# 2GIG BY Linear®

2GIG-PIR4-433
PASSIVE INFRARED MOTION DETECTOR

INSTALLATION INSTRUCTIONS

The Passive Infrared Motion Detector (2GIG-PIR4-433) is a wall-mounted unit with wide-angle motion protection. It communicates with the 2GIG Control Panel using the 433 MHz frequency. When set to High (HI) Sensitivity Mode, the PIR has a maximum range of 30 ft deep x 50 ft wide (9.1 m x 15.2 m). The PIR's pet-immune feature can be set to tolerate animals up 55 lbs.

Figure 1 Passive Infrared Motion Detector
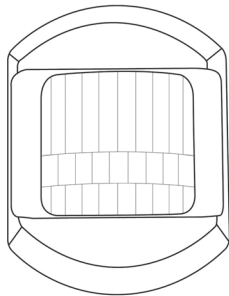
Box Contents

Verify that the package includes the following (see *Figure 3 PIR and Mounting Bracket Detail* on page 2):

- 1—Passive Infrared Motion Detector (Part A)
- 1—Plastic Mounting Bracket (Part B)
- 1—Plastic Wall Mount (Part C)
- 1—Plastic Corner Mount (Part D)
- 2—Plastic Wall Anchors With Screws (not pictured)
- 1—Short Phillips Head Screw with Fender (not pictured)
- 1—Short Phillips Head Screw (not pictured)
- 1—3-Volt (3V) Lithium Coin Battery (not pictured)

Inserting and Replacing the Battery

To insert or replace the battery:

1. Unwrap the PIR and remove the screw from the case bottom.
2. Remove the backplate using a bottom-to-top lifting motion.
3. Insert the battery.

   Always match the plus (+) sign on the battery with the flat side of the compartment and the minus (-) sign on the battery with the spring side.
4. Replace the PIR cover.

WARNING: Failure to follow these warnings and instructions can lead to heat generation, rupture, leakage, explosion, fire, or other injury, or damage. Do not insert the battery into the compartment in the wrong direction. Always replace the battery with the same or equivalent type (see *Specifications* on page 4). Never recharge or disassemble the battery. Never place the battery in fire or water. Always keep batteries away from small children. If batteries are swallowed, promptly see a doctor.

- Always dispose and/or recycle used batteries in accordance with the hazardous waste recovery and recycling regulations for your location. Your city, state, or country may also require you to comply with additional handling, recycling, and disposal requirements.

Configuring the PIR Features

Ensure that you have inserted the PIR battery as described in *Inserting and Replacing the Battery*. Then configure the features as follows:

Figure 2 PIR Pet Immune and Sensitivity Features
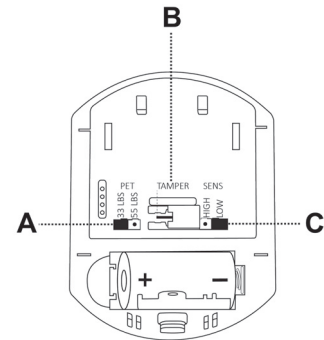
A   PET: This is the pet-immune tolerance setting (33 LBS or 55 LBS).
B   TAMPER: This is the tamper switch.
C   SENS: This is the sensitivity setting (High or Low).

Step 1: Setting the Pet Immune Feature

To set the pet immune feature to an appropriate weight:

NOTE: Do not aim the PIR at stairs, furniture, or other surfaces that a pet may climb on. The PIR provides immunity when the room temperature is above 50° F (10° C) and below 90° F (32° C). When mounting the PIR with the plastic mounting bracket, for best protection ensure the PIR is mounted to the wall or corner with NO tilt (see *Lens Pattern and Tilt Angles* on page 3).

1. With the backplate off, locate the left jumper block immediately above the battery compartment. This is the block labeled PET (see *Figure 2 PIR Pet Immune and Sensitivity Features*).
2. Gently pull out the jumper and slip it over the desired pins to set one of the pet-immune tolerance settings:
   - **33 LBS**. Tolerates pets up to 33 lbs (15 kg).
     OR
   - **55 LBS** (Default). Tolerates pets up to 55 lbs (25 kg).
3. Continue with the next step below.

Step 2: Setting the Sensitivity Feature

1. Locate the right jumper block immediately above the battery compartment on the right. This is the block labeled SENS (see *Figure 2 PIR Pet Immune and Sensitivity Features*).
2. Gently pull out the jumper and slip it over the desired pins to set the desired sensitivity mode:
   - **LOW** (Default). Low sensitivity. This is the recommended setting for pets.
     OR
   - **HIGH**. High sensitivity.
3. Continue with *Step 3: Powering ON the PIR* on page 2.

Step 3: Powering ON the PIR

With the battery inserted (see *Inserting and Replacing the Battery* on page 1), press and release the switch labeled TAMPER. It takes approximately 10 seconds for the PIR to power ON.

Mounting the PIR

There are two methods for mounting the PIR: *Option A: Bracket Mounting* or *Option B: Direct-to-Wall Mounting*. For both methods, always mount the PIR at a height of 7.5 ft (2.3 m).

Figure 3 PIR and Mounting Bracket Detail
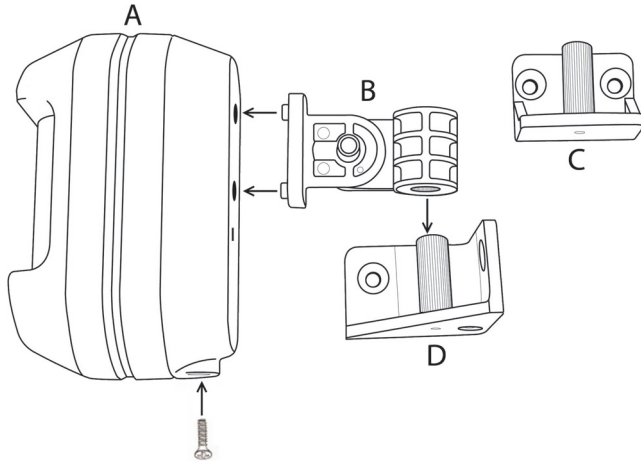
A PIR
B Plastic Mounting Bracket
C Plastic Wall Mount
D Plastic Corner Mount

Option A: Bracket Mounting

See *Figure 3 PIR and Mounting Bracket Detail*. If you plan to mount the PIR to either the Plastic Wall Mount or Plastic Corner Mount, you must first attach the Plastic Mounting Bracket to the PIR backplate.

Step 1: Attaching the Plastic Mounting Bracket to the PIR

1   Remove the PIR backplate.
2   Insert the two stubs on the Plastic Mounting Bracket into the corresponding holes on the exterior side of the PIR backplate.
3   On the interior of the PIR backplate (see *Figure 4 PIR Backplate—Direct-to-Wall Mounting Guides*), use the Short Phillips Head Screw (provided) to secure the Plastic Mounting Bracket to the backplate
4   Replace the PIR backplate.
5   Reattach the screw that was removed earlier to the bottom of the PIR.
6   Continue with either *Step 2: Wall Mounting Option* or *Step 2: Corner Mounting Option*.

NOTE: For optimum pet immunity when using the Plastic Mounting Bracket, ensure that the PIR is mounted to the wall or corner with NO tilt (see *Lens Pattern and Tilt Angles* on page 3).

Step 2: Wall Mounting Option

See *Figure 3 PIR and Mounting Bracket Detail*. If using the Plastic Wall Mount (C), do the following:

NOTE: Ensure that you have attached the bracket to the PIR backplate (see *Step 1: Attaching the Plastic Mounting Bracket to the PIR*).

1   On the intended wall, use the two (2) Plastic Wall Anchors to hang the Plastic Wall Mount at a height of 7.5 ft (2.3 m).

2   Locate the barrel end of the Plastic Mounting Bracket. Locate the barrel end of the Plastic Mounting Bracket and carefully set it onto the ribbed pin of the Plastic Wall Mount at the desired angle (see *Lens Pattern and Tilt Angles* on page 3).
3   From the topside of the Plastic Wall Mount, use the Short Phillips Head Screw with Fender (provided) to secure the mount to the barrel end of the bracket.

Step 2: Corner Mounting Option

See *Figure 3 PIR and Mounting Bracket Detail*. If using Plastic Corner Mount, do the following:

NOTE: Ensure that you have attached the bracket to the PIR backplate (see *Step 1: Attaching the Plastic Mounting Bracket to the PIR* on page 2).

1   Use the two (2) Plastic Wall Anchors to hang the Plastic Corner Mount at a height of 7.5 ft (2.3 m).
2   Locate the barrel end of the Plastic Mounting Bracket and carefully set it onto the ribbed pin of the Plastic Wall Mount. Ensure that you set it at the desired angle (see *Lens Pattern and Tilt Angles* on page 3).
3   From the topside of the Plastic Wall Mount, use the Short Phillips Head Screw with Fender (provided) to secure the mount to the barrel end of the bracket.

Option B: Direct-to-Wall Mounting

If planning to mount the PIR directly to a wall, use the built-in mounting guides on interior of the PIR backplate to screw the backplate into the wall.

1   Remove the PIR backplate.
2   Use the two (2) Plastic Wall Anchors to screw the PIR backplate into the wall at a height of 7.5 ft (2.3 m):
   • **Wall**. Use the wall mounting guides (see A below).
   • **Corner Mount**. Use the left- or right- corner mounting guides (see B below).

Figure 4 PIR Backplate—Direct-to-Wall Mounting Guides
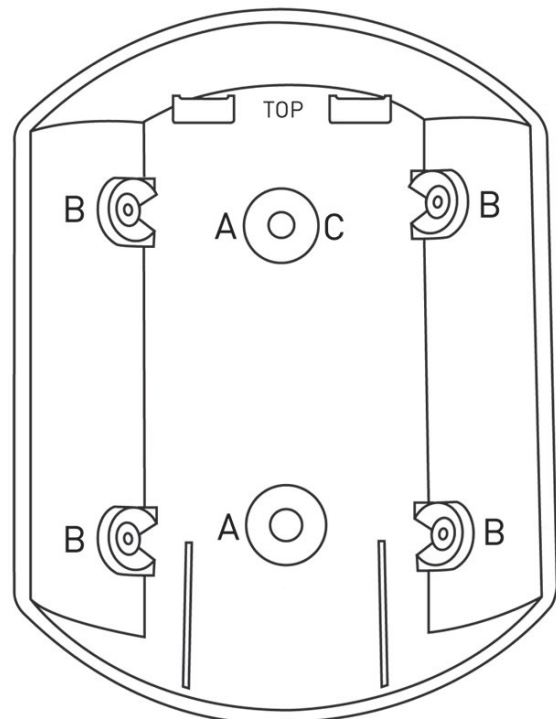
A Wall Mounting Guides (For *Option B: Direct-to-Wall Mounting*)
B Corner Mounting Guides (For *Option B: Direct-to-Wall Mounting*)
C Wall Mount Bracket Guide (For *Option A: Bracket Mounting*)

Environmental and Other Useful Information

While the PIR is a highly reliable intrusion detection device, it does not guarantee against burglary. Any intrusion device is subject to a "failure to warn" for a variety of reasons. Consider the following when installing and setting up the PIR:

1 This PIR has built-in protection to keep bugs from getting into the sensor area and causing false alarms. Note that this protection does not prevent insects from crawling across the lens of the PIR, which could trigger the PIR.

2 Infrared energy can be reflected off any glossy surfaces such as mirrors, windows, floors, or counter tops with glossy finish, and slick-finished concrete. Some surfaces reflect less than others (e.g. the PIR can see a change in infrared energy off of reflective surfaces even if the heat or cold source is not within the PIR detection pattern).

3 Windows reflect infrared energy. They also allow sunlight or light from other sources (e.g., cars) to pass through to the PIR. The PIR can detect these changes in infrared energy. For example, if sunlight passing through a window shines onto a hardwood floor and the change in infrared energy is quick enough, the PIR can trigger an alarm. The same applies if the PIR area includes a window, even though the pattern of protection cannot "see" through glass. Lights from a passing car can also pass through the window at night and shine directly into the PIR's lens.

4 Heating and air conditioning ducts are also important because if they blow air onto an object within the field of the PIR's view, the temperature of that object could change quickly enough for the PIR to "see" a change in infrared energy. **PIR's cannot see air current, only the change in temperature of a physical object**.

5 The PIR senses change in temperature. However, as the ambient temperature of the protected area approaches the temperature range of 95° to 120° F, the detection performance of the PIR decreases.

6 Ensure that the area you wish the PIR to cover is free of obstructions (for example, curtains, screens, plants, and so on.) that may block the pattern of coverage.

7 Anything that can sway or move due to air current can cause a change in infrared energy within the fields of view. Drafts from doors or windows can cause this to happen. Plants, balloons, curtains, and hanging baskets should never be left in the PIR's field of view.

8 Do not mount the PIR on a surface that allows for any vibration. Vibrations not only cause the PIR to move a little, but it also causes the fields of view in a room to move with respect the PIR. A little vibration can cause havoc with the PIR's field of view, thus the PIR may see a change in energy and trigger the alarm.

9 An installation often requires that the PIR is aimed at the door. The PIR may detect door movement before the door contact can initiate an entry delay, causing the alarm to trigger. If you install the PIR facing a door, then while programming the PIR, choose an appropriate sensor/zone type.

10 The PIR ONLY detects intrusion within the pattern of coverage.

11 The PIR does not provide volumetric area protection.

12 The PIR creates multiple beams of protection. Intrusion can only be detected in unobstructed areas covered by those beams.

13 The PIR cannot detect motion or intrusion that occurs behind walls, ceilings, floors, closed doors, partitions, glass doors, or windows.

14 Tampering with, masking, painting, or spraying of any material on the PIR lens or any part of the optical system can impair detection ability.

15 The PIR, like other electrical devices, are subject to component failure. Even though the PIR is designed to last as long as 10 years, the electronic components are subject to failure.

Lens Pattern and Tilt Angles

The diagrams below show the lens pattern and tilt angles for the PIR in meters.
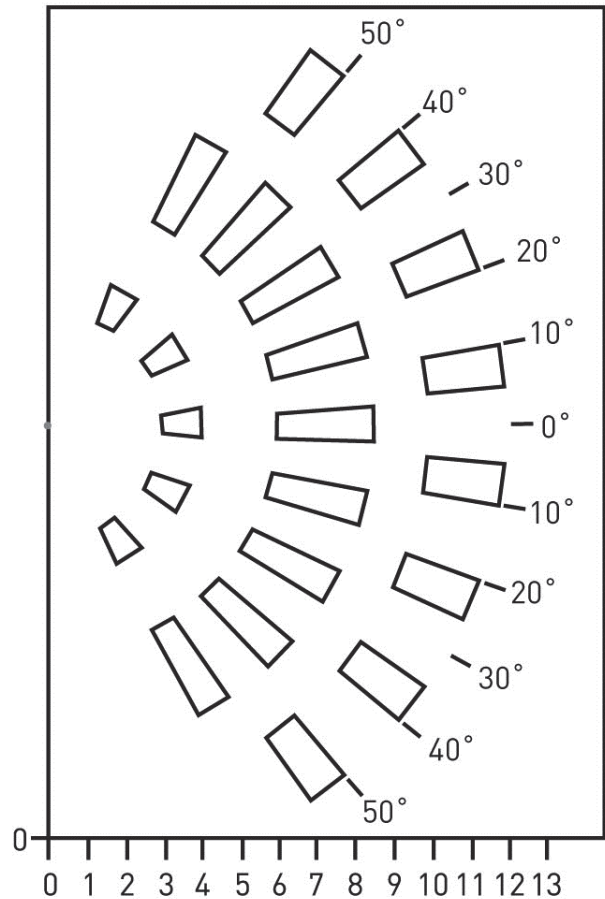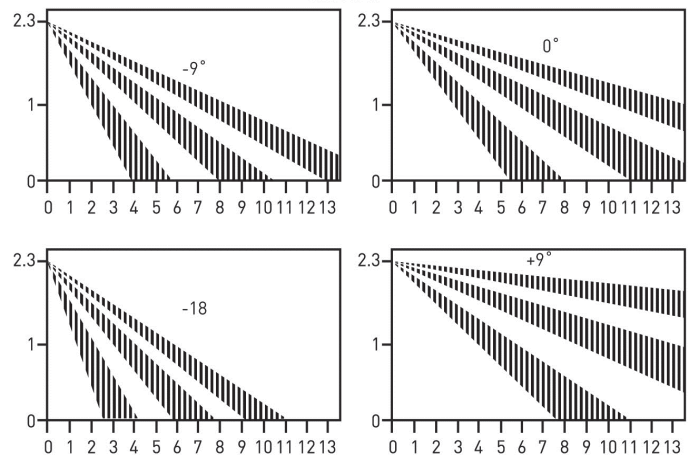
Figure 5 Lens Pattern—Top View

Figure 6 Tilt Angle—Side View

-9°	PIR titled down one click
0°	PIR facing the opposite wall (Direct-to-wall or mounting bracket with no tilt adjustment.
-18°	PIR tilted down two clicks
+9°	PIR tilted up one click

SPECIFICATIONS

Wireless Signal Range	350 ft (106.7 m), open air, with Wireless Control Panel
Code Outputs	Alarm, Alarm Restore, Tamper, Tamper Restore, Supervisory, Low Battery
Transmitter Frequency	433.92 MHz (crystal controlled)
Unique ID Codes	Over one (1) million different code combinations
Supervisory Interval	70 minutes
Sensor Type	Quad element
Pet Immunity Selectable	33 lb (15 kg) or 55 lb (25 kg; default)
Sensitivity Jumper Selectable	High or Low (default)
Suggested Mounting Height	7.5 ft (2.3 m)
Sensor Range	30 ft (9.1 m) x 50 ft (15.2 m)
Maximum Horizontal Sensing Angle	90°
Dimensions (L x W x H)	3.2 x 2.5 x 1.9 in (8.12 x 6.35 x 4.82 cm)
Weight (including battery & bracket)	3.7 oz (104.9 g)
Housing Material	ABS Plastic
Color	White
Operating Temperature	32°-120 F° (0°-49° C)
Relative Humidity	5-90% Non-Condensing
Battery (installed)	One (1) Panasonic CR123A, or equivalent Lithium battery
Certification	CE and RCM

REGULATORY INFORMATION

LIMITED WARRANTY

This Linear product is warranted against defects in material and workmanship for two (2) years. This warranty extends only to wholesale customers who buy direct from Linear LLC or through Linear LLC's normal distribution channels. Linear LLC does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer's warranty, if any.

There are no obligations or liabilities on the part of Linear LLC for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation. All implied warranties for functionality, are valid only until the warranty expires. This Linear LLC Warranty is in lieu of all other warranties expressed or implied.