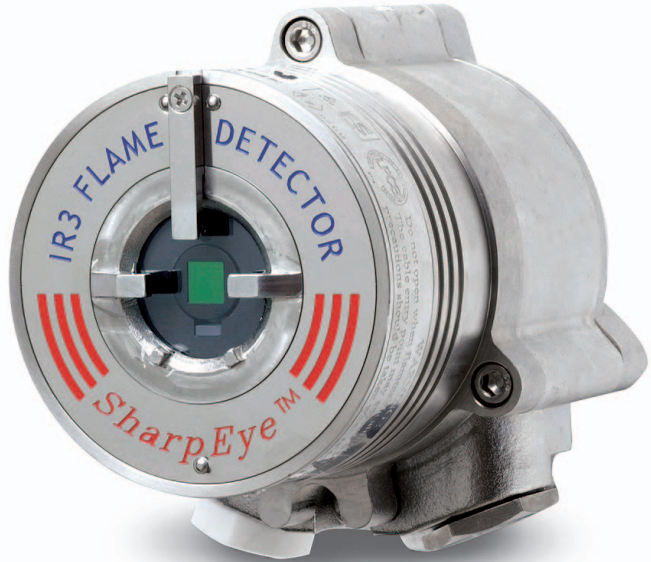# GASTRON

Triple IR Flame Detector

40/40I

SharpEye

The new 40/40I, a multi spectrum based on three IR bands (IR3), detects fuel and gas fires at long distances with the bigbest immunity to false alarms.
The 40/40I IR3 can detect a 1 ft^2 (0.1m^2) 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.
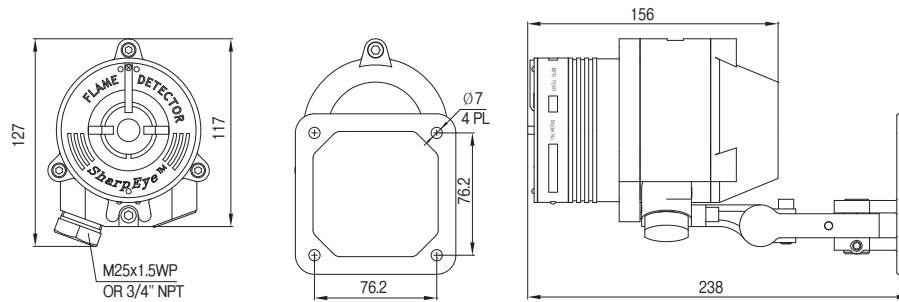
FEATURES & BENEFITS

- 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, condesation)
- 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

Accessories

Simulators
Up to 9m

Tilt Mount
Wall Mount bracket

Duct Mount
In high temperatures

U-Bolt/Pole Mount
2" ~ 3" Pipe mounting

Laser Pointer
Optimizing
detector location

Air shield
Using under tough
environmental conditions

Weather Protector
Protecting the detector
from rain and snow

Mini Laptop Kit
Re-configure settings
or perform diagnostics

USB RS485 Harness
Re-configure settings
or perform diagnostics

Dimension (Unit:mm)

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℃ to +75℃) Option: −67°F to +185°F (−55℃ to +85℃) Storage: −67°F to +185°F (−55℃ to +85℃)				
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 2A at 30 VDC
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: 100−600Ω
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 Enclosure options	− Stainless Steel 316L with electro polish finish − Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish (not available in FM version)
Enclosure options	Stainless Steel 316L with electro polish finish
Mounting	Detector 101.6 x 117 x 157 mm
Dimensions	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 (Ta −55℃ to +75℃) Ex de IIC T4 (Ta −55℃ to +85℃) Ex tD A21 IP66/X7 T 95℃ Ex tD A21 IP66/X7 T 105℃
	FM/FMC/CSA	Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G
Performance	EN54-10 (VdS) FM3260	
Reliability	IEC61508 − SIL2 (TUV)	
Marine	MED ' Wheelmark ' approval (DNV)	

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		