

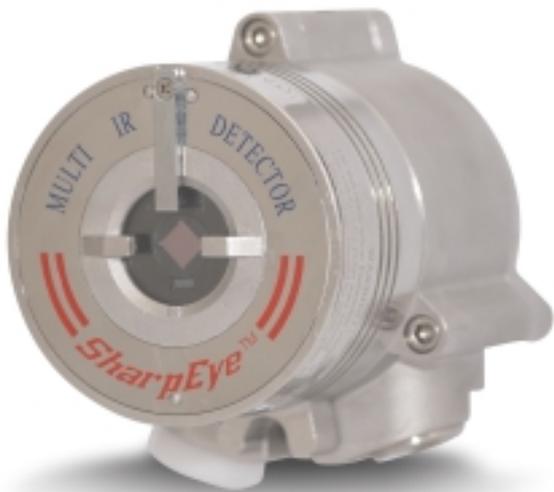
keep a **SharpEye™** on your safety



# 40/40M

## Multi IR Flame Detector

*Superior performance, reliability and immunity to false alarms*



**SharpEye™**

*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 40/40 Series is the most durable and weather resistant range of flame detectors 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.*

### FEATURES & BENEFITS

- 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
  - CSA
- 3rd party Performance Tested
  - EN54-10 (LPCB)
  - FM3260 (FM)

### 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

**SPECTREX INC.**

*keep a **SharpEye**™ on your safety*

### GENERAL SPECIFICATIONS

|   |   |                 |                         |                  |                                    |               |
|---|---|-----------------|-------------------------|------------------|------------------------------------|---------------|
| <b>Spectral Response</b>  | Multi IR Bands  |                 |                         |                  |                                    |               |
| <b>Detection Range</b><br>(at highest Sensitivity Setting for 1ft <sup>2</sup> (0.1m <sup>2</sup> ) pan fire) | <b>Fuel</b>   | <b>ft / m</b>   | <b>Fuel</b>             | <b>ft / m</b>    | <b>Fuel</b>                        | <b>ft / m</b> |
|   | 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 |               |
|   | Kerosene  | 150 / 45        | Methane*                | 100 / 30         | plume fire                         |               |
| <b>Response Time</b>  | Typically 5 seconds   |                 |                         |                  |                                    |               |
| <b>Adjustable Time Delay</b>  | Up to 30 seconds  |                 |                         |                  |                                    |               |
| <b>Sensitivity Ranges</b>   | 4 Sensitive ranges for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire from 50 ft (15m) to 215 ft (65m) |                 |                         |                  |                                    |               |
| <b>Field of View</b>  | Horizontal 90°; Vertical 90°  |                 |                         |                  |                                    |               |
| <b>Built-in-Test (BIT)</b>  | Automatic (and Manual)  |                 |                         |                  |                                    |               |
| <b>Temperature Range</b>  | 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) |                                    |               |
| <b>Humidity</b>   | Up to 95% non-condensing - withstands up to 100% RH for short periods   |                 |                         |                  |                                    |               |
| <b>Heated Optics</b>  | To eliminate condensation and icing on the window   |                 |                         |                  |                                    |               |

### ELECTRICAL SPECIFICATIONS

|                                      |  |                                       |  |  |  |  |
|--------------------------------------|--|---------------------------------------|--|--|--|--|
| <b>Operating Voltage</b>             | 24 VDC nominal (18-32 VDC)   |                                       |  |  |  |  |
| <b>Power Consumption</b>             | Standby:   | Max. 100mA (150mA with heated window) |  |  |  |  |
|                                      | Alarm:   | Max. 150mA (200mA with heated window) |  |  |  |  |
| <b>Cable Entries</b>                 | 2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO                                      |                                       |  |  |  |  |
| <b>Wiring</b>                        | 12 - 22AWG (2.5mm <sup>2</sup> - 0.3mm <sup>2</sup> )                                  |                                       |  |  |  |  |
| <b>Electrical Input Protection</b>   | According to MIL-STD-1275B   |                                       |  |  |  |  |
| <b>Electromagnetic Compatibility</b> | EMI/RFI protected to EN50130-4   |                                       |  |  |  |  |
| <b>Electrical Interface</b>          | The detector includes twelve (12) terminals with five (5) wiring options (factory set) |                                       |  |  |  |  |

### OUTPUTS

|                         |  |           |  |                  |           |  |
|-------------------------|--|-----------|--|------------------|-----------|--|
| <b>Relays</b>           | Alarm, Fault and Auxiliary<br>SPST volt-free contacts rated 5A at 30 VDC or 250 VAC.                                     |           |  |                  |           |  |
| <b>0-20mA (stepped)</b> | Sink (source option) configuration   |           |  |                  |           |  |
|                         | Fault:   | 0 +1mA    |  | Warning:         | 10mA ± 5% |  |
|                         | BIT Fault:   | 2mA ± 10% |  | Alarm:           | 15mA ± 5% |  |
|                         | Normal:  | 5mA ± 10% |  | Resistance Loop: | 100-600 Ω |  |
| <b>HART Protocol</b>    | HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management |           |  |                  |           |  |
| <b>RS-485</b>           | RS-485 Modbus compatible communication link that can be used in computer controlled installations                        |           |  |                  |           |  |

### MECHANICAL SPECIFICATIONS

|                                |   |  |  |  |  |  |
|--------------------------------|---|--|--|--|--|--|
| <b>Materials</b>               | - Stainless Steel 316L with electro polish finish   |  |  |  |  |  |
|                                | - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish                     |  |  |  |  |  |
| <b>Enclosure options</b>       |   |  |  |  |  |  |
| <b>Mounting</b>                | Stainless Steel 316L with electro polish finish   |  |  |  |  |  |
| <b>Dimensions</b>              | Detector  | 3.5" x 4.5" x 6.1" (90 x 114 x 156 mm) |  |  |  |  |
| <b>Weight</b>                  | 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)                        |  |  |  |  |
| <b>Environmental Standards</b> | Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp |  |  |  |  |  |
| <b>Water and Dust</b>          | IP66 and IP67 per EN60529, NEMA 250 6P  |  |  |  |  |  |

### APPROVALS

|                       |                                |  |  |  |  |
|-----------------------|--------------------------------|--|--|--|--|
| <b>Hazardous Area</b> | ATEX and IECEx                 | Ex II 2 GD,<br>Ex de IIB+H2 T5 (-55°C to + 75°C)<br>Ex tD A21 IP66/X7 T 95°C |  | Ex de IIB+H2 T4 (-55°C to + 85°C)<br>Ex tD A21 IP66/X7 T 105°C |  |
|                       | FM / CSA                       | Class I Div. 1, Groups B, C & D<br>Class II/III Div. 1, Groups E, F & G      |  |  |  |
| <b>Performance</b>    | EN54-10 (LPCB)<br>FM-3260 (FM) |  |  |  |  |
| <b>Reliability</b>    | IEC61508 - SIL2 (TUV)          |  |  |  |  |

### ACCESSORIES

|                       |           |                          |        |                          |        |
|-----------------------|-----------|--------------------------|--------|--------------------------|--------|
| <b>Fire Simulator</b> | 20/20-313 | <b>Weather Protector</b> | 777163 | <b>Laser Pointer</b>     | 777166 |
| <b>Tilt Mount</b>     | 40/40-003 | <b>Air Shield</b>        | 777161 | (Detector area coverage) |        |

**Authorized Distributor:**  
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