



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 07ATEX1175X** Issue: **2**

4 Equipment: **Adaptors Type 'A', Reducers Type 'R', Stopping Plugs Type 'D' and Stopping Plugs Type 'U'**

5 Applicant: **Hazardous Location Solutions LLC**

6 Address: **22755 – D, Savi Ranch Parkway
Yorba Linda
CA 92886
USA**

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 60079-1:2007 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:



II 2 GD

Ex d IIC Gb & Ex e IIC Gb & Ex tb IIIC Db IP6X (Adaptors Type 'A' and Reducers Type 'R')

Ex d IIC Gb & Ex tb IIIC Db IP6X (Stopping Plugs Type 'D')

Ex d IIC Gb & Ex e IIC Gb & Ex tb IIIC Db IP6X (Stopping Plugs Type 'U')

Project Number 28931

C Ellaby
Deputy Certification Manager

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13 DESCRIPTION OF EQUIPMENT

Adaptors (Type 'A') and Reducers (Type 'R')

The Adaptors (Type 'A') and Reducers (Type 'R') are used to convert an existing cable entry aperture to a different thread form and/or size. They have a hollow metallic body that is partly threaded at each end, one end has a male thread and the other a female thread. Alternative adaptor variants are available, male to male (Type 'M') and female to female (Type 'F'). The Adaptors and Reducers may be fitted with an optional O-ring seal and the thread combinations of the devices are such that a maximum of one 'standard' size difference is maintained. The products are manufactured with the following external profiles and assigned the following prefix type designations:

- Type A1 - Metallic hexagonal bodied adaptors
- Type A2 - Metallic round bodied adaptors
- Type A4 - Metallic round bodied adaptors with a partially milled hexagonal profile
- Type R1 - Metallic hexagonal bodied reducers
- Type R2 - Metallic round bodied reducers
- Type R3 - Metallic round bodied reducers with two milled flats
- Type R4 - Metallic round bodied reducers with a partially milled hexagonal profile
- Type M1 - Metallic hexagonal bodied male to male threaded in-line adaptors
- Type M2 - Metallic round bodied male to male threaded in-line adaptors
- Type M3 - Metallic round bodied male to male threaded in-line adaptors with a partially milled hexagonal profile
- Type F1 - Metallic hexagonal bodied female to female threaded in-line adaptors
- Type F2 - Metallic round bodied female to female threaded in-line adaptors

Threadform Size Range

Adaptors						Reducers	
Types A1, A2 & A4		Types M1, M2 & M3		Types F1 & F2		Types R1, R2, R3 & R4	
Male	Female	Male 1	Male 2	Female 1	Female 2	Male	Female
M16 x 1.5	M20 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5	M16 x 1.5
M20 x 1.5	M25 x 1.5	M20 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5	M20 x 1.5
M25 x 1.5	M32 x 1.5	M25 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5	M25 x 1.5
M32 x 1.5	M40 x 1.5	M32 x 1.5	M40 x 1.5	M40 x 1.5	M40 x 1.5	M40 x 1.5	M32 x 1.5
M40 x 1.5	M50 x 1.5	M40 x 1.5	M50 x 1.5	M50 x 1.5	M50 x 1.5	M50 x 1.5	M40 x 1.5
M50 x 1.5	M63 x 1.5	M50 x 1.5	M63 x 1.5	M63 x 1.5	M63 x 1.5	M63 x 1.5	M50 x 1.5
M63 x 1.5	M75 x 1.5	M63 x 1.5	M75 x 1.5	M75 x 1.5	M75 x 1.5	M75 x 1.5	M63 x 1.5
M75 x 1.5	M80 x 2.0	M75 x 1.5	M80 x 2.0	M80 x 2.0	M80 x 2.0	M80 x 2.0	M75 x 1.5
M80 x 2.0	M85 x 2.0	M80 x 2.0	M85 x 2.0	M85 x 2.0	M85 x 2.0	M85 x 2.0	M80 x 2.0
M85 x 2.0	M90 x 2.0	M85 x 2.0	M90 x 2.0	M90 x 2.0	M90 x 2.0	M90 x 2.0	M85 x 2.0
M90 x 2.0	M100 x 2.0	M90 x 2.0	M100 x 2.0	M100 x 2.0	M100 x 2.0	M100 x 2.0	M90 x 2.0

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Sira Certification Service

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Stopping Plugs Type 'D' and Type 'U'

The stopping Plugs are used to fill unused cable entries in associated apparatus. They have a metallic, cylindrical body that is partly threaded at one end with a male thread. The Type 'U' Stopping Plugs may be fitted with an 'O' ring seal. The products are manufactured with the following external profiles and assigned the following prefix type designations:

- Type D5 - Metallic round body, with an external hexagonal socket recess
- Type D6 - Metallic round body, with an internal hexagonal socket recess
- Type U5 - Metallic round body, with an external hexagonal socket recess

Threadform Size Range

Type D5	Type D6	Type U5
M16 x 1.5	M16 x 1.5	M16 x 1.5
M20 x 1.5	M20 x 1.5	M20 x 1.5
M25 x 1.5	M25 x 1.5	M25 x 1.5
M32 x 1.5	M32 x 1.5	M32 x 1.5
M40 x 1.5	M40 x 1.5	M40 x 1.5
M50 x 1.5	M50 x 1.5	M50 x 1.5
M63 x 1.5	M63 x 1.5	M63 x 1.5
M75 x 1.5	M75 x 1.5	M75 x 1.5
M80 x 2.0	M80 x 2.0	M80 x 2.0
M85 x 2.0	M85 x 2.0	M85 x 2.0
M90 x 2.0	M90 x 2.0	M90 x 2.0
M100 x 2.0	M100 x 2.0	M100 x 2.0

General Design Options for Adaptors Type 'A', Reducers Type 'R', Stopping Plugs Type 'D' and Stopping Plugs Type Type 'U'

Threadforms: All products may be machined with the following typical thread forms of the nearest equivalent recognized thread size. Thread combinations are such that minimum wall thicknesses are maintained.

- ISO Metric to IEC 60423:1993, sizes above M75 may be manufactured with a 1.5 mm pitch
- NPT to ANSI/ASME B1.20.1:1983 (R2001)
- NPS (ANSI/ASME B1.20.1:1983 (R2001)
- ISO Pipe Thread to ISO 7-2:1988
- UNI 6125
- PG to DIN 40430

O-ring seals: O-ring seals materials fitted to male thread forms may be provided in the following materials to suit the application:

Nitrile (IRHD 70)
Silicone (EPDM)



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Material of manufacture: The following materials are used as appropriate:

- Brass (CuZn39Pb3/4 or CuZn36Pb3)
- Stainless Steel 316 S1
- Steel (ISO EN 1A or 12L 14)
- Aluminium (HE30TF or 6262-T651) [Stopping plug ranges only]

Surface coating: The products may additionally be metallic plated (0.008 mm thick max.) to suit the application.

Type 'L1' Hexagonal Lock Nuts: Products marked Ex e II in the following metric male thread sizes can be supplied with the manufacturers brass locknuts for clearance hole applications:

M20, M25, M32, M40, M50, M63, M75 (1.5 mm pitch) M80, M85, M90, M100 (2.0 mm pitch)

Product Nomenclature: *AB.C.D.E.F*

- A** - alphabetical product type designation (see description above)
B - numerical body style number (as applicable, see description above)
C - male (typically) thread size and form
e.g. Metric - 16
NPT - 1/2
NPS - 1/2S
ISO parallel - 1/2P
ET - 1/2E
PG - 7
D - female (typically) thread size and form
e.g. Metric - 16
NPT - 1/2
NPS - 1/2S
ISO parallel - 1/2P
ET - 1/2E
PG - 7
E - material of manufacture
e.g. B - brass
A - aluminium
S - steel
SS - stainless steel
F - O-ring seal material when fitted (as applicable)
e.g. SC - silicone (EPDM)
NT - nitrile (IRHD 70)

Variation 1 - This variation introduced the following change:

- Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents previously listed in section 9, EN 60079-0:2006, EN 60079-1:2004, EN 60079-7:2003 plus corrigendum No. 1, EN 61241-0:2006, EN 61241-1:2004 plus corrigendum Nos. 1 & 2, were replaced by those currently listed, the markings in section 12 were updated accordingly.

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Variation 2 - This variation introduced the following changes:

- i. The list of standards was updated to recognise compliance with the requirements of the latest version of EN 60079-0.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	18 January 2008	R51L15554A	The release of the prime certificate.
1	28 February 2011	R22944A/00	The introduction of Variation 1.
2	11 October 2012	R28931A/00	The introduction of Variation 2.

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

- 15.1 Adaptors and Reducers shall not be used for the direct inter-connection of enclosures.
- 15.2 Only one adaptor or reducer shall be used with any single cable entry on the associated equipment.
- 15.3 The ranges of stopping plugs shall not be used in conjunction with any other cable entry device.
- 15.4 The interfaces between the male thread of the products and an associated enclosure and female thread of the products and the cable entry device 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 of increased safety enclosures for metric male threaded products shall have a diameter that is 0.3 mm to 0.5 mm larger than the major diameter of the male thread.
- 15.6 The products are approved for a temperature ranges at their point of mounting based upon the minimum upper and lower temperatures of their constituent parts of construction:

Products fitted with Nitrile O-rings	-30°C to 90°C
Products fitted with Silicone O-rings	-50°C to 230°C
Products manufactured from Brass	-100°C to 150°C
Products manufactured from Aluminium	-100°C to 150°C
Products manufactured from Stainless steel	-100°C to 450°C
Products manufactured from Steel	-20°C to 230°C

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.

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Certificate Annexe



Certificate Number: Sira 07ATEX1175X

Equipment: Adaptors Type 'A', Reducers Type 'R',
Stopping Plugs Type 'D' and Stopping Plugs
Type Type 'U'

Applicant: Hazardous Location Solutions LLC

Issue 0

Number	Sheet	Rev.	Date	Description
011006-A-001	1 of 1	3	2007 Nov 26	Ex thread adaptor (general arrangement)
011006-A-002	1 of 1	6	2007 Dec 03	Adaptor dimensions
011006-A-003	1 of 1	4	2007 Nov 26	Adaptors (general notes)
011006-R-001	1 of 1	2	2007 Nov 27	Ex reducers (general arrangement)
011006-R-001.1	1 of 1	3	2007 Nov 27	Ex reducers (general arrangement)
011006-R-002	1 of 1	6	2007 Dec 03	Reducer dimensions
011006-R-003	1 of 1	4	2007 Nov 27	Ex reducers (general notes)
011006-M-001	1 of 1	3	2007 Nov 27	Ex male x male adaptors (general arrangement)
011006-M-002	1 of 1	3	2007 Nov 27	Adaptor dimensions
011006-M-003	1 of 1	4	2007 Nov 27	Adaptors (general notes)
011006-F-001	1 of 1	3	2007 Nov 27	Ex female x female adaptors (general arrangement)
011006-F-002	1 of 1	3	2007 Nov 27	Female x female adaptor dimensions
011006-F-003	1 of 1	4	2007 Nov 27	Female x female adaptor (general notes)
011006-U-001	1 of 1	4	2007 Nov 27	Exd/Exe Plugs (general arrangement)
011006-U-002	1 of 1	5	2007 Nov 27	Exd/Exe Plug (dimensions)
011006-U-003	1 of 1	5	2007 Nov 27	Exd/Exe Plug (general notes)
011006-D-001*	1 of 1	4	2007 Nov 27	Exd plugs (general arrangement)
011006-D-002	1 of 1	5	2007 Nov 27	Exd plug (dimensions)
011006-D-003	1 of 1	4	2007 Nov 27	Exd plug (general notes)
011006-L-001	1 of 1	5	2007 Dec 03	Ex locknut
011006-OR-001	1 of 1	2	2007 Nov 27	OR "O" Ring
011006-Marking-001	1 of 1	6	2007 Dec 03	Product Marking - Information
011006-Marking-001.1	1 of 1	2	2007 Nov 29	Product Marking – Example options
011006-Marking-001.2	1 of 1	2	2007 Nov 29	Product Marking – Nomenclature

* This drawing was amended by Sira 6 December 2007

Issue 1

Number	Sheet	Rev.	Date	Description
011006-Marking-001	1 of 1	8	22 Feb 2011	Product Marking – Information
011006-Marking-001.1	1 of 1	4	22 Feb 2011	Product Marking – Example options

Issue 2 No new drawings were introduced.

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