

*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 μ m 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

GENERAL SPECIFICATIONS

Spectral Response	Single band IR 4.4-4.6 μ m					
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 \pm 5% BIT Fault: 2mA \pm 10% Alarm: 20mA \pm 5% Normal: 4mA \pm 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 \leq Ta \leq +75°C)	Ex db eb op is IIC T4 Gb Ex tb op is IIIC T106°C Db (-55°C \leq Ta \leq +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 \leq Ta \leq +75°C)	1 Ex db eb op is IIC T4 Gb X Ex tb op is IIIC T106°C Db X (-55°C \leq Ta \leq +85°C)
		1 Ex db eb mb op is II T4 Gb X Ex tb op is IIIC T98°C Db X (-55°C \leq Ta \leq +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				
		USB RS485 Harness Kit				
		E.O.L Encapsulated Resistor				

*Supplied free of charge with the detector