



# 40/40I

## Triple IR (IR3) Flame Detector

*Superior performance, reliability and immunity to false alarms*



### **SharpEye™**

*The new 40/40I, a multi spectrum based on three IR bands (IR3), detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1 ft<sup>2</sup> (0.1m<sup>2</sup>) gasoline pan fire at 215 ft (65m) in less than 5 seconds.*

*The 40/40I is the most durable and weather resistant 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.*

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### FEATURES & BENEFITS

- Multi spectrum design - for long distance detection and high false alarm immunity
- Sensitivity selection - to ensure no zone crossover detection
- 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
- 3rd party performance tested
  - EN54-10 (VdS)
  - FM3260
- Marine Approval
  - MED 'Wheemark' approval (DNV)

### 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                  |
| Aircraft hangars                              | Explosives & Munitions      |
|   | Waste Disposal facilities   |

## GENERAL SPECIFICATIONS

<b>Spectral Response</b>	Three IR Bands					
<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	215 / 65	Kerosene	150 / 45	Methane*	150 / 45
	Gasoline	215 / 65	Ethanol 95%	135 / 40	LPG*	150 / 45
	Diesel Fuel	150 / 45	Methanol	115 / 35	Polypropylene Pellets	115 / 35
	JP5	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Office Paper	83 / 25
	* 30" (0.75m) high, 10" (0.25m) width plume fire					
<b>Response Time</b>	Typically 5 seconds					
<b>Adjustable Time Delay</b>	Up to 30 seconds					
<b>Sensitivity Ranges</b>	4 Sensitive ranges for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)					
<b>Field of View</b>	Horizontal 100°; Vertical 95°					
<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. 90mA (110mA with heated window) Alarm: Max. 130mA (160mA 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 (0.3mm <sup>2</sup> -2.5mm <sup>2</sup> )					
<b>Electrical Input Protection</b>	According to MIL-STD-1275B					
<b>Electromagnetic Compatibility</b>	EMI/RFI protected to EN61326-3 and EN61000-6-3					
<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 2A at 30V DC					
<b>0-20mA (stepped)</b>	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					
<b>HART Protocol</b>	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					
<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					
<b>Enclosure options</b>	- Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version)					
<b>Mounting</b>	Stainless Steel 316L with electro polish finish					
<b>Dimensions</b>	Detector 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)					
<b>Weight</b>	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)					
<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 G D Ex d e IIC T5 Gb      Ex d e IIC T4 Gb Ex tb IIIC T96°C Db      Ex tb IIIC T106°C Db (-55°C ≤ Ta ≤ +75°C)      (-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					
<b>Performance</b>	EN54-10 (VdS) FM3260					
<b>Reliability</b>	IEC61508 - SIL2 (TUV)					
<b>Marine</b>	MED 'Wheelmark' approval (DNV)					

## ACCESSORIES

<b>Fire Simulator</b>	20/20-310	<b>U-Bolt/Pole Mount</b>	789260-2 (2" pole)	<b>Mini Laptop Kit</b>	777820	<b>Weather Cover</b>	777163 (St.St)
<b>Tilt Mount</b>	40/40-001		789260-1 (3" pole)	<b>Air Shield</b>	777650		*777263 (Plastic)
<b>Duct Mount</b>	777670	<b>USB RS485 Harness Kit</b>	794079-5	<b>Laser Pointer</b>	777166	*Supplied free of charge with the detector	



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