



UNITED KINGDOM CONFORMITY ASSESSMENT

1 **TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
UKSI 2016:1107 (as amended)

3 Certificate Number: **CSAE 21UKEX4723X** Issue: **1**

4 Product: **Switchboxes / TV\***

5 Manufacturer: **Topworx Inc.**

6 Address: **3300 Fern Valley Road  
Louisville  
Kentucky  
40213, USA**

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

8 CSA Group Testing UK Limited, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. 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 has been assured by compliance with:

EN IEC 60079-0:2018                      EN 60079-15:2019                      EN 60079-31:2014  
EN60079-7:2015(for 'ec' only)

Except in respect of those requirements listed at Section 16 of the schedule to this certificate.

The above standards may not appear on the UKAS Scope of Accreditation, but have been added through flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:



II 3GD

Refer to the Equipment Schedule for the marking pertinent to each model

Name: M Halliwell  
Title: Director of Operations



Certificate No. CSAE21UKEX4723X  
CSA Group Testing UK Ltd., Unit 6 Hawarden Industrial Park, Hawarden, CH5 3US, UK  
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QD 1601 Issue 4 (2023-09-11)

## SCHEDULE

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Issue 1

#### 13 DESCRIPTION OF PRODUCT

TV* option	Certification code (gas)	Certification code (dust)	Ambient temperature range
P2	Ex ec nC IIC T6 Gc	Ex tc IIIC T85°C Dc, IP66/68	-40°C to +55°C
	Ex ec nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +80°C
R2, R4	Ex ec nC IIC T3 Gc	Ex tc IIIC T85°C Dc, IP66/68	-40°C to +60°C
	Ex ec nC IIC T3 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +95°C
OX	Ex ec IIC T4 Gc	Ex tc IIIC T70°C Dc IP66/68	-40°C to +55°C
PX, RX	Ex ec nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +55°C
Q2, Q4, G2, G4	Ex ec nC IIC T6 Gc	Ex tc IIIC T85°C Dc, IP66/68	-40°C to +55°C
	Ex ec nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +80°C
AS, DN, PB	Ex ec nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +85°C
S	Ex ec nC IIC T4 Gc	Not applicable	-40°C to +60°C
D2, D4, S2, S4	Ex ec nC IIC T6 Gc	Ex tc IIIC T85 °C Dc	-40°C to +55°C
	Ex ec nC IIC T4 Gc	Ex tc IIIC T115°C Dc, IP66/68	-40°C to +80°C

The TV\*-series Switchboxes consist 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.

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 (ec) plus two reed switches (nC)	AS	-40°C to +85°C
DeviceNet module (ec) plus two reed switches (nC)	DN	-40°C to +85°C
Profibus module (ec) plus two reed switches (nC)	PB	-40°C to +85°C
Two reed switches (nC) plus TopWorx 4-20 mA Transmitter Module (ec, Sira 12ATEX4193U) and associated potentiometer	PX, RX	-40°C to +55°C
TopWorx 4-20 mA Transmitter Module (ec, Sira 12ATEX4193U) and associated potentiometer only	OX	-40°C to +55°C
Two or four Series 36 GO switches (nC), 120Vac/4A, 24Vdc/3A	G2/G4	-40°C to +80°C
Two or four Series 36 GO switches (nC), 120Vac/2A, 24Vdc/1A	Q2/Q4	-40°C to +80°C
LED Board, Q, P, R switch options	S	-40°C to +60°C
Series 36SD GO Switch module (IEC UL 18.0139U), 120Vac/4A,24Vdc/3A	S2, S4	-40°C to +80°C
Series 36SD GO Switch module (IEC UL 18.0139U), 120Vac/2A,24Vdc/1A	D2, D4	-40°C to +80°C

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**Incorporated Amendments**

The product description includes the following applicable amendments from the previous supporting assessments. Only amendments directly applicable to UKCA certification have been included in this list. The amendments are numbered to include a reference to the variation at which these were introduced.

- V.1 Administrative changes only.
- V.2 Administrative changes only.
- V.3
  - i. Introduction of model numbers TV\* Px.... (Profibus), TV\* Ax.... (ASi) and TV\* Dx.... (Device Net), where 'x' = K, M or R.
  - ii. The product description and marking were amended for clarity.
- V.4
  - i. The introduction new models that incorporate a 4-20mA Transmitter Module Sira 12ATEX4193U, plus an associated Novotechnic WAL305 potentiometer. This change required the application of a new Condition of Manufacture.
  - ii. The removal of the nitrile O-ring option; only silicone O-rings will now be fitted.
  - iii. 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)
  - iv. The Description of Equipment and the marking were extensively modified to better describe the product in its current format and recognise the following.
    - The introduction the new models that incorporate a 4-20mA Transmitter Module.
    - The removal of the nitrile O-ring option.
    - The clarification of the ambient temperature ranges that are applicable to alternative internal constructions.

It should be noted that previous Issues of the certificate are still relevant and apply to products manufactured in accordance with already certified constructions.

- V.5
  - i. The introduction of S50440A silicone O-ring on the lid/base joint as a replacement to S7395-60 silicone.
  - ii. The replacement of IP64 with IP66/68, the marking was amended accordingly.
  - iii. 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 Certification was introduced.

- iv. The addition of ASi, DeviceNet and Profibus drawings.
- V.6
  - i. Introduction of the 36-series GO Switch, associated with sensing options Q2/Q4 and G2/G4, requiring the addition of a Specific Condition of Use.
  - ii. Rationalisation of dust temperature marking to T85°C (associated with gas T6 marking) and T115°C (associated with gas T4 marking) for all except the 'OX' option.
- V.7
  - i. The addition of an LED circuit board (option S) to enclosure models TVL/TVH to be used in conjunction with listed switch options Q, P and R and referred to as options QS, PS and RS was recognised, and the description was amended accordingly.
  - ii. A Specific Condition of Use was introduced.

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- V.8 Administrative changes only.
- V.9 Administrative changes only.
- V.10 Administrative changes only.

**Variation 1** - This variation introduced the following changes:

- i. Conditions of Manufacture is revised to replace the Novotechnic WAL305 potentiometer with a generic 10k potentiometer that has a 0.5 mm separation distance through a plastic insulation.

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	13 December 2022	R80088231A	The release of the prime certificate.
1	18 January 2024	R80188967A	The introduction of Variation 1.

**15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)**

- 15.1 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.
- 15.2 When the supply to the Series 36 GO Switches does not exceed 60 Vac/85 Vdc, the supply shall be protected such that transients are limited to a maximum of 119 V. If the supply is above 60 Vac/85 Vdc but not exceeding 120 Vac, the supply shall be protected such that transients are limited to a maximum of 238 V.
- 15.3 The supply values, when option S LED board is fitted, are  $U_{max} = 24V$ ,  $I_{max} = 250\text{ mA}$  and  $P_{max} = 1.2W$ .

**16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (REGULATIONS SCHEDULE 1)**

In addition to the Essential Health and Safety Requirements covered by the standards listed in Section 9, all other requirements are demonstrated in the relevant reports.

**17 PRODUCTION CONTROL**

- 17.1 Holders of this certificate are required to comply with production control requirements defined in Schedule 3A, as applicable, and CSA Group Testing UK Regulations for Certificate Holders.
- 17.2 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. The current flowing during the test shall not exceed 5 mA.
- 17.3 The products 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 CSA Group Testing UK of any modifications of the devices that may impinge upon the explosion safety design of their products. They shall also provide the end user with the appropriate certification documents.





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- 17.4 When the equipment incorporates a 4-20 mA Transmitter Module (Sira 12ATEX4193U), the following additional requirements apply:
- The manufacturer shall supply a copy of certificate Sira 12ATEX4193U with each unit or batch of units;
  - The output from the 4-20mA Transmitter Module shall only be connected to a 10k potentiometer that has a 0.5 mm separation distance through a plastic insulation;
  - A maximum of two switches is permitted when the 4-20 mA Transmitter Module is fitted.
- 17.5 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





## Certificate Annexe

Certificate Number: CSAE 21UKEX4723X  
 Product: Switchboxes / TV  
 Manufacturer: Topworx Inc.

### Issue 0

Drawing	Sheets	Rev.	Date (stamp)	Title
CERT-ES-09059-1	1 of 1	AA	06 Dec 22	Certification Drawing, TVL/TVH Markings Ex e,n
CERT-ES-02967-1	1 of 1	7	17 Oct 13	General assembly
ES-01596-1	1 of 1	5	29 Aug 12	Clear Cover (Lexan Dome)
ES-01598-1	1 of 1	3	16 Jul 12	Assembly, Dome
CERT-ES-01901-1	1 of 1	6	16 Jul 12	Assembly Shaft, Standard (T-Series, Thinwall)
CERT-ES-02265-1	1 of 1	5	16 Jul 12	Assembly Shaft (Namur)
CERT-ES-02266-1	1 of 1	4	16 Jul 12	Assembly Shaft (Standard)
CERT-ES-02280-1	1 of 1	5	16 Jul 12	Assembly Shaft
CERT-ES-02768-1	1 of 1	1	16 Jul 12	Assembly Shaft (Linear)
CERT-ES-02772-1	1 of 1	1	16 Jul 12	Assembly Shaft (Linear)
S-S01-0037	1 of 1	3	16 Jul 12	Shaft O-rings
ES-00403-1	1 of 1	6	16 Jul 12	Assey, 'R' Reed Switch
ES-00530-1	1 of 1	8	16 Jul 12	Assey, 'P' Reed Switch
PS-00094-1	1 of 1	3	16 Jul 12	'R' Reed Switch details
PS-00125-1	1 of 1	2	16 Jul 12	'P' Reed Switch details
CERT-ES-02884-1	1 of 1	2	08 May 13	Wiring diagram, ASi board with two reed switches
CERT-ES-02887-1	1 of 1	1	08 May 13	Wiring diagram, Profibus board with two reed switches
CERT-ES-02888-1	1 of 1	2	08 May 13	Wiring diagram, Profibus board with two mechanical switches
CERT-ES-03260-1	1 of 1	20	17 Jan 19	Certification Drawing, TVL/TVH
CERT-ES-02866-1	1 of 5 4 of 5	1	05 Nov 14	ASi module schematic and BoM
CERT-ES-02867-1	1 of 5 4 of 5	1	05 Nov 14	Profibus schematic and BoM
CERT-ES-02868-1	1 to 4	1	05 Nov 14	DeviceNet, schematic, BoM and assembly
CERT-ES-04334-1	1 to 3	19	13 Feb 18	General assembly
CERT-ES-04334-1	3 of 3	18	18 Sep 17	General assembly
CERT-ES-06321-1	1 of 1	1	18 Sep 17	Pin clearance, 36 series
ES-03334-1	1 of 1	5	18 Sep 17	Hermetic seal, 36-series GO switch for T series
ES-03335-1	1 of 1	5	18 Sep 17	Can, 36-series GO switch, T series
ES-03890-1	1 to 2	6	18 Sep 17	Sensor assembly, 36 series TVL/TVH/TVF
ES-05116-1	1 to 5	2	26 Mar 18	LED indicator PCBA
ES-05482-1	1 of 1	3	23 Jan 18	Assy, Indicator QS TV Series (Led) Minigo
ES-05484-1	1 of 1	4	16 Nov 17	Assy, RS and PS Indicator TV Series (LED)
ES-05626-1	1 of 1	3	16 Nov 17	Assy, MS and KS Indicator TV Series (LED)





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Product: Switchboxes / TV  
Manufacturer: Topworx Inc.

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### Issue 1

Drawing	Sheets	Rev.	Date (Stamp)	Title
CERT-ES-02205-1	1 of 1	AA	05 Dec 23	Assembly, Potentiometer

