



# 1. EU-TYPE EXAMINATION CERTIFICATE

2. Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU

3. EU-Type Examination Certificate No: FM10ATEX0031X

4. Equipment or protective system: IR5500 Open Path Gas Detector  
(Type Reference and Name)

5. Name of Applicant: General Monitors Inc an MSA Company

6. Address of Applicant  
16782 Von Karman Ave.,  
Unit 14,  
Irvine, California 92606, USA

7. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8. FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3036609EC dated 21<sup>st</sup> September 2010

9. Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-29-4:2010, EN 60079-31:2014,  
EN 60529:1991+A1:2000+A2:2013

10. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11. This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

Certificate issued by:

Certification Manager, FM Approvals Europe Ltd.

Date 15 July 2024

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12. The marking of the equipment or protective system shall include:



II 2 G Ex db IIB+H<sub>2</sub> T4 Gb Ta = -55°C to +65°C

II 2 D Ex tb IIIC T135°C Db Ta = -55°C to +65°C

EN 60079-29-4

### 13. Description of Equipment or Protective System:

The IR5500; part numbers, 329000-a, 329001-a are fixed open path gas detectors, comprising of a Source and Receiver operating over a distance of 5-150 meters. The operating temperature range is -55°C to +65°C and the power consumptions (Um) are: for the Source = 12W and for the Receiver = 10W. The enclosures are manufactured from 316L stainless steel. Field accessories comprise of Attenuation plate P/N 329113-1, Pan-Tilt Base assembly P/N 329071-1, Pan-Tilt Arm assembly P/N 329073-1, Pan-Tilt Basic Arm assembly P/N 329123-1, Long Range Alignment Kit P/N 329082 and gas filter kits P/N 329083 & 329084. Depending on the model selected, the system communications are Dual Modbus or Single Modbus. Each variation comes complete with (2) 4 - 20mA outputs for detection of Propane with measurement ranges of 0-1 LEL•m and 0-2000ppm•m and Methane with measurement ranges of 0-5 LEL•m and 0-5000ppm•m, with minimum alarm set point of 10% FSD and repeatability of ±6% FSD. The apparatus complies with EN 60079-29-4.

The enclosures have an ingress protection rating of IP66/67.

#### **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

Specifications - The manufacturer's specifications are as follow:

|                        |  |
|------------------------|--|
| Operating Temperature: | -55°C to +65°C   |
| Relative Humidity:     | 10 to 95% (Non- condensing)  |
| Supply Parameters:     | +24 V nominal, 20-36 VDC   |
| Measurement Signal:    | 4-20mA   |
| Calibration:           | Units are supplied factory calibrated for the specified target gas or gases.<br>Units should not require recalibration in service. |

### 14. Specific Conditions of Use:

1. Consult the manufacturer for dimensional information on the flameproof joints for repair.
2. Parts of the equipment and the painted surface of the IR5500 Source or IR5500 Receiver may store electrostatic charge and become a source of ignition in applications with a low relative humidity <~30%

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relative humidity where the parts and the painted surface is relatively free of surface contamination such as dirt, dust, or oil. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in EN TR50404 and IEC TR60079-32-1 (in preparation). Cleaning of the parts and painted surface should only be done with a damp cloth.

### **15. Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

### **16. Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

### **17. Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

### **18. Certificate History**

Details of the supplements to this certificate are described below:

| <b>Date</b>                       | <b>Description</b>   |
|-----------------------------------|--|
| 23 September 2010                 | Original Issue.  |
| 28 February 2011 to 30 April 2018 | <u>Supplements 1 to 9</u><br>See certificate dated 30 <sup>th</sup> April 2018.  |
| 30 January 2019                   | <u>Supplement 10:</u><br>Report Reference: – RR216941 dated 28 <sup>th</sup> January 2019.<br>Description of the Change: Documentation Update.                                   |
| 8 April 2019                      | <u>Supplement 11:</u><br>Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809. |
| 23 October 2019                   | <u>Supplement 12:</u><br>Report Reference: – RR220545 dated 17 <sup>th</sup> October 2019.<br>Description of the Change: Documentation Update to add configuration options.      |

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| Date              | Description   |
|-------------------|---|
| 19 February 2020  | <u>Supplement 13:</u><br>Report Reference: – RR222271 dated 17 <sup>th</sup> February 2020.<br>Description of the Change: Documentation Update to add configuration options and update listing for the removal of HART. |
| 29 September 2020 | <u>Supplement 14:</u><br>Report Reference: – RR224491 dated 12 <sup>th</sup> August 2020.<br>Description of the Change: Update of EN IEC 60079-0 to the 2018 edition.   |
| 24 February 2021  | <u>Supplement 15:</u><br>Report Reference: – RR226370 dated 23 <sup>rd</sup> February 2021.<br>Description of the Change: Documentation Update due to label change.   |
| 25 August 2021    | <u>Supplement 16:</u><br>Report Reference: – RR227059 dated 29 <sup>th</sup> July 2021.<br>Description of the Change: Documentation Label update to add manufacturing location.   |
| 20 January 2022   | <u>Supplement 17:</u><br>Report Reference: – RR229755 dated 12 <sup>th</sup> January 2022.<br>Description of the Change: Update to add UKEX to label.   |
| 15 July 2024      | <u>Supplement 18:</u><br>Report Reference: RR241686 dated 9 July 2024.<br>Description of the Changes: Editorial changes to Manual and label and change of 1 component which does not affect original evaluation.        |

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# Blueprint Report

## General Monitors Inc 1000001865

Class No. 6325

Original Project I.D. 3036609

Client ID FM10ATEX0031X

| <u>Drawing No.</u> | <u>Revision Level</u> | <u>Drawing Title</u>                       | <u>Last Report</u> |
|--------------------|-----------------------|--|--------------------|
| 329000             | K                     | IR5500 RCVR Assy                           | RR220545           |
| 329001             | R                     | IR5500 Source Assy                         | RR222271           |
| 329033             | R                     | Nameplate, IR5500 Receiver                 | RR241686           |
| 329035             | P                     | Nameplate, IR5500 Transmitter              | RR241686           |
| 32910              | F                     | Schematic Diagram HV CPLD Controller Board | RR241686           |
| 329100             | A                     | Schematic Diagram, Control Board           | 3036609            |
| 329101-1           | G                     | BOM, Dual Modbus Control Board             | RR226370           |
| 329101-2           | G                     | BOM, HART Control Board                    | RR226370           |
| 32911              | F                     | CCA, HV CPLD Controller Board              | RR241686           |
| 32911-1            | H                     | Object Description                         | RR241686           |
| 32920              | B                     | Schematic Diagram, Auxiliary PSU Board     | 05/03/14           |
| 32921              | B                     | CCA, Auxiliary PSU Board                   | 05/03/14           |
| 32921-1            | D                     | BOM, Auxiliary PSU Board                   | 3058657            |
| 32921-2            | D                     | BOM, Auxiliary PSU Board                   | 3058657            |
| 32946              | A                     | Certification Drawing                      | 3036609            |
| 32960              | F                     | Schematic Diagram, Sensor Board            | 3058657            |
| 32961              | F                     | CCA, Sensor Board                          | 3058657            |
| 32961-1            | F                     | BOM, Sensor Board Mid-Range                | RR226370           |
| 32970              | G                     | Schematic, Motor Drive Board               | 3058657            |
| 32971              | F                     | CCA, Motor Drive Board                     | 3058657            |
| 32971-1            | F                     | BOM, Motor Drive Board                     | 3058657            |
| 32980              | A                     | Schematic Diagram, Display Board           | 3036609            |
| 32981              | A                     | CCA, Display Board                         | 3036609            |
| 32981-1            | B                     | BOM, Display Board                         | 3046962            |
| 32990              | D                     | Schematic Diagram, Relay Board             | 05/03/14           |
| 32991              | D                     | CCA, Relay Board                           | 05/03/14           |
| 32991-1            | F                     | BOM, Relay Board                           | 3058657            |
| 32991-2            | F                     | BOM, Relay Board                           | 3058657            |
| 910006             | M                     | Nameplate MSA, Ultima OPIR-5 Receiver      | RR241686           |
| 910007             | L                     | Nameplate MSA, Ultima OPIR-5 Source        | RR241686           |
| D01011Q1           | 10/26/10              | D01011Q1.pdf                               | 3036609            |
| MANIR5500_OPIR-5   | R                     | IR5500/OPIR-5 Instruction Manual           | RR241686           |