

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 40/40R is the most durable and weather resistant single IR 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.*

### Offered by:

Mil-Ram Technology, Inc.

4135 Business Center Drive

Fremont, CA 94538

Tel: 510-656-2001 888-464-5726

### 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
- 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)

### 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

Email: [sls@mil-ram.com](mailto:sls@mil-ram.com)

Web: [mil-ram.com](http://mil-ram.com)

**SPECTREX INC.**

*keep a SharpEye™ on your safety*

## GENERAL SPECIFICATIONS

<b>Spectral Response</b>	Single band IR 4.4-4.6 $\mu$ m					
<b>Detection Range</b> (at highest Sensitivity Setting for 1ft <sup>2</sup> (0.1m <sup>2</sup> ) pan fire)	<b>Fuel</b>	<b>ft / m</b>	<b>Fuel</b>	<b>ft / m</b>	<b>Fuel</b>	<b>ft / m</b>
	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) high, 8" (0.2m) width plume fire					
<b>Response Time</b>	Typically 5 seconds					
<b>Adjustable Time Delay</b>	Up to 30 seconds					
<b>Sensitivity Ranges</b>	2 ranges; 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire from 15 ft (5m) or 50 ft (15m)					
<b>Field of View</b>	Horizontal 90°; Vertical 90°					
<b>Built-in-Test (BIT)</b>	Automatic (and Manual)					
<b>Temperature Range</b>	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)
<b>Humidity</b>	Up to 95% non-condensing (withstands up to 100% RH for short periods)					
<b>Heated Optics</b>	To eliminate condensation and icing on the window					

## ELECTRICAL SPECIFICATIONS

<b>Operating Voltage</b>	24 VDC nominal (18-32 VDC)					
<b>Power Consumption</b>	Standby:	Max. 90mA (110mA with heated window)				
	Alarm:	Max. 130mA (160mA with heated window)				
<b>Cable Entries</b>	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO					
<b>Wiring</b>	12 - 22AWG (2.5mm <sup>2</sup> - 0.3mm <sup>2</sup> )					
<b>Electrical Input Protection</b>	According to MIL-STD-1275B					
<b>Electromagnetic Compatibility</b>	EMI/RFI protected to EN61326-3 and EN61000-6-3					
<b>Electrical Interface</b>	The detector includes twelve (12) terminals with five (5) wiring options (factory set)					

## OUTPUTS

<b>Relays</b>	Alarm, Fault and Auxiliary SPST volt-free contacts rated 5A at 30 VDC or 250 VAC.					
<b>0-20mA (stepped)</b>	Sink (source option) configuration					
	Fault:	0 +1mA		Warning:	16mA $\pm$ 5%	
	BIT Fault:	2mA $\pm$ 10%		Alarm:	20mA $\pm$ 5%	
	Normal:	4mA $\pm$ 10%		Resistance Loop:	100-600 $\Omega$	
<b>HART Protocol</b>	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					
<b>RS-485</b>	RS-485 Modbus compatible communication link that can be used in computer controlled installations					

## MECHANICAL SPECIFICATIONS

<b>Materials</b>	- Stainless Steel 316L with electro polish finish - Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish					
<b>Enclosure options</b>						
<b>Mounting</b>	Stainless Steel 316L with electro polish finish					
<b>Dimensions</b>	Detector	4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)				
<b>Weight</b>	Detector (St.St.)	6.1 lb	(2.8 kg)			
	Detector, aluminum	2.8 lb	(1.3 kg)			
	Tilt mount	2.2 lb	(1.0 kg)			
<b>Environmental Standards</b>	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp					
<b>Water and Dust</b>	IP66 and IP67 per EN60529, NEMA 250 6P					

## APPROVALS

<b>Hazardous Area</b>	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	
<b>Performance</b>	EN54-10 (LPCB) FM-3260 (FM)		
<b>Reliability</b>	IEC61508 - SIL2 (TUV)		

## ACCESSORIES

<b>Fire Simulator</b>	20/20-312	<b>Weather Protector</b>	777163	<b>Mini Laptop Kit</b>	777820	<b>Laser Pointer</b>	777166
<b>Tilt Mount</b>	40/40-001	<b>Air Shield</b>	777161	<b>USB RS485 Harness Kit</b>	794079-5	(Detector area coverage)	