

HYDROGEN (H₂) FLAME DETECTOR

Specially Tuned UV and UV/IR Sensors
Detect Hydrogen and Silane Flame



- **Explosion-proof, Class I, Division 1 certified**
- **Wide Field of view of up to 130 degrees!**
- **Fast Response to Invisible Hydrogen and Silane Flame**
- **Immune to lightning, arc welding, sunlight and hot body radiation (UVS-H2 is immune to sunlight and hot body radiation only)**
- **Fully adjustable swivel mount is included**
- **Operating Range of -50°C to +75°C**
- **CSA, ANSI-UL/ISA, and ATEX Certified**

Net Safety's Hydrogen flame detectors are specially tuned for non-hydrocarbon based flame applications where accurate and instant detection of difficult to see hydrogen and silane flame is required. Our advanced optical sensors ensure the greatest degree of UV and IR spectral bandwave matching to the radiant energy emitted by invisible hydrogen and silane flame — and the lowest degree of matching to non-fire stimuli. This provides ultra-fast alarm, an unparalleled level of false alarm immunity, as well as a field-of-view unmatched in the industry — a full 130° horizontal degrees!

Enclosed in a rugged, explosion-proof housing, the UVS-H2 and UV/IRS-H2 are engineered for extreme applications and utilize the latest in SMART microprocessor sensor technology. They're capable of stand-alone operation or can be connected to a variety of control devices to create a dependable fire monitoring system. The field user can define sensitivity and time delay settings to further enhance false-alarm immunity and the built-in testing routines ensure continuous operation.

The UVS-H2 and UV/IRS-H2 are ideally suited for specialized applications where response time and a wide FOV are most critical — industrial and commercial locations that utilize hydrogen fuel cells, hydrogen gas generators, hydrogen refilling stations, and storage tanks as well as semiconductor facilities where silane combustion risks are present. Net Safety's UVS-H2 and UV/IRS-H2 flame detectors are globally certified Class I, Division 1 for hazardous locations to CSA, ANSI-UL/ISA, and ATEX technical and safety standards.

Net Safety has engineered a cost effective, high-performance hydrogen flame detector — ideal for even the most high-risk, industrial applications!



UV/IR-H2 HYDROGEN FLAME DETECTOR

Ultra-violet / Infrared Specially Tuned Optical Sensors

BCR-0040-00-007

SPECIFICATIONS	ANALOG		RELAY	HART
Operating Voltage Range	10 to 32 Vdc			
Power Consumption (at 24 Vdc) *with Heater	Nom 45 mA / 1.1 W Max 115 mA / 2.76 W * Nom 90 mA / 2.16 W Max 165 mA / 3.96 W	Nom 45 mA / 1.1 W Max 115 mA / 2.76 W * Nom 90 mA / 2.16 W Max 165 mA / 3.96 W	Nom 71 mA / 1.7 W Max 173 mA / 3.36 W * Nom 106 mA / 2.22 W Max 223 mA / 5.36 W	
Power Consumption (at 32 Vdc) *with Heater	Nom 35 mA / 1.12 W Max 105 mA / 3.36 W * Nom 70 mA / 2.24 W Max 145 mA / 4.64 W	Nom 35 mA / 1.12 W Max 105 mA / 3.36 W * Nom 70 mA / 2.24 W Max 145 mA / 4.64 W	Nom 57 mA / 1.72 W Max 158 mA / 5.06 W * Nom 92 mA / 2.84 W Max 198 mA / 6.34 W	
Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) / Operational -50°C to +75°C (-58°F to +167°F)			
Field of View	120 degrees horizontal / 95 degrees vertical			
Spectral Range	UV Radiation 185 to 260 nanometres (1850 to 2600 angstroms) IR Radiation in the 4.4 micron range			
Time Delay	DIP switch selectable to 0, 3, 5, 7 seconds			
Sensitivity Settings	DIP switch selectable to 8, 16, 24 or 32 counts per second			
Typical Response Time	<6 seconds [depending on fuel source, fire size and distance]			
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing			
Humidity Range	0 to 95% RH, non-condensing			
Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb) - does not include junction boxes			
Outputs	0 to 20 mA - Into a maximum loop impedance of 800 Ohms at 32 V dc or 150 Ohms at 11.0 V dc. Non-isolated loop supply	Form C contacts rated 1 Amp at 30 Vdc, 0.5 Amp at 125 Vac. Selectable energized/de-energized, latching/non-latching Fire relay Fault relay factory set as energized/non-latching, cannot be modified	HART Communication Protocol	
Certifications/Approvals	CSA - Class I, Division 1, Groups B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI/UL - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX/IECEX - Ⓢ II 2 G Ex d II B+H2 T5 Gb GOST-R - 1Ex d II BT5/H2 INMETRO - BR-Ex d II B+H2 T5 ABS Marine NEMA Type 4X • IP66 - Enclosure ratings			
Warranty	3 Years Electronics / 2 Years Sensors			

PERFORMANCE

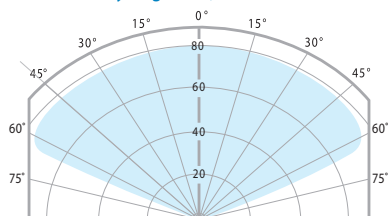
Summary of Distances

Fuel	Fire Size	Typical Response
hydrogen	24" plume	1.8 sec @ 55 ft.
silane	36" plume	2.0 sec @ 55 ft.

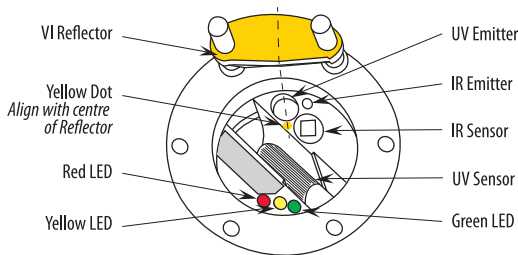
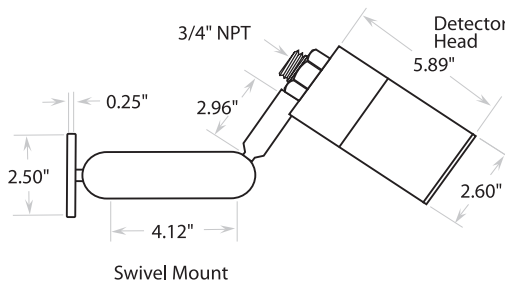
Immunity False Alarm Source (Modulated)

Stimuli	Immunity Range
Direct/indirect sunlight	total
1000W electric heater	5 ft
halogen, incandescent light	5 ft
fluorescent light	5 ft
arc welding	20 ft

Field of View - Hydrogen (24" plume - distances indicated in feet)



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ORDERING INFORMATION

- UV/IRS-H2-A** 0 to 20 mA Analog output
- UV/IRS-H2-AR** 0 to 20 mA Analog output with a Fire and Fault alarm relay (with JB-MPR-A/S)
- UV/IRS-H2-AH** 0 to 20 mA Analog Output and HART Communication Protocol (with JB-MPHF-A/S)
- UV/IRS-H2-AHR** 0 to 20 mA Analog Output and Fire and Fault Alarm Relays and HART Communication Protocol (with JB-MPHFR-A/S)

OPTIONS _____ -X (ATEX/IECEX), -H (Heated Optics), -SS (Stainless Steel)

NOTE: Specify flammable source when ordering

ACCESSORIES

- TL-UV/IR-KIT** - Test Lamp Kit
- LAT-120** - Laser Alignment Tool.
- AIR-SHIELD** - Air Shield (device protects lens from dirt build-up)
- SSK-4** - Sunshade Kit

Distributed by:

ISO 9001:2008



UV-H2 HYDROGEN FLAME DETECTOR

Ultra-violet Specially Tuned Optical Sensors

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Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) / Operational -50°C to +75°C (-58°F to +167°F)			
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Spectral Range	UV Radiation 185 to 260 nanometres (1850 to 2600 angstroms)			
Time Delay	DIP switch selectable to 0, 3, 5, 7 seconds			
Sensitivity Settings	DIP switch selectable to 8, 16, 24 or 32 counts per second			
Typical Response Time	<6 seconds [depending on fuel source, fire size and distance]			
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing			
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Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb) - does not include junction boxes			
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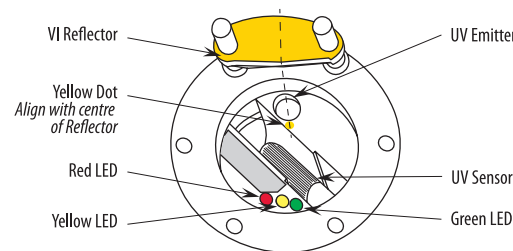
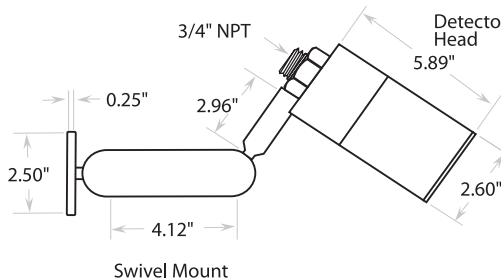
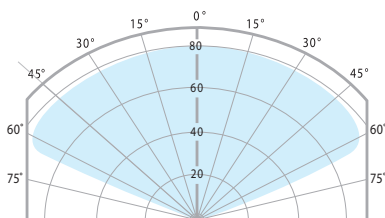
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halogen, incandescent light	3 ft
fluorescent light	10 ft

Field of View - Hydrogen (24" plume - distances indicated in feet)



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