

keep a **SharpEye™** on your safety



40/40I

Triple IR (IR3) Flame Detector

Superior performance, reliability and immunity to false alarms



SharpEye™

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
Onshore Oil & Gas installations and pipelines
Chemical plants
Petrochemicals plants
Storage Tank farms
Aircraft hangars

Power Generation facilities
Pharmaceutical Industry
Printing Industry
Warehouses
Automotive Industry
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	Fuel	ft / m
	n-Heptane	215 / 65	Kerosene	150 / 45	Methane*	100 / 30
	Gasoline	215 / 65	Ethanol 95%	135 / 40	LPG *	100 / 30
	Diesel Fuel	150 / 45	Methanol	115 / 35	Polypropylene Pellets	16 / 5
	JP5	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Office Paper	33 / 10
	* 20" (0.5m) high, 8" (0.2m) 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 (2.5mm ² - 0.3mm 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 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	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 per EN60529, NEMA 250 6P					

APPROVALS

Hazardous Area	ATEX and IECEx	Ex II 2 GD, Ex de IIC T5 (-55°C to +75°C) Ex tD A21 IP66/X7 T 95°C	Ex de IIC 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	
Performance	EN54-10 (LPCB) FM-3260 (FM) DNV Marine Approval		
Reliability	IEC61508 - SIL2 (TUV)		

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		



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



UK Office

Keison Products,

P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.

Tel: +44 (0)330 088 0560

Fax: +44 (0)1245 808399

Email: sales@keison.co.uk

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.