

# SS4-A Multi-Spectrum Electro-Optical Digital Fire Detector

SS4-A



## FEATURES

- Multi-Spectrum™: senses ultraviolet, visible and Wide Band Infrared™
- Built-In Test for optical "through the lens" testing
- False alarm immunity
- Detects hydrocarbon and non-hydrocarbon based fires
- Wide field-of-view and solar-blind
- Adjustable detector sensitivity
- Microprocessor based algorithms: FirePic™, and Tri-Mode Plot™
- Wide temperature range of operation
- Compatible with standard approved fire alarm panels
- Explosion-Proof housing
- Time programmable alarm verification

## APPLICATIONS INCLUDE:

- Petrochemical Facilities and Refineries
- Co-Generation Plants
- Aircraft Hangars
- Silane Gas Storage
- Gas Turbines & Power Plants
- Gas Compressor Stations

The model SS4-A represents the world's pre-eminent UV/IR technology for Electro-Optical Flame Detectors with tens of thousands successfully operating in a multitude of installations worldwide. This Multi-Spectrum Detector senses radiant energy in the ultraviolet (UV), visible, and Wide Band Infrared™ (IR) spectrum. The radiant energy from all types of flaming fires will alert the detector to their presence.

The field of view is the widest in the industry with a 120 degree cone of vision. This means more hazard area can be covered by each detector. Greater sensitivity also increases the volume covered by each detector, up to four times more than some other detectors.

Using sophisticated microprocessor signal processing algorithms with complete spectrum information, virtual immunity to false alarms from arc welding, corona discharge and other common UV sources is achieved.

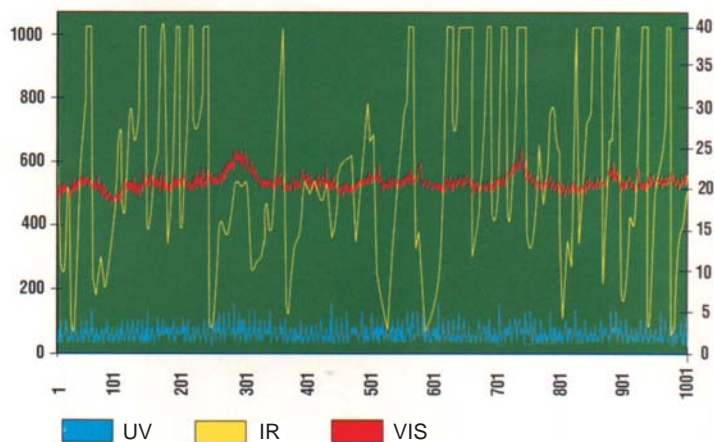
## OPERATION

The SS4 operates from standard 24 Volt DC power and interfaces to approved fire alarm panels or standard PLC's. When power is applied, a self test is performed and the fault relay resets to show no faults. The detector is then in normal operation. The front LEDs flash every ten seconds to indicate power is on.

The continuous spectral data stream of information from the sensor array is analyzed by the microprocessor. On Alarm, the detector activates the alarm relay and stores all of the pre-fire spectral data from the sensor array in non-volatile memory for retrieval and evaluation. This Fire Pic™ data can be used to postulate the cause of the fire.

As part of the FS2000™ System, the SS4-A detector communicates with CM1-A Controller via a four wire bi-directional RS-485 FireBus™.

Tri-Mode Plot Shown on Computer Display



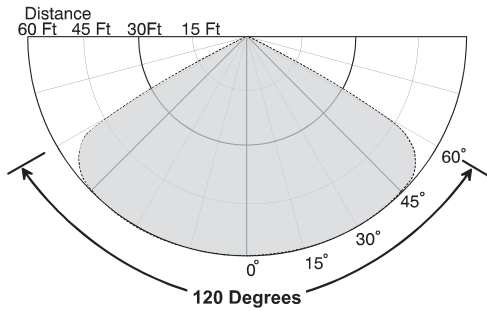
**WORLD LEADER IN ELECTRO-OPTICAL FIRE DETECTION TECHNOLOGY**



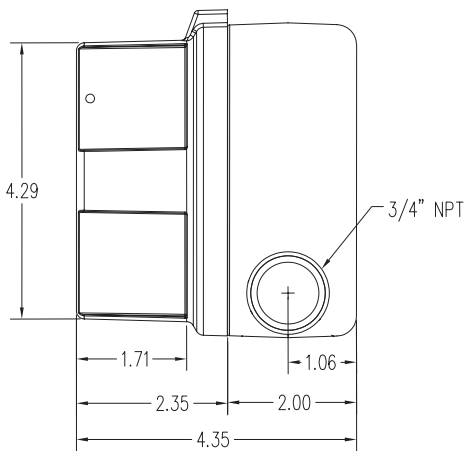
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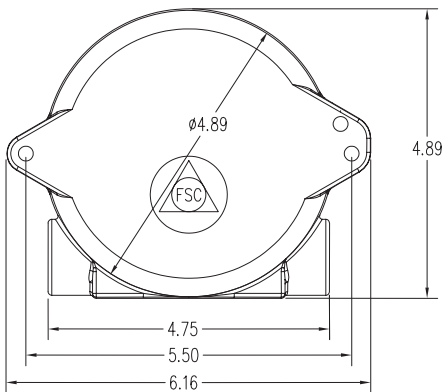
### Maximum Sensitivity



Field of View, Horizontal and Vertical Sensitivity to 1 sq. ft. Gasoline Pan Fire



Model SS4 - Side View



Model SS4 - Back View

## SPECIFICATIONS

|                           |  |
|---------------------------|--|
| Sensitivity               | Adjustable between 60 ft., 45 ft., 30 ft., & 15 ft. to a 1 sq. ft. gasoline fire   |
| Response Time             | 2-5 seconds to 1 sq. ft. of gasoline fire at 60 ft.  |
| Field-of-View             | 120 degrees cone of vision (60 degrees from on axis).  |
| Spectral Sensitivity      | Ultraviolet: 185 to 260 nanometers<br>Wide Band Infrared: 0.7 to 3.5 micrometers<br>Visible: 400 to 700 nanometers   |
| Input Power               | 24 VDC nominal (20.5 to 34 VDC)  |
| Power Consumption         | 68 mA normal operation (relay version)<br>75 mA alarm condition (relay version)<br>95 mA alarm condition (analog version)  |
| Relay Outputs             | <i>Fire Alarm relay:</i> NO & NC contacts<br>Latching / Non-Latching, switch selectable<br><i>Fire Verify relay:</i> NO & NC contacts<br>Adjustable time from 0 to 30 seconds<br><i>Fault relay:</i> NO & NC contacts<br>Relay contact ratings:<br>0.5 A at 120 VAC, 1.0 A at 24 VDC<br>Fault relay is energized during normal operation. All other relays are de-energized. |
| Operating Temperature     | -40 to +185°F<br>-40 to +85°C  |
| Humidity Range            | 10 to 90% RH, non-condensing   |
| Weight                    | 4 pounds - Aluminum<br>7.5 pounds - Stainless Steel  |
| Housing                   | Copper-free aluminum (less than 0.4%) powder coated NEMA 4 (IP66), tamper resistant with integral dual 3/4" NPT conduit openings, or optional M25, Stainless steel housing available.  |
| Electrical Classification | Explosion-Proof<br>Class I, Div. 1 & 2, Groups B, C, & D<br>Class II, Div. 1 & 2, Groups E, F, & G<br>Class III.   |
| Vibration                 | Meets or exceeds Mil Spec 810C Method 514.2, Curve AW  |
| Mounting                  | Swivel bracket assembly  |
| Warranty                  | Two year from factory shipping date<br>Extended warranty available.  |

## ORDERING INFORMATION

|         |                                     |
|---------|-------------------------------------|
| SS4-A2  | Electro-Optical Detector            |
| SS4-AS  | Optimized for Non-Hydrocarbon Fires |
| SM4     | Stainless Steel Swivel Mount        |
| FT-2145 | Explosion-proof Test Lamp           |
| MA420-4 | 4-20 mA current Module              |
| CM1-A   | Wall-mount Controller               |
| MB-3    | ModBus Module                       |

Dimensions are in inches  
This specification is subject to change without notice.

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