



TECHNICAL DATA SHEET

VSF303 Multi-Spectrum IR Flame Detector

1. INTENDED USE

Designed for hazardous industries where fast fire detection is critical and nuisance alarms are not an option. The Viking VSF303 Multi-Spectrum IR Flame Detector is an explosion-proof multi-spectrum infrared 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.

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 and rail-loading racks
- LNG/LPG
- Warehouses/storage areas
- Waste recycling/biomass plants
- Printing industry



2. APPROVALS AND CERTIFICATIONS



FM Approved
 Class 1 Div 1 Groups B, C, D
 Class 1 Zone 1 AEx/Ex db IIC T4
 Gb
 Ambient -58 °F to +185 °F
 (-50 °C to +85 °C)



Ingress NEMA type 4X IP66
IEC 61508 SIL 2 Capable



ATEX EX II 2 G Ex db IIC T4 Gb
IECEx Ex db IIC T4 Gb
 Ambient -76°F to +185°F
 (-60°C to +85°C)



Performance approvals
FM2809
EN 54-10



**California Department of
 Forestry & Fire Protection**

- Listing number:
7210-0533:0501
- Category 7210 - Flame
Detector


TECHNICAL DATA SHEET
**VSF303 Multi-Spectrum
IR Flame Detector**
3. TECHNICAL SPECIFICATIONS & FEATURES
3.1 Specifications

Parameters	Value
Operating temperature	-76 °F to +185°F (-60°C to +85°C)
Storage temperature	-76 °F to +185°F (-60°C to +85°C)
Humidity	0 to 93% RH non-condensing
Operating voltage	24 Vdc Nominal (range is 18 to 32 Vdc)
Outputs	Configurable relay contacts (SPST 2A at 30 Vdc) - alarm and fault. 0-20mA, HART®
Power consumption	3 W minimum (heater off); 12 W at 32 Vdc maximum (heater on)
Field of view	90° horizontal by 90° vertical
Speed of response	less than 5 seconds (typical)
Dimensions	4" (100 mm) diameter x 8" (200 mm) length
Materials	Copper-free aluminum or 316 stainless steel
Entry size	3/4" NPT or M25, single or dual
Weight	Aluminum 5.5 lbs (2.5 Kg); stainless steel 13.2 (6 Kg)

3.2 Flame Sensitivity Specifications

Flame Sensitivity			
	Fuel	Fire Size	Distance
High Sensitivity	n-Heptane	1' x 1' / 30 cm x 30 cm	196' (60 m)
	n-Heptane + arc welding	1' x 1' / 30 cm x 30 cm	196' (60 m)
	Gasoline	1' x 1' / 30 cm x 30 cm	196' (60 m)
	Diesel	1' x 1' / 30 cm x 30 cm	164' (50 m)
	Crude oil (heavy fuel)	20" x 20" / 0.5 m x 0.5 m	164' (50 m)
	JP4	1' x 1' / 30 cm x 30 cm	196' (60 m)
	Methane	24" plume / 60 cm	164' (50 m)
	Ethanol	1' x 1' / 30 cm x 30 cm	137' (42 m)
	Methane	1' x 1' / 30 cm x 30 cm	137' (42 m)
Standard Sensitivity	n-Heptane	1' x 1' / 30 cm x 30 cm	98' (30 m)
	Gasoline	1' x 1' / 30 cm x 30 cm	98' (30 m)
	JP4	1' x 1' / 30 cm x 30 cm	98' (30 m)
	Methane	24" plume / 60 cm	98' (30 m)
	Ethanol	1' x 1' / 30 cm x 30 cm	98' (30 m)


TECHNICAL DATA SHEET
**VSF303 Multi-Spectrum
IR Flame Detector**

3.3 Features

- Multi-spectrum IR design delivers long-detection distances and enhanced false alarm immunity.
- Continuous optical test, which verifies operation and improves device up-time.
- Microprocessor-controlled heated optics, which maintain operation in harsh weather conditions (e.g., snow, ice, condensation).
- International hazardous area approvals, such as FM, ATEX, IEC Ex.
- Design to meet performance testing (through FM 2809 and EN 54-10) to multiple fuels.
- Adjustable sensitivity levels for application flexibility and to ensure detectors do not cross-vote.
- External testing with a long-range flame simulator, which minimizes the need for scaffolding.
- External testing and calibration with a long-range flame simulator.
- Easy integration using industry standard outputs, such as configurable alarm and fault relays, 0-20mA, and HART®, as standard.
- Certified SIL 2 capable.

4. ORDERING INFORMATION

Detector

Part Number*	Description
24364	3/4" NPT, dual entry
24365	M25, dual entry
24366	3/4" NPT, dual entry, stainless steel
24367	M25, dual entry, stainless steel
24598	3/4" NPT, single entry
24595	3/4" NPT, single entry, stainless steel

*Additional cable entry variants are available upon request.

Accessories

Part Number	Description
24376	VSF3008 ITEST
24377	Vertical to horizontal mounting adapter
24378	Standard bracket 316 stainless steel (spare only)
24379	Marine bracket 316 stainless steel (spare only)
24380	Detector sealing kit (metric)
24382	Flame simulator charger (spare)
24383	Sunshield
24384	2" pole mount bracket
24385	3" pole mount bracket
24386	4" pole mount bracket
24591	USB to RS485 converter

5. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

The Viking Corporation
 5150 Beltway SE
 Caledonia, MI 49316
 Tel.: (800) 968-9501
 Fax: 269-818-1680
 Technical Services: 1-877-384-5464
 techsvcs@vikingcorp.com
 www.vikinggroupinc.com/locations