The SharpEye Mini-IR3 Flame Detector (20/20MD) is a high performance and high reliability compact, self-contained triple spectrum infrared flame detector. With the highest immunity to false alarms, the Mini-IR3 has applications in a wide range of industrial and commercial facilities, where the threat of accidental fire involves hydrocarbon fuels such as gasoline, kerosene, diesel fuel, aviation jet fuels like JP-4, JP-5, JP-8, hydraulic fluids, paints and solvents, monomers and polymers like ethylene and polyethylene, natural gas (LNG), town gas and liquefied petroleum gas (LPG), hydrocarbon gases like methane, ethane, propane, butane, acetylene, propylene, etc.

The patented Triple IR design also offers 3 - 4 times the detection distance of any conventional IR or UV/IR Detector. 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. This model is also available as intrinsically safe approved for use in Ex areas.

**Main Features**

- Triple Spectrum Design
- 80% Less Power Consumption
- Highly Immune to False Alarms
- Large Field of View (100° horizontal/vertical)
- Sensitivity Selection
- User-Programmable Functions
- Configurable via software from a PC or handheld device
- Automatic and Manual Built-In-Test (BIT)
- Standard 4-Wire Connection
- 4-20mA sink or source (3-4 wires) configuration
- RS-485 Modbus Compatible
- MTBF Minimum 100,000 Hours
- 3-Year Warranty
- ATEX Approved
- FM Approval (Functional)
- EN54-10 (VdS) Approved for 20/20MI-1

**Applications**

- Aircraft-hangars and maintenance areas including landing gear pits
- Automotive parts manufacturing
- Car parking towers and garages
- Chemical industry
- Mining and heavy-duty vehicles
- Nuclear power plants
- Paint spray booths
- Petrochemical facilities
- Power generation - pumps, generators, and unmanned stations
- Printing-presses and facilities
- Recreational and sports arenas (facilities)
- Storage areas
- Tank farms with fixed or floating roofs
- Wet bench manufacturing
**GENERAL SPECIFICATIONS**

**Spectral Response**
- Three IR Bands

**Detection Range**
- (Highest Sensitivity Setting for 1 ft$^2$ (0.1m$^2$) pan fire)
  - Gasoline: 133 ft (40m)
  - n-Heptane: 133 ft (40m)
  - Diesel Fuel: 90 ft (27m)
  - IP5: 100 ft (30m)
  - Kerosene: 100 ft (30m)
  - Alcohol (Ethanol): 100 ft (30m)

**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
- *The Relays do not apply to Ex approved version

**Power Supply**
- Operating Voltage: 18-32 VDC

**Electrical Connection**
- 12 wires 6 ft. (2m) cable (for junction box connection)
- Optional: 12-wires electrical connector (the suitable connector will be supplied)

**Electrical Input Protection**
- According to MIL-STD-1275B

**Electromagnetic Compatibility**
- EMI/RFI protected CE Marked

**Outputs**
- 4-20mA
  - Sink (source option) configuration
  - Fault: 0 ±0.5mA
  - BIT Fault: 2mA ±10%
  - Normal: 5mA ±10%
  - Warning: 10mA ±5%
  - Alarm: 15mA ±5%
  - 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)
  - Tilt Mount: 0.8Lb (0.37 Kg)
- Enclosure:
  - Stainless Steel 316L with electro polish finish.
- Environmental Standards:
- 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
  - *The Relays do not apply to Ex approved version

**ACCESSORIES**
- Fire Simulator: 20/20-310
- 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-MI, June 2007