The World Leader in Powder Coating Systems

Infrared Flame Detector (Systems)

Alarms to hydrocarbon and non-hydrocarbon fires in milliseconds.

ITW Gema

Infrared Flame Detector - Systems

The FS System 10 is an infrared flame detector containing a high speed sensor array, and alarms to hydrocarbon and non-hydrocarbon fires in milliseconds. It provides output signal relays for interfacing with process shutdown, fire suppression and various types of control systems.

Using intelligent processing architecture, each fire detector and remote card controller contains an on-board digital signal processing microcomputer.

Each unit is capable of detecting wide band infrared (IR) radiant energy, near band IR radiant energy and visible radiant energy spectrums.

These radiant energy bands are scanned in real-time by the flame detector sensor array. The information is processed by the dual microcomputer to rapidly detect fires while eliminating nuisance spurious alarms. Because of the fast processor and spectrum sensors, the FS System 10 typically detects a fire in 16 milliseconds.

The FS System 10 also includes the FIRE-PIC detecting wide band infrared (IR) radiant energy, near band IR radiant energy and visible radiant energy spectrums feature. This allows the user to download historical information and graphically view the last 200 events recorded. Each recorded event includes the time and date, as well as the spectrum of energy in which it occurred. This feature is very valuable for troubleshooting.

Systems Version

A card controller is mounted in the powder booth master electrical panel. This controller governs and electronically records the overall operation of the FS System 10. The controller processes the information for two fire detector heads.

The FS System 10 – Retrofit includes:

(1) Card controllers - mounted and pre-wired in powder booth electrical panel.

(2) FS System 10 flame detectors - all cables pre-wired and supplied with powder booth system

(3) Manual, mounting bracket and hardware.

Specifications

Location:
Class I, Div. 1, Groups B, C, D
Class II, Div.1 & 2, Groups E, F, G
Class III, NEMA 3 & 4

Sensors:
High Speed, Photoconductive Quantum Type

Spectral Bands:
Wide Band Infrared (IR): 0.7 to 3.5 microns
Near Band Infrared (NIR): 0.715 to 1.2 microns
Visible Band (VIS): 350 to 700 nanometers

Field of View:
90º max. (horizontally and vertically)

Sensitivity:
30 feet max. distance for 1 sq.ft. gasoline fire to be reliably detected

Response Time:
Alert signal - 300 mS
Fire Early Warning - 500 mS
Fire alarm - 5 seconds
Process Control – On wall mount

Cable Parameters:
4-wire shielded twisted pair - 18 awg at 1000 feet max.
(1) pair RS-485 digital communication link
(1) pair - 9 volt DC power and ground

Environmental Specifications

Operating Temp. Range:
Detector: -40ºF to 185ºF
Card Controller: 32ºF to 122ºF

Electrical Specifications

Wall Mount
120VAC @ 1.00 Amp

Card Controller
Nominal Supply Voltage: 24Volts DC ±10%
Nominal Supply Current: 0.13 Amps (5 watts)

Flame Detector
Nominal Supply Voltage: 9 Volts DC supplied by controller
Nominal Supply Current: 0.10 Amps

Relay Outputs (SPDT)
Alert Relay Contacts: 1 amp @ 24 VDC; 0.5 amp @ 120 VAC
F.E.W. Relay Contacts: 1 amp @ 24 VDC; 0.5 amp @ 120 VAC
Fire Alarm Relay Contacts: 1 amp @ 24 VDC; 0.5 amp @ 120 VAC
Fault Alarm Relay Contacts: 1 amp @ 24 VDC; 0.5 amp @ 120 VAC

Wall Mount – Process Control Relay (3)
10 @ 120 VAC

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Superior By All Measures