

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 ft² (0.1m²) 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)
- 3rd party Performance
 - EN54-10 (VdS)
 - 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

GENERAL SPECIFICATIONS

| | | | | | | |
|--|--|---------------|-------------------------|---------------|-----------------------|---------------|
| Spectral Response | Three IR Bands | | | | | |
| 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 | 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 | | | | | |
| High Speed Response | 50 msec for 1ft diameter sphere methane-air mixture explosion at 66ft (20m) | | | | | |
| Response Time | Typically 2 sec at 131ft (40m) Typically 10 sec at 300ft (90m) | | | | | |
| Adjustable Time Delay | Up to 30 seconds | | | | | |
| Sensitivity Ranges | 4 Sensitive ranges for 1 ft ² (0.1m ²) n-heptane pan fire from 66 ft (20m) to 300 ft (90m) | | | | | |
| Field of View | Horizontal 90°; Vertical 90° | | | | | |
| Built-in-Test (BIT) | Automatic | | | | | |
| 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

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|--------------------------------------|---|
| 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 (0.3mm ² - 2.5mm 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

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|---|--|
| Relays | Alarm, Fault and Auxiliary SPST volt-free contacts rated 2A at 30 VDC |
| Analogue Output 0-20mA (stepped) | 4-4.7 V at detection 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

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|--------------------------------|--|
| Materials | - Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish |
| Enclosure options | |
| 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 G D Ex db eb op is IIC T4 Gb Ex tb op is IIIC T96°C Db (-55°C ≤ Ta ≤ +75°C) | Ex db eb op is IIC T4 Gb Ex tb op is IIIC T106°C Db (-55°C ≤ Ta ≤ +85°C) |
| | FM/FMC/CSA | Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G | |
| | TR CU (EAC) | 1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T96°C Db X (-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 Ex tb op is IIIC T106°C Db X Ex tb op is IIIC T98°C Db X (-55°C ≤ Ta ≤ +85°C) (-55°C ≤ Ta ≤ +75°C) |
| Performance | EN54-10 (VdS) FM3260 | | |
| Reliability | IEC61508 - SIL2 (TUV) | | |

ACCESSORIES

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

*Supplied free of charge with the detector