

Fire Watch

Heat Detector



Product Overview

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|-----------------------|--------------------------|
| Product | Fire Watch Heat Detector |
| Part No. | FW5500-450 |
| Digital Communication | FW Protocol |

Product Information

The FW Heat Detector monitors temperature by using a single thermistor which provides a voltage output proportional to the external air temperature. It is classified as an ordinary detector by UL.

- Compatible with all devices from the UL 268 7th Edition approved FW range
- Electronic temperature sensing
- Alarm flag for fast alarm reporting
- Automatic addressing with the EXPERT 7 card
- Electronics-free 4" and 6" bases
- Easy installation and elegant design
- Ideal for environments that are dirty or smoky under normal circumstances

Technical Data



CAUTION: the Fire Watch Heat Detector, part # FW5050-450, can only be used on systems operating with FW protocol.

All specifications are subject to change without notice. Specifications are typical at 24 VDC, 73°F, and 50% RH unless otherwise stated.

Sensor: Single NTC thermistor

Sampling frequency: one time per second

Digital communication: XP95

Supply voltage: 17 – 28 VDC

Modulation voltage at detector: 5 – 9 V, peak to peak

Standby current: 250 µA

Surge current: 1 mA

Alarm current: 3 mA maximum

Operating temperature range: 32 to 151°F

Humidity: 0 to 95% RH, no condensation or icing

Standards and approvals¹

Dimensions: 3.93" diameter x 1.65" high

Weight: 3.7 oz.

Material: White flame-retardant polycarbonate, terminals are tin-plated stainless steel

Test method: hair dryer

Spacing:

Smooth ceiling: 60 feet

To a wall or partition: 25 feet

Operating Principles

The FW Heat Detector has a low airflow resistant case made of white polycarbonate. The detector monitors heat by using a single thermistor which provides a voltage output proportional to the external air temperature.

Electrical Description

The FW Heat Detector is designed to be connected to a two-wire SLC loop carrying data and 17 – 28 VDC power. The detector is connected to the incoming and outgoing supply using terminals L1 and L2 on the mounting base. A remote LED indicator requiring not more than 1 mA maximum may be connected between the “R” and L2 terminals. An Earth connection terminal is also provided. The detector is calibrated to give an analog value of 25, ± 5 counts, at 70°F. This value increases with rising temperature. A count of 55 corresponds to the UL alarm sensitivity of 135°F. When the detector is energized the ASIC regulates the flow of power and controls the data processing. The thermistor provides an output over the normal operating range that is proportional to the external air temperature. The voltage output is processed in the analog to digital converter and stored by the communications ASIC. It is transmitted to the control equipment with the detector is interrogated. When a count of 55 is exceeded the alarm flag is initiated and the device address is added to the data stream every 32 polling cycles from its last polling for the direction of the alarm level condition, except for when an alarming device is being interrogated. This sequence provides the location of the device in alarm in approximately two seconds.

Maintenance and Service

Maintenance shall be performed in accordance with all applicable codes and standards. The exterior of the detector may be cleaned using a soft damp cloth.

Response Characteristics of the FW Heat Detector

| Type of Fire | FW Heat Detector |
|------------------------|------------------|
| Overheating | Very Poor |
| Thermal Combustion | Very Poor |
| Smoldering | Very Poor |
| Glowing Combustion | Very Poor |
| Flaming Combustion | Poor |
| Flaming with High Heat | Moderate/Good |
| Flaming Clean Burning | Moderate/Good |

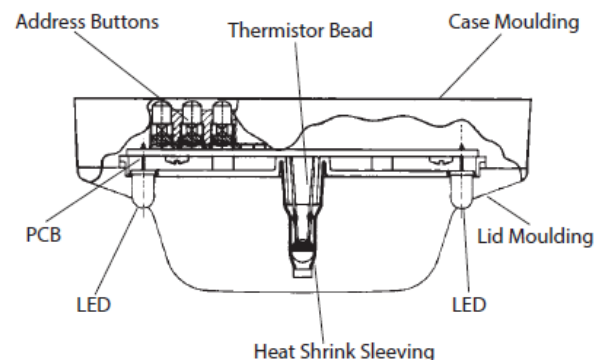
Compatible Bases

| Part Number | Product Name |
|-------------|--------------------------|
| FW5000-210 | FW UL Base – 4” diameter |
| FW5000-230 | FW UL Base – 6” diameter |

Other FW Detector Models

| Part Number | Product Name |
|-------------|---|
| FW5050-350 | FW Multi-Criteria Detector (Smoke/Heat) |
| FW5050-250 | FW Smoke Detector |

FW Heat Detector Diagram



Technical Data—Fire Watch Detectors

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|--|--|--|--|
| Detector Model Number | FW5050-250 | FW5050-350 | FW5500-450 |
| Detector Type | Smoke Detector | Multi-Criteria Detector (Smoke + Heat) | Heat Detector |
| UL Listed Voltage | 17—28 VDC | 17—28 VDC | 17—28 VDC |
| Modulation Voltage (V Peak to Peak) | 5—9 Volts | 5—9 Volts | 5—9 Volts |
| Maximum Alarm Current LED On | 4 mA | 4 mA | 2.5 mA |
| Surge Current | 1 mA | 1mA | 1mA |
| Supervisory Current | 340 µA | 500 µA | 250 µA |
| Additional Remote LED Current | 5 mA | 5 mA | 5 mA |
| Heat Sensitivity Rating | n/a | Rate of Rise (RoR) 20°F/min (11°C/min) | n/a |
| Sensitivity | UL 1.23 - 2.09 %/ft ULC 1.44 - 2.3 %/ft | UL 1.23 - 2.09 %/ft ULC 1.44 - 2.3 %/ft | n/a |
| UL Instruction | Smoke Automatic Fire Detector for use with a S5022 UL listed Base | Smoke Automatic Fire Detector with integral Heat Detector for use with a S5022 UL listed Base | Heat Automatic Fire Detector for use with a S5022 UL listed Base |
| Test Method | Please refer to the detector instructions. Spray with any of the following smoke products: <ul style="list-style-type: none"> • Solo Detector Tester Solo A10 • Smoke Sabre Smoke Detector Tester • Solo Detector Tester Solo 365 • Solo Detector Testifire | | Hair Dryer |