



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.: issue No.:

Status:

Date of Issue: **2012-08-03** Page 1 of 4

Applicant: **Mine Safety Appliances Co. (Instrument Division)**
1000 Cranberry Woods Drive
Cranberry Township PA 16066 – 5207
United States of America

Certificate history:
Issue No. 5 (2012-8-3)
Issue No. 4 (2011-8-9)
Issue No. 3 (2009-4-16)
Issue No. 2 (2008-7-8)
Issue No. 1 (2007-6-15)
Issue No. 0 (2005-12-22)

Electrical Apparatus: **Altair Portable Single Gas Detector**
Optional accessory:

Type of Protection: **Ex ia**

Marking: **Ex ia IIC T4 (-40 °C < Ta < +50 °C)**
IECEX TSA 05.0056X
Serial No: _____

*Approved for issue on behalf of the IECEx
Certification Body:* Ujen Singh

Position: Quality and Certification Manager

*Signature:
(for printed version)*

Date: 03 AUGUST 2012

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





IECEX Certificate of Conformity

Certificate No.: IECEX TSA 05.0056X

Date of Issue: 2012-08-03

Issue No.: 5

Page 2 of 4

Manufacturer: **Mine Safety Appliances Co. (Instrument Division)**
1000 Cranberry Woods Drive
Cranberry Township PA 16066 – 5207
United States of America

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 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition: 4.0

IEC 60079-11 : 1999 Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'
Edition: 4

*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/ExTR05.0002/00
AU/TSA/ExTR11.0034/00

AU/TSA/ExTR08.0026/00
AU/TSA/ExTR12.0035/00

AU/TSA/ExTR09.0016/00

Quality Assessment Report:

FR/INE/QAR08.0011/03



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 05.0056X

Date of Issue: 2012-08-03

Issue No.: 5

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The "Altair" portable single gas detector is initially available in three gas models e.g. O₂, CO and H₂S. The O₂ model is called "Altair O₂". The gas sensing cells are of the electro-chemical type. The instrument is powered by a non-replaceable lithium cell. The LCD display panel on the front displays the months of battery life remaining or the alarm range when in alarm mode. A push button allows users to select the information viewed on the LCD display. Audible and visual alarm indicators are located on the front of the apparatus, and an imbalanced motor produces an optional vibration alert when in alarm mode.

CONDITIONS OF CERTIFICATION: YES as shown below:

Please refer to Annexe of the certificate.



IECEX Certificate of Conformity

Certificate No.: IECEx TSA 05.0056X

Date of Issue: 2012-08-03

Issue No.: 5

Page 4 of 4

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

Please refer to Annexe of the certificate.



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 05.0056X	Issue No.:	5
-----------------------------	--------------------	------------	---

Drawing list pertaining to Issue 0 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
SK3098-1013	1 of 7	SK3098 Altair Approval Critical Items (<i>Labels</i>)	Orig.	2005/12/15
SK3098-1013	2 of 7	SK3098 Altair Approval Critical Items (<i>Assembly</i>)	Orig.	2005/12/15
SK3098-1013	3 of 7	SK3098 Altair Approval Critical Items (<i>Schematic</i>)	Orig.	2005/12/15
SK3098-1013	4 of 7	SK3098 Altair Approval Critical Items (<i>Parts List</i>)	Orig.	2005/12/15
SK3098-1013	5 of 7	SK3098 Altair Approval Critical Items (<i>Artworks</i>)	Orig.	2005/12/15
SK3098-1013	6 of 7	SK3098 Altair Approval Critical Items (<i>Blank page</i>)	Orig.	2005/12/15
SK3098-1013	7 of 7	SK3098 Altair Approval Critical Items (<i>Approval List</i>)	Orig.	2005/12/15

Conditions of Certification pertaining to Issue 0 of this Certificate:

It is a condition of safe use that the lithium batteries of XENO XL-055F, Saft LST 17330 and EEMB ER 17335 shall be used in the apparatus.

Variations Permitted by Issue 1:

- Changes H₂S sensor part numbers.

These changes to the sensor part numbers do not affect the previous assessment in Test Report 27040. No further assessment is required.

Drawing list pertaining to Issue 1 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
SK3098-1013	8	Approval Critical Items, TestSafe I.S. (ANZEx/IECEX), Altair	1	2007/05/08
Altair.Parts.Details.051222a119.wFooter.doc	3 of 5	Parts Details, Altair	-	-

Conditions of Certification pertaining to Issue 1 of this Certificate:

The conditions remain as specified for Issue 0 of this certificate.

Variations Permitted by Issue 2:

- Adding an alternate case overmould material RTP 2099E X 118617 B (Black) to the apparatus.

This change has been assessed in Test Report AU/TSA/ExTR08.0026/00.

Certificate issued by:

	TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia
---	---



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 05.0056X	Issue No.:	5
------------------------------------	--------------------	-------------------	---

Drawing list pertaining to Issue 2 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
SK3098-1013	6 of 8	Special Component Requirements	2	2008/05/06

Conditions of Certification pertaining to Issue 2 of this Certificate:

The conditions remain as specified for Issue 0 of this certificate.

Variations Permitted by Issue 3:

- The minimum ambient temperature changed from -20 °C to -40 °C.
- Removed sensor current parameter.
- Some text added/replaced for clarification.
- Added alternate static dissipative case overmould material RTP2099 EX 118617 B (various colours) to the apparatus.

These changes have been assessed in Test Report AU/TSA/ExTR09.0016/00.

Drawing list pertaining to Issue 3 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
SK3098-1013	8	Altair TestSafe (ANZEx / IECEx)	3	2008/12/02

Conditions of Certification pertaining to Issue 3 of this Certificate:

The conditions remain as specified for Issue 0 of this certificate.

Variations Permitted by Issue 4:

- Only the revision number was changed to indicate a solder mask change.
- These changes have been assessed in Test Report AU/TSA/ExTR11.0034/00.

- The QAR Issuer was changed from CSA to Ineris.

Condition of Certification Relating to Issue 4:

The previous conditions are still applicable.

Drawings Relating to Issue 4:

Document Number	Document Title	Revision	Date
SK3098-1013 8 sheets	Altair TestSafe (ANZEx / IECEx)	4	2011/03/09

Certificate issued by:

	TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia
---	---



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 05.0056X	Issue No.:	5
------------------------------------	---------------------------	-------------------	----------

Variations Permitted by Issue 5:

1. The IR Transceiver (component designator U2) Sharp GP2W0110YP0F is being replaced by a similar device Vishay TFBS4650.
2. Associated capacitor C8 decreased in nominal capacitance from 1.0 μ F to 0.1 μ F.
3. Protective resistor R3 previously 39.2 Ω , \pm 1% tolerance, 0.5 W rating, has changed to 100 Ω , \pm 1% tolerance, 0.5 W rating.

These changes have been assessed in Test Report AU/TSA/ExTR12.0035/00.

Condition of Certification Relating to Issue 5:

The previous conditions are still applicable.

Drawings Relating to Issue 5:

Document No.	Sheets	Document Title	Issue	Date
SK3098-1013	26	Altair / Altair O2, TestSafe	5	2012-05-18

Certificate issued by:

	TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia
---	---

