



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 08ATEX1077X** Issue: **4**

4 Equipment: **Heated Regulator Assemblies XHM-300, XHS-300 Series, XHS-301 Series, XHS-310 Series & XHS-311 Series**

5 Applicant: **Pressure Tech Ltd**

6 Address: **Unit 24 Graphite Way
Hadfield
Glossop
Derbyshire SK13 1QH
UK**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2006

EN 60079-1:2007

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2 G

Ex d IIC T3 Gb Ta = -40°C to +55°C

Project Number 80037171

Signed: J A May

Title: Director of Operations

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CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands



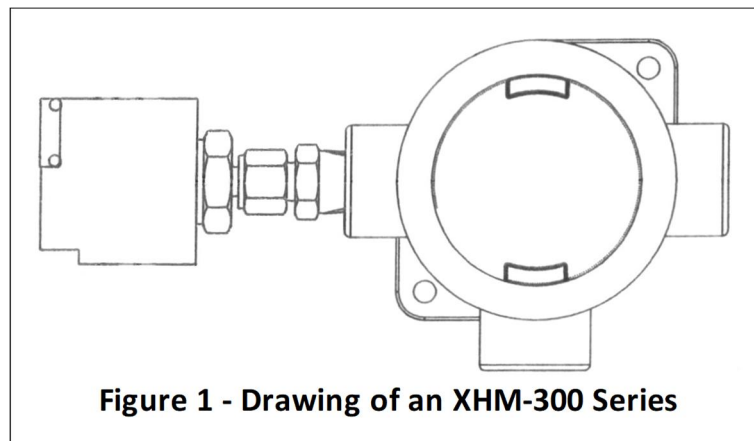
SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

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:

- The heated manifold block, this consists of 2 inlet/outlet ports.
- 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 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.



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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:

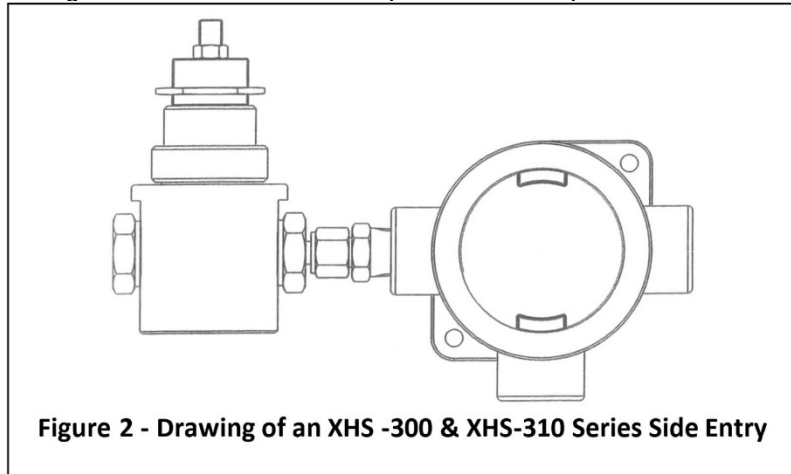


Figure 2 - Drawing of an XHS -300 & XHS-310 Series Side Entry

- 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.

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

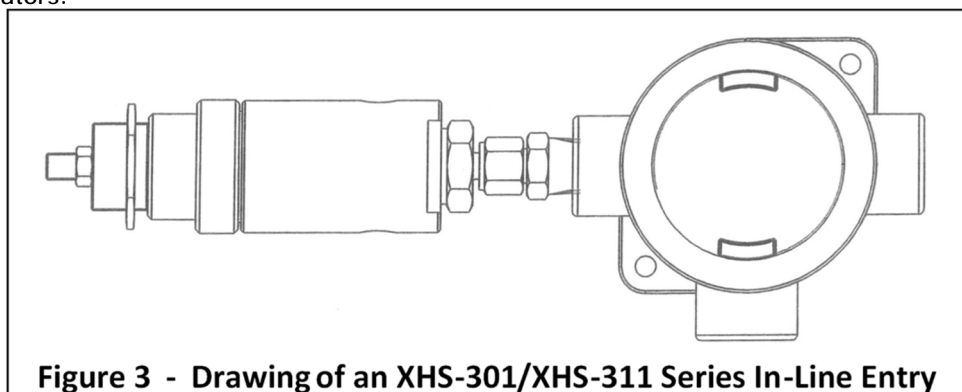


Figure 3 - Drawing of an XHS-301/XHS-311 Series In-Line Entry



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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 limit 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.

Variation 1 - This variation introduced the following change:

- i. The introduction of:
 - External, M4, earthing connections.
 - Two, M4 x 5 mm deep, internal mounting holes.
 - One, M4 hole drilled in the lid to fit an M4 grub screw used as an anti-vibration aid.

Variation 2 - This variation introduced the following change:

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

Variation 3 - This variation introduced the following change:

- i. Introduction of new model variants, XHS310 Series In-line regulators and XHS311 Series Side Entry regulators which incorporate a previously approved heating element. The description was amended to reflect this change
- ii. The label drawings were reviewed and a typo corrected to put the EPL at the end of the standard coding.



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14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	19 November 2008	R51A16632A	The release of the prime certificate.
1	05 November 2009	R51A21069A	The introduction of Variation 1.
2	27 March 2012	R27537A/00	The introduction of Variation 2.
3	31 October 2019	2371	This Issue covers the following changes: <ul style="list-style-type: none">• Transfer of certificate Sira 08ATEX1077X from Sira Certification Service to CSA Group Netherlands B.V.• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i>
4	21 May 2020	R80037171A	The introduction of Variation 3.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 The equipment shall not be energised without a regulator or manifold attached.

15.2 On non-venting regulators with pressure on the outlet, the hand wheel shall not be turned anti-clockwise, in this case, pressure shall be reduced by venting downstream of the regulator and turning the hand wheel simultaneously anti-clockwise.

15.3 An external earth or equipotential bond in accordance with the requirements of EN 60079-0 clause 15 shall be made via one of the mounting holes in the electronics housing base

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF MANUFACTURE

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 The XHM-300 series shall be fitted with a thermal fuse with a rated temperature of 187°C at the base of the cartridge to protect the manifolds from exceeding their T3 temperature rating. This fuse shall be non- resettable.

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

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CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem Netherlands

Certificate Annexe

Certificate Number: Sira 08ATEX1077X

Equipment: Heated Regulator Assemblies XHM-300, XHS-300 Series, XHS-301 Series, XHS-310 Series & XHS-311 Series

Applicant: Pressure Tech Ltd

Issue 0

Common Parts

Drawing	Rev.	Date	Description
A2-PT-XHS-300-100	G	02 Sep 08	Electrical Heated Regulator XHS300 Electrical Portion
A2-PT-XHS-300-011	B	03 Apr 08	Electrical Heated Junction Box
A2-PT-XHS-300-201	D	03 Apr 08	Circuit Board Assembly
A2-PT-XHS-300-202	D	03 Apr 08	Circuit Board Assembly
A4-PT-XHS-300-010	C	05 Dec 07	Connection Fitting
A4-PT-XHS-300-005	C	31 Mar 08	Heater Sheath
A4-PT-XHS-300-001-002	D	05 Dec 07	Heater Sheath
A4-PT-EHR-300-016-120	B	02 Sep 08	120 V Cartridge Heater 100 Watt
A4-PT-EHR-300-016-230	B	02 Sep 08	230 V Cartridge Heater 100 Watt

XHS-300 (Diaphragm Sensed for 35 bar Max. Outlet)

Drawing	Rev.	Date	Description
A4-PT-XHS-300-004	E	03 Apr 08	Heated Regulator Label
A2-PT-XHS-300-INLINE	D	11 Oct 07	Electrical Heated Regulator XHS300 Inline
A2-PT-XHS-300-SE	D	11 Oct 07	Electrical Heated Regulator XHS300 300 Bar
A2-PT-XHS-300-SE-OL	B	15 Oct 07	Electrical heated Regulator XHS300SE Outline
A2-PT-XHS-300-IL-OL	D	11 Oct 07	Single Electric Heated Regulator 300 Bar

XHS-301 (Piston Sensed for 150 bar Max. Outlet)

Drawing	Rev.	Date	Description
A4-PT-XHS-301-012	A	03 Apr 08	Heated Regulator Label
A2-PT-XHS-301-INLINE	C	31 Mar 08	Electrical Heated Regulator XHS301 Inline
A2-PT-XHS-301-SE	A	31 Mar 08	Electrical Heated Regulator XHS301 300 Bar

XHM-300 (Heater Manifold)

Drawing	Rev.	Date	Description
A4-PT-XHM-300-001	E	03 Apr 08	Heated Manifold Label
A2-PT-XHS-300-HMOL	E	07 Mar 08	Single Electric Heated Manifold 300 Bar
A4-PT-XHM-300-005-115	B	27 Apr 08	Cartridge Heater (For Manifold Block)
A4-PT-XHM-300-005-230	B	27 Apr 08	Cartridge Heater (For Manifold Block)
A2-PT-XHM-300-100	B	03 Apr 08	Electrical Heated Manifold Electrical Portion
A4-PT-XHS-300-008	D	11 Oct 07	Heater Retainer

Issue 1

Common Parts

Drawing	Rev.	Date (Sira stamp)	Description
A2-PT-XHS-300-011	C	15 Oct 09	Electrical heated junction box

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 Utrechtseweg 310,
 6812 AR, Arnhem,
 Netherlands

Certificate Annexe

Certificate Number: Sira 08ATEX1077X

Equipment: Heated Regulator Assemblies XHM-300, XHS-300 Series, XHS-301 Series, XHS-310 Series & XHS-311 Series

Applicant: Pressure Tech Ltd

Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
PT-XHM-300-001	1 of 1	G	27 Mar 12	Heated Manifold Label
PT-XHS-300-004	1 of 1	F	27 Mar 12	Heated Regulator Label
PT-XHS-301-012	1 of 1	B	27 Mar 12	Heated Regulator Label

Issue 3 – No new drawings were introduced.

Issue 4

Drawing	Sheets	Rev.	Date (Stamp)	Title
PT-XHM-300-001	1 of 1	H	13 MAY 20	HEATED MANIFOLD LABEL
PT-XHS-300-004	1 of 1	G	13 MAY 20	HEATED REGULATOR LABEL
PT-XHS-301-012	1 of 1	C	13 MAY 20	HEATED REGULATOR LABEL