

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 μm 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 it meets the 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
- Meets Safety Integrity Level 2 (SIL2 - TUV pending)
- 5-Year Warranty
- User Programmable via HART or RS-485
- Ex approved for Zone 1 hazardous area location
 - ATEX
 - IECEx
 - FM (applied for)
 - CSA (applied for)
- 3rd party Performance Tested
 - EN54-10 (applied for)
 - FM3260 (applied for)
 - DNV marine approval (applied for)

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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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*	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) Plume fire ** 8" (0.2m) Diameter					
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:	-57°F to +167°F		(-50°C to +75°C)		
	Option:	-57°F to +185°F		(-50°C to +85°C)		
	Storage:	-65°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. 100mA (150mA with heated window)			
	Alarm:	Max. 150mA (200mA with heated window)			
Cable Entries	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO				
Wiring	12 - 22AWG (2.5mm ² - 0.3mm ²)				
Electrical Input Protection	According to MIL-STD-1275B				
Electromagnetic Compatibility	EMI/RFI protected to EN50130-4, EN55011 & EN 55022				
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 5A at 30 VDC or 250 VAC.				
0-20mA (stepped)	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 Ω	
HART Protocol	HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management				
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 - Heavy duty copper free aluminum (less than 1%), white epoxy enamel finish				
Enclosure options					
Mounting	Stainless Steel 316L with electro polish finish				
Dimensions	Detector	3.5" x 4.5" x 6.1" (90 x 114 x 156 mm)			
Weight	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)		
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 GD, Ex de IIB+H2 T5 (-55 to + 75°C) Ex tD A21 IP66/X7 T 95°C	Ex de IIB+H2 T4 (-55 to + 85°C) Ex tD A21 IP66/X7 T 105°C
	FM / CSA	Class I Div. 1, Groups B, C & D (applied for) Class II Div. 1, Groups E, F & G (applied for)	
Performance	EN54-10 - applied for FM-3260 - applied for		
Reliability	IEC61508 - SIL2 (TUV) - applied for		

ACCESSORIES

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

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