



# 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)

Certificate No.: **IECEx SIR 08.0103X** Page 1 of 4 [Certificate history:](#)  
Status: **Current** Issue No: 2 [Issue 1 \(2012-03-27\)](#)  
[Issue 0 \(2009-03-18\)](#)  
Date of Issue: 2020-05-21  
Applicant: **Pressure Tech Limited**  
Unit 24 Graphite Way  
Hadfield  
Glossop  
Derbyshire SK13 1QH  
**United Kingdom**  
Equipment: **Heated Regulator Assemblies XHM-300, XHS-300, XHS-301, XHS-310 & XHS-311 series**  
Optional accessory:  
Type of Protection: **Flameproof "d"**  
Marking: Ex d IIC T3 Gb

Approved for issue on behalf of the IECEx  
Certification Body:

**Neil Jones**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:

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Certificate issued by:

**SIRA Certification Service**  
**CSA Group**  
**Unit 6, Hawarden Industrial Park**  
**Hawarden, Deeside, CH5 3US**  
**United Kingdom**

**sira**  
CERTIFICATION





# IECEX Certificate of Conformity

Certificate No.: **IECEX SIR 08.0103X**

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Date of issue: 2020-05-21

Issue No: 2

Manufacturer: **Pressure Tech Limited**  
Unit 24 Graphite Way  
Hadfield  
Glossop  
Derbyshire SK13 1QH  
**United Kingdom**

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 60079-0:2007-10** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:5

**IEC 60079-1:2007-04** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:6

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:

[GB/SIR/ExTR08.0153/00](#)

[GB/SIR/ExTR12.0073/00](#)

[GB/SIR/ExTR20.0089/00](#)

Quality Assessment Report:

[GB/SIR/QAR09.0005/06](#)



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Date of issue: 2020-05-21

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Heated Regulator Assemblies XHM-300, XHS-300 Series, XHS-301 Series, XHS-310 series & XHS-311 Series.

For Full details refer to the certificate annexe.

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

1. The cable and cable entry devices used must be suitable for a minimum temperature rating of 80°C.
2. The equipment shall not be energised without a regulator or manifold attached.
3. Turning the hand wheel anti-clockwise (with pressure on the outlet) should be refrained on non-venting regulators. Pressure should be reduced in this case by venting downstream of the regulator, and turning the hand wheel simultaneously anti-clockwise.
4. An external earth or equipotential bond in accordance with the requirements of EN 60079-0 and IEC 60079-0 clause 15 shall be made via one of the mounting holes in the electronics housing base.



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Date of issue: 2020-05-21

Issue No: 2

## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

**Issue 1** – this Issue introduced the following change:

1. The change of company address from Unit 3 Rossington Place, Graphite Way, Hadfield, Derbyshire SK13 1QG to that currently shown was recognised.

**Issue 2** – this Issue introduced the following changes:

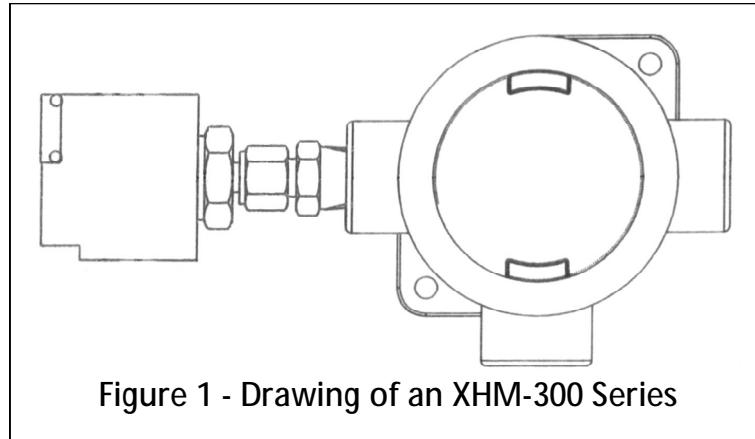
1. Introduction of new model variants, XHS310 and XHS311 In-line and Side Entry series regulators which incorporate a previously approved heating element.
2. The label drawings were reviewed and a typo corrected to put the EPL at the end of the standard coding.

## **Annex:**

[IECEX SIR 08.0103X Iss 2 Annexe.pdf](#)

Annexe to: IECEx SIR 08.0103X Issue 2  
Applicant: Pressure Tech Limited  
Apparatus: Heated Regulator Assemblies / XHM-300,  
XHS-300, XHS-301, XHS-310 & XHS-311  
Series.

The XHM-300 Series, as detailed in Figure 1, are electronically heated manifolds intended for altering the temperature of a flowing media.



The XHM-300 comprises two main parts:

- i. The heated manifold block, this consists of 2 inlet/outlet ports.
- ii. The electronics that controls the heat input to the regulator - installed inside a Type EAB flameproof enclosure manufactured by Cooper Crouse Hinds.

The manifold is manufactured from 316 stainless steel and protrudes from the electronics housing via a ½" NPT threaded cable entry point. The electronics housing is manufactured from aluminium alloy, with mounting lugs to provide a secure means of locating.

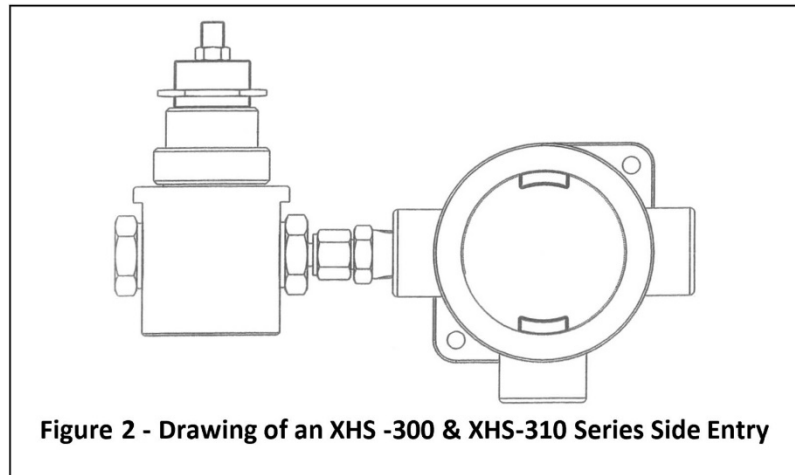
The manifold is fitted with a single heater sheath, with a 150 W cartridge heater located within. An adjustable potentiometer on the surface of a potted PCB board located within the electronics housing controls the amount of heat output via a burst-firing controller.

The cartridge is fitted with a 'Type J' sensor, which monitors the temperature to the unit. Should this sensor fail, or the wiring become disconnected, the PCB will not apply power to the heater cartridge.

A thermal fuse with a rated temperature of 187°C is placed near the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. The fuse being non-resettable.

Annexe to: IECEx SIR 08.0103X Issue 2  
Applicant: Pressure Tech Limited  
Apparatus: Heated Regulator Assemblies / XHM-300,  
XHS-300, XHS-301, XHS-310 & XHS-311  
Series.

The XHS-300 Series and XHS310 Series, as detailed in Figure 2, are heated single stage diaphragm-sensed pressure regulators. The XHS-300 comprise two main parts:



- i. The mechanical regulator, capable of a maximum 300 bar inlet pressure for the XHS-300 and 414 bar for the XHS-310 which may be reduced down to a maximum 35 bar outlet pressure.
- ii. The electronics that control the heat input to the regulator - installed inside a Type EAB flameproof enclosure manufactured by Cooper Crouse Hinds.

The regulator housing is manufactured from 316 stainless steel. and protrudes from the electronics housing via a ½" NPT threaded cable entry point. The electronics housing is manufactured from aluminium alloy, with mounting lugs to provide a secure means of locating.

The regulator is fitted with a single heater sheath, with a 100 W cartridge heater located within. An adjustable potentiometer on the surface of a potted PCB board within the electronics housing controls the amount of heat output via a burst-firing controller. The cartridge is fitted with a 'Type J' sensor, which monitors the temperature to the unit. Should the sensor fail, or the wiring become disconnected, the PCB will not apply power to the heater cartridge.

A thermal fuse with a rated temperature of 86°C is placed near the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. The fuse being non-resettable.

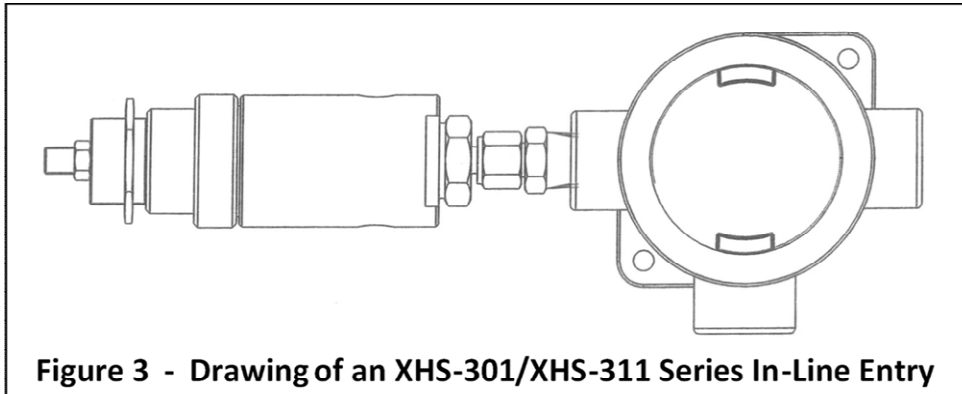
Annexe to: IECEx SIR 08.0103X Issue 2

Applicant: Pressure Tech Limited

Apparatus: Heated Regulator Assemblies / XHM-300, XHS-300, XHS-301, XHS-310 & XHS-311 Series.



The XHS-301 Series and XHS-311 Series, as detailed in Figure 3, are heated single stage piston-sensed pressure regulators.



**Figure 3 - Drawing of an XHS-301/XHS-311 Series In-Line Entry**

The regulator predominantly consists of two parts:

- i. The mechanical regulator, capable of a maximum 300 bar inlet pressure for the XHS-301 Series and 414 bar for the XHS-311 Series, which may be reduced down to a maximum 150 bar outlet pressure.
- ii. The electronics that control the heat input to the regulator - installed inside a Type EAB flameproof enclosure manufactured by Cooper Crouse Hinds.

The regulator housing is manufactured from 316 stainless steel to ensure protection against the media with which it will be used, and the environment in which it will be placed. The electrical housing is manufactured from aluminium alloy, with mounting lugs to provide a secure means of locating.

The regulator is fitted with a single heater sheath, with a 100 W cartridge heater located within. An adjustable potentiometer on the surface of a potted PCB board within the electronics housing controls the amount of heat output via a burst-firing controller. The cartridge is fitted with a 'type J' sensor, which monitors the temperature to the unit. Should this sensor fail, or the wiring become disconnected, the PCB will not apply power to the heater cartridge.

A thermal fuse with a rated temperature of 86°C is placed near the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. This fuse is non-resettable.

XHS-300 & XHS-310 Outlet Pressure Ratings		XHS-301 & XHS-311 Outlet Pressure Ratings	
02 - 0 to 2 bar	10 - 0 to 10 bar	50 - 0 to 50 bar	100 - 0 to 100 bar
04 - 0 to 4 bar	20 - 0 to 20 bar	75 - 0 to 75 bar	150 - 0 to 150 bar
08 - 0 to 8 bar	35 - 0 to 35 bar		

All the above products have the following supply parameters:  
115 V ac 1 A, 230 V ac 0.5 A

**Design Options:**

Both the XHS-300, XHS-301, XHS-310 and XHS-311 Series are available in Side Entry or In-Line Entry heating configurations.

Annexe to: IECEx SIR 08.0103X Issue 2  
Applicant: Pressure Tech Limited  
Apparatus: Heated Regulator Assemblies / XHM-300,  
XHS-300, XHS-301, XHS-310 & XHS-311  
Series.

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## Conditions of Manufacture

The Manufacturer shall note the following conditions of manufacture:

- i. The XHM-300 series shall be fitted with a thermal fuse with a rated temperature of 187°C and fitted at the base of the cartridge to protect the manifolds from exceeding their T3 temperature rating. This fuse shall be non- resettable.
- ii. The XHS-300/310/301/311 series shall be fitted with a thermal fuse with a rated temperature of 86°C and fitted at the base of the cartridge to protect the manifolds from exceeding their T3 temperature rating. This fuse shall be non-resettable.

## Full certificate change history

Issue 1 – this Issue introduced the following change:

1. The Change of company address from Unit 3 Rossington Place, Graphite Way, Hadfield, Derbyshire SK13 1QG to that currently shown was recognised.

Issue 2 – this Issue introduced the following changes:

1. Introduction of new model variants, XHS310 and XHS311 In-line and Side Entry series regulators which incorporate a previously approved heating element.
2. The label drawings were reviewed and a typo corrected to put the EPL at the end of the standard coding.