
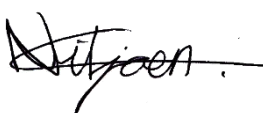




# Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

<b>IA CERTIFICATE</b>	MASC MS/18-0462X	<b>Issue</b>	5
<b>Issue Date</b>	25 March 2024	<b>Expiry Date</b>	12 June 2025
<b>** Based on Certificate No</b>	IECEX TSA 08.0013X	<b>Issue / Variations / Amendment</b>	8
<b>Requested by</b>	MSA – The Safety Company 1000 Cranberry Woods Township, PA 16066, United States of America		
<b>Manufacturer</b>	MSA – The Safety Company 1000 Cranberry Woods Drive, Cranberry Township PA 16066, United States of America		
<b>Description</b>	The Altair 4X Multi-gas Detector is a 4 Gas instrument. It contains XCell series toxic electrochemical cell (one or two sensors), one XCell combustible cell, and one XCell oxygen electrochemical cell. It measures 75 mm by 120 mm by 35 mm. The body is made of RTP 2099 EX 118617 B material. The display is a mono-colour LCD (Philips PCF8533 series). The rechargeable battery is Lithium polymer (Sony battery) – one cell. The battery is encapsulated in a plastic container with soft polyurethane based encapsulant.  See **Base certificate for full description.		
<b>Equipment</b>	Multi-gas Detector	<b>Type</b>	Altair 4X
<b>MARKING:</b> Original marking as per certificate ** remains applicable. IA number must be added.	<b>Type:</b> <b>Ex Marking:</b>	Altair 4X Diffusion Multi-gas Detector Ex ia I Ma Ex da ia IIC T3 Ga - When Combustible XCell Sensor is installed Ex ia IIC T3 Ga - When Combustible XCell Sensor is not installed -40 °C ≤ Tamb ≤ +60 °C SANS 1515-3-1 SANS 1515-4-1	
	<b>IA Number:</b> <b>Warnings:</b>	MASC MS/18-0462X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
<b>Quality Assurance report (QAR) / Notification (QAN):</b>		FR/INE/QAR08.0011/14	
<b>Compliance:</b> The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards: <ul style="list-style-type: none"> <li>SANS (IEC) 60079-0: 2019 Equipment - General requirements</li> <li>SANS (IEC) 60079-1: 2015 Equipment protection by flameproof enclosure "d"</li> <li>SANS (IEC) 60079-11: 2012 Equipment protection by intrinsic safety "i"</li> <li>SANS 1515-1: 2020 Battery-operated portable, flammable gas measuring instruments and warning devices</li> <li>SANS 1515-3-1: 2015 Battery-operated portable, toxic gas measuring instruments and warning devices</li> <li>SANS 1515-4-1: 2015 Battery-operated portable, oxygen-deficient/oxygen-enriched measuring instruments and warning devices</li> </ul> <p><i>Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.</i></p>			
<b>Special conditions of safe use "X":</b>			
<ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>			
<b>Conditions of manufacture:</b>			
<ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>			
 <b>C. WELTHAGEN</b> <b>TECHNICAL SPECIALIST</b>		 <b>N. VILOJEN</b> <b>TECHNICAL OFFICER</b>	
This certificate covers all units sold as long as the QAR/QAN remains valid. According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).			

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

SANS 10086 requirements;

Any conditions mentioned in the above certificate;

Any relevant requirements of the MHS Act;

Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

This certificate may only be reproduced in full

The certificate is not transferable and remains the property of the issuing body.

**IA CERTIFICATE: MASC MS/18-0462X**  
**Equipment: Altair 4X Diffusion Multi-gas Detector**  
**(Expiry date: 12 June 2025)**

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**ANNEX A**

This document is based on and must be read in conjunction with certificate IECEx TSA 08.0013X.					
<b>Description (According to Base Certificate) **</b>					
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."					
<b>Standard compliance</b>	See Base Certificate **				
<b>Issue</b>	Issue 4: Supplemented for QAR review as per ARP 0108. Issue 5: Supplemented for QAR review as per ARP 0108.				
<b>Special conditions of safe use ("X")</b>	<ul style="list-style-type: none"><li>The output parameters for the battery charger, which may be connected only in safe area, are shown below:<table border="1" data-bbox="421 633 896 687"><tr><td>Maximum Charger Voltage <math>U_m</math></td><td>6.7 V</td></tr><tr><td>Maximum Charger Current <math>I_m</math></td><td>1.7 A</td></tr></table></li></ul>	Maximum Charger Voltage $U_m$	6.7 V	Maximum Charger Current $I_m$	1.7 A
Maximum Charger Voltage $U_m$	6.7 V				
Maximum Charger Current $I_m$	1.7 A				
<b>Conditions of manufacture</b>	<ul style="list-style-type: none"><li>None.</li></ul>				
<b>Conditions of Certification</b>	<ul style="list-style-type: none"><li>This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</li><li>As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date).</li><li>The apparatus must be additionally marked with the MASC marking details above.</li><li>This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date.</li><li>The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate.</li><li>The certification on which this IA Certificate is based must remain valid.</li><li>The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged.</li><li>The Ex-quality assurance notification/report for the equipment must remain valid.</li></ul>				
<b>Conclusion:</b>	<ul style="list-style-type: none"><li>From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **.</li><li>The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).</li></ul>				

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions, or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

This document may only be reproduced in full.

This certificate is not transferable and remains the property of the issuing body.

This document will not be supported by MASC for certification purposes outside the borders of South Africa.

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07  
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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEx TSA 08.0013X**

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Certificate history:

Status: **Current**

Issue No: 8

[Issue 7 \(2018-02-05\)](#)

[Issue 6 \(2017-09-07\)](#)

[Issue 5 \(2016-07-19\)](#)

[Issue 4 \(2012-08-03\)](#)

[Issue 3 \(2010-09-16\)](#)

[Issue 2 \(2008-09-29\)](#)

[Issue 1 \(2008-07-08\)](#)

[Issue 0 \(2008-03-12\)](#)

Date of Issue: 2024-03-12

Applicant: **MSA – The Safety Company**  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
**United States of America**

Equipment: **Altair 4X Diffusion Multi-gas Detector**

Optional accessory:

Type of Protection: **Flameproof “d”, Intrinsic safety “ia”**

Marking:

Ex ia I Ma

Ex da ia IIC T3 Ga - When Combustible XCell Sensor is installed

Ex ia IIC T3 Ga - When Combustible XCell Sensor is not installed

$-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

Approved for issue on behalf of the IECEx  
Certification Body:

**Ujen Singh**

Position:

**Quality & Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**TestSafe Australia**  
919 Londonderry Road  
Londonderry NSW 2753  
**Australia**





# IECEx Certificate of Conformity

Certificate No.: **IECEx TSA 08.0013X**

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Date of issue: 2024-03-12

Issue No: 8

Manufacturer: **MSA – The Safety Company**  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
**United States of America**

Manufacturing locations: **MSA – The Safety Company**  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
**United States of America**

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

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

[AU/TSA/ExTR07.0040/01](#)  
[AU/TSA/ExTR16.0015/00](#)  
[CZ/FTZU/ExTR09.0023/03](#)

[AU/TSA/ExTR10.0009/00](#)  
[AU/TSA/ExTR16.0015/01](#)

[AU/TSA/ExTR12.0034/00](#)  
[AU/TSA/ExTR16.0015/02](#)

### Quality Assessment Report:

[FR/INE/QAR08.0011/14](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX TSA 08.0013X**

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Date of issue: 2024-03-12

Issue No: 8

## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Altair 4X Multi-gas Detector is a 4 Gas instrument. It contains XCell series toxic electrochemical cell (one or two sensors), one XCell combustible cell, and one XCell oxygen electrochemical cell. It measures 75 mm by 120 mm by 35 mm. The body is made of RTP 2099 EX 118617 B material. The display is a mono-colour LCD (Philips PCF8533 series).

The rechargeable battery is Lithium polymer (Sony battery) – one cell. The battery is encapsulated in a plastic container with soft polyurethane based encapsulant.

The equipment contains already tested and certified Ex component, summarized in Table below:

Item	Ex certificate number/ ExTR number	Standards with Editions	Ex marking code
Xcell	IECEX FTZU 09.0023U / CZ/ FTZU/ExTR09.0023/03	IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-11:2011	Ex da ia IIC Ga Ex ia I Ma

## SPECIFIC CONDITIONS OF USE: YES as shown below:

Please refer to Annexe of the certificate.



# IECEX Certificate of Conformity

Certificate No.: **IECEX TSA 08.0013X**

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Date of issue: 2024-03-12

Issue No: 8

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

### Details of certificate changes for issue 8:

1. Update IEC 60079-0:2011 to IEC 60079-0:2017
2. New Inventus Power Li-Ion Polymer battery IP583548 added and revised PCB artwork.
3. The new battery necessitates a change from T4 to T3 as a result of testing done by CSA in the USA.

### Annex:

[Annexe for IECEx TSA 08.0013X-8.pdf](#)



# IECEx Certificate of Conformity Annexe

<b>Annexe for Certificate No.:</b>	IECEx TSA 08.0013X	<b>Issue No.:</b>	8
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## Drawing list pertaining to Issue 8 of this Certificate:

Drawing/Document No.:	Page/s:	Title:	Revision Level:	Date: yyyy-mm-dd
SK3098-1157	1	*LABEL, AS/NZS AND IEC APPROVALS, ALTAIR4X	1	2024-01-29
SK3025-1061	2	*ARTWORK, AS/NZS, IEC APPROVALS, ALTAIR 4X	1	2024-01-30
SK3098-1135	24	*ALTAIR4X, TESTSAFE, IEC/Ex	4	2023-12-13

Note: An "\*" is added before the title of documents that are new or revised.

## Specific Conditions of use pertaining to Issue 8 of this Certificate:

The output parameters for the battery charger, which may be connected only in a safe area, are shown below:

Maximum Charger Voltage $U_m$	6.7 V
Maximum Charger Current $I_m$	1.7 A

Certificate issued by:



**TestSafe Australia**  
919 Londonderry Road  
Londonderry NSW 2753 Australia