



GENERAL MONITORS
Protection for life.

MODELS FL3100H / FL3101H

UV/IR and UV Unitized Flame Detectors



Features

- Wide field of view
- Event logging
- 4-20 mA stepped output
- Modbus and HART user interface
- Wide operating temperature range
- Continuous Optical Path Monitoring (COPM)
- Three SPDT high current programmable relay outputs

Benefits

- Greater fire detection coverage
- Stores fault and alarm history
- Industry standard for remote alarm and fault indication
- Provides complete status and control capability in the control room
- Permits operation at higher ambient temperature
- Checks optical path integrity and detector's electronic circuitry once every minute
- Immediate and time delayed relay outputs for alarm, warn and fault conditions

Description

General Monitors' Models 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 Model 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 Model 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.

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



MODELS FL3100H / FL3101H

System Specifications

- Wave Lengths:** 185 to 260 nm (UV)
4.35 microns (IR)
- Field of View:** 120° max. conical (FL3100H)
140° max. conical (FL3101H)
- Sensitivity:** Approved performance specifications –
50 feet (15.2m) distance for a 1 sq. ft
(0.092m²) heptane fire.
- Typical Response Time:**
< 3 sec @ 50 ft. (FL3100H)
< 1 sec @ 50 ft. (FL3101H)
- Minimum Sensor Response Time:** UV/IR – FL3100H < 500 ms
UV – FL3101H < 100 ms
- Accessories:** Swivel elbow union, mounting bracket,
test lamp
- Classification:** Class I, Div 1, Groups B, C, D;
Class II, Div 1, Groups E, F, G;
Class III, Type 4X
Ex d IIC T5 Gb, Ex tb IIIC
T100°C Db, IP66/IP67
- Warranty:** Two years
- Approvals:** CSA, FM, ATEX, IECEx, GOST, INMETRO
HART registered, SIL 3 suitable (FM)
- Patent Number:** 5,914,489

Environmental Specifications

- Operating Temperature Range:**
-40°F to +185°F (-40°C to +85°C)
- Storage Temperature Range:**
-40°F to +185°F (-40°C to +85°C)
- Operating Humidity Range:**
10% to 95% RH, non-condensing

Electrical Specifications

- Input Power:** 20-36 VDC
24 VDC @ 150 mA max. (3.4 W max.)
- Analog Signal:** 0 – 20 mA (600 ohms maximum)
- Fault Mode:** 0 – 0.2 mA*
- COPM Fault:** 2 mA, ± 0.1 mA**
- Ready Signal:** 4.05 mA, ± 0.05 mA
- IR Signal:** 8 mA, +0.1 mA (FL3100H only)
- UV Signal:** 12 mA, +0.1 mA (FL3100H only)
- WARN Signal:** 16 mA, ± 0.1 mA
- ALARM Signal:** 20 mA, ± 0.1 mA
- Relay Contact Rating:** 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)

Dip Switch Selectable Options:

- Sensitivity:** 100%, 75%, 50% Alarm
Time Delay: 2, 4, 8 or 10 seconds
Warn & Alarm Relays:
Latching/Non-Latching
Energized/De-Energized
- RS-485 Output:** Modbus RTU, suitable for linking up
to 128 units or up to 247 units with
repeaters. Optional – Dual Modbus.
- Baud Rate:** 2400, 4800, 9600, or 19200 BPS
- HART:** HART 6, HART Device
(optional) Description Language available.
AMSaware

Wireless Communication:

- Available with ELPRO
Technologies wireless devices
- EMC:** Complies with EN 50130-4,
EN 61000-6-4

Cable Requirements:

- Max. distance between detector and
power source @ 24 VDC nominal
(20 ohm loop), 14 AWG – 4500 ft
(1370 m)
Terminal Blocks – 14-22 AWG

Status Indicator:

- 2 LEDs with status, fault and alarm
indication

Faults Monitored:

- Memory checksum, reset line shorted,
optics failure/blockage, internal
voltages, and low supply voltage

Mechanical Specifications

- Housing:** Aluminum (Stainless steel optional)
- Diameter:** 6 inches (152 mm)
- Length:** 5.5 inches (140 mm)
- Weight:** 5 lbs (2.3 kg) – Aluminum
16 lbs (7.3 kg) – Stainless Steel
- Mounting:** 3/4" NPT (2 ports) or surface
mounting (ATEX)
- Cable Entry:** 2 x 3/4" NPT or 2 x 25 mm ISO or
2 x 20 mm ISO or 2 x 13.5 PG

Standard Configuration:

- FL3100H-1-5-1-3-1-1-1
FL3101H-1-5-1-3-1-1-1

Specifications subject to change without notice.

Represented by:

General Monitors Worldwide



www.generalmonitors.com

Lake Forest, CA

26776 Simpatica Circle
Lake Forest, California 92630
Tel: +1-949-581-4464
Fax: +1-949-581-1151
Email: info@generalmonitors.com

Houston, TX

9776 Whithorn Drive
Houston, Texas 77095
Tel: +1-281-855-6000
Fax: +1-281-855-3290
Email: gmhou@generalmonitors.com

Ireland

Ballybrit Business Park
Galway
Republic of Ireland
Tel: +353-91-751175
Fax: +353-91-751317
Email: info@gmil.ie

Singapore

Block 5, Amk Tech II, #05-20/22/23
Ang Mo Kio Industrial Park, 2A
Singapore 567760
Tel: +65-6748-3488
Fax: +65-6748-1911
Email: genmon@gmpacifica.com.sg

United Arab Emirates

P.O. Box 61209
Jebel Ali
Dubai
United Arab Emirates
Tel: +971-4-8143814
Fax: +971-4-8857587
Email: gmme@generalmonitors.ae

United Kingdom

Heather Close
Lyme Green Business Park
Macclesfield, Cheshire
United Kingdom, SK11 0LR
Tel: +44-1625-619583
Fax: +44-1625-619098
Email: info@generalmonitors.co.uk

* 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