40/40M
Multi IR Flame Detector
Superior performance, reliability and immunity to false alarms

The new 40/40M Multi IR Flame Detector is specifically designed for detection of hydrocarbon and hydrogen flames. It detects hydrocarbon-based fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40M can detect a gasoline pan fire at 215 ft (65m) or a hydrogen flame at 100 ft (30m) in less than 5 seconds.

The 40/40M 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 of hydrocarbons and hydrogen flames
- 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)

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
Hydrogen Fuel Cell Industry
Hydrogen Vehicle Parking & Refueling
Battery Charging areas
Refinery Hydrogenation
Space Industry hydroxyl propellant
Static Fuel Cell systems

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**GENERAL SPECIFICATIONS**

**Spectral Response**
- Multi IR Bands

**Detection Range**
- (at highest Sensitivity Setting for 1 ft² (0.1 m²) pan fire)
  - n-Heptane: 215 / 65 ft / m
  - Gasoline: 215 / 65 ft / m
  - Diesel Fuel: 150 / 45 ft / m
  - JP5: 150 / 45 ft / m
  - Kerosene: 150 / 45 ft / m
  - Ethanol 95%: 135 / 40 ft / m
  - Methanol: 115 / 35 ft / m
  - IPA (Isopropyl Alcohol): 135 / 40 ft / m
  - Hydrogen*: 100 / 30 ft / m
  - Methane*: 100 / 30 ft / m

**Response Time**
- Typically 5 seconds

**Adjustable Time Delay**
- Up to 30 seconds

**Sensitivity Ranges**
- 4 Sensitivity ranges for 1 ft² (0.1 m²) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)

**Field of View**
- Horizontal 67°, Vertical 70° for Gasoline
- Horizontal 80°, Vertical 80° for Hydrogen

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

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

**OUTS**

**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
  - 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
- Heavy duty copper free aluminum (less than 1%), red epoxy enamel 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: 6.1 lb (2.8 kg)
- Tilt mount: 2.2 lb (1.0 kg)
- Detector, aluminum: 2.8 lb (1.3 kg)

**Environmental Standards**
- IP66 and IP67 per EN60529, NEMA 250 6P

**WATER AND DUST**
- IP66 and IP67 per EN60529, NEMA 250 6P
- 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 IIC T5 (-55ºC to +75ºC)
- Ex tD A21 IP66/X7 T 95ºC
- Class I Div. 1, Groups B, C & D
- Ex tD A21 IP66/X7 T 105ºC
- Class II/III Div. 1, Groups E, F & G

**Performance**
- EN54-10 (LPCB)
- FM-3260 (FM)
- IEC61508 - SIL2 (TUV)

**Reliability**
- IEC61508 - SIL2 (TUV)

**ACCESSORIES**

**Fire Simulator**
- 20/20-313

**Tilt Mount**
- 40/40-001

**Duct Mount**
- 777670

**USB RS485 Harness Kit**
- 794079-5

**Air Shield**
- 777161

**Mini Laptop Kit**
- 777820

**Laser Pointer**
- 777166

**Mini Laptop Kit**
- 777820

**Weather Protector**
- 777163

**Duct Mount**
- 777670

**USB RS485 Harness Kit**
- 794079-5

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**Specifications subject to changes**

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

DS-F-40/40M, March 2012

keep a SharpEye™ on your safety

SPECTREX INC.