VIKING®

TECHNICAL DATA

VSF301

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Intelligent Visual Flame Detector

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

The Viking VSF301 is an explosion proof intelligent visual flame detector (iVFD). The device processes live video images to detect the characteristic properties of flames by means of onboard digital signal processing and hardcoded software algorithms.

Features and Benefits

Highest Immunity to False Alarms
The VSF301 consistently demonstrates the highest immunity to false alarms in areas where flare reflections and / or hot CO_2 emissions may cause other technologies to false alarm.

⚠️ **WARNING**: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

No sensitivity loss
The VSF301 has been independently tested to show no sensitivity loss to a fire in the presence of modulated sunlight and modulated black body heat. This key feature means the unit has greater coverage than almost all other detectors in "real world" outdoor conditions.

On-board recording of alarms
The VSF301 incorporates a micro-SD card capable of recording a video of detected fires pre and post alarm.
This recording is invaluable when carrying out an incident investigation and essentially by using the VSF301, there will never be an instance of an unknown alarm.

Live Video
Each unit has a live color video stream output; this can provide an invaluable source of information insight into the conditions in the area being protected.

- Intelligent visual flame detection (iVFD) principle ensures maximum false alarm immunity and eliminates sensitivity loss in the presence of modulated sunlight and black body heat.
- Operates with or without color video output.
- On-board recording of pre-and post fire alarms
- Continuous optical test, without a reflector
- Verifies operation and improves device up-time
- Microprocessor controlled heated optics
- Maintains operation in harsh weather conditions (snow, ice, condensation)
- International hazardous area approvals

- FM / ATEX / IECEx
- Certified performance testing to multiple fuels
- FM 3260
- EN 54-10
- Spatially aware—single sensitivity detection
- External testing with a long-range flame simulator
- Minimizes the need for scaffolding
- Easy integration using industry standard outputs:
- Alarm and Fault Relays
- 0-20mA
- HART®, as standard
- Certified SIL 2 capable

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Technical Specification

Environmental
Operating Temp -76°F to +185°F (-60°C to +85°C)
Storage Temp -76°F to +185°F (-60°C to +85°C)
Humidity 0 to 95% RH non-condensing

Operating Voltage
24 VDC Nominal – (Range 18 to 32 VDC)

Power Consumption
6 W minimum (without heater), 15 W at 32 VDC with heater on maximum

Field of View
90° horizontal by 65° vertical

Speed of Response
<7 seconds (Typical)

Flame Sensitivity

Fuel	Fire Size	Distance
n-Heptane pan fire	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: direct sun-light	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: modulated sunlight	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: modulated black body	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: Arc welding	1 foot x 1 foot pan	144 feet (44m)
n-Heptane: 1000 W lamp	1 foot x 1 foot pan	144 feet (44m)
Gasoline	1 foot x 1 foot pan	144 feet (44m)
JP4	2 foot x 2 foot pan	200 feet (61m)
Tri-ethylene glycol	1 foot x 1 foot pan	32 feet (10m)
Diesel	1 foot x 1 foot pan	130 feet (40m)
Crude oil (heavy fuel)	20 in x 20 in pan	130 feet (40m)
Methane Jet Fire	36" plume	100 feet (30m)
Ethanol	1 foot x 1 foot pan	85 feet (25m)
Silane	36" plume	42 feet (13m)

Enclosure
Dimensions: 4" Dia x 8" L 100 mm Dia x 200 mm
Material: Copper free aluminum or 316 stainless steel
Entry size: 3/4 inch NPT or M25
Weight: Aluminum 5.5 lbs (2.5 Kg)
Stainless steel 13.2 lbs (6 Kg)

Outputs
Relay contacts - alarm and fault
0-20mA, HART®
Live color video—PAL or NTSC

Certification
FM approved
Class 1 Div 1, Groups B, C, D T4
Class 1 Zone 1 AEx/Ex db IIC T4
Ambient –50°C to +85°C

ATEX Ⓔⓧ II 2 G Ex db IIC T4
IECEx Ex db IIC T4
Ambient –60°C to +85°C

Performance approvals
FM 3260 EN 54-10
Ingress   IP66 / NEMA type 4X
IEC 61508 Certified SIL 2 Capable

Accessories
Flame Simulator (VSF3008 ITEST)
Vertical to Horizontal Mounting Adapter
Standard Bracket (spare)
Marine Bracket
Detector Sealing Kit (Metric)
Flame Simulator Charger
Sun-shield
USB to RS485 Converter
USB HART Modem
2", 3" & 4" Pole Mount Bracket
VTP4 Twisted Pair to Coax Converter
BNC Converter
VIM4 Quad Channel Video Isolator