

Maximum choice of features in a high performance package

Sierra Monitor offers two versions of the new 3600 Series UV/IR Flame Detectors:

Model 3600-L (& LB) provides a combination of UV and IR sensors, where the IR sensor operates at a wavelength of 2.5-3.0µm, and can detect hydrocarbon-based fuel and gas fires, hydroxyl and hydrogen fires, as well as metal and inorganic fires.

Model 3600-L4 (& L4B) is identical to the 3600-L except that the IR sensor works at a wavelength of 4.5µm and is only suitable for hydrocarbon-based fires.

The UV/IR flame detector senses radiant energy in the short wave section of both the ultraviolet and infrared portions of the electromagnetic spectrum. The signals from both sensors are analyzed for frequency, intensity and duration. Simultaneous detection of radiant energy in both the UV and IR sensors triggers an alarm signal.

The UV sensor incorporates a special logic circuit that helps prevent false alarms caused by solar radiation. Due to increased reliability, the 3600-L Series is approved to IEC 61508 Safety Integrity requirements of SIL2 (TUV).



Features & Benefits

- UV/IR Dual-Sensor
- High-Speed Response - 150 sec Response to Saturated Signal
- Heated window - for operation in harsh weather conditions (snow, ice, condensation)
- Multiple output options for maximum flexibility and compatibility
 - Relays (3) for Alarm, Fault and Auxiliary
 - 0-20mA (stepped)
 - HART Protocol for maintenance and asset management
 - RS-485, Modbus Compatible
- High Reliability - MTBF - minimum 150,000 hours
- Approved to Safety Integrity Level 2 (SIL2-TUV)
- 2-Year Warranty
- User Programmable via HART or RS-485
- Ex approved for Zone 1 hazardous area location
 - ATEX - FM *
 - IECEx - CSA *
- 3rd party Performance Tested
 - EN54-10 (LPCB) - FM3260 (FM)
- Solar blind
- Automatic Built-In-Test (BIT)* and Manual - to assure continued reliable operation

* Option

Applications

- Offshore Oil & Gas installations
- Onshore Oil & Gas installations and pipelines
- Chemical plants
- Petrochemical plants
- Storage Tank farms
- Aircraft hangers
- Power Generation facilities
- Pharmaceutical industry
- Printing industry
- Warehouses
- Automotive industry
- Explosives & Munitions
- Waste Disposal facilities
- Aerospace industry
- Paint, Polymer and Glue processes

Ordering Information

Model Number	Type	Wiring Config (Table1)	Temperature	Elec Entry	Housing	EX Approval
3600	- L = UV/IR	- 1	- 1 = 75C std	- 1 = -M25	- S = SS	- F = FM
	- LB = UV/IR with BIT	- 2	- 2 = 85C	- 2 = 3/4" NPT	- A = AL	- C = ATEX/IECEX
	- L4 = UV/IR (IR at 4.5mm)	- 3				
	- L4B = UV/IR (4.5mm) w/ BIT	- 4				
		- 5				

Table 1: Wiring Options

All units are provided with RS-485 and HART enabled if mA output is used

Option	4-20mA	Fault Relay	Aux Relay	Alarm Relay
1 default	Sink	NC	--	NO
2	Source	NC	--	NO & NC
3	Source	NO	--	NO & NC
4	X	NC	NO	NO
5	X	NO	NO	NO

Model 3600-L

IR Flame Detector

Specifications:

Spectral Response	3600-L-LB: 3600-L4-L4B: n-Heptane: 50 ft (15m) Gasoline: 50 ft (15m) Diesel Fuel: 37 ft (11m) JP5: 37 ft (11m) Hydrogen **: 16 ft (5m)	UV: 0.185 - 0.260 micron UV: 0.185 - 0.260 micron Kerosene: 37 ft (11m) Ethanol 95%: 25 ft (7.5m) Methanol: 25 ft (7.5m) IPA (Isopropyl Alcohol): 25 ft (7.5m) *20" (0.5m) high, 8" (0.2m) w/ plume fire	IR: 2.5-3.0 micron IR: 4.4-4.6 micron Methane*: 16 ft (5m) LPG*: 16 ft (5m) Polypropylene Pellets: 13 ft (4m) Office Paper: 16 ft (5m) **3600-L/LB only		
Detection Range (at highest Sensitivity Setting for 1 ft ² (0.1m ²) pan fire)	Typically 5 seconds. High speed 150 msec response to saturated signal				
Response Time	Up to 30 seconds				
Adjustable Time Delay	1 ft ² (0.1m ²) n-heptane pan fire from 50 ft (15m)				
Sensitive Range	Horizontal 100°, Vertical 95°				
Field of View	Automatic (and Manual)				
Built-in-Test (BIT)	Operating: -67°F to +167°F (-55°C to +75°C) Operating Option: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)				
Temperature Range	Up to 95% non-condensing (withstands up to 100% RH for short periods) To eliminate condensation and icing on the window				
Humidity					
Heated Options					
Electrical Specifications					
Operating Voltage	24 VDC nominal (18-32 VDC)				
Power consumption	Standby: Max. 90mA (110mA with heated window) Alarm: Max. 130mA (160mA with heated window)				
Cable Entries	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO				
Wiring	12 - 22AWG (2.5mm ² - 0.3mm ²)				
Electrical Input Protection	According to MIL-STD-1275B				
Electromagnetic Compatibility	EMI/RFI protected to EN61326-3 and EN61000-6-3				
Electrical Interface	The detector includes twelve (12) terminals with five (5) wiring options (factory set)				
Outputs					
Relays	Alarm, Fault and Auxiliary SPST volt-free contacts rated 5A at 30 VDC or 250 VAC				
4-20mA (stepped)	Sink (source option) configuration Fault: 0 +1mA BIT Fault: 2mA ±10% Normal: 4mA ±10%			IR: 8mA ± 5% UV: 12mA ± 5% Warning: 16mA ±5%	Alarm: 20mA ±5% Resistance Loop: 100-600 ohms
HART Protocol	Optional HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management, available in mA source output wiring options				
RS-485	RS-485 Modbus compatible communication link that can be used in computer control installations				
Mechanical Specifications					
Materials	- Heavy-duty copper free aluminum (less than 1%), red epoxy enamel finish (ATEX Approval only)				
Enclosure Options	- Stainless Steel 316L with electro polish finish (FM or ATEX Approval)				
Mounting	Stainless Steel 316L with electro polish finish				
Dimensions	Detector: 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)				
Weight	Aluminum: 2.8 Lb (1.3 Kg) Stainless Steel 316L: 6.1 Lb (2.8 Kg) Tilt mount: 2.2 Lb (1.0 Kg)				
Environmental Standards	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp				
Water and Dust	IP66 and IP67 per En60529, NEMA 250 6P				
Approvals					
Hazardous Area					
ATEX & IECEx	Ex II 2 GD, Ex de IIB + H2 T5 (-55°C to + 75°C) Ex tD A21 IP66/X7 T 95°C			Ex de IIB + H2 T4 (-55°C to + 85°C) Ex tD A21 IP66/X7 T 105°C	
FM / CSA *	Class I Div. 1, Groups B, C & D EN54-10 (LPCB) FM-3260 (FM)			Class II/III Div. 1, Groups E, F & G	
Performance	IEC61508 - SIL-2 (TUV)				
Reliability					
Accessories					
Fire Simulator	20/20-311				
Tilt Mount	3600-01				
Weather Protector	777163				
Air Shield	777161				
Mini Laptop Kit	777820				
USB RS485 Harness Kit	794079-5				
Laser Pointer (Detector area coverage)	777166			* Contact Sierra Monitor Specifications subject to changes without notice	

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