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 14.0019X issue No.:0 Certificate history:

Status: **Current**

Date of Issue: **2014-06-09** Page 1 of 3

Applicant: **Hoffman Enclosures Inc**
2100 Hoffman Way
Minneapolis
MN 55303
United States of America

Electrical Apparatus: **Purge/Pressurisation Unit**
Optional accessory:

Type of Protection: **Pressurised**

Marking:

Standard versions: (Ta –20°C to +55°C)	Ex [px] IIC T6 Gb Ex [py] IIC T6 Gb Ex [p] IIIC T85°C Db or Ex [pz Gc] IIC T6 Gb Ex [p Dc] IIIC T85°C Db
Standard/ET versions: (Ta –20°C to +55°C)	Ex [px] ia IIC T6 Gb Ex [p] ia IIIC T95°C Db
Low temp. versions: (Ta –50°C to +55°C)	Ex [px] dem IIC T3 or T4 Gb Ex [p] IIIC T200°C or T135°C Db
Low temp./ET versions (Ta –50°C to +55°C)	Ex [px] dem ia IIC T3 or T4 Gb Ex [p] ia IIIC T200°C or T135°C Db

Note - Due to restrictions applied by the applicant some products that are detailed in this certificate may not be commercially available.

Approved for issue on behalf of the IECEx Certification Body: R A Craig

Position: Certification Suport Officer

Signature:
(for printed version)

Date: 2014-06-09

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.

Certificate issued by:

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

sira CERTIFICATION

IECEx Certificate of Conformity

Certificate No.: IECEx SIR 14.0019X

Date of Issue: **2014-06-09** Issue No.: **0**

Manufacturer: **Hoffman Enclosures Inc**
2100 Hoffman Way
Minneapolis
MN 55303
United States of America

Additional 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-2 : 2007-02 Edition: 5	Explosive Atmospheres - Part 2 Equipment protection by pressurized enclosure "p"
IEC 61241-4 : 2001 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 4: Type of protection 'pD'

*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/ExTR14.0049/00

Quality Assessment Report:

GB/SIR/QAR09.0018/08

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Certificate No.: IECEx SIR 14.0019X

Date of Issue: **2014-06-09** Issue No.: **0**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

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

Refer to Annexe for continued Equipment description and Conditions of Manufacture.

CONDITIONS OF CERTIFICATION: YES as shown below:

Conditions of Certification
The user/installer shall comply with the following:

1. When using the AO, AS and DT options, the recommendations for the additional requirements of Ex p apparatus contained within IEC 60079-14 shall be applied.
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.
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.
4. This Purge Pressurisation Unit shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination. This certificate does not cover the combination.
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 (Note: These RTDs have not been assessed as a safety related device).

Annex: IECEx SIR 14.0019X Issue 0_Annexe.pdf

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

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

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

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

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	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)
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

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

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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.

Conditions of Manufacture

The Manufacturer shall comply with the following:

1. The switches incorporated in the PA option shall be suitably certified for Zone 1.
2. The following routine tests shall be performed by the manufacturer:

   Verification of Minimum Overpressure Cut Off
   An overpressure loss shall be simulated whilst the Purge/Pressurisation Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

   Verification of Purge Failure Protection
   A purge failure shall be simulated whilst the Purge/Pressurisation Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

   Verification of Air Supply Failure Protection
   An air supply failure shall be simulated whilst the Purge/Pressurisation Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

   Verification of Purging Overpressure protection
   Where the HP is specified an overpressure shall be simulated whilst the Purge/Pressurisation Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.
3. The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the products.
4. The certification code that is appropriate to Purge Controllers low temperature version shall appear in the product marking applied to outer stainless steel enclosure.
5. The Purge Controllers: Sub- Purge/Pressurisation Unit, Purge/Pressurisation Unit, Super- Purge/Pressurisation Unit, Super- Purge/Pressurisation Unit 1800/3500/7000/7000X shall not be marked as suitable for use in explosive dust atmospheres when a non-metallic or painted housing is used.

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6. Due to restrictions applied by the Applicant, some products that are detailed in the supporting documents used to generate this certificate may not be commercially available; it is therefore the responsibility of the Applicant to ensure that that the information in this certificate does not conflict with the information in these supporting documents which are identified in Sira report number R33280B/00.

The following variations were included:

Issue 1 – this Issue introduced the following changes:

1 To permit the inclusion of the following codings for the Low Temperature Minipurge Enclosure
Ex [p] dem IIC T4
Ex pD II 21 T135°C
(Ta –50°C to +55°C)

Issue 2 – this Issue introduced the following changes:

1 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 Mini Purge, the certification includes 'ia' marking when the ETM is fitted.

2 The dust marking was changed to be consistent with the marking for gases and vapours.

3 The introduction of a high pressure sensor for the LC option.

Issue 3 – this Issue introduced the following changes:

1 The marking section was amended to add information that had been omitted in error.

Issue 4 – this Issue introduced the following changes:

1 Following appropriate re-assessment to demonstrate compliance with the requirements of the latest IEC 60079 series of standards, the documents previously listed IEC 60079-0: 2004 Ed 4.0, and IEC 60079-2: 2001 Ed 4 were replaced by those previously listed (IEC 61241-0: 2004 Ed 1 was removed as this is incorporated into the current version of IEC 60079-0), the markings were updated accordingly and a new condition of certification was added

Issue 5 – this Issue introduced the following changes:

1 Issued to allow GB/SIR/ExTR12.0251/00 to be replaced by GB/SIR/ExTR12.0251/01

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