# 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 LCIE 12.0025X** | Page 1 of 4 | Certificate history: |
| Status: | **Current** | Issue No: 5 | Issue 4 (2021-09-30)<br>Issue 3 (2017-02-21)<br>Issue 2 (2015-11-09)<br>Issue 1 (2015-08-04)<br>Issue 0 (2012-10-25) |
| Date of Issue: | 2022-09-09 | | |
| Applicant: | **PCB Piezotronics Inc.**<br>3425 Walden Avenue<br>Depew, New York 14043<br>**United States of America** | | |
| Equipment: | **High temperature pressure transducer - Type: 176XYY/MZZZ-AA series.** | | |
| Optional accessory: | | | |
| Type of Protection: | **Ex ia** | | |
| Marking: | Ex ia IIC T6...T770°C Ga<br>(Refer to attachment for full marking). | | |

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

Position: **Certification Officer**

Signature: (for printed version)

Date: (for printed version) 2022-09-09

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92266 FONTENAY AUX ROSES

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:

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

# IECEx Certificate of Conformity



Certificate No.: **IECEx LCIE 12.0025X**

Date of issue: 2022-09-09

Issue No: 5

Manufacturer: **PCB Piezotronics Inc.**
3424 Walden Avenue
Depew, New York 14043
**United States of America**

Manufacturing locations: **PCB Piezotronics of North Carolina Inc.**
10869 Hwy 903
Halifax, NC 27839
**United States of America**

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
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 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 Reports:

FR/LCIE/ExTR12.0028/00
FR/LCIE/ExTR15.0069/00
FR/LCIE/ExTR15.0117/00
FR/LCIE/ExTR16.0088/00
FR/LCIE/ExTR21.0053/00
FR/LCIE/ExTR22.0065/00

Quality Assessment Report:

NL/DEK/QAR14.0004/05

# IECEx Certificate of Conformity



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

The sensor is made of a hermetically sealed metal housing containing only a piezo-crystal assembly connected to an integral cable (maximum length 61m).

Designation of the model : 176XYY/MZZZ-A ((Refer to attachment for full detail).

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

- The apparatus can be only connected to certified intrinsically safe equipment. This combination must be compatible as regards intrinsic safety rules (see electrical parameters),
- The mounting of the apparatus into an installation must be carried out in such a way that metallic body of the sensor and cable shield are reliably connected to the system earth.
- The equipment must be mounted in such a way that it is not subjected to mechanical shocks on the sensor.
- Temperature classification (Refer to attachment for full details).

# IECEx Certificate of Conformity



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
Issue 05:

- Expansion of the Temperature range of the 176 Series to include up to Ta ≤ 760°C T770°C,
- Adding a variation with integral connector option (instead of cable),
- Normative update according to IEC 60079-0:Ed.7.0,
- Modification of IS parameters.

**Annex:**

Annex 01 to Certificate IECEx LCIE 12.0025X.pdf

# Annex 01 to Certificate
# IECEx LCIE 12.0025X issue 05

## FULL EQUIPMENT DESCRIPTION

The sensor is made of an hermetically sealed metal housing containing only a piezo-crystal assembly connected to an integral cable.

## MARKING

PCB Piezotronics Inc.
Address : …..
Type : 176XYY/MZZZ-AA series
Serial number : …
Year of construction : …
Ex ia IIC T6…T770°C* Ga
IECEx LCIE 12.0025X
*See Temperature classification
$U_i$ : 30V, $I_i$ : 300mA, $P_i$ : 1W, $C_i$ : 5nF, Li : 0,3 mH

Reduced marking :
PCB
Type : 176XYY/MZZZ-AA series
Serial number : …
Year of construction : …
Ex ia IIC T6…T770°C* Ga
IECEx LCIE 12.0025X

## RANGE DETAILS

**Designation model : 176XYY/MZZZ-AA :**

X = A to Z for family code
YY = 01 to 99 for indicate mounting, diaphragm, cabling or connector variations
M = optional to indicate metric cable length
ZZZ = 001 to 999 is optional to indicate cable length in feet (≤ 200 feet) or meters (≤ 61m)
AA = 01 to 99 is optional to indicate fractional length of cable in inches or centimeters

## RATINGS

$U_i$ : 30V, $I_i$ : 300mA, $P_i$ : 1W, $C_i$ : 5nF, $L_i$ : 0,3 mH

## FULL CONDITIONS OF CERTIFICATION

- The apparatus can be only connected to certified intrinsically safe equipment. This combination must be compatible as regards intrinsic safety rules (see electrical parameters),
- The mounting of the apparatus into an installation must be carried out in such a way that metallic body of the sensor and cable shield are reliably connected to the system earth.
- The equipment must be mounted in such a way that it is not subjected to mechanical shocks on the sensor.
- Temperature classification :

| Temperature classification | Ambient temperature |
|---|---|
| T6 | -70°C ≤ $T_{amb}$ ≤ +80°C |
| T5 | -70°C ≤ $T_{amb}$ ≤ +95°C |
| T4 | -70°C ≤ $T_{amb}$ ≤ +130°C |
| T3 | -70°C ≤ $T_{amb}$ ≤ +195°C |
| T2 | -70°C ≤ $T_{amb}$ ≤ +290°C |
| T1 | -70°C ≤ $T_{amb}$ ≤ +440°C |
| T530°C | -70°C ≤ $T_{amb}$ ≤ +520°C |
| T660°C | -70°C ≤ $T_{amb}$ ≤ +650°C |
| T770°C | -70°C ≤ $T_{amb}$ ≤ +760°C |