# 975HR Multi IR Flame Detector

| Multi spectrum design-for ling distance detection of hydrocarbons and hydrogen flames | High false alarm immunity | Sensitivity selection-to ensure no zone crossober 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-48 |

IMAGE
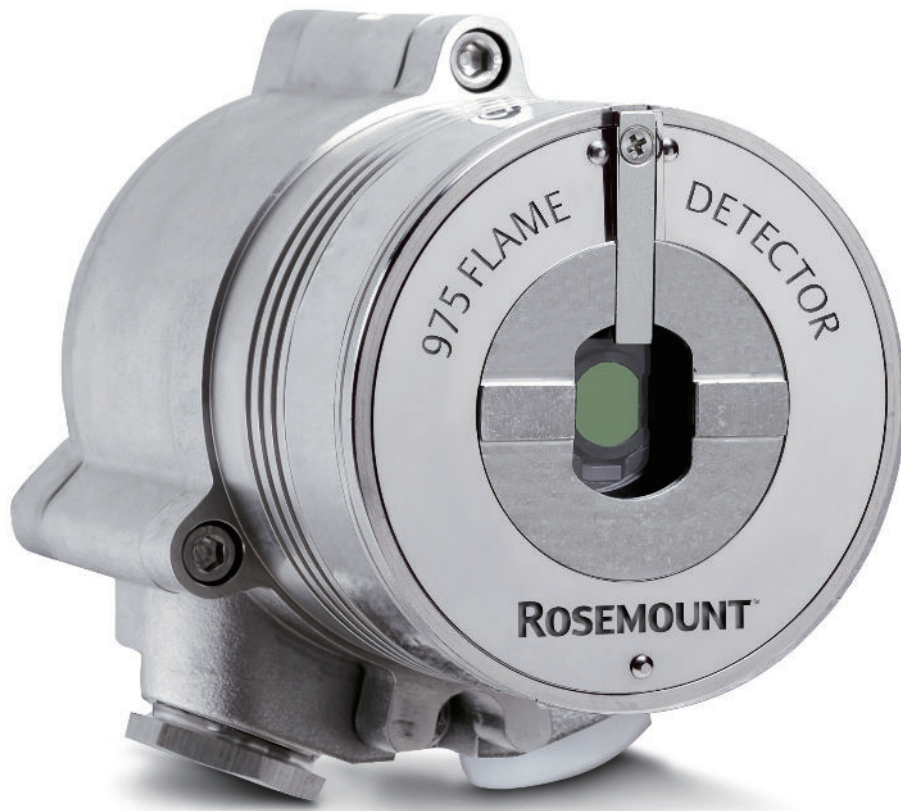
ACCESSORIES

Air Shield

Duct Mount

Mini Laptop Kit

Simulators

U-Bolt / Pole Mount

USB RS485 Harness

Laser Pointer

Tilt Mount

Weather Protector

SPECIFICATION

GENERAL SPECIFICATIONS	
Spectral Response	Multi IR Bands
Detection Range [at highest sensitivity setting for 0.1 m2 (1 ft2) pan fire]	Fuel / ft / m ... (see table below)

GENERAL SPECIFICATIONS					
Spectral Response	Multi IR Bands				
Detection Range [at highest sensitivity setting for 0.1 m2 (1 ft2) pan fire]	Fuel / ft / m				
	Fuel	ft / m	Fuel	ft / m	Fuel	ft / m
	n-Heptane	215 / 65	Ethanol 95%	135 / 40	LPG *	150 / 45
	Gasoline	215 / 65	Methanol	115 / 35	Polypropylene Pellets	115 /35
	Diesel Fuel	150 / 45	IPA (Isopropyl Alcohol)	135 / 40	Ammonia**	60 / 18
	JP5	150 / 45	Hydrogen*	125 / 38	Silane**	2 / 7
	Kerosene	150 / 45	Methane*	150 / 45	Office Paper	82 / 25
	*0.75 m (30 in.) high, 0.25 m (30 in.) width plume fire **0.5 m (25 in.) high, 0.2 m (8 in.) width plume fire				
Response Time	Typically 5 seconds				
Adjustable Time Delay	Up to 30 seconds				
Sensitivity Ranges	4 Sensitive ranges for 1 ft^2 (0.1 ㎡) n-heptane pan fire from 50 ft (15m) to 215 ft (65m)				
Field of View	Horizontal 67,° Vertical 70° for Gasoline Horizontal 80°, Vertical 80° for Hydrogen				
Built-in-Test (BIT)	Automatic (and Manual)				
Temperature Range	Operating: -67℉ to +167℉ (-55℃ to +75℃) Option: -67℉ to +185℉ (-55℃ to +85℃) Storage: -67℉ to +185℉ (-55℃ to +85℃)				
Humidity	Up to 95% non-condensing (withstands up to 100 % relative humidity 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 (0.3㎟ - 2.5㎟)
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 W arning: 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	Stainless Steel 316L with electro polish 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 : II 2 G D or Ex 2 G D Ex db eb op is IIC T4 Gb Ex db eb op is IIC T4 Gb Ex tb op is IIIC T96°C Db Ex tb op is IIIC T96 °C Db (Ta -55°C to +85°C) Ta -55 °C to +75 °C

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) |