



TECHNICAL DATA SHEET

VSF303H Multi-Spectrum IR H2 Flame Detector

1. INTENDED USE

Designed for hazardous industries where fast H2 flame detection is critical and nuisance alarms are not an option.

The VSF303H compliments the VSF series of Visual and IR3 Flame Detectors by delivering superior detection performance of hydrogen (H2) fires. The VSF303H utilizes the latest IR flame detection algorithms to ensure maximum false alarm immunity.

Typical applications include:

- Petroleum-refining
- Semiconductor manufacturing
- Aerospace applications
- Fertilizer production
- Pharmaceuticals
- Hydrogen Compressors
- Hydrogen Fueling Stations
- Hydrogen Trains / Buses
- Hydrogen Ferries
- Hydrogen to Methane Production
- Refrigeration
- Gas Plants
- Hydrogen Generators



2. APPROVALS AND CERTIFICATIONS



cFMus Approved
Class 1 Div 1 Groups B, C, D T4
Ambient -50C to 85C



FM(US) Approved
Class 1 Zone 1 AEx/Ex db IIC T4
Ambient -50C to 85C



ATEX Ex II 2 G Ex db IIC T4
IECEx Ex db IIC T4 Ambient -60
to 85C



INMETRO Ex db IIC T4* PESO Ex db
IIC T4* Ta=-60C to 85C
*pending



Performance approvals
FM3260
EN 54-10



Ingress NEMA type 6P/ IP67
IEC 61508 Certified SIL 2 Capable


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**VSF303H Multi-Spectrum IR
H2 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	Relay contacts (SPST 2 A at 30Vdc) - alarm and fault. 0-20mA, HART® 7
Power consumption	3 W minimum (heater off); 12 W maximum (heater on)
Field of view	90° horizontal by 90° vertical
Speed of response	2-5 seconds (typical) at 40 m (131 feet)
Dimensions	4" diameter x 8" L; 100 mm diameter x 200 mm
Materials	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 (6 Kg)

Flame Sensitivity			
	Fuel	Fire Size	Distance
High Sensitivity	Hydrogen	0.9 m (36 inch) plume	40 m (131 feet)
	Methylated spirits	0.3 m x 0.3 m (1 ft ²)	20 m (65 feet)
	Methanol	0.3 m x 0.3 m (1 ft ²)	20 m (65 feet)
	n-Heptane	0.3 m x 0.3 m (1 ft ²)	12 m (40 feet)
	Methane	0.9 m (36 inch) plume	30 m (100 feet)

3.2 Features

The VSF303H consists of multiple features and benefits:

- Multi-Spectrum IR design that delivers long detection distances and enhanced false alarm immunity.
- Continuous optical test without a reflector, which verifies operation and improves the device's up-time.
- Microprocessor-controlled heat optics, which maintains operation in harsh weather conditions (i.e., snow, ice, condensation).
- International hazardous area approvals, such as FM, ATEX, IEC Ex, INMETRO, PESO.
- Design that meets performance testing standards, such as FM 3260 and EN 54-10, for multiple fuels.
- Adjustable sensitivity levels that allow for application flexibility and that ensure VSF303H detectors do not cross-vote.
- External testing with a long-range flame simulator, which minimizes the need for scaffolding.
- Easy integration when using industry standard outputs, such as alarm and fault relays, 0-20mA, and HART® 7 (as standard).
- Design that meets SIL 2 capable.
- 5-year warranty.



4. ORDERING INFORMATION

4.1 Detector

Part Number	Description
25626	3/4 inch NPT, Dual entry
25627	M25, Dual entry
25628	3/4 inch NPT, Dual entry, stainless steel
25629	M25, Dual entry, stainless steel
25630	3/4 inch NPT, Single entry
25631	M25, Single entry

4.2 Accessories

Part Number	Description
24376	Flame simulator (VSF3008)
24384, 24385, 24386	2", 3", & 4" pole mount bracket
24377	Vertical to horizontal mounting adapter
24383	Sunshield
26299	Duct mount bracket
25518	Air shield
24380	Detector sealing kit

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
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