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# Detection & Control Equipment

## Model 20/20 MI-3

### Triple IR (IR<sup>3</sup>) Flame Detector



#### Application

The Triple IR (IR<sup>3</sup>) Flame Detector is used with the CHECKFIRE SC-N Detection and Actuation System. The Triple IR detector is used as an optional add-on to standard linear detection or thermal detection. The Triple IR detector has been designed as a rugged, heavy duty type detector with special emphasis on immunity to false alarms. It has applications in a wide range of mining, industrial and commercial facilities, where fuels, such as, hydraulic fluid, gasoline, kerosene, diesel fuel, aviation fuel, polymers, natural gas, hydrocarbon gases, present a possible fire hazard.

#### Features

- Triple-Spectrum Design
- Large Field of View (100° horizontal/vertical)
- Sensitivity Selection
- User-Programmable Functions
- Highly Immune to False Alarms
- Automatic and Manual Built-In-Test (BIT)
- Mean Time Between Failures (MTBF)  
Minimum 100,000 Hours
- FM Approved

#### Description

The Triple IR (IR<sup>3</sup>) Flame Detector is a high performance and high reliability self-contained triple spectrum flame detector.

This detector, packaged in a small, convenient size housing for easy installation in tight areas, is specially designed as a general purpose flame detector for off-road (mining) and industrial applications with the highest immunity to false alarms. The patented Triple IR design offers two to three times the detection distance of any conventional IR or UV/IR detector, scanning for oscillating IR radiation (1 to 10 Hz) in three special bands. Each sensor band pass has been selected to ensure the greatest degree of spectral matching to the radiant energy emissions of fire, and the lowest degree of matching to non-fire stimuli.



### Specifications

#### General

- Spectral Response - Three IR bands
- Detection Range
  - Gasoline fire at 133ft. (40m)
  - N-Heptane fire at 13ft (40m)
  - Alcohol 95% fire at 100ft (30m)
  - Diesel Fuel fire at 93ft (28m)
  - JP4 fire at 100ft (30m)
  - Kerosene fire at 100ft (30m)
  - Methane\* fire at 40ft. (12m)
  - Propane\* fire at 40 ft (12m)
    - \*1.6ft (0.5m) plume fire
- Response Time - Typical 5 seconds
- Time Delay - Adjustable time delay up to 30 seconds
- Sensitive Range - 4 sensitive ranges for 1ft<sup>2</sup> (0.1m<sup>2</sup>) gasoline pan fire from 33ft (10m) to 133ft (40 m)
- Field of View - 100° horizontal, 100° vertical
- Built-in-Test - Manual and automatic BIT
- Temperature Range
  - Operating: -40°F (-40°C) to 160°C (70°C)
  - Storage: -65°F (-55°C) to 185°F (85°C)
- Humidity - Up to 95%
- Electromagnetic compatibility - EMI/RFI protected  
CE marked

#### Output

- RS-485 - The detector is equipped with an RS-485 communication link that can be used in installations with computerised controllers. The RS-485 is Modbus compatible.

#### Mechanical

- Dimensions - 4 in. x 4 in. x 2.5 in. (100 x 100 x 62 mm)
- Weight - 1.1 lb. (0.5 kg)
- Enclosure - Aluminium
- Environmental Standards - Meets MIL-STD-810C for humidity, salt and fog, vibration, mechanical shock, high temperature, low temperature
- Water and Dust - IP66 and IP67 per En60529, NEMA 250 6P

### Ordering Information

Part No.	Description
432480	Triple IR (IR <sup>3</sup> ) Flame Detector Shipping Assembly (includes Flame Detector, Part No. 432035; Swivel Bracket with Mounting Plate, Part No. 432300)
432477	Starter Junction/Cable Assembly
432478	Following Junction/Cable Assembly
432319	10ft. (3.1m) Plug-Plug Cable Assembly
432320	20ft. (6.1m) Plug-Plug Cable Assembly
432324	30ft. (9.1m) Plug-Plug Cable Assembly
432321	1ft. (0.3 m) Receptacle-Receptacle Cable Assembly
432481	Supervision End Plug Assembly
432485	Operation and Maintenance Manual