40/40R
Single IR Flame Detectors
A low cost solution in a durable, high spec package

FEATURES & BENEFITS
- Sensitivity selection
- 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)

APPLICATIONS
- Offshore Oil & Gas installations
- Onshore Oil & Gas installations and pipelines
- Chemical plants
- Petrochemicals plants
- Storage Tank farms
- Power Generation facilities
- Pharmaceutical Industry
- Printing Industry
- Warehouses
- Automotive Industry
- Waste Disposal facilities

The new 40/40R Single IR Flame Detector detects hydrocarbon-based fuel and gas fires using advanced flame analysis tools. The detector provides early warning of flaming fires working at 4.5 μm for maximum sensitivity, and immunity to false alarms from IR sources such as sunlight and IR projectors.

The 40/40R is the most durable and weather resistant single IR 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.
GENERAL SPECIFICATIONS

Spectral Response
- Single band IR 4.4-4.6 μm

Detection Range (at highest Sensitivity Setting for 1 ft² (0.1 m²) pan fire)
- Fuel: Kerosene 37 / 11, Ethanol 95% 25 / 7.5, Methanol 25 / 7.5, IPA (Isopropyl Alcohol) 25 / 7.5

Response Time
- Typically 5 seconds

Adjustable Time Delay
- Up to 30 seconds

Sensitivity Ranges
- 2 ranges; 1 ft² (0.1 m²) n-heptane pan fire from 15 ft (5m) or 50 ft (15m)

Field of View
- Horizontal 90°; Vertical 90°

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

Temperature Range
- Operating: -67°F to +167°F (-55°C to +75°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

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
- BIT Fault: 2mA ± 10%
- Warning: 16mA ± 5%
- Alarm: 20mA ± 5%
- Resistance Loop: 100-600Ω

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
- 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)

Environmental Standards

Water and Dust
- IP66 and IP67 per EN60529, NEMA 250 6P

APPROVALS

Hazardous Area
- ATEX and IECEx
- FM/FMC/CSA

Performance
- EN54-10 (LPCB)
- FM-3260 (FM)

Reliability
- IEC61508 - SIL2 (TUV)

ACCESSORIES

Fire Simulator
- 20/20-312

Weather Protector
- 777163

Air Shield
- 777161

Mini Laptop Kit
- 777820

USB RS485 Harness Kit
- 794079-5

Laser Pointer
- 777166

Specifications subject to changes
For more information view manual or website www.spectrex-inc.com

DSF-40/40R, November 2010