

## Applications Include

- ✓ Refineries and Oil Production Facilities
- ✓ Off-Shore Platforms
- ✓ Oil & Gas Pipelines and Pumping Stations
- ✓ LNG/LPG Loading & Unloading Facilities
- ✓ Natural Gas and CNG Plants
- ✓ Ethanol, Methanol, and IPA Production and Storage
- ✓ Crude Oil and Gasoline Storage and Tank Farms
- ✓ Hydrogen Plants and Storage
- ✓ Paint & Solvent Storage
- ✓ Chemical Production, Storage, and Loading Facilities
- ✓ Power Plants



## Operation

The WideBand IR™ Infrared technology using high-speed solid-state Quantum sensors allows detection of all types of fires, hydrocarbon and non-hydrocarbon, in all weather conditions and in all altitudes. Dual microprocessors provide a high level of fail-safe operation combined with fast and reliable performance. The Master Microprocessor performs high-speed digital sampling and signal-processing calculations; while the slave microprocessor handles various sensor data, performs communications, self-diagnostics and provides interface versatility; and additional memory for storing Event Log and FirePic™ data.

The FSX family of Detectors features the patented\* FirePic data storage and information retrieval facility. FirePic™ records pre-fire data, which can be recovered from the Detector's non-volatile flash memory for post fire analysis and postulation of the fire cause. Additionally, unique Real-Time Graphing (RTG™) allows viewing of the data which the Detector actually sees. A combination of outputs makes the FS18X a truly versatile Detector for today's demanding industrial requirements. The FS18X has a detection range greater than 60 feet (Very High Sensitivity setting) for the detection of a one square-foot Heptane reference fire and has a cone of vision far greater in volumetric coverage than any other Multi-Spectrum IR Detector.

## Features

- ✓ Patented WideBand IR™ Infrared Technology
- ✓ Patented Electronic Frequency Analysis™
- ✓ Visible Sensor for optimum false alarm rejection
- ✓ Selectable Detection Sensitivities
- ✓ Field-of-View: 110° full 100% cone-of-vision
- ✓ Dual Microprocessors for reliable performance
- ✓ Real-Time Clock for accurate time dating of events
- ✓ FirePic™ - Pre-Fire Event Data Storage
- ✓ Event Log with Date & Time Stamp ✓ RS-485 ModBus Communication
- ✓ Non-Isolated 4-20 mA Analog output (sink or source)
- ✓ Alarm, Fault and Verification relays.
- ✓ Automatic Optical Path and Electronic Self-Test
- ✓ Widest Operating Temperature Range
- ✓ Patented\* Electronics Module for components protection with easy plug-in terminations and field installation
- ✓ Two 3/4" NPT OR 25mm Conduit Connections ✓ Low Power consumption
- ✓ High RFI and EMI immunity ✓ FM, ATEX, CE mark approvals
- ✓ Meets SIL 2 requirements

The new Model FS18-X is the latest generation high technology Multi-Spectrum TriBand™ (IR/IR/Visible) Fire and Flame Detector, which is part of the new FSX family of advanced technology Electro-Optical Fire Detectors. Using patented WideBand IR™ Infrared, and Visible detection technology, the FS18X is a quantum leap in Electro-Optical flame and fire detection. Sophisticated software algorithms and dual microprocessors ensure the FS18X has the highest fire detection performance combined with optimal false alarm rejection.

## Specification

Field of View: 110° Full 100% Cone of vision, ± 55° from on axis

Sensitivity: Very High, High, Medium and Low -- Switch Selectable

Response Time: 3-5 Seconds to 1 sq. ft. n-Heptane fire at 60 ft.

Spectral Sensitivity: Visible: 400 - 700 nanometers  
Near Band IR: 0.7 - 1.1 microns  
Wide Band IR: 1.1 - 3.0 microns

Operating Voltage: 24 VDC nominal (18-32 VDC) - Regulated

Power Consumption: Operating: 56 mA @ 24 VDC nominal  
Alarm: 106 mA @ 24 VDC nominal  
Heater: 155 mA - additional  
Note: Heater will turn on at 0°F (-17°C)

Output Relays: Fire Alarm: SPDT (NO / NC) - De-Energized/Energized, Latching/Non-Latching  
Fault: SPST (NO) - Normally Energized,-Latching/Non-Latching  
Auxiliary: SPDT (NO / NC) - De-Energized/Energized, Latching/Non-Latching  
Contacts rating: 1 amp @ 24 VDC

Analog Output: 0 - 20 mA stepped - Source or Sink User Selectable

Loop Resistance: 50 - 400 Ohms

Communication: One of the following - User Selectable:  
- RS-485, ModBus Protocol  
- RS-485, FireBus II  
- RS-485 Special (optional)  
- HART, Optional plug-in module

Visual Indications: Blue LED: Power, Red LED: Alarm  
Yellow LED: Fault

Temperature Range: Operating: -40 to +185°F (-40 to +85°C)  
Storage: -67 to +230°F (-55 to +110°C)  
Optional extended temperature version available -58 to 230°F (-50 to +110°C)

Humidity Range: 5 to 95% relative humidity, non-condensing

Vibration: Meets or exceeds MilSpec 810C Method 514.2, Curve AW12

Wiring: 12 AWG (3.31mm<sup>2</sup>) to 22 AWG (0.326mm<sup>2</sup>)  
Shielded Cable Recommended

Conduit Entries: Standard: Two ¾" NPT  
Optional: Two 25mm

Enclosure Materials: Copper-free Aluminum -- Powder Coated  
316 Stainless Steel -- Optional

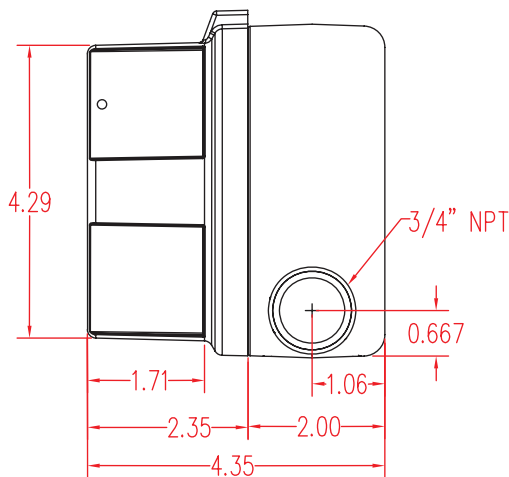
Enclosure Type: NEMA 4 & 4X, IP66

Certifications: **FM:** Class I, Div. 1 & 2, Groups B, C, & D  
Class II, Div. 1 & 2, Groups E, F, & G  
Class III  
**ATEX:** II 2 G D  
Ex d IIC T4 (Ta: -60 to + 110 °C)  
T5 (Ta: -60 to + 90 °C)  
T6 (Ta: -60 to + 75 °C)  
**CE:** Complies with EN6000-6-4 & EN50130-4  
**SIL Rating:** FMEDA meets IEC 61508 Safety requirements

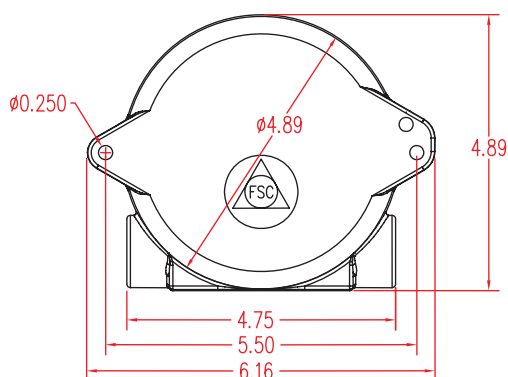
Shipping Weight: Aluminum: 3.6 lbs (1.6 kg)  
Stainless Steel: 7 lbs (3.2 kg)

Mounting: Swivel Bracket Assembly - Optional

Warranty: Three years from date of shipping  
Extended Warranty available



Model FS18-X - Side View



Model FS18-X - Back View

All dimensions in inches. This specification subject to change without prior notice