

40/40I

Triple IR (IR3) Flame Detector



The new 40/40I, a multi spectrum based on three IR bands (IR3), detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1 ft² (0.1m²) gasoline pan fire at 215 ft (65m) in less than 5 seconds.

The 40/40I 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.

FEATURES & BENEFITS

- Multi spectrum design - for long distance detection and 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
- Marine Approval
 - MED 'Wheelmark' approval (DNV)

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

Explosives & Munitions

Waste Disposal facilities

40/40I

Triple IR (IR3) Flame Detector

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|--|---|--|-----------------|-------------------------|----------|-----------------------|----------|
| (at highest Sensitivity Setting for 1ft2 (0.1m2) pan fire) | Detection Range | Fuel | ft/m | Fuel | ft/m | Fuel | ft/m |
| | | n-Heptane | 215 / 65 | Kerosene | 150 / 45 | Methane* | 100 / 30 |
| | | Gasoline | 215 / 65 | Ethanol 95% | 135 / 40 | LPG* | 100 / 30 |
| | | Diesel Fuel | 150 / 45 | Methanol | 115 / 35 | Polypropylene Pellets | 16 / 5 |
| | | JP5 | 150 / 45 | IPA (Isopropyl Alcohol) | 135 / 40 | Office Paper | 33 / 10 |
| | Spectral Response | Three IR Bands | | | | | |
| | 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 100°; Vertical 95° | | | | | |
| | 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 | | | | | |
| | <u>ELECTRICAL SPECIFICATIONS</u> | | | | | | |
| | 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) | | | | | |
| | <u>OUTPUTS</u> | | | | | | |
| | Relays | Alarm, Fault and Auxiliary SPST volt-free contacts rated 2A at 30 VDC | | | | | |
| | 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 | | | | | |
| | 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) | | | | | |
| | <u>MECHANICAL SPECIFICATIONS</u> | | | | | | |
| | Materials | - Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version) | | | | | |
| | Mounting | SPST volt-free contacts rated 2A at 30 VDC | | | | | |
| | Dimensions | Stainless Steel 316L with electro polish finish 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 | | | | | |
| | Part Number | 85-4040I | | | | | |

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specifications subject to change without notice (MAY 14)