

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

Certificate of Conformity

Certificate No.: ANZEx 12.3003X

Issue No.: 0

Date of Issue: 2012-03-26

Applicant:

Trolex Limited
Newby Road, Hazel Grove
Stockport, Cheshire, SK7 5DY
UK

Electrical Apparatus:

TX592x series Vortex Flow Sensor/Transmitter

Type of Protection:

Intrinsic Safety 'ia'

Marking Code:

ANZEx 12.3003X
Ex ia I / Ex ia IIC T4
Ta = -20 °C to +60 °C

Manufacturer:

Trolex Limited
Newby Road, Hazel Grove
Stockport, Cheshire, SK7 5DY
UK

Manufacturing Location(s):

Trolex Limited
Newby Road, Hazel Grove
Stockport, Cheshire, SK7 5DY
UK

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

This certificate and schedule shall not be reproduced except in full

 <p>TestSafe AUSTRALIA</p>	<p>Certificate issued by:</p> <p style="text-align: center;"><i>TestSafe Australia</i> <i>919 Londonderry Road, Londonderry NSW 2753 Australia</i> Phone: +61 2 4724 4900 Fax: +61 2 4724 4999 http://www.testsafe.com.au</p>	 <p>www.jas-anz.com.au/register</p>
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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
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:	33375 ; TestSafe
Quality Assessment Report No. and Issuing Body:	GB/SIR/QAR07.0017/02 ; Sira
File Reference:	2011/021891



Signed for and on behalf of issuing body

Quality & Certification Manager

Position

2012-03-26

Date of Issue

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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 TX592x series Vortex Flow Sensor/Transmitter comprises three PCBs housed in a stainless steel filled polycarbonate or polycarbonate/ABS enclosure with anti-static properties. A polycarbonate window is fitted to allow viewing of a liquid crystal display. A stainless steel cylindrical sensor head (Vortex Head) projects from the enclosure or is mounted remotely by a flying lead.

There are three types of TX592x series Vortex Flow Sensor/Transmitter:

1. TX5921: rear-projecting sensor
2. TX5922: side-projecting sensor
3. TX5923: remote sensor

Each of these types may be manufactured in one of five versions:

- A. Group I: 4 to 20mA version
- B. Group I: 0.4 to 2V version
- C. Group I: 5 to 15Hz version
- D. Group II: 4 to 20mA version, non-HART
- E. Group II: 4 to 20mA version, HART

CONDITIONS OF CERTIFICATION:

1. It is a condition of safe use that the following entity parameters for the terminals shall be taken into account during installation:

Version	T3/T4 (supply)	T1/T2 (signal out) [See notes 1-4]
Group I: 4 – 20 mA version	U _i = 16.5 V; C _i = 4 nF; L _i = 0	U _i = 16.5 V; U _o = 16.5 V; I _o = 223 mA; C _i = 15 nF; L _i = 0 Po = 0.921 W Pi = 1.72 W (see Note 2) Co = 7 µF; Lo = 0.6 mH
Group I: 0.4 - 2 V version	U _i = 16.5 V; C _i = 4 nF; L _i = 0	U _i = 16.5 V; U _o = 16.5 V; I _o = 41 mA; C _i = 15 nF; L _i = 0 Po = 0.17 W Pi = 1.72 W (see Note 2) Co = 7 µF; Lo = 0.6 mH
Group I: 5-15 Hz version	U _i = 16.5 V; C _i = 4 nF; L _i = 0	U _i = 16.5 V; U _o = 0 C _i = 0; L _i = 0 Pi = 1.72 W (see Note 2)
	T1/T2/T3/T4	
Group II 4 – 20 mA versions:	U _i = 28 V; I _i = 120 mA Pi = 0.84 W; R _{min} = 233 Ω (see Note 5) C _i = 18.3 nF; L _i = 0	

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Note 1: In some applications, T1 and T2 are inputs, in which case these output parameters are not relevant.

Note 2: For Group I versions, the connections to terminals T1/T2 and T3/T4 shall be from the same power supply. The user should note that the power to terminals T1/T2 must be limited to 1.72W via a supply with a minimum source resistance of 40Ω. There is no specific power limitation to terminals T3/T4, so terminals T1/T2 and T3/T4 should be regarded as separate intrinsically safe circuits.

Note 3: Terminals T5, T6 and T8 are connections to the sensor head which may be integral with the main part of the apparatus (TX5921 and TX5922) or connected by a cable, not exceeding 10 m in length (TX5923) with cable inductance and capacitance of not more than 15uH and 15nF. T7 is not connected.

Note 4: The installer should refer to the parameters of the equipment connected to terminals T1/T2 and compare these to the parameters listed in the table.

Note 5: The user should note that the current and power to these terminals must be limited via a supply with a minimum source resistance of 233Ω.

2. The apparatus shall only be cleaned with a damp cloth.

DOCUMENTS:

Document Number	Sheets	Document Title	Rev.	Date (yyyy-mm-dd)
P5431.42	1	Certified Block Diagram	A	1998-01-16
P5431.01	1	Output PCB Certified Circuit Diagram	E	2012-02-10
P5430.01	1	Control PCB Certified Circuit Diagram	A	1997-11-03
P5431.37	1	Head PCB Certified Circuit Diagram	D	2002-01-28
P5430.04	1	Output PCB (PCB artwork)	A	1998-01-22
P5431.03	1	Head P.C.B. Artwork	D	2002-01-28
P5431.02	1	General Assembly	G	2012-03-05
P5431.90	1	Certification Labels	C	2012-03-09