



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 00ATEX1073U** Issue: **5**

4 Component: **Range of Cable Entry Components (as defined in section 13)**

5 Applicant: **EX Innovations Limited**

6 Address:

Jepson Court	Trading as Raxton
Tancred Close	Kingsway South
Queensway	Westgate
Royal Leamington Spa	Aldridge
Warwickshire CV31 3RZ	West Midlands WS9 8FS
UK	UK

7 This component and any acceptable variation thereto are 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 component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component 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 50014:1997 (amendments 1 and 2) EN 50018:2000 EN 50019:2000 EN 50281-1-1:1998

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 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when incorporated into equipment. Any special conditions for safe use are listed in the schedule to this certificate.

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

12 The marking of the components is detailed in section 13.

A C Smith
Certification Manager

Project Number 29745

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13 DESCRIPTION OF COMPONENT

Types AB and AJ Male/Female Adaptors and Types BB and BJ Male/Female Reducers

Drawing No. 812

These are a range of adaptors and reducers that are used to convert an existing cable entry aperture to a different thread form and/or size. They each comprise a hollow body with a male thread at one end and a female thread at the other. The body profile may be hexagonal or round. The entry thread is between M16 and M120. Thread combinations are such that a maximum of one 'standard' size difference is maintained.

An optional undercut may be provided at the base of the male thread to allow the fitting of an additional 'O' ring or sealing washer.

Material options: Brass to BS 2874:1985
Stainless steel to BS 970: part 4:1970
Mild steel to BS 970: Part 1: 1983
Aluminium to BS 1474: 1987
Glass filled nylon MDF2, black 900

Entry thread options: Metric to BS 3643:1981
ET Conduit to BS 31:1940
PG to DIN 40430:1971
BSPP to BS 2779:1985
BSPT to BS 21:1985
NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:

Material of construction

Coding

Brass to BS 2874:1985



I M2 II 2GD
EEx de I/IIC

Stainless steel to BS 970: part 4:1970



I M2 II 2GD
EEx de I/IIC

Mild steel to BS 970: Part 1: 1983



I M2 II 2GD
EEx de I/IIC

Aluminium to BS 1474: 1987



II 2GD
EEx de IIC

Glass filled nylon MDF2, black 900



II 2GD
EEx e II

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Type AR Male/Male Adaptor and Types AU and AX Female/Female Adaptors

Drawing No. 815

These are a range of adaptors that are used to convert an existing cable entry aperture to a different thread form and / or size. They each comprise a hollow body with either male threads (type AR) or female threads (types AU and AX) at each end. The thread forms are between M16 and M75. Thread combinations are such that a maximum of one 'standard' size difference is maintained.

Material options: Brass to BS 2874:1985
Stainless steel to BS 970: part 4:1970
Mild steel to BS 970: Part 1: 1983

Entry thread options: Metric to BS 3643:1981
ET Conduit to BS 31:1940
PG to DIN 40430:1971
BSPP to BS 2779:1973
BSPT to BS 21:1985
NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2G
EEx d IIC



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Type FG and FN Right Angle Adaptors

Drawing No. 814

These are a range of right angled adaptors, each comprising a brass or stainless steel body with a male thread at one end a female thread machined into the body at 90° to the male thread. The components are designed to provide cable entry options where space is limited or to avoid cable damage, additionally, they may be used to convert an existing cable entry aperture to a different thread form and / or size. Threadforms are between M16 and M75 (to BS 3643:1981) inclusive, the male thread being the same or one standard thread size larger than the female.

Alternatively the component may be machined such as to have female threads at both ends.

Material options: Brass to BS 2874:1985
 Brass to BS 2872:1989
 Stainless steel to BS 970: part 4:1970
 Mild steel to BS 970: Part 1: 1983
 Aluminium bronze to BS 1400AB2

Entry thread options: Metric to BS 3643:1981
 ET Conduit to BS 31:1940
 PG to DIN 40430:1971
 BSPP to BS 2779:1985
 BSPT to BS 21:1985
 NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2G
EEx d IIC



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Type DB Insulated Adaptors

Drawing No. 817

These are a range of insulated adaptors manufactured from glass filled nylon 'Beetle' MDF2 with threaded metallic inserts at either end. The components are intended to insulate a cable gland or termination from the associated apparatus, additionally, they may be used to convert an existing cable entry aperture to a different thread form and / or size. Each threaded insert is threaded into the insulating body and sealed with a cementing compound. Threadforms are between M16 and M75 inclusive, the male thread being the same or one standard thread size larger than the female.

Material options: Brass to BS 2874:1985
Stainless steel to BS 970: part 4:1970
Mild steel to BS 970: Part 1: 1983
Aluminium to BS 1474: 1987

Entry thread options: Metric to BS 3643:1981
ET Conduit to BS 31:1940
PG to DIN 40430:1971
BSPP to BS 2779:1985
BSPT to BS 21:1985
NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2G
EEx d IIC



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Type EG Stopper Boxes

Drawing Nos. 822GD and 822A

The Type SBB range stopper boxes each comprise a metallic body and sleeve assembly for the interposition between a cable gland and the wall of the associated apparatus. Cables pass through the body which is subsequently filled with potting compound (Borden Putty Pack 3A) thus forming a cable bushing/stopping box. Threadforms are between M16 and M75.

Material options: Brass to BS 2874:1985
 Brass to BS 2872:1989
 Stainless steel to BS 970: part 4:1970
 Mild steel to BS 970: Part 1: 1983
 Aluminium bronze to BS 1400:1985 AB2

Entry thread options: Metric to BS 3643:1981
 ET Conduit to BS 31:1940
 PG to DIN 40430:1971
 BSPP to BS 2779:1985
 BSPT to BS 21:1985
 NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2GD
EEx de IIC



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Types DG and DN Earthlead Adaptors and Reducers

Drawing No. 818

These are a range of adaptors and reducers, each comprising a hollow, brass, hexagonal body with a male thread at one end and a female thread at the other. The entry thread is between M16 and M75. Thread combinations are such that a maximum of one 'standard' size difference is maintained.

The components are designed to provide a connection from a cable gland or termination to earth via an earth lead cable riveted and soldered to the body, additionally, they may be used to convert an existing cable entry aperture to a different thread form and / or size.

Entry thread options:

- Metric to BS 3643:1981
- ET Conduit to BS 31:1940
- PG to DIN 40430:1971
- BSPP to BS 2779:1985
- BSPT to BS 21:1985
- NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2GD
EEx e II

Type DK Earth Plates

Drawing No. 819

These are a range of brass plates with a threaded hole through the centre (up to M32) and one or more earth leads riveted to it. The components are intended for interposition between a cable gland and the associated apparatus and are intended to provide an earthing facility.

Thread options:

- Metric to BS 3643:1981
- ET Conduit to BS 31:1940
- PG to DIN 40430:1971

The marking of the component shall include the following:



II 2GD
EEx e II



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Types CK, CQ, CF and CB Stopping Plugs

Drawing No. 813

These are a range of threaded stopping plugs that are used to fill unused entries in the associated apparatus. The plugs have threadforms between M16 and M 100 and are briefly described as follows:

Type CF	Round/hexagon socket/internal mounting
Type CB	Round/hexagon socket/external mounting
Type CK	Hexagon head
Type CQ	'Mushroom' head

Material options:	Brass to BS 2874:1985
	Stainless steel to BS 970: part 4:1970
	Mild steel to BS 970: Part 1: 1983
	Aluminium to BS 1474: 1987
	Glass filled nylon MDF2, black 900

Thread options:	Metric to BS 3643:1981
	ET Conduit to BS 31:1940
	PG to DIN 40430:1971
	BSPP to BS 2779:1985
	BSPT to BS 21:1985
	NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:

Material	Type CF	Type CB	Type CK	Type CQ	Type CY
Brass to BS 2874: 1985	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	Not applicable
	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx d*e* IIC
	I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	Not applicable
Stainless steel to BS 970: Part 4: 1970	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	Not applicable
	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx d*e* IIC
	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	Not Applicable
Mild steel to BS 970: Part 1: 1983	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	⊕ I M2 EEx de I	Not applicable
	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx d*e* IIC
	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	⊕ I M2 II 2GD EEx de I/IIC	Not applicable

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Material	Type CF	Type CB	Type CK	Type CQ	Type CY
Aluminium to BS 1474:1987	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	⊕ II 2GD EEx de IIC	Not applicable
Glass filled nylon MDF2, black 900	⊕ II 2GD EEx e II	⊕ II 2GD EEx e II	⊕ II 2GD EEx e II	⊕ II 2GD EEx e II	Not applicable

Type FB and FL Union Adaptors

Drawing No. 816

The range of union adaptors is intended for in-line cable gland connection. Each union comprises two threaded entry components and a 'spinning' internal component. The components are assembled such that flamepaths are formed at both the entry threads and around the 'spinning' components and such that connection at both ends is achieved without twisting the cable.

The threads are between M16 and M75. Thread combinations are such that a maximum of one 'standard' size difference is maintained.

Material options: Brass to BS 2874:1985
Brass to BS 2872:1989
Stainless steel to BS 970: part 4:1970
Mild steel to BS 970: Part 1: 1983
Aluminium Bronze to BS 1400: 1985

Entry thread options: Metric to BS 3643:1981
ET Conduit to BS 31:1940
PG to DIN 40430:1971
BSPP to BS 2779:1985
BSPT to BS 21:1985
NPT to ANSI/ASME B1.20.1-1983

The marking of the component shall include the following:



II 2G

EEx d IIC



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Variation 1 - This variation introduced the following change:

- i. The table for the Types CK, CQ, CF and CB Stopping Plugs was replaced.

Variation 2 - This variation introduced the following change:

- i. To permit the manufacture of one half of the Types AR, AU and AX Adaptors used to convert existing cable entry apertures, having smaller cable gland entry thread apertures. The cable gland entry thread aperture being either: M63, M50, M40, M32, M25, M20 or M16 (or nearest equivalent thread forms as approved). Thus becoming Types BR (male/male), BU and BX (female/female) reducers respectively.

The coding of the devices is  II 2 G EEx d IIC

Variation 3 - This variation introduced the following changes:

- i. The introduction of stamping as an optional method of marking the certification details onto the products, in addition, the position of the marking details has been clarified.
- ii. The addition of the M80 thread form size to the range of stopping plugs, note: the previously defined entry thread options are also applicable to this size of stopping plug.
- iii. The introduction of the **Type CY Stopping Plug**

The Type CY Stopping Plugs are formed by machining a hollow section in the body of the Type CK Stopping Plugs. They are manufactured from brass, stainless steel or mild steel, in all the sizes from M16 up to and including M100. The Type CY Stopping Plugs may only be used for Group II applications. The table clarifying the specific markings that may be applied to the types CF, CB, CK, CQ and CY Stopping Plugs is replaced..

Variation 4 - This variation introduced the following change:

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



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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 number	Comment
0	3 September 2001	R51A6772A	The release of the prime certificate.
1	21 March 2002	R51A6772A	Issued to correct a typographical error and for clarification of the AR, AU and AX adaptors
2	30 June 2004	R53M11776A	The introduction of Variation 1.
3	28 April 2005	R51A13336A	The introduction of Variation 2.
4	3 January 2006	R51A15428A	The introduction of Variation 3.
5	31 January 2013	R29745A/00	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 5, Issues 0 to 4 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.The introduction of Variation 3.

15 SPECIAL CONDITIONS FOR SAFE USE

15.1 The following condition is applicable to the Type EG stopping boxes:

15.1.1 These components shall only be used where the maximum temperature, at the point of mounting, is less than 85°C.

15.2 The following condition is applicable to the Type DB Insulated Gland Adaptors:

15.2.1 These components shall only be used where the maximum temperature, at the point of mounting, is less than 130°C.

15.3 The following conditions are applicable to the Type DK Earth Plates:

15.3.1 The cable entry device fitted to the earth plate shall be fitted with a lock nut as shown on the certificate drawing.

15.3.2 The earth lead shall be connected to the earth terminal of the enclosure.

15.4 The following conditions are applicable to all non-metallic adaptors and reducers and stopping plugs:

15.4.1 The components shall be installed with a suitable 'O' ring seal fitted against the shoulder at the base of the thread.

15.4.2 These components shall only be used where the temperature, at the point of mounting, is in the range -20°C to +60°C.

15.4.3 These components shall not be used for applications where there is a 'high' risk of mechanical damage.

15.5 The following condition is applicable to the Types CK and CQ stopping plugs:

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- 15.5.1 If a Type CK or CQ stopping plug is machined with an undercut and is used for an Ex d application, then the wall of the enclosure into which it is fitted shall be such as to maintain five full threads engagement.
- 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 00ATEX1073U
Component: Range of Cable Entry Components
Applicant: EX Innovations Limited Trading as Raxton



Issues 0 and 1

Drawing No.	Sheet	Rev.	Date	Title
812	1 of 1	-	28 Jan 01	Thread Conversions
813*	1 of 1	-	28 Jan 01	Stopping Plugs
814*	1 of 1	-	28 Jan 01	Right Angled Adaptors
815*	1 of 1	-	28 Mar 01	Male/Male Female/ Female
816*	1 of 1	-	28 Mar 01	Union Adaptors
817*	1 of 1	-	29 Mar 01	Insulated Adaptor
818	1 of 1	-	29 Mar 01	Earth lead Connections
819	1 of 1	-	28 Mar 01	Earth Plates
822GD	1 of 1	-	28 Apr 01	General Details, Stopper Box Barrier
822A	1 of 1	-	28 Apr 01	Assembly, Stopper Box Barrier

Issue 2 No new drawings were introduced.

Issue 3

Drawing No	Sheet	Rev	Date	Description
815	1 of 1	1	13 Apr 05	Male/Male Female/ Female

Issue 4

Number	Sheet	Rev.	Date	Description
813	1 of 1	2	19 Dec 06	General Arrangement - Stopping Plugs
823/3	1 of 1	3	13 Dec 06	Type CY Stopping Plug

Issue 5

Number	Sheet	Rev.	Date	Description
MD - 01	1 of 1	1	14 Jan 13	Raxton Marking Label Drawing

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