



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 99ATEX3050X** Issue: **10**

4 Equipment: **Range of Breather/Drains for Ex e Enclosures**

5 Applicant: **EX Innovations Limited**

6 Address: 

Jepson Court	<b>Trading as Redapt</b>
Tancred Close	Unit 1, 1 Kingsway South
Queensway	Aldridge
Royal Leamington Spa	Walsall
Warwickshire CV31 3RZ	West Midlands WS9 8FS
UK	UK

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:

IEC 60079-0:2007                      EN 60079-7:2007                      EN 60079-31:2009

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:



I M 2 / II 2 G D  
Ex e I / II Mb Gb  
Ex tb IIIC Db IP66  
Ta = -70°C to 180°C

or



II 2 G D  
Ex e II Gb  
Ex tb IIIC Db IP66

(Dependant on construction material and O-ring fitted, refer to Special Conditions of Safe Use)

Project Number 70004736

A C Smith  
Certification Manager

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#### 13 DESCRIPTION OF EQUIPMENT

The Breather/Drains are designed to allow moisture emission from Increased Safety Type 'Ex e' enclosures. Each device comprises a brass body with an M20, M25 or M32 entry thread. The body is machined such that a dust/moisture seal, manufactured from Hydrophilic Polyethylene or sintered bronze, can be pressed in place. Drainage channels through the body allow for the passage of moisture through the filter. The device may be screwed into the wall of an enclosure or into a through hole, being secured by a locknut.

#### Design Options

Alternative materials of manufacture: Groups I and II – Brass, Mild Steel or Stainless Steel  
Group II only - Glass filled nylon (Durathon glass filled nylon BKV30) or Aluminium

Alternative equivalent entry threads: NPT, NPS BSPP, BSPT, Imperial Conduit, ET or Pg.

O' ring seals: The Breather/Drain may be provided in the following materials to suit the application: Nitrile, Viton EPDM, Neoprene, Silicone and Fluorosilicone

Surface coating: The products may additionally be metallic plated to suit the application.

**Variation 1** - This variation introduced the following changes:

- i. The following modifications of the glass filled nylon variants:
  - The introduction of an additional internal capillary
  - The re-positioning of the external drain holes

**Variation 2** - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2), EN 50018:2000 and EN 50281-1-1:1998, were replaced by IEC 60079-0:2007, EN 60079-7:2007, EN 61242-0:2006 and EN 61241-1:2004, the markings were updated accordingly.
- ii. The introduction of an optional, longer thread length and an alternative drainage design.
- iii. The use of an alternative dust/moisture seal material.
- iv. The addition of an M32 size to the range (metallic versions only).
- v. The recognition of minor dimensional changes to the A/F and main body diameter.
- vi. The Special Conditions for Safe use were similarly amended to reflect the revised standards.



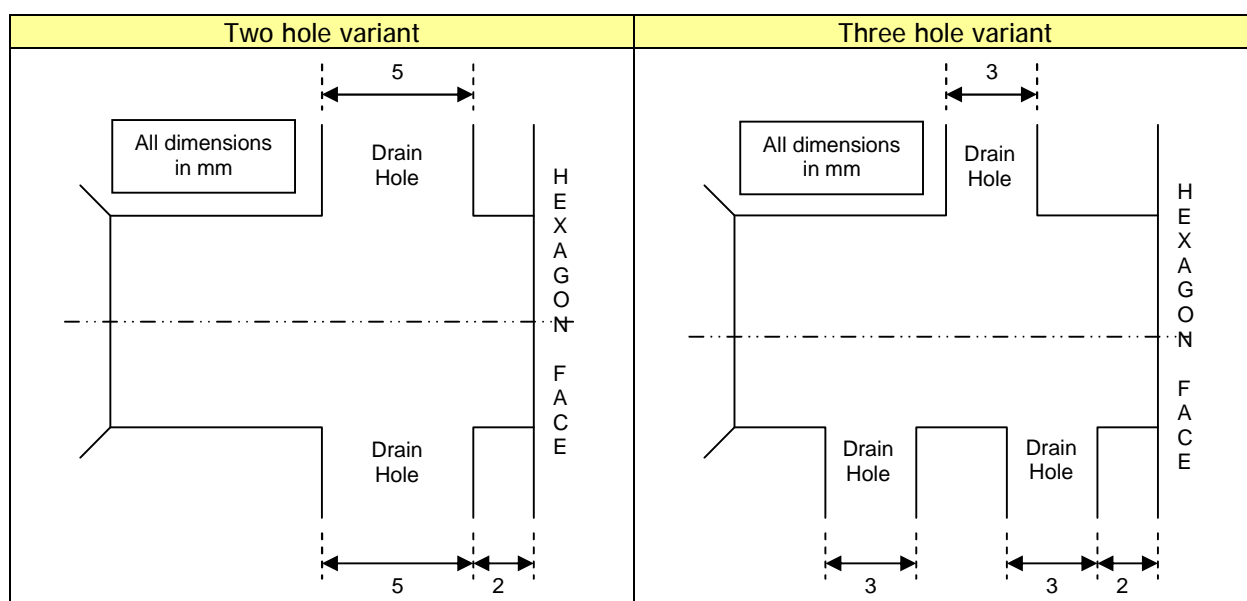
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**Variation 3** - This variation introduced the following changes:

- i. The drain holes were re-positioned and re-sized as defined in the representations shown below, in consequence, the special condition for safe use/condition of certification that specifies the wall thickness of the associated enclosure has been removed.



**Variation 4** - This variation introduced the following changes:

- i. The applicant has advised us that their address has been changed from Units 46 & 47, Darlaston Central Trading Estate, Salisbury Street, Darlaston, West Midlands WS10 8XB to that currently shown.

**Variation 5** - This variation introduced the following change:

- i. The recognition that the company name and address has changed from Redapt Ltd, Westgate, Aldridge, West Midlands WS9 8FS to EX Innovations Ltd., Trading as Redapt at Jepson Court, Tancred Close, Queensway, Royal Leamington Spa, Warwickshire CV31 3RZ.
- ii. The introduction of a Condition of Certification/Manufacture.

**Variation 6** - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge for dust requirements, the previously listed documents, EN 61241-0:2006 and EN 61241-0:2006 were replaced by EN 60079-31:2009, the marking was already in accordance with this latest standard.



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#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report/File no.	Comment
0	1 October 1999	R51X5803A	The release of the prime certificate.
1	19 November 1999	51V6482	The introduction of Variation 1.
2	9 February 2000	R51X5803B	Re-issued to permit report number R51X5803B to replace report number R51X5803A thereby correcting a typographical error, variation 1 was also incorporated.
3	17 February 2000	R51X5803C	Re-issued to permit report number R51X5803C to replace report number R51X5803B to correct test references.
4	10 April 2008	R51A13163A	The introduction of Variation 2.
5	5 November 2008	R59M19052	The introduction of Variation 3.
6	28 May 2012	R27642A/00	The introduction of Variation 4.
7	15 January 2013	R29744A/00	The introduction of Variation 5.
8	22 November 2013	R32289A/00	The introduction of Variation 6.
9	5 December 2013	R59M19052	Issued to allow R59M19052A/01 to replace R59M19052
10	28 May 2014	R70004736A	The certificate was changed from a Component 'U' certificate into an Equipment certificate at this variation.

#### 15 SPECIAL CONDITIONS FOR SAFE USE

15.1 These breather/drains are only suitable for bottom entry applications.

15.2 The breather/drains with three, 3 mm drain holes shall only be used with increased safety enclosures that have a minimum wall thickness of 2 mm, there is no restriction on the wall thickness for breather/drains with two, 5 mm drain holes.

15.3 The products shall be selected for a temperature range at their point of mounting based upon the combination of interface seal and material of construction:

##### Construction material

Metallic body

Nylon body

HDPE dust/moisture seal

Metallic dust/moisture seal

##### Limiting temperature

Dependant on filter and seal material

-50°C to +125°C, unless limited by filter material

-50°C to +85°C

Dependant on body and interface material

##### Interface O-ring Material

Nitrile

EPDM

Neoprene

Viton

Silicone

Fluorosilicone

##### Limiting temperature

-30°C to +100°C

-50°C to +125°C

-40°C to +100°C

-20°C to +180°C

-50°C to +180°C

-70°C to +150°C

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### Sira Certification Service

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- 15.4 The interfaces between the breather/drains and associated enclosure cannot be defined. Therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.
- 15.5 The clearance holes for metric male threaded products, suitable for clearance hole applications of Increased safety enclosures are to have a diameter of 0.3 to 0.5 mm larger than the major diameter of the male thread.
- 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 These products shall be marked in accordance with the information as specified in this certificate and related reports.

# Certificate Annexe

Certificate Number: Sira 99ATEX3050X  
Component: DP-E Range of Breather/Drains  
Applicant: EX Innovations Ltd., Trading as Redapt



## Issue 0

Drawing No.	Sheet	Rev.	Date	Description
98-S-10	1 of 1	1	-	EExe II Breather Drain
98-S-11	1 of 1	1	-	Castellated Locknut

## Issue 1

Drawing No.	Sheet	Rev.	Date	Description
98-S-10/NYLON	1 of 1	1	Nov 99	G.F. Nylon Breather Drain

## Issue 2 and 3

Drawing No.	Sheet	Rev.	Date	Description
98-S-10	1 of 1	1	-	EExe II Breather Drain
98-S-11	1 of 1	1	-	Castellated Locknut
98-S-10/NYLON	1 of 1	1	Nov 99	G.F. Nylon Breather Drain

## Issue 4

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
98-S-10	1 of 1	2	3 Apr 08	EExe II Breather Drain
98-S-11	1 of 1	2	3 Apr 08	Castellated Locknut
98-S-10/NYLON	1 of 1	2	3 Apr 08	G.F. Nylon Breather Drain

## Issue 5

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
98-S-10	1 of 1	3	16 Oct 08	Increased Safety Breather Drains

## Issue 6

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
IECEx MD-01	1 of 1	3	18 May 12	Marking Drawing

## Issue 7

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
IECEx MD-01	1 of 1	4	14 Jan 13	Redapt Marking Label drawing

Issue 8 No new drawings were introduced.

## Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
98-S-10	1 of 1	3	05 Dec 13	Increased safety breather drains

## Issue 10

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
DP-E Marking	1 of 1	1	23 May 14	Redapt Marking for DP-E Products

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