

I. Flame detector User Manual

The HW-F005 is an industrial-grade fire alarm device. It features a dual-band detection method combining infrared and thermal radiation sensing, utilizing the Curie temperature of lithium thallium crystal material. It is effective against flame temperatures ranging from 250-4000°C and provides significant temperature difference and high-contrast polarity for fire early warning. The detector boasts stable performance and can quickly detect and trigger an alarm within 5-10 seconds when a fire occurs. The product can be set up via scanning a QR code with a mobile phone. It is suitable for various open flame detection fire alarms, including: internal fire alarms for machinery, security machine alarms, industrial plants, mining areas, chemical combustible material alarms, residential homes, charging piles, gas stations, chargers, and other equipment.

II. Setup Instructions

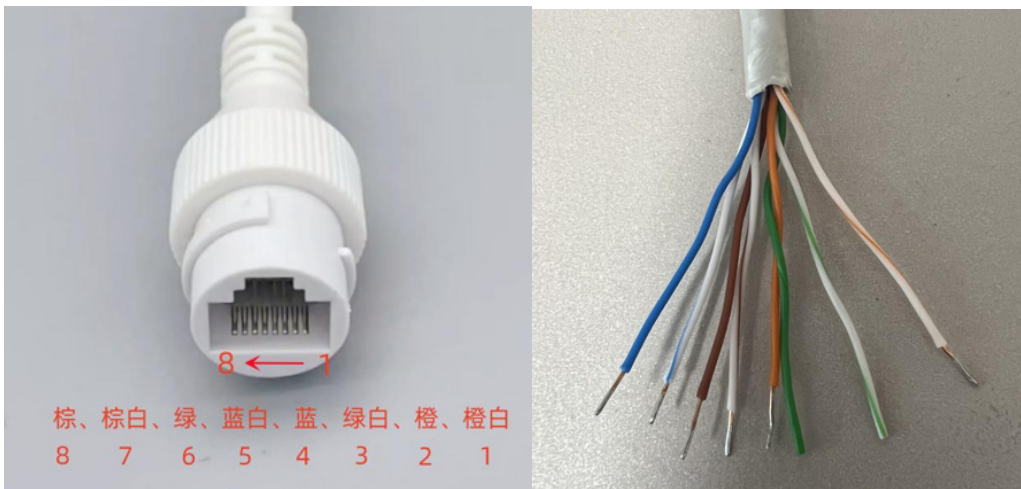
1. Powered via RS-8-core network cable, installed flush-mounted on the ceiling in fire protection passages for detection.
2. Multi-channel output: Fire alarm high-level output and fire alarm solid-state relay switch signal output.
3. Enclosed in a metal housing.
4. High-sensitivity outdoor fire detection, suitable for secondary development.
5. Wide range of applications, especially suitable for outdoor scenarios.
6. Immune to electromagnetic radiation, sunlight, and background thermal radiation.
7. Passive operation, low power consumption, multiple protections, and ultra-long service life design.
8. Installed inside equipment machinery, fully enclosed in metal, corrosion-resistant, waterproof, dustproof, and pollution-proof.

III. Alarm threshold: Refer to the chart:

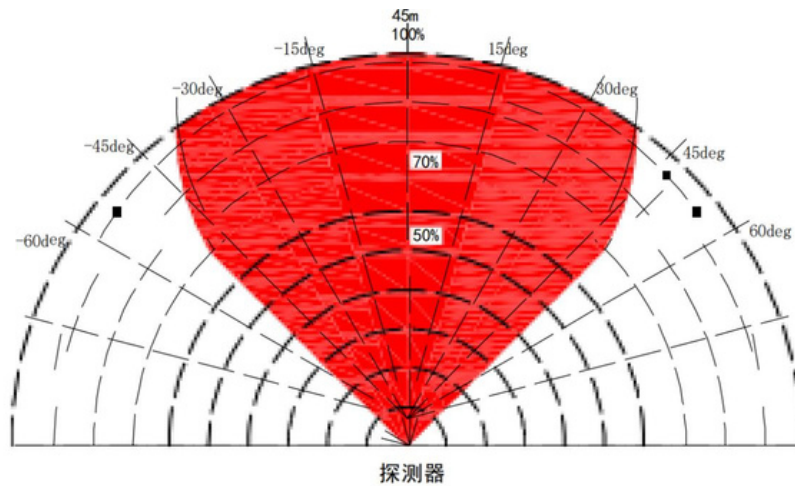
Model	HW-F005	Dual-Wavelength	FlameAlarm
Power supply	9v/500mA-15v/500mA	Default12v	Built-insolid-staterelay
Work indicator light	Blue: The indicator light shows normal operation. Red: Alarm indicator light.		
Power consumption	<3w		
Sensing distance	1-30m	Thelargerthefire,thefasterthedetection	
Relay load range	3A-100W	Drycontactswitchsignal	
Fire alarm threshold	300mmx300mm	Areafireflame,sizealarmthreshold	
Sensor	43----51	Dual-WavelengthFlameAlarm	
Output 3-channel signal	Relayswitchoutput	High-leveloutput	
Output port	RS-8 Network cable output		
Network cable	RS8core network cable length 150mm		
Blackbody threshold	500k	1HZ0.3-3BPS	Default500K
Fire alarm sending time	5s-10s	Firealarmduration:3-5s	Repeatabletriggering
Sensing angle	10-110°		Windowangle
Sensor probe wavelength	380-750nm		
Metal casing accessories	host x1pcs		
Module size	45mmx45mmx45mm		Casingsize
Waterproof rating	IP66		
Operating temperature	-20----+70		

IV. Output port definition

Line number	Color	definition
1.Power Positive (+) / VCC	Orange-white	VCC
2.Power Negative (-) / GND	Orange	GND
3.RS-485 Signal A (485A)	Green-white	----
4.Relay Common (COM)	Blue	Relay K
5.Relay Normally Open (NO)	Blue-white	RelayON
6.RS-485 Signal B (485B)	Green	----
7.Relay Normally Closed (NC)	Brown-white	----
8.Fire Alarm TTL	Brown	Fire alarm high level OUT

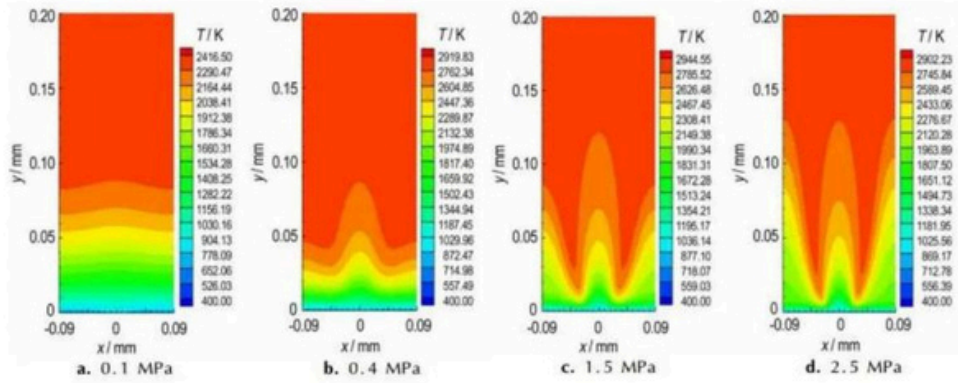


V. Detection Range Schematic and Response Time Definitions



The fire alarm detection time is as follows: when the triggering conditions are met, the fire will continue to output a trigger signal as long as the fire is extinguished, indicated by a constantly lit red LED. When the flame disappears, the flame sensor source will reset in approximately 5 seconds, returning to sentinel detection mode. This detection time is determined when a fire occurs.

1. Avoid installation in areas with heavy steam/oil fume, such as kitchens and bathrooms, and keep away from air conditioning vents and dust accumulation areas to prevent false alarms.
2. Clean the optical sensor quarterly with a soft brush to prevent dust from obstructing detection accuracy.
3. Monthly check the audible and visual alarms and power connection by pressing the test button to ensure timely response in case of fire.



2.The combustion temperature of common combustibles

Material	temperature/°C	Material	temperature/°C	Material	temperature/°C	Material	temperature/°C
methane	1800	crude oil	1100	wood	1000-1170	liquefied gas	2100
ethane	1895	gasoline	1200	Magnesium metal	3000	natural gas	2020
acetylene	2127	kerosene	700-1030	Metallic sodium	1400	petroleum gas	2120
methanol	1100	heavy oil	1000	lithium battery	1427	Match flame	750-850
ethanol	1180	bituminous coal	1647	carbon monoxide	1680	Burning cigarettes	700-800
Ether	2861	hydrogen	2130	sulfur	1820	paper	650-850
acetone	1000	coal gas	1600-1850	carbon dioxide	2195	rubber	1600

VI. Product casing

