



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 07ATEX2170** Issue: **5**

4 Equipment: **STX3241 Toxic Gas Sensor**

5 Applicant: **Trolex Limited**

6 Address: Hazel Grove  
Stockport  
Cheshire SK7 5DY  
UK

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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:

EN 60079-0:2006 EN 60079-11:2007  
EN 60079-0:2009 (used for guidance in respect of marking)

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

11 This EU-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:



I M1  
Ex ia I Ma  
(T<sub>amb</sub> = -20°C to +55°C)

Project Number 1008

Signed: 

Title: Director of Operations

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**CSA Group Netherlands B.V.**  
Utrechtseweg 310,  
6812 AR, Arnhem,  
Netherlands



## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The STX3241 Toxic Gas Sensor is designed to measure toxic gas concentration by means of an electrochemical type sensing cell and to electronically convert the measured value into an output signal that can be configured either as a 0.4 to 2.0 V output signal or as a 4 to 20 mA output signal.

The apparatus consists of an Output PCB and an LCD, both located in a plastic enclosure having an ingress protection rating of at least IP54. A window in the outer enclosure permits local viewing of the gas concentration displayed on the optional LCD. The electrochemical cell is located in the adjoining metallic enclosure.

External electrical connections are made inside the enclosure, via a cable gland entry, to screw type terminals mounted on the output PCB.

#### INPUT and OUTPUT PARAMETERS

Connector T1 w.r.t. T2 (Power input)	Connector T4 w.r.t. T3 (0.4 to 2 V output signal)	Connector T4 w.r.t. T3 (4-20 mA output signal)
U <sub>i</sub> = 14.4 V I <sub>i</sub> = 3.14 A L <sub>i</sub> = 0 C <sub>i</sub> = 0	U <sub>o</sub> = 8.34 V    Co = 802 µF I <sub>o</sub> = 14 mA    Lo = 1 H Po = 30 mW    Ui = 14.4 V Ci = 0 Li = 0	U <sub>o</sub> = 14.4 V    Lo = 1 mH I <sub>o</sub> = 696 mA    Co = 17.9 µF Po = 2.5 W    Ui = 14.4 V Ci = 0 Li = 0

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

- i. The amplifier and voltage reference circuitry was removed from the Output PCB and put onto a separate Cell Amplifier PCB that is mounted directly on the back of the gas cell.

**Variation 2** - This variation introduced the following changes:

- i. The recognition of an alternative head arrangement for the STX3241 Toxic Gas Sensor
- ii. A change to the voltage rating of capacitors (C3 and C5) from 25V to 16V
- iii. 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 changes:

- i. The recognition of an alternative enclosure material and a laser etched label.
- ii. The recognition of minor circuit modifications that allow an alternative '4-series' toxic sensor to be used.
- iii. The marking was amended to add the Equipment Protection Level (EPL), this change uses EN 60079-0:2009 for guidance.
- iv. EN 60079-26:2007 was previously referenced in error and has been removed.

**Variation 4** - This variation introduced the following change:

- i. The removal of the reference to the electrochemical cell manufacturer on drawing P5558\_15 was recognised.



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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 no.	Comment
0	21 August 2007	R59A16540A	The release of prime certificate.
1	14 February 2008	R59A17518A	The introduction of Variation 1.
2	14 October 2010	R22983A/00	The introduction of Variation 2.
3	18 February 2011	R23934A/00	The introduction of Variation 3.
4	22 February 2017	R70117075A	This Issue covers the following changes: <ul style="list-style-type: none"><li>• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i></li><li>• The introduction of Variation 4.</li></ul>
5	31st October 2019	1008	<ul style="list-style-type: none"><li>• Transfer of certificate Sira 07ATEX2170 from Sira Certification Service to CSA Group Netherlands B.V..</li></ul>

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

None

#### 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.

# Certificate Annexe



**Certificate Number:** Sira 07ATEX2170  
**Equipment:** STX3241 Toxic Gas Sensor  
**Applicant:** Trolex Limited

## Issue 0

Number	Sheet	Rev.	Date	Description
P5558-02	1 of 1	A	03 Jul 07	General Arrangement
P5558_01	1 of 2	A03	04 Jul 07	Circuit Output PCB
P5558.01	2 of 2	A03	04 Jul 07	Parts List Output PCB
P5558.03	1 of 1	A	26 Jun 07	PCB Control & Display
P5555.05	1 of 2	A	08 Mar 07	Circuit Diagram Control & Display
P5555.05	2 of 2	A	08 Mar 07	Part List Control & Display PCB
P5555.04	1 of 1	A	17 Jan 07	PCB Control & Display
P5558-17	1 of 1	A	03 Jul 07	Certification Label ATEX

## Issue 1

Number	Sheet	Rev.	Date	Description
P5558-02	1 of 1	B	07 Dec 07	General Arrangement
P5558_01	1 of 2	A05	11 Nov 07	Circuit Output PCB
P5558_01	2 of 2	A05	11 Nov 07	Parts List Output PCB
P5558.03	1 of 1	A5	07 Dec 07	PCB Output
P5558_15	1 of 2	A2	07 Dec 07	Circuit Cell Amplifier PCB
P5558_15	2 of 2	A2	07 Dec 07	Part List Cell Amplifier PCB
P5558_16	1 of 1	A2	07 Dec 07	Cell Amplifier PCB

## Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
P5558-02-02	1 of 1	A	08 Sep 10	Alternative head arrangement
P5558-01	1 of 2	A06	08 Sep 10	Output PCB
P5558-01	2 of 2	A06	08 Sep 10	Output PCB
P5558-15	1 of 2	A03	08 Sep 10	Cell Amplifier
P5558-15	2 of 2	A03	08 Sep 10	Cell Amplifier

## Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P5558-02	1 of 1	C	04 Feb 11	General Arrangement
P5558-15	1 & 2	B	04 Feb 11	Cell Amplifier Schematic
P5558-16	1 of 1	B	04 Feb 11	Cell Amplifier PCB
P5558-17	1 of 1	B	18 Feb 11	Certification Labelling ATEX

## Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P5558_15	1 to 2	C	14 Feb 17	Cell Amplifier Schematic

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