



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 13ATEX1083X** Issue: **0**

4 Equipment: **Pre-Start Ventilation System**

5 Applicant: **Expo Technologies**

6 Address: **Unit 2, The Summit  
Hanworth Road  
Sunbury on Thames  
Surrey, TW16 5DB**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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

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

EN 60079-0:2012 EN 60079-7:2007

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

**Standard versions**



II 2 G  
Ex e IIC T5 Gb  
(Ta -20°C to +60°C)

**Low temperature versions**



II 2 G  
Ex d e mb IIC T3 or T4\* Gb  
(Ta -50°C to +60°C)

**Standard /ET versions**



II 2 G  
Ex e ia IIC T5 Gb  
(Ta -20°C to +60°C)

**Low temperature /ET versions**



II 2 G  
Ex d e ia mb IIC T3 or T4\* Gb  
(Ta -50°C to +60°C)  
\* Depending on heater

Project Number 29083

A C Smith  
Certification Manager

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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The Expo Technologies Pre-Start Ventilation System is intended to provide pre-start ventilation for Ex e motors. The equipment consists of a control unit and a relief valve, which comprise various electrical, mechanical and pneumatic components for the control of ventilation gas to an associated motor (not included in this certification), at a set flow rate and for a predetermined time. Alternative arrangements include the provision of an electronic timer, a solenoid valve and the option for extended or continuous ventilation.

A low temperature version is available which includes a certified heater and thermostat.

Model designation is of the form:

a b c d e

where, a = Size or Capacity

- i.e.
- 1 = Flow rate up to 225 l/min
  - 2 = Flow rate up to 450 l/min
  - 3 = Flow rate up to 1500 l/min
  - 4 = Flow rate up to 3000 l/min
  - 5 = Flow rate up to 6000 l/min
  - 6 = Flow rate up to 9000 l/min
  - 7 = Flow rate up to 14000 l/min

b = Pre-start Ventilation Type

- i.e.
- PV = Pre-start Ventilation
  - PP = Pre-start Ventilation (alternative)

c = Control Unit Enclosure Material/Mounting Configuration

- i.e.
- al = Aluminium alloy
  - cs = Mild steel, painted
  - ss = Stainless steel
  - bp = Back Plate only
  - co = Chassis only
  - pm = Panel mounting
  - nm = Non-Metallic

d = Start Option

- i.e.
- LS = Local start using start switch on PV/PP system
  - RS## = Remote start using Ex rated solenoid kit

e = Fitting Option

- i.e.
- A = ANSI flange connection fittings used
  - D = DIN flange connection fittings used
  - B = BSP Pipe connection fittings used
  - N = NPT Pipe connection fittings used
  - # = letter showing non-certified pipe fitting

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### Sira Certification Service

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Option codes (Added only if used)

- i.e. FM = Flow Meter(s) fitted on enclosure to indicate ventilation flow
- IS = Internal Switches suitable for Ex i circuits.
- MR = Mechanically Resets ventilation reset signal.
- ER = Electronically Resets ventilation reset signal.
- PR = Pneumatically Resets ventilation reset signal.
- MT = Mechanical Timing used to time pre-start ventilation cycle
- PT = Pneumatic Timing used to time pre-start ventilation cycle
- ET = Electronic Timing used to time pre-start ventilation cycle
- HP = High Pressure sensor fitted to prevent over pressure.
- OV = Outlet valve, pneumatically operated.
- PA = "Ex" switch(es) built-in, with/without "Ex" junction box.
- SP = Secondary Pre-Ventilation supply options.
- SS = Separate Supply for Protective gas and Logic air.
- TW = Twin (or more) outputs for two or more separate ventilated enclosures ventilated in parallel.
- HS = High Supply Pressure up to 16 Bar.
- CV = Ventilation sustained indefinitely after completion of ventilation cycle
- EV = Ventilation extended for predefined period of time after completion of ventilation cycle
- DXXX = Special design, not certification related options

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	11 October 2013	R29083A/00	The release of the prime certificate.

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

- 15.1 The intended use of this equipment is as a pre-start ventilation system. It is the user's responsibility to ensure the correct functionality of the equipment when in use.
- 15.2 The equipment enclosure may contain RTDs or simple resistive switches. It is the user's responsibility to ensure that these are connected into suitably certified intrinsically safe circuits.
- 15.3 The Pre-Start Ventilation System, low temperature version, shall be protected by a safety related system that ensures that it cannot be energised if the temperature of the air inlet or controller unit falls below -20°C. This system shall utilise the RTDs that are fitted to the control unit to provide the appropriate level of safety integrity, i.e. a level of operational safety of Cat 3 according to EN 954-1 for ATEX Category 2 (Zone 1) applications; note that these RTDs have not been assessed as a safety related device in accordance with EHSR 1.5 of Directive 94/9/EC.
- 15.4 When the equipment is provided with an intrinsically safe solenoid valve, the user must ensure that any associated line inductance is within the parameters of the solenoid valve certificate.

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

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

#### 17 CONDITIONS OF CERTIFICATION

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

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The following tests shall be performed by the manufacturer:

- Verification of Ventilation Failure Protection  
An output flow failure shall be simulated whilst the Pre-start Ventilation 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 Pre-start Ventilation Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.
- Verification of Ventilation Overpressure Protection  
Where HP is specified an overpressure shall be simulated whilst the Pre-Start Ventilation Control Unit is cycling, it shall be verified that the controller provides the appropriate output and resets.

# Certificate Annexe

Certificate Number: Sira 13ATEX1083X  
Equipment: Pre-Start Ventilation System  
Applicant: Expo Technologies



## Issue 0

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
SD7448	1 to 3	9	18 Sep 13	Low Temperature Housing
SD7449	1 of 1	7	18 Sep 13	System Low Temp. Wiring (Typical)
SD7535	1 of 1	1	18 Sep 13	Spark Arrestor
SD7536	1 of 1	1	18 Sep 13	Differential Flow Monitor
SD7555	1 to 5	3	18 Sep 13	RLV Configurations
SD8036	1 to 3	1	18 Sep 13	Ventilation Complete Reset Options 'MR' 'ER' & 'PR' for PV System
SD8037	1 to 2	1	18 Sep 13	Sequence Diagram for PV/PP System
SD8038	1 of 1	4	18 Sep 13	Pre-Start Ventilation Housing
SD8040	1 of 1	1	18 Sep 13	Option 'IS' Internal Switches for PV/PP System
SD8042	1 of 1	1	18 Sep 13	Secondary Pre-Ventilation 'SP' & Twin Output 'TW' for PV System
SD8043	1 to 2	3	18 Sep 13	Pre-Start Ventilation Model Numbers
SD8044	1 to 5	2	18 Sep 13	Circuit Diagram for PV/PP System
SD8045	1 of 1	1	18 Sep 13	Separate Supply 'SS' Option for PV System
SD8049	1 of 1	1	18 Sep 13	High Pressure Option 'HP'
SD8065	1 of 1	1	18 Sep 13	OV Option for PV System
SD8066	1 of 1	3	18 Sep 13	Timing Options for PV System 'ET' 'MT' 'PT'
SD8076	1 to 2	1	18 Sep 13	Certification Label

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