CROWCON
Detecting Gas Saving Lives

FGard H2

Flame detector

For hazardous industries where fast hydrogen flame detection is critical and nuisance alarms are not an option

FGard H2

Multi Spectrum IR Hydrogen Flame Detector

The Crowcon FGard H2 flame detector is an explosion proof multi spectrum IR hydrogen flame detector. The device delivers superior performance, responding to hydrogen fires at long distances.

The FGard H2 has been independently tested to demonstrate it can detect a hydrogen plume fire at 40m (131ft) in less 5 seconds.

The FGard H2 delivers superior detection performance of hydrogen fires, utilising the latest hydrogen flame detection algorithms to ensure maximum false alarm immunity.
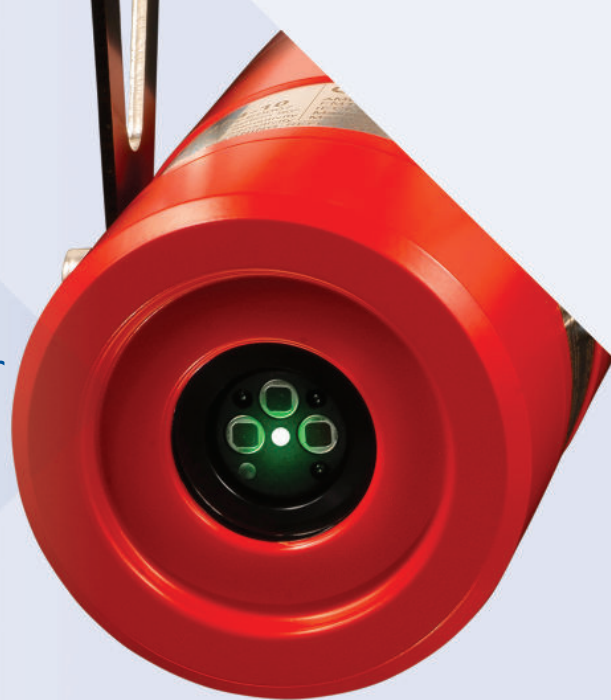
Features and benefits

◆ 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 / INMETRO* / PESO*

◆ 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
  • Minimises 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

*pending

Applications

Typical applications include:

◆ Hydrogen Generators

◆ Hydrogen Fueling Stations

◆ Hydrogen to Methane Production

◆ Hydrogen Trains, Buses and Ferries

◆ Hydrogen Compressors

◆ Petroleum Refining

◆ Gas Plants

◆ Pharmaceuticals

◆ Semiconductor Manufacturing

◆ Aerospace Applications

◆ Fertilizer Production

◆ Refrigeration

Accessories

◆ Flame simulator
◆ Pole mount bracket
◆ Retrofit mounting bracket
◆ Marine mounting bracket

Part Numbers

Product Code	Description
FD-H2-SS-M25	Fgard H2 Flame Detector - Stainless Steel M25
FD-H2-SS-NPT	Fgard H2 Flame Detector - Stainless Steel 3/4" NPT
FD-H2-A-M25	Fgard H2 Flame Detector - Aluminium M25
FD-H2-A-NPT	Fgard H2 Flame Detector - Aluminium 3/4" NPT
Accessories	
Product Code	**Description**
FD-AC-01	Vertical to Horizontal Mounting Adaptor
FD-AC-02	Standard Bracket 316 Stainless Steel
FD-AC-03	Marine Bracket 316 Stainless Steel
FD-AC-04	Detector Sealing Kit - Metric (Gland Seals and O-Ring Set)
FD-AC-05	FDS Series Sunshield
FD-AC-06	Crowcon Flame simulator
FD-AC-09	2" pole mount kit
FD-AC-10	3" pole mount kit
FD-AC-11	4" pole mount kit
FD-AC-12	Flame Simulator Spare Charger

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Crowcon Fire and Gas Hazard Detection Review Service

Crowcon recognizes the complexities inherent to each industrial site, as well as the nuances of gas and flame behaviour, and we highly recommend incorporating a comprehensive fire and gas mapping assessment into the detector selection process. Our dedicated Fire and Gas Hazard Detection Review Service provides invaluable insights tailored to your specific needs, enhancing overall safety and efficiency.

Using sophisticated computer aided design, Crowcon can provide a detailed report based on 3D site images which identifies gas and flame hazards and recommends detector quantities and location in-line with the British Standard BS 60080:2020. The review can be conducted for new sites/installations, or for established detection systems

The report enables the client to optimise the system design and achieve the best possible balance between safety and economy. This practice improves safety and reduces operating costs by ensuring that the number of devices used is minimized while the required level of safety is maintained.

Technical Specification

Environmental	
Operating Temp	-76°C to +185°C (-60°F to +85°F)
Storage Temp	-76°C to +185°C (-60°F to +85°F)
Humidity	0-100 % RH (Non condensing)
Operating Voltage	24 Vdc Nominal – (Range 18 to 32 Vdc)
Power Consumption	3 W minimum (without heater), 12 W maximum (with heater).
Speed of Response	2-5 seconds (Typical) at 40 m (131 feet)
Field of View	90° (horizontal and vertical)

Enclosure	
Dimensions	4" Dia x 8" L (inches) 100 mm Dia x 200 mm
Material	Copper free aluminum or 316 stainless steel
Entry size	3/4 inch NPT or M25
Weight	Alu 5.5 lbs (2.5 Kg) / SS 13.2 lbs (6.0kg)
Outputs	Relay contacts (DPDT 2A at 30Vdc) - alarm and fault.
	0-20mA, HART®

Crowcon reserves the right to change the design or specification of the product without notice.

Flame Sensitivity

Fuel	Fire Size	Distance
Hydrogen	36" plume / 90cm	131 feet (40m)
Methane	36" plume / 90cm	100 feet (30m)
Methanol	1'x1' / 30cm x 30cm	65 feet (20m)
Methylated Spirits	1'x1' / 30cm x 30cm	65 feet (20m)
n-Heptane	1'x1' 30cm x 30cm	40 feet (12m)

Performance approvals

FM 3260

EN 54-10

Ingress – IP67 / NEMA type 6P

Certified SIL 2 Capable – IEC 61508

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

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

*pending

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