**40/40R**

Single IR Flame Detectors

* A low cost solution in a durable, high spec package

---

The new 40/40R Single IR Flame Detector detects hydrocarbon-based fuel and gas fires using advanced flame analysis tools. The detector provides early warning of flaming fires working at 4.5 μm for maximum sensitivity, and immunity to false alarms from IR sources such as sunlight and IR projectors.

The 40/40R is the most durable and weather resistant single IR 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**

- Sensitivity selection
- 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)

---

**APPLICATIONS**

Offshore Oil & Gas installations
Onshore Oil & Gas installations and pipelines
Chemical plants
Petrochemicals plants
Storage Tank farms
Power Generation facilities
Pharmaceutical Industry
Printing Industry
Warehouses
Automotive Industry
Waste Disposal facilities
DS-F-40/40R, March 2012

GENERAL SPECIFICATIONS

Spectral Response
Single band IR 4.4-4.6 μm

Detection Range
(at highest Sensitivity Setting for 1°F (0.1m²) pan fire)

<table>
<thead>
<tr>
<th>Fuel</th>
<th>ft / m</th>
<th>Fuel</th>
<th>ft / m</th>
<th>Fuel</th>
<th>ft / m</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>50 / 15</td>
<td>Kerosene</td>
<td>37 / 11</td>
<td>Methane*</td>
<td>16 / 5</td>
</tr>
<tr>
<td>Gasoline</td>
<td>50 / 15</td>
<td>Ethanol 95%</td>
<td>25 / 75</td>
<td>LPG</td>
<td>16 / 5</td>
</tr>
<tr>
<td>Diesel Fuel</td>
<td>37 / 11</td>
<td>Methanol</td>
<td>25 / 75</td>
<td>Polypropylene Pellets</td>
<td>10 / 3</td>
</tr>
<tr>
<td>JP5</td>
<td>37 / 11</td>
<td>IPA (isopropyl Alcohol)</td>
<td>25 / 75</td>
<td>Office Paper</td>
<td>20 / 6</td>
</tr>
</tbody>
</table>

Response Time
Typically 5 seconds

Adjustable Time Delay
Up to 30 seconds

Sensitivity Ranges
2 ranges; 1 ft² (0.1m²) n-heptane pan fire from 15 ft (5m) or 50 ft (15m)

Field of View
Horizontal 90°; Vertical 90°

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

Temperature Range
Operating: -67°F to +167°F (-55°C to +75°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

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)

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

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

O-20mA (stepped)
Sink (source option) configuration
Fault: 0 +1mA
Bit Fault: 2mA ± 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
- 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)
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

Approval of Hazardous Area
ATEX and IECEx
FM/FMC/CSA

Performance
EN54-10 (LPCB)
FM-3260 (FM)

Reliability
IEC61508 - SIL2 (TUV)

ACCESSORIES

Fire Simulator
20/20-312

Tilt Mount
40/40-001

Duct Mount
777670

USB RS485 Harness Kit
794079-5

Mini Laptop Kit
777820

Weather Protector
777163

Laser Pointer
777166

Air Shield
777161

Specifications subject to changes
For more information view manual or website www.spectrex-inc.com

[Image]