

## 5251RB-WP and 5251B-WP Weatherproof Intelligent Heat Sensors

[www.systemsensor.com](http://www.systemsensor.com)

### SPECIFICATIONS

Diameter:	104 mm (4.1 inches) installed in B501A
Height:	51 mm (2.0 inches)
Weight:	137 g (4.8 ounces)
Installation Temperature Range:	-20°C to 50°C (-4°F to 122°F)
Operating Humidity Range:	10% to 90% Relative Humidity (Non-condensing)
Voltage Range:	15 to 32 Volts DC Peak
Standby Current:	300 $\mu$ A @ 24 VDC (one communication every 5 seconds with LED blink enabled)
LED Current:	6.5 mA @ 24 VDC
Fixed Temperature Rating:	63°C (146°F)
Fixed Temp. & ROR Detection:	Type: A2R (5251RB-WP)
Fixed Temp. Detection:	Type: A2 (5251B-WP)
IP Rating:	IP67

### BEFORE INSTALLING

This sensor must be installed in compliance with the C.I.E. installation manual. The installation must meet the requirements of the Authority Having Jurisdiction (AHJ). Heat Sensors offer maximum performance when installed in compliance with AS1670.1-2004.

Please refer to the operators manual for the listed C.I.E. for specific operation and settings for the 5251RB-WP and 5251B-WP Heat sensors.

**Note:** This detector must be fitted to the special B501A base as supplied with the detector. This detector will not fit into the standard B501 model base.

### GENERAL DESCRIPTION

Models 5251RB-WP and 5251B-WP are intelligent heat sensors that utilize a state-of-the-art thermistor sensing circuit for fast response. All heat detectors should be spaced and installed in accordance with the requirements of the relevant authority having jurisdiction and AS1670.1-2004.

The detector address should be set by handheld programmer (model CP500) from 1 to 159 before installing.

**Note:** Check C.I.E. maximum loop capacity before setting address higher than 99.

Model 5251RB-WP is a Type A2R rate-of-rise temperature sensor with 63°C fixed temperature alarm setting. Model 5251B-WP is a Type A2 fixed temperature heat sensor with 63°C fixed temperature alarm setting.

Two LEDs illuminate red to provide 360° visibility of the sensor alarm indication. The LEDs can be latched on by code command from the C.I.E. for an alarm indication. The LEDs can also be unlatched to the normal condition by code command. Remote LED annunciator capability is available as an optional accessory (Part No. RA400Z).

Models 5251RB-WP and 5251B-WP require compatible addressable communications to function properly. Therefore these sensors must only be connected to compatible and listed C.I.E.

### WIRING GUIDE

Proper wire gauges should be used. The installation wires should be color coded to limit wiring mistakes and ease system troubleshooting. Improper connections will prevent a system from responding properly in the event of a fire.

### WIRING INSTALLATION GUIDELINES

This detector provides six wires which are divided into three groups, separately two red, two white and two black wires.

Refer to Figure 1.

Terminal Notes:

Red wire: Power / Loop +ve  
Black wire: Power / Loop -ve (also Remote LED -ve )  
White wire: Remote LED +ve

Wiring Diagram refers to Figure 2.

Remove power from the communication line before installing sensors.

1. Secure B501A adapter to the roof or ceiling.
2. Set the sensor to a desired address with handheld programmer.
3. Connect the Wires to loop wiring as per the wiring diagram, see Figure 2A.
4. The wiring connections must be prevent from water, see figure 2B.
5. Install the sensor into the sensor adapter. Push the sensor into the adapter while turning it clockwise to secure it in place.
6. After all sensors have been installed, apply power to the control unit and activate the communication line.
7. Test the sensor(s) as described in the TESTING section of this manual.

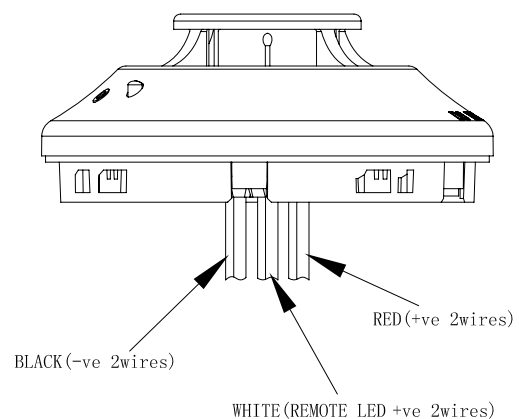
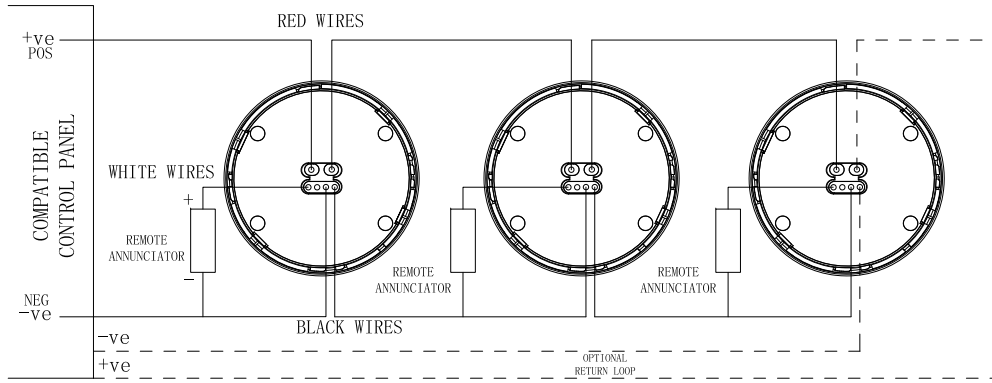


Figure 1.



**Figure 2A. Detector Wiring Diagram**

**TAMPER RESISTANT FEATURE**

The sensor adapter have a tamper-resistant feature. When this feature is enabled, sensors cannot be removed from the adapter without the use of a small screwdriver or other similar tool. Refer to the sensor adapter installation instruction manual for details in using this feature.

**TESTING**

Before testing, notify the proper authorities that the system is undergoing maintenance, and will temporarily be out of service. Disable the system to prevent unwanted alarms.

All sensors must be tested after installation and periodically thereafter. Testing methods must satisfy the Authority Having Jurisdiction (AHJ). Sensors offer maximum performance when tested and maintained in compliance with AS1851-2005. The sensor may be tested in the following ways:

**A. Test Magnet (Model No. M02-04)**

1. Place the magnet against the cover in the magnet test area as shown in Figure 3 to activate the test feature.
2. The LEDs should latch ON within 10 seconds, indicating alarm and annunciating the panel.
3. Reset the detector at the system control panel.

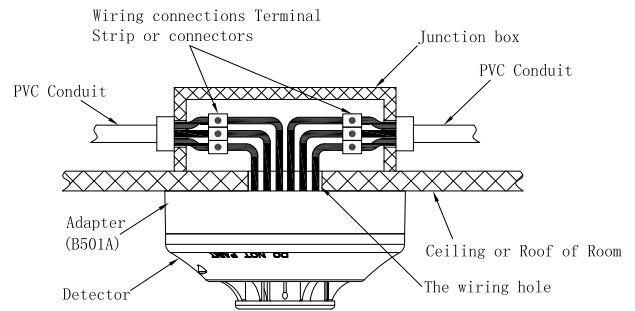
**B. Direct Heat Method (Hair dryer of 1000 – 1500 watts)**

1. From the side of the detector, direct the heat toward the sensor. Hold the heat source about 15cm (6 inches) away to prevent damage to the cover during testing.
2. The LEDs on the detector should light when the temperature at the detector reaches the alarm setpoint. If the LEDs fail to light, check the power to the detector and the wiring in the detector adapter.
3. Reset the detector at the system control panel.

Detectors that fail these tests should be cleaned as described under MAINTENANCE and retested. If the detectors still fail these tests they should be replaced immediately.

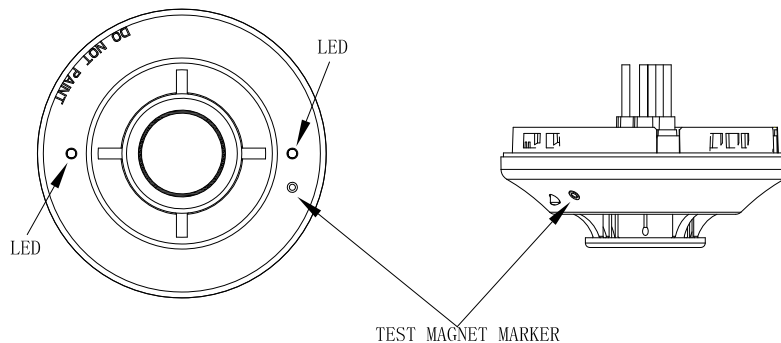
**MAINTENANCE**

**NOTE:** Before cleaning notify the proper authorities that the system is undergoing maintenance, and therefore the system will temporarily be out of service. Disable the loop or system undergoing maintenance to prevent unwanted alarms.



- Notes:
1. The terminal strip or connectors should be prevent from water.
  2. The wiring hole should be filled with silicone sealant.

**Figure 2B. Field Wiring Diagram**



**Figure 3. Views Showing Position of Test Magnet**

**Please refer to insert for the Limitations of Fire Alarm Systems**