

CERTIFICATE

(1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 04ATEX1100 X** Issue Number: **5**

(4) Equipment: **Pressure Transmitter CERABAR S Types PMP71, PMP72, PMP75 and PMC71 and DELTAPILOT S Type FMB70 and Differential Pressure Transmitters DELTABAR S Types PMD70, PMD75, FMD76, FMD77 and FMD78**

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

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

(7) This equipment 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 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems 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.

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

EN 60079-0 : 2012

EN 60079-11 : 2012

EN 60079-26 : 2007

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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



**II 1 G Ex ia IIC T6 ... T2 Ga or
II 1 G Ex ia IIC T6 ... T2 Ga and
II 1 D Ex ia IIIC T85 °C**

This certificate is issued on 15 October 2012 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

T. Pijpker
Certification Manager

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(13) **SCHEDULE**

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

Issue No. 5

(15) **Description**

Pressure transmitters CERABAR S Type PMP71, Type PMP72, Type PMP75 and Type PMC71 and DELTAPILOT S Type FMB70 and differential pressure transmitter DELTABAR S Type PMD70, Type PMD75, Type FMD76, Type FMD77 and Type FMD78 are used in potentially explosive atmospheres 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

Depending on the electronics insert the output of the Pressure or Differential Pressure Transmitter is a 4 - 20 mA current output signal with 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.

The certified intrinsically safe Service Interface Commubox Type FXA193 with ToF cable (EC-Type Examination Certificate BVS 03 ATEX E 187) may be connected to all versions for service purposes.

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

Ambient temperature range -50 °C to +70 °C.

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

Temperature class	Ambient temperature	Process temperature
T6	≤ 40 °C	≤ 80 °C
T4	≤ 70 °C	≤ 120 °C
T3	≤ 70 °C	≤ 180 °C
T2	≤ 70 °C	≤ 280 °C

The maximum surface temperature T85 °C is related to the maximum ambient temperature of 70 °C.

The enclosure of the apparatus provides a degree of protection of at least IP65 and IP67 in accordance with EN 60529.

(13) **SCHEDULE**

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

Issue No. 5

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:

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

$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $L_i = \text{negligible}$; $C_i = 11,8 \text{ nF}$ (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:

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

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:

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

Installation instructions

The instructions of the manufacturer shall be followed in detail in order to assure safe operation of the equipment.

(16) **Test Report**

No. 213103500-1.

(17) **Special conditions for safe use**

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.

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

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 213103500-1.