



UNITED KINGDOM CONFORMITY ASSESSMENT

1 **UK TYPE EXAMINATION CERTIFICATE**

2 Equipment Intended for use in Potentially Explosive Atmospheres

UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Certificate Number: **CSAE 21UKEX1285X** Issue: **0**

4 Product: **Limit Switch Enclosure Types TXP and TXS**

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, Approved Body number 0518, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 60079-1:2014 EN 60079-31:2014

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 UK 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 be in accordance with Regulation 41 and include the following:

**Limit Switch Enclosure
Types TXP and TXS without solenoid**



II 2GD
Ex db IIC T6/T5/T4 Gb,
Ta = -65°C to +40°C/+60°C/+80°C
Ex tb IIIC T85°C/T100°C/T135°C Db,
Ta = -50°C to +40°C/+60°C/+80°C

**Solenoid Switch
Types TXP and TXS with solenoid**



II 2GD
Ex db IIB T6/T5/T4 Gb,
Ta = -65°C to +40°C/+60°C/+80°C
Ex tb IIIC T85°C/T100°C/T135°C Db,
Ta = -50°C to +40°C/+60°C/+80°C

Name: Michelle Halliwell

Title: Director of Operations



SCHEDULE**UK TYPE EXAMINATION CERTIFICATE**CSAE 21UKEX1285X
Issue 0**13 DESCRIPTION OF PRODUCT**

The Limit Switch Enclosure Types TXP and TXS are intended to indicate the position of a valve or actuator to which it is connected. The equipment comprises a rectangular enclosure manufactured from either die cast aluminium (TXP) or stainless steel (TXS) with the cover being fixed to the body via four M5 x 20 socket head fasteners. The Solenoid Switch Types TXP and TXS are additionally supplied with an integral solenoid and spool valve, and are intended to control the valve or actuator. The body contains up to four, single pole, double throw, limit switches or inductive switches, and a 1 K Ω potentiometer in varying combinations, which make and break via a rotating armature connected to the operating shaft. The operating shaft passes through a bronze or stainless steel bushing and the position of the valve or actuator to which it is connected is transferred. There are up to four cable entry points, with a maximum of one per side, via which electrical connection to external circuitry is made. Both types may be additionally supplied with a visual indicator affixed to the cover, connected to and rotating with the operating shaft.

The enclosure fasteners are stainless steel M8 x 1.25 – 6H, reduced shank A2-70 grade fasteners.

When marked for dust, the enclosures have an IP66/IP67 rating.

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.

1. The introduction of alternative product labels that allow a distributor's name to be applied to the products.
2. The TS-EXD-C, TS-EXD-C-S/S & TS-SOL-B variants were permitted to be fitted with switch types:
 - SPDT - 250 V ac at 1.5 A
 - SPDT - 250 V ac at 0.5 A
 - NO Proximity - 250 V ac at 0.2 A
 - DPDTh - 110 V ac at 6 A
 - NO Proximity - 60 V dc at 0.2 A
 - PNP Proximity - 30 V dc at 0.2 A
 - NC Proximity - 8 V dc at 3 mA

The option to use of nickel plated brass as a material of manufacture of the TS-EXD-3 venting and breathing device was recognised.

The option to machine the shaft from one piece of metal was endorsed.

3. The equipment was allowed to be used in a lower ambient temperature of -50°C; in consequence, the marking has been modified to include Ta = -50°C.
The inclusion of bus network cards to provide feedback on the actuator position; the equipment type reference suffix is detailed below:
 - A - AS-I card
 - B - Profibus DP card
 - C - Profibus PA card
 - D - Foundation Fieldbus card
 - E - Position transmitter card
 - F - Devicenet card
 - G - Modbus card

The introduction of alternative labels that allow a distributors name to be applied to the products.

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4. The option to fit Go[®] switches to the TS-SOL-B & TS-EXD-C Enclosures was approved.
5. The existing routine overpressure testing requirements were removed.
6. Topworx were recognised to have ownership of the intellectual rights of these products.
Minor drawing modifications were recognised; these changes relate to the securing arrangements and are not detrimental to explosion safety.
The ambient temperature range (-50°C to +40°C) is raised to -50°C to +80°C, the temperature class is raised to T4 as a result of this change.
The range of products has been rationalised, the certificate now covers the Limit Switch Enclosure Types TXP and TXS.
The Limit Switch Enclosure Types TXP and TXS were allowed to be used in IIC environments, in consequence, a condition of certification associated with routine pressure testing was introduced.
7. To recognise a modification to the product nomenclature, by including a letter 'M', for the TXP and TXS versions only.
8. The introduction of a new model designated as the type 'TXPOX', this model has an alternative shaft and bushing arrangement in enclosure lid.
9. Minor drawing and dimensional changes were approved.
10. To permit the metal enclosures to be given an IP66/67 ingress protection rating. The marking was amended accordingly.
11. The enclosure was modified in order to make it more robust.
12. The ambient temperature range has been extended to -60°C for category 2G only.
The requirement for routine overpressure testing has been removed for enclosures suitable for a -50°C ambient temperature limit, in addition, a routine overpressure testing requirement for enclosures suitable for -60°C was added.
14. The removal of routine overpressure testing on model variants with stainless steel housings was endorsed.
Clarification of the special fastener head, on drawing numbers ES-03002-1, was approved.
The recognition of minor drawing modifications; the leading edge of the bushing from 0.5 mm x 30° to 1.0 mm x 10° to aid assembly, these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.
15. To permit a reduction in lower ambient temperature of TXP and TXS mechanical switches from -60°C to -65°C for configurations with/without solenoid valve, and for use in gas atmospheres only (not dust atmospheres);
The reintroduction of an ambient temperature range option of -50°C to +40°C, allowing a temperature class of T6 for both gas and dust atmospheres;
To permit the removal of the routine overpressure test currently mandatory for aluminium enclosures (26 bar @-60°C) in the conditions of manufacture;
Modification to drawing no. ES-02478-1, revision of NPT Threads ANSI/ASME B1.20.1-2013 rather than ANSI/ASME B1.20.1-1993;
Rationalisation of modified drawings that were highlighted/made by the manufacturer, including two additional schedule drawing no. ES-01524-1 and CERT-ES-06068-1;
Recognition of the pilot solenoid switch into the label drawing no. CERT-ES-01609-1, associated with the IIB gas group. This option is specified as option 'n' on this drawing, and the switch is rated at 24VDC, 110VAC and 220VAC;
Introduction of drawing no. CERT-ES-06068-1, which provides a summary of the flame paths associated with the enclosures, which are unchanged from previous assessments;
The introduction of an alternative material for the operating shaft, drawing no. CERT-ES-01457-1.



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16. The introduction of the 36-series GO Switch, associated with new sensing options Q2/Q4 and G2/G4.
17. The introduction of the Series 36SD Switch, associated with new sensing options D2/D4 and S2/S4.
20. Drawing CERT-ES-01609-1 and CERT-ES-01607-01 were updated to Rev. 16. This was to add optional ambient temperature of 60°C which determines a T5 Temperature Class for gas and T100°C for dust, as a result the marking was updated accordingly.
Added clarification "Device construction for IIC rating, does not allow for integral solenoid/valve to be fitted" to drawing CERT-ES-01607-1.
Updated Instructions manual document ES-01856-1 to rev.19.
21. To recognize minor drawing modifications. These amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.
To permit the introduction of a Specific Condition of Use to aid with the proper selection of cable glands and cables.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	14 April 2022	R80088233A	The release of the prime certificate.

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

- 15.1 The slotted hexagonal head cover screws are not of standard form; they shall only be replaced with identical screws sourced from the equipment manufacturer.
- 15.2 The hexagonal head cover screws are to be replaced only with stainless steel A2-70 or A4-80 screws to ISO 35061.
- 15.3 Cover fasteners are to be tightened to a torque value of 10.85 Nm (8ft/lbs) minimum.
- 15.4 Under rated conditions, cable entries may reach 19°C above ambient temperature. Consideration should be taken in selecting the appropriate cables and glands.

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 This product shall be uniquely marked with the label identified in the annexe of this certificate.



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Certificate Annexe

Certificate Number: CSAE 21UKEX1285X
 Product: Limit Switch Enclosure Types TXP and TXS
 Manufacturer: Topworx Inc.

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
CERT-ES-00321-1	1 of 1	1	22 Jul 09	Breathing device
CERT-ES-01495-1	1 of 1	1	22 Jul 09	Hollow O-ring
CERT-ES-01498-1	1 of 1	8	27 Sep 11	TXP Exploded Assembly
CERT-ES-01503-1	1 of 1	1	07 Mar 11	Shaft, TXP Flat Top
CERT-ES-01523-1	1 of 1	4	10 Nov 12	TX Series DIV 1, Base, Aluminium
CERT-ES-01530-1	1 of 1	6	10 Nov 12	TXP DIV 1, Lid, Flat Top
CERT-ES-02477-1	1 of 1	1	06 Dec 12	Enclosure base – machining
CERT-ES-02481-1	1 of 1	3	16 May 12	TXP Lid Machined
CERT-ES-02738-1	1 of 1	2	07 Dec 12	Enclosure lid – w/o indicator – machining
CERT-ES-06068-1	1 of 1	2	02 Mar 17	Flamepath Analysis – Shaft bearing and flange
CERT-S-S01-00037*	1 of 1	a	10 Aug 09	O-ring, Shaft
ES-01113-1	1 of 1	19	01 Mar 17	Enclosure base
ES-01114-1	1 of 1	8	02 Mar 17	TXP/TXS DIV 1, Lid
ES-01455-1	1 of 1	4	01 Mar 17	Upper Bearing, TXP
ES-01456-1	1 of 1	6	01 Mar 17	Lower bearing, TXP
ES-01457-1	1 of 1	13	03 Mar 17	SHAFT, TXP DIV 1
ES-01506-1	1 of 5	3	06 Dec 12	Enclosure specification
ES-01524-1	1 of 1	4	01 Mar 17	TXP/TXS, Base, Raw Casting
ES-01525-1	1 of 1	4	01 Mar 17	TXP/TXS, Lid, Raw Casting
ES-01604-1	1 of 1	AB	23 Feb 22	Label, warning
ES-01605-1	1 of 1	1	11 Sep 09	Nameplate, blank
ES-01642-1	1 of 1	4	27 Sep 11	Nameplate, label
ES-01831-1	1 of 1	1	11 Sep 09	Plate, Blank for logo, warning
ES-01835-1	1 of 1	4	27 Sep 11	Label, custom Logo marking
ES-01988-1	1 of 1	2	27 Sep 11	Alternative Shaft, TS 4-20 TXPOX Model
ES-01995-1	1 of 1	3	18 Nov 13	Alternative Bushing, Lid TXP 4-20
ES-02476-1	1 of 1	6	10 Nov 12	Enclosure base – casting
ES-02478-1	1 of 1	7	01 Mar 17	TXP Base, with conduit
ES-02479-1	1 of 1	1	16 May 12	Assembly, TXP Base
ES-02480-1	1 of 1	4	10 Nov 12	Enclosure lid –indicator
ES-02482-1	1 of 1	2	10 Nov 12	Assembly, Lid, TXP
ES-02627-1	1 of 1	2	10 Nov 12	Assembly, Lid, TX Series DIV 1
ES-02638-1	1 of 1	1	21 Feb 11	Assembly, Lid, TX Series
ES-03002-1	1 of 1	2	18 Nov 13	Cover bolt
ES-06720-1	1 to 2	2	04 Dec 18	Switch Assembly
ES-06889-1	1 of 1	1	04 Dec 18	Sensor Assembly, SD36 TXP/S
CERT-ES-09062-1	1 of 1	AA	23 Feb 22	Nameplate – Markings, TXP/TXS IIC – CSAE21UKEX1285X





Certificate Annexe

Certificate Number: CSAE 21UKEX1285X
Product: Limit Switch Enclosure Types TXP and TXS
Manufacturer: Topworx Inc.

Drawing	Sheets	Rev.	Date (Stamp)	Title
CERT-ES-09063-1	1 of 1	AA	23 Feb 22	Assembly, Nameplate & Artwork, TXP/TXS IIB – CSAE21UKEX1285X

* This drawing was amended by Sira 12 October 2009.



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