



The SharpEye Mini Single-IR Flame Detector (20/20MR) has a compact design and will provide early warning of flaming fires involving organic (hydrocarbon fuels and vapors) materials.

The detector contains an infrared sensor and optical filter that provides maximum sensitivity to the CO₂ emission spectral band at 4.4 microns and improved immunity to false alarms, caused by environmental IR emitting sources, including sunlight and IR artificial light.

This detector is packaged in a compact, lightweight housing for easy installation and where space is at a premium. It is specially designed as a general-purpose flame detector for industrial applications



to withstand "harsh" environmental conditions, including extreme temperatures, high humidity, vibrations, etc.

MAIN FEATURES

- Sensitivity Selection
- Large Field of View (100° horizontal/vertical)
- User Programmable Functions
- Configurable via software from a PC or handheld device
- Immune to False Alarms
- Automatic and Manual Built-In Test (BIT)
- Standard 4-wire Connection
- 4-20mA sink or source (3-4 wires) configuration
- RS-485 Interface Modbus Compatible
- MTBF Minimum 100,000 Hours
- 3-Year Warranty
- ATEX Approved
- Functional Test - FM Pending

APPLICATIONS

- **Automotive** - manufacturing, paint spray booths
- **Chemical Industry** - production, storage, transportation
- **Paint** - manufacturing facilities
- **Petrochemicals** - production, storage, shipping facilities
- **Pharmaceutical Industry**
- **Power Generation Facilities** - pump areas, generator rooms, unmanned stations, gas-fired and coal-fired reactors
- **Printing Industry** - solvent handling, presses, drying processes
- **Warehouses** - storage facilities for flammable materials
- **Waste Disposal Facilities** - incineration, processing and storage of flammable waste materials (solids, liquids, gases)

SharpEye™ 20/20MR

GENERAL SPECIFICATIONS

Spectral Response	Single IR Band 4.2-4.5µm			
Detection Range (Highest Sensitivity Setting for 1 ft ² (0.1m ²) pan fire)	Gasoline	50 ft (15m)	IPA (Isopropyl Alcohol)	25 ft (7.5m)
	n-Heptane	50 ft (15m)	Methanol	25 ft (7.5m)
	Diesel Fuel	25 ft (7.5m)	Methane*	33 ft (10m)
	JP5	37 ft (11m)	LPG (Propane)*	33 ft (10m)
	Kerosene	37 ft (11m)	Polypropylene Pellets**	12 ft (4m)
	Alcohol (Ethanol)	25 ft (7.5m)	Office Paper	20 ft (6m)
	<i>*20" (0.5m) plume fire, **8" (0.2m) diameter</i>			
Response Time	Typical 5 sec.			
Adjustable Time Delay	Up to 30 seconds			
Sensitive Range	2 Sensitive Ranges for 1 ft ² (0.1m ²) gasoline pan fire from 15 ft (5m) to 50 ft (15m)			
Field of View	100° horizontal, 100° vertical			
Built-in-Test	Manual and Automatic BIT			
Temperature Range	Operating:	-40°F (-40°C) to 160°F (70°C)		
	Storage:	-65°F (-55°C) to 185°F (85°C)		
Humidity	Up to 95%			

ELECTRICAL SPECIFICATIONS

Power Supply	Operating Voltage: 18-32 VDC
Power Consumption	Max. 25mA in stand-by Max. 50mA in alarm
Electrical Connection	12-wires electrical connector (the suitable connector will be supplied)Optional 12 wires 6 ft. (2m) cable (for junction box connection)
Electrical Input Protection	According to MIL-STD-1275A
Electromagnetic Compatibility	EMI/RFI protected CE Marked

OUTPUTS

Relays*	Alarm and Fault SPST volt-free contacts rated 2A at 30 VDC or 0.5A at 250 VAC Fault relay normally closed, Alarm Relay normally open <i>* The Relays do not apply to Ex approved version</i>
4-20mA	Sink (source option) configuration Fault: 0 +0.5mA BIT Fault: 5mA ±10% Normal: 10mA ±10% Warning: 10mA ±10% Alarm: 15mA ±10% Resistance Loop: 100-600 Ω
RS-485	The detector is equipped with an RS-485 communication link that can be used in installation with computerized controllers. The RS-485 is Modbus compatible.

MECHANICAL SPECIFICATIONS

Dimensions	4" x 4" x 2.5" (100 x 100 x 62 mm)
Weight	St.St 316L 2.5Lb (1.2 Kg)
	Plastic 0.7Lb (0.3 Kg)
	Tilt Mount 0.8Lb (0.37 Kg)
Enclosure	1. Stainless Steel 316L with electro polish finish. 2. Plastic housing - glass fiber reinforced polyester.
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

HAZARDOUS AREA APPROVALS

ATEX*	EX II 1 GD, EExia IIC T5 (60°C), T4 (85°C) Zener barriers (not included) are required to achieve the stated approval <i>* The Relays do not apply to Ex approved version</i>
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ACCESSORIES

Fire Simulator	20/20-312
Tilt Mount	20/20-005 (St. St. 316L)

Specifications subject to changes

For more information view manual or website www.spectrex-inc.com

DS-F-MR, May 2005