



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 14ATEX1045X** Issue: **1**

4 Equipment: **Purge/Pressurisation Unit**

5 Applicant: **Hoffman Enclosures**

6 Address: 2100 Hoffman Way, Minneapolis, MN 55303, USA.

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:
IEC 60079-0:2011 EN 60079-2:2007 EN 61241-4: 2006

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:

Standard versions



II 2(2) GD
Ex [px] IIC T6 Gb
Ex [py] IIC T6 Gb
Ex [p] IIIC T85°C Db
(Ta -20°C to +55°C)



II 2(3) GD
Ex [pz Gc] IIC T6 Gb
Ex [p Dc] IIIC T85°C Db
(Ta -20°C to +55°C)

Standard /ET versions



II 2(2) GD
Ex [px] ia IIC T6 Gb
Ex [p] ia IIIC T95°C Db
(Ta -20°C to +55°C)

Low temperature versions



II 2(2) GD
Ex [px] dem IIC T3 or T4 Gb
Ex [p] IIIC T200°C or T135°C Db
(Ta -50°C to +55°C)

Low temperature /ET versions



II 2(2) GD
Ex [px] dem ia IIC T3 or T4 Gb
Ex [p] ia IIIC T200°C or T135°C Db
(Ta -50°C to +55°C)

Project Number 1881

Signed: 
Title: Director of Operations

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13 DESCRIPTION OF EQUIPMENT

The Purge Controllers are pneumatically operated devices, which are intended to provide a given flow rate of purging gas for a predetermined time to unspecified Ex p protected electrical equipment. The Purge Control Units provide one of the following four methods of purge operation.

- LC-Leakage compensation only after initial high purge.
- CF-Continuous flow (same flow rate during and after purging).
- CF2-Two flow CF system with initial high purge rate only at one orifice.
- CFHP-Continuous (lower) flow after initial high purge

The Purge/Pressurisation Unit may be supplied within a heated enclosure to permit the use of the system within an ambient temperature down to -50°C.

The Purge/Pressurisation Unit option pD is for use in combustible dust

Relief Valve - The Purge/Pressurisation Unit is supplied with an optional overpressure relief valve, which is to be fitted to the Ex p protected apparatus to prevent an internal overpressure above the maximum overpressure rating of the apparatus. There are 14 models of relief valve; the designation of each relief valve refers to its nominal bore in mm, as follows:

RLV3, RLV6, RLV9, RLV12, RLV19, RLV25, RLV26, RLV52, RLV36, RLV75, RLV104, RLV125, RLV150 and RLV200.

The outlet of each relief valve is fitted with a spark arrestor, of which there are four optional types:

- Metal foam
- Tortuous path with at least 4 x 90° or 2 x 180° bends
- Multi-layer stainless steel mesh
- Knitted mesh

Outlet Orifice - Three types of orifice are used:

- Threaded Orifices e.g. ¼" NPT or 2" BSP with a built in spark arrester. These are selected to maintain a desired back pressure within the Ex p protected apparatus when used with the Continuous Flow options. The designation of each outlet orifice indicates the nominal inlet diameter. The designations are as follows: SA3, SA6, SA9, SA12, SA19, SA25, SA32, SA38 and SA50.
- Plain holes in the Relief Valve disk, sized according to the flow rate required.
- Replaceable orifice type SAU**.

High Pressure Sensor for CF Systems (HP code) - If the pressure in the pressurized enclosure rises above the setting of the High Pressure sensor, the controller resets cutting the power to the enclosure. On detecting the overpressure an optional facility is available for the generation of an alarm or indicator. On systems with a High Pressure sensor, the relief valve may be omitted.

High Pressure Sensor for LC Systems (HP code) - If the pressure in the pressurized enclosure rises above the setting of the High Pressure sensor, the purge gas flow is isolated from the pressurised enclosure. The valve isolates both the leakage compensation and the purge streams. On detecting the overpressure, an optional facility is available for the generation of an alarm or indicator. On systems with a High Pressure sensor, the relief valve may be omitted.

Pneumatically Operated Outlet Valve - The pneumatically operated outlet valve is used to positively open or close the outlet of the purged enclosure by means of a spring return pneumatic cylinder. Systems fitted with the Pneumatically Operated Outlet Valve will carry the option OV.

The following tables detail the Model Number Designation for ATEX approved Purge/Pressurisation Unit systems:

a	Size or Capacity
1	Sub-Purge/Pressurisation Unit
2	Purge/Pressurisation Unit

Model Number: 1 X LC cs DS SS AA MO FM OA TW
Key: a b cc mm Example option codes

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3	Super- Purge/Pressurisation Unit
4	Super- Purge/Pressurisation Unit 1800
5	Super- Purge/Pressurisation Unit 3500
6	Super- Purge/Pressurisation Unit 7000
7	Super- Purge/Pressurisation Unit 2813
b	Pressurization Type
X	X Pressurization
Y	Y Pressurization
Z	Z Pressurization
cc	Action after initial purging
LC	Leakage Compensation only after initial High Purge
CF	Continuous Flow (same flow rate during and after purging)
CF2	Two Flow CF system with initial High Purge rate but only one orifice
CFHP	Continuous (lower) Flow after initial High Purge
DP	Dust Protection (pressurization only)
mm	Material of the Control Unit Enclosure
al	Aluminium alloy
cs	Mild steel, painted
ss	Stainless steel
bp	Back Plate only
co	Chassis only
pm	Panel mounting
nm	Non-Metallic
	Option codes (Added only if used)
AA	Active Alarm output fitted.
AC	Alarm cancellation circuit.
AO	"Alarm Only" Action on Pressure or Flow Failure.
AS	Alarm "Action on Pressure or Flow failure", Selector valve.
CS	Containment System Monitor.
DS	Door switch Power Interlock fitted.
DT	Delayed Trip after Pressure or Flow failure.
DXXX	Special design for specific flow rates
ET	Electronic Timer
FM	Flow Meter(s) fitted.
HP	System LC or CF with High Pressure Sensor
IS	Internal Switches suitable for Ex i circuits.
MO	Manual Override fitted.
MT	Mechanical Timer.
OA	On/Off switch controlling Protective gas and logic supply.
OB	On/Off switch controlling logic supply only.
OC	On/Off switch controlling Protective gas supply only.
OS	Outlet (Orifice) Selector valve.
OV	Outlet valve, pneumatically operated.
PA	"Ex" switch(es) built-in, with/without "Ex" junction box.
PC	PE Pressure Control Leakage Compensation Valve (CLAPS System.)
PO	Pneumatic Output signals for Power and Alarm control.
SP	Secondary Pressurization supply options.
SS	Separate Supply for Protective gas and Logic air.
TW	Twin (or more) outputs for two or more separate pressurized enclosures purged in parallel

	Protection
P	Purge
cc	Action after initial Purge
LC	Leakage Compensation only after initial High Purge
CF	Continuous Flow (Same flow rate during and after Purge)

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DP	Dust Protection (Pressurization only)
mm	Material of the Control Unit Enclosure
S	Stainless Steel (ss)
B	Black Plate (bp)
F	Flush Mount (pm)
a	Size or Capacity
1	
b	Pressurization Type
X	X Pressurization
Y	Y pressurization
Z	Z Pressurization
	Hoffman Model Numbers included
	PLCS1X
	PLCF1Y
	PLCF1Z
	PLCB1Y
	PLCB1Z
	PCFF1Y
	PCFF1Z
	PCFB1Y
	PCFB1Z
	PDPF1X
	PDPB1X
	PDPF1Y
	PDP/B1Y
	PDPF1Z
	PDPB1Z
	Option Codes (Added only if used)
E	Electronic Timer

Variation 1 This variation introduced the following changes:

- i. The purge controller to be fitted inside an additional, heated, stainless steel enclosure that allows it to be used down to -50°C.

The heater (500 W maximum) is manufactured by Intertec-Hess GmbH and coded Ex d m IIC T3 (max) under PTB 02ATEX1041X. If the outer enclosure is reduced in size the power of the heater may be reduced in proportion to the reduction in surface area. Other alternative heaters may be used as a replacement if they are suitably certified, carry the same or greater ambient temperature range, occupy the same or smaller physical space, have the same certification code and have the same or more restrictive Temperature Class.

The enclosure is made from 1.5mm or 2.5 mm thick stainless or mild steel painted and the lid is made from 1.5 mm thick stainless steel, lined with 38 mm thick insulation, or other materials with equivalent insulating properties. The purge inlet, purge outlet and pressure sensing lines are similarly insulated. The door may optionally be hinged with quick release catches, these will be fitted with a padlock. An enclosure breather tube is fitted to help prevent condensation. A plastic clear viewing window may optionally be fitted to the door.

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RTDs are fitted to the air inlet pipe-work and inside the purge controller enclosure.

An Ex e terminal box is provided within the main enclosure for connection of the heater leads. This polyester box is manufactured by Bartec and coded Ex e II T6 under BAS 98ATEX3008X. Other alternative ATEX terminal boxes may be used as a replacement if they are suitably certified, carry the same or greater ambient temperature range, occupy the same or smaller physical space, have the same certification code and have the same Temperature Class.

Any suitably ATEX, Category 2 approved cable gland may be used, if it can be used with the ambient temperature range.

Variation 2 This variation introduced the following change:

- i. To permit the pressurisation of enclosures for the exclusion of combustible dusts in accordance with IEC61241-4:2001 and modification of the marking to include one of the following:

[Ex pD] II T200°C 21 (Ta = -20°C to +55°C) - (used with the low temperature versions)

[Ex pD] II T85°C 21 (Ta = -20°C to +55°C) - (used with the standard temperature versions)

The ATEX coding is modified to: II 2(2) G D

Variation 3 This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2) and EN 50016:1995, were replaced by EN 60079-0:2006, EN 60079-1:2004, EN 61241-0:2006 and EN 61241-1:2006, the markings in section 12 were updated accordingly.
- ii. The removal of special conditions for safe use that were not specifically associated with the equipment covered by this certificate.

Variation 4 - This variation introduced the following changes:

- i. To permit the inclusion of the following coding for the Low Temperature Purge/Pressurisation Unit Enclosure:
Ex [p] dem IIC T4
Ex pD II 21 T135°C
(Ta -50°C to +55°C)

Variation 5 - This variation introduced the following changes:

- i. The introduction of the /ET version, an alternative to the pneumatic or mechanical timer system, this incorporates an Electronic Timer Module ETM-IS**-*** in the Purge/Pressurisation Unit, the certification includes 'ia' marking when the ETM is fitted.
- ii. The dust marking was changed to be consistent with the marking for gases and vapours.
- iii. The introduction of a high pressure sensor for the LC option.

Variation 6 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest EN 60079 series of standards, the documents previously listed in section 9, EN 60079-0: 2006 and EN 60079-2: 2004 were replaced by those currently listed (EN 61241-0: 2006 was removed as this is incorporated into the current version of 60079-0), the markings were updated accordingly and a new condition of certification was added.



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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 number	Comment
0	9 June 2014	R33280B/00	The release of the prime certificate incorporating variations 1 to 6 inclusive.
1	31st October 2019	1881	<ul style="list-style-type: none">• Transfer of certificate Sira 14ATEX1045X 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>

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1. When using the AO, AS and DT options, the recommendations for the additional requirements of Ex p apparatus contained within EN 60079-14 shall be applied.
- 15.2. The installer/user shall ensure that the Purge/Pressurisation Unit is installed in accordance with the equipment certificate that covers the combination of the pressurised enclosure(s) and Purge/Pressurisation Unit.
- 15.3. The values of the safety parameters shall be set in accordance with the equipment certificate that covers the combination of the pressurised enclosure(s) and Purge/Pressurisation Unit.
- 15.4. This Purge/Pressurisation Unit shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination as defined by Directive 94/9/EC. This certificate does not cover the combination.
- 15.5. The purge controller, low temperature version, shall be protected by a safety related system that ensures that it cannot be energised if the temperature of the air inlet or purge controller falls below -20°C. This system shall utilise the RTDs that are fitted to the purge controller to provide the appropriate level of system integrity, i.e. a level of operational safety of Cat 3 according to EN 954-1 for ATEX Category 2 (Zone 1) applications; note that these RTDs have not been assessed as a safety related device in accordance with EHSR 1.5 of Directive 94/9/EC.

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.

Certificate Annexe



Certificate Number: Sira 14ATEX1045X
Equipment: Purge/Pressurisation Unit
Applicant: Hoffman Enclosures

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
89107483	1 to 3	D	23 Apr 14	Hoffman Purge/Pressurization Unit ATEX/IECEX Certification Label

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