FS2000 Fire Early Warning System

SPECIFICATIONS

Multi-Spectrum Electro-Optical Digital Fire Detector
Model No.
SS4-AUV

STAND-ALONE RELAY MODE
or 4-20 mA Output Option
Introduction: The Model SS4-AUV Ultraviolet Fire/Flame Detectors are fast-reacting (within 5 seconds), digital, configurable, computerized, “smart” units. They are capable of solar-blind flame detection in the ultra-violet spectral range (185 to 260 nanometers) utilizing long-life twin ruggedized UV sensors. This Ultraviolet Fire Detector has sensitivity to Type A, B, and C flaming fires, false alarm immunity, and alarm range between 15 and 60 feet for a one square foot gasoline flame with a 120-degree conical field of view.

The Detector contains a built-in automatic SLR-BIT “through-the-lens” self-test. Self-testing is performed for optical path integrity, and virtually all internal electronic systems of the Detector every 10 minutes during its operation.

These Detectors may be used in the FS2000 Fire Early Warning System or in the Stand-alone mode.

NOTE: In areas where non-fire ultraviolet radiant energy sources may be present, it is recommended that the Multi-Spectrum SS4-A/A2 or SS4-AS Detector be used which utilizes UV, Wide Band IR, and Visible spectral bands to discriminate against false alarm sources.

General Description:

FS2000 System: The Model SS4-AUV Fire Detector can be used as a part of the FS2000 Fire Early Warning System (with CM1-A Controller and FireBus™). When used with the FS-2000 System, the Detector(s) are interconnected by a four-conductor shielded FireBus Loop. Refer to Fire Sentry Corporation document MN0003, “FS2000 Fire Early Warning System - INSTALLATION and OPERATIONS GUIDE”.

Stand-alone mode: In the Stand-alone mode, the Detector may be connected to any FM Approved or UL Listed fire alarm panel using the “Fire” and “Fault” relays, or the optional 4-20 mA analog output. Refer to the Fire Sentry Corporation document MN0009, “Model SS4-AUV Multi-Spectrum Electro-Optical Fire Detector - INSTALLATION and OPERATIONS GUIDE”.

Spectral Sensitivity: Ultraviolet solar-blind UV twin ruggedized sensors

Field-of-View: 120 degrees conical (± 60 degrees from the axis).
• Detection Range and Response Time: The Detector response time is less than 5 seconds to a one square foot pan fire of gasoline at a distance of 60 feet. The Detection range is user adjustable from 15 to 60 feet. For addition details, refer to the Model SS4-AUV Manual, Fire Sentry document No. MN0009.

• FirePic™: Stores the pre-fire spectral data of the last fire event in the Detector’s non-volatile digital memory. FirePic provides numerical spectral evidence for analysis of the fire cause. The FirePic data includes a graphical display of the relative spectral intensities versus time, preceding and during the fire.

  NOTE: PC computer and Fire Sentry Corporation software are required to access FirePic.

• Configurations: The SS4 Detectors may be reconfigured in the field for special applications. The configuration of the Detector is set using DIP Switches located on the middle circuit board of the Detector module. For additional details, refer to the Model SS4-AUV Manual, Fire Sentry document No. MN0009.

• Housing: Explosion-Proof Copper-free (<0.4%) Aluminum with powder coated finish or optional 316 Stainless Steel, NEMA types 3, 4, and 7, tamper-resistant enclosure with integral dual ¾ inch NPT openings. Approved for installation in Class I, Div. 1 & 2, Groups B, C, and D, Class II, Div. 1 & 2, Groups E, F, G, and Class III areas. Conduit seal-off must be within 6" from the enclosure wall.

• Size and Weight: Ø 4.81 inches x 4.40 inches high; approximately 3.8 lbs. Stainless Steel approximately 8.9 lbs.

• Normal Operation: Dual LEDs blink every 10 seconds.

• Factory Re-certification: Factory re-certification may be necessary if the Input voltage or Temperature design limits are exceeded. Both LEDs flash ON and OFF rapidly.

• Fault Signal Relay: Active only when operating as Stand-alone device. Energized during normal operation, de-energizes upon a Detector Fault or power loss, both N.O. and N.C. contacts available. Automatically resets upon Fault cure.

  NOTE: If the SS4-AUV Detector is connected to the FS2000 system, the fault relay will not be active, but faults will activate the FS2000 Controller Fault Relay.

• Fire Declaration:
If a Model SS4-AUV Detector alarms to a fire, it energizes the Fire and Verify relay (if configured) and turns on both LEDs in the following sequence. One LED is turned on immediately and the second LED will rapidly blink for several seconds indicating that the Detector’s FirePic™ (FirePic is the several seconds of Detector spectral data that preceded an alarm event) is being permanently stored in the Detector’s solid-state memory. The second LED will remain on once the FirePic data is stored, and both LEDs will unlatch when the Fire threat is eliminated.

  NOTE: If the Detector is reset before the FirePic is recorded in the Detector’s solid-state non-volatile memory, the FirePic data will be lost. To prevent losing the FirePic data, wait at least 5 seconds before resetting the Detector after a fire event occurs.

• Temperature Range:
  Operating: -40 to +85 degrees C (-40 to +185 degrees F)
  Storage: -55 to 105 degrees C (-67 to +221 degrees F)

• Humidity: 10 to 90%, RH, non-condensing.

• Input Voltage: 24 VDC nominal, minimum 20.4 VDC, maximum 34 VDC.

• Normal Operation Current: 68 mA nominal (72 mA with MA420-4 Module).

• Fire Alarm Current (maximum case): 75 mA nominal (95 mA with MA420-4 Module).

• Analog Current Output (Optional): 4 or 20 mA with MA420-4 Module.

  NOTE: The MA420-4 module is only Factory installed and certified.

• Fire Signal Relay: Energizes when the Detector declares a Fire, both N.O. and N.C. contacts are available and field configurable by DIP Switches.

• Verify Signal Relay: If the Verify Relay is enabled, it energizes when the Detector has verified a Fire, both N.O. and N.C. contacts and field configurable by DIP Switches. Time delay is adjustable from 0 to 30 seconds.

• Relay Electrical Ratings: 0.5 A at 120 V AC or 1 A at 24 V DC, resistive.
• **Serial Communication:** FS2000 FireBus System PC serial port output, or using the optional accessory Interface kit for the Stand-alone Detector.

• **Agency approvals:** FM and CSA

• **Warranty:** One year from date of purchase, with an optional extended warranty available for two additional years.  
  **NOTE:** Any other device connected to the Detector RS485 communication port, J1 connector pins 2 & 3 or J2 pins 2 & 3, may cause Detector damage and voids all warranties.

• **Optional Accessories:**
  1. **Model No. 2029-INTERFACE-KIT:** Interface Box and PC DOS software and connector cables for access to FirePic and SnapShot data through RS-232 serial port.
  2. **Model No. MA420-4:** The 4-20 mA module is by Factory Mutual (FM) recognized device to be used with all approved SS4 type Detectors. Fire Sentry is required by FM to install this device at the factory and certifies this option along with the Detector.  
     **NOTE:** Converting Field units of the SS4 Stand-alone relay type to the 4-20 mA version requires the unit be returned to the factory for installation and certification.
  3. **Model No. DASA1-P:** Air Shield for applications in contaminated environment. The Airline fitting accepts ¼” O.D. nylon tubing for an instrument grade air supply of 5 to 15 psi @ 6 cubic ft. per minute.
  4. **Model No. SM2 or SM2316:** Detector Mounts – Carbon steel Swivel Mount (SM2) and Stainless Steel Swivel Mount (SM2316). Refer to Figure 1 and 2 for swivel mount dimensions.
  5. **Model No. SS4-MOD-AUV:** Electro-optical module only without the housing for the SS4-AS Detectors.
  6. **Model No. FT2045:** Explosion-Proof Test Lamp, Hand-held, portable, rechargeable battery powered test lamp used for testing SS4 type Detectors.

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**Figure 1: SM2 Swivel Mount Dimensions**

![Swivel Mount Diagram](image-url)
Figure 2: SM2316, Stainless Steel (#316) Swivel Mount

Figure 3: Model SS4-AUV Detector Enclosure - Side View
Figure 4: Model SS4-AUV Detector Enclosure - Rear View