

40/40M Multi IR Flame Detector



Features

- **Superior performance, reliability and immunity to false alarms**
- **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; CSA
- **3rd party Performance Tested:**
 - EN54-10 (LPCB)
 - FM3260 (FM)

General

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 65m or a hydrogen flame at 30m in less than 5 seconds.

The 40/40 Series is the most durable and weather resistant range of flame detectors 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 approved to IEC 61508 Safety Integrity requirements of SIL2.

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

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 EN50130-4
 Electrical Interface: The detector includes 12 terminals
 with 5 wiring options (factory set)

Specifications

General

Spectral Response: Multi IR Bands
 Detection Range: (at highest Sensitivity Setting for
 0.1m² pan fire)

Fuel	m
n-Heptane	65
Ethanol 95%	40
LPG *	30
Gasoline	65
Methanol	35
Polypropylene Pellets	5
Diesel Fuel	45
IPA (Isopropyl Alcohol)	40
Office Paper	10
JP5	45
Hydrogen*	30
Kerosene	45
Methane*	30

* 0.5m high, 0.2m width plume fire

Response Time: Typically 5 seconds
 Adjustable Time Delay: Up to 30 seconds
 Sensitivity Ranges: 4 Sensitive ranges for 0.1m²
 n-heptane pan fire from 15m to 65m
 Field of View: Horizontal 90°; Vertical 90°
 Built-in-Test (BIT): Automatic (and Manual)
 Temperature Range:
 Operating: -55°C to +75°C
 Option: -55°C to +85°C
 Storage: -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

Operating Voltage: 24 VDC nominal (18-32 VDC)
 Power Consumption:
 Standby: Max. 100mA (150mA with heated
 window)
 Alarm: Max. 150mA (200mA with heated
 window)

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: 10mA ± 5%
 BIT Fault: 2mA ± 10%
 Alarm: 15mA ± 5%
 Normal: 5mA ± 10%
 Resistance Loop: 100-600 Ω
 HART Protocol: HART communication on the
 0-20mA analog current (FSK) - used
 for maintenance, configuration
 changes and asset management
 RS-485: RS-485 Modbus compatible
 communication link that can be used
 in computer controlled installations

Mechanical

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 90 x 114 x 156 mm
 Weight: Detector (St.St.) 2.5 kg
 Detector, aluminum 1.2 kg
 Tilt mount 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 GD
 Ex de IIB+H2 T5 (-55°C to + 75°C)
 Ex de IIB+H2 T4 (-55°C to + 85°C)
 Ex tD A21 IP66/X7 T 95°C
 Ex tD A21 IP66/X7 T 105°C
 FM / 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)
 Reliability: IEC61508 - SIL2 (TUV)

Certification

CPD

0832-CPD-0977

Product references

40/40M	Multi IR Flame Detector
40/40-ADD-ST	supplement for stainless steel housing
40/40-ADD-85	supplement for calibration to 85°C

Accessories

40/40-001	Tilt mount
40/40-777161	Air Shield (Detector area coverage)
40/40-777163	Weather Protector
40/40-777166	Laser Pointer
20/20-310	Fire Simulator
40/40-789260-2	Pole mount (U-BOLT) - 2"
40/40-789260-1	Pole mount (U-BOLT) - 3"
40/40-777820	Handheld Pocket PC diagnostics kit
40/40-794079-5	USB connection cable for PC (includes software)

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