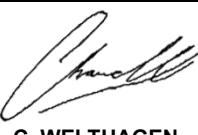




Mining And Surface Certification (Pty) Ltd

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 S/21-8017X	Issue	2		
Issue Date	04 December 2023	Expiry Date	17 June 2025		
** Based on Certificate No	IECEx FMG 10.0011X	Issue / Variations / Amendment	13		
Requested by	MSA – The Safety Company 1000 Cranberry Woods Township, PA 16066 United States of America				
Manufacturer	General Monitors Inc 16782 Von Karman Ave. Unit 14, Irvine, CA 92606 United States of America				
Description	OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER IR5500 Receiver: 329000-a a: Output & Terminals - 1, 2, 3, 4, 9, 10, 11, 12, 25, 26, 27, 28, 29, 30, 31, 32 and 33 Firmware revision G IR5500 Source: 329001-a a: Range & Terminals – 1, 2, 5, 6, 9, 10, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 31, 32, 33, 34 and 37				
Equipment	OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER				
MARKING: Original marking as per certificate ** remains applicable. IA number must be added.	Type: Ex Marking: IA Number: Warnings:	OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER Ex db IIB+H2 T4 Gb Ta = -55°C to 65°C Ex tb III C T135°C Db Ta = -55°C to 65°C MASC S/21-8017X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)			
Quality Assurance report (QAR) / Notification (QAN):	US/UL/QAR10.0004/10				
Compliance:	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">• SANS (IEC) 60079-0: 2019 Equipment - General requirements• SANS (IEC) 60079-1: 2015 Equipment protection by flameproof enclosures "d"• SANS (IEC) 60079-29-4: 2009 Gas detectors - Performance requirements of open path detectors for flammable gases• SANS (IEC) 60079-31: 2014 Equipment dust ignition protection by enclosure "t" <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>				
Special conditions of safe use "X":	<ul style="list-style-type: none">• Refer to Annex A below for more details.				
Conditions of manufacture:	<ul style="list-style-type: none">• Refer to Annex A below for more details.				
 C. WELTHAGEN 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).

This certificate may only be reproduced in full
The certificate is not transferable and remains the property of the issuing body.

IA CERTIFICATE: MASC S/21-8017X
Equipment: OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of
IR5500 SOURCE and IR5500 RECEIVER
(Expiry date: 04 December 2026)

Page 2 of 2

ANNEX A

<p>This document is based on and must be read in conjunction with certificate IECEx FMG 10.0011X</p>	
Description (According to Base Certificate) **	
<p>"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."</p>	
Standard compliance	See Base Certificate **
Issue	Issue 2: Supplemented for QAR review as per ARP 0108.
Special conditions of safe use ("X")	<ul style="list-style-type: none"> • Consult the manufacturer for dimensional information on the flameproof joints for repair. • Potential electrostatic charging hazard - use only damp cloth for cleaning.
Conditions of manufacture	<ul style="list-style-type: none"> • None.
Conditions of Certification	<ul style="list-style-type: none"> • This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • 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). • 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 (or regulations), 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:	<ul style="list-style-type: none"> • 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).

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

Directors: Roelof Viljoen & Francois du Toit

Unit #5, Lelyta Park, 45 Jurg Avenue, Hennopspark Ext 87, Centurion, 0157

P.O. Box 14344, Clubview, 0014

Tel: 012 653 2959 ◊ Fax: 086 605 8568

e-mail: info@masc-ex.co.za



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 FMG 10.0011X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 13	Issue 12 (2021-07-29) Issue 11 (2021-02-23) Issue 10 (2020-08-12) Issue 9 (2020-02-17) Issue 8 (2019-10-17) Issue 7 (2019-03-06) Issue 6 (2016-12-27) Issue 5 (2015-01-29) Issue 4 (2014-10-30) Issue 3 (2014-07-29)
Date of Issue:	2022-01-12		
Applicant:	General Monitors Inc 16782 Von Karman Ave. Unit 14 Irvine, CA 92606 United States of America		
Equipment:	OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER		
Optional accessory:			
Type of Protection:	Flameproof Ex d and Dust Ignition Protection by Enclosure Ex t		
Marking:	Ex db IIB+H2 T4 Gb Ta = -55°C to 65°C Ex tb III C T135°C Db Ta = -55°C to 65°C		

Approved for issue on behalf of the IECEx
Certification Body:

James E. Marquedant

Position:

VP, Manager - Electrical Systems

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:

FM Approvals LLC
1151 Boston-Providence Turnpike
Norwood, MA 02062
United States of America





IECEx Certificate of Conformity

Certificate No.: **IECEx FMG 10.0011X**

Page 2 of 4

Date of issue: 2022-01-12

Issue No: 13

Manufacturer: **General Monitors Ireland Ltd,**
Ballybrit Business Park
Galway
Ireland

Manufacturing locations:

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 60079-29-4:2009 Explosive atmospheres - Part 29-4: Gas detectors - Performance requirements of open path detectors for flammable gases
Edition:1.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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:

US/FGM/ExTR10.0013/00
US/FGM/ExTR10.0013/04
US/FGM/ExTR10.0013/07
US/FGM/ExTR14.0003/01
US/FGM/ExTR14.0003/04
US/FGM/ExTR14.0003/07

US/FGM/ExTR10.0013/01
US/FGM/ExTR10.0013/05
US/FGM/ExTR10.0013/08
US/FGM/ExTR14.0003/02
US/FGM/ExTR14.0003/05

US/FGM/ExTR10.0013/03
US/FGM/ExTR10.0013/06
US/FGM/ExTR14.0003/00
US/FGM/ExTR14.0003/03
US/FGM/ExTR14.0003/06

Quality Assessment Report:

GB/SIR/QAR07.0014/09



IECEx Certificate of Conformity

Certificate No.: **IECEx FMG 10.0011X**

Page 3 of 4

Date of issue: 2022-01-12

Issue No: 13

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER

IR5500 Receiver:329000-a

a: Output & Terminals - 1, 2, 3, 4, 9, 10, 11, 12, 25, 26, 27, 28, 29, 30, 31, 32 and 33

Firmware revision G

IR5500 Source:329001-a

a: Range & Terminals – 1, 2, 5, 6, 9, 10, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 31, 32, 33, 34 and 37

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Consult the manufacturer for dimensional information on the flameproof joints for repair.
2. Potential electrostatic charging hazard - use only damp cloth for cleaning.



IECEx Certificate of Conformity

Certificate No.: **IECEx FMG 10.0011X**

Page 4 of 4

Date of issue: 2022-01-12

Issue No: 13

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Label Update to add UKEX