

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

***Certificate of Conformity***

Certificate No.: <b>ANZEx 05.3045X</b>	Issue No.: <b>0</b>	Date of Issue: <b>2005-12-20</b>
	Issue No.: <b>8</b>	Date of Issue: <b>2017-06-15</b>

**Applicant:** Mine Safety Appliances LLC  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
United States of America

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

**Type of Protection:** Ex ia

**Marking Code:** Ex ia IIC T4 (Ta = -40 °C to 50 °C)

**Manufacturer:** Mine Safety Appliances LLC  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
United States of America

**Manufacturing Location(s):** As above

*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><b>Test Safe</b> AUSTRALIA</p>	<p>Certificate issued by:</p> <p><b>TestSafe Australia</b> 919 Londonderry Road, Londonderry NSW 2753 Australia Phone: +61 2 4724 4900 Fax: +61 2 4724 4999 <a href="http://www.testsafe.com.au">http://www.testsafe.com.au</a></p>	 <p><b>JAS-ANZ</b></p> <p><a href="http://www.jas-anz.org/register">www.jas-anz.org/register</a></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:*

- IEC 60079-0: 2011** Electrical apparatus for explosive gas atmospheres Part 0: General requirements
- IEC 60079-11:2011** Electrical apparatus for explosive gas atmospheres Part 11: Intrinsic safety 'i'

*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:	<b>35940, TestSafe Australia</b>
Quality Assessment Report No. and Issuing Body:	<b>FR/INE/QAR08.0011/06, Ineris</b>
File Reference:	<b>2017/005791</b>



Debbie Wouters

*Signed for and on behalf of issuing body*

15 June 2017

*Date of Issue*

Acting 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 “Altair” portable single gas detector is initially available in three gas models e.g. O<sub>2</sub>, CO and H<sub>2</sub>S. The O<sub>2</sub> model is called “Altair O<sub>2</sub>”. 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.

Altair Single Gas Detector Operation Manual 10068081 Rev.4 was provided.

**CONDITIONS OF CERTIFICATION:**

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.

**DOCUMENTS:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
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

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**Schedule of Variations**

**Variations Permitted by Issue 1:**

- Changes H<sub>2</sub>S 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.

**Condition of Certification Relating to Issue 1:**

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

**Drawings Relating to Issue 1:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	7	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	-	-

**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 30309.

**Condition of Certification Relating to Issue 2:**

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

**Drawings Relating to Issue 2:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	6 of 8	Special Component Requirements	2	2008-05-06

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**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 31213.

**Condition of Certification Relating to Issue 3:**

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

**Drawings Relating to Issue 3:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	8	Altair_TestSafe (ANZEx / IECEx)	3	2008-12-02

**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 33116.

- The QAR Issuer was changed from CSA to Ineris.

**Condition of Certification Relating to Issue 4:**

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

**Drawings Relating to Issue 4:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	8	Altair_TestSafe (ANZEx / IECEx)	4	2011-03-09

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**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  $\mu$ F to 0.1 $\mu$ F.
3. Protective resistor R3 previously 39.2  $\Omega$  nominal,  $\pm$ 1% tolerance, 0.5 W rating, has changed to 100  $\Omega$  nominal,  $\pm$ 1% tolerance, 0.5 W rating.

These changes have been assessed in Test Report 33797.

**Condition of Certification Relating to Issue 5:**

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

**Drawings Relating to Issue 5:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	26	Altair / Altair O2 TestSafe	5	2012-05-18

**Variations Permitted by Issue 6:**

Revised Altair PCB P/N 10066407 and Altair O<sub>2</sub> PCB P/N 10068318.

The changes have been assessed in Test Report 34979.

**Condition of Certification Relating to Issue 6:**

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

**Drawings Relating to Issue 6:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	27	Altair / Altair O <sub>2</sub> , TestSafe	6	2014-09-24

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**Variations Permitted by Issue 7:**

Update standards to IEC 60079-0:2011 and IEC 60079-11:2011.  
The company name was changed to Mine Safety Appliances LLC.  
The changes have been assessed in Test Report 35695.

**Condition of Certification Relating to Issue 7:**

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

**Drawings Relating to Issue 7:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	27	Altair / Altair O2, TestSafe	7	2016-08-09

**Variations Permitted by Issue 8:**

Some changes on the PCB artworks.  
The changes have been assessed in Test Report 35940.

**Condition of Certification Relating to Issue 8:**

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

**Drawings Relating to Issue 8:**

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
SK3098-1013	27	Altair / Altair O2, TestSafe	8	2017-05-15

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