INDUSTRIAL AND COMMERCIAL FLAME DETECTORS

PRODUCT DESCRIPTION

The Detectors Inc. Model D171   1IR+UV Multi -Spectrum Flame Detectors are the most advanced optical flame detectors designed and optimized to respond to both Hydrocarbon based fires while rejecting False Alarm sources. The D171 model senses UV radiation in the Ultraviolet spectrum and infrared radiation in one discrete band of the IR spectrum for detecting fires. Flame response and false source rejection for the D171 model is accomplished by utilizing the Convolution Method and Advanced DSP (Digital Signal Processing) in conjunction with hard coded Algorithms identifying specific wavelengths of Energy. The Detectors is able to respond to Hydrocarbon fires at distances of 100+ feet, all this while rejecting false sources.

The D171 is a stand-alone fire & flame detector in a watertight NEMA 4X (IP66, 67) and explosion-proof Stainless-Steel enclosure designed for indoor/outdoor Class I, Div. 1 (Zone 1) Installations. The Detector is supplied with Alarm / Auxiliary / Fault relays, 0-20 mA analog and RS485 outputs. The detectors can store 200 events and 6 FireGraphs in its FRAM memory.

APPLICATIONS

- ❖ Airports & Aircraft Hangars
- ❖ Warehouse & Storage Facilities
- ❖ Manufacturing & Food Processing
- ❖ Diesel Generators & Fuel Storage
- ❖ Battery Rooms & Charging Facilities
- ❖ Oil & Gas Facilities
- ❖ Refineries & Cogeneration Plants
- ❖ Chemical & Hydrogen Plants
- ❖ Tank Farms
- ❖ Compressor Stations
- ❖ Paint Booths
- ❖ Paint & Solvent Storage Facilities
- ❖ Recycling Centers
- ❖ LPG / LNG Facilities
- ❖ Power Plants
- ❖ Marine Fuel Loading & Unloading

FEATURES AND BENEFITS

- ❖ Multi-Spectrum IR + UV design
- ❖ Detects Hydrocarbon and Non-Hydrocarbon fires with the highest false alarm immunity.
- ❖ Standard outputs: Alarm / Fault / Auxiliary relays, 0-20mA and RS485
- ❖ 200 event history log & 6 FireGraphs®
- ❖ Adjustable Time/Verification Delay up to 20 seconds.
- ❖ Automatic Self-Test checking electronic circuitry and Optical Path Integrity test with OptiRadar®
- ❖ Copper free aluminum enclosure, powder coated finish.
- ❖ Test Mode for manual testing
- ❖ Solar Blind
- ❖ Heater Option to avoid condensation and icing.
- ❖ High False Alarm immunity to external non-fire sources
- ❖ Manufactured in the USA with a 5-year warranty.
- ❖ RFI & EMC compliant
- ❖ Meets SIL 2 requirements
- ❖ FM/CFM/CSFM Approved
- ❖ NEMA 4 & 4x (IP66/67) Enclosure

MODEL D171 FLAME DETECTOR TECHNICAL DATA

GENERAL

Field-of-View:	100° Horizontal and Vertical
Spectral Sensitivity:	UV: 180-260 nanometers
	IR: 4.3 - 4.6 microns (1 discrete band)
Sensitivity Range:	Low, High
Response Time:	Alarm: 3-5 Seconds
Detection Range:	1' x 1' n-Heptane fire: 100 ft. (30.5 m)

ELECTRICAL

Operating Voltage:	24 VDC nominal (18-31), Regulated
Power Consumption:	Standby: 60 mA @ 24 VDC
	Alarm: 90 mA @ 24 VDC
	Heater: Optional, 120 mA additional
Output Relays:	Alarm / Auxiliary / Fault SPDT— contacts rated 2A @ 24 VDC Alarm & Auxiliary relays: De-Energized Fault relay: Energized
	Aux. relay settings: .3, 3, 10, 20 seconds
Analog Output:	0-20 mA Stepped - Source
Communication:	RS485 ModBus
Visual Indications:	Green LED - Normal
	Red LED - Alarm
	Amber LED - Fault
Conduit Entries:	Standard: (2) M25
Wiring:	12 AWG (3.3 mm²) - 22 AWG (.33mm²)

MECHANICAL

Enclosure Material:	316 Stainless Steel
Weight:	10 lbs. (4.5 kg)
Mounting:	Stainless Steel Swivel Arm— Order Separately DA-001
	6.6 lbs. (3 kg)
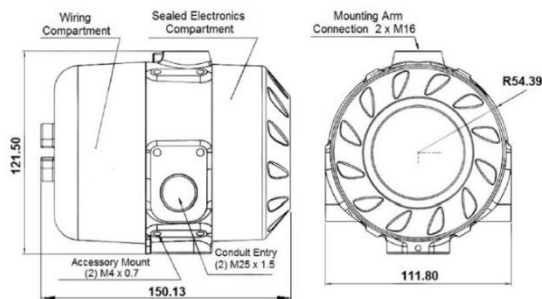
Dimensions in mm

ENVIRONMENTAL

Humidity Range:	5 to 95% Relative humidity, Non-Cond.
Temperature Range:	-40° to +185° F (-40° to +85°C) FM -55° to +185°F (-48.3° to + 85°C) with Heater Option
Vibration:	In compliance with FM 3260-2003, Meets or Exceeds MIL-STD 810C
Enclosure Type:	NEMA 4 & 4X, IP66/IP67

APPROVALS & CLASSIFICATIONS

US FM APPROVED

Certification No: **FM17US0336X**

Class I, Div. 1, Groups A, B, C and D; Ta = -40°C to +110°C Class II/ T4 = -40°C to +85°C, T5 = -40°C to +75°C, T6 = -40°C to +60°C

Class I, Zone 1 AEx db eb IIC T4 Gb, Ta = -40°C to +110°C AEx tb IIIC 135°C Db T4, Ta = Ta = -40°C to +110°C

T4 = -40°C to +85°C, T5 = -40°C to +75°C, T6 = -40°C to +60°C Type 4X and IP66/IP67

Canada FM

Certification No: **FM17CA0120X**

Class I, Div. 1, Groups A, B, C and D; T4, Ta = -40°C to +110°C Class II/ III, Groups E, F and G; T4, Ta = -40°C to +110°C T4 = -40°C to +85°C, T5 = -40°C to+75°C, T6 = -40°C to +60°C Class I, Db T4, Ta = Ta = -40°C to +110°C

T4 = -40°C to +85°C, T5 = -40°C to +75°C, T6 = -40°C to +60°C Type 4X and IP66.IP67

Meets or Exceeds MIL-STD 810C. In Compliance with FM3260-2003

Ex   IEC   IECEx   CE Mark

ORDERING INFORMATION

D171	UV/1IR Multi Spectrum Flame Detector in a stainless-steel Enclosure.
D171 Basic	UV/1IR Multi Spectrum Flame Detector in a stainless-steel Enclosure. Standard outputs: Alarm/Fault/Auxiliary relay only.
DA-001	316 SS Mounting Arm
DA-003	Air Purge Kit
DA-004	Test Light only for Single IR D171
DA-005	Weather Shield
DA-006	Field of View Restrictor
DA-008	Detector Key Test Switch
HW-AM25-0001	M25 Male to ¾" Female Adaptor SS

Installation Recommendations: Please refer to our User Manual for mounting and wiring instructions.

The installation of Detectors Incorporated® flame detectors should be executed in accordance with the recognized national or international standards and codes of practice.

Specifications and wiring information are provided for information only and are believed to be accurate. Detectors Incorporated assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions are shipped with the products and should always be used for actual installation. For more information, contact your Sales Representative.