1 **TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 99ATEX3050U** Issue: **5**

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

5 Applicant: **Redapt Engineering Company Limited**

6 Address: Units 46 & 47
Darlaston Central Trading Estate
Salisbury Street
Darlaston
West Midlands WS10 8XB
UK

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

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 2 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

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 of this certificate, has been assessed by reference to:

IEC 60079-0:2007 EN 60079-7:2007 EN 61241-0:2006 EN 61241-1:2004

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 TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

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

or

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

C Ellaby
Certification Officer

Project Number 59M19052
C. Index 18

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SCHEDULE

TYPE EXAMINATION CERTIFICATE **Sira 99ATEX3050U**
Issue 5

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 Flurosilicone
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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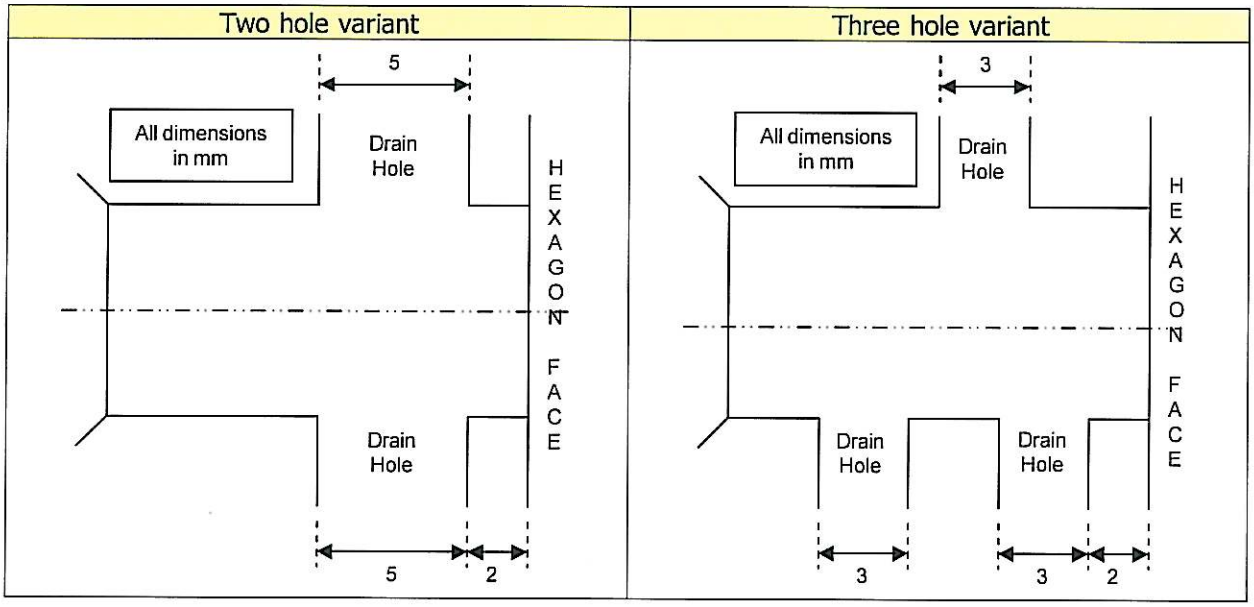
Variation 3 - This variation introduced the following changes:

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.



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.

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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	**Limiting temperature**
Metallic body	Dependant on filter and seal material
Nylon body	-50°C to +125°C, unless limited by filter material
HDPE dust/moisture seal	-50°C to +85°C
Metallic dust/moisture seal	Dependant on body and interface material

Interface O-ring Material	**Limiting temperature**
Nitrile	-30°C to +100°C
EPDM	-50°C to +125°C
Neoprene	-40°C to +100°C
Viton	-20°C to +180°C
Silicone	-50°C to +180°C
Fluorosilicone	-70°C to +150°C

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 (EHSRs)**

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed 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 Type Examination Certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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Certificate Annexe

Certificate Number: **Sira 99ATEX3050U**

Component: **DP-E Range of Breather/Drains**

Applicant: **Redapt Engineering Company Limited**

Issue 0

Number	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

Number	Sheet	Rev.	Date	Description
98-S-10/NYLON	1 of 1	1	Nov 99	G.F. Nylon Breather Drain

Issue 2 and 3

Number	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

Number	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

Number	Sheet	Rev.	Date (Sira stamp)	Description
98-S-10	1 of 1	3	16 Oct 08	Increased Safety Breather Drains

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