keep a SharpEye™ on your safety

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

40/40U-UB

UV Flame Detector

A low cost solution in a durable, high spec package

SharpEye™

The new 40/40 UV Flame Detector detects hydrocarbon-based fuel and gas fires, invisible hydrogen flames, and fires from hydrides, ammonia, silane and other organics. The new design is the most durable and weather resistant UV flame detector currently on the market. Its new features include a heated window, to eliminate condensation and icing; HART capabilities, for digital communications; lower power requirements; and a compact, lighter design.

Due to increased reliability, the 40/40 Series warranty period has been extended to 5 years and is approved to IEC 61508 Safety Integrity requirements of SIL2.

The model 40/40UB includes a Built-in-Test (BIT) feature, whereas the 40/40U model does not.

Note: This type of detector should not be exposed to UV radiation sources such as welding, sparks, and electric arcs as it will cause false alarms.

FEATURES & BENEFITS

- UV spectrum design
- 3 seconds response
- 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
  - CSA
- 3rd party Performance Tested
  - EN54-10 (LPCB)
  - FM3260 (FM)

APPLICATIONS

Chemical plants
Petrochemicals plants
Power Generation facilities
Pharmaceutical Industry
Printing Industry
Warehouses
Automotive Industry
Aerospace
Explosives & Munitions
Waste Disposal facilities
Paint and solvent processes

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SPECTREX INC.

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GENERAL SPECIFICATIONS

Spectral Response	UV 0.185-0.260 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%	37 / 11	LPG *	40 / 12
Gasoline	50 / 15	Methanol	37 / 11	Polypropylene Pellets**	18 / 5
Diesel Fuel	37 / 11	IPA (Isopropyl Alcohol)	37 / 11	Office Paper	20 / 6
JP5	37 / 11	Hydrogen	33 / 10	* 20" (0.5m) high, 8" (0.2m) width plume fire	
Kerosene	37 / 11	Methane*	40 / 12		

Response Time	Typically 3 seconds
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	Warning:	16mA ± 5%
BIT Fault:	2mA ± 10%	Alarm:	20mA ± 5%
Normal:	4mA ± 10%	Resistance Loop:	100-600 Ω

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)	

Specifications subject to changes

For more information view manual or website www.spectrex-inc.com

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