



## TECHNICAL DATA

## VSF303

The Viking Corporation, 5150 Beltway Dr. SE, Caledonia, MI 49316  
 Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com  
 Visit the Viking website for the latest edition of this technical data page. www.vikinggroupinc.com

### MULTI SPECTRUM IR FLAME DETECTOR

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

The Viking VSF303 is an explosion proof multi spectrum IR (IR3) flame detector. The device delivers superior performance, responding to hydrocarbon liquid fuel and gas fires at long distances. The VSF303 has been independently tested to demonstrate it can detect a hydrocarbon fuel pan fire at nearly 200 feet in less than 5 seconds.

### Features and Benefits

The VSF303 compliments the VSF301 and VSF300 Visual Flame Detectors by delivering superior performance in the detection of hydrocarbon fires which are not detectable in the visible spectrum. The VSF303 utilizes the latest IR flame detection algorithms to ensure maximum false alarm immunity.

#### Multi Spectrum IR design delivers long detection distances and enhanced false alarm immunity

- 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 / IEC Ex

#### Certified performance testing to multiple fuels

- FM 3260
- EN 54-10

#### Adjustable sensitivity levels

- For application flexibility
- Ensure detectors do not cross vote

#### 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® 7, as standard
- Certified SIL 2 capable
- 5 year warranty



**WARNING:** Cancer and Reproductive Harm-  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### Applications

Typical applications include:

- On/Offshore Oil and Gas Processing Facilities
- Refineries
- Petrochemical Plants
- Chemical Facilities
- Pharmaceutical
- Aircraft Hangars
- Road Tunnels
- Power Generation
- Tank Farms
- Road & Rail Loading Racks
- LNG / LPG
- Warehouses/ Storage Areas
- Waste Recycling/ Biomass Plants
- Printing Industry



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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 100% RH non-condensing

### Operating Voltage

24 VDC Nominal – (Range 18 to 32 VDC)

### Power Consumption

3 W minimum (heater off)  
 12 W maximum (heater on)

### Field of View

90° horizontal by 90° vertical

### Speed of Response

5 seconds (Typical)

### Flame Sensitivity

	Fuel	Fire Size	Distance
HIGH SENSITIVITY	n-Heptane	1'x1' / 30cm x 30cm	196 feet (60m)
	n-Heptane + arc welding	1'x1' / 30cm x 30cm	196 feet (60m)
	Gasoline	1'x1' / 30cm x 30cm	196 feet (60m)
	Diesel	1'x1' / 30cm x 30cm	164 feet (50m)
	Crude oil (heavy fuel)	20"x20" 0.5m x 0.5m	164 feet (50m)
	JP4	1'x1' / 30cm x 30cm	196 feet (60m)
	Methane	24" plume / 60 cm	164 feet (50m)
	Ethanol	1'x1' / 30cm x 30cm	137 feet (42m)
	Methanol	1'x1' / 30cm x 30cm	137 feet (42m)
	STANDARD SENSITIVITY	n-Heptane	1'x1' / 30cm x 30cm
Gasoline		1'x1' / 30cm x 30cm	98 feet (30m)
JP4		1'x1' / 30cm x 30cm	98 feet (30m)
Methane		24" plume / 60 cm	98 feet (30m)
Ethanol		1'x1' / 30cm x 30cm	98 feet (30m)

### Enclosure

Dimensions: 4" Diameter 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 (current source)  
 HART 7

### Certification

Class 1 Div 1 Groups B, C, D T4  
 Ambient -50°C to +85°C

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 NEMA type 4X / IP66  
**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

