



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 TUR 14.0017X issue No.: 1
Status: **Current**
Date of Issue: 2014-12-11 Page 1 of 4

Certificate history:
Issue No. 1 (2014-12-11)
Issue No. 0 (2014-6-3)

Applicant: **KROHNE Pressure Solutions GmbH**
Oberbecksenerstraße 76
32547 Bad Oeynhausen
Germany

Electrical Apparatus: **Pressure Transmitter**
Optional accessory: OPTIBAR PC 5060 C and OPTIBAR PM 5060 C

Type of Protection: **Ex i**

Marking: **Ex ia IIC T6...T1 Ga, Ga/Gb, Gb**

Approved for issue on behalf of the IECEx
Certification Body:

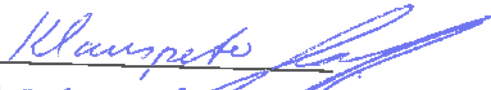
Dipl.-Ing. Klauspeter Graffi

Position:

Head of Certification Body

Signature:
(for printed version)

Date:


2014-12-11

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:

TUV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Cologne
Germany





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Manufacturer: **KROHNE Pressure Solutions GmbH**
Oberbecksenerstraße 76
32547 Bad Oeynhausen
Germany

Additional Manufacturing location
(s):

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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:

[DE/TUR/ExTR14.0017/00](#)

[DE/TUR/ExTR14.0017/01](#)

Quality Assessment Report:

[DE/BVS/QAR13.0005/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

OPTIBAR PC 5060 C (*) WC/WU/WO/WH/WT/VC*****(*)P/F*****OPTIBAR PM 5060 C
(*).WC/WU/WO/WH/WT/VC*****(*)P/F*****

General product information:

For complete Type designation refer to manufacturers documents.

The pressure transmitter of the OPTIBAR 5060 series is designed to measure the pressure of vaporous, gaseous and liquid media. The pressure transmitters are supplied as standard with 2- wire, 4...20 mA signal outputs.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. At the plastic parts of the Pressure Transmitter there is a danger of ignition by electrostatic discharge. Observe safety instructions of manufacturer and warning label.
2. For EPL Ga resp. EPL Ga/Gb applications, at the metallic parts of the Pressure Transmitter made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. For EPL Ga resp. EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the Pressure Transmitter have to be secured effectively against these dangers. Observe manual of the manufacturer.
4. For EPL Ga/Gb applications the medium tangent materials of the Pressure Transmitter have to be resistant to the media. Observe manual of the manufacturer.
5. For the type with separate housing of the pressure transmitter, the potential equalization has to exist in the complete course of the erection of the connecting cable between the electronics housing and the measuring sensor housing.



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

Addition of devices



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Attachment to to Certificate IECEX TUR 14.0017/01 X

Device: Pressure Transmitter
OPTIBAR PC 5060 C (*).WC/WU/W0/WH/WT/VC*****(*)P/F*****

OPTIBAR PM 5060 C (*).WC/WU/W0/WH/WT/VC*****(*)P/F*****

Manufacturer: KROHNE Pressure Solutions GmbH

Address: Oberbecksenerstraße 76
32547 Bad Oeynhausen
Germany

General product information:

General product information:

For complete Type designation refer to manufacturers documents.

In the future, the pressure transmitter type OPTIBAR may be manufactured in the version with electronics for Profibus PA and Foundation Fieldbus, available in an 1 chamber or a 2 chamber housing.

OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics P (Profibus PA), F (Foundation Fieldbus), version with single chamber housing A, K, V or 8)	
Supply and signal circuit: (Terminals 1[+], 2[-] in the "Ex-i" electronics compartment or connector)	<p>In protection type intrinsic safety Ex ia IIC</p> <p>Only for connection to a certified, intrinsically safe circuit.</p> <p>Maximum values</p> <ul style="list-style-type: none"> • Ui [V]: 17.5 V • Ii [mA]: 500 mA • Pi [W]: 5.5 W <p>The equipment is suitable for connection to a fieldbus system according to the FISCO model (EN 60079-11), e.g. Profibus PA.</p> <p>or</p> <ul style="list-style-type: none"> • Ui [V]: 24 V • Ii [mA]: 250 mA • Pi [W]: 1.2 W <p>The effective internal capacitance Ci is negligibly small.</p> <p>In the version with permanently mounted connection cable, Ci wire/wire = 150 pF/m and Ci wire/shield = 270 pF/m must be taken into account.</p> <p>The effective internal inductance Li is negligibly small.</p>



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Revision 1

	In the version with permanently mounted connection cable, $L_i = 0.62 \mu\text{H/m}$ must be taken into account additionally.
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OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics P (Profibus PA), F (Foundation Fieldbus), version with double chamber housing D, W, or R)	
Supply and signal circuit: (Terminals 1[+], 2[-] in the "Ex-i" electronics compartment or connector)	<p>In protection type intrinsic safety Ex ia IIC for equipment of category 1G or category 1/2G and Ex ia IIC or Ex ib IIC for equipment of category 2G.</p> <p>Only for connection to a certified, intrinsically safe circuit.</p> <p>Maximum values</p> <ul style="list-style-type: none"> • U_i [V]: 17.5 V • I_i [mA]: 500 mA • P_i [W]: 5.5 W <p>The equipment is suitable for connection to a fieldbus system according to the FISCO model (EN 60079-11), e.g. Profibus PA.</p> <p>or</p> <ul style="list-style-type: none"> • U_i [V]: 24 V • I_i [mA]: 250 mA • P_i [W]: 1.2 W <p>The effective internal capacitance C_i is negligibly small.</p> <p>In the version with permanently mounted connection cable, $C_{i \text{ wire/wire}} = 150 \text{ pF/m}$ and $C_{i \text{ wire/shield}} = 270 \text{ pF/m}$ must be taken into account.</p> <p>The effective inner inductance is $L_i \leq 5 \mu\text{H}$.</p> <p>In the version with permanently mounted connection cable, $L_i = 0.62 \mu\text{H/m}$ must be taken into account additionally.</p>

OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics P (Profibus PA), F (Foundation Fieldbus)	
Indicating and adjustment circuits: (terminals 5, 6, 7, 8) ^{3,4}	<p>In protection type intrinsic safety Ex ia IIC</p> <p>For connection to the intrinsically safe circuit or for connection of an OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics S or T for electronic differential pressure measurement.</p> <p>The rules for interconnecting intrinsically safe circuits between OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T and OPTIBAR * 5060 with electronics S or T are observed when the overall inductance and overall capacity of the connecting cable between</p>



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	<p>OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T and OPTIBAR * 5060 with electronics S or T L_{cable} = 212 µH and C_{cable} = 1.98 µF are not exceeded. Take into account the following cable inductances L_i and cable capacities C_i when using the supplied connection cable between OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T and OPTIBAR * 5060 with electronics S or T.</p> <ul style="list-style-type: none"> • L_i = 0.62 µH/m • C_i wire/wire = 150 pF/m • C_i wire/shield = 270 pF/m
<p>³ In the "Ex-i" electronics compartment for OPTIBAR in version with single chamber housing A, K V or 8. ⁴ In the "Ex-i" terminal compartment for OPTIBAR in version with double chamber housing D, W or R.</p>	

<p>Intrinsically safe circuit for the display and adjustment module OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics P (Profibus PA), F (Foundation Fieldbus), version with single chamber housing A, K, V or 8)</p>	
<p>Circuit for the display and adjustment module: (spring contacts in the "Ex-i" electronics compartment)</p>	<p>In protection type intrinsic safety Ex ia IIC Only for connection to the display and adjustment module.</p>

<p>OPTIBAR * 5060 VGK5/6/D*A/W C/U/0/H/T with integrated electronics P (Profibus PA), F (Foundation Fieldbus), version with double chamber housing D, W, or R)</p>	
<p>Circuit for the display and adjustment module: (spring contacts in the "Ex-i" terminal compartment)</p>	<p>In protection type intrinsic safety Ex ia IIC Only for connection to the display and adjustment module.</p>
<p>or circuit for the display and adjustment module: (spring contacts in the "Ex-i" electronics compartment)</p>	<p>In protection type intrinsic safety Ex ia IIC Only for connection to the display and adjustment module.</p>
<p>In the double chamber housing version, the display and adjustment module in the terminal compartment should only be equipped if there is no external display unit or OPTIBAR * 5060 with electronics S or T connected.</p>	