Please refer to insert for the Limitations of Fire Alarm Systems

Three-Year Limited Warranty

Pertronic Industries warrant its enclosed smoke detector to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. Pertronic Industries makes no other express warranty for this smoke detector. No agent, representative, dealer, or employee of the Pertronic Industries has the authority to increase or alter the obligations or limitations of this Warranty. The Industries's obligation of this Warranty shall be limited to the repair or replacement of any part of the smoke detector which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After Contacting your local Pertronic Industries representative for issuing of a Return Authorisation Number (RA#) and to arrange for return of the defective units. Please include a note describing the malfunction and suspected cause of failure. The Industries shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Industries be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Industries's negligence or fault.

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Model 2151BPI
Low Profile Photoelectric
Plug-in Smoke Detector

www.pertronic.co.nz
www.pertronic.com.au

Specifications

Height:	51 mm (2.0 inches) installed in B401 Base
Diameter:	104 mm (4.1 inches) installed in B401 Base 155 mm (6.1 inches) installed in B110LP Base
Weight:	88 g (3.1 oz)
Operating Temperature Range:	0°C to 49°C (32°F to 120°F)
Operating Humidity Range:	10% to 93% Relative Humidity noncondensing
Latching Alarm:	Reset by momentary power interruption.
Input Voltage Range:	8.5VDC to 35VDC
Max. Start-Up Current:	120µA
Max. Standby Current:	60µA
Alarm Current Range:	10mA to 130mA
Typical Remote Output Voltage(Voc):	4.3V (Current Limiting 10mA); 4.5V (Current Limiting 100mA)
Remote Output Current(Isc) Range:	20mA to 26mA (Current Limiting 100mA)
Min. Reset Voltage:	2.5VDC

Before Installing

The model 2151BPI must be installed in compliance with this manual and connected to a compatible control panel. The installation must meet the requirements of the Authority Having Jurisdiction (AHJ). This detector will offer maximum performance when installed in compliance with Australian Standard AS1670.1-2004

NOTICE: This manual should be left with the owner/user of this detector.

IMPORTANT: The detector must be tested and maintained regularly in compliance with the requirements of the local AHJ. The detector should be visually inspected at least once per year.

General Description

The 2151BPI low-profile photoelectric detector uses a state-of-the-art optical sensing chamber. This detector is designed to provide open area protection and to be used with compatible listed control panels only. The capability of plugging this detector into a variety of special bases makes it more versatile than equivalent direct-wired models.

Two LEDs on each detector provide local 360° visible alarm and diagnostic indication. They flash every five seconds indicating that power is applied and the detector is working properly. The LEDs latch on in alarm and stop flashing if the detector gets excessively dirty or becomes too insensitive. Remote LED annunciator capability is standard and may be implemented through an optional accessory RA400Z. The alarm can be reset only by a momentary power interruption. This detector may be tested by activating the internal reed switch with a test magnet.

Base Selection And Wiring Guide

Refer to the installation instructions for the plug-in detector bases for base selection and wiring instructions.

The standard 2-wire base is the B401 base. There are also a a variety of detector bases available for this smoke detector, including 2-wire & 4-wire bases with and without relays and/or current limiting resistors.

All bases are provided with screw terminals for power, ground, remote annunciator connections and relay contact connections, if applicable. The electrical ratings for each detector-base combination are also included in the base installation instructions.

Installation

NOTE: All wiring must comply with applicable local codes, ordinances, and regulations.

NOTE: Verify that all detector bases are installed, that the initiating-device circuits have been tested, and that the wiring is correct.

⚠WARNING

Remove power from initiating-device circuits before installing detectors.

1. Detector Installation:
   a. Place the detector into the detector base.
   b. Turn the detector clockwise until the detector drops into place.
   c. Continue turning detector clockwise to lock it in place.
2. Tamper Resistance: The detector bases can be made tamper resistant. When capability is enabled, detectors cannot be removed from the base without the use of a tool. See the detector base installation manual of the detector base for details in using this capability.
3. After all detectors have been installed, apply power to the control unit.
4. Wait at least 30 secs for the detector to power up, then test the detector using a test magnet as described under TESTING.
5. Reset the detector at the system control panel.
6. Notify the proper authorities that the system is back on line.

CAUTION

Dust covers are an effective way to limit the entry of dust into smoke detector sensing chambers. However, they may not completely prevent airborne dust particles from entering the detector. Therefore, Pertronic Company recommends the removal of detectors before beginning construction or other dust producing activities.

Be sure to remove the dust covers from any sensors that were left in place during construction as part of returning the system to service.

Testing

Before testing, notify the proper authorities that the smoke detector system is undergoing maintenance and will temporarily be out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms. Detectors must be tested after installation and as part of periodic maintenance. Test 2151BPI as follows:

NOTE: Before testing the detector, check to ensure that the LEDs are blinking. If they do not blink, the detector has lost power (check the wiring) or it is defective (return it to supplier for repair).

A. Test Magnet (p/n M02-04-01 or M02-09-00)

1. Place the test magnet against the cover in the location designated by the raised mark to activate the test feature (see Figure 1).
2. The LEDs should latch ON within 5 seconds indicating an alarm and an alarm should be annunciated at the control panel.

B. Sensitivity Reader (SENS-RDR)

Use the Sensitivity Reader (SENS-RDR) to measure the sensitivity of the detectors. Place the SENS-RDR against the cover in the location designated by the small depression in the cover for at least 10 seconds. (see Figure 1) Please refer to the SENS-RDR instruction manual for full operating details.
This SENS-RDR feature has been designed to meet the 5 yearly sensitivity testing requirement of AS1851-2005.

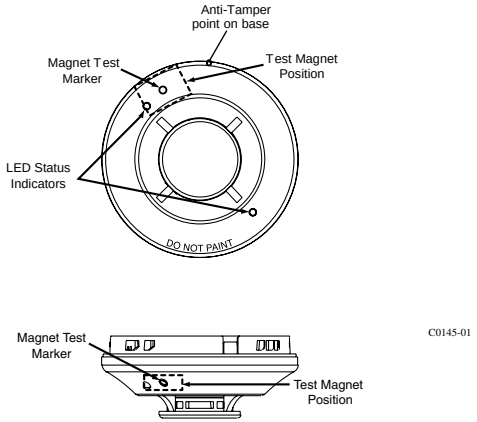
C. Aerosol Generator (Gemini 501)

Set the generator to represent 4% to 5%/ft. obscuration as described in the Gemini 501 Manual. Using the bowl-shaped applicator, apply aerosol until unit alarms.

Notify the proper authorities that the system is back on line.

Detectors that fail these tests should be cleaned as described under Cleaning and then retested. If the detectors still fail these tests, they should be returned to supplier for repair.

Figure 1. Bottom and side views showing position of test magnet:



Maintenance

The 2151BPI has an inbuilt maintenance feature that is designed to meet the 5 yearly testing requirements of AS1851-2005. The blinking LEDs are used to indicate the detector sensitivity. If the LEDs are not blinking, this indicates the detector requires maintenance. The LEDs will stop blinking for the following reasons:

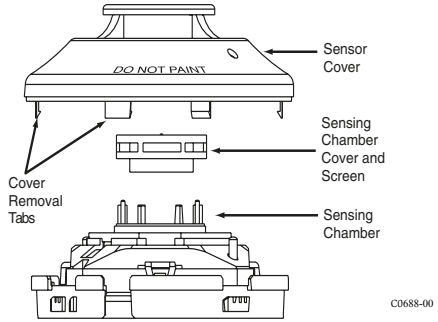
1. No power to the detector.
2. The limit of the built-in drift compensation has been reached. The detector chamber requires immediate cleaning.
3. The detector chamber sensitivity has become too low and has drifted outside the manufacturers specifications. The detector requires immediate replacement.

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. Remove the sensor cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight up from the chamber.
5. Use a vacuum cleaner or compressed air in conjunction with a very soft brush to remove dust and debris from the sensing chamber.
6. Reinstall the chamber cover/screen assembly by pressing back onto the sensing chamber.
7. Replace the sensor cover using the LEDs to align the cover and then gently pushing it until it locks into place.
8. Reinstall the detector.
9. Confirm the correct detector sensitivity using the SENS-RDR.
10. Test the detector as described in TESTING.
11. Reconnect disabled circuits.
12. Notify the proper authorities that the system is back on line.

Figure 2:



Special Note Regarding Smoke Detector Guards

Smoke detectors are not to be used with detector guards unless the combination has been evaluated by a recognised testing agency and found to be suitable for that purpose.