

Triple IR3 Flame Detector

HIGHLY ADVANCED SENSOR & OPTICS



SharpEye™

Product Overview

The new 40/40I Triple IR (IR3) Flame Detector detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1ft² (0.1m²) 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.

FEATURES & BENEFITS

- Triple 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
- Ex approved for Zone 1 hazardous area location
 - ATEX
 - IECEx
 - FM/FMC
 - CSA
- 3rd party Performance Tested
 - EN54-10 (LPCB)
 - FM3260 (FM)
 - DNV Marine Approval

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
Aircraft hangars	Explosives & Munitions
	Waste Disposal facilities

APPROVALS

Performance Certification	EN54-10 (LPCB) FM-3260 (FM) DNV Marine Approval		
Hazardous Area	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	Ex de IIB+H2 T4 (-55°C to + 85°C) Ex tD A21 IP66/X7 T 105°C
	FM/FMC/CSA	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G	
Reliability	IEC61508 - SIL2 (TUV)		

DATA SHEET

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SPECIFICATIONS

General

Spectral Response	Triple IR Bands					
Detection Range At highest Sensitivity Setting for 0.1m ² (1ft ²) pan fire	Fuel	m / ft	Fuel	m / ft	Fuel	m / ft
	n-Heptane	65 / 215	Kerosene	45 / 150	Methane*	30 / 100
	Gasoline	65 / 215	Ethanol 95%	40 / 135	Polypropylene Pallets	5 / 16
	Diesel Fuel	45 / 150	Methanol	35 / 115	Office paper	10 / 32
	Aviation Fuel	45 / 150	IPA (Isopropyl Alcohol)	40 / 135		
Response Time	Typically 5 seconds					
Adjustable Time Delay	Up to 30 seconds					
Sensitivity Ranges	4 Sensitive ranges for 0.1m ² (1 ft ²) n-heptane pan fire from 15m (50 ft) to 65m (215 ft)					
Field of View	Horizontal 100°; Vertical 95°					
Built-in-Test (BIT)	Automatic (and Manual)					
Temperature Range	Operating:	-55°C to +75°C				(-67°F to +167°F)
	Option:	-55°C to +85°C				(-67°F to +185°F)
	Storage:	-55°C to +85°C				(-67°F to +185°F)
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	14AWG to 24AWG (0.205mm ²) shielded cable recommended.					
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)					
OutPut						
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:	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					
Mounting	Stainless Steel 316L with electro polish finish					
Dimensions	Detector 101.6 x 117 x 157 mm (4" x 4.6" x 6.18")					
Weight	Detector (St.St.)	2.8 kg (6.1 lb)	Tilt mount	1.0 kg (2.2 lb)		
	Detector, aluminum	1.3 kg (2.8 lb)				
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					

Accessories

Fire Simulator	20/20-310	U-Bolt/Pole Mount	789260-2 (2" pole)	Mini Laptop Kit	777820	Laser Pointer	777166
Tilt Mount	40/40-001		789260-1 (3" pole)	Weather Protector	777163	(Detector area coverage)	
Duct Mount	777670	USB RS485 Harness Kit	794079-5	Air Shield	777161		