

# CERTIFICATE OF CONFORMITY



## HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS

1. Certificate No: **FM17CA0021**
2. Equipment: **GAS DETECTORS (COMBUSTIBLE)**  
**IR400 and IR4000 series**
3. Name of Listing Company: **General Monitors**
4. Address of Listing Company: **16782 Von Karman Ave.  
Unit 14  
Irvine, CA 92606  
United States of America**
5. The examination and test results are recorded in confidential report number:  
**3029222 dated 9<sup>th</sup> July 2008**
6. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:  
**CSA-C22.2 No 0.5: 2008, CSA-C22.2 No 213: 1987, CSA/CAN C22.2 No 30: 2003, CSA/CAN C22.2 No 142: 2000, CSA/CAN C22.2 No 152: 1984**
7. 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.
8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
9. Equipment Ratings:  
**IR400: Suitable for installation in Class I, Division 1, 2 Groups B, C and D, indoor/outdoor (TYPE 4X, IP65) hazardous locations , T5, Ta = -40°C to +75°C**  
**IR4000M/S: Suitable for installation in Class I, Division 1, 2 Groups B, C and D, and Class I, Zone 1, IIB +H2 ; indoor/outdoor (TYPE 4X) hazardous locations, T5 Ta = -40°C to +75°C**

### Certificate issued by:

**J.E. Marquedant**  
VP, Manager - Electrical Systems

**12 January 2022**  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE



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10. The marking of the equipment shall include:

IR400: Class I, Division 1, 2 Groups B, C and D, TYPE 4X, IP65 T5 Ta = -40°C to +75°C

IR4000M/S: Class I, Division 1, 2 Groups B, C and D, and Class I, Zone 1, IIB +H<sub>2</sub>, TYPE 4X, T5 Ta = -40°C to +75°C

11. Description of Equipment:

**IR400 - Stationary Single Channel 4-20mA, Modbus, or Hart Combustible Gas Detector.** Stand Alone Sensor/Transmitter model IR400. IR400 is suitable for installation in Class I, Division 1, 2 Groups B, C and D, indoor/outdoor (TYPE 4X, IP65) hazardous locations with a temperature class of T5, Ta = -40°C to +75°C and may be connected to the IR4000M, IR4000S or junction box P/N 31305. The IR400 monitors 0-100% LEL of either; methane, propane, hexane, pentane, ethane, or butane. The IR400 provides a 4-20mA output. The operating voltage range is 20-36 Vdc, with a maximum power consumption of 4.8W. The apparatus complies with ANSI/ISA-12.13.01-2000; Performance Requirements for Combustible Gas Detectors. This Approval covers use of the instruments when connected to FM Approvals stand alone combustible gas control unit and when calibration is performed using the gas to be monitored and when the higher of the alarm points is preset within 10% LEL of the calibration gas concentration.

32500-a

a: 1, 2, 5 through 8, 11, 12, 15, 16, 17, 18, 21 through 32, 65, 68, 86, 100, 101

31305-a

a: 1, 2, 3 or 4

**IR4000S/M - Stationary single or dual channel Control Unit for Combustible Gas Detectors.** Stationary single or dual channel Control Unit for Combustible Gas Detectors. Stand alone controller model IR4000M and IR4000S monitor FM Approved Combustible Gas Detectors which monitor 0-100% LEL gas-in-air atmospheres. Suitable for installation in Class I, Division 1, 2 Groups B, C and D, and Class I, Zone 1, IIB +H<sub>2</sub>; indoor/outdoor (TYPE 4X) hazardous locations with a temperature class of T5 Ta = -40°C to +75°C. The IR4000M and IR4000S controllers' operating temperature range is -40°C to +75°C and operating voltage is 24VDC at 2W. The apparatus also complies with ANSI/ISA-12.13.01-2000; Performance Requirements for Combustible Gas Detectors. This Approval covers use of the instruments when connected to FM Approvals stand alone combustible gas detector and when calibration is performed using the gas to be monitored and when the higher of the alarm points is preset within 10% LEL of the calibration gas concentration.

32563-a - firmware revision C

a = Monitor Output 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 29, 38, 39, 40

32580-a - firmware revision D

a = Monitor Output: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24

12. Specific Conditions of Use:

None

13. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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# SCHEULE



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## 14. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

## 15. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
9 <sup>th</sup> July 2008	Original Issue.
19 <sup>th</sup> February 2017	<u>Supplement 4:</u> Report Reference: RR207859 dated 19 <sup>th</sup> February 2017. Description of the Change: Addition of enclosure 31305 to description and conversion to new format.
17 <sup>th</sup> April 2017	<u>Supplement 5:</u> Report Reference: 3057599 dated 17 <sup>th</sup> April 2017. Description of the Change: Hardware, Firmware and documentation update.
9 <sup>th</sup> April 2018	<u>Supplement 6:</u> Report Reference: RR212939 dated 9 <sup>th</sup> April 2018 Description of the Change: addition of -40 blue painted model.
12 <sup>th</sup> January 2022	<u>Supplement 7:</u> Report Reference: – RR229755 dated 12 <sup>th</sup> January 2022 . Description of the Change: Update to address on certificate.

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