



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEx SIR 12.0089X** issue No.:5  
Status: **Current**  
Date of Issue: **2015-02-04** Page 1 of 4

Certificate history:  
Issue No. 5 (2015-2-4)  
Issue No. 4 (2013-11-7)  
Issue No. 3 (2013-6-24)  
Issue No. 2 (2013-5-28)  
Issue No. 1 (2013-1-7)  
Issue No. 0 (2012-9-3)

Applicant: **TopWorx Inc.**  
3300 Fern Valley Road  
Louisville  
Kentucky 40213  
**United States of America**

Electrical Apparatus: **TV\* Switchboxes**  
*Optional accessory:*

Type of Protection: **Type nA nC**



Marking: Refer to the Annexe for markings.

*Approved for issue on behalf of the IECEx  
Certification Body:* C Ellaby

*Position:* Deputy Certification Manager

*Signature:  
(for printed version)*

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
Rake Lane  
Eccleston  
Chester  
CH4 9JN  
United Kingdom

**sira**  
CERTIFICATION



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3300 Fern Valley Road  
Louisville  
Kentucky 40213  
**United States of America**

Additional Manufacturing location(s):

<b>Emerson Process Management</b>	<b>Emerson Machinery Equipment (Shenzhen) Co. Ltd.</b>
Fisher Controls International LLC.	Fisher Controls Division
H-8001 Szekesfehervar	Bao Heng Technology Industry Park
Berenyi U	North Hong Long 2nd Road
72-100	District 68
Hungary	Boan District
	Shenzhen 518101
	China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-15 : 2010</b> Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

##### Test Report:

GB/SIR/ExTR12.0208/00  
GB/SIR/ExTR13.0168/00

GB/SIR/ExTR12.0259/00  
GB/SIR/ExTR13.0263/00

GB/SIR/ExTR13.0061/00  
GB/SIR/ExTR14.0290/00

##### Quality Assessment Report:

GB/BAS/QAR06.0020/04

GB/BAS/QAR13.0005/00

GB/SIR/QAR07.0025/04



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The TV\* Switchbox consists of an enclosure (approximately 145 mm x 100 mm by 80 mm, without dome) comprising a base and a lid. The enclosure can be made from aluminium alloy (TVL) or stainless steel (TVH), with or without a Lexan indicator dome, depending upon the application. The lid is fitted with a seal inside a groove and four captive screws for attachment to the base. There are two types of lid; one is normal (flat) the other is a flat lid with a bushing and indicator dome. The bushing version of the lid has a hole in its centre to allow a shaft to be fitted for a Position Indicator under the Lexan dome. The base provides a cable entry via screwed entry holes for cable glands.

Refer to the Annexe for additional information and Conditions of Manufacture.

### CONDITIONS OF CERTIFICATION: YES as shown below:

- 1 When fitted with an indicator dome, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall only be cleaned with a damp cloth.



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

<b>Issue 1 to Issue 3 - for changes refer to Issue 3</b>			
<b>Issue 4 – this Issue introduced the following changes:</b>			
1.	The introduction new models that incorporate a 4-20mA Transmitter Module, IECEx SIR 12.0076U, plus an associated Novotechnic WAL305 potentiometer. This change required the application of a new Condition of Manufacture.		
2.	The following model number changes were recognised: TV*.AR to TV*.AS (ASI option); TV*.DR to TV*.DN (DeviceNet option); TV*.PR to TV*.PB (Profibus option)		
3.	The removal of the nitrile O-ring option; only silicone O-rings will now be fitted.		
4.	<p>The Description of Equipment and the marking were extensively modified to better describe the product in its current format and recognise the following.</p> <ul style="list-style-type: none"> <li>• The introduction the new models that incorporate a 4-20mA Transmitter Module.</li> <li>• The removal of the nitrile O-ring option.</li> <li>• The clarification of the ambient temperature ranges that are applicable to alternative internal constructions.</li> </ul> <p>It should be noted that previous Issues of the certificate are still relevant and apply to products manufactured in accordance with already certified constructions.</p>		
<b>Issue 5.- this Issue introduced the following changes:</b>			
1.	The introduction of S50440A silicone O-ring on the lid/base joint as a replacement to S7395-60 silicone.		
2.	The replacement of IP64 with IP66/68 marking, the marking was amended accordingly.		
3.	The removal of the following devices that incorporate mechanical switches:		
	Device	Style	Ambient temp. range
	2 switches plus ASI module (nA)	AK, AM	-40°C to +85°C
	2 switches plus DeviceNet module (nA)	DK, DM	-40°C to +85°C
	2 switches plus Profibus module (nA)	PK, PM	-40°C to +85°C
	The product description was amended accordingly and an additional Condition of Manufacture was introduced.		
4.	The addition of ASI, DeviceNet and Profibus drawings.		

**Annexe to:** IECEx SIR 12.0089X Issue 5  
**Applicant:** Topworx Inc.  
**Apparatus:** TV\* Switchboxes



The marking is as follows:

TV* option	Certification code (gas)	Certification code (dust)	Ambient temperature range
P2	Ex nA nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +55°C
R2, R4	Ex nA nC IIC T3 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +95°C
AS, DN, PB	Ex nA nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +85°C
PX, RX	Ex nA nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +55°C
0X	Ex nA IIC T4 Gc	Ex tc IIIC T70°C Dc IP66/68	-40°C to +55°C

**Equipment (continued):**

The permitted internal devices are as follows:

Device	Style	Ambient temp. range
Two reed switches (nC) type HSR-634W only	P2	-40°C to +55°C
Two or four reed switches (nC) type LV ELE145 only	R2, R4	-40°C to +95°C
ASI module (nA) plus two reed switches (nC)	AS	-40°C to +85°C
DeviceNet module (nA) plus two reed switches (nC)	DN	-40°C to +85°C
Profibus module (nA) plus two reed switches (nC)	PB	-40°C to +85°C
Two reed switches (nC) plus TopWorx 4-20 mA Transmitter Module (nA, Sira 12ATEX4193U) and associated potentiometer	PX, RX	-40°C to +55°C
TopWorx 4-20 mA Transmitter Module (nA, Sira 12ATEX4193U) and associated potentiometer only	0X	-40°C to +55°C

**Conditions of Manufacture**

- i. The manufacturer shall subject 100% of completed switchbox units to the electrical strength test in IEC 60079-15:2010 clauses 6.5, by applying a voltage of 1500 Vrms between all input terminals and the outer enclosure for a minimum of 60 s. Alternatively, a voltage of 1800 Vrms may be applied for 100 ms. There shall be no breakdown or flashover. The current flowing during the test shall not exceed 5 mA.
- ii. When the equipment incorporates a 4-20 mA Transmitter Module (IECEX SIR 12.0076U), the following additional requirements apply:
  - the manufacturer shall supply a copy of certificate IECEx SIR 12.0076U with each unit or batch of units;
  - the output from the 4-20mA Transmitter Module shall only be connected to a Novotechnic WAL305 potentiometer;
  - A maximum of two switches is permitted when the 4-20 mA Transmitter Module is fitted.
- iii. The following drawings, relating to TV\* Switchboxes incorporating simple mechanical switches (models AK, AM, DK, DM, PK, PM), are withdrawn and shall not be used for production:
  - CERT-ES-02883-1
  - CERT-ES-02888-1
  - CERT-ES-02890-1