

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 (UVS-H2 will also detect hydrocarbon and metal-based fires)**
- **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 fires is required. As an added advantage our UVS-H2 model is also capable of simultaneously detecting hydrogen, hydrocarbon and metal based fires!

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!

UVS-H2 HYDROGEN FLAME DETECTOR

Ultra-violet Specially Tuned Optical Sensors

BCR-0040-00-003

SPECIFICATIONS

"A" VERSION

"AR" VERSION

Operating Voltage Range	10 to 32 Vdc	
Power Consumption (at 24 Vdc) *with Heater	Nominal 45 mA / 1.1 W Maximum 115 mA / 2.76W * Nominal 90 mA / 2.16 W Maximum 165 mA / 3.96W	Nominal 45 mA / 1.1 W Maximum 95 mA / 2.28W * Nominal 90 mA / 2.16 W Maximum 145 mA / 3.48W
Operating Temperature Range	-50°C to +75°C (-58°F to +167°F)	
Field of View	130 degrees horizontal	
Spectral Range	UV Radiation 185 to 260 nanometers (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	4.5 seconds response time, 24" Hydrogen (H2) plume at 60ft./18.3m	
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)	
Outputs	0 to 20 mA - Into a maximum loop impedance of 800 Ohms at 32 V dc or 150 Ohms at 11.0V 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
Certifications	CSA - Class I, Division 1, Groups A, B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI/UL - Class I, Division 1, Groups A, B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX - EEx d II B+H2 T5 NEMA Type 4X • IP66 - Enclosure ratings	
Warranty	3 Years Electronics / 2 Years Sensors	

PERFORMANCE

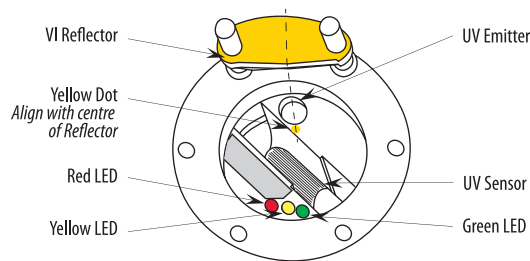
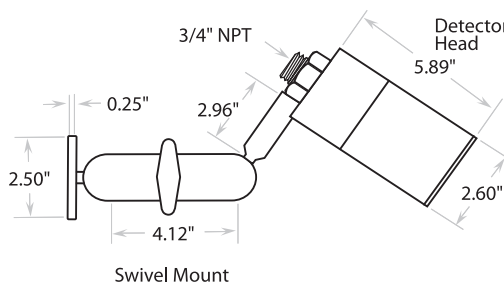
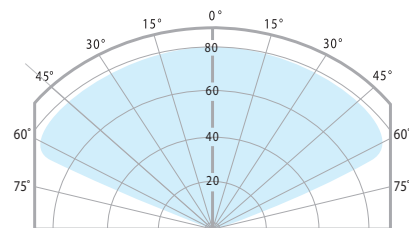
Summary of Distances (zero time delay, max sensitivity)

Fuel	Fire Size	Typical Response
hydrogen	24" plume	1.8 sec @ 55 ft.
silane	36" plume	2.0 sec @ 55 ft.
methane	1' x 1'	3.0 sec @ 120 ft.

Immunity False Alarm Stimuli

Stimuli	Immunity Range
Direct/indirect sunlight	total
1500W electric heater	10 ft
halogen, incandescent light	3 ft
fluorescent light	10 ft

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



ORDERING INFORMATION

UVS-H2-A 0 to 20 mA Analog output
UVS-H2-AR 0 to 20 mA Analog output with a Fire and Fault alarm relay (includes junction box)

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

NOTE: Specify flammable source when ordering

ACCESSORIES

JB-MPS-A - Junction Box (NEMA 4, IP67) c/w connector board (MVI switch) (Stainless Steel model available - JB-MPS-SS)

JB-MPNS-A - Junction Box (NEMA 4, IP67) c/w connector board (No MVI switch) (Stainless Steel model available - JB-MPNS-SS)

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

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Distributed by:

ISO 9001:2000



UV/IRS-H2 HYDROGEN FLAME DETECTOR

Ultra-violet / Infrared Specially Tuned Optical Sensors

BCR-0040-00-003

SPECIFICATIONS

"A" VERSION

"AR" VERSION

Operating Voltage Range	10 to 32 Vdc	
Power Consumption (at 24 Vdc)	Nominal 45 mA / 1.1 W Maximum 115 mA / 2.76W	Nominal 45 mA / 1.1 W Maximum 115 mA / 2.76W
*with Heater	* Nominal 90 mA / 2.16 W Maximum 165 mA / 3.96W	* Nominal 90 mA / 2.16 W Maximum 165 mA / 3.96W
Operating Temperature Range	-50°C to +75°C (-58°F to +167°F)	
Field of View	128 degrees horizontal	
Spectral Range	UV Radiation 185 to 260 nanometers (1850 to 2600 angstroms) IR Radiation in the 3.09 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	1.8 seconds average response time, 24" Hydrogen (H2) plume at 55ft./16.7m	
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)	
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
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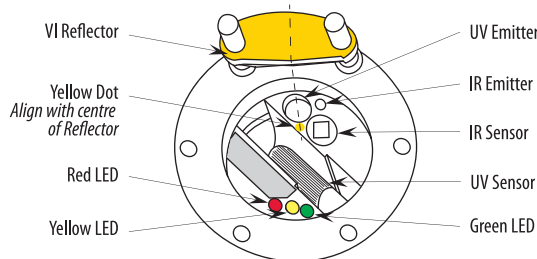
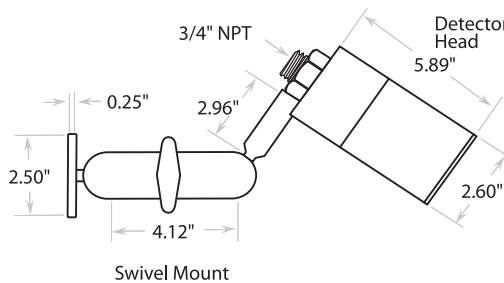
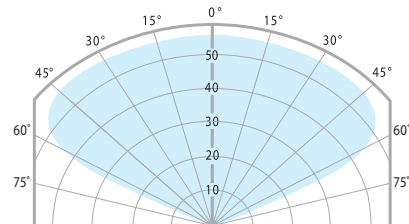
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silane	36" plume	2.0 sec @ 55 ft.

Immunity False Alarm Stimuli

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)



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 (includes junction box)

OPTIONS ___-X (ATEX), H- (Heated Optics),
___-SS (Stainless Steel)

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