Honeywell

Installation Guide and Operating Manual

Infrared (IR) Digital Electro-Optical Fire Detector

Model SS4-AI *(For Special Applications Only – Consult Factory)*

Stand-Alone Mode

Notices and Trademarks

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol **Definition**

ATTENTION: Identifies information that requires special consideration.

TIP: Identifies advice or hints for the user, often in terms of performing a task.

REFERENCE-EXTERNAL: Identifies an additional source of information outside of this bookset.

REFERENCE-INTERNAL: Identifies an additional source of information within this bookset.

⚠**CAUTION**   Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
CAUTION: Symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.

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SECTION 1: FAMILIARIZATION

1.1 Introduction

The **Model SS4-AI Infrared Flame Detectors** can be used in the FS2000 Fire Early Warning System or in the Stand-Alone mode. This model is housed in an Explosion-Proof enclosure and incorporates built in optical testing of both the Detectors and lens.

The Detector maximum alarm range is 45 feet for a one square foot gasoline with a 120 degree circular field of view. This Detector design features dynamic signal processing that utilizes infrared band and visible band sensor elements. ***For Special Applications Only – Consult Factory***.

> The only difference between a FS2000 System Model SS4-AI Detector and a Stand-Alone SS4-AI Detector is how each is wired and the use of the fault relay. However, there are operational advantages when the Model SS4-AI Detector is connected to a FS2000 Controller and FireBus.

The Model SS4-AI Detector also has the flexibility to be re-configured in the field. It is simple to install and operate because its built in self-testing does most of the work. The only real maintenance is to wipe the Detector window lens clean and perform any periodic testing required by the manufacturer of the Fire Control and Suppression System.

1.2 Stand-Alone Operation

For Stand-Alone operation, the Model SS4-AI Detector may be connected to a FM/UL Approved Fire/Security Panel. The Model SS4-AI Detector operates on 24 volts DC. The Model SS4-AI Detector, when operated in the Stand-Alone mode, uses its Fire, Fault, and Verify (optional) relays to interface to FM/UL Approved Fire /Security Panels. For Stand-Alone operation, the Model SS4-AI's Fault relay is **automatically** configured by its on-board microcomputer. The input current of the Model SS4-AI Detector increases about 15 milliamps in the Stand-Alone mode compared to with connected to theFS2000 System. The Fault relay is not available for use when the Model SS4-AI Detector is wired to the FS2000 System.

1.3 FS2000 System Operation

For FS2000 System operation, the Model SS4-AI Fire and Fault signals are sent digitally to the FS2000 System Controller using the four wire FS2000 FireBus. The FireBus provides the 24 volts DC power for the Model SS4-AI Detector and RS-485 digital communication (Refer to Honeywell Analytics document MN0003 entitled "FS2000 FIRE EARLY WARNING SYSTEM - INSTALLATION and OPERATIONS GUIDE"). For special remote alarm applications, users may connect directly to the Model SS4-AI's Fire four pin relay connector. (Note: When the Model SS4-AI Detector is connected to the FS2000 System using FireBus communication, the Controller **automatically** disables the Model SS4-AI's Fault relay.)

1.4 Overview

1.4.1 Model SS4-AI Infrared Flame Detector

The Model SS4-AI Infrared (IR) Flame Detectors are micro-computerized devices that see the visible and infrared spectral bands. The SS4-AI Detector Module is contained in an Explosion-Proof and Weather-Proof housing which is approximately 4 3/4 inches in diameter and 4 3/4 inches long. The housing has two integral 3/4 inch NPT conduit openings for wiring and an optional Swivel Mount (Model SM4) for greater flexibility in mounting locations.

There are two (2) LED's on the Model SS4-AI Detector that indicate the state of the Detector. During normal operation both of the LED's blink will every 10 seconds.

If a Model SS4-AI Detector has a Fault, it de-energizes its Fault relay and turns on one (1) of its LED's. (The LED will not light if the Fault is a "No Power Fault".) If the Fault condition is cured, such as a "Low Voltage Fault", the Detector will automatically return to Normal Operation. Faults caused by Excessive Input Voltage or temperatures outside the operating temperature range require factory re-certification. Re-certification required Faults are indicated by both LED's rapidly blinking. (about 2 Hz.)

If a Model SS4-AI Detector alarms to a fire, it energizes its Fire relay and turns on its two LED's 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 is being permanently stored in the Detector's solid-state memory. (FirePic is the several seconds of Detector data that preceded an alarm event.) Once the FirePic data is stored the second LED will remain on.

1.4.2 Detection Range

The detection range of the detector is field adjustable between 15 (fifteen) and 45 (fourtyfive) feet to an industry-standard one square foot gasoline pan fire within 5 seconds. Each detection range is calibrated to a one square foot fire. The Detector's ranges are optimized but not limited to a specific distance. A larger size fire outside the set range may cause the Detector to alarm based on the "Inverse Square Law" for radiated energy.

1.4.3 Field-of-View

120 degrees circular - minimum. The fire emissions received by the detector diminish at extreme range and edges of the field-of-view. It is recommended that the detector be pointed at the fire threat area for the fastest response times to the smallest size fire. When multiple detectors are used to cover large areas the Field-of-Views should overlap to insure complete coverage of the fire threat area. The Field-of-View is not limited to 120 degrees, larger fires outside the 120 degree Field-of-View may cause the detector to alarm.

1.4.4 Configuration Settings

The SS4-AI Detector may be reconfigured in the field for special applications. The configuration of the Detector is set from a dip switch located on the middle circuit board of the SS4-AI Module. These settings

allow the detectors to be optimized for the specific application. The DIP switch settings for each configuration are listed in **Table 2: Configuration Dip Switch Settings** on page 12. The reconfigurable options include:

1. **Fire Verify Relay** - The Verify Relay may be disabled or enabled with several Verify Time settings. It also may be set to act as another Fire Relay. The Verify Time may be set from 5 to 30 seconds in 5 second increments. **The Factory setting is the Verify Relay is Disabled.**

With the Verify Relay enabled and a Verify Time is set the Verify Relay will energize and the Fire Relay will de-energize if the fire conditions are still present at the end of the Verify Time. If the fire conditions are not present the Detector will wait 5 seconds plus another Verify Time period to test for the fire conditions. This wait and verify time will repeat 10 times or until the fire is verified. This ends the verify process. If the fire is not verified the Fire Relay will remain energized unless Non-Latching mode is set. If a subsequent fire is detected the entire verify process will repeat. The state of the Fire and Verify Relay after the verify process will depend upon whether Latching or Non-Latching mode is set.

> **NOTE:** When the Verify Relay is enabled and Verify Time is set the Fire Relay will de-energize when the Verify Relay is energized.

2. **Latching / Non-Latching** - The Fire Relay and Verify Relay may be set in a Latching or Non-Latching mode. If Latching mode is set the Fire or Verify Relay will remain energized until the Detector is reset (Powered down and up). When Non-latching mode is set the Fire Relay will reset after 10 seconds. Unless the Verify Relay is enabled with a Verify Time, then the Fire Relay will remain energized until the Verify Relay is energized or until the end of the verify process. (see Fire Verify Relay above.) If the Verify Relay is energized the Verify Relay will de-energize after 10 seconds. **The Factory setting is Latching.** Non-Latching mode may not meet some Fire Codes. Consult with authority having jurisdiction before using the non-Latching setting.

3. **Test Period** - This setting if for the Through-the-Lens test. The Through-the-Lens test is run periodically. The test period may be set to 6 or 30 minute periods. **The Factory setting is 30 minutes.** If 6 minute periods are set this may affect the life expectancy of the source tube. The 6 minute period may be required in applications where the lens is obscured with great frequency.

4. **Fire Detection Range Setting** - 15, 30, or 45 feet. The SS4-AI Detector has been calibrated to alarm on an industry standard 1 sq. ft. gasoline fire for each of the range settings. If the Range is set to 15 feet, the detector will require a much larger gasoline fire at 45 feet to declare an alarm. These settings are not simply sensitivity settings. They are calibrated to the characteristics of fire emissions at the set ranges. **The Factory setting is 45 feet.** This setting should only be changed if the detector is located close to the fire threat area and there is abnormally high IR activity.

1.4.5 Testing

The SS4-AI Detector has both active and passive built-in self-test systems. The detector uses passive testing for virtually all internal electronic systems.

The Model SS4-AI Detectors and the system they are connected to should be periodically manually tested to insure proper function of the entire Fire Protection System. To test the Model SS4-AI Detectors manually (where open fires are might be a safety hazard) for both optical path and window cleanliness, use a Honeywell Analytics Model FT-2145 Test Lamp.

SECTION 2: INSTALLATION

2.1   Installation Procedure

This section describes the installation of the Model SS4-AI Detector for the Stand-Alone mode. It is recommended that junction boxes be used to wire the Model SS4-AI Detectors. Determine a mounting location for the detector which is within the detectors range (see Detection Range and Field-of-View) and has a clear view of the fire threat area. Where multiple detectors are used to cover a large area, the detectors should be located to allow overlapping Field-of-Views. Determine the configuration settings for the device and the number of connections to be used. (Fire, Fire Verify, Fault, and Power) The configuration settings and number of connections will depend on the Detection Range desired and the type of Fire Control Panel used. For Configuration information see the Dip Switching Setting chart and the manual for your Fire Control Panel.

2.1.1   Installation Precautions

The following precautions should be observed during installation of Model SS4-AI Detectors.

1. Double-check to make sure that the external electrical power is turned OFF before connecting to the Model SS4-AI Detector.

2. **Do not handle the Model SS4-AI Detector's module (with its printed circuit boards) without being adequately grounded.** Printed circuit board components are susceptible to damage from electrostatic discharge. Grounding may be accomplished by wearing an anti-static wrist strap connected to an earth ground.

2.1.2   Conduit Installation

Model SS4-AI Detectors should be located to cover the specific "fire threat" areas.

When planning the conduit, observe the following recommendations.

1. If only one of the two ½ inch NPT conduit openings on the Model SS4-AI Detector enclosure is used, seal the unused opening with a threaded plug.

2. In areas where moisture may accumulate, install an approved conduit trap or drain.

3. A seal shall be installed within 6 inches of the enclosure for applications requiring a Class I, Div. 1 Explosion-Proof rating.

2.1.3 Wiring Recommendations

The Honeywell Analytics recommends using junction boxes to help prevent problems with intermittent connections. Install a junction box near each Model SS4-AI Detector location. Next, wire each Model SS4-AI Detector to its junction box. Use screw-down terminal strips inside the junction box to make the connections to the Detector's terminals and a UL/FM Approved Fire Alarm Panel. Use UL/FM Approved junction boxes and terminal strips.

Avoid wire splices. However, if wire splices are necessary, solder all splices. The use of good wiring practices will greatly improve the ease of installation, improve reliability, and allow easier servicing.

2.1.4 Power Supply Considerations

The Model SS4-AI Detector uses 24 volts DC at a maximum current of 75 milliamps. Make sure that the Panel's power supply can handle the current load of the total number of Model SS4-AI Detectors connected to it. For example, if 10 Model SS4-AI Detectors are used on one Panel's power supply, (multiply 10 times 75 milliamps), the Panel's power supply must be able to handle at least 750 milliamps (3/4 amps). This current load must also be considered when calculating the Panel's power backup requirements for 24 hour backup.
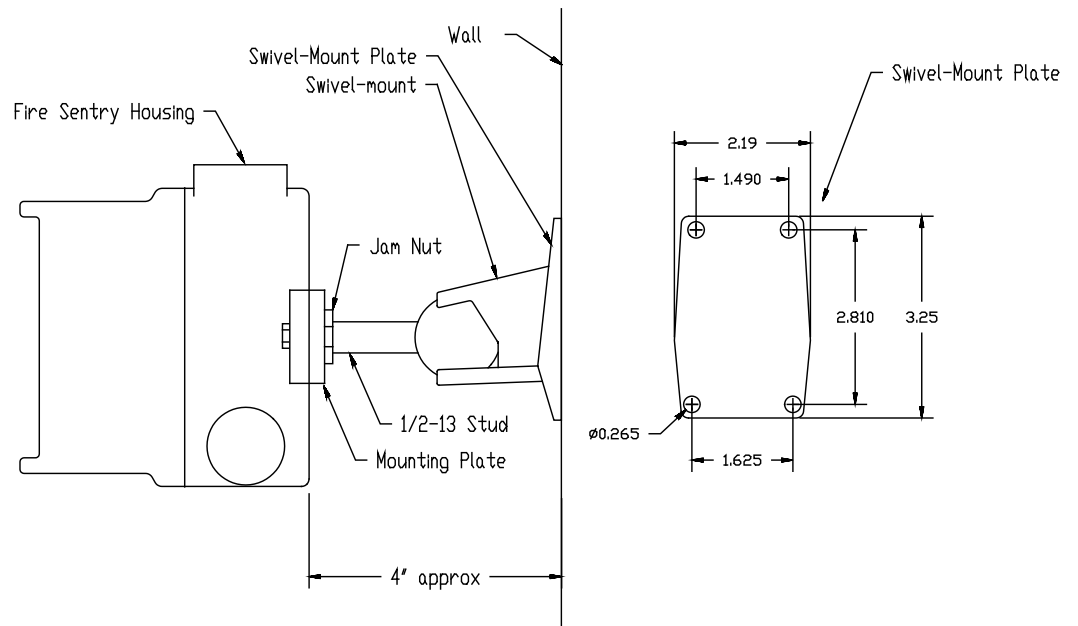
Figure 2: Model SS4-AI Detector Swivel Mount

2.2   Enclosure Installation

1. **INSTALL THE MODEL SS4-AI DETECTOR SWIVEL MOUNTS** (see Figure 2). Although not required, Honeywell Analytics recommends using the SM4 Swivel Mounts when installing the Model SS4-AI Detector.

    a. Choose fasteners for the swivel-mount that will secure it solidly to the type of material at the enclosure location.

    b. Mount the swivel-mount to the wall. Do not install upside down.

    c. Install the mounting bracket onto the Model SS4-AI Detector enclosure using ¼-20 screws and nuts provided. Be sure the bracket is mounted with the correct orientation. The outside contours of the mounting ears on the Detector enclosure and the ends of the bracket will match. The large diameter of the threaded insert must be facing the enclosure.

    d. Screw the enclosure/bracket assembly on to the ball stud. Turn the Detector until the stud bottoms against the enclosure. **Do not tighten.** While holding the enclosure, tighten the jam nut against the bracket.

    e. While holding the enclosure, loosen the socket head screw on the swivel-mount. Position the enclosure so that the conduit openings are on the bottom and horizontal. Point the enclosure in the desired direction and tighten the socket head screw.

    INSTALL CONDUIT (If not already installed).
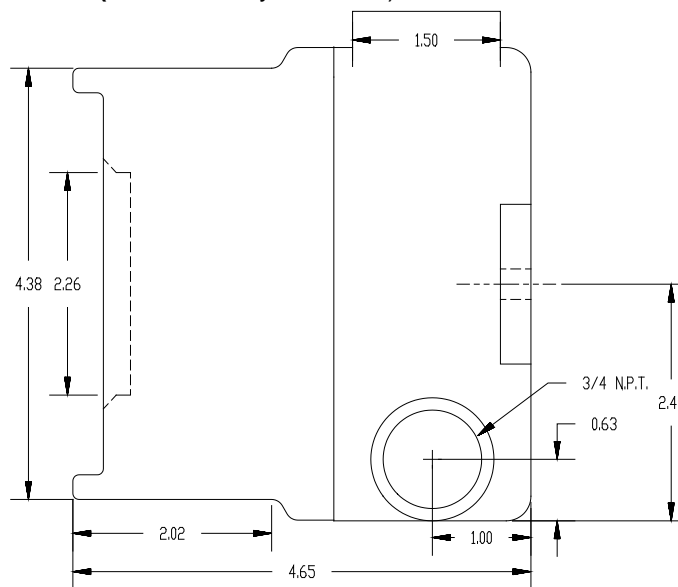
Figure 3: Model SS4-AI Detector Enclosure - Side View
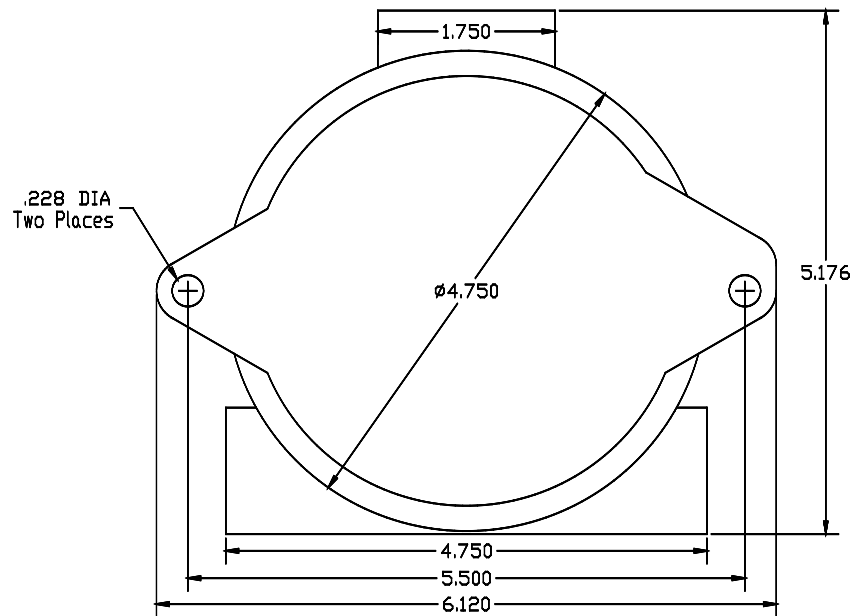
Figure 4: Model SS4-AI Detector Enclosure Rear View

2.4 Configuring and Wiring Detectors

To configure and wire a Model SS4-AI Detector, its module has to be removed from the enclosure. After the configuration settings and wiring connections are made, re-install the module in the enclosure.

Exercise caution while performing this procedure. Do not touch the detector elements on the front of the Model SS4-AI Detector modules. If they are accidentally touched, clean them as instructed in Section 3.2, Cleaning Windowed Enclosures and Detectors.

Observe static protection safeguards while handling Model SS4-AI Detector modules. Properly wear a wrist strap connected to earth ground.

1. **REMOVE THE DETECTOR MODULE FROM ITS ENCLOSURE.**

   a. With electrical power off, loosen the Allen-head screw at the base of the metal enclosure top windowed cover. (Double check that electrical power is off by seeing that the Detector's LED's do NOT blink for at least 10 seconds.)

   b. Unscrew the top windowed cover and set it aside with its "O" ring. Keep both clean.

   c. Loosen/remove the three slot headed screws located on the top circuit board. (Some models use captive screws that should not be removed from the circuit board).

   d. Gently lift out the module, sliding it along the three metal standoffs.

2. CONFIGURING THE DETECTOR MODULE.

a. Set the Dip switches located on the center PC board of the detector module to the desired settings. The factory settings should be appropriate for most applications. See Dip Switch Setting Chart for switch functions and settings.

3. WIRE THE DETECTOR MODULE.

a. Insert the cables into the metal enclosure base through one of the conduit openings.
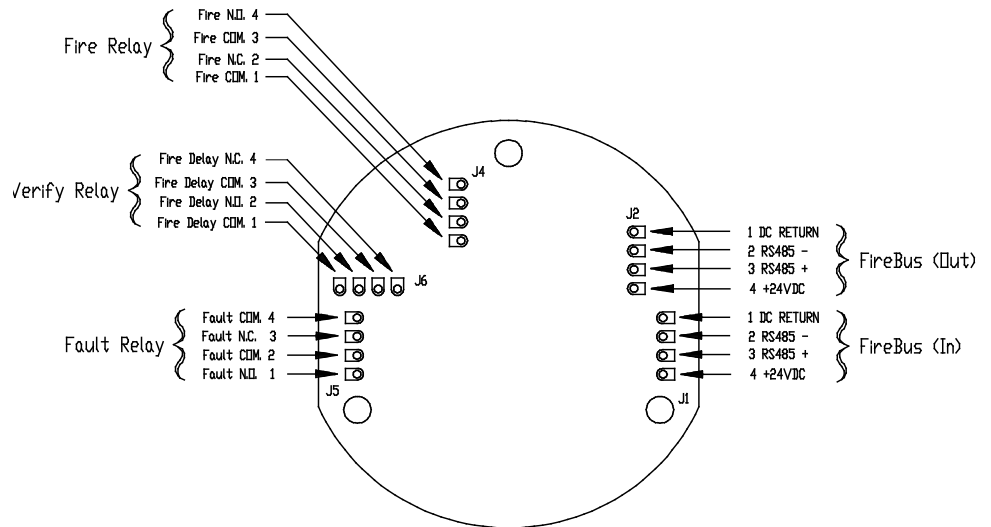
**Figure 5: Model SS4-AI Detector Wiring
Bottom View of SS4-AI Detector Module**

b. Then connect the 24 volt DC Power Supply wires into the J1 or J2 connector and firmly tighten down the two slotted screws with a small screwdriver. **DO NOT CONNECT ANY WIRES TO Pin 2 or Pin 3.** Do NOT over tighten or the screws may strip or break. Refer to Figure 4, Model SS4-AI Detector Wiring.

Pin 1	Pin 2	Pin 3	Pin 4
Black	Green or Blue	White or Yellow	Red
Ground (-)	NOT USED	NOT USED	Power (+)

4. WIRE THE DETECTOR RELAYS.

    a. Insert the relay cables into the metal enclosure base through one of the conduit openings.

    b. Connect the Fire Alarm wires to the 4 pin WECO terminal J3. Install the wires into J4 Pins 3 and 4 (for **N**ormally **O**pen relays) and firmly tighten down the slotted screws with a small screwdriver.

    c. Connect the Fault wires to the four pin WECO terminal J5. Install the wires into J5 Pins 1 and 2 (for Normally Closed relays) and firmly tighten down the slotted screws with a small screwdriver.

    d. If the Fire Verify option is used, connect the Verify Fire Alarm wires to the four pin WECO terminal J6. Install the wires into J6 Pins 1 and 2 (for Normally Open relays) and firmly tighten down the slotted screws with a small screwdriver.

       Refer to Figure 4, Model SS4-AI Detector Wiring, for more details on relay connections.

5. REPLACE THE DETECTOR MODULE INTO THE ENCLOSURE.

    a. Gently install the module back over the three metal standoffs and screw it down with the three chrome-plated screws into the standoffs. This secures the module to the enclosure.

    b. If necessary, clean the detectors and windowed cover according to the instructions in Section 3.2.

    c. Screw down the metal enclosure top windowed cover until secure and tighten the Allen-head "tamper-proof" screw.

SECTION 3: MAINTENANCE AND TROUBLESHOOTING

3.1　　Personnel

The following will aid in troubleshooting the Model SS4-AI Detector. Tests must be performed by qualified authorized personnel observing standard safety practices. Although the Model SS4-AI Detector operates on safe 24 volts DC, the FM/UL Approved Fire Alarm Panel's power supply may operate on a dangerous 120 or 240 volts AC

WARNING: Hazardous voltages may be present during testing procedures. Serious injury or death may result if personnel fail to observe safety precautions.

CAUTION: Model SS4-AI Detector modules and its components are susceptible to permanent damage due to electrostatic discharge (ESD). Do NOT handle adequate grounding precautions.   If the Module must shipped back to the factory for repair, it MUST be packed in static protected material.   If static protected material is not available, carefully wrap the Module in aluminum foil.

3.2　　Cleaning Windowed Enclosures and Detectors

The optical windows on the Model SS4-AI Detector should be cleaned periodically on a regular maintenance schedule. For clean applications, this may be every month. However, for extremely dirty applications, such as a truck filling station where black carboneous smoke can cover a nearby Detector, a cleaning schedule of every day may be necessary.

Clean the windows on the Model SS4-AI Detectors whenever they are handled, whenever the windows look dirty, or whenever the Model SS4-AI Detector fails to pass an end-to-end test with a Handheld Tester.

Clean the Model SS4-AI Detector Module's Detectors whenever a Detector has been disassembled for wiring or replacement. To prevent static damage to the Detector Module's electronics, remember to be grounded whenever working with exposed Model SS4-AI Detector Modules.

Use a blast of an air hose or an oil-free cloth to clean the enclosure window. Oil degrades the performance of UV detectors. Occasionally, the use of a solvent such as alcohol may be required. No disassembly of the Model SS4-AI Detector is required.

DO NOT USE SILICONE-BASED OR COMMERCIAL WINDOW CLEANING PRODUCTS. THEY WILL DEGRADE THE MODEL SS4-AI DETECTOR PERFORMANCE.

3.3 Model SS4-AI Detector Faults

3.3.1 Detector Faults

The Model SS4-AI Detector will issue a Fault (or Trouble) condition by de-energizing its Fault Relay (J5 connector). The following are Model SS4-AI Detector Faults:

a. **Temperature Fault**. The Detector will Fault if the internal temperature during operation is above 85°C or falls below -40°C. Requires factory re-certification to correct. (both LED's blink rapidly)

b. **Excessive Input Voltage Fault**: The Detector will Fault if the voltage supplied to it is too high. Requires factory re-certification to correct. (both LED's blink rapidly)

c. **Low Input Voltage Fault**: The Detector will Fault if the voltage supplied to it is to low. Check the voltage at the power connector J1 or J2 Pins 1 and 4. If the voltage is above 15 volts factory service may be required. (One LED is on until fault is corrected.) If the voltage is below 15 volts check the wiring and power supply.

d. **No Power Fault**: The Detector will Fault if the voltage supplied to it is interrupted or turned off. (No LED indication.) Check voltage at the power connector J1 or J2 Pins 1 and 4. If no or very low voltage is measured check wiring and power supply.

e. **Detector Fault**: The Detector will Fault if any one of its Detectors fails the automatic built in test. (One LED is on until the fault is corrected.) Begin by thoroughly cleaning the Lens both inside and outside, also clean the exposed surface of the Detector elements and the protective grill mounted on the outside of the housing cover. Reassemble and apply power. Wait for 10 to 15 minutes if the fault recurs factory service may be necessary.

f. **Relay Fault**: The Detector will Fault if one of its Relay circuit fails. (One LED is on until the fault is corrected.) Return to factory for service.

g. **Self-Checking Fault**: The Detector will Fault if its internal microcomputer self-checking circuitry and software finds a failure. (One LED is on until the fault is corrected.) This class of fault may be caused by several things. Check for proper grounding of the device and for noise on the power wires. If fault persists return detector to factory for service.

3.4 Model SS4-AI Detector Module Replacement

CAUTION: Model SS4-AI Detector modules and its components are susceptible to permanent damage due to electrostatic discharge (ESD). Do NOT handle without adequate grounding precautions.

1. With electrical power off, loosen the Allen-head screw at the base of the metal enclosure top windowed cover. (Double-check and see that the Detector's LED's do NOT blink for at least 10 seconds.)

2. Unscrew the top windowed cover and set aside with its "O" ring. Keep both clean.

3. Loosen, then remove the three slot headed screws located on the top circuit board. (Some models use captive screws that should not be removed from the circuit board).

4. Gently lift out the module, sliding it along the three metal standoffs.

5. Disconnect all of the wires from the female jacks located on the bottom of the module. Be sure to note the connection location of each wire.

6. Install another module. Reconnect the wires to the new module. Make sure the module is correctly aligned. Gently re-install back over the three metal standoffs. Next, re-install the three chrome-plated screws. **Be careful not to touch the Detector elements**. If they are accidentally touched, clean as instructed in Section 3.2, Cleaning Windowed Enclosures and Detectors.

7. Screw down the metal enclosure top windowed cover until it is secure and tighten the Allen-head "tamper-proof" screw.

3.5   Detector Repair

Return the defective module to the factory for repair service.

⚠️   **There are NO user serviceable parts in a Detector Module.**

If the Model SS4-AI Module must be shipped back to the factory for repair, it **MUST** be packed in static protected material. If this material is not available, carefully wrap the Module in aluminum foil. An RMA (Return Material Authorization) is required for all returns to the factory. Contact Customer Service or your Distributor for an RMA number before shipping a unit back to the factory.

DETECTOR PINOUT DATA

TABLE 1: Stand-Alone Model SS4-AI Detector Connectors - Pinouts

J1: DETECTOR INPUT POWER
PIN
 1 DC Return or Ground (-)
 2 NOT USED (Do not connect to this Pin.)
 3 NOT USED (Do not connect to this Pin.)
 4 Power (+24 Volts DC)

J2: DETECTOR POWER OUT
PIN
 1 DC Return or Ground (-)
 2 NOT USED (Do not connect this Pin.)
 3 NOT USED (Do not connect this Pin.)
 4 Power (+24 Volts DC)

J4: FIRE RELAY
PIN
 1 Fire Relay Common
 2 Fire Relay Normally Closed
 3 Fire Relay Common
 4 Fire Relay Normally Open

J5: FAULT RELAY (Energized)
PIN
 1 Fault Relay Normally Open
 2 Fault Relay Common
 3 Fault Relay Normally Closed
 4 Fault Relay Common

J6: FIRE VERIFY RELAY
PIN
 1 Verify Relay Common
 2 Verify Relay Normally Open
 3 Verify Relay Common
 4 Verify Relay Normally Closed

TABLE 2: Configuration Dip Switch Settings

Verification Time

DIP SWITCH 1	DIP SWITCH 2	DIP SWITCH 3	DESCRIPTION
closed	**closed**	**closed**	Verify is disabled & the Verify Relay is unused. **Factory setting**.
closed	open	open	Verify is enabled and the Verify time is 5 seconds.
open	closed	open	Verify is enabled and the Verify time is 10 seconds.
closed	closed	open	Verify is enabled and the Verify time is 15 seconds.
open	open	closed	Verify is enabled and the Verify time is 20 seconds.
closed	open	closed	Verify is enabled and the Verify time is 25 seconds.
open	closed	closed	Verify is enabled and the Verify time is 30 seconds.
open	open	open	Verify is disabled and the Verify Relay operates as a second Fire Relay.

Latching

DIP SWITCH 4	DESCRIPTION
open	Non-Latching mode. If Verify is enabled then the Verify Relay will de-energize approximately 10 seconds after it energizes. If Verify is disabled then the Fire Relay(s) will de-energize approximately 10 seconds after it energizes.
closed	Latching mode. If Verify is enabled then when the Verify Relay energizes it will remain energized until the detector is reset. If Verify is disabled then when the Fire Relay energizes it will remain energized until the detector is reset. **Factory setting.**

Test Cycle

DIP SWITCH 6	DESCRIPTION
open	Testing of the Lens occurs every 30 minutes. **Factory setting.**
closed	Testing of the Lens occurs every 6 minutes

Fire Range

DIP SWITCH 7	DIP SWITCH 8	DESCRIPTION
open	open	The detector is set to detect an industry standard 1 sq. ft. fire at 15 feet on axis.
closed	open	The detector is set to detect an industry standard 1 sq. ft. fire at 30 feet on axis.
open	**closed**	The detector is set to detect an industry standard 1 sq. ft. fire at 45 feet on axis.

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Limited Warranty

Honeywell Analytics warrants its Products against defects in material and workmanship under normal use and service for a period of two (2) years from the date of shipment as described herein. Honeywell Analytics, at its option, will repair or replace, at no charge, such products found to be defective during the warranty period provided that they are returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All Replaced parts of Products shall become the property of Honeywell Analytics. This express limited warranty is extended by Honeywell Analytics to the original purchaser only and is not assignable or transferable to any other party. This is the complete warranty for the Products manufactured by Honeywell Analytics. Honeywell Analytics assumes no obligations or liability for additions or modifications to this warranty unless made in writing and signed by an officer of Honeywell Analytics. Honeywell Analytics does not warrant the installation, maintenance or service of its Products. Honeywell Analytics is not responsible in any way for ancillary equipment not furnished by Honeywell Analytics, which is attached to or used in connection with its Product(s), or for operation of the Product(s) with ancillary equipment and all such equipment if expressly excluded from this warranty. This warranty sets forth the full extent of Honeywell Analytics' responsibility regarding the Products' repair or replacement at Honeywell Analytics' options, is the exclusive remedy.

This Warranty is given in lieu of all other Express Warranties, Implied Warranties, including without limitation, Implied Warranties of Merchantability and fitness for a particular purpose, are limited to the duration of this Limited Warranty. In no other event shall Honeywell Analytics be liable for damages in excess of the purchased price of the product(s), for any loss of use, loss of time, inconvenience, commercial loss, lost profits or savings or other incidental, special or consequential damages arising out of or in connection with the use or inability to use such product, to the full extent such may be disclaimed by law.

THIS WARRANTY DOES NOT COVER:

1. Defects or damage resulting from use of the Product(s) in other than its normal and customary manner.

2. Defects or damage from misuse, accident, or neglect.

3. Defects or damage from improper testing, operation, maintenance, installation, alteration, modification or adjustment.

4. Product(s) subject to unauthorized Product modifications, disassemblies or repairs (including, without limitation, the audition of the product of non-Honeywell Analytics supplied equipment) which adversely affect performance of the Product(s) to interfere with Honeywell Analytics' normal warranty inspection and testing of the Product(s) to verify any warranty claim.

5. Product(s) that have had the serial number removed or made illegible.

6. Freight cost to the repair facility.

7. A Product which due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Honeywell Analytics' specifications.

8. Scratches or other cosmetic damage to Product surfaces that do not affect the operation of the Product.

9. Normal and customary wear and tear.

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These Honeywell websites may be of interest to Industry Solution customers.

Honeywell Organization	URL
Corporate	www.honeywell.com
Honeywell Analytics	www.honeywellanalytics.com

Telephone

Contact us by telephone at these numbers.

Organization		Phone Number
Americas	Honeywell Analytics Inc.	1-800-538-0363 1-800-321-6320
Europe	Life Safety Distribution AG	{32-2} 728-2711
Asia Pacific	Honeywell Analytics Asia Pacific Co., Ltd.	+82 2 6909 0321 VOIP: +8 5401 0321

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