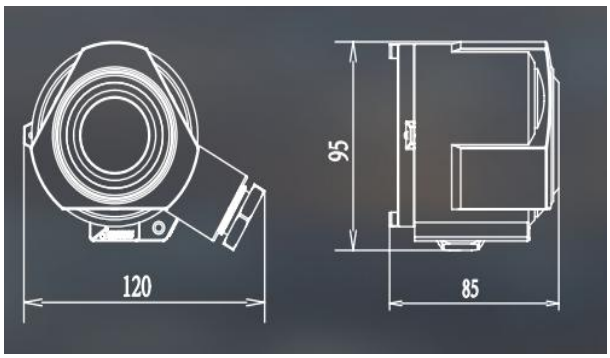
Anwetech

AT-FD1 series Flame detector



Product Introduction

The FD1 series flame detectors are compact, high-performance devices developed by leveraging our advanced flame detection technology to meet market demands. These detectors utilize a new ribbon-type current-mode infrared pyroelectric sensor and a "solar blind" ultraviolet photoelectric sensor. Integrated with a built-in 32-bit microprocessor and proprietary signal processing algorithms, they enable rapid flame signal identification and accurate distinction between real flames and common interference sources.

These detectors significantly minimize the impact of environmental factors and meet stringent requirements for explosion-proof safety, environmental protection, and corrosion resistance. Additionally, their compact size, lightweight design, and simplified installation offer enhanced convenience.

Product Features

Extensive Data Library
Leverages vast industry data to build digital models, significantly improving anti-interference capabilities.

Proprietary Algorithm
Features an independently developed flame recognition algorithm for superior detection performance.

Excellent Anti-Interference
Robust EMC circuit design ensures industrial-grade resistance to electromagnetic interference.

High Corrosion Resistance

Constructed with selected aluminum alloy and a special thermosetting silicone resin coating for enhanced durability.

Self-Diagnostic Function

Comprehensive self-checking capabilities with fault alarm output.

Modular Core Design

Modular internal design simplifies operation and maintenance.,

Item / Model		FD1-UVIR3	FD1-UVIR2	FD1-IR3	FD1-UV
Core Performance	Spectral Range	IR: 3.8-5.0μm; UV: 185-260nm	IR: 4.3-5.0μm; UV: 185-260nm	IR: 3.8-5.0μm	UV: 185-260nm
	Response Time (n-Heptane)	Varies based on fuel, fire size, and distance			
	Field of View	120°		90°	120°
	Optical Integrity Check (Oi)	Yes		NO	
Environmental	Operating Temperature	-40°C ~ 70°C			
	Storage Temperature	-40°C ~ 85°C			
	Humidity Range	0 ~ 96% RH (Non-condensing)			
Electrical	Operating Voltage	24V DC (18 ~ 30V DC)			
	Operating Current	≤ 50mA			
	Output Signal	Standard: Two Relay Outputs			
	Contact Rating	1A @ 30V DC			
Structural Certifications & Standards	Housing Material	Cast Aluminum			
	Conduit Entry	1 x NPT 3/4"			
	Dimensions	120mm * 95mm * 85mm			
	Weight	0.7kg			
	Explosion Protection Rating	Ex db IIC T6 Gb / Ex tb IIIC T80°C Db			

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Application Areas

Petrochemical

Aerosol Filiing

Loading Racks

Machine Tool Procesing

Refineries

Combustible Metals

Warehouses

Food Processing

Oil & Gas Onshore Platforms

Powder Coating

Hangars

Rail Transportation

Tank Farms

Electrostatic Spraying

Battery Rooms

Testing

Before testing, the relevant authorities should typically disable the logical control functions of the area or system being serviced to prevent unnecessary alarm activation during testing of the flame detector system. The flame detector must be tested after installation and following each maintenance service.

Upon power-up, the detector performs an initialization sequence, indicated by a solid green light for approximately 50 seconds. During normal operation, the number of times the green LED flashes indicates the current sensitivity level.

Before testing, verify that the LED is flashing. If it is not flashing, the detector may not be powered (check connections) or may be damaged (return for repair).

Field testing can be performed using an alcohol lamp or a flame simulator. Simulate a fire condition until the detector alarms. After testing, notify the relevant authorities to restore the system to normal operation. If the detector fails these tests, it should be returned for repair.

Note: The flame detector contains no user-serviceable parts. Any unauthorized replacement of components or circuit adjustments may impair device performance and void the warranty.

Maintenance

Important: Flame detectors must be regularly tested and maintained in accordance with national standards and relevant regulations. Detectors should be cleaned at least once per year and tested monthly.

Before cleaning, the relevant authorities should typically place the flame detector system under temporary maintenance mode. Disable the logical control functions for the area or system being serviced to prevent unnecessary alarm activation.

Remove dust and debris from the detector's front window using a vacuum suction tool or compressed air.

If the lens has oily stains or dirt, wipe it gently with a cotton swab moistened with alcohol. Do not use abrasive materials that could scratch the lens.

After cleaning all detectors, test each unit according to the testing procedure described in Section

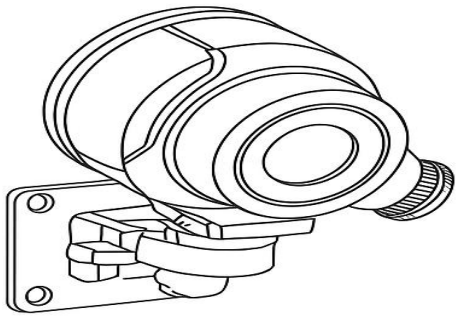
Installation

Warning: Before installing the detector, **disconnect the power** to the detector circuit. Verify that the external wiring is free of open or short circuits.

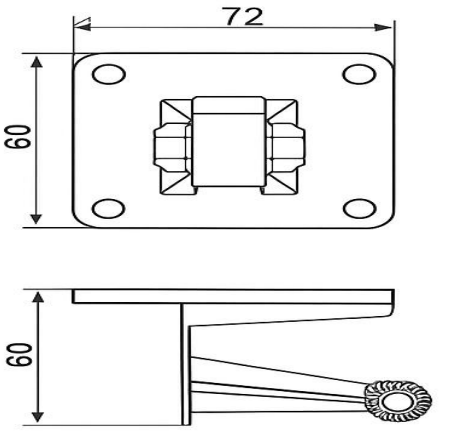
Note: All wiring must comply with applicable standards and regulations. Use wires with a cross-sectional area of **at least** 1.0 mm^2. Strip approximately 6 mm of insulation from the end of each wire for connection to the flame detector's terminals.

Caution: Excessive or insufficient exposure of the conductor may result in faulty connections.

Install the flame detector as shown in the diagram. Adjust the detector's viewing angle as needed to cover the intended protection area.



Wall-mounted installation



Bracket hole dimensions

9. Terminal Wiring

⊕	⊙	⊙	⊙	⊙	⊙
+24V	GND	FRJK	FRJD	FLJK	FLJD

Terminal Description	
+24V	24V Power Supply
GND	24V Power Ground
FRJK	Fire Alarm Relay Normally Open Contact
FRJD	Fire Alarm Relay Common Contact
FLJK	Fault Relay Normally Closed Contact *

*Note: Fault relay is normally closed. Closed during normal operation, open during fault alarm.