40/40I

Triple IR (IR3) Flame Detector

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 require- ments; 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.

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

KEY FEATURES

- **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**
- **Ex approved for Zone 1 hazardous area location**
  - **ATEX**
  - **IECEx**
  - **FM/FMC**
  - **CSA**
- **3rd party performance tested**
  - **EN54-10 (VdS)**
  - **FM3260**
- **Marine Approval**
- **MED 'Wheelmark' approval (DNV)**

SPECIFICATIONS   Specifications subject to change without notice

Detection Range	Fuel	ft/m	Fuel	ft/m	Fuel	ft/m
(Highest Sensitivity Setting for 1 ft^2 (0.1m^2) pan fire.	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

Spectral Response	Three IR Bands 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 (2.5mm2 - 0.3mm2)

OUTPUTS

Relays	Alarm, Fault and Auxiliary SPST volt-free contacts rated 2A at 30 VDC
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
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)

MECHANICAL SPECIFICATIONS

Materials	- Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version) SPST volt-free contacts rated 2A at 30 VDC 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
Part Number	85-4040I