



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx KEM 10.0031

Issue No: 3

Certificate history:

Issue No. 3 (2017-12-16)

Issue No. 2 (2014-04-08)

Issue No. 1 (2012-10-15)

Issue No. 0 (2010-12-23)

Status: **Current**

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Date of Issue: **2017-12-16**

Applicant: **Endress+Hauser GmbH+Co. KG**
Hauptstraße 1
79689 Maulburg
Germany

Equipment: **Pressure Transmitters CERABAR S Types PMC71, PMP71 and PMP75 and Differential
Pressure Transmitters DELTABAR S Types PMD75, FMD77 and FMD78**

Optional accessory:

Type of Protection: **Ex db, Ex ia**

Marking:

Ex db IIC T6 ... T4 Gb or
Ex db IIC T6 ... T1 Gb or
Ex db ia IIC T6 ... T4 Gb or
Ex db ia IIC T6 ... T3 Gb

*Approved for issue on behalf of the IECEx
Certification Body:*

R. Schuller

Position:

Certification Manager

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
The Netherlands





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Manufacturer: **Endress+Hauser GmbH+Co. KG**
Hauptstraße 1
79689 Maulburg
Germany

Additional Manufacturing location(s):

Refer to Annex 2 for a list of manufacturing locations

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1 : 2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[NL/KEM/ExTR10.0023/03](#)

Quality Assessment Report:

[DE/TUN/QAR06.0003/06](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Pressure Transmitters CERABAR S Types PMC71, PMP71 and PMP75 and the Differential Pressure Transmitters DELTABAR S Types PMD75, FMD77 and FMD78 are used to convert an over- under- or differential pressure into a 4-20 mA HART (SIL), Profibus PA or Foundation Fieldbus output signal.

For type designation, marking and technical data refer to Annex 1 to this certificate.

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- assessment according to the latest editions of the standards
- lower ambient temperature revised to -60 °C
- type PMP72 removed from scope

Annex:

[219903700-Annex 2.pdf](#)

[219903700-Annex 1.pdf](#)

Annex 2 to Certificate of Conformity IECEx KEM 10.0031 Iss 3

Manufacturing locations

1. Endress+Hauser GmbH+Co. KG
Hauptstraße 1
79689 Maulburg
Germany
2. Endress+Hauser GmbH+Co. KG
Miramstraße 87
34123 Kassel
Germany
3. Endress+Hauser (USA) Automation Instrumentation Inc.
2340 Endress Place
Greenwood, Indiana 46143
USA
4. Endress+Hauser (Suzhou) Automation Instrumentation Co. Ltd.
China-Singapore Industrial Park (SIP)
Su-Hong-Zhong-Lu, No. 491
Jiangsu Province, 215021 Suzhou
P.R. China
5. Endress+Hauser (India) Automation Instrumentation Pvt. Ltd.
M-192, Waluj MIDC
Aurangabad - 431136
Maharashtra State
India
6. Endress+Hauser Yamanashi Co. Ltd.
862-1, Sakaigawa-cho
Fuefuki-shi
406 0846 Yamanashi
Japan
7. Endress+Hauser (Brasil),
Instrumentação e Automação Ltda.,
Avenida Antonio Sesti, 600, Itatiba/SP
Brasil

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Note: in this document [.] is used as decimal separator.

Type designation
Cerabar S Pressure Transmitter

PMC71 - B A A 40 * ** * T ...
a b c d e f g h till i k till t

Designation	Explanation	Value	Explanation
	Sensor type	PMC71	ceramic sensor with thread, flange
a.	Approval	B 5	IECEX Ex db ia IIC T6...T4 Gb IECEX Ex db ia IIC T6...T3 Gb (designation h or i = T) ATEX II 2 G Ex db ia IIC T6...T4 Gb ATEX II 2 G Ex db ia IIC T6...T3 Gb (designation h or i = T)
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus, with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L 1 2 3 7 8	T14 aluminum enclosure, M20 T14 aluminium, G1/2 ²⁾ T14 aluminum enclosure, 1/2"-NPT T15 stainless steel enclosure, M20 T15 aluminium, G1/2 ²⁾ T15 aluminum enclosure, 1/2" NPT T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	pressure range up to 40 bar
e.	Calibration and unit	custom	not relevant for this certificate
f.	Process connection and material	custom **	type of process connection not relevant materials: Stainless Steel, Alloy C, Monel
g.	Gasket material	custom	not relevant for this certificate
h. till i.	Options	T custom	high temperature option (Tmax process = 150 °C) all other options are not relevant for this certificate
k. till t.	Additional Options	custom	all other options are not relevant for this certificate
Notes: 1) FVMQ seal not relevant and not tested for this certificate 2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.			

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PMP71 - 5 A A 700 * * ** * ... JT ...
a b c d e f g h i till m n o till u

Designation	Explanation	Value	Explanation
	Sensor type	PMP71	metal sensor with thread
a.	Approval	5 M	ATEX II 2 G Ex db IIC T6...T4 Gb IECEx Ex db IIC T6...T4 Gb
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus, with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L G H 1 2 3 7 8	T14 aluminum, M20 T14 aluminum, G1/2 ²⁾ T14 aluminum, 1/2"-NPT T15 stainless steel, M20 T15 aluminum, G1/2 ²⁾ T15 aluminum, 1/2" NPT T14 aluminum, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾ T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	Pressure range up to 700 bar
e.	Calibration and unit	custom	not relevant for this certificate
f.	Diaphragm material	custom	not relevant for this certificate
g.	Process connection and material	custom **	type of process connection not relevant materials: Stainless Steel, Alloy C, Monel
h.	Fillmedia	custom	not relevant for this certificate
i. till m	Options	custom	all other options are not relevant for this certificate
n.	Minimum ambient temperature	JN JT custom	Minimum ambient temperature -50 °C Minimum ambient temperature -60 °C all other options are not relevant for this certificate
o. till u.	Additional Options	custom	all other options are not relevant for this certificate
Notes: 1) FVMQ seal not relevant and not tested for this certificate 2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.			

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PMP75 - 5 A A 400 * * ** * ... JN ...
a b c d e f g h i till m n o till v

Designation	Explanation	Value	Explanation
	Sensor type	PMP75	metal sensor with diaphragm seal
a.	Approval	5 M	ATEX II 2 G Ex db IIC T6...T1 Gb IECEX Ex db IIC T6...T1 Gb
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus, with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L G H 1 2 3 7 8	T14 aluminum, M20 T14 aluminum, G1/2 ²⁾ T14 aluminum, 1/2"-NPT T15 stainless steel, M20 T15 aluminum, G1/2 ²⁾ T15 aluminum, 1/2" NPT T14 aluminum, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾ T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	Pressure range up to 400 bar
e.	Calibration and unit	custom	not relevant for this certificate
f.	Diaphragm material	custom	not relevant for this certificate
g.	Process connection and material	custom **	type of process connection not relevant materials: Stainless Steel, Alloy C, Monel
h.	Transmitter mounting, fillmedia, capillary length	*	not relevant for this certificate
i. till m.	Options	custom	options are not relevant for this certificate
n.	Minimum ambient temperature	JN JT custom	Minimum ambient temperature -50 °C Minimum ambient temperature -60 °C all other options are not relevant for this certificate
o. till v.	Options	custom	all other options are not relevant for this certificate

Notes: 1) FVMQ seal not relevant and not tested for this certificate
2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.

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DELTABAR-S Differential Pressure Transmitter

PMD75 - 5 A A ** * * ** * ... JN ...
a b c d e f g h i till m n o till u

Designation	Explanation	Value	Explanation
	Sensor type	PMD75	metal sensor with oval flanges
a.	Approval	5 M	ATEX II 2 G Ex db IIC T6...T4 Gb IECEX Ex db IIC T6...T4 Gb
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus, with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L G H 1 2 3 7 8	T14 aluminum, M20 T14 aluminum, G1/2 ²⁾ T14 aluminum, 1/2"-NPT T15 stainless steel, M20 T15 aluminum, G1/2 ²⁾ T15 aluminum, 1/2" NPT T14 aluminum, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾ T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	Pressure range up to 420 bar static pressure
e.	Calibration and unit	custom	not relevant for this certificate
f.	Diaphragm material	custom	materials: stainless steel 316L, Monel, Tantal, Alloy C (optional with coating)
g.	Process connection and material	custom **	type of process connection not relevant materials: stainless steel 316L, Alloy C, Monel, Tantal, steel C22.8 (optional with coating)
h.	sealing material	custom	not relevant for this certificate
i. till m.	Options	custom	all other options are not relevant for this certificate
n.	Minimum ambient temperature	JN JT custom	Minimum ambient temperature -50 °C Minimum ambient temperature -60 °C all other options are not relevant for this certificate
o. till u.	Options	custom	all other options are not relevant for this certificate
Notes: 1) FVMQ seal not relevant and not tested for this certificate 2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.			

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FMD77 - 5 A A ** * * * * * ...
a b c d e f g h i k till n

Designation	Explanation	Value	Explanation
	Sensor type	FMD77	metal sensor with flushmount flange
a.	Approval	5 M	ATEX II 2 G Ex db IIC T6...T1 Gb IECEX Ex db IIC T6...T1 Gb
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L G H 1 2 3 7 8	T14 aluminum, M20 T14 aluminum, G1/2 ²⁾ T14 aluminum, 1/2"-NPT T15 stainless steel, M20 T15 aluminum, G1/2 ²⁾ T15 aluminum, 1/2" NPT T14 aluminum, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾ T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	Pressure range up to 160 bar static pressure
e.	Calibration and unit	custom	not relevant for this certificate
f.	Diaphragm material	custom	not relevant for this certificate
g.	Process connection and material / low pressure side	custom **	type of process connection not relevant materials: stainless steel 316L, Alloy C, Monel, Tantal, steel C22.8 (optional with coating)
h.	Process connection and material / high pressure side	custom **	type of process connection not relevant materials: stainless steel 316L, Alloy C, Monel, Tantal, steel C22.8 (optional with coating)
i.	Fillmedia	custom	not relevant for this certificate
k. till n.	Options	custom	all other options are not relevant for this certificate
o.	Minimum ambient temperature	JN JT custom	Minimum ambient temperature -50 °C Minimum ambient temperature -60 °C all other options are not relevant for this certificate
p. till y.	Options	custom	all other options are not relevant for this certificate
Notes: 1) FVMQ seal not relevant and not tested for this certificate 2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.			

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FMD78 - 5 A A ** * * * * * JN ...
a b c d e f g h i. till m. n o till w

Designation	Explanation	Value	Explanation
	Sensor type	FMD78	metal sensor with capillary remote
a.	Approval	5 M	ATEX II 2 G Ex db IIC T6...T1 Gb IECEx Ex db IIC T6...T1 Gb
b.	Electronic / communication / display	A B C D E F M N O P Q R	4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART 4..20 mA, HART with display, ext. pushbuttons 4..20 mA, HART with display 4..20 mA, HART Profibus PA, with display, ext. pushbuttons Profibus PA, with display Profibus PA Foundation Fieldbus, with display, ext. pushbuttons Foundation Fieldbus, with display Foundation Fieldbus
c.	Housing material and cable entry	A B C J K L G H 1 2 3 7 8	T14 aluminum, M20 T14 aluminum, G1/2 ²⁾ T14 aluminum, 1/2"-NPT T15 stainless steel, M20 T15 aluminum, G1/2 ²⁾ T15 aluminum, 1/2" NPT T14 aluminum, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾ T14 stainless steel, M20 T14 stainless steel, G1/2 ²⁾ T14 stainless steel, 1/2" NPT T14 stainless steel, M20, FVMQ seal ¹⁾ T14 stainless steel, 1/2" NPT, FVMQ seal ¹⁾
d.	Pressure range	custom	any dual letter or number combination
e.	Calibration and unit	custom	any single letter or number combination
f.	Diaphragm material	custom	not relevant for this certificate
g.	Process connection and material / low pressure side	custom **	type of process connection not relevant materials: stainless steel 316L, Alloy C, Monel, Tantal, steel C22.8 (optional with coating)
h.	Fillmedia, length of capillary	custom	not relevant for this certificate
i. till m.	Options	custom	all other options are not relevant for this certificate
n.	Minimum ambient temperature	JN JT custom	Minimum ambient temperature -50 °C Minimum ambient temperature -60 °C all other options are not relevant for this certificate
o. till w.	Options	custom	all other options are not relevant for this certificate
Notes: 1) FVMQ seal not relevant and not tested for this certificate 2) Flameproof equipment with G threaded entry holes is not intended for new installations but only for replacement of equipment in existing installations.			

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Thermal data

The relation between type, temperature class, process temperature range and ambient temperature range shall be taken from the following table:

Type	Cover type	Temperature class	Process temperature range	Ambient temperature range
PMP71 PMD75 FMD78	blind cover	T6 T4	-60 °C to +75 °C -60 °C to +100 °C	-60 °C to +75 °C
	blind cover + window cover	T6 T4	-50 °C to +75 °C -50 °C to +100 °C	-50 °C to +75 °C
PMP71 ²⁾ PMP75 FMD77	blind cover	T6 T4	-60 °C to +75 °C -60 °C to +125 °C	-60 °C to +75 °C
	blind cover + window cover	T6 T4	-50 °C to +75 °C -50 °C to 125 °C	-50 °C to +75 °C
PMP75 FMD77 FMD78	blind cover	T3 T2 T1	-60 °C to +185 °C ¹⁾ -60 °C to +285 °C ¹⁾ -60 °C to +400 °C ¹⁾	-60 °C to +75 °C
	blind cover + window cover	T3 T2 T1	-50 °C to +185 °C ¹⁾ -50 °C to +285 °C ¹⁾ -50 °C to +400 °C ¹⁾	-50 °C to +75 °C
PMC71	blind cover + window cover	T6	-50 °C to +75 °C	-50 °C to +40 °C
		T4	-50 °C to +100 °C	-50 °C to +70 °C
		T4	-50 °C to +125 °C	-50 °C to +65 °C
		T4	-50 °C to +125 °C ¹⁾	-50 °C to +70 °C
		T3	-50 °C to +150 °C ¹⁾	-50 °C to +65 °C

Notes: 1) High Temperature version with extended sensor only
2) PMP71 with type of process connection inner membrane only

Electrical data

Supply voltage: max. 32 Vdc (Profibus PA and Foundation Fieldbus)
max. 45 Vdc (HART)

Power dissipation: max. 3 W

For transmitter CERABAR S Type PMC71: $U_m = 250 \text{ V}$

Marking

The marking of the Pressure Transmitters shall include the following:

Ex db IIC T6 ... T4 Gb CERABAR S, Types PMP71, PMP75 and DELTABAR S, Types PMD75, FMD77, FMD78
Ex db IIC T6 ... T1 Gb CERABAR S, Type PMP75 and DELTABAR S, Types FMD77, FMD78
Ex db ia IIC T6 ... T4 Gb CERABAR S, Type PMC71
Ex db ia IIC T6 ... T3 Gb CERABAR S, Type PMC71 (high temperature)