40/40M   **40/40I**   40/40L-LB   40/40L4-L4B   40/40U-UB   40/40R

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

SharpEye™

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.

FEATURES & 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

SPECTREX INC.

GENERAL SPECIFICATIONS

Spectral Response — Three IR Bands

Detection Range
(at highest Sensitivity Setting
for 1ft^2 (0.1m^2) pan fire)

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

* 20" (0.5m) high, 8" (0.2m) width plume fire

Response Time — Typically 5 seconds

Adjustable Time Delay — Up to 30 seconds

Sensitivity Ranges — 4 Sensitive ranges for 1 ft^2 (0.1m^2) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)

Field of View — Horizontal 100º; Vertical 95º

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

Temperature Range
Operating: -67ºF to +167ºF (-55ºC to +75ºC)
Option: -67ºF to +185ºF (-55ºC to +85ºC)
Storage: -67ºF to +185ºF (-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 (2.5mm^2 - 0.3mm^2)

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.

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

MECHANICAL SPECIFICATIONS

Materials
Enclosure options
- 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

Hazardous Area
ATEX and IECEx Ex II 2 GD,
Ex de IIC T5 (-55ºC to +75ºC) Ex de IIC T4 (-55ºC to +85ºC)
Ex tD A21 IP66/X7 T 95ºC Ex tD A21 IP66/X7 T 105ºC
FM/FMC/CSA Class I Div. 1, Groups B, C & D
Class II/III Div. 1, Groups E, F & G

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	**Laser Pointer**	777166
Tilt Mount	40/40-001		789260-1 (3" pole)	**Weather Protector**	777163	(Detector area coverage)	
Duct Mount	777670	**USB RS485 Harness Kit**	794079-5	**Air Shield**	777161		