

UV/IR Flame Detector

Ultraviolet and Infrared Sensors

Net Safety's Ultra-violet/Infrared (UV/IR) flame detector delivers exceptional performance with many distinct functions and features. Two precise spectrums of radiation must be recognized and confirmed by highly tuned sensors for the UV/IR to initiate a fire condition. This accurate and reliable flame monitoring technology combined with immunity to arc welding, hot body radiation, lightning and sunlight greatly reduces costly false alarms while providing critical safety performance to your site and personnel.



- Two Radiation Wavelengths Necessary For Alarm— Minimize False Alarm Events
- Lowest Power Consumption of Any Flame Detector On the Market
- Manual and Automatic Testing of Optical Surfaces — Constatly Monitors Internal Electronics
- Designed for Extreme Conditions, Operational From -50°C — +75°C
- Global Certifications and Approvals
- Wide Voltage Range Allows For Greater Stability and System Compatibility
- Field-selectable Sensitivity and Delay Settings Allows Operators To Fine Tune At Installation Site
- Wide Area Coverage, Extended Range with Fast Response Times
- Analog, Relay, RS 485 Digital Modbus, and HART Outputs Available
- 3 Year Warranty Electronics / 2 Years on Sensors

Enclosed in a rugged, explosion-proof housing, the Net Safety UV/IR flame detector uses the latest in modular microprocessor and UV/IR sensor technology — delivering accurate and reliable monitoring for hydrocarbon based fires. It's capable of stand-alone operation or can be connected to a variety of networked safety systems to create a dependable fire monitoring system.

The UV/IR Flame Detector has many unique features which make it one of the industries best: an extra wide field of view

— up to 120 degrees; user defined sensitivity and time delay settings can be completed in the field with no special tools required; one of the lowest power consumption levels and widest voltage range available on the market; plus the option of a separated HART communication interface at ground level.

Net Safety has engineered a superior UV/IR flame detector that is simple to operate and maintain while delivering all the security and performance required for high-risk, industrial installations!

UV/IR Flame Detector

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 / 1.72W 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		
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 Factory Mutual (FM) 3260 SIL2 by exida® ABS Marine NEMA Type 4X • IP66 - Enclosure ratings		
Warranty	3 Years Electronics / 2 Years Sensors		

ORDERING INFORMATION

UV/IRS-A	4-20mA Analog Output
UV/IRS-AR	4-20mA Analog output with a Fire and Fault alarm relay (JB-MPR-A/S included)
UV/IRS-AH	4-20mA Analog Output and HART Communication Protocol (JB-MPHF-A/S included)
UV/IRS-AHR	4-20mA Analog Output and Fire and Fault Alarm Relays and HART Communication Protocol (JB-MPHFR-A/S included)

ADDITIONAL APPROVALS : -X (ATEX/IECEX)
ENCLOSURE MATERIAL: Stainless Steel (-SS) [Aluminum is Standard]
ADDITIONAL FEATURES : -H (Heated Optics)

Ordering Matrix Example:

UV/IRS-AHR-X-SS-H
(Detector - Output - Additional Approval - Enclosure Material - Optional Features)

UV/IR Flame Detector

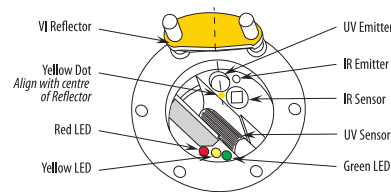
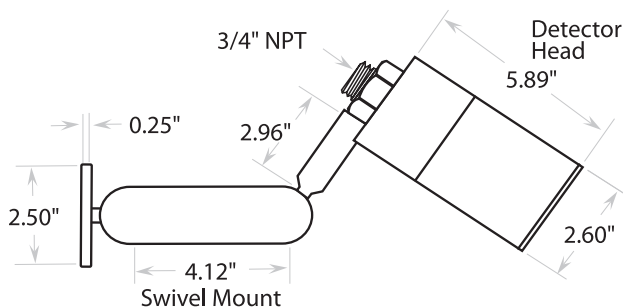
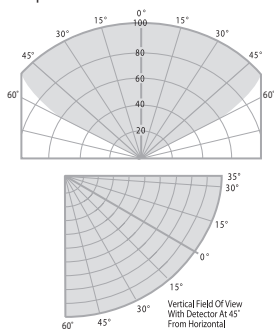
Specifications con't - Termination Boxes - Accessories

Summary of Distances

Fuel	Fire Size	Typical Response
n-heptane	1' x 1'	< 11sec @ 140 ft.
gasoline	1' x 1'	< 6sec @ 120 ft. (< 3sec @ 50 ft.)
methane	30" plume	< 6sec @ 100 ft.

Example Field of View - Methane

32" plume - indicated in feet - consult factory for other flame types



Immunity False Alarm Stimuli

Stimuli	Immunity Range
Direct/Indirect Sunlight	total
1500W Heater	10 ft
Halogen, Incandescent Light	3 ft
Florescent Light	10 ft
Arc Welding	30 ft

TERMINATION BOXES

Class 1, Division 1, Groups BCD - Class 1, Zone 1 – Enclosure rated NEMA 4X, IP67 (See man-0081 for full specifications)

JB-MPS-A/S	Termination box - Analog Output - Switch (for remote MVI testing) & Test Jacks - Aluminum or Stainless Steel
JB-HRTCOM-A/S	Separated HART Communication Input Kit (JB-MPH-A with installed HPT-001) - Aluminum or Stainless Steel

ACCESSORIES

LAT-120	Laser alignment tool assembly - used to define area of coverage for all NSM flame detectors
AIR-SHIELD	Air Shield assembly (aluminum), supplied clean instrument air keeps lens clear in areas with heavy airbourne particulate
HPT-001	HART Communicator port - Intrinsically Safe connection mounts to connected JB-MPHF & JB-MPHFR
FH-SHROUD	Field of View Restrictor Anodized (Red) for "S" series fire detectors (aluminum)
UN-MK-41	1" Pipe Mounting kit - Stainless steel
UN-MK-42	2" Pipe Mounting kit - Stainless steel
UN-MK-43	3" Pipe Mounting kit - Stainless steel
SSK-4	Sun shade kit/rain guard for "S" series flame, stainless steel - mounts directly to flame detector
SSK-1	Sun shade kit for "S" series flame, stainless steel - mounts directly to flame detector
TL-MP-KIT	Universal test lamp kit - certified rechargeable hand-held unit - produces accurate fire simulation (UV and IR sources)
TL-MP-KIT-X	Universal test lamp kit [ATEX] - certified rechargeable hand-held unit - produces accurate fire simulation (UV and IR sources)

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™Please refer to manuals for complete specifications.