

keep a **SharpEye™** on your safety



40/40I-H

Triple IR (IR3) Flame Detector for exhaust application

Superior performance, reliability and immunity to false alarms



SharpEye™

The SharpEye 40/40I-H is a flame detector that utilizes improved IR3 technology to provide state-of-the-art fire protection. The 40/40I-H uses patented digital signal processing to analyze the spectral and dynamic characteristics of the measured infrared radiation, to identify fire events in which there are high levels of CO₂ with exceptional sensitivity and extreme immunity to false alarms.

All 40/40 series detectors include a heated optical window for improved performance in ice, snow, and condensation conditions. Detection performance can be easily adapted to all environments, applications, and requirements, by changing the detector's configuration parameters. Adjusting these parameters, as well as performing other maintenance and monitoring tasks, is possible by means of RS-485-based Modbus communication or HART communication (in models with 0–20mA output).

FEATURES & BENEFITS

- Multi spectrum design - for short distance detection with high false alarm immunity against hot CO₂ sources
- Specifically designed to mitigate false alarms in applications with high levels of extremely hot exhaust fumes
- 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
- 5-Year Warranty
- User Programmable via HART or RS-485
- 3rd party performance tested
 - 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 |
| Aircraft hangars | Explosives & Munitions |
| | Waste Disposal facilities |

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GENERAL SPECIFICATIONS

Spectral Response	Three IR Bands			
Detection Range (at highest Sensitivity Setting for 1ft ² (0.1m ²) pan fire)	Fuel	ft / m	Fuel	ft / m
	n-Heptane	215 / 65	Kerosene	150 / 45
	Gasoline	215 / 65	Ethanol 95%	135 / 40
	Diesel Fuel	150 / 45	Methanol	115 / 35
	JP5	150 / 45	IPA (Isopropyl Alcohol)	135 / 40
			Methane*	150 / 45
			LPG*	150 / 45
			Polypropylene Pellets	115 / 35
			Office Paper	83 / 25
	* 30" (0.75m) high, 10" (0.25m) width plume fire			
Response Time	Typically 5 seconds			
Adjustable Time Delay	Up to 30 seconds			
Sensitivity Ranges	4 Sensitive ranges for 1 ft ² (0.1m ²) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)			
Field of View	Horizontal 100°; Vertical 95°			
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, NEMA 250 6P

APPROVALS

Hazardous Area	FM/FMC	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G
Performance	FM3260	

ACCESSORIES

Flame Simulator FS-1100	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	USB RS485 Harness Kit	794079			

*Supplied free of charge with the detector

sales@norrscope.com