40/40R

Single IR Flame Detectors

A low cost solution in a durable, high spec package

SharpEye™

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.

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

keep a SharpEye™ on your safety

Spectral Response	Single band IR 4.4-4.6 µm
Detection Range (at highest Sensitivity Setting for 1ft^2 (0.1m^2) pan fire)	**Fuel** / **ft / m**: n-Heptane 50 / 15; Gasoline 50 / 15; Diesel Fuel 37 / 11; JP5 37 / 11; Kerosene 37 / 11; Ethanol 95% 25 / 7.5; Methanol 25 / 7.5; IPA (Isopropyl Alcohol) 25 / 7.5; Methane* 16 / 5; LPG * 16 / 5; Polypropylene Pellets 10 / 3; Office Paper 20 / 6 * 20" (0.5m) high, 8" (0.2m) width plume fire
Response Time	Typically 5 seconds
Adjustable Time Delay	Up to 30 seconds
Sensitivity Ranges	2 ranges; 1 ft^2 (0.1m^2) n-heptane pan fire from 15 ft (5m) or 50 ft (15m)
Field of View	Horizontal 90º; Vertical 90º
Built-in-Test (BIT)	Automatic (and Manual)
Temperature Range	Operating: -67ºF to +167ºF (-55ºC to +75ºC) Option: -67ºF to +185ºF (-55ºC to +85ºC) Storage: -67ºF to +185ºF (-55ºC to +85ºC)
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 (2.5mm^2 - 0.3mm^2)
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; 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 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 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 GD, Ex de IIB+H2 T5 (-55ºC to + 75ºC) Ex tD A21 IP66/X7 T 95ºC; Ex de IIB+H2 T4 (-55ºC to + 85ºC) Ex tD A21 IP66/X7 T 105ºC FM/FMC/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)

ACCESSORIES

Fire Simulator	20/20-312	**U-Bolt/Pole Mount**	789260-2 (2" pole)	**Mini Laptop Kit**	777820	**Laser Pointer**	777166
Tilt Mount	40/40-001		789260-1 (3" pole)	**Weather Protector**	777163	(Detector area coverage)	
Duct Mount	777670	**USB RS485 Harness Kit**	794079-5	**Air Shield**	777161		

For more information visit our website www.desusystems.com