keep a SharpEye™ on your safety

40/40M 40/40I **40/40L-LB** **40/40L4-L4B** 40/40U-UB 40/40R

40/40 UV/IR
Flame Detector Series

Maximum choice of features in a high performance package

SharpEye™

Spectrex offers two versions of the new 40/40 Series UV/IR Flame Detectors:

Model 40/40L (& LB) *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.*

Model 40/40L4 (& L4B) *is identical to the 40/40L except that the IR sensor works at a wavelength of 4.5 µm and is only suitable for hydrocarbon-based 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.

FEATURES & BENEFITS

- UV/IR Dual-Sensor
- High-Speed Response - 150 msec Response to Saturated Signal
- 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)
- 5-Year Warranty
- User Programmable via HART or RS-485
- Ex approved for Zone 1 hazardous area location
  - ATEX
  - IECEx
  - FM
  - CSA
- 3rd party Performance Tested
  - EN54-10 (LPCB)
  - FM3260 (FM)

*option

APPLICATIONS (model dependent)

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 Industry
Explosives & Munitions
Waste Disposal facilities
Aerospace Industry
Paint, Polymer and Glue processes

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GASTECH AUSTRALIA

GENERAL SPECIFICATIONS

Spectral Response	40/40L–LB: UV: 0.185 - 0.260 µm; IR: 2.5-3.0 µm 40/40L4–L4B: UV: 0.185 - 0.260 µm; IR: 4.4-4.6 µm

Detection Range (at highest Sensitivity Setting for 1ft² (0.1m²) pan fire)

Fuel	ft / m	Fuel	ft / m	Fuel	ft / m
n-Heptane	50 / 15	Ethanol 95%	25 / 7.5	LPG *	16 / 5
Gasoline	50 / 15	Methanol	25 / 7.5	Polypropylene Pellets	13 / 4
Diesel Fuel	37 / 11	IPA (Isopropyl Alcohol)	25 / 7.5	Office Paper	16 / 5
JP5	37 / 11	Hydrogen**	16 / 5	* 20" (0.5m) high, 8" (0.2m) width plume fire ** 40/40L/LB only	
Kerosene	37 / 11	Methane*	16 / 5		

Response Time	Typically 5 seconds. High speed 150 msec response to saturated signal
Adjustable Time Delay	Up to 30 seconds
Sensitivity Ranges	1 ft² (0.1m²) n-heptane pan fire from 50 ft (15m)
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. 100mA (150mA with heated window) Alarm: Max. 150mA (200mA with heated window)
Cable Entries	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
Wiring	12 - 22AWG (2.5mm² - 0.3mm²)
Electrical Input Protection	According to MIL-STD-1275B
Electromagnetic Compatibility	EMI/RFI protected to EN50130-4
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 5A at 30 VDC or 250 VAC.

0-20mA (stepped)

Sink (source option) configuration

Fault:	0 +1mA	IR:	8mA ± 5%	Alarm:	20mA ± 5%
BIT Fault:	2mA ± 10%	UV:	12mA ± 5%	Resistance Loop:	100-600 Ω
Normal:	4mA ± 10%	Warning:	16mA ± 5%		

HART Protocol	HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management
RS-485	RS-485 Modbus compatible communication link that can be used in computer controlled installations

MECHANICAL SPECIFICATIONS

Materials Enclosure options	- 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 3.5" x 4.5" x 6.1" (90 x 114 x 156 mm)
Weight	Detector (St.St.) 5.5 lb (2.5 kg) Detector, aluminum 2.5 lb (1.2 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 IIB+H2 T5 (-55°C to + 75°C) Ex tD A21 IP66/X7 T 95°C	Ex de IIB+H2 T4 (-55°C to + 85°C) Ex tD A21 IP66/X7 T 105°C
	FM / CSA	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G	
Performance	EN54-10 (LPCB) FM-3260 (FM)		
Reliability	IEC61508 - SIL2 (TUV)		

ACCESSORIES

Fire Simulator	20/20-311	**Weather Protector**	777163	**Laser Pointer**	777166
Tilt Mount	40/40-003	**Air Shield**	777161	(Detector area coverage)	

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