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 40/40U-UB 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 SIL2 (TUV) approved to IEC 61508.

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) Model 40/40UB only
- 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 (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

CONTACT INFORMATION

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GENERAL SPECIFICATIONS

Spectral Response	UV 0.185-0.260 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	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	
Kerosene	37 / 11	Methane*	40 / 12	plume fire	

Response Time	Typically 3 seconds
Adjustable Time Delay	Up to 30 seconds
Sensitivity Ranges	1 ft^2 (0.1m^2) n-heptane pan fire from 50 ft (15m)
Field of View	Horizontal 100º; Vertical 95º
Built-in-Test (BIT)	Automatic (and Manual)

Temperature Range

	Operating:	-67ºF to +167ºF	(-55ºC to +75ºC)
	Option:	-67ºF to +185ºF	(-55ºC to +85ºC)
	Storage:	-67ºF to +185ºF	(-55ºC to +85ºC)

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 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	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 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	4" x 4.6" x 6.18"	(101.6 x 117 x 157 mm)	
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)		

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 T5 (-55ºC to +75ºC)	Ex de IIC T4 (-55ºC to +85ºC)
		Ex tD A21 IP66/X7 T 95ºC	Ex tD A21 IP66/X7 T 105ºC
	FM/FMC/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) - model 40/40UB only		

ACCESSORIES

Fire Simulator	20/20-311	**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**	777161		

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