

# 6540UPIW-OEM

## 100 lb Pet Immune Wireless Motion Detector Sensor

### Product Introduction

The 6540PIW100 Pet Immune Wireless Motion Detector Sensor has a brand new range of volumetric motion sensor using a Fresnel lens, PIR element and digital signal processing. This product complies with UL639. It is suitable for indoor use in residential environments. For the consumer, it builds value in meeting security needs with respecting budgets. Quick to install and comes with a stylish low profile design. It provides detection for a variety of ranges, including up to 360 degrees of coverage for ceiling mount applications. It even has an option setting for smart pet immunity up to 100lbs / 45kg, making this product all the more attractive. This product delivers easy solutions for installers - being equipped with flexible installation heights and optional mounting bracket which are ideal for your security solution.

This wireless product works in conjunction with your wireless Control Panel, providing a local indication.

### About This Guide

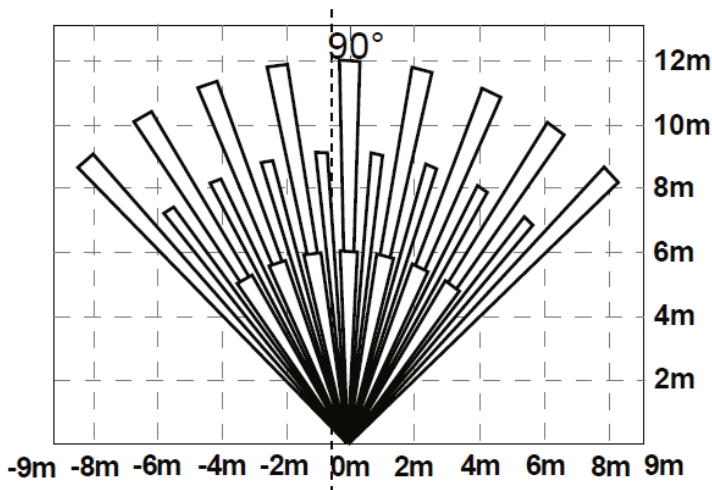
This User Guide describes how to install, the operation and maintenance of this product. The User Guide is organized as you intent to use this product with step by step instructions.

Keep this document in a handy location and refer to it when you have questions about this product and its functions and features. Reading this guide is the only way to learn how to use your product wisely and to know how to react in the event of an alarm.

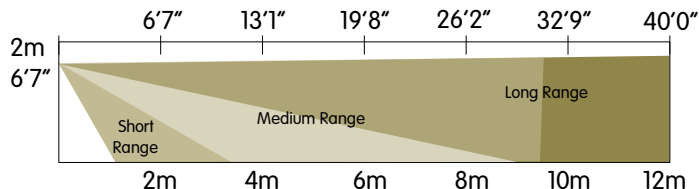
### 1. General Information

Passive infrared (PIR) motion sensor technology provides one of the most reliable and cost effective methods for protecting spaces in homes, offices, or industrial facilities. PIR motion sensors sense temperature contrasts between a relatively stable background and hotter or colder objects moving across their fields of view. The sensors emit no energy of their own, they merely see infrared images.

This product uses a Fresnel lens, PIR sensor element and digital signal processing. The Fresnel lens focuses the 90° viewing range onto the PIR sensor element through 24 lenses grouped into short, medium and long range viewing. See picture below.



From a side view, the PIR detection range shows overlapping coverage to ensure complete range detection. As shown here.



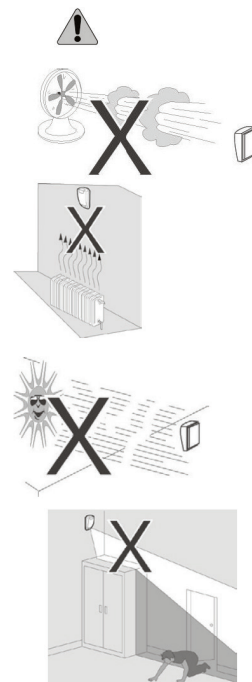
With all single lens Motion Detectors, it cannot see directly underneath the device. Therefore mounting the device higher and angling down maybe preferred.

The digital signal processing translates the heat signatures into movement detection within the viewing range. Based on these signatures the electronics determines the different between pets and humans. To ensure a 100 lb / 45 kg pet can be detected versus a person of the same weight, the motion detector uses a 4-pulse algorithm, twice the industry norm.

### 2. Mounting Guideline

The technology used in these detectors resists false alarm hazards. However, avoid potential causes of instability such as:

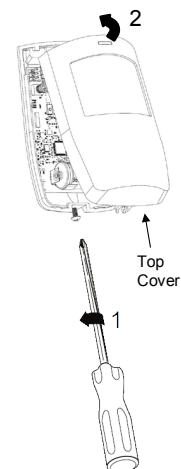
- Direct sunlight on the detector.
- Heat sources within the detector field of view.
- Strong draughts onto the detector.
- Large animals within the detector field of view. (except for pet immune version)
- Obscuring the detector field of view with large objects, such as furniture.



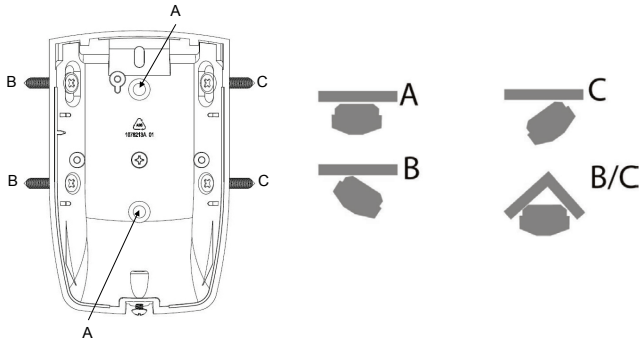
Not suitable for outdoor use.

### 3. Mounting the Sensor

- A. Unscrew the base screw on the detector until loose. The screw can be retained in the product to secure cover when complete with installation.
- B. Lift detector cover out from the base and off the lugs at the top.
- C. Loosen the PCB lock screw and remove the electronic assembly to gain access to the case mounting holes. Please use the battery terminals as a hand hold in removing the electronics.
- D. Locate the base on the wall between 4.1 and 10 ft (1.5 - 3.1 m) from the floor. Recommended height is 2 m / 6' 7". For flat wall mounting use a minimum of 2 screws in positions A. For corner



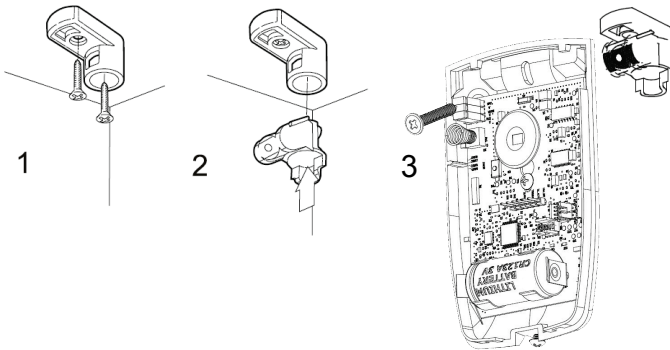
mounting use screws in positions B and/or C. Drill holes in the base in provided screw locator.



- E. An optional swivel mount bracket is available, 6545-BP. The swivel bracket is used to adjust precisely the motion sensor's viewing field. The swivel bracket mounts to the product on the top rear side for ceiling and wall mounts.

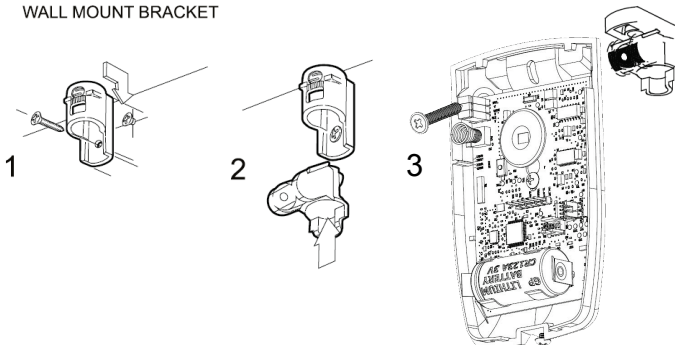
For ceiling mount, (1) position the ceiling bracket base and secure properly to the ceiling. (2) Insert the swivel into the base and (3) secure with screw through the product's swivel mount. With screw partially inserted make minor adjustments to sensor's view angle and secure.

CEILING MOUNT BRACKET



For wall mount, (1) position the wall bracket base and secure properly to the ceiling material. First insert the top screw partially into the wall so the screw head can be inserted into the keyhole opening. Insert second screw into the lower mounting hole. (2) Insert the swivel into the base and (3) secure with screw through the product's swivel mount. With screw partially inserted make minor adjustments to sensor's view angle and secure.

WALL MOUNT BRACKET



To complete the installation.....

1. Select the desired jumper settings. See the **Jumper Adjustment (1) – switch settings** section for more information.
2. Add masking labels if required (see next section for an example).
3. For ceiling mount applications that require a 90° coverage use the optional swivel-mount bracket (Part Number: 6545U-BP).
4. Replace cover and tighten the screw in the base.

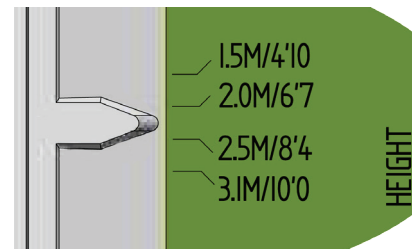
**Note:** ensure the battery is inserted properly and/or the battery pull tab is removed to activate the product. See the **Installing / Replacing Batteries** section for more information.

#### 4. Sensor Setup & Jumper Selections

This sensor has two mechanical adjustment and three jumper switches to aid in your application. After selecting your mounting location within the room, it's time to optimize the sensor.

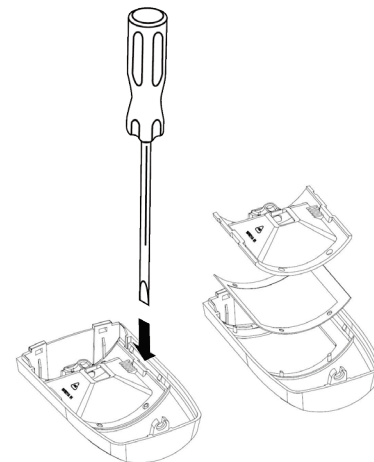
##### Mechanical Adjustments (1) – Mounting Height

Located on the left side beneath the tamper spring is a PCB legend for mounting height adjustment. Loosen the PCB mounting screw by turning counterclockwise so that PCB may slide up and down. Use the plastic pointer, locate your mounting height and tighten the PCB screw. By selecting the proper height maximizes the sensors range and viewing area.

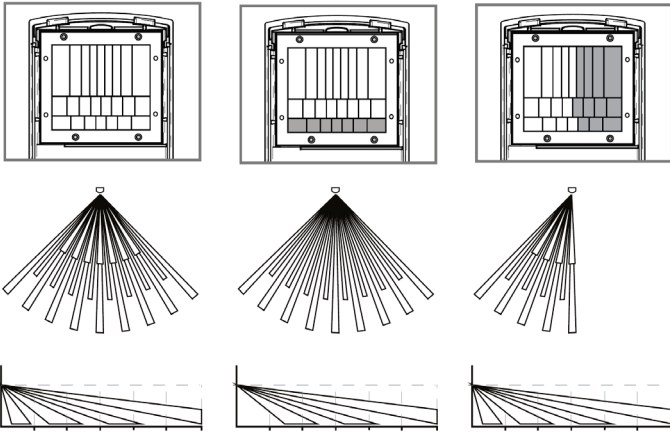


##### Mechanical Adjustment (2) – Viewing Range

This adjustment allows the sensor's viewing area to be limited into a vertical curtain, removing short-range scanning, removing long-range scanning or any combinations that suits the application. If you know the desired scanning zone(s) then add masking to the inside surface of the Fresnel lens as shown below.



Note: left to right: full range, short range removed and 1/2 vertical range removed.



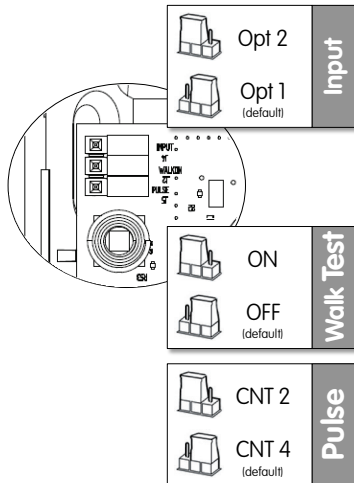
### Jumper Adjustment (1) – switch settings.

There are three (3) jumpers switches located on the Printed Circuit Board in the upper left corner. These jumpers assist in setup the device and its operation. Jumper Switch definitions:

Input – reserved for future features – not used.

Walk Test – used to disable the wireless alarm to the control panel. Default is OFF.

Pulse – selects the PIR sensitivity. Default is 100 lb pet immunity.



Product shipped with factory default settings.

To verify the device detects all the areas, set the **Walk Test** jumper to the ON position. This allows you to walk in all areas of coverage to ensure the device detects a person's movement. Make mechanical mounting adjustments as required to cover the open area.

Depending on the pets inside the house, the motion detector's Pet Immunity is adjustable between 50 lbs or 100 lbs. Move the **Pulse** jumper to pulse count 2-position for 50 lbs and pulse count 4 for 100 lbs.

## 5. Basic Operations

This detector is equipped with a learn-mode at startup and an intuitive normal mode.

### Power ON

- The detector turns on with a 3V battery on the board. Remove the battery pull tab and/or ensure the battery is installed per the plus and minus signs located on the PCB white legend.
- At power up, the detector's Status LED blinks for 60 seconds with 1Hz frequency or 60 times. During this time, learn mode, the detector sets its internal parameters according to surrounding environment.
- RF Status LED blinks 3 times, once per second and waits for next 2 seconds. This indicates the detector is looking for control panel to pair with i.e. enrollment.
- The RF Status LED turns OFF after 2 minutes or after enrolling with a control panel.
- If the battery is removed after enrollment into a control panel, this enrollment sequence is skipped at the next power up. The detector is already enrolled.

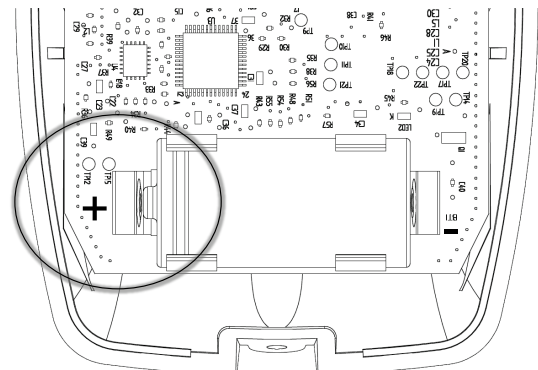
### Normal Mode

- In normal mode of operation the Status LED remains OFF and PIR sensor remains in power saving mode which increases the battery life.
- The Sensor wakes upon the motion detection in the field of view and the algorithm starts analyzing the signature of the heat source movement.
- Once motion is detected in the field of view, the PIR status LED turns ON for 2 seconds and sends the alarm signal to the control panel using wireless message(s).
- Status LED remains ON as long as motion is detected in field of view.
- Status LED turns OFF after two seconds when motion is no longer detected in the field of view.

## 6. Installing / Replacing Battery

This detector comes with one battery preinstalled. When you need to replace the battery, use the following procedure. Be sure the device is mounted to the wall and the cover is attached before performing this procedure.

- Place the control panel into sensor test mode. Otherwise, an alarm/tamper condition may be indicated.
- Remove the top cover body off the detector.
- Remove the old battery and dispose of it properly, as recommended by the battery manufacturer.
- Install the new battery. Note the polarity shown in the battery compartment.



- Install the top cover onto the detector.
- Perform a sensor/RF test with the control panel. See **"Error! Reference source not found."**

- When replacing the battery, use one of the following approved brands, which can be purchased at your local hardware store:
  - Duracell
  - Energizer E91



Using a different battery can affect the detector operation detrimentally. Constant exposures to high or low humidity may reduce battery life.

## 7. Adding to the Touch Screen

Each detector is programmed with a unique ID when manufactured. The unique ID is enrolled into the control panel at the time of installation, allowing the detector to communicate with that specific control panel.

- From the Home screen, touch the **Settings** widget.
- At the keypad, enter the Installer's keypad code (not the customer's Master keypad code).
- At the keyboard screen, enter your Technician Code and touch **Done**.
- At the Installer Settings Menu, touch **Sensors & Zones > Add a Sensor/Zone**.
- At the Locating Wireless Sensors screen, default the detector and place it in Search mode (see section x).

The detector must not be paired with another Touch Screen. If it is, unpair it (refer to the TouchScreen Installation Manual).

- Touch **Next**. A **Stop** button appears on the screen and the TouchScreen searches for the detector to be added. When the TouchScreen finds it, a grayed icon appears.
- Fault the detector to pair it to the TouchScreen. Move hand over the PIR Sensor.
- Touch **Stop**. The Wireless Sensors Located screen shows the detector that was found and paired.
- Touch **Next**. The Configure Wireless Sensors screen shows an icon for the detector that was found.
- Touch the sensor icon to configure the detector. The Add Sensor/Zone Modify screen appears.
- When the detector is configured properly, touch **Next**. The Add Sensor/Zone Modify screen appears.
- To modify any text field on the TouchScreen, such as the **Zone Label**, touch the field to display a keyboard. Then use the keyboard to enter your changes and touch **Done** to save your changes.
- As the detector is configured, the circle in the top-right of the icon changes from:
  -  to .
- When the detector is configured properly, touch **Next** in the Configure Wireless Sensors screen.
- If all sensors have not been configured, the Modify screen appears for each sensor to let you review its details.
- Change the details as needed or touch **Next** to cycle through all the sensors.

## 8. Testing the Detector

This detector has two test modes: Walk mode and RF Communication Test.

### Walk Test

This is a local test to determine the coverage area of the installation. Enable Walk mode via the internal jumper. When enabled the detector activates for detected motion by the detector's LED indication. The detector does not send an alarm message to the control panel. When finished, place the Walk mode jumper back to the default setting.

### Running the RF Communication Test

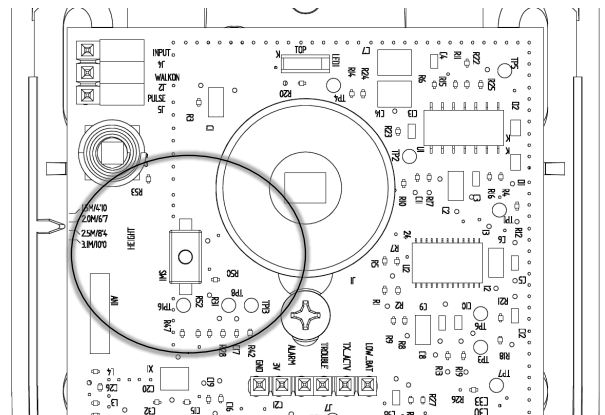
This section provides general guidelines for testing the detector with the control panel. For complete testing details, refer to the specific control panel documentation.

- Wait at least 5 minutes after installing the detector to test.
- Be sure the detector is normal operation.
- Set the control panel to sensor test mode to prevent an alarm signal from being sent to the central-monitoring station if you have a monitored system.
- To generate a test alarm, walk in the detector's viewing range. An alarm message is sent to the control panel. To generate a tamper alarm, remove the detector's top cover. A tamper alarm message is sent to the control panel.
- The control panel beeps and shows the number of RF packets received.
- At the panel, exit sensor test mode.

## 9. Defaulting the Detector

This step should only be performed by a qualified service technician.

- Remove the detector's top cover.
- Remove the battery.
- Press the enrollment switch in the RF circuit inside the detector and hold until you replace the battery. Switch location shown below.



- Replace the battery while still pressing the enrollment switch, then release the switch. The RF LED flashes three times to signal the detector is not paired with a control panel.
- Reinstall the front cover.

## 10. Viewing Zone Event History

To view event history:

- Tap the Security widget on the Home screen.
- Tap the History tab. The Zone Event History shows the event history.



## 11. Disabling Zones

The system can bypass a zone, so the zone is not monitored when the system is armed. This is useful when a sensor is being repaired. You can only change the Bypass state of a zone when the system is disarmed.

The system continues to log the activity of bypassed zones in the Event History (see "View Zone Event History," above).

To bypass a zone:

- A. With the system disarmed, tap the Security app on the Home screen.
- B. Tap the Turn Zone Off button for the smoke alarm. The Turn Zone Off button changes to Turn Zone On.
- C. When the system is disarmed, the Security Status header shows that some zones have been bypassed.

## 12. Troubleshooting

### Detector does not power up properly or reports low battery

- Be sure the battery is fully seated within the battery compartment and the polarity is correct.
- Check the battery voltage (3.0 VDC nominal).

### Control Panel does not respond

- Use the 60-401 RF Sniffer to confirm that the detector is sending messages for activation.
- Move or rotate the detector position.
- Be sure the detector is enrolled into the control panel properly.
- Be sure you are using a compatible control panel (see "**Error! Reference source not found.**").

### Tamper condition does not restore

- Be sure the detector's top cover is installed properly.
- Be sure there are no trouble indications at the detector.
- Be sure you are using a compatible control panel (see "**Error! Reference source not found.**").

### If a tamper alarm occurs

- Be sure you are using a compatible control panel (see "**Error! Reference source not found.**").
- Be sure the control panel is in sensor test mode during sensor testing.

### Alarm/open condition does not restore

- Be sure the motion condition has cleared at the detector.
- Be sure you are using a compatible control panel (see "**Error! Reference source not found.**").

## 13. Specifications

Compatible panels	-
Power	One CR123 battery
Battery type	3.0 VDC lithium
Standby Current	00 $\mu$ A (typically)
Battery life	5 years (typically)
Sensor	PIR thermal
Range	12 m / 40 ft @ 90°
RF Wireless Frequency	2.4 GHz
Audible alarm	Control Panel Indication
Weight w/battery	0.20 lbs / 0.09 kg
Dimensions	3.94 x 2.52 x 1.50 in. (100 x 64 x 38 mm)
Storage temperature	-4 to 140°F (-20 to 60°C)
Operating environment	40 to 100°F (4.4 to 37.8°C)
Relative Humidity	10 to 95% non-condensing

## 14. Maintenance Tips

To keep your detector in good working order:

- Perform a RF Communication Test once a week.
- Never use detergents or solvents to clean the detector. Chemicals can permanently damage or temporarily contaminate the Fresnel lens.
- Avoid spraying air fresheners, hair spray, paint, or other aerosols near the detector.
- Do not paint the detector. Paint may interfere with proper sensor operation.

## 15. Regulatory Information

Manufacturer: UTC Fire & Security

### WEEE Directive

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: [www.recyclethis.info](http://www.recyclethis.info).



### RoHS Directive

2002/95/EC RoHS Compliant. Hereby, UTC Fire and Security declares that this device does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) in more than the percentage specified by EU directive 2002/95/EC, except exemptions stated in EU directive 2002/95/EC annex.

### UL Rating

ANSI/UL 639 Recognized

### FCC Compliance

FCC ID: QPY-6540UPI-Z  
IC: 8303B-6540UPI-Z

The device complies with part 15 of the FCC Rules as well as Industry Canada Rules and Regulations license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Conformité Réglementaire

Ce dispositif est conforme à la réglementation de la IC et (Partie 15) de la FCC. Son fonctionnement est soumis à deux conditions : (1) ce dispositif ne doit pas causer d'interférences nuisibles, et (2) ce dispositif doit accepter toute interférence reçue, y compris les interférences pouvant entraîner des conditions de fonctionnement indésirables.



**WARNING:** Changes to Section 15 – Regulatory Information is strictly prohibited. Any changes or modification made to the product without the permission of the manufacturer could void the user's authority to use this product.

## 16. Product Information

### Disclaimer

This PIR Motion Detector is not a complete alarm system, but only a part of. Therefore UTC Fire & Security does not accept any responsibility or liability for any damage that is claimed to be a result of an incorrect functioning of the PIR Motion Detector. UTC Fire & Security reserves the right to change the specification without a prior notice.

### Limitations of Security Products

Security products and alarm systems do not offer guaranteed protection against burglary, fire, or other emergencies. They may fail to warn for diverse reasons, including (but not limited to): power failure, dead batteries, improper installation, coverage, coverage areas overlooked during installation, defeat by technically sophisticated intruders, component failure, or inadequate maintenance. Alarm systems should be checked weekly to ensure that all devices are working properly.

AN ALARM SYSTEM IS NOT A SUBSTITUTE FOR INSURANCE

### Limited Warranty

Edwards is a brand of UTC Fire & Security. The manufacturer warrants this product (except batteries) to be free from defects in material and workmanship under conditions of normal use for a term of 3 years from the date of manufacture.

During the warranty period, if a UTC Fire & Security product or any of its components becomes defective, it will be repaired or replaced without charge.

Out-of-warranty units will be repaired at the discretion of the manufacturer or, if not, a card will be forwarded to the customer suggesting a replacement unit and the cost of that unit.

This warranty does not apply to units which have been subject to abuse, misuse, negligence or accident, or to which any modifications, alterations or repairs have been made or attempted.

This warranty is extended only to the original purchaser of the smoke alarm and may be enforced only by such person. During the warranty period, if the alarm or any warranted components thereof becomes defective, it will be replaced or repaired without charge at the

manufacturer's discretion if returned in accordance with the following instructions:

Obtain a Return Authorization Number by calling the number below, then carefully pack it in a well padded and insulated carton and return, postal charges prepaid to:

This product is manufactured by Edwards, A UTC Fire and Security Company, 8985 Town Center Parkway, Bradenton FL 34202.
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Return units to: UTC – Climate, Controls & Security  
325 N Main St  
Pittsfield, ME 04967  
Phone: 1-207-487-3104

A note should be included advising the nature of the malfunction. Care must be exercised in the proper packing of product(s) returned under this warranty as UTC Fire & Security will not be responsible for warranty repairs to equipment damaged because of improper packing.

The above warranty is in lieu of all other express warranties, and implied warranties of merchantability and fitness for a particular purpose are limited in duration for a period of THREE years from the date of manufacture. Under no circumstances shall manufacturer be liable to the purchaser or any other person for incidental or consequential damages of any nature, including without limitation damages for personal injury or damages to property, and however occasioned, whether alleged as resulting from breach of warranty by manufacturer, the negligence of manufacturer or otherwise. Manufacturer's liability will in no event exceed the purchase price of the product. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. Unless a longer period is required by applicable law, any action against manufacturer in connection with this smoke alarm must be commenced within one year after the cause of action has occurred.

No agent, employee or representative of the Manufacturer, nor any other person is authorized to modify this warranty in any respect. Repair or replacement as stated above is the exclusive remedy of the purchase hereunder. This warranty gives you specific legal rights and you also have other rights which vary from state to state.

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