



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

Certificate No.: **IECEx SIR 08.0103X** issue No.:1
Status: **Current**
Date of Issue: **2012-03-27** Page 1 of 4

Certificate history:
Issue No. 1 (2012-3-27)
Issue No. 0 (2009-3-18)

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

Electrical Apparatus: **Heated Regulator Assembly XHM-300 & XHS-300**
Optional accessory:

Type of Protection: **Flameproof**

Marking: **Ex d IIC Gb T3**

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

D R Stubbings BA MIET

Position:

Certification Manager

*Signature:
(for printed version)*

Date:

2012-03-27

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:

SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

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CERTIFICATION



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

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 : 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 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:

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

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

Quality Assessment Report:

[GB/SIR/QAR09.0005/00](#)

[GB/SIR/QAR09.0005/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The XHM-300 Series are electronically heated manifolds Intended for altering the temperature of a flowing media. The XHS-300 Series are heated single stage diaphragm-sensed pressure regulators and the XHS-301 Series are heated single stage piston-sensed pressure regulators.

For Full details refer to the certificate annexe.

CONDITIONS OF CERTIFICATION: 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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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.
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Annexe to: IECEx SIR 08.0103X Issue 1
Applicant: Pressure Tech Limited
Apparatus: XHM-300, XHS-300 Series & XHS-301 Series Heated Regulator Assemblies

sira
CERTIFICATION

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 1/2" 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 187°C ($\pm 2^\circ\text{C}$) limit is placed near the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. The fuse being non-resettable.

The XHS-300 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 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 1/2" 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 89°C ($\pm 2^\circ\text{C}$) limit is placed near the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. The fuse being non-resettable.

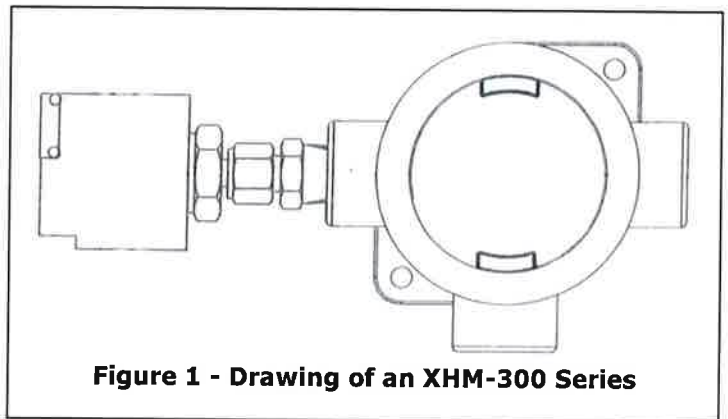


Figure 1 - Drawing of an XHM-300 Series

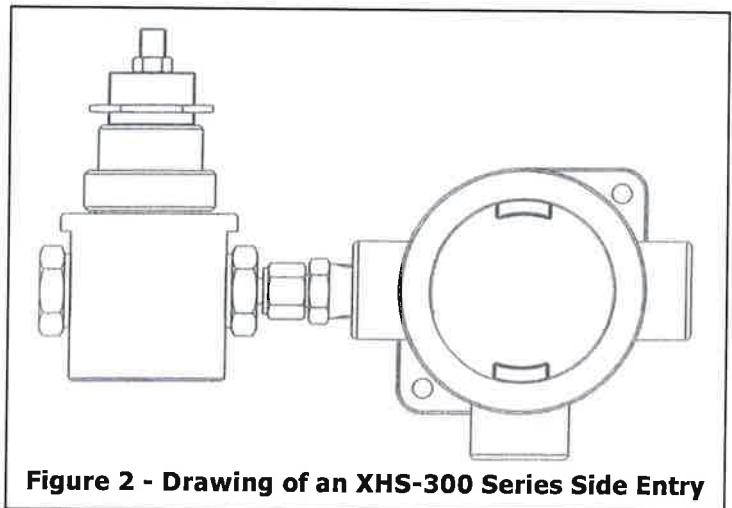


Figure 2 - Drawing of an XHS-300 Series Side Entry

Annexe to: IECEx SIR 08.0103X Issue 1
Applicant: Pressure Tech Limited
Apparatus: XHM-300, XHS-300 Series & XHS-301 Series Heated Regulator Assemblies



The XHS-301 Series, as detailed in Figure 3, are heated single stage piston-sensed pressure regulators. The regulator predominantly consists of two parts:

- i. The mechanical regulator, capable of a maximum 300 bar inlet pressure, 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.

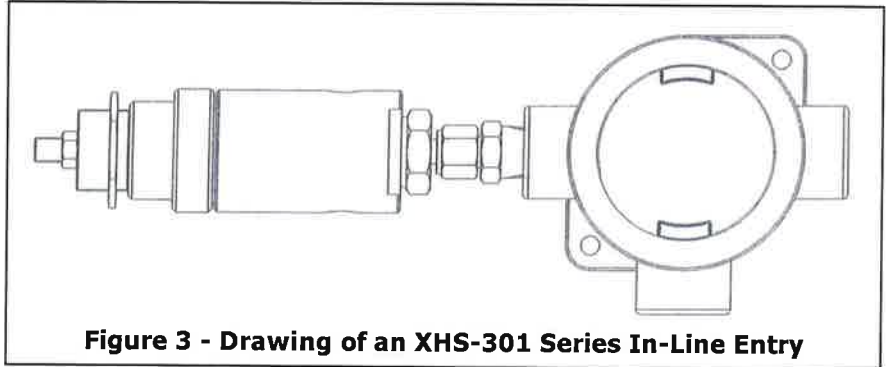


Figure 3 - Drawing of an XHS-301 Series In-Line Entry

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 89°C limit ($\pm 2^\circ\text{C}$) 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 outlet pressure ratings:

02 - 0 to 2 bar	10 - 0 to 10 bar
04 - 0 to 4 bar	20 - 0 to 20 bar
08 - 0 to 8 bar	35 - 0 to 35 bar

XHS-301 outlet pressure ratings:

50 - 0 to 50 bar	100 - 0 to 100 bar
75 - 0 to 75 bar	150 - 0 to 150 bar

All three products have the following supply parameters:

110 V ac 1 A, 230 V ac 0.5 A

Design Options:

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

The Manufacturer shall note the following conditions of manufacture:

- i. The XHM-300 series shall be fitted with a thermal fuse with a 187°C limit ($\pm 2^\circ\text{C}$) and fitted at the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. This fuse shall be non-resettable.
- ii. The XHS-300 series shall be fitted with a thermal fuse with a 139°C limit ($\pm 2^\circ\text{C}$) and fitted at the base of the cartridge to protect the regulators from exceeding their T3 temperature rating. This fuse shall be non-resettable.