keep a SharpEye™ on your safety

40/40M

Multi IR Flame Detector

Superior performance, reliability and immunity to false alarms

SharpEye™

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 125 ft (38m) 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
- 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
- 3rd party performance tested
  - EN54-10 (VdS)
  - FM3260

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
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 1ft² (0.1m²) pan fire)

Fuel	ft / m	Fuel	ft / m	Fuel	ft / m
n-Heptane	215 / 65	Ethanol 95%	135 / 40	LPG*	150 / 45
Gasoline	215 / 65	Methanol	115 / 35	Polypropylene Pellets	115 / 35
Diesel Fuel	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Ammonia**	60 / 18
JP5	150 / 45	Hydrogen*	125 / 38	Silane**	7 / 2
Kerosene	150 / 45	Methane*	150 / 45	Office Paper	82 / 25

*30" (0.75m) high, 10" (0.25m) width plume fire
**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 ft² (0.1m²) 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 (-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 Normal: 4mA ± 10% Alarm: 20mA ± 5% BIT Fault: 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
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)
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 d e IIC T5 Gb Ex tb IIIC T96°C Db (-55°C ≤ Ta ≤ +75°C)	Ex d e IIC T4 Gb Ex tb 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	
Performance	EN54-10 (VdS) FM3260		
Reliability	IEC61508 - SIL2 (TUV)		

ACCESSORIES

Flame Simulator	20/20-313	**U-Bolt/Pole Mount**	789260-2 (2" pole) 789260-1 (3" pole)	**Mini Laptop Kit**	777820	**Weather Cover**	777163 (St.St) *777263 (Plastic)
Tilt Mount	40/40-001			**Air Shield**	777650		
Duct Mount	777670	**USB RS485 Harness Kit**	794079-5	**Cone Viewer**	777166		
		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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