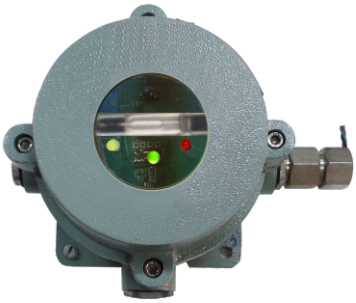
FLAME DETECTOR

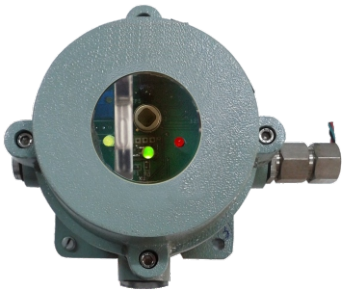
ELECTRIC SPARK DETECTOR / FIRE CONTROLLER

A highly sensitive instrument to detect flames / electric spark, in environments where catastrophic consequences could result.



UV FLAME DETECTOR

IR FLAME DETECTOR



UV-IR FLAME DETECTOR

SCAN AN AREA INSTEAD OF SPOT DETECTION

The HNL Flame Detector is a compact and highly responsive Flame / Fire Detector. The Unit incorporates an extremely sensitive sensing circuit that responds to high energy sources in a bandwidth of 185 - 260 nm with optimum spectral sensitivity centered around 200 nm.

Thus HNL Flame Detector is the most effective in early detection of fire before they can possibly cause damage. In contrast, other types of detectors operate at a disadvantage. Smoke detectors do no operate until the fire has developed into a sufficient size to accelerate smoke along with strata of hot air rising to the detector.

It is particularly suitable for use in outdoor applications because it is not affected by wind or rain. Various models to detect & control the presence or absence of flame are available.

SPECIAL FEATURES

- Sensitive to virtually all fires including Hydrogen and Hydrocarbon
- Relay Output
- MODBUS (Optional)
- Virtually immune to:
  1. Direct & reflected sunlight
  2. Artificial Light source
- Self diagnosis including sensor check
- Ex-Proof / Weather-Proof

APPLICATIONS

- Wherever highly combustible material are involved
- Where there is a need for instantaneous response to flame
- Whenever unsupervised areas require automated fire protection
- Whenever there is a large capital investment to be protected

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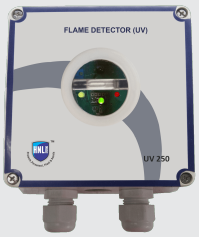
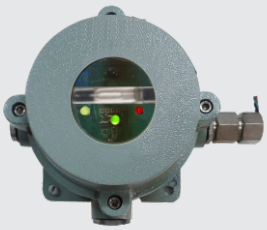
UV FLAME DETECTOR





UV 250
(Weather Proof)

UV 250
(Ex-Proof)

UV 250

UV FLAME DETECTOR

This fire detection technology focuses on detecting heat, smoke or flame (light). These are three major characteristics of the fire. A UV detector uses a sensor tube that detects radiation emitted in the range of bandwidth 185 nm to 260 nm. The UV radiation is the fastest method for fire detection because the first energy released from a fire source is the ultraviolet. This energy travels through air at the speed of light and it is not dissipated by the air currents. UV Flame Detector is an optical device; therefore they can response to flame less than second. The Ultraviolet flame detector detects flames by sensing the ultraviolet (UV) radiation produced during a combustion process.

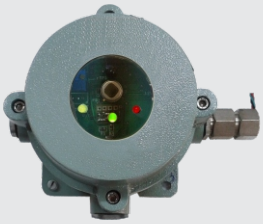
This traditional method of detection is usable inside buildings and enclosures where the detector is isolated from sources of false alarms such as lightning and arc welding. UV Flame Detector is the most flexible general purpose optical fire detector available. They are fast, reliable, have few false alarm sources and respond to virtually any fire.

IR 250

IR FLAME DETECTOR

IR (Infrared) flame detectors monitor the heat radiation generated by fire and open flames, with a response time of roughly 3 to 5 seconds. Working within the infrared spectral band, these flame detection systems have a sensitivity range between approximately 4.3 to 4.4 micrometers. This range covers the resonance frequency of Carbon Dioxide (CO2), which is generated in large amounts by the burning of hydrocarbon materials such as wood and fossil fuels. Hot CO2 gases from fires produce a peak in total radiation emission, as well as a specific spectral pattern in the infrared range, both of which are easily detectable by IR flame detectors.

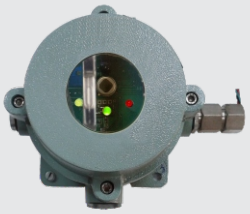
IR FLAME DETECTOR



IR 250
(Weather Proof)

IR 250
(Ex-Proof)

UV-IR FLAME DETECTOR



UV-IR 250
(Weather Proof)

UV-IR 250
(Ex-Proof)

UV-IR 250

UV-IR FLAME DETECTOR

UV-IR Flame Detector is a combination of a UV andIR flame detector which utilizes a microprocessor for sophisticated electronic signal analysis. When a UV optical sensor is integrated with an IR sensor, a dual band detector is created that is sensitive to the UV and IR radiation emitted by a flame. The combined UV-IR flame detector offers increased immunity over the UV detector, operates at moderate speeds of response, and is suited for both indoor and outdoor use. As with UV detectors, however, the detection range of these instruments may be reduced by heavy smoke.

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UV, IR, UV-IR FLAME DETECTORS

TYPICAL APPLICATION

APPLICATION	UV	UV-IR	IR
Aircraft hangars		✓	✓✓
Atriums		✓	✓✓
Battery storage rooms / data communication	✓	✓✓	
Biogas		✓	✓✓
Car, bus, tram and train parking's		✓	✓✓
Clean rooms: semi-conductor, pharmaceutical & hospital rooms	✓	✓✓	
CNG filling / refilling for buses (public transportation)		✓✓	✓✓
Cold Storage	✓✓		
Conveyer Belts			✓✓
Diesel Engine Rooms		✓	✓✓
Electric power transformers		✓✓	✓
Engine test cells / rooms	✓	✓✓	✓✓
Fume hoods	✓✓	✓	
Gas Cabinets	✓	✓✓	✓✓
Gasoline / Gas Engine Rooms	✓	✓✓	✓✓
Service stations and plug-in (hybrid) charging stations		✓✓	✓✓
Heating Rooms for chemicals	✓✓	✓	
Hydraulics e.g. Extruders		✓	✓✓
Indoor chemical, fuel and solvent storage	✓	✓✓	✓
Indoor Hydrocarbons storage and processing	✓	✓	✓✓
Indoor Hydrogen storage and processing	✓✓	✓✓	
Radio amplifier rooms / Isolators for antennas	✓✓		
Laboratories	✓	✓✓	✓
Loading and unloading terminals: truck, rail, & marine		✓✓	✓✓
Monitoring of machinery	✓	✓✓	✓✓
Outdoor chemical, fuels, paint and solvent storage		✓	✓✓
Outdoor Hydrogen storage and processing		✓✓	
Oil and Gas pipe line and pumping stations		✓	✓✓
Paint spray booths			✓✓
Recycling and waste processing plants		✓	✓✓
Wind Turbines		✓	✓✓

Note* : ✓ Suitable ✓✓ Recommended

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SPECIFICATIONS

Technology	UV Technology	IR Technology	UV-IR Technology
Model no.	UV 250	IR 250	UV-IR 250
Response Time	< 3 seconds		
Adjustable Time Delay	3 or 6 seconds		
Detection Modes	UV	IR flicker	**Standard setting:** UV, IR flicker,
			Temperature
	-	-	**Custom setting:** UV only, IR flicker
			only, IR flicker and Temperature
Cone of vision	120° minimum		
Optical Self-Test	Automatic continuous optical path		
Input Power	20-35 VDC, 125 mA standby, 230 mA alarm @ 24 VDC		
Relay Contact Ratings	2 amps @ 28 VDC or 300 VAC resistive		
	1/8 HP @ 120/240 VAC		
Analog Signal	Standard 0-20 mA, self-powered		
	Malfunction 0-2 mA		
	Ready 4 mA		
	UV Alarm 8 mA	IR Alarm 8 mA	UV Alarm 8 mA
	-	-	IR Alarm 12 mA
	Delayed Alarm 20 mA		
Relay Outputs	NO and NC, 2 Amp (Instantaneous, non-latching) fire alarms;		
	Delayed Alarm (3 or 6 seconds, latching or non-latching)		
Alarm Reset	Automatic or manual when flame is no longer detected		
Visual Indicators	Detector Ready (Green LED);		
	Malfunction (Yellow LED);		
	Alarm/Delayed Alarm (Red LED)		
Field Connections	0 - 20 mA output – three wire shielded cable		
	All other connections: 18 AWG (.35mm²) to 14 AWG (2.5mm²)		
Communication	Available with optional MODBUS (RS-485) facility / HART		
Operating Temperature	-40°F to 185°F (-40°C to 85°C)		
Dimensions	125 X 125 X 71 mm		
Weight	Approx. 350 grams (Weather Proof) / Approx. 2 kg (Ex-Proof)		
Housing	UV 250(WP) - PP	IR 250(WP) - PP	UV-IR 250(WP) - PP
	UV 250 - Cast Aluminum	IR 250 - Cast Aluminium	UV-IR 250 - IP 66, NEMA 4, EN 60079-1:2007
Compliance	EN 54-10, CCOE, SIL2, FM , ATEX, Vibration test		

Note : Specifications and Features will vary with application. There may be changes overtime due to continuous development process.

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