Australian/New Zealand
Certification Scheme for
EXPLOSION-PROTECTED ELECTRICAL EQUIPMENT
ANZEx Scheme

Certificate of Conformity

Certificate No.: **ANZEx 12.3021X** Issue No.: **0** Date of Issue: **2012-09-06**

Applicant: Trolex Ltd
Newby Road, Hazel Grove
Stockport, Cheshire SK7 5DY
United Kingdom

Electrical Apparatus: TX6383 Series Flammable Gas Sensor / Transmitter

Type of Protection: Ex ia d

Marking Code: Ex ia I (Ta = 60 °C)
Ex ia d IIB T4 (Ta = 60 °C)

Manufacturer: Trolex Ltd
Newby Road, Hazel Grove
Stockport, Cheshire SK7 5DY
United Kingdom

Manufacturing Location(s): As above

*The EPEE certification database located at **http://www.anzex.com.au** shows the validity of this Certificate.*

Test Safe AUSTRALIA

Certificate issued by:

TestSafe Australia
919 Londonderry Road, Londonderry NSW 2753
Australia
Phone: +61 2 4724 4900 Fax: +61 2 4724 4999
http://www.testsafe.com.au

JAS-ANZ
www.jas-anz.org/register

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*This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand Miscellaneous Publication **MP87.1:2008**.*

STANDARDS:

The electrical apparatus 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:

AS/NZS 60079.0:2005	Electrical apparatus for explosive gas atmospheres – Part 0: General requirements (including Amendment 1)
AS/NZS 60079.11:2006	Explosive atmospheres – Part 11: Equipment protection by Intrinsic safety 'i'
AS 60529:2004	Degree of protection provided by enclosures (IP code)

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standard(s) listed above.*

ASSESSMENT & TEST REPORTS:

The equipment listed has successfully met the assessment and test requirements as recorded in:

Test Report No. and Issuing Body: **33832, TestSafe**
Quality Assessment Report No. and Issuing Body: **GB/SIR/QAR07.0017/02, SIRA**

File Reference: **2012/006336**

Ujen Singh — 2012-09-06

Signed for and on behalf of issuing body — *Date of Issue*

Quality & Certification Manager

Position

This certificate is not transferable and remains the property of the issuing body and must be returned in the event of it being revoked or not renewed.

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Schedule

EQUIPMENT:

The TX6383-Series Flammable Gas Sensor/Transmitters take a signal from a gas sensing head mounted on a sensor board; this signal is conditioned and an analogue signal is then transmitted to other monitoring equipment.

The TX6383 comprises an output board, which is connected to two sensor-head boards and an optional display board. The assembly is housed in a metal-loaded polycarbonate or Polycarbonate/ABS enclosure with anti-static properties. A polycarbonate window is fitted to allow viewing of the liquid crystal display.

The sensor head may be mounted in the main unit, or housed in a brass or polycarbonate enclosure in a remote location connected by up to 10 m of cable. The Group I builds use an intrinsically safe sensing head, whereas the Group IIB builds use a previously certified flameproof sensing head.

There are four versions of the TX6383:

1	TX6383.84.01.12.240	Group I, 4 to 20 mA output
2	TX6383.84.01.11.240	Group I, 0.4 to 2 V output
3	TX6383.84.01.13.240	Group I, 5 to 15 Hz output
4	TX6383.84.02.12.240	Group IIB, 4 to 20 mA output

where	84	indicates the model has a remote sensing head, otherwise these two digits are omitted
	01	indicates a Group I build
	02	indicates a Group II build
	11	indicates a 0.4-2 V output
	12	indicates a 4-20 mA output
	13	indicates a 5-15 Hz output
	240	indicates that the head is intended for methane

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CONDITIONS OF CERTIFICATION:

It is a condition of safe use that the following parameters shall be taken into account during installation:

Group I

	T4/T3 (power) (See note 1)		
U_i	16.5 V		
C_i	0 µF (See note 3)		
L_i	0 mH		
	T1/T2 (sensor output signal)		
	4-20 mA 4-wire	**0.4-2 V**	**5-15 Hz**
U_i	16.5 V	16.5 V	16.5 V
I_i	200 mA	200 mA	Not critical
P_i	0.271 W	0.271 W	Not critical
C_i	0 µF	0 µF	0 µF
L_i	0 mH	0 mH	0 mH
U_o	16.5 V (See note 2)	5.88 V	0 V
$I_{o(peak)}$ $I_{o(continuous)}$	322 mA 213 mA	24 mA -	0 mA
P_o	1.33 W	35 mW	0 mW
C_o	9.7 µF	9.7 µF	-
L_o/R_o	≤ 40 µH/Ω	≤ 40 µH/Ω	-

Note 1: The TX6383 may be connected to supplies derived from a single power source or from two separate power sources. Where two separate power sources are used, the power and signal supplies should be regarded as separate intrinsically safe circuits unless the combination of the sources has been assessed as non-incendive.

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Note 2: The quoted U_o, $I_{o(peak)}$ and P_o parameters are worst-case values based on a U_i value of 16.5 V. U_o has the same value as U_i, so, if a U_i value of less than 16.5 V is used, the same lower value may be used for U_o. $I_{o(peak)}$ and P_o are also reduced.

Note 3: There is no terminal capacitance at the supply voltage but, for system assessment purposes, the installer should note that there is a terminal capacitance of 5.5 µF at 5.88 V with one countable fault.

Group IIB, 4-20 mA 4-wire

	T4/T3 (power) and T1/T2 (sensor output signal) (See note 1)
U_i	28 V
I_i	200 mA
P_i	1.41 W
R_{source}	≥ 139 Ω
C_i	6.5 nF (See note 4)
L_i	0 mH
	T1/T2 (sensor output signal) (See note 2)
U_o	28 V
I_o	171 mA
P_o	1.194 W
C_o	237 nF (See note 3)
L_o	200 µH (See note 3)

Note 1: The TX6383 may be connected to supplies derived from a single power source or from two separate power sources. Where two separate power supplies are used, they shall be unipolar positive power supplies referenced to the same zero volt, and the combined current and power shall not exceed the stated values.

Note 2: The quoted U_o, I_o and P_o parameters are worst-case values based on a U_i value of 28 V. U_o has the same value as U_i, so, if a U_i value of less than 28 V is used, the same lower value may be used for U_o. $I_{o(peak)}$ and P_o are also reduced.

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Note 3: For system assessment purposes, it should be noted that terminals T1 and T4 are connected via a minimum resistance of 25 Ω. Thus, calculations of the external capacitance and inductance connected to terminals T1/T2 should take account of capacitance and inductance connected to terminals T4 and T3.

Note 4: In addition to the terminal capacitance at the supply voltage, for system assessment purposes, the installer should note that there is a terminal capacitance of 5.5 μF at 5.88 V.

DOCUMENTS:

Document No.	Sheets	Document Title	Issue	Date (yyyy-mm-dd)
P5486.110.1	1	Master Certified Circuit Diagram	C	2002-04-10
P5486.110.2	1	TX6383 Flammable Gas Sensor / Transmitter 50mV to 1V input, 4 to 20mA Output Group I and Group II Certified Circuit Diagram	C	2002-04-10
P5486.110.3	1	TX6383 Flammable Gas Sensor / Transmitter 50mV to 1V Input, 0.4 to 2V Output Group I Certified Circuit Diagram	C	2002-04-10
P5486.110.4	1	TX6383 Flammable Gas Sensor / Transmitter 50mV to 1V Input, 5 to 15Hz Output Group I Certified Circuit Diagram	C	2002-04-10
P5486.110.5	1	TX6383 Flammable Gas Sensor / Transmitter Certified Parts Lists	C	2002-06-24
P5486.111	1	Universal Output PCB P.C.B. Artwork	C	2002-04-24
P5486.02	1	General Arrangement	H	2012-03-05
P5487.100	1	Alpha-Numeric LCD Board Certified Circuit Diagram	C	2002-03-06
P5487.101	1	(*Display*) PCB Artwork	E	2002-03-06
P5486.101	1	Sensor Head PCBs (*Schematic & Parts List*)	C	2002-04-30
P5486.179	1	Certification Label Details AUS	A	2012-08-30