



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEX ExTC 24.0029X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2025-04-04

Applicant: **Trox Limited**  
Newby Road  
Stockport  
SK7 5DY  
United Kingdom

Equipment: **Sentro X Gas Detector comprising TX6310 Controller, TX6320 Remote Sensor, TX6301 Gas Sensing Bloc, TX6302 Remote Bloc, TX6303 Programming Bloc, TX6304 Potentiometer Bloc**

Optional accessory:

Type of Protection: **Intrinsic safety "i"**

Marking: Ex ia I Ma  
Ex da ia I Ma  
Ex db+ia ia I Ma  
(\*see description)

Approved for issue on behalf of the IECEx  
Certification Body:

**Justin Gavranich**

Position:

**Certification Authority**

Signature:  
(for printed version)

Date:  
(for printed version)

2025-04-04

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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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**Ex Testing and Certification Pty Ltd**  
1/30 Kennington Drive  
Tomago NSW 2322  
Australia



**TESTING AND  
CERTIFICATION**



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Date of issue: 2025-04-04

Issue No: 0

Manufacturer: **Trolex Limited**  
Newby Road  
Hazel Grove  
Stockport  
Cheshire SK7 5DY  
**United Kingdom**

Manufacturing  
locations:

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 equipment 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

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:7.0

This Certificate **does not** indicate compliance with 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/CML/ExTR25.0051/00](#)

Quality Assessment Report:

[GB/SIR/QAR07.0017/13](#)



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Date of issue: 2025-04-04

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Sentro X Gas Detector is intended for monitoring flammable gases, toxic gases, and oxygen levels in underground mining environments (Group I). Operating from an intrinsically safe power supply, the product provides a user interface with an OLED screen and a three-button keyboard. The Sentro X Gas Detector offers output connectivity with analogue (4-20mA and 0.4-2V) and RS485 options. An optional Relay Card or Ethernet Card can be fitted for additional output functionality. An optional Audio-Visual Alarm can be fitted for enhanced alarming functionality.

The items fitted in the Sentro X, with identification numbers and the applicable Ex codes, are described in the certificate annex.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to certificate annex



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Date of issue: 2025-04-04

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**Additional information:**

Job 24133

**Annex:**

[Certificate Annex IECEx\\_ExTC\\_24.0029X\\_000 final.pdf](#)



# IECEX Certificate of Conformity

## Annex



Annex to Certificate No.:	IECEX ExTC 24.0029X	Issue No.:	0
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### Description:

(continued from main body of the certificate)

The equipment comprises the following:

- TX6310 Controller
- TX6320 Remote Sensor
- TX6301 Gas Sensing Bloc (fits inside the Controller or Remote Sensor)
- TX6302 Remote Bloc (fits inside the Controller)
- TX6303 Programming Bloc (fits inside the Controller or Remote Sensor)
- TX6304 Potentiometer Bloc (fits inside the Controller or Remote Sensor)

TX6301 Gas Sensing Bloc



TX6302 Remote Bloc



TX6303 Programming Bloc



TX6304 Potentiometer Bloc



Relay Card (optional)



Ethernet Card (optional)



TX6310 Controller



Remote Bloc fitted



Gas Sensing Bloc fitted





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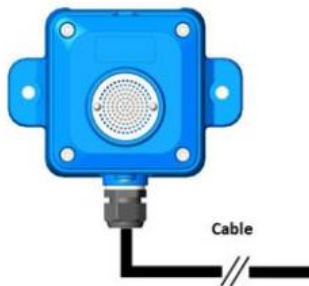
## Annex



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**TX6320 Remote Sensor**



**Gas Sensing Bloc fitted**



While the Ex equipment generally complies with the Ex ia I Ma marking code, the hot-swappable TX6301 Gas Sensing Blocs that allow for the sensing of various gases may vary the Ex code, depending on the internally fitted gas detection cell. The Gas Sensing Bloc have the applicable Ex code printed on a label attached to the TX6301 Gas Sensing Bloc. The Ex code for the complete TX6310 Controller (or TX6320 Remote Sensor) incorporating the Gas Sensing Block is then obtained, as shown in the table below:

<b>Ex code printed on the TX6301 Bloc</b>	<b>Applicable Ex code for the TX6310 or TX6320</b>
Ex db+ia ia I Ma	Ex db+ia ia I Ma
Ex da ia I Ma	Ex da ia I Ma
Ex ia I Ma	Ex ia I Ma

The TX6302 Remote Bloc, when installed in the Controller, facilitates cable connection to the TX6320 Remote Sensor.

The TX6303 Programming Bloc is an accessory that enables convenient on-site firmware updates.

The TX6304 Potentiometer Bloc is an accessory that enables convenient manual signal simulation for on-site diagnostics.

The TX6303 Programming Bloc and the TX6304 Potentiometer Bloc are intended for occasional use as part of a brief installation or maintenance routine when the front cover of the TX6310 Controller or TX6320 Remote Sensor is removed. The TX6310 Controller and the TX6320 Remote Sensor do not maintain the minimum IP54 rating without the front cover - the front cover must always be reinstalled after completing these routines.



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The equipment has the following safety description:

	TX6310 Controller						TX6320 Remote Sensor
	Power in	Analog	RS485 (each data line)	Relays	Ethernet	TX6302 Remote Bloc	
Ui	16V	16V	16V	23V	7.14V	-	16V
Ii	3.1A	0.132A	-	NOTE 1	-	-	3.13A (peak) 0.238A (continuous)
Pi	-	0.273W	-	-	-	-	3.44W
Ci	100nF NOTE 3 465nF NOTE 4	0	0	0	0	-	≤ 5nF NOTE 5
Li	0 NOTE 3 10μH NOTE 4	0	0	0	0	-	≤ 10μH NOTE 5
Uo	-	15.75V	5.4V	0	5.5V (pp-ac) 0V (dc)	16V	-
Io	-	0.35A	13mA	0	0.288A (pp-ac) 0A (dc)	3.13A (peak) 0.238A (continuous)	-
Po	-	1.04W	17mW	0	0.049W	3.44W	-
Co	-	15.8μF NOTE 2	1000μF NOTE 2	-	10μF NOTE 2	≤ 5nF NOTE 5	-
Lo	-	3.81mH NOTE 2	2761mH NOTE 2	-	1mH NOTE 2	≤ 10μH NOTE 5	-
Lo/Ro	-	338μH/Ω	26mH/Ω	-	-	-	-

NOTE 1 – See specific conditions of use

NOTE 2 – The values of inductance and capacitance shown above are allowed when:

- all inductance and capacitance are distributed, for example as in a cable; or
- the total inductance of the circuit (excluding the cable) is less than 1% of the allowed value of inductance; or
- the total capacitance of the circuit (excluding the cable) is less than 1% of the allowed value of capacitance;

Where both the total inductance and capacitance of the circuit (excluding the cable) are greater than or equal to 1% of the shown values of inductance and capacitance, the allowed values



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shall be halved. The reduced capacitance of the circuit (including cable) shall not be greater than 1µF.

NOTE 3 – Applicable to the Fixed Gas Detector configuration.

NOTE 4 – Applicable to the Remote Gas Detector configuration (TX6310 Controller fitted with TX6302 Remote Bloc, TX6320 Remote Sensor and the interconnecting cable). The stated Ci parameter is equal to the internal capacitance and interconnecting cable (max 5nF). The stated Li parameter is equal to the inductance of the interconnecting cable (max 10µH).

NOTE 5 – The C and L Parameters represent the maximum allowed capacitance and inductance of the remote cable connected between the TX6302 Remote Bloc and TX6320 Remote Sensor, when the remote cable is selected by the user. If the remote cable is supplied by Trolex, it already meets those parameters

### Specific Conditions of Use:

1. For TX6310 Controller fitted with the optional Relay Card, the end-user must ensure that the current supplied to the relay contacts in normal operation does not exceed the rated current of the relay, i.e. 0.25A, and is from an intrinsically safe source.
2. The TX6320 Remote Sensor, TX6301 Gas Sensing Bloc, TX6302 Remote Bloc, TX6303 Programming Bloc and TX6304 Potentiometer Bloc shall only be used as part of a Sentro X Gas Detector with a TX6310 Controller.

### Manufacturer's Documents pertaining to this Issue of the Certificate:

Title:	Drawing No.:	Pages	Rev. Level:	Date:
<b>Controller</b>				
Controller - General Arrangement	TX6310.CERT	4	B	2025-02-05
Terminal PCB - Schematic and BOM	P5600.13.CERT	6	B	2025-02-11
Terminal PCB - PCB Layout	P5600.14.CERT	3	A	2024-10-29
Terminal PCB - PCB Assembly	P5600.15.CERT	6	A	2024-10-29
Interposer PCB - Schematic and BOM	P5600.28.CERT	1	A	2024-10-28
Interposer PCB - PCB Layout	P5600.29.CERT	2	A	2024-10-28
Display & Control PCB - Schematic and BOM	P5600.10.CERT	5	A	2024-10-29
Display & Control PCB - PCB Layout	P5600.11.CERT	2	A	2024-10-29
Display & Control PCB - PCB Assembly	P5600.12.CERT	4	A	2024-10-29
Relay Card - Schematic and BOM	P5600.16.CERT	3	A	2024-10-28
Relay Card - PCB Layout	P5600.17.CERT	2	A	2024-10-28



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Title:	Drawing No.:	Pages	Rev. Level:	Date:
Relay Card - PCB Assembly	P5600.18.CERT	3	A	2024-10-28
Reed Relay	P5093.27	1	D	2024-10-01
Ethernet Card - Schematic and BOM	P5600.19.CERT	3	A	2024-10-28
Ethernet Card - PCB Layout	P5600.20.CERT	2	A	2024-10-28
Ethernet Card - PCB Assembly	P5600.21.CERT	3	A	2024-10-28
AV Alarm PCB - Schematic and BOM	P5600.46.CERT	2	A	2024-10-28
AV Alarm PCB - PCB Layout	P5600.47.CERT	1	A	2024-10-28
AV Alarm PCB - PCB Assembly	P5600.48.CERT	2	A	2024-10-28
*IECEX Certification Marking - TX6310 Controller	P5600.1810	1	A	2025-04-02
<b>Remote Sensor</b>				
Remote Sensor - General Arrangement	TX6320.CERT	1	B	2025-02-05
Remote Top PCB - Schematic & BOM	P5600.63.CERT	2	A	2024-10-28
Remote Bottom PCB - Schematic and BOM	P5600.66.CERT	3	B	2025-02-11
Remote Bottom PCB - PCB Layout	P5600.67.CERT	2	A	2024-10-28
Remote Bottom PCB - PCB Assembly	P5600.68.CERT	3	A	2024-10-28
*IECEX Certification Marking - TX6320 Remote Sensor	P5600.1811	1	A	2025-04-02
<b>Gas Sensing Bloc</b>				
Gas Sensing Bloc – General Arrangement	TX6301.CERT	1	A	2024-09-10
Electrochem PCB – Schematic and BOM	P5600.04.CERT	4	A	2024-11-04
Infrared PCB – Schematic and BOM	P5600.07.CERT	4	A	2024-10-29
Infrared PCB – PCB Layout	P5600.08.CERT	2	A	2024-10-29
Infrared PCB – PCB Assembly	P5600.09.CERT	3	A	2024-10-29
Pellistor PCB – Schematic and BOM	P5600.43.CERT	4	A	2024-10-29
*IECEX Certification Marking – TX6301 Gas Sensing Bloc	P5600.1812	1	A	2025-04-03
<b>Remote Bloc</b>				
Remote Bloc – General Arrangement	TX6302.CERT	1	A	2023-12-06
Remote Bloc PCB – Schematic and BOM	P5600.25.CERT	2	B	2025-02-05
Remote Bloc PCB – PCB Layout	P5600.26.CERT	2	A	2024-10-29
Remote Bloc PCB – PCB Assembly	P5600.27.CERT	3	A	2024-10-29



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Title:	Drawing No.:	Pages	Rev. Level:	Date:
*IECEX Certification Marking – TX6302 Remote Bloc	P5600.1813	1	A	2024-11-12
<b>Programming Bloc</b>				
Programming Bloc – General Arrangement	TX6303.CERT	1	A	2024-06-18
Programming Bloc PCB – Schematic and BOM	P5600.22.CERT	4	A	2024-11-14
*IECEX Certification Marking – TX6303 Programming Bloc	P5600.1814	1	A	2024-11-12
<b>Potentiometer Bloc</b>				
Potentiometer Bloc – General Arrangement	TX6304.CERT	1	A	2024-06-18
Potentiometer Bloc PCB – Schematic and BOM	P5600.912.CERT	3	A	2024-10-30
*IECEX Certification Marking – TX6304 Potentiometer Bloc	P5600.1815	1	A	2024-11-12
<b>Instruction Manual</b>				
IECEX Certification Information for User Manual Sentro X	P5600.1816	3	A	2025-04-02

*Note: The manufacturer's documents listed are those listed in the IECEX test report GB/CML/ExTR25.0051/00, except that the documents with \* included before the title of documents replace the equivalent documents listed in the GB/CML/ExTR25.0051/00. This has been necessitated to reflect label marking aligned with certificate IECEX ExTC 24.0029X. No other changes were made and hence a separate test report for this change is not necessary.*