40/40U-UB
UV Flame Detector
A low cost solution in a durable, high spec package

FEATURES & BENEFITS

- UV spectrum design
- 3 seconds response
- 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

Chemical plants
Petrochemicals plants
Power Generation facilities
Pharmaceutical Industry
Printing Industry
Warehouses
Automotive Industry
Aerospace
Explosives & Munitions
Waste Disposal facilities
Paint and solvent processes

The new 40/40 UV Flame Detector detects hydrocarbon-based fuel and gas fires, invisible hydrogen flames, and fires from hydrides, ammonia, silane and other organics. The 40/40U-UB is the most durable and weather resistant UV 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.

The model 40/40UB includes a Built-in-Test (BIT) feature, whereas the 40/40U model does not.

Note: This type of detector should not be exposed to UV radiation sources such as welding, sparks, and electric arcs as it will cause false alarms.
### GENERAL SPECIFICATIONS

**Spectral Response**

<table>
<thead>
<tr>
<th>Material</th>
<th>UV Range</th>
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<tbody>
<tr>
<td>- Stainless Steel 316L</td>
<td>0.185-0.260 μm</td>
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**Detection Range**

- Fuel: ft / m
  - n-Heptane: 50 / 15
  - Ethanol 95%: 37 / 11
  - Methanol: 37 / 11
  - IPA (Isopropyl Alcohol): 37 / 11
  - JPS: 37 / 11
  - Methane*: 40 / 12

**Response Time**

- Typically 3 seconds

**Adjustable Time Delay**

- Up to 30 seconds

**Sensitivity Ranges**

- 1 ft² (0.1 m²) n-heptane pan fire from 50 ft (15 m)

**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)
- 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)

### RELAYS

**Outputs**

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

**0-20mA (stepped)**

- Fault: 0 +1mA (2mA ± 10%)
- Warning: 16mA ± 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)
- Detector, aluminum: 2.8 lb (1.3 kg)

**Environmental Standards**


**Water and Dust**

- IP66 and IP67 per EN60529, NEMA 250 6P

### APPROVALS

**Hazardous Area**

- ATEX and IECEx
  - FM/FMC/CSA: Ex II 2 GD, Ex de II B T5 (-55°C to + 75°C)
  - Ex Td A21 IP66/X7 T 95°C
  - Class I Div. 1, Groups B, C & D
  - Class II/III Div. 1, Groups E, F & G

- Office Paper: Ex de II B T4 (-55°C to +85°C)
  - Ex Td A21 IP66/X7 T 105°C

**Performance**

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

**Reliability**

- IEC61508 - SIL2 (TUV)

### ACCESSORIES

- Fire Simulator: 20/20-311
- Tilt Mount: 40/40-001
- Weather Protector: 777163
- Air Shield: 777161
- Mini Laptop Kit: 777820
- USB RS485 Harness Kit: 794079-5
- Laser Pointer: 777186

Specifications subject to changes

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