



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



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



Ingress NEMA type 6P/ IP67
IEC 61508 Certified 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:
7210-0533:0506
- Category 7210 - 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" (100 mm) diameter x 8" (200 mm) length |
| Materials | Copper-free aluminum or 316 stainless steel |
| Entry size | 3/4" NPT or M25 |
| 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 | Hydrogen | 36 inch (0.9 m) plume | 131 feet (40 m) |
| | Methylated spirits | 1 ft ² (0.3 m x 0.3 m) | 65 feet (20 m) |
| | Methanol | 1 ft ² (0.3 m x 0.3 m) | 65 feet (20 m) |
| | n-Heptane | 1 ft ² (0.3 m x 0.3 m) | 40 feet (12 m) |
| | Methane | 36 inch (0.9 m) plume | 100 feet (30 m) |

3.3 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.
- Design that meets performance testing standards (through FM 2908 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.


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H2 Flame Detector**
4. ORDERING INFORMATION
Detector

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

*Additional cable entry variants are available upon request.

Accessories

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

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