



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 06.0031X** issue No.:5

Status: **Current**

Date of Issue: **2012-08-09** Page 1 of 4

Certificate history:
Issue No. 5 (2012-8-9)
Issue No. 4 (2011-9-2)
Issue No. 3 (2008-12-16)
Issue No. 2 (2008-7-8)
Issue No. 1 (2007-1-9)

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

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

Type of Protection: **Ex ia**

Marking: **MSA Altair Pro Gas Detector**
Ex ia IIC T4 (-20 °C < Ta < +50 °C)
IECEX TSA 06.0031X
Serial No: _____

Approved for issue on behalf of the IECEx
Certification Body:

Ujen Singh

Position:

Quality and Certification Manager

Signature:
(for printed version)

Date:

09 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





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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 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 1999 Edition: 4	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 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/ExTR06.0042/00
AU/TSA/ExTR08.0066/00

AU/TSA/ExTR06.0042/01
AU/TSA/ExTR12.0037/00

AU/TSA/ExTR08.0026/00

Quality Assessment Report:

FR/INE/QAR08.0011/03



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The "Altair Pro" portable single gas detector is initially available in three gas models e.g. O₂, CO and H₂S. The O₂ model is called "Altair Pro O₂". The gas sensing cells are of the electro-chemical type. The instrument is powered by a replaceable CR2 lithium cell. The LCD display panel on the front displays an indication of the level of the detected gas. 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.



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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 06.0031X	Issue No.:	5
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Conditions of Certification pertaining to Issue 0 of this Certificate:

1. It is a condition of safe use that the lithium batteries of Panasonic CR-2PA/1B, Energizer CR2 EL1CR2BP, Varta CR2 6206 and Varta (Power One) CR2 CR15H270, 6206 shall be used in the apparatus.

Drawing list pertaining to Issue 0 of this Certificate:

Document No.	Document Title	Issue	Date
SK3098-1014 sheet 1 of 7	Altair Pro <i>Marking Details</i>	00	2006/06/16
SK3098-1014 sheet 2 of 7	Altair Pro <i>Assembly Details</i>	00	2006/06/16
SK3098-1014 sheet 3 of 7	Schematic, <i>Single Gas, Altair Pro</i>	00	2006/06 /16
SK3098-1014 sheet 4 of 7	Altair Pro <i>Parts List</i>	00	2006/06/16
SK3098-1014 sheet 5 of 7 & attachment B, 10 sheets	PCB Artwork, (<i>Altair Pro PCB</i>) (ref. 10073836)	00	2006/06/16
SK3098-1014 sheet 5 of 7 & attachment C, 10 sheets	PCB Artwork, (<i>Altair Pro O2 PCB</i>) (ref. 10066405)	00	2006/06/16
SK3098-1014 sheet 6 of 7	Special Component Requirements	00	2006/06/16
SK3098-1014 sheet 7 of 7	Altair Pro Overview	00	2006/06/16

Changes relating to Issue 1:

- A new model "Altair Pro-R O2" Remote Oxygen Detector has been added. The "Altair Pro-R O2" remote oxygen detector is identical to the model "Altair Pro O₂". The "Altair Pro-R O2" remote oxygen detector has a jack socket on the front panel where a remote oxygen detecting electrochemical cell is connected.


Conditions of Certification pertaining to Issue 1 of this Certificate:

1. It is a condition of safe use that the maximum length of the remote sensor connecting cable in the "Altair Pro-R O2" does not exceed 3.3 metres (10 feet).
2. All previous conditions are still applicable.

Drawing list pertaining to Issue 1 of this Certificate:

Document No.	Document Title	Issue	Date
SK3098-1014 sheet 1 of 9	Altair Pro <i>Marking Details</i>	01	2006/12/14
SK3098-1014 sheet 2 of 9	Altair Pro <i>Assembly Details</i>	01	2006/12/14
SK3098-1014 sheet 3 of 9	Schematic, <i>Single Gas, Altair Pro</i>	01	2006/12/14
SK3098-1014 sheet 4 of 9	Altair Pro <i>Parts List</i>	01	2006/12/14
SK3098-1014 sheet 5 of 9 & attachment 7 sheets	PCB Artwork, (<i>Altair Pro PCB</i>) (ref. 10075555)	01	2006/12/14
SK3098-1014 sheet 6, 7 of 9	Special Component Requirements	01	2006/12/14
SK3098-1014 sheet 8 of 9	Altair Pro Overview	01	2006/12/14
SK3098-1014 sheet 9 of 9	Revision History	01	2006/12/14

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Changes relating to 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.

Conditions of Certification pertaining to Issue 2 of this Certificate:

1. The previous conditions are still applicable.

Drawing list pertaining to Issue 2 of this Certificate:

Document Number	Document Title	Revision	Date
SK3098-1014 sheet 6 of 9	Special Component Requirements	2	2008/05/06

Variations Permitted by Issue 3:

- Capacitors C13, C14, C22 (0.1 μ F 10% each) were added to the Altair Pro microcontroller reset circuit.
- Capacitors C18, C19, C20 (0.1 μ F 10% each) were added to the Altair Pro O2 microcontroller reset circuit.
- An additional Transient Voltage Suppressor was added to the Altair Pro-R O2 version.
- Added alternate case overmould material RTP2099 EX 118617 B (various colour) to the apparatus.

This change has been assessed in Test Report AU/TSA/ExTR08.0066/00.

Condition of Certification Relating to Issue 3:

The previous conditions are still applicable.

Drawing list pertaining to Issue 3 of this Certificate:

Document Number	Document Title	Revision	Date
SK3098-1014 9 sheets	Altair Pro TestSafe	3	2008/11/06

Variations Permitted by Issue 4:

- The QAR Issuer was changed from CSA to Ineris.

Condition of Certification Relating to Issue 4:

The previous conditions are still applicable.

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.

This change has been assessed in Test Report AU/TSA/ExTR12.0037/00.

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IECEX Certificate of Conformity Annexe

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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 (yyyy-mm-dd)
SK3098-1014	28	Altair Pro TestSafe	4	2012-05-18

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