

# Models FL3100H / FL3101H

UV/ IR and UV Unitized Flame Detectors



General Monitors



## Applications

- Aircraft Hangars
- Chemical Plants
- Compressor Stations
- Drilling and Production Platforms
- Electrostatic Paint Spray Booths
- Fuel Loading Facilities
- Gas Turbines
- LNG/LPG Processing and Storage Facilities
- Refineries

## Features & Benefits

- Wide field of view offers greater fire detection coverage
- Event logging stores fault and alarm history
- 4-20 mA stepped output conforms to industry standard for remote alarm and fault indication
- Modbus and HART user interface provides complete status and control capability in the control room
- Wide operating temperature range permits use at higher ambient temperature
- Continuous Optical Path Monitoring (COPM) checks optical path integrity and detector's electronic circuitry once every minute
- Three SPDT high-current programmable relay outputs provide immediate and time delayed relay outputs for alarm, warn and fault conditions

The General Monitors FL3100H and FL3101H are Ultraviolet/ Infrared and Ultraviolet-only flame detectors designed to detect unwanted fires and provide alarm outputs directly from the detector while maintaining false alarm immunity.

The FL3100H detects fires by monitoring in both the ultraviolet and infrared (UV & IR) spectral ranges making it highly immune to false alarms caused by lightning, arc welding, hot objects and other sources of radiation. The FL3101H detects in only the ultraviolet (UV) spectral range for optimized speed of response.

Other features of the FL3100H and FL3101H include three alarm/fault relays, and an RS-485 serial output with Modbus RTU protocol for linking up to 128 detectors in series or 247 with repeaters. The RS-485 and HART outputs provide status, alarm, fault and other information for operation, troubleshooting or programming of the units. HART allows this feature without rewiring.

The COPM (Continuous Optical Path Monitoring) self test feature checks the optical path integrity (window cleanliness) and the detector's electronic circuitry once every minute.



The Safety Company

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

System Specifications	
<b>WAVE LENGTHS</b>	185 to 260 nm (UV) 4.35 microns (IR)
<b>FIELD OF VIEW</b>	120° max. conical (FL3100H) 140° max. conical (FL3101H)
<b>SENSITIVITY</b>	Approved performance specifications— 50 feet (15.2m) distance for a 1 sq. ft (0.092 m <sup>2</sup> ) heptane fire.
<b>TYPICAL RESPONSE TIME</b>	< 3 sec @ 50 ft. (FL3100H) < 1 sec @ 50 ft. (FL3101H)
<b>MINIMUM SENSOR RESPONSE TIME</b>	UV/ IR – FL3100H < 500 ms UV – FL3101H < 100 ms
<b>ACCESSORIES</b>	Swivel elbow union, mounting bracket, test lamp
<b>CLASSIFICATION</b>	Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G; Class III, Type 4X Ex db IIC T5 Gb; Ex tb IIIC T100°C Db IP66/IP67
<b>WARRANTY</b>	Two years
<b>APPROVALS</b>	CSA, FM, ATEX, IECEx, GOST, INMETRO HART registered, SIL 3 suitable (FM)
<b>PATENT NUMBER</b>	5,914,489
Environmental Specifications	
<b>OPERATING TEMPERATURE RANGE</b>	-40° F to +185° F (-40° C to +85° C)
<b>STORAGE TEMPERATURE RANGE</b>	-40° F to +185° F (-40° C to +85° C)
<b>OPERATING HUMIDITY RANGE</b>	0% to 95% RH, non-condensing
Mechanical Specifications	
<b>HOUSING</b>	Aluminum (Stainless steel optional)
<b>DIAMETER</b>	6" (152 mm)
<b>LENGTH</b>	5.5" (140 mm)
<b>WEIGHT</b>	ALUMINUM 5 lbs (2.3 kg) STAINLESS STEEL 16 lbs (7.3 kg)
<b>MOUNTING</b>	Stainless steel mounting bracket
<b>CABLE ENTRY</b>	2 x ¾" NPT or 2 x 25 mm ISO
<b>STANDARD CONFIGURATION</b>	FL3100H-1-5-1-3-1-1-1 FL3101H-1-5-1-3-1-1-1

Electrical Specifications	
<b>INPUT POWER</b>	20-36 VDC 24 VDC @ 150 mA max. (3.6 W max.)
<b>ANALOG SIGNAL</b>	0 – 20 mA (600 ohms maximum)
<b>FAULT MODE</b>	0 – 0.2 mA*
<b>COPM FAULT</b>	2 mA, ± 0.2 mA**
<b>READY SIGNAL</b>	4 mA, ± 0.2 mA
<b>IR SIGNAL</b>	8 mA, +0.2 mA (FL3100H only)
<b>UV SIGNAL</b>	12 mA, +0.2 mA (FL3100H only)
<b>WARN SIGNAL</b>	16 mA, ± 0.2 mA
<b>ALARM SIGNAL</b>	20 mA, ± 0.2 mA
<b>RELAY CONTACT RATING</b>	8 A 250 VAC, 8 A @ 30 VDC resistive (North America). 8 A @ 30 V RMS/42.4 V peak, 8 A @ 30 VDC resistive (Europe).
<b>DIP SWITCH SELECTABLE OPTIONS</b>	SENSITIVITY 100%, 75%, 50% Alarm TIME DELAY 2, 4, 8 or 10 seconds WARN & ALARM RELAYS Latching/Non-Latching Energized/De-Energized
<b>RS-485 OUTPUT</b>	Modbus RTU, suitable for linking up to 128 units or up to 247 units with repeaters. Optional—Dual Modbus.
<b>BAUD RATE</b>	2400, 4800, 9600, or 19200 BPS
<b>HART (OPTIONAL)</b>	Fully HART foundation compliant
<b>WIRELESS COMMUNICATION</b>	Available with ELPRO Technologies wireless devices
<b>EMC</b>	Complies with EN 50130-4, EN 61000-6-4
<b>CABLE REQUIREMENTS</b>	Screened or screened and armored to BS5308 Part 2, Type 2 or equivalent.
<b>STATUS INDICATOR</b>	2 LEDs with status, fault and alarm indication
<b>FAULTS MONITORED</b>	Memory checksum, reset line shorted, optics failure/blockage, internal voltages, and low supply voltage

\* Under HART, current values can be either 3.5 mA or 1.25 mA, depending on user selection

\*\* Under HART, current value can be either 3.5 mA or 2.0 mA, depending on user selection

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.



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