



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 09ATEX3209X** Issue: **4**

4 Equipment: **DXR-R*M***** Switchbox**

5 Applicant: a. **Topworx Inc**
b. **Emerson Machinery Equipment (Shenzhen) Co. Ltd.**
c. **Emerson Proces Management Magyarország Kft.**

6 Address: a. **3300 Fern Valley Road, Louisville, Kentucky, 40213, USA**
b. **Fisher Controls Division, Bao Heng Technology Industry Park, North Hong Long 2nd Road, District 68, Bao'an District, Shenzhen 518101, China**
c. **Fisher Controls International LLC, H-8001 Székesfehérvéár, Berenyi U, 72-100, Hungary**

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 60079-18:2004 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 2GD
Ex e mb IIC T4 Gb
Ex tb IIIC T66°C Db IP67
Ambient range
24 Vdc Asco valve: -20°C to +44°C
115 Vac/230 Vac Asco valve: -20°C to +37°C

Project Number 70005505

A G Boyes
Certification Support Officer

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The DXR-**M***** Switchbox monitors the position of a valve by providing electrical feedback and optional visual indication. It uses a glass fibre reinforced polyester enclosure that houses the following devices:

- One Topworx Cube, either 2-reed or 4-reed - supply: 1 A/125 V maximum.
- Two Asco Joucomatic piezo valves (IECEx SIR 06.0109X, BAS98ATEX2168X), which may be one of the following types:
 - EM5 PVX 30200018: 24 Vdc, 3 W.
 - EM5 PVX 30200017: 115 Vac, 5 W.
 - EM5 PVX 30200017: 230 Vac, 5 W.

The enclosure comprises an upper and lower housing that is fitted with a metallic or a non-metallic bush. The shaft that passes through these bushes is connected to the driving source in the lower housing and is used to activate the internal equipment, this includes the optional visual indication of the shaft rotational position which is located in the upper housing. The enclosure is provided with moulded threaded bushings for the installation of the internal apparatus, chassis plates etc. and the lower housing can be fitted with metallic or non-metallic hubs that accommodate threaded entries and facilitate the attachment of an air operated valve. The enclosure also has an internal and external earth facility or an earth continuity chassis plate. The cover joint is provided with an "O" ring to maintain the ingress protection of the enclosure.

Variation 1 - This variation introduced the following changes:

- To permit the replacement of the IP64 marking with IP67 on the DXR (resin) enclosures. The marking in Section 12 was amended accordingly.
- Following appropriate re-assessment to demonstrate compliance with the requirements of EN 60079-31:2009, the document originally listed in Section 9, EN 61241-1:2004 was replaced.

Variation 2 - This variation introduced the following change:

- The recognition of minor drawing modifications; these amendments are administrative and do not affect the aspects of the product that are relevant to explosion safety.

Variation 3 - This variation introduced the following change:

- To allow an alternative silicone gasket/O-ring material to be used on the enclosure, shaft and valve manifold where applicable.

Variation 4 - This variation introduced the following change:

- The introduction of two additional manufacturing locations:

Emerson Machinery Equipment (Shenzhen) Co. Ltd.
Fisher Controls Division
Bao Heng Technology Industry Park
North Hong Long 2nd Road
District 68 Bao'an District Shenzhen 518101, China

Emerson Proces Management Magyarország Kft.
Fisher Controls International LLC
H-8001 Székesfehérvár
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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	9 December 2009	R16882A	The release of the prime certificate.
1	06 May 2011	R23823A/00	The introduction of Variation 1.
2	25 November 2011	R25807A/00	The introduction of Variation 2.
3	17 August 2012	R28300A/00	The introduction of Variation 3.
4	07 May 2014	R70005505A	The introduction of Variation 4.

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

- 15.1 The DXR-**M***** Switchbox shall only be installed in a location where there is a low risk of mechanical damage.
- 15.2 The DXR-**M***** Switchbox shall not be used inside liquid fuel metering pumps, dispensers and remote pumping units.
- 15.3 The Asco piezo valve shall be connected to a supply protected by a fuse capable of interrupting the prospective short circuit current of that supply.

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 DXR-**M***** Switchbox covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products:
- 17.4 The finished, manufactured Topworx Cube shall be subjected to a visual inspection in accordance with clause 9.1 of EN 60079-18:2004. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decompression, failure in adhesion or softening.
- 17.5 An electric strength test in accordance with clause 9.2 of EN 60079-18:2004 shall be carried out at 1000 V + 2 Un, or 1500 Vac, whichever is the greater, for 60 seconds on the encapsulated Topworx Cube. Alternatively, if this test voltage is multiplied by 1.2 times, it may be applied for at least 100 ms. The voltage shall be applied between the circuits joined together and the outer enclosure wrapped in aluminium foil.

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Sira Certification Service

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Certificate Annexe

Certificate Number: Sira 09ATEX3209X
Equipment: DXR-R*M***** Switchbox
Applicant: Topworx Inc



Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CERT-ES-01703-1	1 to 2	a	06 Nov 09	General assembly
CERT-ES-01946-1	1 of 1	1	06 Nov 09	Nameplate
ES-01568-1	1 of 1	2	06 Nov 09	4-reed Cube: encapsulation details
ES-01569-1	1 to 8	3	06 Nov 09	4-reed Cube: artwork & BoM
ES-01571-1	1 of 1	3	06 Nov 09	2-reed Cube: encapsulation details
ES-01572-1	1 to 8	3	06 Nov 09	2-reed Cube: artwork & BoM

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CERT-ES-01946-1	1 of 1	2	30/03/2011	Nameplate

Issue 2

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
ES-01572-1	1 to 8	4	29 Sep 11	2-reed Cube: artwork & BoM
ES-01569-1	1 to 8	5	29 Sep 11	4-reed Cube: artwork & BoM

Issue 3 (No new drawings were introduced).

Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
CERT-ES-01946-1	1 of 1	3	07 May 14	Nameplate

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