



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

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Status: **Current** Issue No: 0

Date of Issue: 2019-12-10

Applicant: **Pyro Electric Instruments Goa Pvt Limited**  
Plot No. 71  
Bicholim Industrial Estate  
Bicholim-Goa  
403 529  
India

Equipment: **Flameproof TC/RTD Assemblies With Terminal Head, Type PYRO S, Type PYRO SAT and Type PYRO SRT**

Optional accessory:

Type of Protection: **Flameproof, increased safety**

Marking: **Ex db eb IIC T6...T1(\*) Gb (Tamb = -20°C ≤ Ta ≤ +60°C)  
(\* Refer to schedule.**

Approved for issue on behalf of the IECEx  
Certification Body:

**R S Sinclair**

Position:

**Technical Manager**

Signature:  
(for printed version)

Date:

10-12-19

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United Kingdom





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Manufacturer: **Pyro Electric Instruments Goa Pvt Limited**  
Plot No. 71  
Bicholim Industrial Estate  
Bicholim-Goa  
403 529  
India

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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-7:2015** Explosive atmospheres – Part 7: Equipment protection by increased safety "e"  
Edition:5.0

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 Report:

[GB/BAS/ExTR18.0078/00](#)

Quality Assessment Report:

[NO/PRE/QAR19.0014/01](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Type PYRO S, Type PYRO SAT and Type PYRO SRT Flameproof TC/RTD assemblies with terminal head are rated up to 20 mA, 24 VDC, 900 mW.

The equipment comprises terminal head in type of protection flameproof "Ex db", temperature probe in type of protection "Ex eb" and thermowell. The terminal head contains a terminal block for terminating sensor leads.

The spring loaded temperature probe which is a mineral insulated austenitic seamless steel tube, tightly packed with Magnesium Oxide powder. The temperature probe composed of 2,3 or 4 wire temperature sensing device run through the metal tube and the magnesium oxide powder helps keep these wires insulated and separated. Austenitic steel probe is TIG welded with steel cap at one end and had a potted seal at the other end. The probe can have a length up to 3000 mm and diameter from 3mm to 10mm.

Stainless steel sleeve (extension), which is threaded at both the ends is provided for attachment to the thermo well and for the attachment to the terminal head housing.

The spring loaded temperature probe is guided and protected inside steel sleeve and threaded thermo well.

The terminal head is provided with maximum 2 cable entries of size M20 X 1.5P , alternate size can be 1/2" NPT or 3/4" NPT. The cable entries have a threaded axial length of 14 mm. When required second threaded entry can be utilised for elbow adapter of size M20 X 1.5 or 1/2"NPT(Male) to 1/2" NPT OR M20 X 1.5(Female).

The terminal head is provided with internal tapped hole with a threaded axial length of 15 mm at the base to accommodate the sensor probe assembly. The thread size can be M20 X 1.5P , M24 X 1.5P, 1/2" NPT or 3/4" NPT.

The temperature probes are rated up to 20 mA and 24 VDC. Various models are detailed in Annex to this report.

## TABLE - 1

The maximum surface temperature due to process conditions (TP) is the maximum surface temperature of any part of the sensor in contact with the explosive atmosphere.

The relationship between equipment (\*) temperature class, ambient temperature range and process temperature range is as described in table below:-

Ambient temperature	Temperature Class (*)	Process temperature (TP) range
-20°C to +60°C	T6	-20°C to +80°C
-20°C to +60°C	T5	-20°C to +95°C
-20°C to +60°C	T4	-20°C to +130°C
-20°C to +60°C	T3	-20°C to +195°C
-20°C to +60°C	T2	-20°C to +290°C
-20°C to +60°C	T1	-20°C to +440°C

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

- 1) Only one elbow may be used between the enclosure and the cable entry device.
- 2) If elbow is used with lock nut it must be ensured that there are five full threads engaged prior to tightening of the lock nut.
- 3) The thermowell for the temperature probe must be fitted to protect the probe from high risk of mechanical danger.
- 4) A suitable IECEx/ATEX Equipment certified Ex db IIC cable gland shall be used which provides the degree of protection of IP 68 (1.05 meter below the surface of water for 24 hours)
- 5) A suitable IECEx/ATEX Equipment certified Ex db IIC blanking plug shall be used to close off any unused entries which provides the degree of protection of IP 68 (1.05 meter below the surface of water for 24 hours).
- 6) The fastening screws for terminal block shall be stainless steel socket head cap screws of property class A2-70 and yield stress 450 MPa.
- 7) No modification permitted to equipment as the manufacturer has maintained more stringent gap and flamepath length than required by the standard. User must refer to manufacturer before carrying out any repairs to the equipment. The gaps observed in this report must never be exceeded.
- 8) The service temperature -20°C to +100°C of the cemented joint at the base of the terminal head shall not be exceeded.





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**Annex:**

IECEX BAS 17.0037X Annex 0.pdf

**MODEL DECODING :**

**PYRO**

