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 10ATEX0042** Issue Number: **2**

(4) Equipment: **Differential Pressure Transmitters DELTABAR M Model PMD55 and Pressure Transmitters CERABAR M Model PMP51 and Model PMP55**

(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 212824900.

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

EN 60079-0 : 2009 **EN 60079-1 : 2007** **EN 60079-11 : 2007**
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 1/2 G Ex ia IIC T6 ... T4 Ga/Gb
II 2 G Ex d IIC T6 ... T4 Gb

This certificate is issued on 20 January 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

PRODUCTS RvA C 001

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 10ATEX0042** Issue No. **2**

(15) **Description**

Differential Pressure Transmitters DELTABAR M Model PMD55 and Pressure Transmitters CERABAR M Model PMP51 and Model PMP55 are used in potentially explosive atmospheres caused by the presence of flammable gases, liquids or vapours for the measurement of level, flow, differential pressure, over- and under pressure.
The pressure signal at the metal sensor is converted into an electrical signal.

The Pressure or Differential Pressure Transmitter is either provided with a 4 - 20 mA current output with a superimposed HART digital signal, or with a Profibus PA or Foundation Fieldbus interface.

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

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

The transmitters are selectable for use as apparatus either in type of protection intrinsic safety "i" or in type of protection flameproof enclosures "d". Once selected, the type of protection selected is indicated durably and may not be changed afterwards.

Ambient temperature range: -50 °C to +70 °C (type of protection intrinsic safety)
-50 °C to +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	
T6	≤ 40 °C	≤ 75 °C	≤ 80 °C
T4	≤ 70 °C	≤ 75 °C	≤ 120 °C

NOTE: Depending on the diaphragm seal used in model PMP55, a higher process temperature is permitted. For details, refer to the relevant equipment manuals.

Electrical data

Transmitters in type of protection Ex ia

4 - 20 mA current output:
supply and output circuit (terminals + and -, or connector):
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 V; I_i = 300 mA; P_i = 1 W; L_i = 0 mH; C_i = 10 nF.

Interface Profibus PA or Foundation Fieldbus, supply and data circuit
(terminals + and -, or connector):
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 V; I_i = 250 mA; P_i = 1,2 W; L_i = 10 µH; C_i = 5 nF;

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or to an intrinsically safe fieldbus in accordance with 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

Transmitters in type of protection Ex d

U_{max} = 45 V; P_{max} = 1,1 W (4 - 20 mA, HART)
U_{max} = 32 V; P_{max} = 1,25 W (Fieldbus, PA/FF)

Installation instructions

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

(16) **Test Report**

No. 212824900.

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

None.

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

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 212824900.