



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 99ATEX2132X** Issue: **4**

4 Equipment: **TX6273 and TX6274 Temperature Sensor/Transmitters**

5 Applicant: **Trolex Limited**

6 Address: Newby Road  
Hazel Grove  
Stockport 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 50014:1997                      EN 50020:1994                      EN 50284:1999                      prEN 50303 (April 1999)

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  
EEx ia I (Ta = -20°C to +60°C)



II 1 G  
EEx ia IIC T4 (Ta = -20°C to +60°C)

Project Number 3884

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 TX627x Temperature Sensor/Transmitters take a signal from a temperature sensor; this signal is conditioned and an analogue signal is then transmitted to other monitoring equipment. There are two type designations covered: the TX6273 and the TX6274, differing in the location of the sensing element.

The equipment comprises one of two output boards connected to an optional display board. The following versions are covered:

- Group I, 0.4 to 2V
- Group I, 5 to 15 Hz
- Group I, 4 to 20 mA, 3/4-wire
- Group I, 4 to 20 mA, 2-wire
- Group II, 4 to 20 mA, 2-wire

The assembly is housed in a polycarbonate enclosure with a polycarbonate window glued into a recess. The enclosure may or may not be steel filled; if not, the marking bears a static warning label.

The TX627x has the following safety descriptions:

#### Group I, 0.4 to 2 V

Value	Terminals 1 to 4 (supply/signal)
Ui	16.5 V
Pi	Not Specified
Ci	122 nF
Li	9 $\mu$ H

#### Group I, 5 to 15 Hz

Value	Terminals 3 & 4 (supply)	Terminals 1 & 2 (signal)
Ui	16.5 V	16.5 V
Pi	Not Specified	2.5 W
Ci	0	0
Li	9 $\mu$ H	9 $\mu$ H

#### Group I, 4 to 20 mA, 3/4 wire

Value	Terminals 1 to 4 (supply/signal)
Ui	16.5 V
Pi	Not Specified
Ci	122 nF
Li	9 $\mu$ H



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#### Group I, 4 to 20 mA, 2 wire

Value	Terminals 1 & 4	Terminals 2 & 3
U <sub>i</sub>	16.5 V	1.5 V
I <sub>i</sub>	Not Specified	100 mA
P <sub>i</sub>	Not Specified	25 mW
C <sub>i</sub>	0	0
L <sub>i</sub>	9 μH	9 μH
U <sub>o</sub>	N/A	16.5 V
I <sub>o</sub>	N/A	17 mA
C <sub>o</sub>	N/A	11 μF
L <sub>o</sub>	N/A	1614 mH

#### Group II, 4 to 20 mA, 2 wire

Value	Terminals 1 & 4	Terminals 2 & 3
U <sub>i</sub>	28 V	1.5 V
I <sub>i</sub>	120 mA	100 mA
P <sub>i</sub>	0.84 W	25 mW
C <sub>i</sub>	38 nF	0
L <sub>i</sub>	9 μH	9 μH
U <sub>o</sub>	N/A	28 V
I <sub>o</sub>	N/A	28 mA
C <sub>o</sub>	N/A	45 nF
L <sub>o</sub>	N/A	45 mH

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

- i. The use diodes D2 to D5 on the display board that have a higher forward voltage of 0.7 V.

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

- i. A modification to the output board circuit to change some of the components.
- ii. The use of pad-printing as an alternative method of marking of the certification details onto the label.
- iii. The terminal capacitance to be defined separately at the supply and signal terminals for all Group I builds based on output board P5486.06.
- iv. The replacement of the quoted L<sub>i</sub> with a value for L<sub>i</sub>/R<sub>i</sub> for all Group I builds.
- v. A change in the safety description to the following:

	Group I 4-20 mA		Group I 0.4-2 V		Group I 5-15 Hz	
	T1-T2 (signal)	T3-T4 (supply)	T1-T2 (signal)	T3-T4 (supply)	T1-T2 (signal)	T3-T4 (supply)
U <sub>i</sub>	16.5 V	16.5 V	16.5 V	16.5 V	16.5 V	16.5 V
P <sub>i</sub>	-	-	-	-	2.5 W	-
C <sub>i</sub>	9.8 μF	0	1.2 nF	0	0	0
L <sub>i</sub> /R <sub>i</sub>	<20 μH/Ω	<20 μH/Ω	<20 μH/Ω	<20 μH/Ω	0	<20 μH/Ω

Note that the supplies to terminals 1 & 2 and terminals 3 & 4 must be separate intrinsically safe circuits. The safety description for Group II versions is unchanged.



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Group I, 4 to 20 mA, 2 wire		
	Terminals 1 & 4 (supply)	Terminals 2 & 3 (test)
Ui	16.5 V	1.5 V
Ii	-	100 mA
Pi	-	25 mW
Ci	0	0
Li/Ri	<20 $\mu$ H/ $\Omega$	<20 $\mu$ H/ $\Omega$
Uo	N/A	16.5 V
Io	N/A	17 mA
Co	N/A	11 $\mu$ F
Lo	N/A	1614 mH

vi. The introduction of an additional Condition for Safe Use.

**Variation 3** - This variation introduced the following changes:

i. The use of 'Faradex' stainless steel filled nylon 6 as an alternative anti-static enclosure material.

## 14 DESCRIPTIVE DOCUMENTS

### 14.1 Drawings

Refer to Certificate Annexe.

### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	26 October 1999	R52X5937A	The release of the prime certificate. This document was subsequently re-issued on 15 November 1999 to replace Report No R52A5937A by Report No R52A5937B.
1	07 January 2000	52V6583	The introduction of Variation 1.
2	29 June 2000	R52A6855A	The introduction of Variation 2.
3	24 March 2003	R52A9400A	The introduction of Variation 3.
4	31st October 2019	3884	This Issue covers the following changes: <ul style="list-style-type: none"> <li>All previously issued certification was rationalised into a single certificate, Issue 4, Issues 0 to 3 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.</li> <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 transfer of certificate <b>Sira 99ATEX2132X</b> from Sira Certification Service to CSA Group Netherlands B.V..</li> </ul>

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- 15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)
- 15.1 The TX627x Temperature Sensor/Transmitters shall not be installed where the external conditions could cause a build up of electrostatic charges on their non-conducting surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.
- 15.2 The modifications to this equipment that are included in variation 2 of this certification have affected the safety parameters of the Group I builds of the TX627X Temperature Sensor/Transmitter and therefore the user shall confirm the compatibility of this equipment before it is installed in a certified intrinsically safe system.
- 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 99ATEX2132X

**Equipment:** TX6273 and TX6274 Temperature Sensor/Transmitters

**Applicant:** Trolex Limited

## Issue 0

Drawing	Sheets	Rev.	Date	Title
P5460.109	1 of 1	A	18 May 98	Circuit Diagram 5-15 Hz module P.C.B.
P5485.04	1 of 1	A	30 Sep 99	Certified Parts List Group I 0.4 to 2V, 4 to 20mA and 5 to 15Hz
P5485.05	1 of 1	A	08 Oct 99	Certification Labels
P5486.03	1 of 1	A	06 Sep 99	Output PCB Certified Circuit Diagram
P5486.06	1 of 4	A	01 Sep 99	Output PCB – Top Overlay
P5486.06	2 of 4	A	01 Sep 99	Output PCB – Top Layer
P5486.06	3 of 4	A	01 Sep 99	Output PCB – Bottom Overlay
P5486.06	4 of 4	A	01 Sep 99	Output PCB – Bottom Layer
P5487.01	1 of 1	A	20 Sep 99	Certified Circuit Diagram Output PCB
P5485.02	1 of 1	A	05 Oct 99	General Arrangement
P5487.03	1 of 4	A	21 Sep 99	Top Overlay Output PCB
P5487.03	2 of 4	A	21 Sep 99	Top Layer Output PCB
P5487.03	3 of 4	A	21 Sep 99	Bottom Overlay Output PCB
P5487.03	4 of 4	A	21 Sep 99	Bottom Layer Output PCB
P5487.04	1 of 4	A	01 Sep 99	Display PCB - Top Overlay
P5487.04	2 of 4	A	01 Sep 99	Display PCB - Top Layer
P5487.04	3 of 4	A	01 Sep 99	Display PCB - Bottom Overlay
P5487.04	4 of 4	A	01 Sep 99	Display PCB - Bottom Layer
P5487.07	1 of 1	A	01 Sep 99	Certified Circuit Diagram Display PCB
P5487.15	1 of 1	A	05 Oct 99	Certified Block diagram

## Issue 1

Drawing	Sheets	Rev.	Date	Title
P5487.07	1 of 1	B	14 Dec 99	Certified Circuit Diagram Display PCB

## Issue 2

Drawing	Sheets	Rev.	Date	Title
P5485.02	1 of 1	B	09 May 00	General Arrangement
P5485.04	1 of 1	B	09 May 00	Certified Parts List Group I 0.4 to 2V, 4 to 20 mA and 5 to 15Hz
P5486.03	1 of 1	B	21 Jun 00	Output PCB Certified Circuit Diagram
P9000.100	1 of 1	C	07 Jun 00	Alternative Housing Arrangement

## Issue 3

Drawing	Sheets	Rev.	Date	Title
P5485.02	1 of 1	D	05 Feb 03	General arrangement

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