keep a **SharpEye**™ *on your safety*

40/40M | **40/40I** | 40/40L-LB | 40/40UFL | 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, a multi spectrum based on three IR bands (IR3), detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1 ft² (0.1m²) 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

- Multi 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
- Hazardous area zones:
  - Zones 1 & 2 with IIC gas group vapors present
  - Zones 21 & 22 with IIIC dust type present
- Ex approved to:
  - ATEX & IECEx
  - FM/FMC/CSA
  - TR CU (EAC)
- 3rd party performance tested
  - EN54-10 (VdS)
  - FM3260
- Marine Approval
  - MED 'Wheelmark' approval (DNV)

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
Explosives & Munitions
Waste Disposal facilities

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SPECTREX

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GENERAL SPECIFICATIONS

Spectral Response	Three IR Bands

Detection Range (at highest Sensitivity Setting for 1ft² (0.1m²) pan fire)

Fuel	ft / m	Fuel	ft / m	Fuel	ft / m
n-Heptane	215 / 65	Kerosene	150 / 45	Methane*	150 / 45
Gasoline	215 / 65	Ethanol 95%	135 / 40	LPG*	150 / 45
Diesel Fuel	150 / 45	Methanol	115 / 35	Polypropylene Pellets	115 / 35
JP5	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Office Paper	83 / 25

* 30" (0.75m) high, 10" (0.25m) width plume fire

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)
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) Option: -67°F to +185°F (-55°C to +85°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 (0.3mm² -2.5mm²)
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 2A at 30V DC
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	- Stainless Steel 316L with electro polish finish
Enclosure options	- Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version)
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 G D Ex db eb op is IIC T4 Gb Ex tb op is IIIC T96°C Db (-55°C ≤ Ta ≤ +75°C)	Ex db eb op is IIC T4 Gb Ex tb op is IIIC T106°C Db (-55°C ≤ Ta ≤ +85°C)	
	FM/FMC/CSA	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G		
	TR CU (EAC)	1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T96°C Db X (–55°C ≤ Ta ≤ +75°C)	1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T106°C Db X (–55°C ≤ Ta ≤ +85°C)	1 Ex db eb mb op is II T4 Gb X Ex tb op is IIIC T98°C Db X (–55°C ≤ Ta ≤ +75°C)
Performance	EN54-10 (VdS) FM3260			
Reliability	IEC61508 - SIL2 (TUV)			
Marine	MED 'Wheelmark' approval (DNV)			

ACCESSORIES

Flame Simulator	FS-1100	**U-Bolt/Pole Mount**	789260-2 (2" pole)	**Air Shield**	777650	**Weather Cover**	777163 (St.St)
Tilt Mount	40/40-001		789260-1 (3" pole)				*777263 (Plastic)
Duct Mount	777670	**USB RS485 Harness Kit**	794079				
		E.O.L Encapsulated Resistor	777915-X				

*Supplied free of charge with the detector

Specifications subject to change

For more information view manual or website www.spectrex.net

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