

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 04ATEX1100 X** Issue Number: **6**

(4) Product: **Pressure transmitter
CERABAR-S Types PMP71, PMP75 and PMC71 and
DELTAPILOT-S Type FMB70 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 213103500-1, issue 3.

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

EN IEC 60079-0 : 2018

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 G Ex ia IIC T6...T3 Ga
II 1 D Ex ia IIIC T₂₀₀ 70 °C Da**

Date of certification: 9 November 2021

DEKRA Certification B.V.

R. Schuller
Certification Manager



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(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 04ATEX1100 X**

Issue No. 6

(15) **Description**

Pressure transmitters CERABAR-S Types PMP71, PMP75 and PMC71 and DELTAPILOT-S Type FMB70 and Differential pressure transmitters DELTABAR-S Types PMD75, FMD77 and FMD78 are used in potentially explosive atmospheres for the measurement of level, flow, differential pressure, over- and under pressure.

Depending on the electronics insert the output of the Pressure or Differential Pressure Transmitter is a 4 – 20 mA current output signal with a superimposed HART digital signal, or the transmitter is connected to a Fieldbus system for the supply and the communication.

The several versions of the Pressure Transmitters differ in type of sensor, type of electronics insert, type of enclosure, process connection etc.

Optionally all versions of the Pressure and Differential Pressure Transmitters may be provided with an indicator and/or overvoltage protection.

A certified intrinsically safe device may be connected to the display interface of all versions for service purposes.

Optionally all intrinsically safe versions of the Pressure and Differential Pressure Transmitters may be provided with an extended sensor cable.

Thermal data

For protection level Ga, marking Ex ia IIC T6...T3 Ga

The relation between the temperature class, the ambient temperature and the process temperature is given in the table below.

Temperature class	Process temperature range T_p	Ambient temperature range
T6	$-40^{\circ}\text{C} \leq T_p \leq 80^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$
T4	$-40^{\circ}\text{C} \leq T_p \leq 120^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$
T3	$-40^{\circ}\text{C} \leq T_p \leq 150^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

Remarks:

- T3 only for type PMC71 high
- the lower ambient and process temperature decreases to -50°C (ordercode option "JN")

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For protection level Da, marking Ex ia IIIC T₂₀₀ 70°C Da

The relation between the maximum surface temperature, the ambient temperature and the process temperature is given in the following table, for more detailed tables see safety instructions.

Model	Type	Electronic	Maximum surface temperature	Process temperature range T _p	Ambient temperature range
CERABAR-S	PMP71 PMP75 PMC71	4..20 mA	T70°C	-40°C ≤ T _p ≤ 40°C	-40°C ≤ T _a ≤ +40°C
		PA/FF		-40°C ≤ T _p ≤ 34°C	-40°C ≤ T _a ≤ +34°C
DELTABAR-S	PMD75 FMD77 FMD78	4..20 mA	T70°C	-40°C ≤ T _p ≤ 40°C	-40°C ≤ T _a ≤ +40°C
		PA/FF		-40°C ≤ T _p ≤ 34°C	-40°C ≤ T _a ≤ +34°C
DELTAPILOT-S	FMB70	4..20 mA	T70°C	-10°C ≤ T _p ≤ 40°C	-40°C ≤ T _a ≤ +40°C
		PA/FF		-10°C ≤ T _p ≤ 34°C	-40°C ≤ T _a ≤ +34°C

Remarks:

- Above defined temperatures are for all types of connections
- the lower ambient and process temperature decreases to -50°C (ordercode option "JN")

Electrical data

Transmitters with electronics insert 4 – 20 mA HART or 4 – 20 mA HART (SIL version)

Supply and output circuit (Terminals + and – or connector):

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

U_i = 30 V; I_i = 300 mA; P_i = 1 W; L_i = 225 μH; C_i = 11,8 nF (output options A, B and C);

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

Transmitter with electronics insert Profibus PA or Foundation Fieldbus

Supply and output circuit (terminals 1 and 2):

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

U_i = 17,5 V; I_i = 500 mA; P_i = 5,5 W; L_i = 10 μH; C_i = 5 nF;

or

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

U_i = 24 V; I_i = 250 mA; P_i = 1,2 W; L_i = 10 μH; C_i = 5 nF.

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Issue No. **6**

(16) **Report Number**

No. 213103500-1, issue 3.

(17) **Specific conditions of use**

1. Equipment with an enclosure and/or process connections containing light metals used in an area where the use of category 1 G equipment is required, shall be installed such, that even the event of rare incidents, ignition sources due to impact and friction sparks are excluded.
2. For ambient temperature range and maximum process temperatures see Thermal data at item (15) and safety instructions

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Test Report No. 213103500-1, issue 3.

(20) **Certificate history**

Issue 1 - 202787200	initial certificate
Issue 2 - 202787200	initial certificate
Issue 3 - 202787200	initial certificate
Issue 4 - 213103500	constructional changes and update to the latest standards
Issue 5 - 215686600	constructional changes and update to the latest standards
Issue 6 - 225920100	types PMP72, PMD70 and FMD76 have been deleted from certificate, update to the latest standards, removal of standard EN 60079-26