

keep a **SharpEye™** on your safety



# 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  $\mu$ m for maximum sensitivity, and immunity to false alarms from IR sources such as sunlight and IR projectors.*

*The new design is the most durable and weather resistant single IR 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.*

### 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
  - 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

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**GASTECH**  
AUSTRALIA

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## GENERAL SPECIFICATIONS

<b>Spectral Response</b>	Single band IR 4.4-4.6 $\mu\text{m}$					
<b>Detection Range</b> (at highest Sensitivity Setting for 1ft <sup>2</sup> (0.1m <sup>2</sup> ) pan fire)	<b>Fuel</b>	<b>ft / m</b>	<b>Fuel</b>	<b>ft / m</b>	<b>Fuel</b>	<b>ft / m</b>
	n-Heptane	50 / 15	Kerosene	37 / 11	Methane*	16 / 5
	Gasoline	50 / 15	Ethanol 95%	25 / 7.5	LPG *	16 / 5
	Diesel Fuel	37 / 11	Methanol	25 / 7.5	Polypropylene Pellets	10 / 3
	JP5	37 / 11	IPA (Isopropyl Alcohol)	25 / 7.5	Office Paper	20 / 6
	* 20" (0.5m) high, 8" (0.2m) width plume fire					
<b>Response Time</b>	Typically 5 seconds					
<b>Adjustable Time Delay</b>	Up to 30 seconds					
<b>Sensitivity Ranges</b>	2 ranges; 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire from 15 ft (5m) or 50 ft (15m)					
<b>Field of View</b>	Horizontal 90°; Vertical 90°					
<b>Built-in-Test (BIT)</b>	Automatic (and Manual)					
<b>Temperature Range</b>	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)					
<b>Humidity</b>	Up to 95% non-condensing (withstands up to 100% RH for short periods)					
<b>Heated Optics</b>	To eliminate condensation and icing on the window					

## ELECTRICAL SPECIFICATIONS

<b>Operating Voltage</b>	24 VDC nominal (18-32 VDC)
<b>Power Consumption</b>	Standby: Max. 100mA (150mA with heated window) Alarm: Max. 150mA (200mA with heated window)
<b>Cable Entries</b>	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
<b>Wiring</b>	12 - 22AWG (2.5mm <sup>2</sup> - 0.3mm <sup>2</sup> )
<b>Electrical Input Protection</b>	According to MIL-STD-1275B
<b>Electromagnetic Compatibility</b>	EMI/RFI protected to EN50130-4
<b>Electrical Interface</b>	The detector includes twelve (12) terminals with five (5) wiring options (factory set)

## OUTPUTS

<b>Relays</b>	Alarm, Fault and Auxiliary SPST volt-free contacts rated 5A at 30 VDC or 250 VAC.		
<b>0-20mA (stepped)</b>	Sink (source option) configuration Fault: 0 +1mA      Warning: 10mA $\pm$ 5% BIT Fault: 2mA $\pm$ 10%      Alarm: 15mA $\pm$ 5% Normal: 5mA $\pm$ 10%      Resistance Loop: 100-600 $\Omega$		
<b>HART Protocol</b>	HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management		
<b>RS-485</b>	RS-485 Modbus compatible communication link that can be used in computer controlled installations		

## MECHANICAL SPECIFICATIONS

<b>Materials</b>	- Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish		
<b>Mounting</b>	Stainless Steel 316L with electro polish finish		
<b>Dimensions</b>	Detector	3.5" x 4.5" x 6.1" (90 x 114 x 156 mm)	
<b>Weight</b>	Detector (St.St.)	5.5 lb	(2.5 kg)
	Detector, aluminum	2.5 lb	(1.2 kg)
	Tilt mount	2.2 lb	(1.0 kg)
<b>Environmental Standards</b>	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp		
<b>Water and Dust</b>	IP66 and IP67 per EN60529, NEMA 250 6P		

## APPROVALS

<b>Hazardous Area</b>	ATEX and IECEx	Ex II 2 GD, Ex de IIB+H2 T5 (-55°C to + 75°C) Ex tD A21 IP66/X7 T 95°C Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G	Ex de IIB+H2 T4 (-55°C to + 85°C) Ex tD A21 IP66/X7 T 105°C
<b>Performance</b>	EN54-10 (LPCB) FM-3260 (FM)		
<b>Reliability</b>	IEC61508 - SIL2 (TUV)		

## ACCESSORIES

<b>Fire Simulator</b>	20/20-312	<b>Weather Protector</b>	777163	<b>Laser Pointer</b>	777166
<b>Tilt Mount</b>	40/40-003	<b>Air Shield</b>	777161	(Detector area coverage)	