





# 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 S/21-8017X  | <b>Issue</b>   | 2            |
| <b>Issue Date</b>  | 04 December 2023   | <b>Expiry Date</b>   | 17 June 2025 |
| <b>** Based on Certificate No</b>  | IECEX FMG 10.0011X   | <b>Issue / Variations / Amendment</b>  | 13           |
| <b>Requested by</b>  | MSA – The Safety Company<br>1000 Cranberry Woods Township, PA 16066<br>United States of America  |  |              |
| <b>Manufacturer</b>  | General Monitors Inc<br>16782 Von Karman Ave.<br>Unit 14, Irvine, CA 92606<br>United States of America   |  |              |
| <b>Description</b>   | <b>OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER</b><br><b>IR5500 Receiver:</b> 329000-a<br>a: Output & Terminals - 1, 2, 3, 4, 9, 10, 11, 12, 25, 26, 27, 28, 29, 30, 31, 32 and 33<br>Firmware revision G<br><b>IR5500 Source:</b> 329001-a<br>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 |  |              |
| <b>Equipment</b>   | OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER  |  |              |
| <b>MARKING:</b><br><b>Original marking as per certificate ** remains applicable.</b><br><b>IA number must be added.</b>  | <b>Type:</b><br><b>Ex Marking:</b><br><b>IA Number:</b><br><b>Warnings:</b>  | OPEN PATH COMBUSTIBLE IR GAS DETECTOR consisting of IR5500 SOURCE and IR5500 RECEIVER<br>Ex db IIB+H2 T4 Gb Ta = -55°C to 65°C<br>Ex tb III C T135°C Db Ta = -55°C to 65°C<br>MASC S/21-8017X (To be additionally marked on equipment)<br>See Base Certificate ** (original marking must be applied) |              |
| <b>Quality Assurance report (QAR) / Notification (QAN):</b>  |  | US/UL/QAR10.0004/10  |              |
| <b>Compliance:</b><br>The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards:<br><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 enclosures "d"</li> <li>SANS (IEC) 60079-29-4: 2009 Gas detectors - Performance requirements of open path detectors for flammable gases</li> <li>SANS (IEC) 60079-31: 2014 Equipment dust ignition protection by enclosure "t"</li> </ul> <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> |  |  |              |
| <b>Special conditions of safe use "X":</b><br><ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>   |  |  |              |
| <b>Conditions of manufacture:</b><br><ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>  |  |  |              |
| <br><b>C. WELTHAGEN</b><br><b>TECHNICAL SPECIALIST</b>  |  | <br><b>N. VILOJEN</b><br><b>TECHNICAL OFFICER</b>  |              |
| This certificate covers all units sold as long as the QAR/QAN remains valid.<br>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**

|   |   |
|---|---|
| This document is based on and must be read in conjunction with certificate IECEx FMG 10.0011X |   |
| <b>Description (According to Base Certificate) **</b>   |   |
| "Refer to description in Base Certificate ** (and any applicable schedules/issues/variants)." |   |
| <b>Standard compliance</b>  | See Base Certificate **   |
| <b>Issue</b>  | Issue 2: Supplemented for QAR review as per ARP 0108.   |
| <b>Special conditions of safe use ("X")</b>   | <ul style="list-style-type: none"><li>• Consult the manufacturer for dimensional information on the flameproof joints for repair.</li><li>• Potential electrostatic charging hazard - use only damp cloth for cleaning.</li></ul>   |
| <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  
Directors: Roelof Viljoen & Francois du Toit  
Unit #5, Lelyta Park, 45 Jurg Avenue, Hennospark 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](mailto: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](http://www.iecex.com)

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

Page 1 of 4

Certificate history:

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](http://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/FMG/ExTR10.0013/00  
US/FMG/ExTR10.0013/04  
US/FMG/ExTR10.0013/07  
US/FMG/ExTR14.0003/01  
US/FMG/ExTR14.0003/04  
US/FMG/ExTR14.0003/07

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

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