FL3100 **Flame Detector Series**

Monitoring Accuracy and Reliability You Can Depend On

GM General Monitors

MSA The Safety Company

Because every life has a **purpose...**

Dependable **Flame Detector Performance**

- Immunity to False Alarms
- RS-485 Modbus RTU Serial Communication
- High-Temperature Resistance
- Compact, Rugged Housing

Designed with advanced ultraviolet (UV) and infrared (IR) sensing technology, the General Monitors FL3100 Flame Detector Series represents the state-of-the-art in secure flame monitoring. The microcontroller-based FL3100 Series rapidly and accurately senses unwanted fires, issuing alarm outputs directly from the detector, without compromising false alarm immunity, providing reliable and secure protection of people, equipment and facilities.

Application-Specific **Flame Detection**

The versatile FL3100 Flame Detector Series is designed for a wide variety of flame detection applications. Choose from inter-changeable UV, UV/IR or Digital Frequency Infrared (DFIR) detectors to meet individual application requirements. Highly accurate built-in flicker-discrimination circuitry and self-checking Continuous Optical Path Monitoring (COPM) ensure the FL3100 Series offers exceptional fire protection, free from the worry of false alarms in:

- Petroleum Refineries
- Offshore Drilling & Production Platforms
- Fuel Loading Facilities
- LNG & LPG Processing & Storage Plants
- Chemical Processing & Pharmaceuticals
- Aircraft Hangars
- Automotive Assembly
- Paint Spray Booths
- Compressor Stations
- Gas Turbines
- Warehousing & Distribution Facilities
- Hydrogen Plants

Key **Features**

The FL3100 Flame Detector Series is designed with:

- Continuous Optical Path Monitoring checks the optical path integrity once every minute.
- Flicker discrimination circuitry reduces the possibility of false alarms even in the presence of arc welding, lightning, sunlight or hot objects.
- Modbus or HART user interface for easy, flexible networking. Dual Modbus optional. HART available on FL3100H and FL3101H models only.
- 4-20mA analog output for remote alarm and fault indication.

- Aluminum or Stainless Steel Housing Supports Harsh Conditions and Explosion-Proof Environments.
- Standard Wide Temperature Range–40˚F to 185˚F (-40˚C to 85˚C)
- Special Version of FL3100H for Detection of Hydrogen Fires
- Modular Components Result in Low Maintenance and Reduced Total Cost of Ownership.

*The **FL3110 (UV/IR)** (left)**, FL3111 (UV)** (center) and **FL3112 (DFIR)** (right) flame detectors were designed and approved with the European market in mind.*

The units feature stainless steel Exd housing, 90℃ operating temperature and segregated EEx-e wiring compartment.

The **FL3100H (UV/IR)** (left), and **FL3101H (UV)** (right) feature rugged, explosion-proof aluminum or stainless steel housings for use in hazardous environments.

Advanced **Flame Detector Design**

The FL3100H/01H, FL3110/11 contain a phototube that responds to radiation in the 185-260 nanometer range. The UV portion of the FL3100H /FL3110 detector is combined with a pyroelectric detector, which responds to a change in the intensity of infrared radiation (4.35 um) achieving a very high degree of discrimination. Only the correct combination and intensity of UV/IR radiation determined by algorithm in the microcontroller can signal an alarm.

The unitized FL3112 Digital Frequency Infrared Detector utilizes infrared detectors and Digital Frequency Analysis (DFA). The infrared detector analyzes high and low frequencies, in addition to comparing flame and reference wavelengths, thus discriminating against false alarms. Associated with the detector is flicker discrimination circuits, which are sensitive to flame modulation, including that produced by a large fire.

System **Approvals**

In support of applications worldwide, the FL3100 Series flame detectors feature universal product approvals: CSA, FM, ATEX, IECEx and CE Marking. ATEX, IECEx and CE Marking available for the FL3110, FL3111, and FL3112. (Patents 5,917,489 & 6,150,659) SIL 2/3 Suitable.

Accessories

The **Model FL802** is a multi-channel Readout/Display that supports zone (and voting) flame sensing with multiple detectors. The **Model TA402A** is a single channel Fire Trip Amplifier module, which is part of the Zero Two Series Gas and Fire Detection System. Various input/output cards are available for complete fire and gas detection.

General Monitors—**by MSA**

Over 100 years of experience and capability in comprehensive safety solutions have made MSA a modern and forward-looking company for the protection of people, facilities, and the environment. MSA is one of the few suppliers of fixed gas and flame detection (FGFD) measurement technology that develops and manufactures a complete range of products and integrates them into safety solutions.

With the acquisition of General Monitors in September 2010, the MSA FGFD product portfolio expanded even further. As two unmatched experts in gas and flame detection joined forces, we are proving that the right mix of durable products and innovative technology can increase safety while driving operational efficiency.

Together MSA and General Monitors have the widest range of sensing technologies for gas and flame detection. We can create solutions that will not only provide worker safety and protect facilities, but will also decrease overall cost of ownership. While our customers still have access to the great products and service that they have come to rely on in the past, they now have access to so much more: superior service, improved support, a wider range of technology, and unique solutions enhanced by the combined strength of MSA and General Monitors.

Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families, and their communities may live in health throughout the world.

MSA: Because every life has a purpose.

ISO 9001 CERTIFIED Quality System • MSA NORTH AMERICA •

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