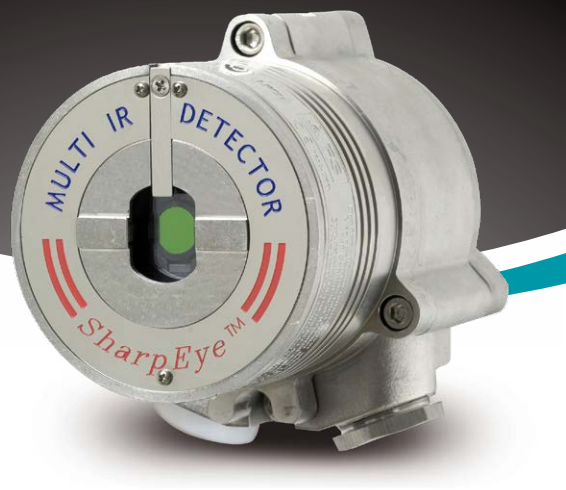
40/40M

Multi IR Flame Detector



The new 40/40M Multi IR Flame Detector is specifically designed for detection of hydrocarbon and hydrogen flames. It detects hydrocarbon-based fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40M can detect a gasoline pan fire at 215 ft (65m) or a hydrogen flame at 100 ft (30m) in less than 5 seconds

The 40/40M is the most durable and weather resistant 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

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 Industry
- Explosives & Munitions
- Waste Disposal facilities
- Hydrogen Fuel Cell Industry
- Hydrogen Vehicle Parking & Refueling
- Battery Charging areas
- Refinery Hydrogenation
- Space Industry hydroxyl propellant
- Static Fuel Cell systems

KEY FEATURES

- **Multi Spectrum Design - for long distance detection of hydrocarbons and hydrogen flames**
- **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**

40/40M

SPECIFICATIONS

Specifications subject to change without notice

Spectral Response	Multi IR Bands					
Detection Range (Highest Sensitivity Setting for 1 ft² (0.1m²) pan fire.	**Fuel**	**ft/m**	**Fuel**	**ft/m**	**Fuel**	**ft/m**
	n-Heptane	215 / 65	Ethanol 95%	135 / 40	LPG *	100 / 30
	Gasoline	215 / 65	Methanol	115 / 35	Polypropylene Pellets	16 / 5
	Diesel Fuel	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Office Paper	33 / 10
	JP5	150 / 45	Hydrogen*	100 / 30	* 20" (0.5m) high, 8" (0.2m) width Plume fire	
	Kerosene	150 / 45	Methane*	100 / 30		

Response Time	Typically 5 seconds
Adjustable Time Delay	Up to 30 seconds
Sensitivity Ranges	4 Sensitive ranges for 1 ft2 (0.1m2) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)
Field of View	Horizontal 67°, Vertical 70° for Gasoline Horizontal 80°, Vertical 80° for Hydrogen
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 (2.5mm² - 0.3mm²)
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 ± 5% Warning: 16mA ± 5% BIT Fault: 2mA ± 10% UV: 12m A± 5% Alarm: 20mA ± 5% Normal: 4mA ± 10% Warning: 16mA ± 5% 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	• Stainless Steel 316L with electro polish finish • Heavy duty copper free aluminum (less than 1%), red epoxy enamel finis
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
Hazardous Area	ATEX and IECEx Ex II 2 GD, Ex de IIC T5 (-55°C to +75°C) Ex de IIC T4 (-55°C to +85°C) Ex tD A21 IP66/X7 T 95°C Ex tD A21 IP66/X7 T 105°C FM/FMC/CSA Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G

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