

# CERTIFICATE

## (1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 05ATEX1009 X** Issue Number: **4**

(4) Product: **Pressure transmitter CERABAR S Types PMP71 and PMP75 and Differential pressure transmitter DELTABAR S Types PMD75, FMD77 and FMD78**

(5) Manufacturer: **Endress+Hauser SE+Co. KG**

(6) Address: **Hauptstraße 1, 79689 Maulburg, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number 213103500-2, issue 3.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0 : 2018  
EN 60079-26 : 2015**

**EN 60079-1 : 2014**

**EN 60079-11 : 2012**

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



**II 1/2 G  
II 2 G**

**Ex ia IIC T6 ... T4 Ga/Gb or Ex ia IIC T6 ... T2 Ga/Gb and  
Ex db IIC T6 ... T4 Gb or Ex db IIC T6 ... T1 Gb**

Date of certification: 15 April 2022

DEKRA Certification B.V.

R. Schuller  
Certification Manager



(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 05ATEX1009 X**

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(15) **Description**

Pressure transmitter CERABAR S Types PMP71 and PMP75 and Differential pressure transmitter DELTABAR S Types PMD75, FMD77 and FMD78 are used in potentially explosive atmospheres caused by the presence of flammable gases, liquids or vapours, for measurement of level, flow, differential pressure, over- and underpressure.

The pressure signal at the ceramic or metal sensor is converted into an electrical signal (4 - 20 mA analogue with superimposed HART digital signal or for connection to a fieldbus, Profibus PA or Foundation Fieldbus).

The types of pressure transmitters differ in type of sensor, type of enclosure, process connection etc.

Optionally the transmitter is provided with an indicator and/or with overvoltage protection.

The transmitters are selectable for use as equipment either in type of protection intrinsic safety or in type of protection flameproof enclosures. Once the type of protection is selected, this may not be changed.

**Type designation**

Refer to the Annex 1 to this certificate.

**Thermal data**

Ambient temperature range:

-50 °C ... +70 °C (type of protection intrinsic safety);

-50 °C ... +75 °C (type of protection flameproof enclosures).

The relation between temperature class, ambient temperature and process temperature for the different models and for the type of protection selected is given in the following table.

Temperature class	Ambient temperature		Process temperature	
	Ex ia version	Ex d version	Ex ia version	Ex d version
T6	≤ 40 °C	≤ 75 °C	≤ 80 °C	≤ 75 °C
T4	≤ 70 °C	≤ 75 °C	≤ 120 °C <sup>1)</sup>	≤ 125 °C <sup>2)</sup>
T3 <sup>3)</sup>	≤ 70 °C	≤ 75 °C	≤ 180 °C	≤ 185 °C <sup>2)</sup>
T2 <sup>3)</sup>	≤ 70 °C	≤ 75 °C	≤ 280 °C	≤ 285 °C <sup>2)</sup>
T1	---	≤ 75 °C	---	≤ 400 °C <sup>2)</sup>

Notes:

1) Only devices type PMP71, PMD75

2) Depending on the selected version (process connection, transmitter mounting), see safety and operating instructions

3) Only device type PMP75, depending on the process connection

The maximum allowed process temperature for the different types of pressure transmitters and differential pressure transmitters is to be taken from the applicable equipment manual.

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**Electrical data**

Transmitters in type of protection Ex ia

Transmitters with electronics insert 4 - 20 mA (HART)

4 – 20 mA input circuit (terminals + and -):

In type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 300 \text{ mA}$ ;  $P_i = 1 \text{ W}$ ;  $C_i = 11,8 \text{ nF}$ ;  $L_i = 225 \text{ }\mu\text{H}$  (output options A, B and C)

$U_i = 30 \text{ V}$ ;  $I_i = 300 \text{ mA}$ ;  $P_i = 1 \text{ W}$ ;  $C_i = 11,8 \text{ nF}$ ;  $L_i = \text{negligible}$  (output options D, E and F).

Transmitter with electronics insert Profibus PA or Foundation Fieldbus

Fieldbus input circuit (terminals 1 and 2):

In type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe Fieldbus system, e.g. according to FISCO, with the following maximum values:

$U_i = 17,5 \text{ V}$ ;  $I_i = 500 \text{ mA}$ ;  $P_i = 5,5 \text{ W}$ ;  $C_i = 5 \text{ nF}$ ;  $L_i = 10 \text{ }\mu\text{H}$

or

in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 24 \text{ V}$ ;  $I_i = 250 \text{ mA}$ ;  $P_i = 1,2 \text{ W}$ ;  $C_i = 5 \text{ nF}$ ;  $L_i = 10 \text{ }\mu\text{H}$ .

Transmitters in type of protection Ex d

Supply voltage: 45 Vdc max (4 - 20 mA, HART)

32 Vdc max (PA/FF)

Power dissipation: 1,1 W max (4 - 20 mA, HART)

1,25 W max (PA/FF)

**Installation instructions**

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

213103500-2, issue 3.

(17) **Specific conditions of use**

For maximum surface temperature, ambient temperature range and maximum process temperatures see Thermal data in cl. 15 and safety instructions.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. 213103500-2, issue 3.

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(20) **Certificate history**

Issue 1 - 207518800	initial certificate
Issue 2 - 213103500	assessment to latest editions of standards
Issue 3 - 215686600	application of alternate terminal assemblies with internal inductance reduced to 0 $\mu$ H, circuit changes due to the application of an alternate Senso ASIC (called CARMEN)
Issue 4 - 226420500	change of manufacturers name; assessment to latest editions of standards; specific condition introduced, update of temperature table, type PMP72 deleted