

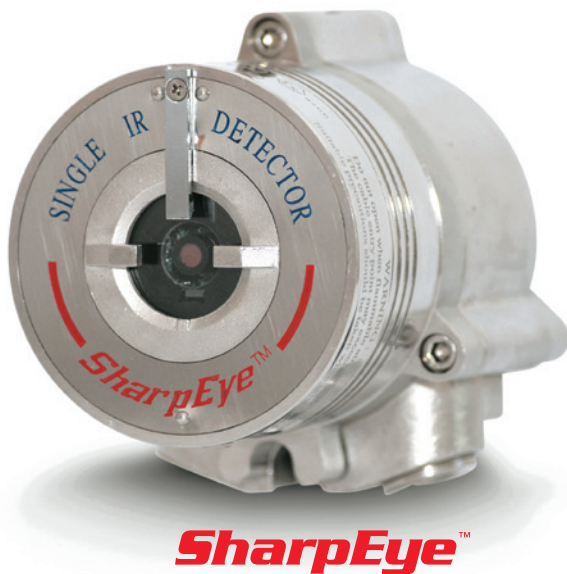
keep a **SharpEye™** on your safety



40/40R

Single IR Flame Detectors

A low cost solution in a durable, high spec package



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
- 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
 - TR CU (EAC)
- 3rd party Performance Tested
 - EN54-10 (VdS)
 - FM3260

APPLICATIONS

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

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GENERAL SPECIFICATIONS

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	Fuel	ft / m	Fuel	ft / m
	n-Heptane	50 / 15	Kerosene	37 / 11	Methane*	29.5 / 9
	Gasoline	50 / 15	Ethanol 95%	25 / 7.5	LPG*	43 / 13
	Diesel Fuel	37 / 11	Methanol	25 / 7.5	Polypropylene Pellets	37 / 11
	JP5	37 / 11	IPA (Isopropyl Alcohol)	25 / 7.5	Office Paper	20 / 6
	* 30" (0.75m) high, 10" (0.25m) 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 90°; Vertical 90°					
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 (0.3mm ² - 2.5mm 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 2A at 30V DC					
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	- Stainless Steel 316L with electro polish finish					
Enclosure options	- Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version)					
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 G D Ex db eb op is IIC T4 Gb Ex tb op is IIIC T96°C Db (-55°C ≤ Ta ≤ +75°C)	Ex db eb op is IIC T4 Gb Ex tb op is 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	
	TR CU (EAC)	1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T96°C Db X (-55°C ≤ Ta ≤ +75°C)	1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T106°C Db X (-55°C ≤ Ta ≤ +85°C)
		1 Ex db eb mb op is II T4 Gb X Ex tb op is IIIC T98°C Db X (-55°C ≤ Ta ≤ +75°C)	
Performance	EN54-10 (VdS) FM3260		
Reliability	IEC61508 - SIL2 (TUV)		

ACCESSORIES

Flame Simulator FS-1300	U-Bolt/Pole Mount	789260-2 (2" pole)	Air Shield	777650	Weather Cover	777163 (St.St) *777263 (Plastic)
Tilt Mount	40/40-001	789260-1 (3" pole)				
Duct Mount	777670	794079				
		E.O.L Encapsulated Resistor	777915-X			

*Supplied free of charge with the detector