IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

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

Certificate No.:	**IECEx DEK 14.0070X**	Page 1 of 5	Certificate history: Issue 0 (2015-01-08)
Status:	**Current**	Issue No: 1	
Date of Issue:	2020-07-03		
Applicant:	**KELLER AG für Druckmesstechnik** St. Gallerstrasse 119 CH-8404 Winterthur **Switzerland**		
Equipment:	**Absolute, Relative and Differential Pressure Transmitters Type 33X Ei (LV), Type 35X Ei (LV), Type 36XW Ei (LV), Type PD-33X Ei (LV), Type PD-39X Ei (LV), Type 33X M Ei (LV), Type 36X M Ei (LV), Type PA-33XEi / 23-3310-141 and Type PA-33XEi / 23-3310-145**		
Optional accessory:			
Type of Protection:	**Ex ia, Ex ec**		
Marking:	Ex ia IIC T4 ... T6 Ga Ex ia I Ma Ex ia IIIC T130 °C Da Ex ec IIC T4 Gc (PA-33XEi / 23-3310-141 and 23-3310-145 only)		

Approved for issue on behalf of the IECEx Certification Body:	**R. Schuller**
Position:	**Certification manager**
Signature: (for printed version)	
Date:	2020-07-03

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

IECEx Certificate of Conformity

Certificate No.: **IECEx DEK 14.0070X**

Date of issue: 2020-07-03

Issue No: 1

Manufacturer: **KELLER AG für Druckmesstechnik**
St. Gallerstrasse 119
CH-8404 Winterthur
Switzerland

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

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/DEK/ExTR14.0076/01

Quality Assessment Report:

DE/EPS/QAR13.0004/09

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Absolute, Relative and Differential Pressure Transmitters Type 33X Ei (LV), Type 35X Ei (LV), Type 36XW (LV), Type PD-33X Ei (LV), Type PD-39X Ei (LV), Type 33X M Ei (LV) and Type 36X M Ei (LV) are used for the measurement of absolute, relative or differential pressure. The output is a 4 - 20 mA current signal or a 0 -10 V voltage signal and RS 485 serial communications signals. For each Type there are two versions possible: 'low voltage version' identified by the additional 'LV' behind the Type number and 'standard version', without 'LV'.

The transmitter is provided with a permanently connected cable or with a connector for the electrical connections.

Type PA-33XEi build according drawing 23-3310-141 with 4-20 mA signals is additionally certified for Ex ec. The connector is according the DIN 43650 and equivalent DIN EN 175301-803 standard.
Type PA-33XEi build according drawing 23-3310-145 with 4-20 mA signals is additionally certified for Ex ec. With permanently connected 5-wire cable.

SPECIFIC CONDITIONS OF USE: YES as shown below:
For ambient temperature range see Thermal data.

For applications in explosive gas or dust atmospheres and where category 1 equipment (Ga and Da) is required, precautions shall be taken to minimize the risk from electrostatic discharge or propagating brush discharges at the transmitter non-metallic label or connector surface. The transmitter shall be cleaned using a damp cloth only.

For Ex ec, the Pressure Transmitter:
- shall only be electrically connected via a DIN 43650 / DIN EN 175301-803 socket, it shall be secured with a screw having the manufacturer specified torque rating.
- DIN 43650 / DIN EN 175301-803 socket shall only be connected or disconnected when the cable is de-energized or when there is no explosive atmosphere present.
- shall only be used in a controlled environment providing an equivalent degree of protection as IP54, protected from UV light and mechanical damage.
- shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.

Equipment (continued):

Thermal data

For type of protection intrinsic safety Ex ia:

Ambient temperature range:

-40 °C to +90 °C: Temperature class T4, T130 °C and Group I with P_i = 640 mW for all types including Types 33X M Ei (LV) and 36X M Ei (LV).

-40 °C to +90 °C: Temperature class T4, T130 °C with P_i = 1.3 W exclusively for LV types

-40 °C to +85 °C: Temperature class T5, T130 °C with P_i = 640 mW.

-40 °C to +70 °C: Temperature class T6, T130 °C with P_i = 640 mW.

-40 °C to +65 °C: Temperature class T4, T130 °C with P_i = 1.1 W.

-40 °C to +40 °C: Temperature class T4, T130 °C with P_i = 1.3 W.

The maximum surface temperature of the enclosure T130 °C in relation to the maximum ambient temperature, is applicable to a maximum dust layer thickness of 5 mm.

For type of protection increased safety Ex ec IIC:

Ambient temperature range:

-40 °C to +70 °C: Temperature class T4.

Electrical data:

For type of protection intrinsic safety Ex ia:

For all standard versions (without 'LV):

Supply and output circuit and RS 485 interface (terminals 1 to 5):

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

U_i = 30 V; I_i = 200 mA; P_i = 640 mW or P_i = 1.1 W or P_i = 1.3 W (depending on Thermal data);

L_i = 0 mH; C_i = 1 nF (supply and current output); C_i = 1 nF (RS 485 interface and voltage output).

For all low-voltage versions (with 'LV'):

Supply and output circuit and RS 485 interface (terminals 1 to 5):

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

U_i = 8.5 V; I_i = 200 mA; P_i = 640 mW or P_i = 1.1 W or P_i = 1.3 W (depending on Thermal data);

L_i = 0 mH; C_i = 6.5 µF.

The intrinsically safe supply and output circuits and the RS 485 interface are galvanically connected. The dielectric strength of at least 500 V of the intrinsically safe circuits of the Absolute, Relative and Differential Pressure Transmitters is limited only by the overvoltage protection for LV versions.

For type of protection increased safety Ex ec IIC:

for PA-33XEi / 23-3310-141 (without 'LV'):

Supply and output circuit interface (terminal 1: Output/GND and terminal 3: +Supply):

U_n = 30 V.

for PA-33XEi / 23-3310-145 (without 'LV'):

Supply and output circuit interface (“white” wire: Output/GND and “black” wire: +Supply):

U_n = 30 V.

RS485 circuit interface (“white” wire: Output/GND and “blue” wire: RS485A and “yellow” wire: RS485B):

U_n = 13 V.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Additional module type PA-33XEi / 23-3310-141 and 23-3310-145 for Ex ia.
Additional type of protection Ex ec for type PA-33XEi / 23-3310-141 and 23-3310-145.
Removal of IEC 60079-26 removal of IEC 60079--26 as it is no longer required for Ex ia equipment without boundary walls.