Optical UV/IR Flame Detector

P/N 764002

The Optical UV/IR Detector high speed response is being installed in military tactical and combat vehicles.

The detector is microcontroller based enabling adjustment of sensitivity and other features to a specific application.

A serial communication port provides outputs for maintenance and diagnostics.

Only simultaneous detection of radiation in the UV and IR ranges of the electro-magnetic spectrum (which are characteristic of fire) and above pre-set threshold will result in a detector output signal.

All other types of radiation sources, not identified as fires, will not be detected.

Main Features

- UV/IR Dual-Sensor
- High speed response - less than 3 msec
- Sensitivity to slow growth fires
- High reliability
- Immunity to false alarm
- Discrimination – optional
- Automatic and manual Built-In Test (BIT)
- RS-485 Modbus compatible
- MTBF minimum 150,000 hours

Detection Specifications

Spectral Response	UV/IR
Response Time	Max. 3 msec. - when detector is exposed to vehicle penetration or explosive fire
Detection Threshold	At least one detection signal every 5 seconds when detector is aimed at the base of 5" (12.5 cm) gasoline pan fire at a distance of 31.5" (80 cm) from the center of the flame
Field of View	90° horizontal, 90° vertical
Built-in-Test (BIT)	Automatic and manual check of window cleanness, sensor and electrical circuitry
Discrimination (Option)	Disables detection signal when no fuel ignition/ explosion/fire occurs following penetration
Temperature Range	-40°F to 160°F (-40°C to 70°C)
Humidity	Up to 95%

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Electrical Specifications

Power Supply	Operating Voltage: 16-33 VDC
Power Consumption	Max. 20mA
Electrical Connection / Pinout	Model No. 764002 Connector MS3112E-10-6P

Power	A	Spare	D
Return	B	RS-485-	E
BIT *	C	RS-485+	F

*** Output:** 2V (Normal Operation), 5V (Fire Signal), 0V (Fault)

Electromagnetic Compatibility	EMI/RFI per MIL-STD-461E

Mechanical Specifications

Dimensions	3.35" x 3.35" x 2.34" (85 x 85 x 58.5 mm)
Weight	1.2 lb (0.55 kg)
Enclosure	Aluminum, white epoxy enamel finish.
Environmental Standards	Meets MIL-STD-810F for high temp, low temp, humidity, vibration, shock, waterproof, dust, salt & fog

Accessories

Fire Simulator	P/N 706905

False Alarm Susceptibility

The detector shall not provide a detection signal under any of the following conditions:

Radiation Description	Immunity Distance (in.)
Direct or reflected sunlight	IAD*
Incandescent frosted glass light, 100 W	IAD*
Incandescent clear glass light, rough service, 100 W	IAD*
Fluorescent light with white enamel reflector, 40W	IAD*
Ambient light extremes (darkness to bright light with snow, water, rain, desert glare and fog	IAD*
Bright color clothing, including red and safety orange	IAD*
Electronic flash (180 watt-seconds minimum output)	IAD*
Movie light, 625W quartz DWY lamp (Sylvania S.G-55)	24
Red vehicular dome light	IAD*
Blue-green vehicular dome light 24V of direct current (dc)	IAD*
Flashlight	IAD*
Electric arc 15/32 in. gap at 4000 VAC	1
Arc welding 5/32 in. rod 100A	24
Radiation heater, 1500W	IAD*
Radiation heater, 1000W with fan	IAD*
Muzzle flash from M16 rifle, 3 round burst	2
Direct or reflected sunlight	IAD*
Incandescent frosted glass light, 100 W	IAD*

**IAD – Immune Any Distance*