

FLAMEVISION FV282f+

INFRARED FLAME DETECTION

OPERATION

The Flame Vision FV282f+ is a triple infrared flame detector designed to detect unwanted fires and provide alarm output directly from the detector while maintaining the highest level of false alarm immunity available.

The FV282f+ samples three wavelengths from the infrared spectral characteristic of a flame. Because of this unique feature, the FV282f+ is virtually immune to false alarms caused by arc welding, lightning, hot objects and other sources of infrared radiation.

The Flame Vision FV282f+ electronics are encapsulated within a corrosion resistant, stainless steel, explosion-proof housing, allowing detector information to be processed at the point of detection with internal relay contacts and 4 to 20 mA output.

The instrument's optical self-test feature tests the optical path integrity (window cleanliness) to ensure the detector is operating at maximum efficiency at all times.

FLAME DETECTION APPLICATIONS

The Flame Vision FV282f+ is suitable for use both indoors or outdoors in a wide range of applications, and is specifically intended for the protection of high-risk areas in which accidental fires are likely to result in flaming combustion with the production of carbon dioxide. Environments where substances ignite readily and burn rapidly, producing flame, and are often accompanied by large volumes of dark smoke.

Ideal industrial environments for the FV282f+ detector include:

- Chemical plants
- Drilling and production platforms
- Fuel loading facilities
- Compressor stations
- Electrostatic paint spray booths
- LNG/LPG processing and storage facilities
- Refineries

LATEST TRIPLE INFRARED DETECTION

The new triple infrared (IR) engine in the FV282f+ flame detection instrument improves upon current IR and UV/IR technologies by employing multiple techniques to detect flames quickly and minimize false alarms, including:

- Flicker analysis to monitor for spectral energy fluctuations typically produced by flames
- Extended range to minimize detectors required to cover an area
- Monitors spectral IR energy above and below the 4.3 um region to limit false alarms and adjust sensitivity based on background IR energy
- Adjustable range and alarm time delay to customize the FV282f+ for your application

PRODUCT FEATURES

- Completely solar blind.
- Remote control of range.
- Switch selectable range settings.
- Switch selectable time to alarm settings.
- Flexible mounting and angular adjustment.
- Operational range up to 178 ft. (54m), fuel dependant.



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System Specifications

IR Center Wavelength:
4.3 microns

Horizontal & Vertical Field of View:
120° maximum

Sensitivity:
Approved performance specifications: The FV282f+ can detect on axis a fully developed 1ft² (0.09m²) n-heptane pan fire at 164 ft. (50m) on the 50m setting and the same fire at 82 ft. (25m) on the 25m setting. A 40 ft. (12m) setting is also available.

Typical Response Time:
< 2 seconds @ 50 ft. (15.24m)

Minimum Sensor Response Time:
< 500 ms

Warranty:
Two years

Approvals:
The FV282f+ detector (Fault and Alarm relay outputs) has been certified by Factory Mutual. The detector is designed to comply with FM3615 (Explosion Proof Electrical Equipment) in systems that comply with FM3260 (Flame Radiation Detectors for Automatic Fire Alarm Signaling).

They are classified as explosion proof for Class I, Division 1, Groups B, C and D; and dust-ignition proof for Class II, Groups E, F and G, Class III; and for indoor and outdoor application (IP66/67).

Patents:
The FV282f+ design and manufacture is covered by the following patents:
UK patents GB 2 281 615, GB 2 335 489
European patent 0 064 811
US patent US 6,255,651

Accessories:
Mounting bracket ordered separately

Ordering Information for FlameVision FV282f+	
Part Number	Description
516.040.014	FV282f+ Triple IR Stainless Steel FM Approved 4 to 20 mA output
592.001.014	T210 Adapter S200

Environmental Specifications

Operating Temperature:
-40°C to 80°C/-40°F to 176°F
(110°C/230°F for short durations)

Storage Temperature:
-0°C to 80°C/-40°F to 176°F

Relative Humidity:
Up to 95% RH (non-condensing)

Enclosure Protection:
NEMA 4 (IP66/IP67)

Normal Operating Atmospheric Pressure:
910 mbar to 1055 mbar

Mechanical Specifications

Housing:
Stainless steel 316 housing

Diameter:
89.5mm (3.3 in.)

Length:
167mm (6.57 in.)

Weight:
2.5kg (5.5 lbs.)
Stainless Steel or Bronze

Cable Entries:
M20 2 ports

Electrical Specifications

Input Power:
16.8V to 31.5V
(Voltage at the detector)

Analogue Signal:
4 to 20 mA (600 ohms Max)

Supply Voltage

Reset Time/Voltage:
Supply must be reduced to less than 2V for greater than 0.5 seconds.

Stabilization Time

After Reset/Power Up:
30 seconds. Detector current consumption without 4 to 20 mA current sink resistor connected. Detector supply two 8V.

Quiescent Current:
11 mA typical
(Fault relay energized)

Alarm Current:
30 mA typical
(Fault and Alarm relay energized)

Fault Current:
0.4 to 1.1 mA pulsing.
(neither Fault or Alarm relay energized)

Detector current consumption with 4 to 20 mA current sink resistor connected. Detector supply 28V.

Quiescent Current:
15 mA typical
(Fault relay energized)

Alarm Current:
0 mA typical
(Fault and Alarm relay energized)

Fault Current:
2.3 to 3.5 mA pulsing.

Fault Relay:
Normally closed,
opens under fault conditions.

Alarm Relay:
Normally open,
closes under alarm conditions.

Status Indicators

Red LED:
Alarm indication

Yellow LED:
Flash rate indicates obscured window or detector fault.

Scott Health & Safety is a global business unit of Tyco Fire & Security that supplies a variety of industries through manufacturing facilities located in the United States, United Kingdom, Asia, Finland, and Australia.

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