

40/40L-LB

UV-IR Flame Detector Series



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

APPLICATIONS

- Offshore Oil & Gas installations
- Onshore Oil & Gas installations and pipelines
- Chemical plants Petrochemicals plants Storage Tank farms Aircraft hangars
- Power Generation facilities
- Pharmaceutical Industry
- Printing Industry
- Warehouses
- Automotive
- Explosives & Munitions
- Waste Disposal facilities
- Aerospace Industry
- Paint, Polymer and Glue processes

KEY FEATURES

- **Multi spectrum design - for long distance detection and high false alarm immunity**
- **Sensitivity selection - to ensure no zone crossover detection**
- **Automatic and Manual Built-In-Test (BIT) - 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)**
- **5-Year Warranty**
- **User Programmable via HART or RS-485**
- **Ex approved for Zone 1 hazardous area location**
 - ATEX
 - IECEx
 - FM/FMC
 - CSA
- **3rd party performance tested**
 - EN54-10 (VdS)
 - FM3260
- **Marine Approval**
 - MED 'Wheelmark' approval (DNV)

40/40L/LB

SPECIFICATIONS Specifications subject to change without notice

Detection Range	Fuel	ft/m	Fuel	ft/m	Fuel	ft/m
(Highest Sensitivity Setting for 1 ft ² (0.1m ²) pan fire.)	n-Heptane	50 / 15	Kerosene	37 / 11	Methane*	16 / 5
	Gasoline	50 / 15	Ethanol 95%	25 / 7.5	LPG*	16 / 5
	Diesel Fuel	37 / 11	Methanol	25 / 7.5	Polypropylene Pellets	13 / 4
	JP5	37 / 11	IPA (Isopropyl Alcohol)	16 / 5	Office Paper	16 / 5

Spectral Response	UV: 0.185 - 0.260 μm; IR: 2.5-3.0 μm	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
Response Time	Typically 5 seconds. 200 msec to flash fire	RS-485	RS-485 Modbus compatible communication link that can be used in computer controlled installations
Adjustable Time Delay	Up to 30 seconds	Electrical Input Protection	According to MIL-STD-1275B
Sensitivity Ranges	1 ft2 (0.1m2) n-heptane pan fire from 50 ft (15m)	Electromagnetic Compatibility	EMI/RFI protected to EN61326-3 and EN61000-6-3
Field of View	Horizontal 100°; Vertical 95°	Electrical Interface	The detector includes twelve (12) terminals with five (5) wiring options (factory set)
Built-In-Test (BIT)	Automatic (and Manual)	MECHANICAL SPECIFICATIONS	
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)	Materials	<ul style="list-style-type: none"> Stainless Steel 316L with electro polish finish Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version) SPST volt-free contacts rated 2A at 30 VDC
Humidity	Up to 95% non-condensing (withstands up to 100% RH for short periods)	Mounting	Stainless Steel 316L with electro polish finish
Heated Optics	To eliminate condensation and icing on the window	Dimensions	Detector 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)
ELECTRICAL SPECIFICATIONS		Weight	Detector (St.St.) 6.1 lb (2.8 kg) Tilt mount 2.2 lb (1.0 kg) Detector, aluminum 2.8 lb (1.3 kg)
Operating Voltage	24 VDC nominal (18-32 VDC)	Environmental Standards	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp
Power Consumption	Standby: Max. 90mA (110mA with heated window) Alarm Max. 130mA (160mA with heated window)	Water and Dust	IP66 and IP67 per EN60529, NEMA 250 6P
Cable Entries	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO	Part Number	85-4040LB
Wiring	12 - 22AWG (2.5mm ² - 0.3mm ²)		
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 ± 5% Warning: 16mA ± 5% BIT Fault: 2mA ± 10% UV: 12mA ± 5% Alarm: 20mA ± 5% Normal: 4mA ± 10% Warning: 16mA ± 5% Resistance Loop: 100-600 Ω		



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