



X Purge System Certificates

ML499

PART A

Important Note

Refer to the system manual for applicable certificates.

CONTENTS

Purge System EU Declaration of Conformity - SC004.....	1
Purge System UK Declaration of Conformity - SC004-UK	2
Purge System ATEX Certificate - SIRA 01ATEX1295X	3
Purge System IECEx Certificate - IECEx SIR07.0027X	11
Purge System UKCA Certificate - CSAE 21UKEX1067X	17
Purge System INMETRO Certificate - TÜV 12.1462X.....	24
Purge System FM Certificate - 1X8A4.AE	28
Purge System FM Certificate - 1X8A4.AE(Canadian)	31
Purge System UL Certificate - E190061	34
Purge System CCC Certificate - 2020312304000830	35
Purge System EAC Certificate - EAEC RU C-GB.АЖ58.В.00906/20	39



EU Authorised Representative:
 ExpoPharma Engineering Services Ltd
 46 Eastcote Drive, Little Island,
 Co. Cork, T45 WR68, Ireland.
 E EUAR@expopharma.ie

Manufacturer:
 Expo Technologies Ltd
 Unit 2, The Summit, Hanworth Road,
 Sunbury-on-Thames, TW16 5DB, U.K.
 E sales@expoworldwide.com

EU Declaration of Conformity



This is to declare that the products listed below are manufactured in conformity with the following EU Directives under the sole authority of Expo Technologies Ltd:

Electromagnetic Compatibility Directive 2014/30/EU

MiniPurge Systems with a /PO suffix in the type number are non-electrical and are outside the scope of the EMC Directive. MiniPurge Systems with suffices /PA or /IS incorporate one or more volt-free ("dry") contacts which work in circuits specified by others. In normal operation these circuits are "benign" and no CE mark is appropriate. MiniPurge Systems with Electronic Timer (Option /ET and /ES) are designed to conform to the EMC Directive, in compliance with EN 61000-6-4:2007 and EN 61000-6-2:2005 (Intertek Report EM10048000) and 61000-6-4:2007 + A1:2011 and EN 61000-6-2:2005 (Intertek Report 102569070LHD-001) respectively.

Low Voltage Directive 2014/35/EU

MiniPurge Systems are intended for use in potentially explosive atmospheres (Hazardous Areas) and are therefore excluded from the Low Voltage Directive.

Pressure Equipment Directive 2014/68/EU

MiniPurge Systems are classified as not higher than category I under Article 13 of this Directive and intended for use in potentially explosive atmospheres (Hazardous Areas) and are therefore excluded from the Pressure Equipment Directive. MiniPurge Systems are covered under ATEX Directive 2014/34/EU.

ATEX Directive 2014/34/EU

MiniPurge Systems are designed to conform to the above Directive in fulfilment of the Essential Health & Safety requirements of Annex II and in compliance with:

EN IEC 60079-0:2018

EN 60079-2:2014

EN 60079-11:2012

MiniPurge Systems are certified under EU Type-Examination Certificate Sira 01ATEX1295X by CSA Group (Netherlands) B.V., in compliance with:

EN 60079-0:2012 + A11:2013

EN 60079-2:2014

EN 60079-11:2012

MiniPurge Systems are manufactured under Production Quality Assurance Notification SIRA 99ATEXM043, issued by CSA Group (Netherlands) B.V. (EU Notified Body No. 2813).

Technical documentation and assessments are in the Expo Technologies confidential technical file SC004.

For and on behalf of Expo Technologies Ltd

John Paul De Beer
Managing Director

Date 23rd November 2021

SC004 EU DoC MiniPurge Systems Iss. 16



Manufacturer:
Expo Technologies Ltd
Unit 2, The Summit, Hanworth Road,
Sunbury-on-Thames, TW16 5DB, U.K.
E sales@expoworldwide.com

UK Declaration of Conformity



This is to declare that the products listed below are manufactured in conformity with the following UK Product Regulations under the sole authority of Expo Technologies Ltd

MiniPurge® Purge & Pressurization Systems

A range of systems intended to provide explosion protection of electrical enclosures through purge & pressurization under international and national standards.

Electromagnetic Compatibility Regulations 2016 (SI 2016/1091)

MiniPurge Systems with a /PO suffix in the type number are non-electrical and are outside the scope of the EMC Regulations.

MiniPurge Systems with suffices /PA or /IS incorporate one or more volt-free ("dry") contacts which work in circuits specified by others. In normal operation these circuits are "benign" and no UKCA mark is appropriate.

MiniPurge Systems with Electronic Timer (Option /ET and /ES) are designed to conform to the EMC Regulations, in compliance with EN 61000-6-4:2007 and EN 61000-6-2:2005 (Intertek Report EM10048000) and 61000-6-4:2007 + A1:2011 and EN 61000-6-2:2005 (Intertek Report 102569070LHD-001) respectively.

Electrical Equipment (Safety) Regulations 2016 (SI 2016/1101)

MiniPurge Systems are intended to be used in potentially explosive areas (hazardous areas) and are therefore excluded from the Regulation.

Pressure Equipment (Safety) Regulations 2016 (SI 2016/1105)

MiniPurge Systems are classified as not higher than Category I under article 13 of this Regulation and also intended for use in potentially explosive atmospheres and are therefore excluded from this Regulation.

Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres Regulations, UKSI 2016:1107 (as amended) - Schedule 3A Part 1

MiniPurge Systems are designed to conform to the above Regulations in fulfilment of the Essential Health & Safety requirements of Annex II and in compliance with:

EN IEC 60079-0:2018

EN 60079-2:2014

EN 60079-11:2012

MiniPurge Systems are certified under UK Type-Examination Certificate CSAE 21 UKEX 1067X by CSA Group Testing UK Ltd. (UK Conformity Assessment Body No. 0518) in compliance with:

EN 60079-0:2012 + A11:2013

EN 60079-2:2014

EN 60079-11:2012

MiniPurge Systems are manufactured under Production Quality Assurance Notification CSAE 21 UKQAN 0005, issued by CSA Group Testing UK Ltd. (UK Conformity Assessment Body No. 0518).

Technical documentation and assessments are in the Expo Technologies confidential technical file SC004.

For and on behalf of Expo Technologies Ltd

John Paul De Beer
Managing Director

Date 15th December 2021

SC004-UK.v1 UKCA DoC MiniPurge Iss. 1

**EU-TYPE EXAMINATION CERTIFICATE**

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

Issue: 15

Certificate Number: Sira 01ATEX1295X

Examination Number:

MinIPurge Purge Controller

EXPO Technologies Limited

Equipment:

Unit 2

Applicant:

The Summit

Address:

Hanworth Road

Sunsbury on Thames

Surrey TW16 5DB

UK

7 This equipment and any acceptable variation thereof 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 60079-11:2012

EN 60079-2:2014

EN 60079-0:2012/A11: 2013

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:

Refer to the schedule for marking

Project Number 80041858

Signed: G Neuroth

Title: Certification Engineer

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6812 AR, Arnhem,
Netherlands

Page 1 of 12

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DQD 544.09 Rev 2018-04-20

Page 2 of 12

**SCHEDULE****EU-TYPE EXAMINATION CERTIFICATE**Sira 01ATEX1295X
Issue 15**DESCRIPTION OF EQUIPMENT**

13	DESCRIPTION OF EQUIPMENT	14	DESCRIPTION OF EQUIPMENT
	Standard versions:	Standard ET/ES versions:	Low temperature/ET/ES versions:
	II 2(2) GD Ex [pxb] IIC T6 Gb Ex [pxb] IIC T85°C Db (Ta -20°C to +55°C)	II 2(2) GD Ex [pxb] IIC T6 Gb Ex [pxc] IIC T85°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pxb] db e ia IIC T3 Gb Ex [pxb] db e ia IIC T4 Gb (Ta -60°C to +55°C)
	II 2(2) GD Ex [pxb] la IIC T5 Gb Ex [pxb] la IIC T100°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pxb] db e ia IIC T4 Gb Ex [pxb] db e ia IIC T4 Gb (Ta -60°C to +55°C)	II 2(2) G Ex [pxb] db e ia IIC T4 Gb Ex [pxb] db e ia IIC T4 Gb (Ta -60°C to +55°C)
	High temperature versions - H6:	High temperature versions - H7:	High temperature/ET/ES versions - H6:
	II 2(2) G Ex [pxb] IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pxb] IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +70°C]	II 2(2) G Ex [pxb] db e ia IIC T4 Gb Ex [pxb] db e ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +60°C]
	Combined Versions	Low temp. with High temp. H6 and Et/ES	Low temp. with High temp. H6 and Et/ES
	II 2(2) G Ex [pxb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C)	II 2(2) G Ex [pxb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C)	II 2(2) G Ex [pxb] db e ia IIC T3 or T4 Gb Ex [pxb] db e ia IIC T3 or T4 Gb (Ta -60°C to +60°C)
	Low temp. with High temp. H7	Low temp. with High temp. H7	Low temp. with High temp. H7 and Et/ES
	II 2(2) G Ex [pxb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C)	II 2(2) G Ex [pxb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C)	II 2(2) G Ex [pxb] db e ia IIC T4 Gb Ex [pxb] db e ia IIC T4 Gb (Ta -20°C to +55°C)
	Standard versions LD:	Standard ET/ES/LD Versions	
	II 2(2) G Ex [pxb] IIC T4 Gb (Ta -20°C to +55°C)	II 2(2) G Ex [pxb] IIC T4 Gb (Ta -20°C to +55°C)	

Project Number 80041858

Signed: G Neuroth

Title: Certification Engineer

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Page 1 of 12

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Page 2 of 12



SCHEDULE
EU-TYPE EXAMINATION CERTIFICATE

Sira 01ATEX1295X
Issue 15

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 MiniPurge 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

DP - Dust Protection (for pressurization only)

The MiniPurge control unit may be supplied within a heated enclosure to permit the use of the system within an ambient temperature down to -60°C.

Relief Valve - The MiniPurge controller 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, 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. 1/4" 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.

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE
Sira 01ATEX1295X
Issue 15

		Size or Capacity		Model Number: 1 X LC cs DS SS AA MO FM OA TW Key: a b cc mm Example option codes	
1	MinPurge with Purge Flow Capacity up to 225 N/min.	2	MinPurge with Purge Flow Capacity up to 450 N/min.	3	MinPurge with Purge Flow Capacity up to 900 N/min.
4	MinPurge with Purge Flow Capacity up to 2000 N/min.	5	MinPurge with Purge Flow Capacity up to 6000 N/min.	6	MinPurge with Purge Flow Capacity up to 8000 N/min.
7	MinPurge with Purge Flow Capacity above 8000 N/min.				
b	Presurization Type	x	X Presurization	y	Y Presurization
x		z	Z Presurization		
y			cc	Action after initial purging	
z			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	CFHP	
			dp	Continuous (lower) Flow after initial High Purge	
			mm	Dust Protection (pressurization only)	
			al	Material of the Control Unit Enclosure	
			cs	Mild steel, painted	
			ss	Stainless steel	
			hd	Back Plate only	
			co	Chassis only	
			pm	Panel mounting	
			nm	Non-Metallic	
			aa	Active Alarm output fitted.	
			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	
			dj	Delayed Trip after Pressure or Flow failure.	
			es	Electronic timer with EPSS	
			et	Electronic liner (not EPSS option)	
			fm	Flow Meter(s) fitted.	
			h6	High Temperature Tamb -20°C to +60°C, Air Supply Max Temp +60°C	
			h7	High Temperature Tamb -20°C to +60°C, Air Supply Max Temp +70°C	
			lc	System LC or CF with High Pressure Sensor	
			ls	Internal switches suitable for Ex circuits.	
			ls	Local Sourcing	
			d	LED Option	
			lt	Low Temperature	
			no	Neutral Overline 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.	
			px	"Ex" switch fitted built-in without an "Ex" Junction box	
			ps	PE Pressure Control, Leakage Compensation Valve (CAPS System).	
			ro	Pneumatic Output Signals for Power and Alarm control.	
			sp	Secondary Pressurization Supply Options.	
			tw	Two (or more) outputs for two or more separate pressurized enclosures purged in parallel	
			dxxx	Special design for specific flow rates, or other non-certification related options.	

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Page 4 of 12

**SCHEDULE****EU-TYPE EXAMINATION CERTIFICATE**

Sira 01ATEX1295X
Issue 15

Variation 1 This variation introduced the following changes:

- 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 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.

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

An ex 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 94ATEX3008X. 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 suitable ATEX, Category 2 approved cable gland may be used, if it can be used with the ambient temperature range.

- A change of the Applicant's name on the certificate and the substitution of the new name for the old name on the approved label affixed to the purge controllers.

Old Name: Expo Teletron Safety System Limited
New name: Expo Technologies Limited

Variation 2 This variation introduced the following change:

- To permit the pressurisation of enclosures for the exclusion of combustible dusts, in accordance with IEC61241-4-2:2001, 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:

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Page 5 of 12
Rev 2018-04-20
DQD 544.09

Page 5 of 12

SCHEDULE**EU-TYPE EXAMINATION CERTIFICATE**

Sira 01ATEX1295X
Issue 15

Variation 3 This variation introduced the following changes:

- 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 50014-1:997 (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.
- 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 change:

- To permit the inclusion of the following coding for the Low Temperature MiniPurge Enclosure:
Ex [p] IIC T4
Ex pb II 21 T135°C
(Ta = -50°C to +55°C)

Variation 5 - This variation introduced the following changes:

- The introduction of an alternative to the pneumatic or mechanical timer system, this incorporates an Electronic Timer Module ETM-1S**. In the Mini Purge, the certification includes 'a' marking when the ETM is fitted.
- The dust marking was changed to be consistent with the marking for gases and vapours.
- The introduction of a high pressure sensor for the LC option.

Variation 6 - This variation introduced the following change:

- 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 in section 12 were updated accordingly and a new condition of certification was added.

Variation 7 - This variation introduced the following change:

- The recognition of the Applicant's address change from Summer Road, Thames Ditton, Surrey KT7 ORH to Unit 2, The Summit, Hanworth Road, Sunbury on Thames, Surrey TW16 5DB.
- This variation introduced the following changes:

 - The inlet air temperature sensing system was changed; as a consequence, a Special Condition For Safe Use was amended.
 - A Local Sensing (LS) option was introduce.
 - The RLV configuration was changed to show an optional alternative position of the flow sensing connection.
 - The recognition of minor drawing modifications; the addition of notes and the clarification of the markings etc., these amendments are administrative that do not affect the aspects of the product that are relevant to explosion safety.
 - The minimum ambient temperature limit for the Low Temperature and Low Temperature/ET versions was lowered from -50°C to -60°C.
 - Following appropriate assessment to demonstrate compliance with the latest technical knowledge, Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012, EN 60079-2:2007, IEC 61241-4:2006 Edition 1 and EN 61241-4:2006 were replaced by EN 60079-0:2012 and EN 60079-2:2014, the markings in section 12 were updated accordingly.



SCHEDULE

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Sira 01ATEX1295X
Issue 15

Variation 9 - This variation introduced the following changes:

- The introduction of the:
 - H6 - high temperature variant of the MiniPurge Purge Controller with an ambient temperature range of -20°C to +60°C, and permitting a maximum purge air temperature of 60°C. Optionally this may include an intrinsically safe electronic timer (ET).
 - The MiniPurge and other components are fitted inside the same enclosure which is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet, fitted to the regulator, and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.
 - The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller. A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

The optional terminal box (T/B) may be any suitable ATEX certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-20°C to +60°C), with a minimum Temperature Class of T4 (135°C).

- H7 - high temperature variant of the MiniPurge Purge Controller with an ambient temperature range of -20°C to +60°C, and permitting a maximum purge air temperature of 70°C. Optionally this may include an intrinsically safe electronic timer (ET).

The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet, fitted to the regulator, and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

One cooled chamber contains the system control logic circuit, the Vortex Cooler and the logic isolator. The other hot chamber contains all of the purge air flow path parts rated for continuous operation at a minimum of 70°C. The two chambers are thermally insulated from each other. The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller.

A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

The optional terminal box (T/B) may be any suitable ATEX certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-20°C to +60°C), with a minimum Temperature Class of T4 (135°C).

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Page 7 of 12

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Page 8 of 12

SCHEDULE

Sira 01ATEX1295X
Issue 15

EU-TYPE EXAMINATION CERTIFICATE

Sira 01ATEX1295X
Issue 15

Variation 10 - This variation introduced the following changes:

- i. The introduction of the Combined Low Temperature (LT) and High Temperature (H6 or H7) options:

Combined Low Temperature (LT) and High Temperature (H6) options – Combination of the previously certified Low temperature and High temperature (H6) versions, with an ambient temperature range of -60°C to +60°C and permitting a maximum purge air temperature of 60°C. Optionally this may include an intrinsically safe electronic timer (ET).

This version has two separate variants, as detailed below:

The MiniPurge and other components are fitted inside the same enclosure which is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller.

A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at -5°C.

The optional terminal box (T/B) may be any suitable ATEX certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C).

Combined Low Temperature (LT) and High Temperature (H7) options – Combination of the previously certified Low temperature and High temperature (H7) options, with an ambient temperature range of -60°C to +60°C and permitting a maximum purge air temperature of 70°C. Optionally this may include an intrinsically safe electronic timer (ET).

The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

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DQD 544.09

Rev 2018-04-20

Page 7 of 12

CSA Group Netherlands B.V.
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Page 8 of 12

**SCHEDULE****EU-TYPE EXAMINATION CERTIFICATE**

Sira 01ATEX1295X
Issue 15

transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals with electrical cables entering it via cable glands.

One cooled chamber contains the system control logic circuit, the Vortex Cooler and the logic isolator. The other hot chamber contains all of the purge air flow path parts rated for continuous operation at a minimum of 70°C. The two chambers are thermally insulated from each other.

The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller. A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at +5°C.

The optional terminal box (T/B) may be any suitable IECEx certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C).

ii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012 was replaced by EN 60079-0:2012/A1:2013

iii. To remove IS marking which was incorrectly applied in a previous variation.

iv. To permit the addition of a previously assessed drawing which was not listed in a previous variation.

Variation 11 - This variation introduced the following change:

i. A solenoid in the Expo Technologies Electronic Timer (ET) Module ETM-1S**-*** covered by certificate FM10ATEX0003X was replaced due to obsolescence, resulting in a change of the temperature classification. The ET Module ETM-1S**-*** is incorporated in 'VET versions' of the purge controller covered by certificate Sira 01ATEX1295X, as a result of this update, only the temperature class/markings of the 'Standard/ET versions' were affected and were therefore amended as follows, raising T6 to T5 and T55°C to T100°C.

Variation 12 - This variation introduced the following changes:

i. The previous product name was changed from 'Purge Controllers; Sub-MiniPurge, MiniPurge, Super-MiniPurge, Super-MiniPurge 1.800/3500/7000/7000X to 'MiniPurge Purge Controller', resulting in the model designation table being amended in the product description and a Condition of Manufacture being amended.

ii. The (ES) option was introduced. This is the (ET) electronic timer option complete with an Electro Pneumatic Power Supply (EPPS), covered by certificate FM10ATEX0003X, resulting in the model designation table being amended in the product description, to recognise the new (ES) option and amend the (ET) option.

iii. The RLV configuration was changed to show an alternative position of the flow sensing connection.

iv. The main certification coding for the low temperature versions of the mini-purge controller, certified for use in gas atmospheres, were amended with 'd' being replaced with 'db' and 'm' being removed in recognition of the change of heater certification coding introduced in variation 8 of certificate Sira 01ATEX1295X.

v. The withdrawal of the dust certification coding from the main certification coding for the low temperature versions of the mini-purge controller.

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DQD 544.09 Rev 2018-04-20

Page 9 of 12

Page 10 of 12

SCHEDULE

Sira 01ATEX1295X
Issue 15

EU-TYPE EXAMINATION CERTIFICATE

Sira 01ATEX1295X
Issue 15

vi. The withdrawal of approved drawing SD8196.
vii. To assess and document minor modifications to the drawings in the certification package for this equipment, resulting in the introduction of a Condition of Manufacture.

Variation 13 - This variation introduced the following changes:

- To recognise a new option code (ID) for addition of LED, resulting in the introduction of a Specific Condition of Use and the introduction of EN 60079-11:2012 assessment standard.
- To extend the range of overpressure relief valve (RLV) sizes up to RLV400- and to include all possible RLV sizes, within minimum 25 mm and maximum 400 mm RLV bore size.
- To introduce an alternative configuration for the Delay Trip (DT) option.
- To introduce an alternative configuration for the leakage compensation system.
- To update existing condition of use 15.5, to remove the reference to withdrawn standard EN 954-1 that is used as an example and to clarify that the safety related system that protects the low temperature version of the purge controller shall comply with the requirements of ATEX Directive 2014/34/EU.

14 DESCRIPTIVE DOCUMENTS**14.1 Drawings**

Refer to Certificate Annex.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	3 July 2002	R53A7169A	The release of prime certificate.
1	29 March 2004	R53V11342A	The introduction of Variation 2.
2	30 September 2004	R51A11080A	
3	19 September 2006	R51A15629A	The re-issue of Variation 2 to include the changes described in report number R51A15629A.
4	7 June 2007	R51L15966B	This issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 4, Issues 0 to 3 referred above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.
5	18 February 2009	R51L19695A	The introduction of Variation 4.
6	22 December 2010	R23665A/00	This issue covers the following changes: • This certificate history was modified to recognise that Variation 2 was re-issued, subsequent variations have therefore been re-numbered.
7	07 December 2011	R25983A/00	The introduction of Variation 5.
8	05 October 2012	R29097A/00	The introduction of Variation 6.
9	10 July 2015	R70012182A	The introduction of Variation 7.

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DQD 544.09 Rev 2018-04-20

Page 9 of 12



SCHEDULE
EU-TYPE EXAMINATION CERTIFICATE

Sira 01ATEX1295X
Issue 15

Issue	Date	Report no.	Comment
10	15 June 2016	R/004822/A	This Issue covers the following changes: • EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. (In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referred to 94/9/EC, that were in existence prior to the date of application of Directive 2014/34/EU (20 April 2016) may be referenced as 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.)
11	25 October 2016	R70086964	The introduction of Variation 9.
12	31 March 2017	R7017326A	The introduction of Variation 11.
13	09 November 2018	R70198821/A	The introduction of Variation 12.
14	15 October 2019	0964	Transfer of certificate Sira 01ATEX1295X from Sira Certification Service to CSA Group Netherlands B.V.
15	02 February 2021	R80041858A	The introduction of Variation 13.

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

- 15.1 When using the A0, 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 MiniPurge Control Unit is installed in accordance with the equipment Certificate that covers the combination of the pressurised enclosure(s) and MiniPurge Control 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 MiniPurge Control Unit.
- 15.4 This MiniPurge Control Unit shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination as defined by Directive 2014/34/EU. This certificate does not cover the combination.
- 15.5 The purge controller, low temperature version, shall be protected by a safety related system, complying with the requirements of ATEX Directive 2014/34/EU, that ensures that it cannot be energised if the temperature of the controller logic air 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 that these RTDs have not been assessed as a safety related device in accordance with EHSR 1.5 of Directive 2014/34/EU.
- 15.6 Where a Vortex cooler is fitted the hot air outlet pipe shall be kept free from obstructions and blockage.
- 15.7 The following routine tests are to be carried out
 - The Vortex cooler is functioning correctly (H6, H7 high temperature variants and H6, H7 combination variants only).
 - The pneumatic logic isolator is functioning correctly (H6, H7 high temperature variants and H6, H7 combination variants only).
- 15.8 When using the 'LD' option, the LEDs have the following IS input parameters and it shall be supplied from a suitable intrinsically safe power supply for category 2 (Zone 1) or Category 3 (Zone 2) depending on which zone the purge controller is being installed.
 - $U_i = 30V$, $I_i = 100mA$, $P_i = 1W$, $C_i = 0$ and $L_i = 0$.

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Rev 2018-04-20

Page 11 of 12

SCHEDULE
EU-TYPE EXAMINATION CERTIFICATE

Sira 01ATEX1295X
Issue 15

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.
- CONDITIONS OF MANUFACTURE**
- 16 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.
 - 17.1 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 switches incorporated in the PA option shall be suitably certified for Category 2.
 - 17.4 The following routine tests shall be performed by the manufacturer:
- Verification of Minimum Overpressure Cut Off**
- An overpressure loss shall be simulated whilst the MiniPurge Control 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 MiniPurge Control 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 MiniPurge Control 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 MiniPurge Control 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 MiniPurge Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.
- 17.5 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.
 - 17.6 The certification code that is appropriate to Purge Controllers Low Temperature and High Temperature H6 or H7 versions shall appear in the product marking applied to outer stainless steel or painted mild steel enclosure.
 - 17.7 The MiniPurge Controller shall not be marked as suitable for use in explosive dust atmospheres when a non-metallic or painted housing is used.
 - 17.8 When the optional electronic timer (FM10ATEX0003X) is fitted the manufacturer shall take into account any certification restrictions or special conditions for safe use that are applicable to the certified device.
 - 17.9 When an Ex d junction box with flange openings is used in the low temperature (LT) versions of the MiniPurge controller, the manufacturer shall ensure that it is installed such that there are no obstructions within 40mm of the Ex junction box flameproof flanged joints.

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Rev 2018-04-20

Page 12 of 12



Certificate Annex

Certificate Number: Sira 01ATEX1295X
Equipment: MiniPurge Purge Controller
Applicant: EXPO Technologies Limited

Issue 0 (The drawings associated with this issue were replaced by those listed in Issue 4)

Number	Sheet	Rev.	Date	Description
SD7781	1 to 4	3	02 Jul 02	MiniPurge ATEX Certification Labelling
SD7782	1 to 2	2	21 May 01	MiniPurge ATEX Certification Type Numbering Scheme
EP199-2-17	1 of 1	1	21 Sep 00	MiniPurge, Continuous Flow with /HP Sensor -Schematic diagram
EP199-7-7	1 of 1	1	21 Sep 00	RLV, outlet orifice
EP199-7-9	1 of 1	1	21 Sep 00	Outlet Valve Control Circuit Diagram

Issue 1 (The drawings associated with this issue were replaced by those listed in Issue 4)

Number	Sheet	Rev.	Date	Description
SD77448	1 of 1	3	22 March 04	Low Temperature Housing - General Arrangement
SD77449	1 of 1	1	18 Dec 03	Certification label

* Modified by Sira 30 September 2004

Issue 3 (The drawings associated with this issue were replaced by those listed in Issue 4)

Number	Sheet	Rev.	Date	Description
SD7781	1 to 5	5	30 Aug 06	Certification label
SD7781*	1 to 5	4	17 Dec 03	Certification label

Issue 4

Number	Sheet	Rev.	Date	Description
EP199-3-1	1 of 1	02	15 Mar 07	Minipurge Control Unit – General Assembly
EP199-2-1	1 of 1	03	09 Jul 07	Schematic - Type X leakage Compensation
EP199-2-3	1 of 1	02	15 Mar 07	Sequence Diagram - Type X leakage Compensation
EP199-2-2	1 of 1	02	15 Mar 07	Schematic - Type X Continuous Flow
EP199-2-7	1 of 1	02	15 Mar 07	Schematic – Separate Supply and Mechanical Timer
EP199-2-8	1 of 1	02	15 Mar 07	Schematic – Delay Before Trip and On/Off
EP199-2-9	1 of 1	02	15 Mar 07	Schematic – Twin Output and Manual Override
EP199-2-10	1 of 1	03	15 Mar 07	Schematic – Pressure Control Leakage Compensation
EP199-2-11	1 of 1	03	15 Mar 07	Internal "15" Switches
EP199-2-12	1 of 1	02	15 Mar 07	Schematic – Containment System and Secondary pressurisation
EP199-2-14	1 of 1	02	15 Mar 07	Schematic – Continuous Flow with 2 Flow Rates
EP199-2-17	1 of 1	02	15 Mar 07	Schematic – Continuous Flow with High Pressure
EP199-2-16	1 of 1	02	15 Mar 07	Schematic – Outlet Valve Control
SD7533	1 of 1	01	15 Mar 07	Schematic – Dust Protection
SD7535	1 of 1	01	15 Mar 07	Spark Arrestor
SD7536	1 of 1	01	18 Apr 07	Differential Flow Monitor
SD7538	1 of 1	01	27 Mar 07	Continuous Flow Outlet Orifice
SD7449	1 of 1	02	15 Mar 07	Wiring Diagram – Low temperature
SD7500	1 of 1	01	25 Apr 07	Outlet Orifice Closing Device
SD7448	1 of 1	04	15 Mar 07	Low Temperature Housing
SD7281	1 to 2	06	20 Feb 07	Certification Label Details
SD7782	1 to 2	03	20 Feb 07	Minipurge Data Sheet

Issue 5

Number	Sheet	Rev.	Date	Description
SD7781	1 to 2	7	12 Feb 09	Minipurge ATEX/IECEx Certification Label
SD7448	1 of 1	05	12 Feb 09	Minipurge Low temperature Housing

Issue 6

Number	Sheets	Rev.	Date	Description
SD7781	1 to 2	8	23 Dec 10	Minipurge ATEX/IECEx Certification Label
SD7282	1 to 2	4	21 Dec 10	Minipurge Data Sheet
SD7913	1 of 1	2	21 Dec 10	Minipurge electronic timer

Issue 7

Number	Sheets	Rev.	Date	Description
SD7781	1 of 1	6	23 Nov 11	Minipurge Low Temperature Housing
SD7448	1 of 1	5	23 Nov 11	Minipurge Data Sheets
SD7782	1 & 2	5	23 Nov 11	Minipurge ATEX/IECEx Certification Label
SD7533	1 to 3	9	23 Nov 11	Minipurge Dust Protection Schematic
SD7533	1 of 1	2	23 Nov 11	Minipurge HP Sensor

Issue 8

Number	Sheets	Rev.	Date	Title
SD7781	1 to 3	10	05 Oct 12	Minipurge Certification Label

Page 1 of 4

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DD 544.09 Rev 2018-04-20

Page 2 of 4



Certificate Annex

Certificate Number: Sira 01ATEX1295X
Equipment: MiniPurge Purge Controller
Applicant: EXPO Technologies Limited

Certificate Number: Sira 01ATEX1295X
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Certificate Annex

Certificate Number: Sira 01ATEX1295X
Equipment: MiniPurge Purge Controller
Applicant: EXPO Technologies Limited

Issue 10

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
SD7281	1 to 4	12	15 April 16	Minipurge Certification Label
SD8243	1 of 1	1	15 April 16	High Temperature Vortex Cooler & Logic Isolator
SD8244	1 of 1	2	20 April 16	High Temperature 60°C Tamb/Purge Air 60°C Option - H6
SD8245	1 to 2	2	20 April 16	High Temperature 60°C Tamb/Purge Air 70°C Option - H7
SD8251	1 to 8	1	20 April 16	Minipurge Manual Extracts

Issue 11

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
SD7282	1 to 2	8	20 Sep 16	Minipurge Data Sheet
SD7281	1 to 5	13	16 Sep 16	Minipurge Certification Label
SD8244	1 of 1	3	16 Sep 16	High Temperature 60°C Tamb/Purge Air 60°C Option - H6
SD8245	1 to 2	3	16 Sep 16	High Temperature 60°C Tamb/Purge Air 70°C Option - H7
SD8251	1 to 8	2	16 Sep 16	Minipurge Manual Extracts
SD8259	1 to 3	2	20 Sep 16	Combined Low Temperature (L1) and High Temperature (H6)
SD8258	1 to 2	1	16 Sep 16	Combined Low Temperature (L1) and High Temperature (H7)

Issue 12

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
SD7281	1 to 5	14	28 Feb 17	Minipurge Certification Label
SD8251	1 to 8	3	28 Feb 17	Minipurge Manual Extracts

Issue 13

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
EP99-2-1	1 of 1	4	04 Oct 18	Internal switches
EP99-7-9	1 to 2	3	04 Oct 18	Outlet Valve Circuit N/O
SD7281	1 to 6	15	04 Oct 18	Minipurge Certification Label
SD7282	1 to 3	9	04 Oct 18	Minipurge Data Sheet
SD7448	1 of 3	12	04 Oct 18	Low Temperature Housing
SD7449	1 of 1	9	04 Oct 18	Low Temperature Wiring
SD7555	1 to 5	4	04 Oct 18	RLV Configurations
SD8251	1 to 10	4	04 Oct 18	Minipurge Manual Extracts
SD8229	1 of 1	2	04 Oct 18	Typical Minipurge with Electronic Timer
SD8340	1 of 1	1	04 Oct 18	Typical Earth Stud Assembly

Issue 14

No new drawings were introduced.

Issue 15

Drawing	Sheets	Rev.	Date (Stamp)	Title
EP99-2-1	1 to 2	04	30 Nov 20	Minipurge Type 'X' Leakage Compensation
EP99-2-8	1 to 2	04	30 Nov 20	Delay Before Trip "DT" and On/Off Controls
SD7281	1 to 7	16	24 Nov 20	Minipurge ATEX/IECEx Certification Label
SD7282	1 to 3	10	30 Nov 20	Minipurge Data Sheet
SD7537	1 to 4	2	30 Nov 20	Fault Evaluation
SD7555	1 to 5	08	17 Dec 20	RLV Configurations

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DOD 544.09 Rev 2018-04-20

Page 3 of 4

DOD 544.09 Rev 2018-04-20

Page 4 of 4

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<p align="center">INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres</p> <p>for rules and details of the IECEx Scheme visit www.iecex.com</p>													
<p>Certificate No.: IECEx SIR 07.0027X</p> <p>Date of issue: 2021-02-02</p>		<p>Certificate No.: IECEx SIR 07.0027X</p> <p>Date of issue: 2021-02-02</p>											
<p>Optional accessory: Page 1 of 4</p> <p>Type of Protection: Current Issue No: 12</p> <p>Marking: Refer to the Annex</p>		<p>Certificate history:</p> <table> <tr><td>Issue 11 (2015-11-09)</td></tr> <tr><td>Issue 10 (2017-03-31)</td></tr> <tr><td>Issue 9 (2016-10-25)</td></tr> <tr><td>Issue 8 (2016-06-15)</td></tr> <tr><td>Issue 7 (2015-07-22)</td></tr> <tr><td>Issue 6 (2012-11-27)</td></tr> <tr><td>Issue 5 (2012-10-23)</td></tr> <tr><td>Issue 4 (2011-12-09)</td></tr> <tr><td>Issue 3 (2011-03-08)</td></tr> <tr><td>Issue 2 (2011-01-12)</td></tr> </table>		Issue 11 (2015-11-09)	Issue 10 (2017-03-31)	Issue 9 (2016-10-25)	Issue 8 (2016-06-15)	Issue 7 (2015-07-22)	Issue 6 (2012-11-27)	Issue 5 (2012-10-23)	Issue 4 (2011-12-09)	Issue 3 (2011-03-08)	Issue 2 (2011-01-12)
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Issue 4 (2011-12-09)													
Issue 3 (2011-03-08)													
Issue 2 (2011-01-12)													
<p>Manufacturer: EXPO Technologies Ltd Unit 2, The Summit Hanworth Road Sunbury on Thames Surrey TW16 5DB United Kingdom</p> <p>Additional manufacturing locations: Expo Technologies, Inc. 9140 Ravenna Road Unit 3 Twinsburg Ohio 44087 United States of America</p> <p>Chinaworkers: Qingdao Expo Mechanical and Electrical Technologies Ltd 329-Huashan Er Lu, Jimo City Qingdao, Shandong Province 266200 China</p>													
<p>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 Oz and Operational Documents as annexed.</p>													
<p>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</p>													
<p>IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements Edition:6.0</p> <p>IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"</p> <p>IEC 60079-2:2014-07 Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p" Edition:6.6</p>													
<p>This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.</p>													
<p>TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:</p>													
<p>Test Reports:</p> <table> <tr><td>GB/SIREX/TR07.0046/00</td></tr> <tr><td>GB/SIREX/TR11.0304/00</td></tr> <tr><td>GB/SIREX/TR16.0114/00</td></tr> <tr><td>GB/SIREX/TR18.0198/00</td></tr> </table> <p>Quality Assessment Report:</p> <table> <tr><td>GB/SIR/QAR07.0012/17</td></tr> </table>				GB/SIREX/TR07.0046/00	GB/SIREX/TR11.0304/00	GB/SIREX/TR16.0114/00	GB/SIREX/TR18.0198/00	GB/SIR/QAR07.0012/17					
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GB/SIREX/TR18.0198/00													
GB/SIR/QAR07.0012/17													
<p>Approved for issue on behalf of the IECEx Certification Body: Neil Jones Position: Certification Manager Signature: (for printed version) Date:</p>													
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<p>Certificate issued by: SIRA Certification Service CSA Group Unit 6, Havardon Industrial Park Havardon, Deeside, CH5 3JS United Kingdom</p>		 											
<p align="right">IECEx 07.0027X</p>													

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<p>Optional accessory: Page 1 of 4</p> <p>Type of Protection: Pressurised</p> <p>Marking: Refer to the Annex</p>		<p>Certificate history:</p> <table> <tr><td>Issue 11 (2015-11-09)</td></tr> <tr><td>Issue 10 (2017-03-31)</td></tr> <tr><td>Issue 9 (2016-10-25)</td></tr> <tr><td>Issue 8 (2016-06-15)</td></tr> <tr><td>Issue 7 (2015-07-22)</td></tr> <tr><td>Issue 6 (2012-11-27)</td></tr> <tr><td>Issue 5 (2012-10-23)</td></tr> <tr><td>Issue 4 (2011-12-09)</td></tr> <tr><td>Issue 3 (2011-03-08)</td></tr> <tr><td>Issue 2 (2011-01-12)</td></tr> </table>		Issue 11 (2015-11-09)	Issue 10 (2017-03-31)	Issue 9 (2016-10-25)	Issue 8 (2016-06-15)	Issue 7 (2015-07-22)	Issue 6 (2012-11-27)	Issue 5 (2012-10-23)	Issue 4 (2011-12-09)	Issue 3 (2011-03-08)	Issue 2 (2011-01-12)
Issue 11 (2015-11-09)													
Issue 10 (2017-03-31)													
Issue 9 (2016-10-25)													
Issue 8 (2016-06-15)													
Issue 7 (2015-07-22)													
Issue 6 (2012-11-27)													
Issue 5 (2012-10-23)													
Issue 4 (2011-12-09)													
Issue 3 (2011-03-08)													
Issue 2 (2011-01-12)													
<p>Manufacturer: EXPO Technologies Ltd Unit 2, The Summit Hanworth Road Sunbury on Thames Surrey TW16 5DB United Kingdom</p>													
<p>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</p>													
<p>IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements Edition:6.0</p> <p>IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"</p> <p>IEC 60079-2:2014-07 Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p" Edition:6.6</p>													
<p>This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.</p>													
<p>TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:</p>													
<p>Test Reports:</p> <table> <tr><td>GB/SIREX/TR07.0046/00</td></tr> <tr><td>GB/SIREX/TR11.0304/00</td></tr> <tr><td>GB/SIREX/TR16.0114/00</td></tr> <tr><td>GB/SIREX/TR18.0198/00</td></tr> </table> <p>Quality Assessment Report:</p> <table> <tr><td>GB/SIR/QAR07.0012/17</td></tr> </table>				GB/SIREX/TR07.0046/00	GB/SIREX/TR11.0304/00	GB/SIREX/TR16.0114/00	GB/SIREX/TR18.0198/00	GB/SIR/QAR07.0012/17					
GB/SIREX/TR07.0046/00													
GB/SIREX/TR11.0304/00													
GB/SIREX/TR16.0114/00													
GB/SIREX/TR18.0198/00													
GB/SIR/QAR07.0012/17													
<p>Approved for issue on behalf of the IECEx Certification Body: Neil Jones Position: Certification Manager Signature: (for printed version) Date:</p>													
<p>1. This certificate and schedule may only be reproduced in full, or the property of the issuing body. 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 www.iecex.com or use of this QR Code.</p>													
<p>Certificate issued by: SIRA Certification Service CSA Group Unit 6, Havardon Industrial Park Havardon, Deeside, CH5 3JS United Kingdom</p>		 											
<p align="right">IECEx 07.0027X</p>													

 IECEx Certificate of Conformity	 IECEx Certificate of Conformity		
IECEx SIR 07.0027X			
Certificate No.:	Page 3 of 4	Certificate No.:	Page 4 of 4
Date of issue:	2021-02-02	Date of issue:	2021-02-02
Issue No.:	12	Issue No.:	12
DETAILS OF CERTIFICATE CHANGES (for issues 1 and above) This issue, Issue 12, recognises the following changes; refer to the certificate annex to view a comprehensive history:			
<ol style="list-style-type: none"> 1. To recognise a new option code (LD) for addition of LED, resulting in the introduction of a change to the marking, the introduction of a Specific Condition of Use and the introduction of IEC 60079-11:2011 Edition 6.0 as assessment standard. 2. To extend the range of overpressure relief valve (RLV) sizes up to RLV400 and to include all possible RLV sizes, within minimum 25 mm and maximum 400 mm RLV bore size. 3. To introduce an alternative configuration for the Delay Trip (DT) option. 4. To introduce an alternative configuration for the leakage compensation system. 5. To record the addition of alternative manufacturing sites as follows: Expo Technologies, Inc. 9140 Ravenna Road, Unit 3 Twinsburg Ohio OH 44087 United States of America Qingdao Expo Mechanical and Electrical Technologies Ltd 329 Huashan Er Lu, Jimo City Qingdao, Shandong Province 266200 China 			
Annex:			
IECEx SIR07_0027X annexe_Iss12.pdf			

 IECEx Certificate of Conformity	 IECEx Certificate of Conformity		
IECEx SIR 07.0027X			
Certificate No.:	Page 3 of 4	Certificate No.:	Page 4 of 4
Date of issue:	2021-02-02	Date of issue:	2021-02-02
Issue No.:	12	Issue No.:	12
EQUIPMENT AND SYSTEMS COVERED BY THIS CERTIFICATE ARE AS FOLLOWS:			
<p>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 MiniPurge Control Units provide one of the following four methods of purge operation.</p> <ul style="list-style-type: none"> • LC1: 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 • DP – Dust Protection (for pressurization only) <p>The MiniPurge control unit may be supplied within a heated enclosure to permit the use of the system within an ambient temperature down to -60°C.</p> <p>See Annex for more information.</p>			
SPECIFIC CONDITIONS OF USE: YES AS SHOWN BELOW:			
<ol style="list-style-type: none"> 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 MiniPurge Control Unit is installed in accordance with the equipment certificate that covers the combination of the pressurised enclosure(s) and MiniPurge Control 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 MiniPurge Control Unit. 4. This MiniPurge Control Unit shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination. This certificate does not cover its combination. 5. The purge controller, low temperature version, shall be protected by a system that ensures that it cannot be energised if the temperature of the controller logic air 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. 6. Where a Vortex cooler is fitted, the hot air outlet pipe shall be kept free from obstructions and blockage. 7. The following routine tests are to be carried out. <ul style="list-style-type: none"> The vortex cooler is functioning correctly (H6 and H7 options ONLY) The pneumatic logic isolator is functioning correctly (H6 and H7 options ONLY) 8. When using the 'LD' option, the LEDs have the following IS input parameters and it shall be supplied from a suitable intrinsically safe power supply for Zone 1 or Zone 2 depending on which zone the purge controller is being installed. $UI = 30V$, $Ii = 100mA$, $Pi = 1W$, $Ci = 0$ and $Li = 0$. 			



IECEx SIR 07.0027X Issue 12

Annex to:

EXPO Technologies Limited

Applicant:

Purge Controller

Apparatus:

IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

Apparatus:

**Standard versions:**Ex [pxb] IIC T6 Gb
Ex [pxb] IIC T6 Gb
(Ta -20°C to +55°C)**Standard /ET/ES versions:**Ex [pxb] IIC T85°C Db
Ex [pxb] IIC T85°C Db
(Ta -20°C to +55°C)**Low temp/ES versions:**Ex [pxb] IIC T3 Gb
Ex [pxb] IIC T3 Gb
(Ta -20°C to +55°C)**High temperature versions - H6:**Ex [pxb] IIC T4 Gb
(Ta -20°C to +55°C)
[Purge air temp. up to +60°C]**High temperature versions - H7:**Ex [pxb] IIC T4 Gb
(Ta -20°C to +60°C)
[Purge air temp. up to +70°C]**Combined Versions****Low temp. with High temp. H6**Ex [pxb] db e IIC T3 or T4 Gb
(Ta -60°C to +60°C)
[Purge air temp. up to +60°C]**Low temp. with High temp. H7**Ex [pxb] db e IIC T3 or T4 Gb
(Ta -60°C to +60°C)
[Purge air temp. up to +70°C]**Standard versions LD:**Ex [pxb] IIC T4 Gb
(Ta -20°C to +55°C)**Standard ET/ES/LD Versions**Ex [pxb] IIC T3 or T4 Gb
(Ta -20°C to +55°C)**High temp. with High temp. H6 and Et/ES**Ex [pxb] db e IIC T3 or T4 Gb
(Ta -60°C to +60°C)
[Purge air temp. up to +60°C]**Low temp. with High temp. H7 and Et/ES**Ex [pxb] db e IIC T3 or T4 Gb
(Ta -60°C to +60°C)
[Purge air temp. up to +70°C]**High temp. with High temp. H6 and Et/ES**Ex [pxc] IIC T6 Gb
Ex [pxc] IIC T6 Gb
(Ta -20°C to +55°C)**High temp. with High temp. H7 and Et/ES**Ex [pxc] IIC T4 Gb
(Ta -20°C to +60°C)**High temp. with High temp. H6 and Et/ES**Ex [pxc] IIC T4 Gb
(Ta -20°C to +60°C)**High temp. with High temp. H7 and Et/ES**Ex [pxc] IIC T4 Gb
(Ta -20°C to +70°C)**Sira Certification Service**Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3JS, United Kingdom
Tel: +44 (0) 1244 670900
Email: ukinfo@siragroup.org
Web: www.siragroupuk.org**Sira Certification Service**Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3JS, United Kingdom
Tel: +44 (0) 1244 670900
Email: ukinfo@siragroup.org
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Date: 02 February 2021

Page 2 of 7

Form 9530 Issue 1

Page 1 of 7

Date: 02 February 2021

Page 1 of 7

Form 9530 Issue 1

Model Number Designation for IECEx approved MiniPurge systems	
a	Size or Capacity Option codes (Added only if used)
1	MiniPurge with Purge Flow Capacity up to 150 N/min.
2	MiniPurge with Purge Flow Capacity up to 300 N/min.
3	MiniPurge with Purge Flow Capacity up to 600 N/min.
4	MiniPurge with Purge Flow Capacity up to 2000 N/min.
5	MiniPurge with Purge Flow Capacity up to 6000 N/min.
6	MiniPurge with Purge Flow Capacity above 6000 N/min.
7	MiniPurge with Purge Flow Capacity above 8000 N/min.
b	Purging Type
X	X Presurization.
Y	Y Presurization.
Z	Z Presurization.
cc	Action after initial purging.
LC	Lecter 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 office.
CFHP	Continuous (lower) Flow after initial High Purge.
DP	Dust Protection (pressurization only).
dm	Material of the Control Unit Endosure
al	Aluminium alloy
cs	Mild steel, painted
ss	Stainless steel
bp	Batch plate only
co	Classic 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	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
EE	Electronic Timer with EPBS
ET	Electronic Timer (not EPBS option)
FM	Flow Meters fitted.
H6	High Temperature Farni -20°C to +60°C, Air Supply Max Temp +60°C.
H7	High Temperature Farni -20°C to +60°C, Air Supply Max Temp +70°C.
HP	System LCo or Cf with High Pressure Sensor.
IS	Internal Switches suitable for ExI circuits.
LS	Local Benting.
LD	LED Opton
LT	Low Temperature.
MO	Mechanical Bungee or Delay timer.
MT	Mechanical Bungee or Delay timer.
OB	On/Off switch controlling Protective gas and logic supply.
OC	On/Off switch controlling Protective gas supply only.
OS	Outlet (Officer) 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 unresized enclosures purged in parallel.
DXXX	Special design for specific flow rates, or other non-certification related options.



IECEx SIR 07.0027X Issue 12

Applicant: EXPO Technologies Limited

Apparatus: Purge Controller

Annex to: IECEx SIR 07.0027X Issue 12

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Apparatus: Purge Controller



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Applicant: EXPO Technologies Limited

Apparatus: Purge Controller

Relief Valve - The MiniPurge controller 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 over pressure 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, 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 (HPS code) - If the pressure in the pressurized enclosure rises above the setting of the High Pressure sensor, the controller resets cutting off the power to the endosure. 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 (HPS 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 pressurized 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 O.

Conditions of Manufacture

- 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 MiniPurge Control 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 MiniPurge Control 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 MiniPurge Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

Verification of Purging Overpressure protection

Where the HPS is specified an overpressure shall be simulated whilst the MiniPurge Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.



Annex to: IECEx SIR 07.0027X Issue 12

Applicant: EXPO Technologies Limited

Apparatus: Purge Controller

Annex to: IECEx SIR 07.0027X Issue 12

Applicant: EXPO Technologies Limited

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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 and High Temperature H6 or H7 versions shall appear in the product marking applied to outer stainless steel or painted mild steel enclosure.

5 The MiniPurge Controller shall not be marked as suitable for use in explosive dust atmospheres when a non-metallic or painted housing is used.

6 When the optional electronic timer (IECEx FME 1.0.0001) is fitted the manufacturer shall take into account any certification restrictions or special conditions for safe use that are applicable to the certified device.

7 When an Ex d junction box with flange openings is used in the low temperature (LT) versions of the MiniPurge controller, the manufacturer shall ensure that it is installed such that there are no obstructions within 40mm of the Ex junction box flameproof flanged joints.

Full Certificate change history

Issue 1 – this Issue introduced the following changes:

- i. To permit the inclusion of the following codings for the Low Temperature MiniPurge Enclosure
Ex [i] dem IIC T4
Ex pd II 21 T135°C
(Ta=50°C to +55°C)

Issue 2 – this Issue 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-LS*-*** in the Mini Purge, the certification includes 'a' 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.

Issue 3 – this Issue introduced the following change:

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

Issue 4 – this Issue introduced the following change:

- i. 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: 2011 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:

- i. The recognition of the Applicant's address change from Summer Road, Thames Ditton, Surrey KT7 0RH to Unit 2, The Summit, Hanworth Road, Sunbury on Thames, Surrey TW16 5DB.

Issue 6 – this Issue introduced the following change:

- i. Issued to allow GB/SIR/EXTR12.0251/00 to be replaced by GB/SIR/EXTR12.0251/01

Sira Certification Service

Date: 02 February 2021

Page 3 of 7

Page 4 of 7

Form 9530 Issue 1

Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3JS, United Kingdom
Tel: +44 (0) 1244 670900
Email: ukinfo@siragroup.org
Web: www.siragroupuk.org

Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3JS, United Kingdom
Tel: +44 (0) 1244 670900
Email: ukinfo@siragroup.org
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IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

Annex to:

Applicant:

Apparatus:

IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

Issue 7 – this Issue introduced the following changes:

- The inlet air temperature sensing system was changed; as a consequence, a Special Condition For Safe Use was amended.
- A Local Sensing (LS) option was introduced.
- The RLV configuration was changed to show an optional alternative position of the flow sensing connection.
- The recognition of minor drawing modifications; the addition of notes and the clarification of the markings etc., these amendments are administrative that do not affect the aspects of the product that are relevant to explosion safety.
- The minimum ambient temperature limit for the Low Temperature and Low Temperature/ET versions was lowered from -50°C to -60°C.
- Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-2:2014 Edition 6, the markings were updated accordingly.

Issue 8 – this Issue introduced the following changes:

- The introduction of the:
 - H6 high temperature variant of the MiniPurge Purge Controller with an ambient temperature range of -20°C to +60°C, and permitting a maximum purge air temperature of 60°C. Optionally this may include an intrinsically safe electronic timer (ET).

The MiniPurge and other components are fitted inside the same enclosure which is made from stainless steel (or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting, Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller. A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

The optional terminal box (T/B) may be any suitable IECEx certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-20°C to +60°C), with a minimum Temperature Class of T4 (135°C),

- H7 - high temperature variant of the MiniPurge Purge Controller with an ambient temperature range of -20°C to +60°C, and permitting a maximum purge air temperature of 70°C. Optionally this may include an intrinsically safe electronic timer (ET).

The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel (or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting, Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

One cooled chamber contains the system control logic circuit, the Vortex Cooler and the logic isolator. The other hot chamber contains all of the purge air flow path parts rated for continuous operation at a minimum of 70°C. The two chambers are thermally insulated from each other.

The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller.



IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

Annex to:

Applicant:

Apparatus:

IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

The optional terminal box (T/B) may be any suitable IECEx certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-20°C to +60°C), with a minimum Temperature Class of T4 (135°C).

Issue 9 – this issue introduced the following changes:

- The introduction of the Combined Low Temperature (LT) and High Temperature (H6 or H7) options:
 - Combined Low Temperature (LT) and High Temperature (H6) options – Combination of the previously certified Low temperature and High temperature (H6) versions, with an ambient temperature range of -60°C to +60°C and permitting a maximum purge air temperature of 60°C. Optionally this may include an intrinsically safe electronic timer (ET).

This version has two separate variants, as detailed below:

- The MiniPurge and other components are fitted inside the same enclosure which is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.
- The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

The Vortex Cooler is set to operate at +50°C and is used to cool the MiniPurge pneumatic logic controller. A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at +5°C.

The optional terminal box (T/B) may be any suitable ATEX certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C). Combined Low Temperature (LT) and High Temperature (H7) options – Combination of the previously certified Low temperature and High temperature (H7) versions, with an ambient temperature range of -60°C to +60°C and permitting a maximum purge air temperature of 70°C. Optionally this may include an intrinsically safe electronic timer (ET).

The MiniPurge and other components are fitted inside an enclosure which is separated into two chambers, this is made from stainless steel or painted (0.2mm maximum thickness) mild steel with a minimum thickness of 1.5mm or 2.5 mm, and earth (ground) terminal compliant with the listed standards, with the Vortex hot air outlet pipe exiting on any face which permits free venting. Also transiting the walls of the enclosure are the main purge air inlet which is fitted to the regulator and outlet entries, the optional pneumatic outputs, and optionally, the terminal box. This terminal box may contain intrinsically safe barriers and/or terminals, with electrical cables entering it via cable glands.

Sira Certification Service

Unit 6 Hawarden Industrial Park,

Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900

Email: ukinfo@siragroup.org

Web: www.csagroup.org

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Unit 6 Hawarden Industrial Park,

Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900

Email: ukinfo@siragroup.org

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Date: 02 February 2021

Page 6 of 7

Form 9530 Issue 1

Date: 02 February 2021

Page 5 of 7

Form 9530 Issue 1

IECEx 07.0027X



IECEx SIR 07.0027X Issue 12

EXPO Technologies Limited

Purge Controller

Annex to:**Applicant:****Apparatus:**

One cooled chamber contains the system control logic circuit, the Vortex Cooler and the logic isolator. The other hot chamber contains all of the purge air flow path parts rated for continuous operation at a minimum of 70°C. The two chambers are thermally insulated from each other.

The Vortex Cooler is set to operate at +30°C and is used to cool the MiniPurge pneumatic logic controller.

A heat exchanger may optionally be fitted in the vortex cool air pipe supplying the MiniPurge system control unit logic circuit.

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at +5°C.

The optional terminal box (T/B) may be any suitable IECEx certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C).

- i. To remove IS marking which was incorrectly applied in a previous variation.
- ii. To permit the addition of a previously assessed drawing which was not listed in a previous variation.

Issue 10 – this issue introduced the following changes:

- i. To align the manufacturer's product name between certificates, resulting in the model designation table being amended in the certificate annex and a Condition of Manufacture being amended.
- ii. The (ES) option was introduced. This is the (ET) electronic timer option complete with an Electro Pneumatic Power Supply (EPPS), covered by certificate IECEx FME 10.0001 X, resulting in the model designation table being amended in the certificate annex, to recognise the new (ES) option and amend the (ET) option. The assessment for the introduction of the (ES) option is against the listed electrical standards. A non-electrical assessment has not been conducted.
- iii. The RLV configuration was changed to show an alternative position of the flow sensing connection.
- iv. The main certification coding for the low temperature versions of the mini-purge controller, certified for use in gas atmospheres, were amended with 'd' being replaced with 'db' and 'm' being removed in recognition of the change of heater certification coding introduced in Issue 7 of certificate IECEx STR 07.0027X.
- v. The withdrawal of the dust certification coding from the main certification coding for the low temperature versions of the minipurge controller.
- vi. The withdrawal of approved drawing SP81.96.
- vii. To assess and document minor modifications to the drawings in the certification package for this equipment, resulting in the introduction of a Condition of Manufacture.

Issue 11 – this issue introduced the following changes:

- i. To recognise a new option code (LD) for addition of LED, resulting in the introduction of a change to the marking, the introduction of a Specific Condition of Use and the introduction of IEC 60079-11:2011 Edition 6.0 assessment standard.
- ii. To extend the range of overpressure relief valve (RLV) sizes up to RLV400 and to include all possible RLV sizes, within minimum 25 mm and maximum 400 mm RLV bore size.
- iii. To introduce an alternative configuration for the Delay Trip (DT) option.
- iv. To introduce an alternative configuration for the leakage compensation system.
- v. To record the addition of alternative manufacturing sites as follows:
 - a. Expo Technologies, Inc. 91-40 Ravenna Road, Unit 3, Twinsburg, Ohio OH 44087, United States of America
 - b. Qingdao Expo Mechanical and Electrical Technologies Ltd., 329 Huashan Er Lu Jimo City, Qingdao, Shandong Province 266200,

Date: 02 February 2021**Page:** 7 of 7**Form 9530 Issue 1****Sira Certification Service**

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom
Tel: +44 (0) 1244 679000
Email: ukinfo@csagroup.org
www.csagroup.org



UNITED KINGDOM CONFORMITY ASSESSMENT

UK TYPE EXAMINATION CERTIFICATE

1 Equipment Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

2 Certificate Number: **CSAE 21UKEX1067X** Issue: 0
 3 Product: **MiniPurge Purge Controller**
 4 Manufacturer: **EXPO Technologies Limited**
 5 Address: Unit 2
 The Summit
 Hanworth Road
 Sunbury on Thames
 Surrey TW16 5DB
 UK

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

8 CSA Group Testing UK Limited, Approved Body number 0518, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. 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 has been assured by compliance with:

EN 60079-0:2012/A11:2013**EN 60079-2:2014**

Except in respect of those requirements listed at Section 16 of the schedule to this certificate. The above standards may not appear on the UKAS Scope of Accreditation, but have been added through flexible scope of accreditation, which is available on request.

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

11 This UK TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall be in accordance with Regulation 41 and include the following:

Refer to the Schedule

Name: J.A. May
 Title: Director of Operations



Certification No. CSAE21UKEX1067X
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 DQD544.21 Issue 2 (2021-04-23)
 Page 1 of 11

**SCHEDULE****UK TYPE EXAMINATION CERTIFICATE**CSAE 21UKEX1067X
Issue 0**Marking**

Standard versions:	Standard ET/ES versions:	Low temperature versions:	High temperature/ET/ES versions - H6:	High temperature versions - H7:	Combined Versions	Low temp. with High temp. H6	Low temp. with High temp. H7	Low temp. with High temp. H7 and ET/ES	Standard ET/ES/LD Versions	UKCA
II 2(2) GD Ex [pb] IIC T6 Gb Ex [pb] IIC T85°C Db (Ta -20°C to +55°C)	II 2(2) GD Ex [pb] IIC T6 Gb Ex [pb] IIC T85°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pb] ia IIC T3 Gb Ex [pb] db e IIC T4 Gb (Ta -60°C to +55°C)	II 2(2) G Ex [pb] ia IIC T5 Gb Ex [pb] ia IIC T100°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +70°C]	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +70°C]	II 2(2) G Ex [pb] ia IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +70°C]	
II 2(2) GD Ex [pb] IIC T6 Gb Ex [pb] IIC T85°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pb] ia IIC T6 Gb Ex [pb] db e IIC T4 Gb (Ta -60°C to +55°C)	II 2(2) G Ex [pb] ia IIC T3 Gb Ex [pb] db e IIC T4 Gb (Ta -60°C to +55°C)	II 2(2) G Ex [pb] ia IIC T5 Gb Ex [pb] ia IIC T100°C Db (Ta -20°C to +55°C)	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +70°C]	II 2(2) G Ex [pb] ia IIC T4 Gb (Ta -20°C to +60°C) [Purge air temp. up to +70°C]	II 2(2) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(2) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +70°C]	
II 2(3) GD Ex [pb] IIC T6 Gb Ex [pb] IIC T85°C Db (Ta -20°C to +55°C)	II 2(3) G Ex [pb] db e IIC T3 Gb (Ta -20°C to +55°C)	II 2(3) G Ex [pb] db e IIC T4 Gb (Ta -20°C to +60°C)	II 2(3) GD Ex [pb] ia IIC T6 Gb Ex [pb] db e IIC T4 Gb (Ta -20°C to +55°C)	II 2(3) G Ex [pb] ia IIC T6 Gb Ex [pb] db e IIC T4 Gb (Ta -20°C to +55°C)	II 2(3) G Ex [pb] db e IIC T3 Gb (Ta -20°C to +55°C)	II 2(3) G Ex [pb] db e IIC T4 Gb (Ta -20°C to +60°C)	II 2(3) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(3) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +60°C]	II 2(3) G Ex [pb] db e IIC T3 or T4 Gb (Ta -60°C to +60°C) [Purge air temp. up to +70°C]	

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 DQD544.21 Issue 2 (2021-04-23)
 Page 2 of 11



SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 21UKEX1067X
Issue 0

DESCRIPTION OF PRODUCT

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 MiniPurge 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 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

Dp - Dust Protection (for pressurization only)

The MiniPurge control unit may be supplied within a heated enclosure to permit the use of the system within an ambient temperature down to -60°C.

Relief Valve - The MiniPurge controller 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, RLV36, RLV75, RLV104, RLV125, RLV150 and RLV200

The outlet of each relief valve is fitted with a spark arrester, 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 Orifice e.g. ¼" NPT or 27° 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, 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 LC 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.



SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 21UKEX1067X
Issue 0

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.



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DQ0544.21 Issue 2 (2021-04-23)
Page 3 of 11



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This certificate and its schedules may only be reproduced in its entirety and without change
DQ0544.21 Issue 2 (2021-04-23)
Page 4 of 11



SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 21UKEX1067X
Issue 0

Size or Capacity		Model Number: 1 X LC cs DS SS AA MO FM OR TW Key: a b cc mm Example option codes	
1	MinPurge with Purge Flow Capacity up to 225 N/min.		
2	MinPurge with Purge Flow Capacity up to 150 N/min.		
3	MinPurge with Purge Flow Capacity up to 900 N/min.		
4	MinPurge with Purge Flow Capacity up to 2000 N/min.		
5	MinPurge with Purge Flow Capacity up to 6000 N/min.		
6	MinPurge with Purge Flow Capacity up to 3000 N/min.		
7	MinPurge with Purge Flow Capacity above 8000 N/min.		
Pressurization Type		RTD's are fitted to the air inlet pipe-work and inside the purge controller enclosure.	
Y	Y Pressurization	RTD's are fitted to the air inlet pipe-work and inside the purge controller enclosure.	
Z	Z Pressurization	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 II T6 under BAS 98ATEX3008X. Other alternative 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 or more restrictive Temperature Class.	
cc	Action after initial purging	To permit the pressurisation of enclosures for combustible dusts in accordance with IEC61241-4-2001 and modification of the marking to include one of the following: [Ex pD] II T20°C 21 (Ta = -20°C to +55°C) [Ex pd] II T85°C 21 (Ta = -20°C to +55°C) - (used with the low temperature versions) [Ex] II (2) G D	
LC	Leakage Compensation only after initial High Purge	Any suitable Category 2 approved cable gland may be used, if it can be used with the ambient temperature range.	
CF	Continuous Flow (same flow rate during and after purging)	To permit the pressurisation of enclosures for combustible dusts in accordance with IEC61241-4-2001 and modification of the marking to include one of the following: [Ex pD] II T20°C 21 (Ta = -20°C to +55°C) [Ex pd] II T85°C 21 (Ta = -20°C to +55°C) - (used with the standard temperature versions)	
CF2	Two Flow CF System with initial High Purge rate but only one orifice	The introduction of a high pressure sensor for the LC option.	
CFHP	Continuous (lower) Flow after initial High Purge	The introduction of a high pressure sensor for the LC option.	
DP	Dust Protection (pressurization only)	The introduction of a high pressure sensor for the LC option.	
mm	Material of the Control Unit Enclosure	The introduction of a high pressure sensor for the LC option.	
al	Aluminium alloy	The introduction of a high pressure sensor for the LC option.	
ss	Sainless steel	The introduction of a high pressure sensor for the LC option.	
bp	Back Plate only	The introduction of a high pressure sensor for the LC option.	
co	Chassis only	The introduction of a high pressure sensor for the LC option.	
pm	Panel mounting	The introduction of a high pressure sensor for the LC option.	
nm	Non-Metallic	The introduction of a high pressure sensor for the LC option.	
Option codes (Added only if used)		The introduction of a high pressure sensor for the LC option.	
AA	Active Alarm output fitted.	The introduction of a high pressure sensor for the LC option.	
AC	Alarm cancellation circuit.	The introduction of a high pressure sensor for the LC option.	
AO	Alarm Only Action on Pressure or Flow Failure.	The introduction of a high pressure sensor for the LC option.	
AS	Alarm Action on Pressure or Flow failure*, Selector valve.	The introduction of a high pressure sensor for the LC option.	
CS	Containment System Monitor.	The introduction of a high pressure sensor for the LC option.	
DS	Delayed Trip after Pressure or Flow failure.	The introduction of a high pressure sensor for the LC option.	
DT	Electronic Timer with EPROM	The introduction of a high pressure sensor for the LC option.	
ES	Electronic Timer (not EPROM option)	The introduction of a high pressure sensor for the LC option.	
FM	Flow Meter(s) fitted.	The introduction of a high pressure sensor for the LC option.	
H6	High Temperature Lamb -20°C to +60°C, Air Supply Max Temp +60°C.	The introduction of a high pressure sensor for the LC option.	
H7	High Temperature Lamb -20°C to +60°C, Air Supply Max Temp +70°C.	The introduction of a high pressure sensor for the LC option.	
HP	System LC or CF with High Pressure Sensor	The introduction of a high pressure sensor for the LC option.	
IS	Internal Switches suitable for Ex i circuits.	The introduction of a high pressure sensor for the LC option.	
LS	Local Sensing.	The introduction of a high pressure sensor for the LC option.	
LD	LED Option	The introduction of a high pressure sensor for the LC option.	
LT	Low Temperature	The introduction of a high pressure sensor for the LC option.	
NO	Manual Overide fitted.	The introduction of a high pressure sensor for the LC option.	
MT	Mechanical Timer.	The introduction of a high pressure sensor for the LC option.	
OA	On/Off switch controlling Protective gas and Logic supply.	The introduction of a high pressure sensor for the LC option.	
OB	On/Off switch controlling logic supply only.	The introduction of a high pressure sensor for the LC option.	
OC	On/Off switch controlling Protective gas supply only.	The introduction of a high pressure sensor for the LC option.	
OS	Outlet (Orifice) Selector valve.	The introduction of a high pressure sensor for the LC option.	
OY	Outer valve pneumatically operated.	The introduction of a high pressure sensor for the LC option.	
PA	"Ex" switches built-in, with or without "Ex" Junction box	The introduction of a high pressure sensor for the LC option.	
PC	PC Pressure Control leakage Compensation Valve (Capex System.)	The introduction of a high pressure sensor for the LC option.	
PO	Pneumatic Output signals for Power and Alarm control.	The introduction of a high pressure sensor for the LC option.	
SP	Secondary Pressurization supply options.	The introduction of a high pressure sensor for the LC option.	
SS	Secondary Supply for protective gas and logic air.	The introduction of a high pressure sensor for the LC option.	
TW	Twin (or more) outputs for two or more separate pressurized enclosures purged in parallel	The introduction of a high pressure sensor for the LC option.	
DXxx	Special design for specific flow rates, or other non-certification related options.	The introduction of a high pressure sensor for the LC option.	



CSA Group Testing UK Ltd, Unit 6 Hawarden Industrial Park, Hawarden, CH5 3US, UK
 This certificate and its schedules may only be reproduced in its entirety and without change
 DQD544.21 Issue 2 (2021-04-23)
 Page 5 of 11



SCHEDULE
UK TYPE EXAMINATION CERTIFICATE
Issue 0

CSAE 21UKEX1067X

13.1 Incorporated amendments:

- The product description includes the following applicable amendments. Amendments directly applicable to UKCA certification have been included in this list.
- I The purge controller to be fitted inside an additional, heated, stainless steel enclosure that allows it to be used down to -50°C.
 - II The heater (500 W maximum) is manufactured by Intertec-Hess GmbH and coded Ex d IIC T3 (max) under PTB D2ATEX1041X. 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.
 - III The enclosure is made from 1.5mm 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.
 - IV RTD's are fitted to the air inlet pipe-work and inside the purge controller enclosure.
 - V 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 II T6 under BAS 98ATEX3008X. Other alternative 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 or more restrictive Temperature Class.
 - VI Any suitable Category 2 approved cable gland may be used, if it can be used with the ambient temperature range.
 - VII To permit the pressurisation of enclosures for combustible dusts in accordance with IEC61241-4-2001 and modification of the marking to include one of the following:
[Ex pD] II T20°C 21 (Ta = -20°C to +55°C)
[Ex pd] II T85°C 21 (Ta = -20°C to +55°C) - (used with the low temperature versions)
[Ex] II (2) G D
 - VIII To permit the inclusion of the following coding for the Low Temperature MiniPurge Enclosure:
Ex [p] den IIC T4
Ex pd II 21 T135°C
(Ta = -50°C to +55°C)
 - IX The introduction of the (ET) version, an alternative to the pneumatic or mechanical timer system, this incorporates an Electronic Timer Module ETM-1S*** in the Mini Purge, the certification includes 'a' marking when the ETM is fitted.
 - X The introduction of a high pressure sensor for the LC option.

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 DQD544.21 Issue 2 (2021-04-23)
 Page 6 of 11

**SCHEDULE****UK TYPE EXAMINATION CERTIFICATE**

CSAE 21UKEX1067X
Issue 0

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at +5°C.

The optional terminal box (TB) may be any suitably certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C).

XVIII A solenoid in the Expo Technologies Electronic Timer (ET) Module ETM-IS*** covered by certificate FM10ATEX0003X was replaced due to obsolescence resulting in a change of the temperature classification. The ET Module ETM-IS*** is incorporated in 'ET' versions of the purge controller as a result of this update, only the temperature class/marking of the 'Standard/ET' versions were affected and were therefore amended as follows, raising T6 to T5 and T95°C to T100°C.

XIX The (ES) option was introduced. This is the (ET) electronic timer option complete with an Electro Pneumatic Power Supply (EPPS), covered by certificate DEMKO 17ATEX1795X, resulting in the model designation table being amended in the product description, to recognise the new (ES) option and amend the (ET) option.

XX The RLV configuration was changed to show an alternative position of the flow sensing connection. XXI The main certification coding for the low temperature versions of the mini-purge controller, certified for use in gas atmospheres, were amended with 'd' being replaced with 'db' and 'm' being removed in recognition of the change of heater certification coding introduced in Variation 8 of certificate Siria 01ATEX1295X.

XXII The withdrawal of the dust certification coding from the main certification coding for the low temperature versions of the mini-purge controller.

XXIII The withdrawal of approved drawing SDB196.

XXIV To recognise a new option code (UD) for addition of LED, resulting in the introduction of a change to the marking, the introduction of a Specific Condition of Use and the introduction of EN 60079-11:2012 assessment standard.

XXV To extend the range of overpressure relief valve (RLV) sizes up to RLV400 and to include all possible RLV sizes, within minimum 25 mm and maximum 400 mm RLV bore size.

XXVI To introduce an alternative configuration for the Delay Trip (DT) option.

XXVII To introduce an alternative configuration for the leakage compensation system.

14 DESCRIPTIVE DOCUMENTS**14.1 Drawings**

Refer to Certificate Annex.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	02 July 2021	RB0078969A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF 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 apparatus contained within EN 60079-14 shall be applied.

**SCHEDULE****UK TYPE EXAMINATION CERTIFICATE**

CSAE 21UKEX1067X
Issue 0

At the bottom of the enclosure is fitted the heater, which is identical to that used in the Low Temperature version. This will operate at +5°C.

The optional terminal box (TB) may be any suitably certified Ex e or Ex d T/B, which is suitable for the ambient temperature range (-60°C to +60°C), with a minimum Temperature Class of T4 (135°C).

XVIII A solenoid in the Expo Technologies Electronic Timer (ET) Module ETM-IS*** covered by certificate FM10ATEX0003X was replaced due to obsolescence resulting in a change of the temperature classification. The ET Module ETM-IS*** is incorporated in 'ET' versions of the purge controller as a result of this update, only the temperature class/marking of the 'Standard/ET' versions were affected and were therefore amended as follows, raising T6 to T5 and T95°C to T100°C.

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XX The RLV configuration was changed to show an alternative position of the flow sensing connection.

XXI The main certification coding for the low temperature versions of the mini-purge controller, certified for use in gas atmospheres, were amended with 'd' being replaced with 'db' and 'm' being removed in recognition of the change of heater certification coding introduced in Variation 8 of certificate Siria 01ATEX1295X.

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XXIII The withdrawal of approved drawing SDB196.

XXIV To recognise a new option code (UD) for addition of LED, resulting in the introduction of a change to the marking, the introduction of a Specific Condition of Use and the introduction of EN 60079-11:2012 assessment standard.

XXV To extend the range of overpressure relief valve (RLV) sizes up to RLV400 and to include all possible RLV sizes, within minimum 25 mm and maximum 400 mm RLV bore size.

XXVI To introduce an alternative configuration for the Delay Trip (DT) option.

XXVII To introduce an alternative configuration for the leakage compensation system.

14 DESCRIPTIVE DOCUMENTS**14.1 Drawings**

Refer to Certificate Annex.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	02 July 2021	RB0078969A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF 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 apparatus contained within EN 60079-14 shall be applied.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (REGULATIONS SCHEDULE 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed in Section 9, all other requirements are demonstrated in the relevant reports.

17 PRODUCTION CONTROL

17.1 Holders of this certificate are required to comply with production control requirements defined in Schedule 3A, as applicable, and CSA Group Testing UK Regulations for Certificate Holders

17.2 The switches incorporated in the PA option shall be suitably certified for Category 2.

Verification of Minimum Overpressure Cut Off

An overpressure loss shall be simulated whilst the MiniPurge Control 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 MiniPurge Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.



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DQD54421 Issue 2 (2021-04-23)
Page 9 of 11

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DQD54421 Issue 2 (2021-04-23)
Page 10 of 11



SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 21UKEX1067X
Issue 0

Verification of Air Supply Failure Protection

An air supply failure shall be simulated whilst the MiniPurge Control 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 MiniPurge Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

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 CSA Group of any modifications of the devices that may impinge upon the explosion safety design of the products.

- 17.4 The certification code that is appropriate to Purge Controllers Low Temperature and High Temperature H6 or H7 versions shall appear in the product marking applied to outer stainless steel or painted mild steel enclosure.
- 17.5 The MiniPurge Controller shall not be marked as suitable for use in explosive dust atmospheres when a non-metallic or painted housing is used.
- 17.6 When the optional electronic timer (FM10ATEX003X) is fitted the manufacturer shall take into account any certification restrictions or special conditions for safe use that are applicable to the certified device.
- 17.7 When an Ex d junction box with flange openings is used in the low temperature (LT) versions of the MiniPurge controller, the manufacturer shall ensure that it is installed such that there are no obstructions within 40mm of the Ex d junction box flameproof flanged joints.



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DQ0544-21 Issue 2 (2021-04-22)
Page 11 of 11



Certificate Annex

CSAE 21UKEX1067X

Issue 0

Certificate Number:

CSAE 21UKEX1067X

Product:

MiniPurge Purge Controller

Manufacturer:

EXPO Technologies Limited

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
EP992-2-1	1 to 2	4	30-Nov-20	MinIPurge Type X Leakage Compensation
EP992-2-10	1 of 1	3	15-Mar-07	Schematic - Pressure Control Leakage Compensation
EP992-11	1 of 1	4	04-Oct-18	Intelligent switches
EP992-12	1 of 1	2	15-Mar-07	Schematic - Containment System and Secondary pressurisation
EP992-14	1 of 1	2	15-Mar-07	Schematic - Continuous Flow with 2 Flow Rates
EP992-16	1 of 1	2	15-Mar-07	Schematic - Outlet Valve Control
EP992-17	1 of 1	2	15-Mar-07	Schematic - Continuous Flow with High Pressure
EP992-2	1 of 1	2	15-Mar-07	Schematic - Type X Continuous Flow
EP992-3	1 of 1	2	15-Mar-07	Sequence Diagram - Type X Leakage Compensation
EP992-4	1 of 1	2	15-Mar-07	Sequence Diagram - Type X Continuous Flow
EP992-5	1 of 1	2	15-Mar-07	Schematic - Alarm only and Alarm Action Selector
EP992-6	1 of 1	2	15-Mar-07	Schematic - Door Switch Active Alarm and Alarm Cancel
EP992-7	1 of 1	2	15-Mar-07	Schematic - Separate Supply and Mechanical Timer
EP992-8	1 to 2	4	30-Nov-20	Delay Before Trip 'D' and On/Off Controls
EP992-9	1 of 1	2	15-Mar-07	MinIPurge Control Unit - Twin Output and Manual Override
EP993-1	1 of 1	2	15-Mar-07	MinIPurge Control Unit - General Assembly
EP997-9	1 to 2	3	04-Oct-18	Outlet Valve Circuit N/O
SD7282	1 to 3	10	30-Nov-20	MinIPurge Data Sheet
SD7448	1 of 3	12	04-Oct-18	Low Temperature Housing
SD7449	1 of 1	9	04-Oct-18	Low Temperature Wiring
SD7500	1 of 1	1	25-Apr-07	Outlet Orifice Closing Device
SD7531	1 of 1	2	09-Jul-07	Schematic - Type Z or Y Leakage compensation
SD7532	1 of 1	1	15-Mar-07	Schematic Type Z or Y Continuous Flow
SD7533	1 of 1	2	23-Nov-11	MinIPurge Dust Protection Schematic
SD7535	1 of 1	1	15-Mar-07	Spark Arrestor
SD7536	1 of 1	1	18-Apr-07	Differential Flow Monitor
SD7537	1 to 4	2	30-Nov-20	Fault Evaluation
SD7538	1 of 1	1	27-Mar-07	Continuous Flow Outlet Orifice
SD7555	1 to 5	8	17-Dec-20	RLV Configurations
SD7556	2 of 2	1	09-Jul-07	Alternative 2&Y LC System
SD7913	1 to 2	4	30-Nov-20	Electronic Timer
SD7914	1 of 1	2	21-Dec-10	MinIPurge HP sensor
SP8158	1 of 1	2	22-Jun-15	Local Sensing Option
SP8196	1 to 7	1	22-Jun-15	MinIPurge - Manual Extracts
SP8243	1 of 1	1	15-Apr-16	High Temperature Vortex Cooler & Logic Isolator
SP8244	1 of 1	3	16-Sep-16	High Temperature 60°C Tamb/Purge Air 60°C Option - H6
SP8245	1 to 2	3	16-Sep-16	High Temperature 60°C Tamb/Purge Air 70°C Option - H7
SP8251	1 to 10	5	24-Nov-20	MinIPurge Manual Extracts

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DQ0544-21 Issue 2 (2021-04-22)
Page 1 of 2



Certificate Annex

Certificate Number:

CSAE 21UKEX1067X

Product:

MiniPurge Purge Controller

Manufacturer:

EXPO Technologies Limited

Drawing	Sheets	Rev.	Date (Stamp)	Title
SD8258	1 to 2	1	16-Sep-16	Combined Low Temperature (LT) and High Temperature (HT)
SD8259	1 to 3	2	20-Sep-16	Combined Low Temperature (LT) and High Temperature (HT)
SD8329	1 of 1	2	04-Oct-18	Typical Minipurge with Electronic Timer
SD8340	1 of 1	1	04-Oct-18	Typical Earth Stud Assembly
SD8422	1 to 3	2	24-Nov-20	Minipurge LD option
SD8424	1 of 1	2	24-Nov-20	Minipurge LD option - BOM
SD8490	1 to 7	1	15-Jun-21	Minipurge Certification Label UKCA
SD8501	1 to 10	1	15-Jun-21	Minipurge - Manual Extracts UKCA

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Certificado N.º: TÜV 12.1462 X

Valido até: **28/09/2024** Valid until: **Válido hasta:**

Revisão: 06 Review: **Revisión:**

Certificado N.º - Certificado N.º: **OCIP 0004**

Emitido em: 27/10/2021 Issued: **Emitió:**

Lista de Modelos

Marca	Modelo	Descrição	Código de Barras GTIN
Brand	Model	Description	GTIN Barcode
Expo	MinIPurge	Controlador de purga	Não existente

Especificações:

Os controladores de purga modelo MiniIPurge são dispositivos pneumáticos, destinados a fornecer uma determinada vazão de gás de purga por um tempo predeterminado para equipamentos elétricos com o tipo de proteção Ex p. Esse controlador de purga possui também uma unidade de interface onde estão instalados os contactos para a verificação do status da pressurização sob a certificação INMETRO no TÜV 12.1463. As unidades de controle MiniIPurge fornecem um dos seguintes quatro métodos de operação de purga.

LC - Compensação de perda após purga inicial elevada;
CF - Fluxo contínuo (mesma vazão durante e após a purga);
CF2 - Dois sistemas de fluxo CF com uma taxa de purga inicial de alta apenas em um orifício;
CFHP - Fluxo (mais baixo) contínuo após purga inicial elevada.

Válvula de Alívio

O controlador de purga MiniIPurge é fornecido com uma válvula de alívio de sobrepressão, para ser instalada no equipamento Ex p para evitar uma sobrepressão interna acima da sobrepressão máxima do equipamento. Os 14 modelos existentes de válvula estão relacionados às suas dimensões nominais em mm, de RLV3 a RLV200. A saída de cada válvula de alívio é equipada com uma barreira contra centelhas, que existem em quatro tipos opcionais como segue: Espuma metálica formando caminhos tortuosos com curvas de pelo menos 4 x 90° ou 2 x 180°, malha de aço inoxidável com multicamadas e malha tricotada.

Orifício de saída

Três tipos de orifício são utilizados:
- Orifícios rosados (ex.: 1/4" NPT ou 2" BSP) com uma barreira contra centelhas embutida. Estes são selecionados para manter a pressão desejada dentro do equipamento Ex p quando utilizado com as opções de fluxo contínuo.
A designação de cada orifício de saída indica o diâmetro nominal de entrada. As denominações são as seguintes: SA3, SA6, SA9, SA12, SA19, SA25, SA32, SA38 e SA50.
- Orifícios planos no disco da válvula de alívio, dimensionados de acordo com a vazão necessária.
- Orifícios substituíveis, tipo SAU **.

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Regra de formação do modelo:
Modelo: a b cc / mm / código de opções

a = Tamanho ou Capacidade

Purga típica	Taxa de vazio* (N/min)	Pressão de alimentação regulada
225	450	4,8
450	900	4,8
900	1800	4,8 (4-16**)
1800	3500	4,8 (4-16**)
3500	7000	4,8 (4-16**)
7000	>7000	4,8 (4-16**)

b = Material de Provação

***Quando a opção "PC" for utilizada, as taxas de vazão serão alteradas de acordo com o projeto específico. Em tais casos, um sufixo adicional DXXX será adicionado para indicar um projeto específico.**

******Até 16 bar são aceitos quando um regulador adequado é instalado.

Notas:
Notes + Anotações:

*Igor Moreno
Local Field Manager*

Certificante:
TUV 12.1462-X – Revolução 06 – 27/10/2021 – Página 2 de 8
CNPJ: 01.390.467/0001-65 – CNPJ: 53.11.354.570-0001-06 – NC-032442-Rev.5
Endereço: Av. Quatros Flores, 767 – Vila Industrial – São Paulo – SP – CEP: 05310-000

Detalhes do produto:
Número de modelo: OCIP 0004
Número de certificação: TÜV 12.1462 X

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Certificado N.º: TÜV 12.1462 X

Valido até: **28/09/2024** Valid until: **Válido hasta:**

Revisão: 06 Review: **Revisión:**

Certificado N.º - Certificado N.º: **OCIP 0004**

Emitido em: 27/10/2021 Issued: **Emitió:**

Produto:
Product • Produto:

Solicitante:
Applicant • Solicitante:

Fabricante:
Manufacturer • Fabricante:

Fornecedor / Representante Legal:
Supplier / Legal Representative • Proveedor / Representante Legal:

Normal Técnicas / Regulamento:
Standards / Regulation • Normas / Reglamento:

Modelo de Certificação:
Certification Model • Modelo de Certificación:

Laboratório, N.º do Relatório de Ensaios e Data:
Laboratory, Test Report No. and Date • Laboratorio, N.º del Informe de Prueba y Fecha:

Relatório de Auditoria e Data:
Audit Report and Date • Informe de Auditoría y Fecha:

Notas:
Notes + Anotações:

*Igor Moreno
Local Field Manager*

Certificante:
TUV 12.1462-X – Revolução 06 – 27/10/2021 – Página 2 de 8
CNPJ: 01.390.467/0001-65 – CNPJ: 53.11.354.570-0001-06 – NC-032442-Rev.5
Endereço: Av. Quatros Flores, 767 – Vila Industrial – São Paulo – SP – CEP: 05310-000

Detalhes do produto:
Número de modelo: OCIP 0004
Número de certificação: TÜV 12.1462 X

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CNPJ: 0004

ACERTAMENTO DESTE 1993

Valido até: 28/09/2024

Valid until • Válido hasta:

Revista: 06

Review • Revisão:

Emitido em: 27/10/2021

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b = tipo de pressurização

- X = Pressurização X
- Y = Pressurização Y
- Z = Pressurização Z

cc = Ação após purga inicial

elevada;

LC = Compensação de perda após purga inicial

a purga);

CF = Fluxo contínuo (mesma vazão durante a purga);

CF2 = Dois sistemas de fluxo CF com uma taxa de purga inicial de alta apenas em um escritório;

CFHP = Fluxo (mais baixo) contínuo após purga inicial elevada;

DP = Proteção contra poeira (somente pressurização),

mm = Material do invólucro da unidade de controle

al = Liga de alumínio

cs = Aço carbono, pintado

ss = Aço inoxidável

bp = Somente placa traseira

co = Somente chassis

pm = Montagem em painel

nm = Não metálico

Código de opções (Adicionado somente se utilizado)

AA = Equipado com saída de alarme ativa	AC = Circuito de cancelamento de alarme
AO = "Somente Alarme" em falha de fluxo ou pressão	AS = "Alarme" falha de fluxo ou pressão, válvula seletora
CS = Monitor do sistema de contenção	DS = Equipado com sensor de intertravamento para abertura da porta
DT = Temporizador de desligamento (Delayed Trip) depois de uma falha de pressão ou fluxo	DXX = Projeto especial para as taxas de vazão específicas
ET = Temporizado eletrônico	FM = Equipado com medidor(es) de vazão
HP = Fluxo contínuo com sensor de pressão alta	IS = Chaves internas adequadas para circuitos Ex i
NO = Equipado com chave manual de by-pass	MT = Rampa mecânica ou temporizador de atraso
OC = Chave liga/desliga controlando o gás de proteção e suprimento de ar da unidade de controle de gás de proteção	OB = Chave liga/desliga para controlar o suprimento de ar da unidade de controle
OY = Válvula de saída, acionamento pneumático	OS = Saída (Orifício), válvula seletora
PC = Válvula de controle para compensação de perda (CLAPS System.)	PA = Switch(es) "Ex" embutido(s), com/sem caixa de ligação "Ex"
SP = Pressurização secundária, opções de alimentação	PO = Sinais de saída pneumáticos para controle de alimentação e alarme
TW = Dias (ou mais) saídas para dois ou mais invólucros pressurizados purgados em paralelo	SS = Alimentação separada para o sistema de controle lógico e para gás de proteção do invólucro
H6 = Indicado para alta temperatura	LS = Sensor local para monitoramento de sobrepressão interna, sob a certificação IECEx SIR 06.0109X.
Temperatura do ar de purga: -20 °C ≤ T_a ≤ +60 °C	H7 = Indicado para alta temperatura
LT = Baixa temperatura	Temperatura do ar de purga: -20 °C ≤ T_a ≤ +70 °C
Temperatura ambiente: -60 °C ≤ T_a ≤ +60 °C	T/B = Caixa de ligação, opcional

Para

confirmar

sua

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Natureza das Revisões / Data
Natureza de las Revisiones / Fecha

Revisão 00:
28/09/2010 – Certificação inicial – Efeituação;
25/04/2012 – Adequação do certificado AEX-13098-X à Portaria 179;

Revisão 01:
01/12/2015 – Revalidação, Inclusão do sensor local e atualização do endereço do fabricante de: Summer Road – Thames Ditton, Surrey KT7 0RH, para: unit 2, The Summit, Haworth Road, Sunbury on Thames, Surrey TW16 5DB;

Revisão 02:
16/11/2017 – Atualização do certificado e correção do endereço do solicitante fabricante

Revisão 03:
30/01/2018 – Correção da tabela de documentos e remoção de informação sobre a temperatura de purga para versão para baixa temperatura.

Revisão 04:
25/08/2018 – Revalidação;

Revisão 05:
01/04/2019 – Correção da codificação do modelo.

Revisão 06:
27/10/2021 – Revalidação.

Observações:

6. Para fins de comercialização no Brasil, as responsabilidades da alínea "e" do item 10.1 da Portaria 179 de 18 de maio de 2010, é do representante legal, do importador ou do usuário.

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Conforme art. 1º, § 1º da Medida Provisória nº 2.200-2, de 24 de agosto de 2001, se decretar que os instrumentos de medida e os aparelhos que os substituem, em regra de 10 de janeiro de 2002 - Código Civil, permanecem em vigor, salvo que o fabricante ou o importador, ou quem os importar, com a utilização do processo de Certificação Digital disponibilizado pela CPB-BRASIL, declare que os mesmos atendem ao disposto na referida MP, ficando dispensado de cumprir as normas técnicas e regulamentos que lhes sejam aplicáveis, desde que o fabricante ou importador, ou quem os importar, com a utilização do processo de Certificação Digital disponibilizado pela CPB-BRASIL, declare que os mesmos atendem ao disposto na referida MP, ficando dispensado de cumprir as normas técnicas e regulamentos que lhes sejam aplicáveis, desde que o fabricante ou importador, ou quem os importar, com a utilização do processo de Certificação Digital disponibilizado pela CPB-BRASIL.

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Certificado N.º / Certificado N.º:
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Review: 06
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Natureza das Revisões / Data
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Revisão 00:
28/09/2010 – Certificação inicial – Efeituação;
25/04/2012 – Adequação do certificado AEX-13098-X à Portaria 179;

Revisão 01:
01/12/2015 – Revalidação, Inclusão do sensor local e atualização do endereço do fabricante de: Summer Road – Thames Ditton, Surrey KT7 0RH, para: unit 2, The Summit, Haworth Road, Sunbury on Thames, Surrey TW16 5DB;

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30/01/2018 – Correção da tabela de documentos e remoção de informação sobre a temperatura de purga para versão para baixa temperatura.

Revisão 04:
25/08/2018 – Revalidação;

Revisão 05:
01/04/2019 – Correção da codificação do modelo.

Revisão 06:
27/10/2021 – Revalidação.

Observações:

1. O número do certificado é finalizado pela letra X para indicar as seguintes restrições no uso:
Quando o controlador de purga MiniPurge é incorporado a um equipamento, as implicações da operação dos indicadores e/ou sinais opcionais de alarme e a aplicação das etiquetas de aviso e identificação devem ser incluídas na avaliação do equipamento.
O instalador/usuário deve garantir que o controlador de purga MiniPurge seja instalado de acordo com o certificado do equipamento que cobre a combinação do involucro pressurizado com o controlador de purga MiniPurge.
Os valores dos parâmetros de segurança devem ser ajustados de acordo com o certificado do equipamento que cobre a combinação do involucro pressurizado e do controlador de purga MiniPurge.
Ao utilizar as opções AO, AS e DI, as recomendações para os requisitos adicionais do equipamento Ex p contido na nota.

O controlador de purga e a versão de baixa temperatura devem ser protegidos por um sistema de segurança que assegure que ele não pode ser energizado se a entrada de ar ou controlador de purga reduzir para -20°C. Este sistema deve utilizar os RTDs que são montados no controlador de purga para fornecer o nível apropriado de integridade do sistema (Nota: Estes RTDs não foram avaliados como um dispositivo de segurança).

Os seguintes testes de rotina deverão ser realizados para:- Verificação funcional do refrator do Vortex (H6, H7 para altas temperaturas e H6, H7 para combinações permitidas);- Verificação funcional do isolador lógico pneumático (H6, H7 para altas temperaturas e H6, H7 para combinações permitidas).

2. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia da TÜV Rheinland, invalidará o certificado.

3. É de responsabilidade do fabricante assegurar que os produtos fabricados estejam de acordo com as especificações do protótipo ensaiado, através de inspeções visuais e dimensionais.

4. Os produtos devem ostentar, na sua superfície externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações da ABNT NBR IEC 60079-2 / ABNT NBR IEC 60079-11 / ABNT NBR IEC 60079-31 / ABNT NBR IEC 60529 e Regulamento de Avaliação da Conformidade, anexo à Portaria nº 179 do INMETRO, publicada em 18 de Maio de 2010. Esta marcação deve ser legível e durável, levando-se em conta possível corrosão química.

5. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos produtos são de responsabilidade do usuário e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

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Conforme art. 1º, § 1º da Medida Provisória nº 2.200-2, de 24 de agosto de 2001, se decretar que os instrumentos de medida e os aparelhos que os substituem, em regra de 10 de janeiro de 2002 - Código Civil, permanecem em vigor, salvo que o fabricante ou o importador, ou quem os importar, com a utilização do processo de Certificação Digital disponibilizado pela CPB-BRASIL, declare que os mesmos atendem ao disposto na referida MP, ficando dispensado de cumprir as normas técnicas e regulamentos que lhes sejam aplicáveis, desde que o fabricante ou importador, ou quem os importar, com a utilização do processo de Certificação Digital disponibilizado pela CPB-BRASIL.

TÜV 12.1462 X - Série 06 - 27/10/2021
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DN: C=BR, O=TUV-RHEINLAND DO BRASIL LTDA, CN=0198467000165
Endereço: Estrada Av. Doutor Fábio 767 - Vila Industrial, São Paulo - SP, CEP: 05131-000
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a = Model size 1, 2, 3, 4, 5 or 6.
 b = Enclosure type cs, ss, bp, pm or nm.
 c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
 PC, PN, PO, SS, TW, and/or **.
 ** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note : All LC Systems must include an RLV Series Relief Valve matched to the specific control system.

Note : All LC Systems must include an internal or separate Outlet Office.

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

- aXCFbc. Mini-X-Purge Type CF Control System.**
APX / I / 1 ABCD / T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CF Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

- aXCFPbc. Mini-X-Purge Type CFHP Control System.**
APX / I / 1 ABCD / T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CFHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

- aXDpb. Mini-Y-Purge Type DP Control System.**
APX / II / 1 EFG / T6 Ta = 60°C - ML386 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All DP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

- aYDpb. Mini-Y-Purge Type DP Control System.**
APX / II / 1 EFG / T6 Ta = 60°C - ML386 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All DP Systems must include an internal or separate Outlet Office.

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 Page 1 of 5



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FM Approvals
 1151 Boston Providence Turnpike
 P.O. Box 9102 Norwood, MA 02062 USA
 T: 781-762-4300 F: 781-762-9375 www.fmaprovals.com

5. **aYCfbc. Mini-Y-Purge Type CF Control System.**
APY / I / 1 ABCD / T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All LC Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

6. **aYCfhpbc. Mini-Y-Purge Type CFHP Control System.**
APY / I / 1 ABCD / T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CFHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

7. **aYDpb. Mini-Y-Purge Type DP Control System.**
APY / II / 1 EFG / T6 Ta = 60°C - ML386 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All DP Systems must include an internal or separate Outlet Office.

8. **aYLcbc. Mini-Y-Purge Type LC Control System.**
APY / I / 1 ABCD / T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All LC Systems must include an RLV Series Relief Valve matched to the specific control system.

9. **aZCfb. Mini-Z-Purge Type CF Control System.**
APZ / I / 2 ABCD / T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All LC Systems must include an RLV Series Relief Valve matched to the specific control system.

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 FM Approvals HLC 5/13
 1X8A4.AE
 Page 2 of 5



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PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related option such as color or enclosure mounting arrangements.

Note: All CF Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

10. aZCFHPbc. Mini-Z-Purge Type CHP Control System.

APZ/I/1/2 / ABCD/T6 Ta = 60°C - ML384 / EP80-2-11

a = Model size 1, 2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note: All CHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

11. aZDPbc. Mini-Z-Purge Type DP Control System.

APZ/I/1/2 / FG/T6 Ta = 60°C - ML386 / EP80-2-11

a = Model size 1, 2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm, or nm.

c = Option code AA, AC, AO, AS, CI, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

12. aZLCbc. Mini-Z-Purge Type LC Control System.

APZ/I/1/2 / ABCD/T6 Ta = 60°C - ML384 / EP80-2-11

a = Model size 1, 2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

13. aZLICbc. Mini-Z-Purge Type LC Control System.

APZ/I/1/2 / ABCD/T6 Ta = 60°C - ML384 / EP80-2-11

a = Model size 1, 2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CI, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Equipment Ratings:

1. Associated Type X Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 Cr.

2. Associated Type X Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

3. Associated Type X Pressurization System for use in Class II, Division 1, Group E, F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML386 Dp.

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Page 3 of 5

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4. Associated Type X Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

5. Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class I, Division 2, Group A, B, C and D Hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 CF.

6. Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class I, Division 2, Group A, B, C and D Hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

7. Associated Type Y Pressurization System for use in Class II, Division 1, Group E, F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class II, Division 2, Group F and G Hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML386 DP.

8. Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class II, Division 2, Group A, B, C and D Hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

9. Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 CF.

10. Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

11. Associated Type Z Pressurization System for use in Class II, Division 2, Group F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML386 DP.

12. Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

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Sunderby on Thames Surrey TW16 5DB
United KingdomTo verify the availability of the Approved product, please refer to www.approvalguide.com
FM Approvals HLC 5/13
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Page 4 of 5



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This certifies that the equipment described has been found to comply with the following
Approval Standards and other documents:

FM Class 3600
FM Class 3610
FM Class 3615
FM Class 3620
ANSI/NFPA 496

2011
2010
2006
2014
2013

Original Project ID: 1X8A4.AE

Approval Granted:

Subsequent Revision Reports / Date Approved Amended	Date	Report Number	Date
OB3A3.AE 30/10/69	November 5, 1996		
07/10/29	June 25, 2001		
08/09/05	June 23, 2008		
10/12/30	September 24, 2008		
30/52/954	March 3, 2011		
	July 28, 2015		

FM Approvals LLC

J.E. Marquedant
Manager, Electrical Systems

28 July 2015
Date

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Page 5 of 5



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FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781-762-4300 F: 781-762-9375 www.fmaprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

1. aXCFPbc. Mini-X-Purge Type CF Control System.

APX / / 1 / ABCD /T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note: All CF Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office

2. aXCFHPbc. Mini-X-Purge Type CFHP Control System.

APX / / 1 / ABCD /T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note: All CFHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

3. aXPDPbc. Mini-X-Purge Type DP Control System.

APX / / 1 / EFG /T6 Ta = 60°C - ML386 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note: All CFDP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

4. aXLcbc. Mini-X-Purge Type LC Control System.

APX / / 1 / ABCD /T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
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FM Approvals Form OLC 5/13

Page 1 of 5



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b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, ET, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All LC Systems must include an RLV Series Relief Valve matched to the specific control system.

5. aYCFPbc. Mini-Y-Purge Type CF Control System.

APY / / 1 / ABCD /T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CF Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

6. aYCFHPbc. Mini-Y-Purge Type CFHP Control System.

APY / / 1 / ABCD /T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CFHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

7. aYDPhc. Mini-Y-Purge Type DP Control System.

APY / / 1 / EFG /T6 Ta = 60°C - ML386 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CFDP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Office.

8. aYLChc. Mini-Y-Purge Type LC Control System.

APY / / 1 / ABCD /T6 Ta = 60°C - ML384 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.
Note: All CLC Systems must include an RLV Series Relief Valve matched to the specific control system.

9. aZCFPbc. Mini-Z-Purge Type CF Control System.

APZ / / 2 / ABCD /T6 Ta = 60°C - ML383 / EP80-2-11
a = Model size 1, 2, 3, 4, 5 or 6.
b = Enclosure type cs, ss, bp, pm or nm.
c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV.
PC, PN, PO, SS, TW, and/or **.
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Page 2 of 5



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** Denotes special, non-Approval related option such as color or enclosure mounting arrangements.

Note: All CF Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Orifice.

10. aZCFHPc. Mini-Z-Purge Type CFHP Control System.

APZ/1/2 / ABCD/T6 Ta = 60°C - ML384 / EP80-2-11

a = Model size 1,2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Note: All CFHP Systems must include an RLV Series Relief Valve matched to the specific control system with either an internal or separate Outlet Orifice.

11. aZDPBc. Mini-Z-Purge Type DP Control System.

APZ/1/2 / FG/T6 Ta = 60°C - ML386 / EP80-2-11

a = Model size 1,2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

12. aZLCbc. Mini-Z-Purge Type LC Control System.

APZ/1/2 / ABCD/T6 Ta = 60°C - ML384 / EP80-2-11

a = Model size 1,2, 3, 4, 5 or 6.

b = Enclosure type cs, ss, bp, pm or nm.

c = Option code AA, AC, AO, AS, CT, DS, DT, IS, FM, MO, MT, NO, OA, OB, OC, OS, OV,

PC, PN, PO, SS, TW, and/or **.

** Denotes special, non-Approval related options such as color or enclosure mounting arrangements.

Equipment Ratings:

- Associated Type X Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 Cf.

- Associated Type X Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

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Expo Technologies Ltd
Sunbury on Thames Surrey TW16 5DB
United Kingdom

- Associated Type X Pressurization System for use in Class II, Division 1, Group E, F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

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Page 3 of 5



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5. Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class I, Division 2, Group A, B, C and D hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 Cf.

- Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class I, Division 2, Group A, B, C and D hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.
- Associated Type Y Pressurization System for use in Class II, Division 1, Group E, F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class II, Division 2, Group F and G hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML386 DP.
- Associated Type Y Pressurization System for use in Class I, Division 1, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to a Class I, Division 2, Group A, B, C and D hazardous (classified) location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.
- Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 Cf.

- Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.
- Associated Type Z Pressurization System for use in Class II, Division 2, Group F and G hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML386 DP.
- Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

- Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML383 Cf.
- Associated Type Z Pressurization System for use in Class I, Division 2, Group A, B, C and D hazardous (classified) locations to be used to reduce the internal area of a connected enclosure to an ordinary location in accordance with Expo Technologies Installation, Operation and Maintenance Manual ML384 LC & CFHP.

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Page 4 of 5

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This certifies that the equipment described has been found to comply with the following
Approval Standards and other documents:

ANSI/NFPA 496	2013
CSA C22.2 No 25	1986
CSA C22.2 No 30	1986
CSA C22.2 No. 157	1992

Original Project ID: 1X8A4.AE
Canadian Project ID: 3052954
Approval Granted: July 28, 2015

Subsequent Revision Reports / Date Approved Amended	Date	Report Number	Date
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FM Approvals LLC

J.E. Marquedant
Manager, Electrical Systems

28 July 2015

Date

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Page 5 of 5

29/01/2018 RFPW7.E190061 - Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada

 **ONLINE CERTIFICATIONS DIRECTORY**

RFPW7.E190061
Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada

[Page Bottom](#)

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EXPO TECHNOLOGIES LIMITED
Unit 2 The Summit
Hanworth Road
Sunbury On Thames, SURREY TW16 5DB UNITED KINGDOM
Purge control units, Type X, for use in Class I, Groups A, B, C and D hazardous locations, Model** 1, 2, 3, 4, 5, 6 or 7 followed by X, followed by CF, CFHP or LC, followed by AO, DS, DT, SS and NO.
For this 'IS' option: intrinsically safe when installed in accordance with Control Drawing number EP80-2-11.
Type Y for use in hazardous (classified) locations, Model** 1, 2, 3, 4, 5, 6 or 7 followed by Y, followed by CF, CFHP or LC, followed by BP, CS, NM, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Type Z for use in hazardous (classified) locations, Model** 1, 2, 3, 4, 5, 6 followed by Z, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Purge control accessory - Vent unit for use in hazardous (classified) locations, Model RLV followed by 25, 36, 52, 75, 104, 125, 150, or 200, followed by CS or SS, may be followed by PS.

** - Internal series identifier, precedes model number, which may contain one or more characters.

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ONLINE CERTIFICATIONS DIRECTORY
RFPW.E190061
Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada

[Page Bottom](#)

Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada

[See General Information for Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada](#)

E190061

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EXPO TECHNOLOGIES LIMITED
Unit 2 The Summit
Hanworth Road
Sunbury On Thames, SURREY TW16 5DB UNITED KINGDOM
Purge control units, Type X, for use in Class I, Groups A, B, C and D hazardous locations, Model** 1, 2, 3, 4, 5, 6 or 7 followed by X, followed by CF, CFHP or LC, followed by IS, PO, AO, DS, DT, SS and NO.
For the 'IS' option: intrinsically safe when installed in accordance with Control Drawing number EP80-2-11.
Type Y for use in hazardous (classified) locations, Model** 1, 2, 3, 4, 5, 6 or 7 followed by Y, followed by CF, CFHP or LC, followed by BP, CS, NM, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Type Z for use in hazardous (classified) locations, Model** 1, 2, 3, 4, 5, 6 followed by Z, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Purge control accessory - Vent unit for use in hazardous (classified) locations, Model RLV followed by 25, 36, 52, 75, 104, 125, 150, or 200, followed by CS or SS, may be followed by PS.

** - Internal series identifier, precedes model number, which may contain one or more characters.

Last Updated on 2017-11-03

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION



No.: 2020312304000830

Applicant
EXPO Technologies Ltd
Unit 2, The Summit, Hanworth Road, Sunbury on Thames Surrey

Address
TW16 5DB, United Kingdom

Manufacturer
EXPO Technologies Ltd

Address
Unit 2, The Summit, Hanworth Road, Sunbury on Thames Surrey

Production Address
TW16 5DB, United Kingdom

Production Factory
EXPO Technologies Ltd
Unit 2, The Summit, Hanworth Road, Sunbury on Thames Surrey

Product
MiniPurge Purge Controller

Model/Type
1XL Ccs DS SS AA MO FM OA TW

Ex marking
See Annex

Reference Standards
GB3836.1-2010, GB/T3836.5-2017, GB12476.1-2013,
GB12476.7-2010

Certification mode Type Test + Initial Factory Inspection + Post-Certification Surveillance

The product(s) is verified and certified according to CNCA-C23-01: 2019 China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product and CNEX-C2301-2019 Guideline of China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product.

See Annex for the detailed product information (6 pages).

Issued on: 2020-11-04

Valid to: 2025-11-03
The validity of this certificate is maintained through the regular supervision of the issuing authority during the validity period.
Where any discrepancy arises between the English translation and the original Chinese version, the Chinese version shall prevail.

Director:

Issued on: 2020-11-04

Director:



Nanyang Explosion Protected Electrical Apparatus Research Institute Co., Ltd.
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China
Tel: 0377-63239734
http://www.ccc-cnex.com
ccc.china-ex.com
Email: ccc@cn-ex.com

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P.C.: 473008
Email: ccc@cn-ex.com



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION
(Annex)

No.: 2020312304000830

Page 2 of 6

DP	Dust Protection (pressurization only)
mm	Material of the Control Unit Enclosure
al	Aluminum 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
ES	Electronic Timer with EPPS
ET	Electronic Timer (not EPPS option)
FM	Flow Meter(s) fitted
H6	High Temperature Tamb -20°C to +60°C, Air Supply Max Temp +60°C
H7	High Temperature Tamb -20°C to +60°C, Air Supply Max Temp +70°C
HP	System LC or CF with High Pressure Sensor
IS	Internal Switches suitable for Ex i circuits
LS	Local Sensing
LT	Low Temperature

Issued on: 2020-11-04

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Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China
Tel: 0377-63239734
Email: ccc@cn-ex.com

<http://www.ccc-cnex.com> ccc.china-ex.com
P.C.: 473008
Tel: 0377-63239734
Email: ccc@cn-ex.com



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION
(Annex)

No.: 2020312304000830

Page 3 of 6

MO	Manual Override fitted
MT	Mechanical Purge or Delay 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	FE 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
DXXX	Special design for specific flow rates, or other non-certification related options

Relief Valve - The MiniPurge controller is supplied with an optional overpressure relief valve, which is to be fitted to the Ex 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, RLV26, RLV36, RLV75, RLV104, RLV125, RLV150 and RLV200; The outlet of each relief valve is fitted with a spark arrester, of which there are four optional types:

- ① Metal foam
- ② Tortuous path with at least 4 x 90° or 2 x 180° bends
- ③ Multi-layer stainless steel mesh

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Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China
Tel: 0377-63239734
Email: ccc@cn-ex.com

P.C.: 473008
Tel: 0377-63239734
Email: ccc@cn-ex.com



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(Annex)

No.: 2020312304000830

Page 4 of 6

④ Knitted mesh

- Outlet Orifice - Three types of orifice are used:
- ① Threaded Orifices e.g. 1/4" NPT or 2" BSP with a built in spark arrester. These are selected to maintain a desired back pressure within the Ex d 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.
 - ② Plain holes in the Relief Valve disk, sized according to the flow rate required.
 - ③ Replaceable office 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.

Note: the possible protection type of certified Ex products(components) listed in Option codes(see table above) could be Ex d, Ex e, Ex ia or Ex id.

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Director:



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ccc.china-ex.com
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China
P.C.: 473008
Tel: 0377-63239734
Email: ccc@cn-ex.com



(Annex)

No.: 2020312304000830

Page 5 of 6

Ex marking:

- Standard versions: Ex [px] IIC T6 Gb, Ex [pd] 21 IP54 T85°C (Ta: -20°C~+55°C)
Ex [py] IIC T6 Gb, Ex [pd] 21 IP54 T85°C (Ta: -20°C~+55°C)
Ex [pz] IIC T6 Gc, Ex [pd] 22 IP54 T85°C (Ta: -20°C~+55°C)
Standard/ET/ES versions: Ex [px] IIC T5 Gb, Ex [pd] 21 IP54 T100°C (Ta: -20°C~+55°C)
Low temperature versions: Ex [px] d e IIC T3 Gb, Ex [px] d e IIC T4 Gb (Ta: -60°C~+55°C)
Low temperature/ET/ES versions: Ex [px] d e IIC T3 Gb, Ex [px] d e IIC T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +60°C)
High temperature versions - H6: Ex [px] d e IIC T4 Gb (Ta: -60°C~+55°C)
High temperature/ET/ES versions - H6: Ex [px] d e IIC T4 Gb (Ta: -20°C~+60°C, Purge air temp. up to +60°C)
High temperature versions - H7: Ex [px] IIC T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +70°C)
High temperature/ET/ES versions - H7: Ex [px] IIC T4 Gb (Ta: -20°C~+60°C, Purge air temp. up to +70°C)

Combined Versions

- Low temp. with High temp. H6: Ex [px] d e IIC T3/T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +60°C)
Low temp. with High temp. H6 and ET/ES: Ex [px] d e IIC T3/T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +60°C)
Low temp. with High temp. H7: Ex [px] d e IIC T3/T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +70°C)
Low temp. with High temp. H7 and ET/ES: Ex [px] d e IIC T3/T4 Gb (Ta: -60°C~+60°C, Purge air temp. up to +70°C)

- Producers should organize production in accordance with the technical documents approved by the certification body.

2. Specific conditions of safety use:

- When using the AQ, AS and DT options, the recommendations for the additional

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Tel: 0377-63239734
Email: ccc@cn-ex.com



**CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION
(Annex)**

No.: 2020312304000830

Page 6 of 6

requirements of Ex p apparatus shall be applied.

- The installer/user shall ensure that the MiniPurge Control Unit is installed in accordance with the equipment certificate that covers the combination of the pressurised enclosure(s) and MiniPurge Control Unit.
- 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 MiniPurge Control Unit.

- This MiniPurge Control Unit shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination. This certificate does not cover the combination.

- The purge controller, low temperature version, shall be protected by a system that ensures that it cannot be energized if the temperature of the controller logic air 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.

- Where a Vortex cooler is fitted the hot air outlet pipe shall be kept free from obstructions and blockage.

- The following routine tests are to be carried out:

The vortex cooler is functioning correctly. (H6 and H7 options ONLY)

The pneumatic logic isolator is functioning correctly. (H6 and H7 options ONLY)

- See instruction for other information.

3. Certificate related report(s):

- Type test report: CQST2009C581

- Factory inspection report: CN2020Q010175

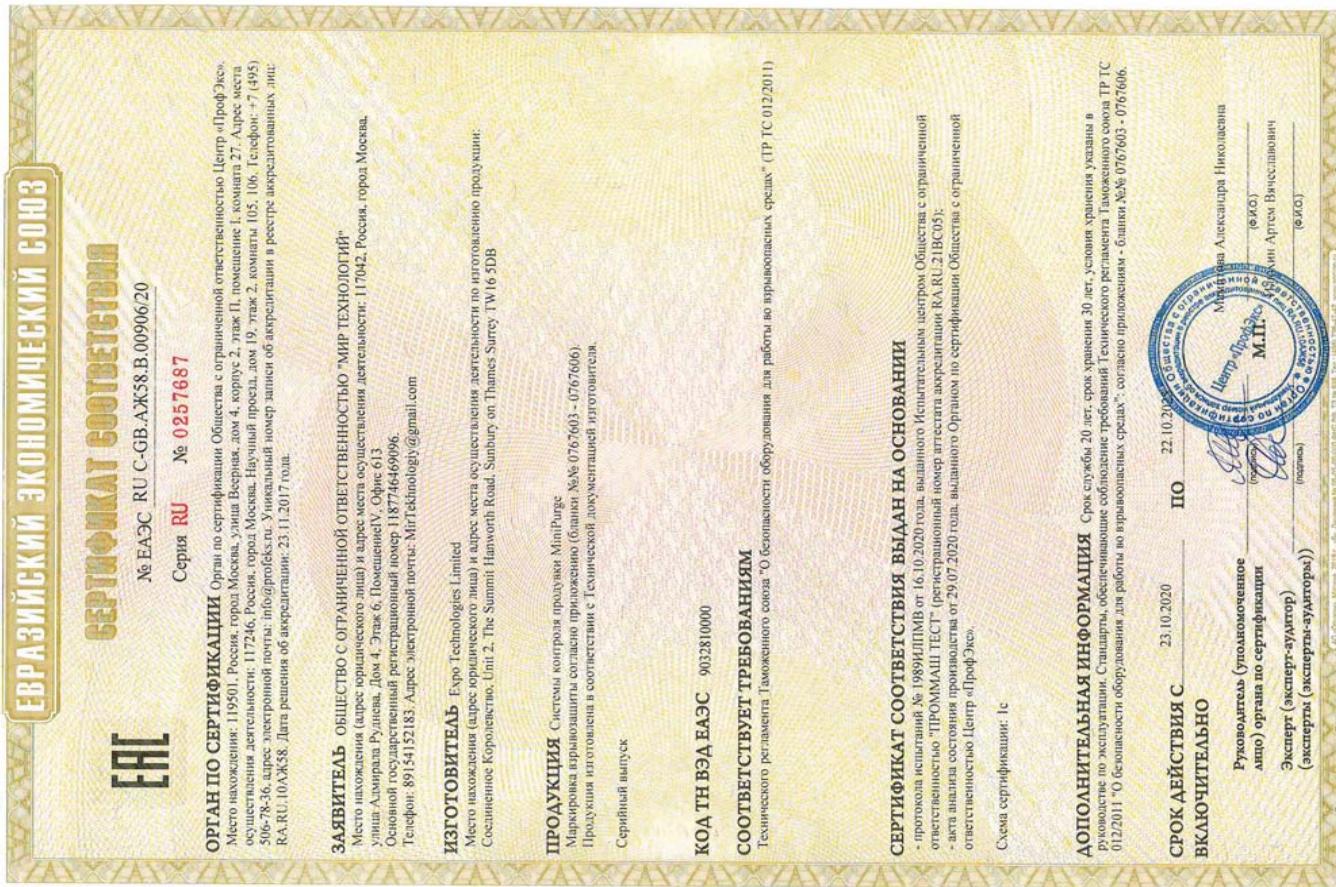
4. Certificate change information: None

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Apparatus Research Institute Co., Ltd.
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China
Tel: 0377-63239734
<http://www.ccc-cnrex.com>
ccc@cn-ex.com
P.C.: 473008
Email: ccc@cn-ex.com



This Certificate does not replace the original EAC Document

EAC**CERTIFICATE**

In accordance with
SERCONS INTERNATIONAL
Russian Certification Authority in Europe

the company:

**Expo Technologies Limited,
United Kingdom, Unit 2,
The Summit Hanworth Road,
Sunbury on Thames Sur-rey,
TW16 5DB**

*fulfills the necessary requirements to be
certified according to EAC regulations.*

Valid until: 22.10.2025



@

A U T H O R I T Y
SERCONS

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-GB.АК58.В.00906/20

Серия RU № 0767603

1. Написание в блоке применения

Сертификат соответствия распространяется на Системы контроля промывки MiniPurge, изготовленные по технической документации исполнителя инженерной разработки узла промывки (далее – «Система»). При этом, что в конструкции Системы отсутствуют опасные факторы, влияющие на здоровье человека и окружающую среду.

Система, контролирующая процесс промывки пневматического компрессора более низкого рабочего давления, поддается изображению в виде схемы в блоке «Применение» в настоящем сертификате.

Система, контролирующая процесс промывки пневматического компрессора более высокого давления, поддается изображению в виде схемы в блоке «Применение» в настоящем сертификате.

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2. Описание оборудования и средств обеспечения взаимозаменности

Наименование параметра	Значение
Давление инспекционной подачи	4
Минимальная подача, бар	16
Максимальная подача, бар	16
Минимальный расход газа при промывке изолированной ячейки в минуту	225 (размер 1)
Время промывки, мин	1,09
Максимальное время промывки, мин	1,09
Стандартное исполнение	
Стандартное ET & ES исполнение	
Низкотемпературное исполнение	
Высокотемпературное исполнение	
Высокотемпературное исполнение - H6	
Высокотемпературное ET & ES исполнение	
Высокотемпературное ET & ES исполнение - H7	
Высокотемпературное исполнение - H8	
Высокотемпературное исполнение - H9	
Высокотемпературное исполнение - H7	
Высокотемпературное ET & ES исполнение - H7	
Кодифицированное исполнение	
Низкотемпературное с высокотемпературным	
Кодифицированное исполнение	
Инженерная документация	



Руководитель (полномочное лицо) органа по сертификации
Эксперт (эксперт-аудитор)
(эксперт (эксперт-аудитор))

Макарова Александра Николаевна
(рук.)
Артём Вячеславович
(рук.)



Руководитель (полномочное лицо) органа по сертификации
Эксперт (эксперт-аудитор)
(эксперт (эксперт-аудитор))

Макарова Александра Николаевна
(рук.)
Артём Вячеславович
(рук.)

Expo Technologies USA

Expo Technologies Inc.
9140 Ravenna Road Unit #3
Twinsburg,
OH 440878, USA
T: +1 440 247 5314
F: +1 330 487 0611
E: sales.na@expoworldwide.com

Expo Technologies UK

Expo Technologies Ltd.
Unit 2 The Summit, Hanworth Road
Sunbury-On-Thames,
TW16 5DB, UK
T: +44 20 8398 8011
F: +44 20 8398 8014
E: sales@expoworldwide.com

Expo Technologies China

Qingdao Expo M. & E. Technologies Co. Ltd
617 Shillin Er Road
Jimo District, Qingdao,
266200 China
T: +86 532 8906 9858
F: +86 532 8906 9858
E: qingdao@expoworldwide.com