



# 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](http://www.iecex.com)

Certificate No.: IECEx LCIE 18.0035X

Issue No: 0

Certificate history:

Issue No. 0 (2018-11-30)

Status: **Current**

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Date of Issue: **2018-11-30**

Applicant: **KELLER AG für Druckmesstechnik**  
St. Gallerstrasse 119  
8404 WINTERTHUR  
**Switzerland**

Equipment: **Numeric manometer, type: LEO1-EI, LEO2-EI, ECO2-EI**

Optional accessory:

Type of Protection: **Ex ia**

Marking:

Ex ia IIC T5 Ga

IECEX LCIE 18.0035 X

See attachment for full marking

Approved for issue on behalf of the IECEx

Julien GAUTHIER

Certification Body:

Position:

Certification Officer

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:

**Laboratoire Central des Industries Electriques (LCIE)**  
**33 Avenue du General Leclerc**  
**FR-92260 Fontenay-aux-Roses**  
**France**





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Manufacturer: **KELLER AG für Druckmesstechnik**  
St. Gallerstrasse 119  
8404 WINTERTHUR  
**Switzerland**

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 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 60079-11 : 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:

[FR/LCIE/ExTR18.0097/00](#)

Quality Assessment Report:

[DE/EPS/QAR13.0004/06](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

### Functional description:

Numeric manometers, Series LEO1-Ei, LEO2-Ei and ECO2-Ei are industrial pressure transmitters to measure absolute, relative and differential pressure.

The pressure transducer consists of a piezo-resistive silicon chip mounted on a glass-feed-through, a ceramic and a case with a thin metal-diaphragm to transmit the pressure.

The transducer case is filled up with isolating oil.

The pressure signal of the Wheatstone-bridge of the silicon chip is taken out by the pins of the glass-feed-through.

### Mechanical description:

Mechanical parts of the transducer are welded or brazed together.

The pressure connection depends on end-user's requirements: male or female thread, front-flash diaphragm for example.

### SPECIFIC CONDITIONS OF USE: YES as shown below:

- Ambient temperature range: -10°C up to +80°C.
- When apparatus is used in hazardous area, no other equipment shall be connected on LCD and RS485 pins.
- The equipment is an autonomous apparatus, powered only by a lithium cell RENATA CR2430.
- Equipement could create potential electrostatic dcharging hazard, please refer to instructions.

### Annex:

[Annex 01 to Certificate IECEx LCIE 18.0035X issue 00.pdf](#)

## MARKING

KELLER  
Address: ...  
Type: ECO2-Ei or LEO1-Ei or LEO2-Ei  
Serial number: ...  
Year of construction: ...  
Ex ia IIC T5 Ga  
IECEx LCIE 18.0035X

## RANGE DETAILS

Models: LEO1-Ei, LEO2-Ei, ECO2-Ei.

The three models are electronically similar (same internal PCB used, same lithium cell).

Main differences are dimensions and their signal precisions expected.

LEO1-Ei, LEO2-Ei, ECO2-Ei models are equipped with:

- an analog sensor as standard version,
- a record memory 2 Mbit (as option N°3),
- an external temperature sensor (as option N°4),
- a pressure sensor connection with flex-board (as option N°5),
- an analog sensor scale (as option N°6).

Options 1 and 2 are not available.

## RATINGS

Equipment supplied by one lithium cell RENATA CR2430.

## ROUTINE TESTS

None.

## APPARATUS OVERVIEW



LEO1-Ei



LEO2-Ei



ECO2-Ei

## ADDITIONAL MANUFACTURING LOCATIONS

None