

# ITI® Aritech APW 450 PIR Motion Sensor

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## Product Summary

A motion sensor (passive-infrared or PIR) detects movement within a specific area by sensing the infrared energy emitted from a body as it moves across the sensor's field of view, causing a temperature change in the sensor's zones. When this motion is detected, the sensor transmits an alarm signal to the control panel.

Use this motion sensor to protect locations where door/window sensors are impractical or not needed. For example, use a motion sensor to protect large areas or open floor plans. Motion sensors also provide backup protection for door/window sensors.

The ITI® PIR utilizes advanced signal processing, a new custom designed lens, and a new custom designed sensing element. The combination of these improvements provides false alarm immunity for pets with a combined weight of up to 40 pounds while still providing superior human catch performance.

This wireless motion sensor includes the following features:

- 35 feet by 40 feet coverage area
- Three minute transmitter lockout time after an alarm that helps extend battery life
- Cover-activated tamper (optional wall-activated tamper is included)
- Supervisory signal transmitted every 64 minutes to the control panel
- Sensor low battery reports (trouble) to the control panel
- Field-selectable sensitivity options (standard setting required for pet applications)

## Installation Guidelines

This PIR was designed for use in the presence of pets having a combined weight of up to 40 pounds. The following installation guidelines must be met to provide this false alarm immunity.

1. If possible, locate sensors within 100 feet of the panel. While a transmitter may have a range of 500 feet or more out in the open, the environment at the installation site can have a significant effect on transmitter range. Sometimes a change in sensor location can help overcome adverse wireless conditions.
2. The required mounting height is 7 1/2 feet.

## Installation Instructions

3. Position the sensor to protect an area where an intruder would be most likely to walk *across* the detection pattern (see Figure 1).
4. Mount the motion sensor on an insulated, outside wall facing in.
5. Mount the motion sensor on a rigid surface which is free from vibrations.
6. Position the sensor so it faces a solid reference point, like a wall.
7. Do not aim the sensor at windows, fireplaces, air conditioners, area heaters, forced air heating vents, or place it in direct sunlight.
8. Do not mount the sensor near duct work or other large metallic surfaces which may affect the RF signals (see "Final Testing" on page 4). Actual acceptable transmitter range should be verified for each installation.
9. Mount the sensor permanently on a flat wall or in a corner. Do not set it on a shelf.
10. Windows should be closed in any area which has an armed motion sensor.
11. The pet must not be allowed to climb on objects such as furniture, boxes, etc. within the field of coverage. See Figures 2 and 3 to determine the sensor's field of coverage.
12. Room temperature must be kept at 60° F or higher.
13. The sensitivity switch must be set to Standard.

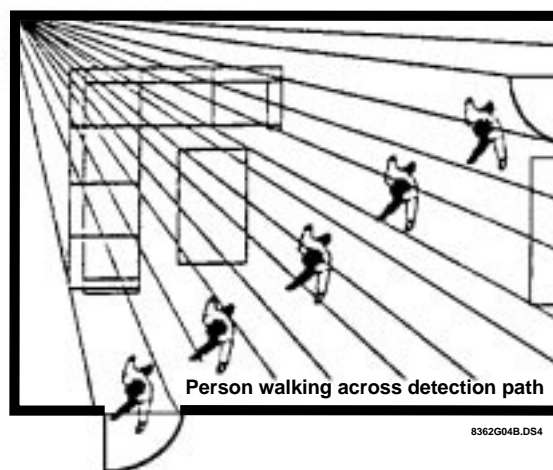


Figure 1. Overhead (Bird's Eye View) Detection Path

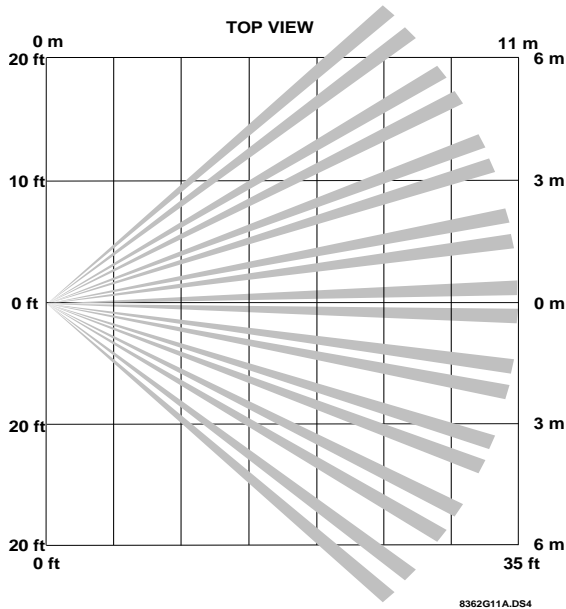


Figure 2. This graph shows the top view of the lens coverage area, for the indoor motion sensor's lens.

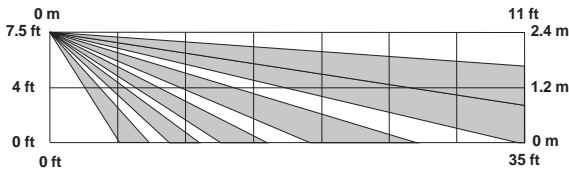


Figure 3. Side view (Motion Sensor) at a mounting height of 7.5 feet.

## Mounting the Motion Sensor

This sensor must be incline-mounted on a wall surface or incline mounted in a corner at a mounting height of 7.5 feet.

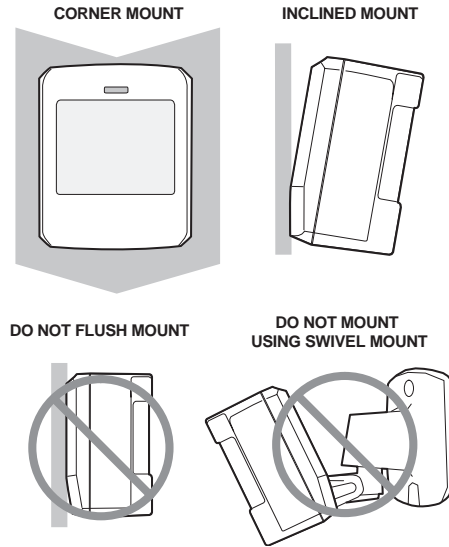


Figure 4. Wall mount options

### To mount the sensor:

1. Remove the mounting plate by depressing the button on the top of the sensor body. With the opposite hand pull the mounting plate away from the body of the sensor.
2. Punch out two of the bottom four mounting holes. See Figure 4 for wall mount options. Use the lower-side holes for corner mounting, or the lower-middle holes for surface mounting.
3. If you desire wall-tamper functionality, remove the wall-tamper knockout.

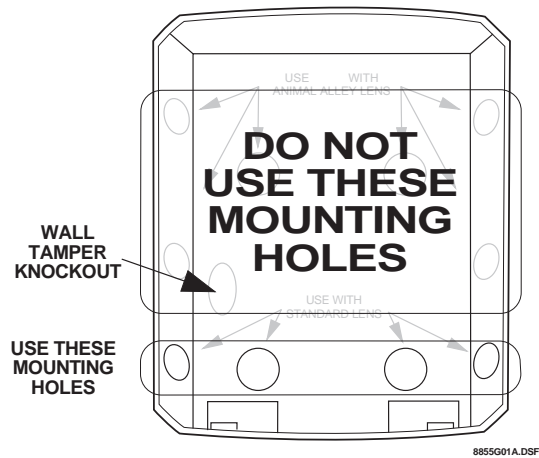


Figure 5. PIR Mounting plate knockouts

Note  
The wall-tamper switch cannot be used when the sensor is corner mounted.

4. Mark the location of the required holes on the mounting surface.
5. Use wall anchors and screws to secure into place. Attach the sensor to the mounting plate.

- When testing is completed the PIR can be securely attached to its mounting plate by screwing the smallest enclosed screw into the hole at the top of the mounting plate.

## Setting the Sensitivity on the Indoor Motion Sensor

For pet applications, the PIR must be set to standard sensitivity.

## Walk Testing the Motion Sensor

Walk testing should be done to determine the sensor's actual coverage area. The edge of the coverage pattern is determined by the first flash of the LED. This may change slightly depending upon the sensitivity setting. Walk test the unit from both directions to determine the pattern boundaries.

- Remove the sensor body from the mounted mounting plate, activate the tamper switch, and then remount the body to activate the 60 second walk test mode.
- Walk across the coverage pattern to determine the coverage area, indicated by LED activation. Each activation extends the walk test mode for an additional 60 seconds.

After 60 seconds without motion the walk test mode and the LED will no longer activate when motion is detected.



### CAUTION

Excessive use of the walk test mode may reduce battery life. Use only for initial setup and maintenance testing.

### Note

When the walk test mode has ended, an alarm can be transmitted only after 3 minutes have passed since the previous alarm. This 3 minute lockout time reduces unnecessary RF transmissions in high traffic areas thereby extending battery life.

## Environment Testing

Turn on all heating or air conditioning sources which would normally be active during the protection period. Stand away from the sensor and outside the coverage pattern and watch for alarms.

## Programming

Refer to the panel installation manual for information on programming the sensor into the panel.

### To trip the sensor:

- Remove the back cover to activate the tamper switch.
- Exit the panel's programming mode.

- Return the PIR to its mounting plate.

## Maintenance

At least once a year, the range and coverage should be verified for proper operation. The end user should be instructed to put the sensor in walk test mode and walk through the far end of the coverage pattern to verify proper detection.

## Replacing Batteries

When battery replacement is necessary, observe proper polarity (as shown in the battery compartment) when installing the new battery, or the sensor may be damaged. Be sure to note that as you look at the battery compartment, on the left side the positive side is down and on the right side the positive end is up. When the battery is replaced, wait at least 3 minutes after installing the battery before activating the walk test mode.

## Final Testing

Final testing should be done to verify radio signal integrity and confirm control panel programming and response. The actual transmitter range can be determined by performing a sensor test as follows:

- After the sensor has been mounted, remove it from its mounting plate and activate the tamper switch to start the walk test mode.
- Replace the sensor in its mounting plate
- Place the control panel in test mode. Move across the detection pattern until the sensor's LED turns on. STOP your motion.
- Listen for the appropriate system response. If the system does not respond, proceed to Troubleshooting section.

## Troubleshooting

Use the following guidelines if the system does not respond correctly when the sensor is activated.

- Check programming and re-program sensor into panel if necessary.
- Move the sensor to another location and test for correct response.

### To relocate a sensor:

- Test the sensor a few inches from the original position.
- Increase the distance from the original position and retest until an acceptable location is found.
- Mount the sensor in the new location.
- If no location is acceptable, test the sensor as follows:
  - Test a known good sensor at the same location.

- If the system does not respond, avoid mounting a sensor at that location.
- If the replacement sensor functions, return the problem sensor for repair or replacement.

## Specifications

- Power source:** One 3-volt lithium (CR123A) battery
- Typical battery life:** 2-4 years at 68° F (not verified by UL)
- Temperature range:** 32° to 120° F (Non-pet applications)  
60° to 120° (Pet applications)

## Notices

These devices comply with part 15 of the FCC rules. Operation is subject to the following two conditions:

- These devices may not cause harmful interference.
- These devices must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Interactive Technologies, Inc. can void the users' authority to operate the equipment.

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