

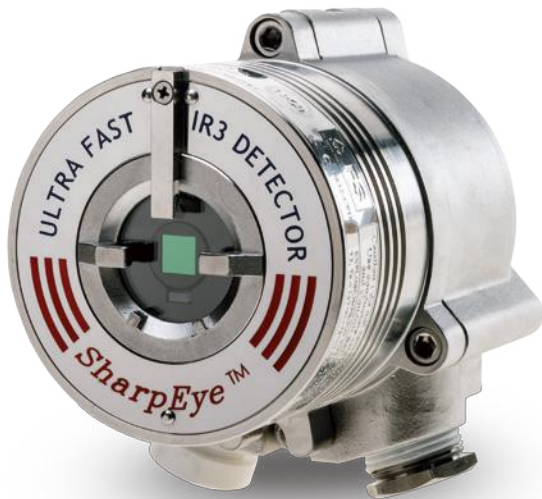
keep a **SharpEye™** on your safety



# 40/40UFI

## Ultra Fast Triple IR (IR3) Flame Detector

*Superior performance, reliability and immunity to false alarms*



### **SharpEye™**

*The new 40/40UFI, an Ultra-Fast multi-spectrum IR3 Flame Detector, detects hydrocarbon fuel and gas fires at long distances, and is especially designed to detect an explosive 1 ft (0.3m) diameter gas cloud explosion in max. 50 msec for 1ft diameter sphere methane-air mixture explosion at 66 ft (20m) with the highest immunity to false alarms. The 40/40UFI IR3 can also detect a 1 ft<sup>2</sup> (0.1m<sup>2</sup>) gasoline/n-Heptane pan fire at up to 300 ft (90m).*

*The 40/40UFI is part of the 40/40 Series, the most durable and weather resistant range of flame detectors currently on the market. Features include a heated window, to eliminate condensation and icing; HART capability 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 per IEC 61508.*

### FEATURES & BENEFITS

- Multi Spectrum Design - for long distance detection and high false alarm immunity
- High Speed Response - 50 msec
- Sensitivity Selection - to ensure no zone crossover detection
- Automatic 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
  - Analogue output for fast detection
  - 0-20mA (stepped)
  - HART Protocol for maintenance and asset management
  - RS-485, Modbus Compatible
- High Reliability - MTBF - minimum 150,000 hours
- Safety Integrity Level SIL2 (TUV)
- 5-Year Warranty
- User Programmable via HART or RS-485
- Hazardous area zones:
  - Zones 1 & 2 with IIC gas group vapors present
  - Zones 21 & 22 with IIIC dust type present
- Ex approved to:
  - ATEX & IECEx
  - FM/FMC/CSA
  - TR CU (EAC)
- 3<sup>rd</sup> party Performance
  - EN54-10 (VdS)
  - FM3260 (FM)

### APPLICATIONS

|   |                             |
|---|-----------------------------|
| Offshore Oil & Gas installations              | Power Generation facilities |
| Onshore Oil & Gas installations and pipelines | Pharmaceutical Industry     |
| Chemical plants                               | Printing Industry           |
| Petrochemicals plants                         | Warehouses                  |
| Storage Tank farms                            | Automotive Industry         |
| Aircraft hangars                              | Explosives & Munitions      |
|   | Waste Disposal facilities   |

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## GENERAL SPECIFICATIONS

|   |  |               |                         |               |                       |               |
|---|--|---------------|-------------------------|---------------|-----------------------|---------------|
| <b>Spectral Response</b>  | Three 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  | 300 / 90      | Kerosene                | 205 / 62      | Methane*              | 205 / 62      |
|   | Gasoline   | 300 / 90      | Ethanol 95%             | 185 / 55      | LPG*                  | 205 / 62      |
|   | Diesel Fuel  | 205 / 62      | Methanol                | 160 / 48      | Polypropylene Pellets | 160 / 48      |
|   | JP5  | 205 / 62      | IPA (Isopropyl Alcohol) | 185 / 55      | Office Paper          | 115 / 34      |
|   | * 30" (0.75m) high, 10" (0.25m) width plume fire   |               |                         |               |                       |               |
| <b>High Speed Response</b>  | 50 msec for 1ft diameter sphere methane-air mixture explosion at 66ft (20m)  |               |                         |               |                       |               |
| <b>Response Time</b>  | Typically 2 sec at 131ft (40m)<br>Typically 10 sec at 300ft (90m)  |               |                         |               |                       |               |
| <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 66 ft (20m) to 300 ft (90m)                    |               |                         |               |                       |               |
| <b>Field of View</b>  | Horizontal 90°; Vertical 90°   |               |                         |               |                       |               |
| <b>Built-in-Test (BIT)</b>  | Automatic  |               |                         |               |                       |               |
| <b>Temperature Range</b>  | Operating: -67°F to +167°F (-55°C to +75°C)<br>Option: -67°F to +185°F (-55°C to +85°C)<br>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. 90mA (110mA with heated window)<br>Alarm: Max. 130mA (160mA 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 (0.3mm <sup>2</sup> - 2.5mm <sup>2</sup> )   |  |  |  |  |  |
| <b>Electrical Input Protection</b>   | According to MIL-STD-1275B  |  |  |  |  |  |
| <b>Electromagnetic Compatibility</b> | EMI/RFI protected to EN61326-3 and EN61000-6-3  |  |  |  |  |  |
| <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 2A at 30 VDC   |  |  |  |  |  |
| <b>Analogue Output</b><br><b>0-20mA (stepped)</b> | 4-4.7 V at detection<br>Sink (source option) configuration<br>Fault: 0 +1mA      Warning: 16mA ± 5%<br>BIT Fault: 2mA ± 10%      Alarm: 20mA ± 5%<br>Normal: 4mA ± 10%      Resistance Loop: 100-600 Ω |  |  |  |  |  |
| <b>HART Protocol</b>                              | 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                       |  |  |  |  |  |
| <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   |  |  |  |  |  |
| <b>Enclosure options</b>       | - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish                               |  |  |  |  |  |
| <b>Mounting</b>                | Stainless Steel 316L with electro polish finish   |  |  |  |  |  |
| <b>Dimensions</b>              | Detector 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)   |  |  |  |  |  |
| <b>Weight</b>                  | Detector (St.St.) 6.1 lb (2.8 kg)      Tilt mount 2.2 lb (1.0 kg)<br>Detector, aluminum 2.8 lb (1.3 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 G D<br>Ex db eb op is IIC T4 Gb<br>Ex tb op is IIIC T96°C Db<br>(-55°C ≤ Ta ≤ +75°C) | Ex db eb op is IIC T4 Gb<br>Ex tb op is IIIC T106°C Db<br>(-55°C ≤ Ta ≤ +85°C)  |
|                       | FM/FMC/CSA              | Class I Div. 1, Groups B, C & D<br>Class II/III Div. 1, Groups E, F & G                      |   |
|                       | TR CU (EAC)             | 1 Ex db eb op is IIC T4 Gb X<br>Ex tb op is IIIC T96°C Db X<br>(-55°C ≤ Ta ≤ +75°C)          | 1 Ex db eb op is IIC T4 Gb X    1 Ex db eb mb op is II T4 Gb X<br>Ex tb op is IIIC T106°C Db X    Ex tb op is IIIC T98°C Db X<br>(-55°C ≤ Ta ≤ +85°C)      (-55°C ≤ Ta ≤ +75°C) |
| <b>Performance</b>    | EN54-10 (VdS)<br>FM3260 |  |   |
| <b>Reliability</b>    | IEC61508 - SIL2 (TUV)   |  |   |

## ACCESSORIES

|                                |                          |                                    |                   |        |                      |                                     |
|--------------------------------|--------------------------|------------------------------------|-------------------|--------|----------------------|-------------------------------------|
| <b>Flame Simulator FS-1100</b> | <b>U-Bolt/Pole Mount</b> | 789260-2 (2" pole)                 | <b>Air Shield</b> | 777650 | <b>Weather Cover</b> | 777163 (St.St)<br>*777263 (Plastic) |
| <b>Tilt Mount</b>              | 40/40-001                | 789260-1 (3" pole)                 |                   |        |                      |                                     |
| <b>Duct Mount</b>              | 777670                   | <b>USB RS485 Harness Kit</b>       | 794079            |        |                      |                                     |
|                                |                          | <b>E.O.L Encapsulated Resistor</b> | 777915-X          |        |                      |                                     |

\*Supplied free of charge with the detector

Specifications subject to change  
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