

UV/IR Flame Detector

40/40L-LB

SharpEye

Model 40/40L (or Lb, with Built-in-test option) provides a combination of UV and IR sensors, where the IR sensor operates at a wavelength of 2.5–3.0 μm , and can detect hydrocarbon-based fuel and gas fires, hydroxyl and hydrogen fires, as well as metal and inorganic fires.

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

Due to increased reliability, the 40/40 Series warranty period has been extended to 5years and is SIL2 (TUV) approved to IEC 61508.



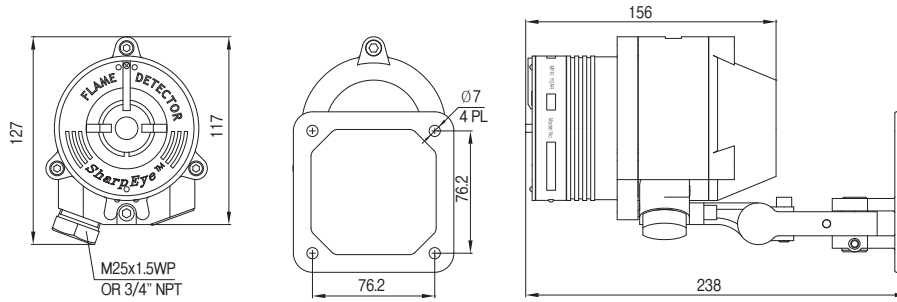
FEATURES & BENEFITS

- UV/IR Dual-Sensor
 - Fast Response-200 msec to flash fire
 - Solar blind
 - 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 (3) for Alarm, Fault and Auxiliary
 - 0-20mA (stepped)
 - HART Protocol for maintenance and asset management
 - RS-485, Modbus Compatible
 - High Reliability-MTBF-minimum 150,000 hours
 - Approved to Safety Integrity Level 2 (SIL2-TUV)
 - model 40/40LB only
 - 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) 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)
Weight	
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 de IIC (Ta -55°C to + 85°C) Ex ID A21 IP66/X7 T 95°C Ex ID 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		