



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx TSA 09.0025X issue No.:2

Status: **Current**

Date of Issue: **2015-07-22**

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Certificate history:
Issue No. 2 (2015-7-22)
Issue No. 1 (2011-9-2)
Issue No. 0 (2009-12-22)

Applicant: **Trox Ltd**
Newby Road
Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

Electrical Apparatus: **Remote Reading Tell-Tale System**
Optional accessory:

Type of Protection: **Ex ia I**

Marking: Trox Ltd
IECEX TSA 09.0025X
Ex ia I
Ta = -20 to +40 degC
Local Interrogation Unit
(Electrical parameters as shown in Annex)
Serial no.

Transponder
(Electrical parameters as shown in Annex)
Serial no.

Approved for issue on behalf of the IECEx
Certification Body:

Ujen Singh

Position:

Quality & Certification Manager

Signature:
(for printed version)

Date:

22 JULY 2015.

1. This certificate and schedule may only be reproduced in full.
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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753
Australia





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

Additional Manufacturing location(s):

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 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:

IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical 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:

AU/TSA/ExTR08.0067/00
AU/TSA/ExTR09.0043/00
AU/TSA/ExTR11.0041/00

AU/TSA/ExTR08.0067/01
AU/TSA/ExTR11.0040/00
AU/TSA/ExTR11.0041/01

AU/TSA/ExTR08.0068/00
AU/TSA/ExTR11.0040/01

Quality Assessment Report:

GB/SIR/QAR07.0017/04



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Remote Reading Tell-Tale System consists of a Local Interrogation Unit and a number of Transponders.

The Local Interrogation Unit for Remote Reading Tell-Tale System communicates data with a number of Transponders so that each Transponder's tell-tale information can be selected and display locally. It is also capable of communicating with a surface-based computer via a Surface Communication Interface so that the tell-tale information can be interrogated by the surface computer. The Local Interrogation Unit comprises two printed circuit boards and a LCD display housed in a sealed metal enclosure fitted behind a control panel containing three switches, three LED indicators, a LCD viewing window and terminal blocks for external connections. The control panel is, in turn, mounted inside a wall mounted metal enclosure fitted with a lockable door. Access for the connecting cables is provided by suitable glands fitted into a wall of the enclosure.

The Transponder for Remote Reading Tell-Tale System is a modified mechanical tell tale. It comprises an encapsulated electronics assembly connected to two sensing coils all enclosed within a plastic enclosure. The two coils and their associated ferrites, which are not encapsulated, are located in the movable part of the tell tale. Any movement of the strata will produce a change in the signal from the coils that is interpreted by the encapsulated circuit and transmitted to a Local Interrogation Unit or a Portable Reader. There are two versions of the Transponder, a single-board version and a two-board version. The two circuit boards used in the two-board version are identical to the one used in the single-board version. The two boards are wired in parallel with each other internally at the connection terminal.

Optionally, a Surface Communication Interface (covered by certificate IECEX TSA 09.0026X) can be added to the system to provide galvanically isolated transfer of data between the Local Interrogation Unit in hazardous area and a non-intrinsic safe device in the safe area. In addition, the Local Interrogation Unit can be replaced by a Portable Reader (covered by certificate IECEX TSA 09.0023X) if operation required.

CONDITIONS OF CERTIFICATION: YES as shown below:

Refer to Annexe for Conditions of Certification



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Change the applicant and manufacturer name from Golder Associates (UK) Ltd, Bretby Business park, Ashby Road, Burton on Trent, DE15 0QD, Staffordshire, United Kingdom to Trolex Ltd, Newby Road, Hazel Grove, Stockport, Cheshire SK7 5DY, United Kingdom.



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 09.0025X	Issue No.:	2
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Drawing list pertaining to Issue 2 of this Certificate:

Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
IMCL 1341.02.03	1	Remote Reading Tell-Tale System Transponder Mechanical Arrangement	A	2015-04
IMCL 1342.02.02	1	Remote Reading Tell-Tale System Local Interrogation and Interface Unit, Mechanical Arrangement	A	2015-04

Conditions of Certification pertaining to Issue 2 of this Certificate:

For the Local Interrogation Unit

The following revised parameters shall be taken into account when connecting with external equipment:

Electrical Parameters	Power Supply (positions 1,2)
Maximum Input Voltage U_i	14.4 V
Maximum Input Current I_i	2.37 A
Maximum Input Power P_i	9.84 W
Maximum Internal Capacitance C_i	6.8 μ F
Maximum Internal Inductance L_i	93 μ H
Electrical Parameters	Transponder (positions 9,10)
Maximum Output Voltage U_o	14.4 V
Maximum Output Current I_o	1.52 A
Maximum Output Power P_o	5.472 W
Maximum External Capacitance C_o	5 μ F
Maximum External Inductance L_o	50 μ H
Maximum External Inductance to Resistance Ratio L_o/R_o	85 μ H/ Ω
Maximum Input Voltage U_i	0 V
Electrical Parameters	Surface Interface Unit (positions 3,4)
Maximum Output Voltage U_o	9.1 V
Maximum Output Current I_o	21 mA
Maximum Output Power P_o	75.6 mW
Maximum External Capacitance C_o	100 μ F
Maximum External Inductance L_o	400 mH
Maximum Input Voltage U_i	9.1 V
Maximum Internal Capacitance C_i	Negligible
Maximum Internal Inductance L_i	0 mH

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For Transponder

Conditions of safe use

1. The following parameters shall be taken into account when connecting with external equipment:

Electrical Parameters	Cable Terminals (T5/T7, T6/T8)
Maximum Input Voltage U_i	15 V
Maximum Input Current I_i	2.37 A
Maximum Internal Capacitance C_i	0.05 μ F (single-board version) 0.1 μ F (two-board version)
Maximum Internal Inductance L_i	26.2 μ H
Maximum Internal Inductance to Resistance Ratio L_i/R_i	44 μ H/ Ω

2. The projected area of the apparatus exposed body, after installation, shall not exceed 100 cm² to avoid electrostatic hazard.

For the System

Conditions of Safe Use

1. The Local Interrogation Unit shall be powered by a separately certified intrinsic safety power supply with U_o and I_o of not greater than 14.4V and 2.37A and with C_o and L_o of not less than 6.8 μ F and 93 μ H.
2. The cable capacitance and inductance of the cable between the Local Interrogation Unit and the Surface Communication Interface shall not be more than 90 μ F and 30 mH.
3. The conditions of safe use for the individual components are listed in their respective test reports 30479, 30481, 30482 and 33131. In addition, the U_m of 250 Vrms (Non-IS terminal (2, 4)) for the Surface Communication Interface in report 30482 and the U_m of 25 V (charger terminal) for the Portable Reader in report 30479 shall be taken into account during installation.

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