

UV/IR Flame Detector

40/40UFL

SharpEye

The new SharpEye UV-IR High Speed Optical Flame detector 40/40UFL is designed to meet two major requirements:

- High-Speed Response (20 msec)
- High Reliability (immunity to false alarm)

This detector is based on our well known military detector used in Armored Vehicle Explosion Suppression System combined with the industrial UV-IR detectors 20/20LB and 40/40LB.

The UV/IR flame detector senses radiant energy in the short wave section of both the ultraviolet and infrared portions of the electromagnetic spectrum. The signals from both sensors are analyzed for frequency, intensity and duration. Simultaneous detection of radiant energy in both the UV and IR sensors triggers an alarm signal.

The UV sensor incorporates a special logic circuit that helps prevent false alarms caused by solar radiation.



FEATURES & BENEFITS

- UV/IR Dual-Sensor
- High Speed Response-20 msec to flash fire
- Solar bind
- Automatic Built-In-Test (BIT) and manual-to assure continued reliable operation
- Heated window-for operation in harsh weather conditions (snow, ice, condensation)
- Multiple output options for maximum flexibility and compatibility
 - relays (2) for Alarm and Fault
 - Analogue output for fast detection
 - 0-20mA (stepped)
 - HART Protocol for maintenance and asset management
 - Designed to Safety Integrity Level 2 (SIL2-TUV)
 - 5-year warranty
 - User programmable via HART or RS-485

Accessories



Simulators
Up to 9m



Tilt Mount
Wall Mount bracket



Duct Mount
In high temperatures



U-Bolt/Pole Mount
2" ~ 3" Pipe mounting



Laser Pointer
Optimizing detector location



Air shield
Using under tough environmental conditions



Weather Protector
Protecting the detector from rain and snow

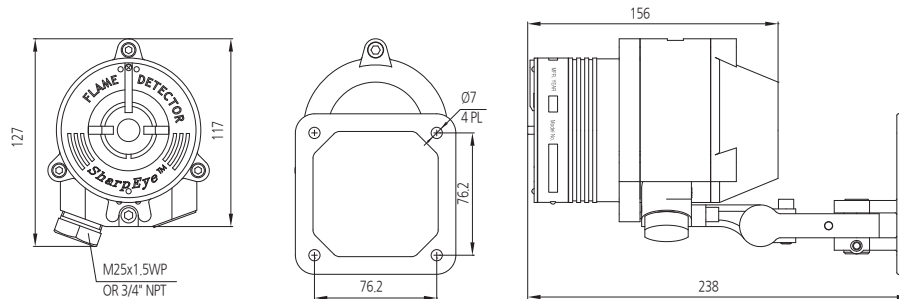


Mini Laptop Kit
Re-configure settings or perform diagnostics



USB RS485 Harness
Re-configure settings or perform diagnostics

Dimension (Unit:mm)



GENERAL SPECIFICATIONS

Spectral Response	UV: 0.185 - 0.260 μm; IR: 2.5-3.0 μm					
Detection Range (at highest Sensitivity Setting for 1ft ² (0.1m ²) pan fire)	Fuel	ft / m	Fuel	ft / m	Fuel	ft / m
	n-Heptane	65 / 20	Ethanol 95%	23 / 7	LPG *	16 / 5
	Gasoline	65 / 20	Methanol	26 / 8	Polypropylene Pellets	16 / 5
	Diesel Fuel	40 / 13.5	IPA (Isopropyl Alcohol)	43 / 13	Ammonia*	16 / 5
	JP5	42 / 14	Hydrogen*	23 / 7	Silane*	20 / 6
	Kerosene	42 / 14	Methane*	16 / 5	Office Paper	16 / 5
	* 20" (0.5m) high, 8" (0.2m) width plume fire					
Response Time	Typically 3 seconds. High speed 20 msec response to saturated signal					
Adjustable Time Delay	Up to 30 seconds					
Sensitivity Ranges	1 ft ² (0.1m ²) n-heptane pan fire from 65 ft (20m)					
Field of View	Horizontal 100°; Vertical 95°					
Built-in-Test (BIT)	Automatic (and Manual)					
Temperature Range	Operating:	-67°F to +167°F		(-55°C to +75°C)		
	Option:	-67°F to +185°F		(-55°C to +85°C)		
	Storage:	-67°F to +185°F		(-55°C to +85°C)		
Humidity	Up to 95% non-condensing (withstands up to 100% RH for short periods)					
Heated Optics	To eliminate condensation and icing on the window					

ELECTRICAL SPECIFICATIONS

Operating Voltage	24 VDC nominal (18-32 VDC)
Power Consumption	Standby: Max. 90mA (110mA with heated window) Alarm: Max. 130mA (160mA with heated window)
Cable Entries	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
Wiring	12 - 22AWG (2.5mm ² - 0.3mm ²)
Electrical Input Protection	According to MIL-STD-1275B
Electromagnetic Compatibility	EMI/RFI protected to EN61326-3 and EN61000-6-3
Electrical Interface	The detector includes twelve (12) terminals with five (5) wiring options (factory set)

OUTPUTS

Relays	Alarm, Fault and Auxiliary SPST volt-free contacts rated 2A at 30 VDC		
0-20mA (stepped)	Sink (source option) configuration Fault: 0 +1mA IR: 8mA \pm 5% Alarm: 20mA \pm 5% BIT Fault: 2mA \pm 10% UV: 12mA \pm 5% Resistance Loop: 100-600 Ω Normal: 4mA \pm 10% Warning: 16mA \pm 5%		
HART Protocol	Optional HART communications on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management, available in mA source output wiring options		
RS-485	RS-485 Modbus compatible communication link that can be used in computer controlled installations		

MECHANICAL SPECIFICATIONS

Materials	- Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish
Mounting	Stainless Steel 316L with electro polish finish
Dimensions	Detector 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)
Weight	Detector (St.St.) 6.1 lb (2.8 kg)
	Detector, aluminum 2.8 lb (1.3 kg)
	Tilt mount 2.2 lb (1.0 kg)
Environmental Standards	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp
Water and Dust	IP66 and IP67 per EN60529, NEMA 250 6P

APPROVALS

Hazardous Area	ATEX and IECEx	Ex II 2 GD, Ex de IIC (Ta -55°C to + 75°C) Ex td A21 IP66/X7 T 95°C	Ex de IIC (Ta -55°C to + 85°C) Ex td A21 IP66/X7 T 105°C
	FM/FMC	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G	
Performance	EN54-10 (VdS Pending) FM3260		
Reliability (designed to meet)	IEC61508 - SIL2 (TUV)		

ACCESSORIES

Fire Simulator	20/20-310	U-Bolt/Pole Mount	789260-2 (2" pole)	Mini Laptop Kit	777820	Laser Pointer	777166
Tilt Mount	40/40-001		789260-1 (3" pole)	Weather Protector	777163	(Detector area coverage)	
Duct Mount	777670	USB RS485 Harness Kit	794079-5	Air Shield	777650		