

CERTIFICATE OF CONFORMITY

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS

- Certificate No:** FM17US0037
- Equipment:** GAS DETECTORS (COMBUSTIBLE)
(Type Reference and Name) IR400 and IR4000 series
- Name of Listing Company:** General Monitors
- Address of Listing Company:** 26776 Simpatica Circle
Lake Forest, CA 92630 USA
- The examination and test results are recorded in confidential report number:
3029222 dated 9th July 2008
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:
FM Class 3600:2011, FM Class 3611:2004, FM Class 3615:2006, FM Class 3810:2005, FM Class 6310/6320:2001, ANSI/ISA 12.13.01:2000, ANSI/NEMA 250:2003, ANSI/IEC 60529:2004
- 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.
- 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.
- Equipment Ratings:
IR400: Suitable for installation in Class I, Division 1, 2 Groups B, C and D, indoor/outdoor (TYPE 4X, IP65) hazardous (classified) 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 (classified) locations, T5 Ta = -40°C to +75°C

Certificate issued by:



J. E. Marquedant
Manager, Electrical Systems

17 April 2017

Date

To verify the availability of the Approved product, please refer to 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
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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 +H₂, 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 (classified) 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 +H₂; indoor/outdoor (TYPE 4X) hazardous (classified) 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.

325a-b

a= Controller model: 63 or 80

b= Monitor Output: 1, 2, 3, 4, 5, 6, 7, 8, 9*, 10*, 11*, 12*, 13*, 14*, 15*, 16*, 39

* = only available when a=80

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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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 th July, 2008	Original Issue.
19 th February 2017	<u>Supplement 4:</u> Report Reference: RR207859 dated 19 th February 2017 Description of the Change: Addition of enclosure 31305 to description and conversion to new format.
17 th April 2017	<u>Supplement 5:</u> Report Reference: 3057599 dated 17 th April 2017 Description of the Change: Hardware, Firmware and documentation update.

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