40/40I
Triple IR (IR3) Flame Detector
Superior performance, reliability and immunity to false alarms

FEATUERS & BENEFITS

• Triple 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 (LPCB)
  - FM3260 (FM)
  - DNV Marine Approval

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

The new 40/40I Triple IR (IR3) Flame Detector detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1ft^2 (0.1m^2) 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.
Spectral Response
Three IR Bands

<table>
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<tr>
<th></th>
<th>Foot</th>
<th>Meter</th>
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<tbody>
<tr>
<td>n-Heptane</td>
<td>215</td>
<td>65</td>
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<tr>
<td>Gasoline</td>
<td>215</td>
<td>65</td>
</tr>
<tr>
<td>Diesel Fuel</td>
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<td>45</td>
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<tr>
<td>JP5</td>
<td>150</td>
<td>45</td>
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<tr>
<td>Ethanol 95%</td>
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<tr>
<td>Methanol</td>
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<tr>
<td>IPA (isopropanol)</td>
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<tr>
<td>Polypropylene</td>
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<td>Office Paper</td>
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</tbody>
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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)

Built-in-Test (BIT)
Automatic (and Manual)

Temperature Range
Operating: -67°F to +167°F (-55ºC to +75ºC)
Storage: -67°F to +185°F (-55ºC to +85ºC)

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 (180mA with heated window)

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)

Relays
Alarm, Fault and Auxiliary
SPST volt-free contacts rated 5A at 30 VDC or 250 VAC.

0-20mA (stepped)
Sink (source option) configuration
Fault: 0-1mA  ±10%
Bit Fault: 2mA  ±10%
Normal: 4mA  ±10%
Warning: 16mA  ±5%
Alarm: 20mA  ±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

Enclosure options
- Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish

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)
Detector, aluminum 2.8 lb (1.3 kg)
Tilt mount 2.2 lb (1.0 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
FM/FMC/CSA

Performance
EN54-10 (LPCB)
FM-3260 (FM)
DNV Marine Approval

Reliability
IEC61508 - SIL2 (TUV)

Accessories
Fire Simulator 20/20-310
U-Bolt/Pole Mount 789260-2 (2’ pole)
Mini Laptop Kit 777820
Weather Protector 777163
Laser Pointer 777166

For more information view manual or website www.spectrex-inc.com