

CD-F-300 Visual Flame Detector

Designed for hazardous industries where fast optical flame detection is critical and nuisance alarms are not an option.

The CD-F-300 is an explosion proof visual flame detector. It processes live video images to detect the characteristic properties of flames, by means of its flame detection algorithms and on-board digital signal processing.



Features and Benefits

The CD-F-300 utilises the same flame detection algorithms which have been refined over 20 years, giving it unparalleled false alarm immunity.

Unrivalled False Alarm Immunity

The unique flame detection algorithm in the CD-F-300 is capable of discriminating between genuine fire conditions and other radiant sources that may cause blinding of conventional flame detectors or produce unwanted alarms.

The detector is immune to common sources of unwanted alarms such as hot work, hot CO₂ emissions and flare reflections. This makes it perfect for application in hazardous/industrial applications, as recommended by FM Global, where downtime can be very costly.

Field of View

The CD-F-300 has an unrivalled 120° horizontal and 80° vertical field of view with an increased range of 60 metres to an n-heptane 0.1m² pan fire. The vast coverage provided from this detector will optimise the number of units required, resulting in reduced maintenance and installation costs. The Field of View is a rectangular pyramid shape and represents a radial projection of the sensing element; therefore, giving it the largest coverage area of any flame detector currently available. This unique Field of View does not reduce at the outer limits unlike conventional flame detectors.

Functional Testing

The CD-FS-301 Flame simulator can dependably activate a CD-F-300 from a distance of up to 8m. The electronics are housed in an Exd enclosure which is designed for Zone 1 hazardous areas. Again, this further reduces maintenance costs by eliminating the need for scaffolds or ladders when testing the device and allows more freedom in the placement of these detectors to optimise the coverage achieved. This rugged design also meets the market's high safety demand.

Detector Flexibility

The CD-F-300 can be operated as a stand-alone unit. It can also be integrated with a control system or fire panel to provide fault, and fire signalling. This is achieved using a 0 to 20 mA and /or relay outputs.

Advanced Optical Verification

The CD-F-300 incorporates an advanced optical verification test which ensures the internal and external surfaces of the window are free of obscitants. This test provides peace of mind that the detector is ready to respond in the event of a fire.

Technical specification

Environmental

Operating Temp: -60°C to +85°C (-76°F to +185°F)

Storage Temp: -60°C to +85°C (-76°F to +185°F)

Humidity: 0 to 90% RH non-condensing

Ingress: IP66, NEMA 4X

Operating Voltage

24Vdc Nominal – (18 to 32 Vdc Range)

Power Consumption

2.8 Watts Nominal at 24Vdc

Speed of Response

<5 seconds (Typical)

Enclosure

Dimensions: 100 Diameter x 200 Length Overall (mm)

Material: HE30 Al (Red epoxy), 316 stainless steel

Entries: 1 – M25 or ¾" NPT (Variants on Request)

Weight: 2.5kg (HE30) or 6kg (316)

Outputs

Relay contacts - alarm and fault

Current source 4-20mA

Certification

ATEX: II 2 G Ex d IIC T4

Factory Mutual: FM 3260 Radiant Energy

-Sensing Fire Detectors for Automatic

Fire Alarm Signaling

IECEX Ex d IIC T4

Class 1 DIV 1 GROUPS B,C,D,T4

Class 1 Zone 1 AEx/Ex d IIC T4

Class 1 Zone 1 Ex d IIC T4



Flame Sensitivity

Fuel	Fire Size	Distance
n-Heptane: Pan Fire	0.1m2 (1sqft) pan	60m (200 ft)
n-Heptane: in direct sunlight	0.1m2 (1sqft) pan	60m (200 ft)
n-Heptane: in modulated sunlight	0.1m2 (1sqft) pan	60m (200 ft)
n-Heptane: modulated black body	0.1m2 (1sqft) pan	60m (200 ft)
n-Heptane: Arc welding	0.1m2 (1sqft) pan	60m (200 ft)
n-Heptane: 1000watt lamp	0.1m2 (1sqft) pan	60m (200 ft)
Ethanol: Pan Fire	0.1m2 (1sqft) pan	30m (100 ft)
Methane Jet Fire	0.9m (3ft) plume	26m (86 ft)
Gasoline Fire	0.1m2 (1sqft) pan	60m (200 ft)
JP4	0.4m2 (4sqft) pan	90m (300 ft)
Ethylene Glycol	0.1m2 (1sqft) pan	20m (65 ft)
Diesel	0.1m2 (1sqft) pan	50m (165 ft)
Crude Oil (heavy fuel oil) Pan Fire	0.25m2 (2.7sqft)	50m (165 ft)
Silane	0.61m (2ft) plume	17m (56ft)

Field of View

Horizontal FOV -120°

Vertical FOV - 80°

