



# 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.:  issue No.:

Status:

Date of Issue: **2015-08-04** Page 1 of 3

Applicant: **PCB Piezotronics**  
3425 Walden Avenue  
Depew, New York 14043  
**United States of America**

Electrical Apparatus: **Vibration sensors type EX619XYY/MNNNZZ**  
Optional accessory:

Type of Protection: **ia and nA**

Marking: Ex ia IIC T6...T510°C Ga  
Ex nA IIC T6...T510°C Gc  
IECEX LCIE 15.0041X  
(see attachment for more informations)

Approved for issue on behalf of the IECEx Certification Body: Rémi Hanot

Position: Certification Officer

Signature:  
(for printed version)

Date:

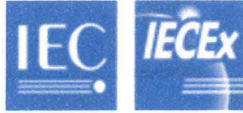
2015/08/04

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

Documents relative to LCIE certification activities (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".





# IECEX Certificate of Conformity

Certificate No.: IECEx LCIE 15.0041X

Date of Issue: 2015-08-04

Issue No.: 0

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Manufacturer: **PCB Piezotronics**  
3425 Walden Avenue  
Depew, New York 14043  
**United States of America**

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** 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 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition: 4

*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/ExTR15.0064/00](#)

Quality Assessment Report:  
[NL/DEK/QAR14.0004/01](#)



# IECEX Certificate of Conformity

Certificate No.: IECEx LCIE 15.0041X

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## Schedule

### EQUIPMENT:

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

The model EX619XY/MNZZ piezoelectric vibration sensors utilize a quartz crystal to convert a mechanical vibration measurement into an electric signal. The sensor consists of a sealed metal case, which houses a piezo crystal element. The quartz crystal is connected to a connector or an integral cable.  
(see attachment for more informations)

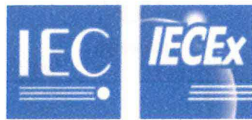
Electrical parameters : see annex

Routine test : see annex

### CONDITIONS OF CERTIFICATION: YES as shown below:

**Version "ia"** :The apparatus must be only connected to a certified associated intrinsically safe equipment. This combination must be compatible regarding intrinsic safety rules (see electrical parameters).  
Operating ambient temperature : -54°C to +500°C (high temperature connector), -54°C to +260°C (standard temperature connector), -54°C to +150°C (lemo style connector).  
Temperature classification : T6 at Tamb +75°C, T5 at Tamb +90°C, T4 at Tamb +125°C, T3 at Tamb +190°C, T2 at Tamb +290°C, T1 at Tamb +440°C, T510°C at Tamb +500°C.  
The apparatus shall be connected according to drawing n°61067 (page 1/2).

**Version "nA"** :The apparatus must be only connected to an equipment whose electrical parameters are compatible with the electrical parameters.  
Operating ambient temperature : -54°C to +500°C (high temperature connector), -54°C to +260°C (standard temperature connector), -54°C to +150°C (lemo style connector).  
Temperature classification : T6 at Tamb +75°C, T5 at Tamb +90°C, T4 at Tamb +125°C, T3 at Tamb +190°C, T2 at Tamb +290°C, T1 at Tamb +440°C, T510°C at Tamb +500°C.  
The apparatus shall be connected according to drawing n°61067 (page 2/2).



## Annex 01 to Certificate IECEX LCIE 15.0041X issue 00



### Description of the equipment :

The model EX619XYY/MNNZZ piezoelectric vibration sensors utilize a quartz crystal to convert a mechanical vibration measurement into an electric signal.

The sensor consists of a sealed metal case, which houses a piezo crystal element.

The quartz crystal is connected to a connector or an integral cable.

Designation of the type :

EX619XYY/MNNZZ :

- X : family type (assigned as a letter)
- YY : variation type (assigned as a two digit number)
- MNNZZ : specifies termination type and cable length-optional
  - M is present only for metric length units-optional
  - NNN specifies cable length (three numbers)-optional
  - ZZ specifies termination type (two letters)-optional

The sensor have stainless steel housings. They have a piezoelectric sensing element with capacitance value of  $< 2\text{nF}$  and a total cable capacitance  $\leq 2\text{nF}$  (total capacitance  $\leq 4\text{ nF}$ ).

Series part numbers determine integral cable length or termination to a connector at the sensor (no cable).

Cable for applicable series part numbers have a two conductor mineral insulated hardline cable with stainless steel sheath.

Cable length will be  $\leq 100$  feet and will either have (specified by part number) exposed connection wires or a connector.

Series part numbers specifying integral connector (no cable) will have a connector type that will have temperature ratings of  $+260^\circ\text{C}$  for the standard connector and  $+500^\circ\text{C}$  for the high temperature version.

### Marking :

PCB Piezotronics

Address :

Type : EX619XYY/MNNZZ (completed with the model)

Serial number : ...

Year of construction : ...

Ex ia IIC T6...T510°C Ga

Ex nA IIC T6...T510°C Gc

IECEX LCIE 15.0041 X

$-54^\circ\text{C} \leq T_a \leq +500^\circ\text{C}$

Version "ia" only :

$U_i : 30\text{V}, I_i : 130\text{ mA}, P_i : 0,8\text{W}, C_i : 2\text{nF} + \text{cable nF}, L_i : 30\mu\text{H}$

### Electrical parameters :

#### Version "ia":

$U_i : 30\text{V}, I_i : 130\text{ mA}, P_i : 0,8\text{W}, C_i : 2\text{nF} + \text{cable nF}, L_i : 30\mu\text{H}$

Cable : 2nF for 100 feet

#### Version "nA":

$U : 30\text{V}, I : 130\text{ mA}, P : 0,8\text{W}$

### Routine test :

Version "ia" : None.

Version "nA" : each apparatus must be submitted to a dielectric strength 500V 50Hz during 1min between the terminals and the housing.