

5251CPI, 5251CPI-W, 5251RCPI, 5251RCPI-W, 5251HCPI, and 5251HCPI-W

Intelligent Temperature Sensors



SPECIFICATIONS

Operating Voltage Range:	15 to 32 Volts DC Peak	
Operating Current @ 24 VDC:	200 uA (one communication every 5 seconds with green LED blink on communication)	
Maximum Alarm Current:	2 mA @ 24 VDC (one communication every 5 seconds with red LED solid on)	
Maximum Current:	4.5 mA @ 24 VDC (one communication every 5 seconds with amber LED solid on)	
Operating Humidity Range:	10% to 93% Relative Humidity, Non-condensing	
Installation Temperature:	Set for fixed-temperature or rate-of-rise (ROR): -10°C to 50°C Set for high-heat: -10°C to 80°C	
Fixed Temperature Rating:	57°C	
High Heat Temperature Rating:	88°C	
Rate-of Rise Detection:	Responds to greater than 8.3°C/minute or 57°C	
Height:	51 mm installed in B501BI-IV/B501BI-W, B501AUS-W/B501AUS-IV Base	
Diameter:	156 mm installed in B501BI-IV/B501BI-W, B501AUS-W/B501AUS-IV Base	
Weight:	95 g	
Applicable Standards:	NZS4512 and AS ISO 7240.5: 2018	Class A2S: 5251CPI, 5251CPI-W Class A2R: 5251RCPI, 5251RCPI-W Class C: 5251HCPI, 5251HCPI-W

This sensor must be installed in compliance with the control panel system installation manual. The installation must meet the requirements of the Authority Having Jurisdiction (AHJ). Sensors offer maximum performance when tested and maintained in compliance with AS1670.1.

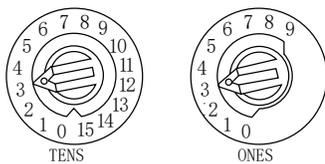
Before installing sensors, please read the system wiring and installation manual thoroughly. This manual provides detailed information on sensor spacing, placement, zoning, and special applications. Copies of these manuals are available from Pertronic.

GENERAL DESCRIPTION

5251CPI, 5251CPI-W, 5251RCPI, 5251RCPI-W, 5251HCPI, and 5251HCPI-W are intelligent sensors that use a state-of-the-art thermistor sensing circuit for fast response. The intelligent temperature sensor operates as either a 57°C fixed temperature sensor, a rate of rise 57°C temperature sensor, or a 88°C high temperature sensor.

Two LEDs on each sensor provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N RA100Z). Rotary dial switches are provided for setting the sensor's address. (See Figure 1.)

FIGURE 1: ROTARY ADDRESS SWITCHES



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Fire Alarm and Control panels offer different feature sets across different models. As a result, certain features of the intelligent temperature sensors may be available on some control panels, but not on others. Detectors support CLIP (Classic Loop Interface Protocol) mode. The possible features available if supported by the control panel include:

1. The sensor's LEDs can operate in three ways—on, off, and blinking—and they can be set to red, green, or amber. This is controlled by the panel.
2. The remote output may be synchronized to the LED operation or controlled independent of the LEDs. Please refer to the operation manual for the UL listed control unit for specific operation of these models
3. Devices are point addressable up to 159 addresses.
4. The heat sensor operates as a fixed-temperature heat detector.
NOTE: The 5251CPI and 5251CPI-W is a 57°C fixed heat detector. 5251RCPI and 5251RCPI-W is a 57°C fixed heat detector and rate-of-rise. 5251HCPI and 5251HCPI-W is a 88°C high temperature heat detector.

Intelligent temperature sensors require compatible addressable communications to function properly. Connect these sensors to listed-compatible control panels only.

Compatible Bases: B501BI-IV/B501BI-W, B501AUS-W/B501AUS-IV.

SPACING

Pertronic recommends spacing sensors in compliance with AS 1670.1 or NZ4512. All detectors should be spaced and installed in accordance with the requirements of the relevant authority having jurisdiction. For specific information regarding sensor spacing, placement, and special applications, refer to AS 1670.1, NZ4512, or the Smoke Detector Application Guide.

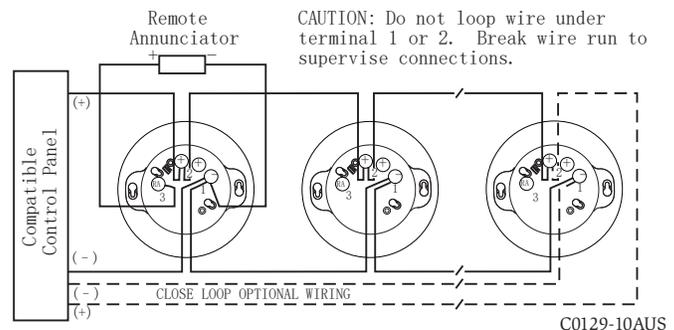
WIRING GUIDE

All wiring must be installed in compliance with the National Electrical Code, applicable local codes and the Authority Having Jurisdiction. 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.

Remove power from the communication line before installing sensors.

1. Wire the sensor base (supplied separately) as shown in the wiring diagram. (See Figure 2.)
2. Set the desired address on the rotary dial switches. (See Figure 1.)
3. Install the sensor into the sensor base. Push the sensor into the base while turning it clockwise to secure it in place.
4. After all sensors have been installed, apply power to the control unit and activate the communication line.
5. Test the sensor(s) as described in the TESTING section of this manual.

FIGURE 2. WIRING DIAGRAM



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TAMPER RESISTANCE

Intelligent temperature sensors include a tamper-resistant capability that prevents their removal from the base without the use of a tool. Refer to the base manual for details on making use of this capability.

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 AS1670.1.

A. Test Magnet (P/N M02-09-00)

1. Place the optional test 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 15 cm 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 base.
3. Reset the detector at the system control panel.

Detectors that fail these tests may need to be cleaned as described under CLEANING and retested.

CLEANING

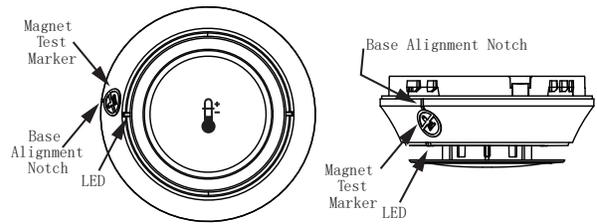
Before removing the detector, notify the proper authorities that the smoke detector system is undergoing maintenance and will be temporarily out of service.

Disable the zone or system undergoing maintenance to prevent unwanted alarms.

1. Remove the sensor to be cleaned from the system.
2. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing area.
3. Reinstall the detector.
4. Test the detector as described in TESTING.
5. Reconnect disabled circuits.
6. Notify the proper authorities that the system is back on line.

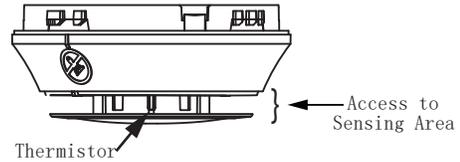
Note: Dispose of electronic waste according to national and local regulations when scrapping or replacing a device. Do not discard as general trash.

FIGURE 3: FEATURES OF THE HEAT DETECTOR



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FIGURE 4: CLEANING THE HEAT DETECTOR



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Australian
Standard
Lic. SMK25312
SAI-Global

DEVICE AND SYSTEM SECURITY

Before installing this product ensure that the tamper seal on the packaging is present and unbroken and the product has not been tampered with since leaving the factory. Do not install this product if there are any indications of tampering. If there are any signs of tampering the product should be returned to the point of purchase. It is the responsibility of the system owner to ensure that all system components, i.e. devices, panels, wiring etc., are adequately protected to avoid tampering of the system that could result in information disclosure, spoofing, and integrity violation.