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

IA CERTIFICATE	MASC MS/21-8010X	**Issue**	2	
Issue Date	11 November 2024	**Expiry Date**	11 November 2027	
**** Based on Certificate No**	IECEx TSA 09.0014X	**Issue / Variations / Amendment**	12	
Requested by	**MSA – The Safety Company** 1000 Cranberry Woods Township, PA 16066, United States of America			
Manufacturer	**MSA - The Safety Company** 1000 Cranberry Woods Drive, Cranberry Township PA 16066-5207, United States of America			
Description	The Altair 5X iR Multi-gas Detector is a 6 Gas instrument. It contains one dual XCell toxic electrochemical cell, one single XCell toxic electrochemical cell, one XCell combustible cell, one XCell oxygen electrochemical cell, and an infrared sensor. One electrochemical sensor bay can be fitted either with a XCell electrochemical cell or a 20 mm electrochemical cell. It measures 170 mm by 90 mm by 47 mm. The body is made of polycarbonate and the over moulding is conductive, of the same material as the Altair 4 gas detector. The display may be mono or colour. The apparatus uses rechargeable Lithium-Ion battery. The equipment has been separately tested against the requirements of IEC 60529 and it meets IP65. The equipment contains already tested and certified devices/Ex component, summarized in Table 1. See **Base certificate for full description.			
Equipment	Altair 5X iR Multi-Gas Detector			
MARKING: **Original marking as per certificate ** remains applicable.** **IA number must be added.**	**Type:**	Altair 5X iR Multi-Gas Detector		
	Ex Marking:	Ex ia I Ma Ex ia IIC T4 Ga (with Ex sensor not installed) Ex da ia IIC T4 Ga (with Ex sensor installed) -40°C ≤ Ta ≤ +50°C		
	IA Number:	MASC MS/21-8010X (To be additionally marked on equipment)		
	Warnings:	See Base Certificate ** (original marking must be applied)		
Quality Assurance report (QAR) / Notification (QAN):	FR/INE/QAR08.0011/14			

Compliance:

The equipment as described above has been allocated the rating Explosion Protected 'as above' utilizing the SANS/IEC Standards:

- SANS (IEC) 60079-0: 2012 Equipment - General requirements
- SANS (IEC) 60079-1: 2015 Equipment protection by flameproof enclosures "d"
- SANS (IEC) 60079-11: 2012 Equipment protection by intrinsic safety "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.

Specific conditions of use "X":

- Refer to Annex A below for more details.

Conditions of manufacture:

- Refer to Annex A below for more details.

S. JORDAAN
TECHNICAL SPECIALIST

N. VILOJEN
TECHNICAL OFFICER

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).

Mining And Surface Certification (Pty) Ltd
Unit 5 Lelyta Park, 45 Jurg Avenue, Hennopspark, Ext 87
Centurion 0157

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx TSA 09.0014X.	
Description (According to Base Certificate) **	
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."	
Supplementary	Issue 1: Supplemented for QAR review as per ARP 0108. Issue 2: Supplemented for review as per ARP 0108 & NCoP 2398.
Standard compliance	See Base Certificate **
Specific conditions of use ("X")	• The rechargeable battery shall be charged only in a safe area, the charge voltage (Um) and current (Im) shall not exceed 6.7 Vdc and 1.7 Adc.
Conditions of manufacture	• None.
Conditions of Certification	• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108: 2018 / NCoP 2398: 2022 (as applicable) a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • 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. • 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. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108:2018 / NCoP 2398: 2022 (as applicable), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex-quality assurance notification/report for the equipment must remain valid.
Conclusion:	• 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 **. • The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07
Directors: Roelof Viljoen & Francoius du Toit
Unit #5, Lelyta Park, 45 Jurg Avenue, Hennopspark Ext 87, Centurion, 0157
P.O. Box 14344, Clubview, 0014
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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

Certificate No.: **IECEx TSA 09.0014X**

Status: **Current**

Issue No: 12

Date of Issue: 2022-04-19

Applicant: **MSA - The Safety Company**
1000 Cranberry Woods Drive
Cranberry Township PA 16066-5207
United States of America

Equipment: **Altair 5X iR Multi-Gas Detector**

Optional accessory:

Type of Protection: **Intrinsic safety "ia" & Flameproof enclosures "da"**

Marking: Ex ia I Ma
Ex ia IIC T4 Ga (with Ex sensor not installed)
Ex da ia IIC T4 Ga (with Ex sensor installed)
-40°C ≤ Ta ≤ +50°C

Certificate history:

Issue 11 (2020-03-04)
Issue 10 (2017-08-17)
Issue 9 (2016-07-19)
Issue 8 (2015-09-10)
Issue 7 (2014-06-13)
Issue 6 (2013-08-21)
Issue 5 (2011-08-26)
Issue 4 (2011-05-19)
Issue 3 (2011-03-16)
Issue 2 (2010-08-23)

Approved for issue on behalf of the IECEx Certification Body: **Debbie Wouters**

Position: **Acting 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 or use of this QR Code.

Certificate issued by:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753
Australia

IECEx Certificate of Conformity

Manufacturer: **MSA - The Safety Company**
1000 Cranberry Woods Drive
Cranberry Township PA 16066-5207
United States of America

Manufacturing locations: **MSA - The Safety Company**
1000 Cranberry Woods Drive
Cranberry Township PA 16066-5207
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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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/ExTR09.0025/00
AU/TSA/ExTR10.0043/00
AU/TSA/ExTR11.0009/00
AU/TSA/ExTR11.0018/00
AU/TSA/ExTR11.0045/00
AU/TSA/ExTR13.0039/00
AU/TSA/ExTR13.0043/00
AU/TSA/ExTR15.0026/00
AU/TSA/ExTR16.0016/00
AU/TSA/ExTR16.0016/01
AU/TSA/ExTR16.0016/02
AU/TSA/ExTR16.0016/03

Quality Assessment Report:

FR/INE/QAR08.0011/11

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Altair 5X iR Multi-gas Detector is a 6 Gas instrument. It contains one dual XCell toxic electrochemical cell, one single XCell toxic electrochemical cell, one XCell combustible cell, one XCell oxygen electrochemical cell, and an infrared sensor. One electrochemical sensor bay can be fitted either with a XCell electrochemical cell or a 20 mm electrochemical cell.

It measures 170 mm by 90 mm by 47 mm. The body is made of polycarbonate and the overmoulding is conductive, of the same material as the Altair 4 gas detector. The display may be mono or colour. The apparatus uses rechargeable Lithium Ion battery.

The equipment has been separately tested against the requirements of IEC 60529 and it meets IP65.

The equipment contains already tested and certified devices/Ex component, summarized in Table 1.

Table 1 - Item list

Item #	Designation	Type	Ex certificate number/ ExTR number	Standards with Editions	Ex marking code
1	SENS1	Combustible Gas Sensor XCell^{TM} Ex	IECEx FTZU 09.0023U	IEC 60079-0:2017 Ed.7 IEC 60079-1:2014 Ed.7 IEC 60079-11:2011 Ed.6	Ex ia I Ma Ex da ia IIC Ga

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The rechargeable battery shall be charged only in a safe area, the charge voltage (Um) and current (Im) shall not exceed 6.7 Vdc and 1.7 Adc.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Details of certificate changes for issue 12:

- Add alternative IC components for U5 & U6 on the Bluetooth board (different footprint).
- Add alternative PCB layout for the Bluetooth board.
- The XCell Combustible Gas Sensor certificate had been updated.

Annex:

Annexe for IECEx TSA 09.0014X-12.pdf

IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 09.0014X	Issue No.:	12

Drawing list pertaining to Issue 12 of this Certificate:

Drawing / Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
3098-1187	97	*TestSafe Approvals, Altair5X/Altair5XIR	8	2022-01-27
SK3025-1080	3	Artwork, Australian Approvals, Altair 5XIR (Marking Label)	2	2020-02-11
SK3098-1394	1	ATT DWG, ALT ASSY, A5X, CLR DSPLY, IECEx	0	2017-02-16

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

Certificate issued by:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753 Australia