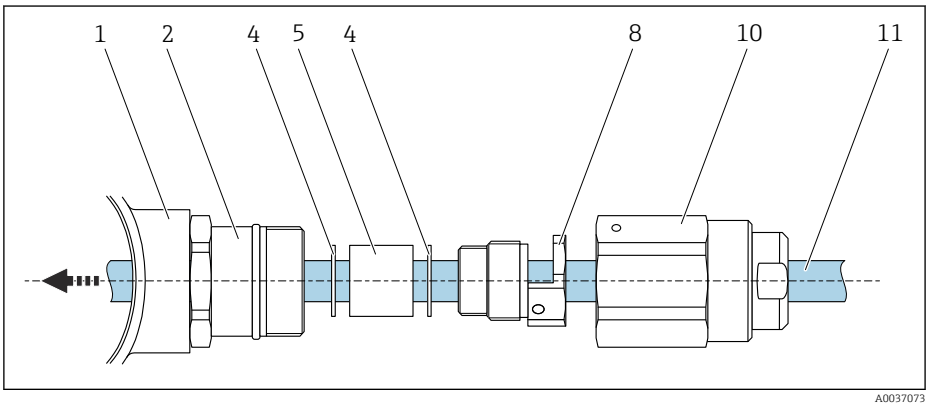
Mounting the cable gland

1. Tighten the cable gland (2) into thread hole of terminal box (1) using tightening tool with a torque of 4 Nm. Then tighten the lock screw (3) using a hexagon wrench (nominal 1.5).



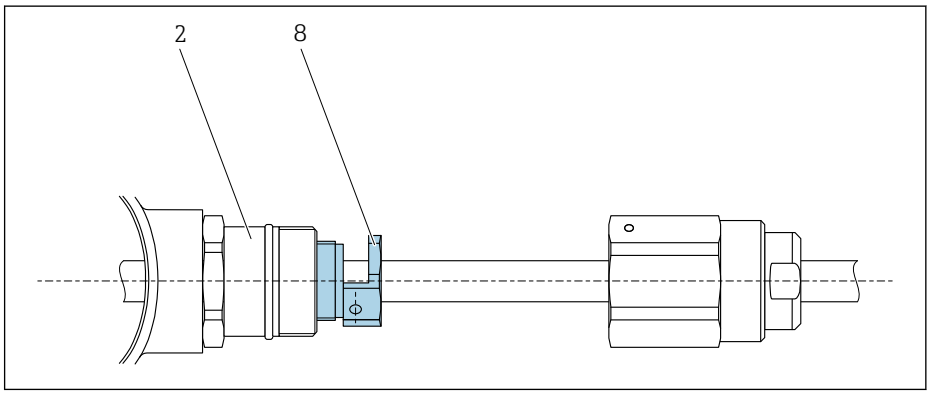
1 Terminal box
2 Cable gland (M20x1.5)
3 Lock screw

2. Pass the cable (11) through the individual parts.



1 Terminal box
2 Cable gland
4 Washer
5 Sealing ring
8 Packing gland
10 Union nut/B. coupling
11 Cable

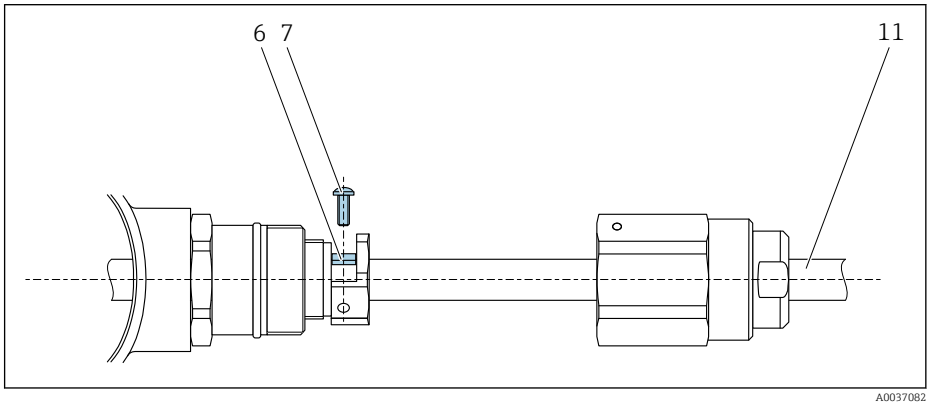
3. Screw the packing gland (8) into cable gland (2) using a wrench and tighten the sealing ring (5) with tightening torque 6 Nm.



2 Cable gland
8 Packing gland

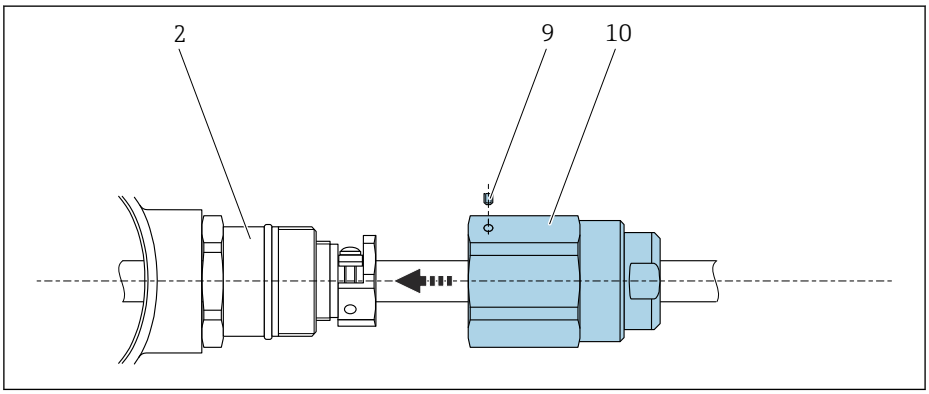
Cable diameter (in mm)		Inner diameter of the sealing ring (in mm)	Inner diameter of the washer (in mm)
Minimum	Maximum		
ø 6	ø 8	ø 8	ø 10.5
ø 8	ø 10.0	ø 10.0	
ø 10.0	ø 12.0	ø 12.0	ø 13.0

4. Secure the cable (11) firmly with clamp (6) and set screws (7). In this case the tightening torque is 1 Nm.



6 Clamp
7 Set screw
11 Cable

5. Screw the union nut/B. coupling (10) onto cable gland (2) and tighten the lock screw (9) using a hexagon wrench (nominal 1.5).



2 Cable gland
9 Lock screw
10 Union nut/B. coupling (G 1/2)

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