

FLAME DETECTION

FGARD H₂

Multi Spectrum IR Flame Detector

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



In industries reliant on hydrogen, detecting its colourless gas and flame presents a critical safety concern. Unlike traditional multi-spectral flame detectors, which lack the capability to discern hydrogen flames, the Fgard H₂ is optimised exclusively for hydrogen flame detection, ensuring your people and your facilities are kept safe.

The Fgard H₂ delivers unparalleled performance, with a response time of just 4 seconds ensuring swift and reliable detection even in demanding industrial environments.

Its intelligent heated optics mean there is no condensation, ice, or water build up on the sensor, with advanced optical verification and automatic tests verify the cleanliness of the lens and electronic circuitry.

Designed to minimise the risk of false alarms, the Fgard H₂ is setting a new standard in reliability, with a market-leading 5 year warranty period for a hydrogen flame detector. This commitment to quality is underscored by the endorsement of Factory Mutual (FM), validating the performance of Fgard H₂ for complete peace of mind.

FEATURES

Fast Detection Time

- Fgard H₂ delivers unparalleled performance, with a response time of just 4 seconds
- Can detect a 36-inch plume size hydrogen flame at a distance of 40 meters
- Provides swift and reliable detection even in demanding industrial environments

Reliable

- Setting a new standard in reliability, Fgard H₂ comes with a market-leading 5 year warranty period for a hydrogen flame detector
- Endorsed by Factory Mutual (FM)
- Intelligent heated optics mean no risk of condensation, ice or water on the lens for unimpaired performance in all weather

Advanced Optical Verification

- Automatic test verifies cleanliness of the lens and electronic circuitry
- No need for reflector optical checks
- Large optical surface results in far fewer false alarms

APPLICATIONS

- 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
- Fertiliser Production
- Refrigeration

SPECIFICATIONS

DEVICE SPECIFICATIONS		
ENCLOSURE MATERIAL	Copper free aluminum or 316 stainless steel	
DIMENSIONS	4" Dia x 8" L (inches) 100 mm Dia x 200 mm	
WEIGHT	Alu 5.5 lbs (2.5 kg) / SS 13.2 lbs (6.0kg)	
ENTRY SIZE	3/4 inch NPT or M25	
OPERATING VOLTAGE	24 Vdc Nominal – (Range 18 to 32 Vdc)	
POWER CONSUMPTION	3 W minimum (without heater), 12 W maximum (with heater).	
RESPONSE TIME	2-5 seconds (Typical) at 40 m (131 feet)	
OUTPUT	Relay contacts (DPDT 2A at 30Vdc) - alarm and fault. 0-20mA, HART®	
OPERATING TEMPERATURE	-60°C to +85°C (-76°F to +185°F)	
STORAGE TEMPERATURE	-60°C to +85°C (-76°F to +185°F)	
HUMIDITY	0 to 93% RH, non-condensing	
PERFORMANCE APPROVALS	FM 3260 EN 54-10 Ingress - IP66 / NEMA type 4X 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 Ex.1 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

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

FLAME SENSITIVITY

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	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)

Disclaimer

Due to ongoing research and product improvement, specifications are subject to change without notice. While every effort has been made to ensure accuracy in this document, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards, and guidelines. This document is not intended to form the basis of a contract.

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