

Fire Sentry FS System 10™ and FS10-R

Honeywell



**Fire detection/process control
for automatic electrostatic
powder coating booths**

Fire Sentry FS System 10™ and Fire Sentry FS10-R Unitised Detector



Features:

- Multi-spectral digital electro-optical Infrared fire detector
- Meets requirements of NFPA 33 (FS System 10 Wall Mounted Control system only)
- Unique two-stage ALERT and FIRE ALARM response
- Immune to false alarms caused by arcs or corona discharges
- Built-in automatic “through the lens” self-test
- Not sensitive to background radiant energy sources such as paint heaters
- Not affected by smoke absorption or paint solvent mist in liquid paint spray booths
- Sees through paint, powder or oil residue on detector’s lens
- Digital communications with RS-485 interface
- FirePic™: retrieval of recorded pre-fire data
- SnapShot™: dynamic graphical display of what the detector sees

Applications (indoor use only)

- Liquid Paint Spray Lines
- Aerosol Filling
- Powder Coating Booths
- Curing Ovens

Operation

The Fire Sentry FS10-R Unitised detector is designed to operate with any approved fire alarm panel. Interface with fire alarm panel is accomplished using the detector’s ALARM, ALERT and FAULT relays.

When power is applied, a self-test is automatically performed and the FAULT relay is energised to show that the detector has no faults. The front LED blinks every ten seconds to indicate normal operation.

In normal operation, the continuous spectral data stream of information from the sensor array is analysed by the microprocessor. With two distinct relay outputs, Fire Sentry FS10-R Unitised provides an ALERT output for spray gun “fireball” type fires, and if the fire continues a FIRE ALARM is declared in 4-5 seconds.

The detector stores all the pre-fire spectral data from the sensor array in non-volatile memory for retrieval and evaluation. Fire Sentry FS10-R stores the last six FirePic™ events, each 8 seconds long and 200 event histories with a time and date stamp. The FirePic™ data can then be used to analyse the cause of the fire.

Our fire detection systems protect electrostatic powder coating booths worldwide. In fact our devices have accumulated millions of booth operational hours, ensuring optimal process safety 24/7.

Fire Sentry FS System 10™

Designed specifically to meet the needs of liquid and powder coating applications, FS System 10™ is a high speed detection solution with process control capabilities. It quickly detects the presence of a flame, reacts by initiating a shutdown of the electrostatic finishing process in a matter of milliseconds and it also stops the fire spreading before residues and wet paint films can ignite.

The Fire Sentry FS System 10™ is the only system that provides a two-stage response:

- **ALERT:** for spray gun “fireball” types fires
- **ALARM:** a fire alarm is deployed if the fire continues within 4-5 seconds.

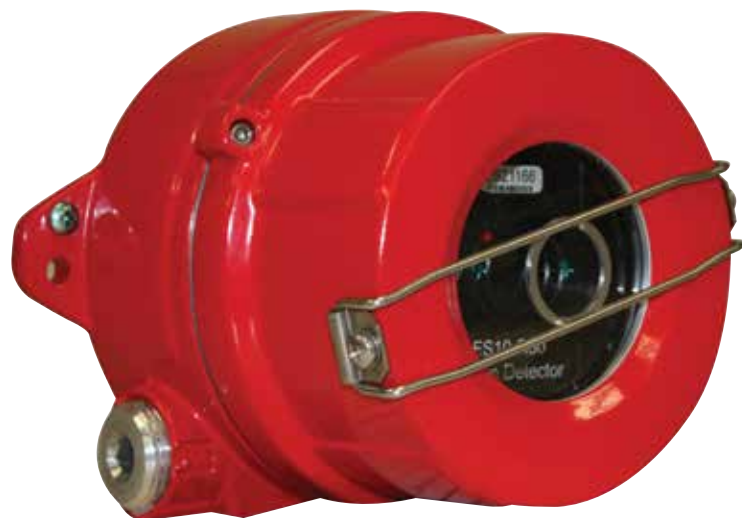
Fire Sentry FS System 10™ provides enhanced safety when compared to a conventional detector due to the electro-optical quantum Infrared sensor array and the ability to accurately detect fires without false alarms.

The FS System 10™ is available in both wall-mount controller and card controller configurations. Please consult us for further information on this device’s card controller.

The detector is mounted in an explosion-proof housing. The wall-mounted controller is a self-contained system mounted in a NEMA 12 enclosure with LCD display and LED status lights. Three 10-amp mechanical relays have been incorporated for shutting down the paint flow, electrostatics and conveyor. Event history and fire technical data are reported by the detector in real time and this data is subsequently stored in the controller’s non-volatile memory. FirePic™ and SnapShot™ data can be downloaded from the RS-232 port of the controller from a PC. The controller may operate with one or two detectors.

Fire Sentry FS10-R Unitised

Based on the Fire Sentry FS System 10™, the FS10-R Unitised flame detector provides a stand-alone capability. Its WideBand IR™, NearBand IR, and Visible sensors, combined with the advanced signal processing provide optimum performance. High speed fire response with optional factory sensitivity settings and alarm outputs provide an enhanced safety solution to fire detection for the Finishing Industry.



Fire Sentry FS System 10™ and Fire Sentry FS10-R Unitised Detector



FS10 Specifications Wall-Mount Controller

Enclosure	NEMA 12 painted steel enclosure with welded seams, door gasket, keyed lock
Display and Indicators	Four (4) status LEDs for FAULT, FIRE EARLY WARNING, ALERT, & ALARM; one (1) LCD Display
Input Power	Option 1-120-GF & Option 1S-120-GF: 120 VAC nominal - +/- 10% Option 1-240-GF & Option 1S-240-GF: 240 VAC nominal - +/- 10%
Power Consumption	Option 1-120-GF & Option 1S-120-GF: 0.22 amps (25 watts) nominal Option 1-240-GF & Option 1S-240-GF: 0.11 amps (25 watts) nominal
Output Signal Relays	Fire Early Warning: SPDT, NO/NC, Normally De-Energised Alert: SPDT, NO/NC, Normally Energised Fire Alarm: SPDT, NO/NC, Normally De-Energised Fault: SPDT, NO/NC, Normally Energised
Process Shutdown Relays	Three (3) SPDT, NO/NC, Normally Energised
Contact Ratings	Output Signal Relays: 1 amp @ 24 VDC Process Shutdown Relays: 10 amps @ 120 VAC
Controller Temperature	0° to +50°C (+32° to +122°F)
FirePic™	6 total, each 8 seconds duration
Number of Detectors	1 or 2 detectors per controller

Detector

Sensitivity	4.57m (15 feet)
Response Time	Alert: 0.3 second (response to "fireball" type fires) Fire Early Warning: 0.5 second (early response to a fire alarm) Fire Alarm: 4 seconds (if fire continues)
Field of View	90° (± 45° horizontal and vertical)
Weight Aluminum	1.7 kg (3.8 lbs)
Operating Temperature	-40° to +85°C (-40° to +185°F)
Enclosure	Copper-Free Powder Coated Aluminium or optional 316 Stainless Steel; NEMA 3, 4 and 4X
Certifications	Explosion-Proof; Class I, Div. 1 & 2, Groups B, C, & D Class II, Div. 1 & 2, Groups E, F, & G Class III FM, CE
Spectral Sensitivity	Visible: 400 – 700 nanometers Near Band IR: 0.7 – 1.1 microns Wide Band IR: 0.7 – 3 microns
Conduit Entries	Two ¾" NPT
Dimensions	122.17mm (4.81 in.) diameter; 118.11mm (4.65 in.) deep
Mounting	Swivel Bracket Assembly - Optional
Warranty	Two years from date of shipping



Fire Sentry FS System 10™ and Fire Sentry FS10-R Unitised Detector



FS10-R Specifications

General Specifications

Sensitivity	13.7m (45 ft) and 9.1m (30 ft) to a 0.3 sq m (1 sq. ft.) fire (factory set)*
Response Time	Alert: 0.3 second (response to "fireball" type fires) Fire Early Warning: 1 second (early response to a fire alarm) Fire Alarm: Less than 5 seconds (if fire continues)
Field of View	90° (± 45° horizontal and vertical)
Spectral Sensitivity	Visible: 400 – 700 nanometers Near Band IR: 0.7 – 1.1 microns Wide Band IR: 0.7 – 3 microns
Input Power	24 VDC nominal (18-32 VDC) - Regulated
Power Consumption	Normal: 85 mA (typical); Alarm: 120 mA (typical)
Output Relays	Alert/Early Warning: SPST, N.O. Fire Alarm: SPST, N.O. Fault: SPST, N.O. with no power Contact ratings: 1 amp @ 24 VDC
Normal Operation	Fault relay is Energised, Non-Latching All other relays are De-energised Fire and Alert relays are available Latching or Non-Latching
Operating Temperature	Operating: -40°C to +85°C (-40°F to +185°F)
Humidity Range	0% to 90% relative humidity, non-condensing
Weight	Aluminium: 1.7kg (3.8 lbs)
Enclosure	Copper-Free Powder Coated Aluminium or optional 316 Stainless Steel; NEMA 3, 4 and 4X
Conduit Entries	Two ¾" NPT
Certifications	Explosion-Proof; Class I, Div. 1 & 2, Groups B, C, & D Class II, Div. 1 & 2, Groups E, F, & G Class III FM, CE
Dimensions	122.1mm (4.81 in.) diameter; 118.1mm (4.65 in.) deep
Mounting	Swivel Bracket Assembly - Optional
Warranty	Two years from date of shipping

* Detectors set at the 13.7m (45-foot) sensitivity setting do not have the Alert/Fire Early Warning output available.

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FS10 Card Specifications

Card Controller

Enclosure	NEMA 1 steel enclosure
Indicators	Four (4) status LED's for NORMAL OPERATION, ALERT, FIRE EARLY WARNING (FEW), FIRE ALARM, and Fault conditions
Input Power	24 volt DC (+10/-15%)
Power Consumption	65 milliamps, at 1.6 watts nominal
Output Signal Relays	2FL: ALERT/FEW NO, ALERT/FEW NC, FIRE ALARM NC, FAULT NC/NO 2GF: ALERT/FEW NC, FIRE ALARM NO, Minor FAULT NC, Major FAULT NC/NO 2WE: ALERT/FEW NO, FIRE ALARM NO, Minor FAULT NO, Major FAULT NC/NO 2WL: ALERT/FEW NO, ALERT/FEW NC, FIRE ALARM NO, FAULT NC/NO
FirePic™	6 total, each 8 seconds duration

Detector

Sensitivity	4.57m (15 feet)
Response Time	2FL: 0.5 second ALERT, 1.0 second FEW, 4.0 second FIRE ALARM 2GF: 0.3 second ALERT, 0.5 second FEW, 5.0 second FIRE ALARM 2WE: 0.5 second ALERT, 2.0 second FEW, 5.0 second FIRE ALARM 2WL: 0.5 second ALERT, 2.0 second FEW, 5.0 second FIRE ALARM
Field of View	90° (± 45° horizontal and vertical)
Weight Aluminum	1.7 kg (3.8 lbs)
Operating Temperature	-40° to +85°C (-40° to +185°F)
Enclosure	Copper-Free Powder Coated Aluminum or 316 Stainless Steel; NEMA 3, 4 and 4X
Certifications	Explosion-Proof; Class I, Div. 1 & 2, Groups B, C, & D Class II, Div. 1 & 2, Groups E, F, & G Class III FM, CE
Spectral Sensitivity	Visible: 400 – 700 nanometers Near Band IR: 0.7 – 1.1 microns Wide Band IR: 0.7 – 3 microns
Conduit Entries	Two ¾" NPT
Dimensions	122.17mm (4.81 in.) diameter; 118.11mm (4.65 in.) deep
Mounting	Swivel Bracket Assembly - Optional
Warranty	Two years from date of shipping

Our Product Range



Fixed Gas Monitoring

Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- » Detection of flammable, Oxygen and toxic gases (including exotics)
- » Innovative use of four core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- » Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- » Cost effective regulatory compliance solutions

Portable Gas Monitoring

When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces.

These include:

- » Detection of flammable, Oxygen and toxic gases
- » Single gas personal monitors – worn by the individual
- » Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- » Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

Technical Services

At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- » Full technical support
- » Expert team on hand to answer questions and queries
- » Fully equipped workshops to ensure quick turnaround on repairs
- » Comprehensive service engineer network
- » Training on product use and maintenance
- » Mobile calibration service
- » Customised programmes of preventative/corrective maintenance
- » Extended warranties on products

Find out more

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We Save Lives



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