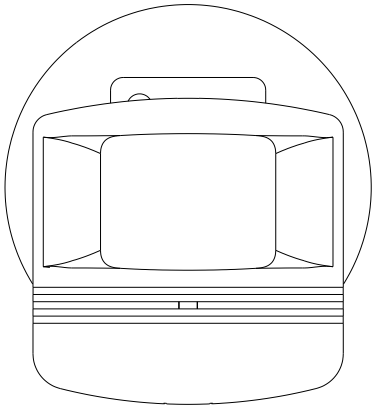
LX-100 Installation

Description

The LX100 is a 24 VDC passive infrared (PIR) sensor which controls lighting and has a light level feature that can be used to keep lights from turning on if the ambient light level is sufficient. The LX100 contains an isolated relay with normally open and normally closed contacts.



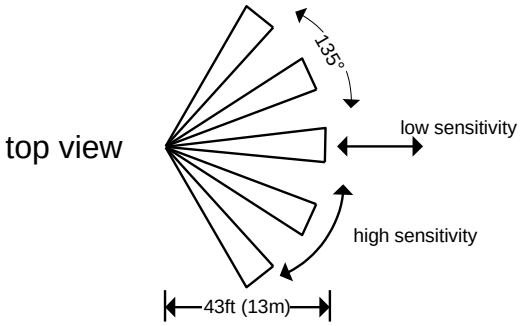
The unit reacts to changes in infrared energy (moving body heat) within the coverage area. PIR sensors must directly “see” motion of an occupant to detect them, so careful consideration must be given to sensor placement.

Specifications

Voltage	24 VDC
Current consumption	19 mA
Time adjustment	10 seconds to 30 minutes
Sensitivity adjustment	0.2 to 186 fc
Light level adjustment	minimum ~ maximum

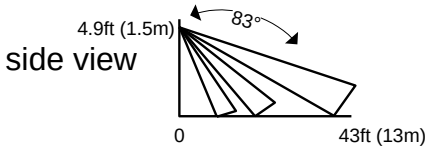
Coverage pattern

Coverage shown is the maximum and represents coverage for walking motion. Actual coverage will vary slightly depending on mounting height.



Masking the lens:

Adhesive tape is supplied with the sensor so that sections of the sensor’s lens can be masked. This restricts the sensor’s view and allows you to eliminate coverage in unwanted areas.



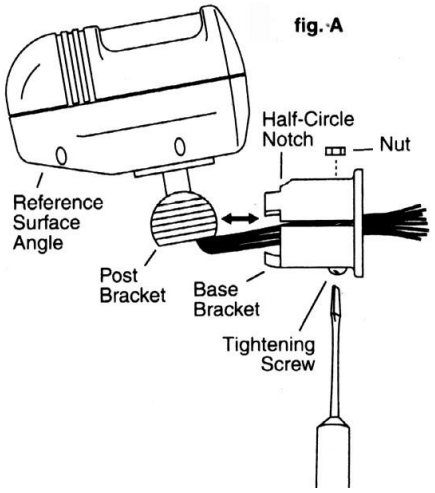
Installation

The LX100 sensor can be mounted to walls or ceilings.

Ceiling:
It is best to leave approximately six inches between the sensor and the wall so that the tightening screw can be easily accessed. Orient the base bracket’s half-circle notch in the direction that the sensor will point.

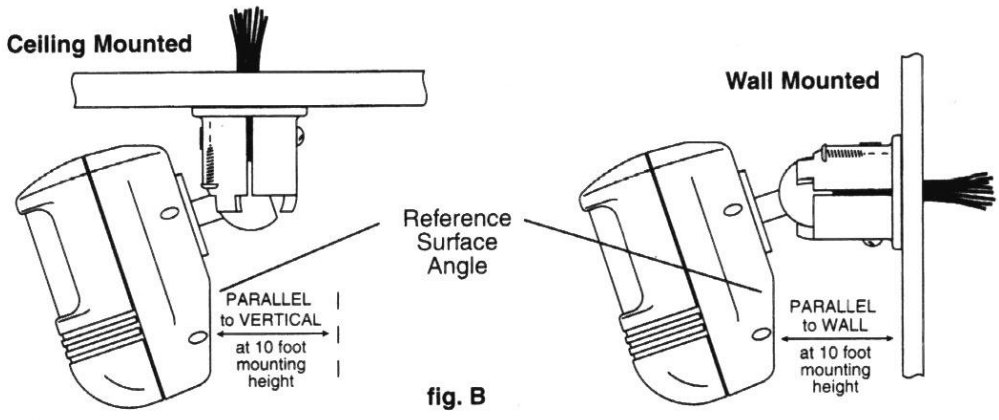
Wall:

Orient the base bracket's half-circle notch up



Procedures:

1. Mount the base bracket to the mounting surface with screws.
2. At the center of the base bracket, drill a hole in the ceiling or wall large enough to thread the sensor's wires through.
3. Guide the sensor's wires into the base bracket and through the hole in the ceiling or wall.
4. Connect the sensor to the base bracket by angling the post bracket so that it is in line with half circle notch, as illustrated in figure A. push the ball into the base bracket opening until it snaps into place, being careful not to pinch the wires.
5. Insert the tightening screw and nut into the base bracket as illustrated.
6. Use the reference surface angle to adjust the sensor for optimum coverage. When mounted at ten feet, the reference surface angle should be parallel to the wall or the vertical (see figure B). (As the mounting height decreases, the sensor will be tilted up slightly; as the mounting height increases, the sensor will be tilted down slightly).

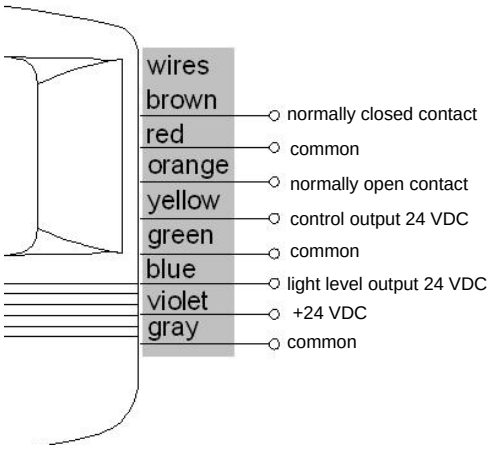


7. Tighten the tightening screw.

Sensor angle adjustment

- While watching the PIR sensing indicator (red LED) for flashes, have a person walk back and forth at the far end of the space. Increase or decrease mount angle as needed until the desired coverage is achieved.
- Tighten the tightening screw to hold this position.

Wiring direction



Sensor adjustment

The sensors are factory preset “to allow for quick installation in most applications”. However, verification of proper wiring or coverage, or customizing of the sensor’s setting can be done through the follow steps.

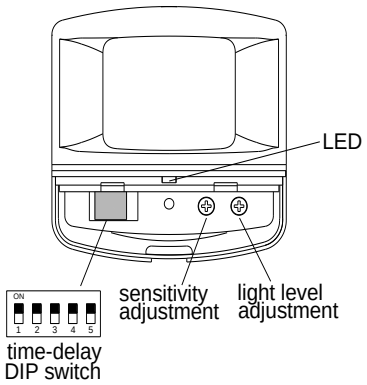
There is a warm-up period when power is first to the sensor of up to 90 seconds.

1. For testing, set the time delay to minimum (10 seconds). See chart below for DIP switch configurations.

DIP switch #	1	2	3	4	5
Time delay					
►10 sec	—	—	—	—	—
2 min	•	—	—	—	—
4 min	—	•	—	—	—
6 min	•	•	—	—	—
8 min	—	—	•	—	—
10 min	•	—	•	—	—
12 min	—	•	•	—	—
14min	•	•	•	—	—
16 min	—	—	—	•	—
18 min	•	—	—	•	—
20 min	—	•	—	•	—
22 min	•	•	—	•	—
24 min	—	—	•	•	—
26 min	•	—	•	•	—
28 min	—	•	•	•	—
30 min	•	•	•	•	—
override	—	—	—	—	•

applied

• =on — =off
►=factory preset



2. Ensure that the sensitivity and light level knob are set to maximum, fully clockwise.
3. Remain still. The lights should turn off after approximately 10 seconds.
4. Set the desired time delay.
5. Readjust the angle of the sensor if necessary.

Time delay

The time delay is set with DIP switch 1 through 4

Light level feature

● The light level feature holds lights off upon initial entry into the space if adequate ambient light exists. It will not turn the lights off if they are on.
● Adjust the light level during daylight hours when ambient light in the area is adequate.
1. Set the time delay to minimum (10 seconds)
2. Set the light level to minimum, fully counter clockwise
3. Be still and allow the light to turn off.
4. Move a hand in front of sensor every 10 seconds (to keep sensor activated). And without blocking any light from reaching the sensor, in small increments, turn light level adjustment toward maximum, waiting at least 5 seconds between increments, until the lights turn on. Then turn it back slightly. At this setting the lights will not turn on with occupancy if the ambient light is above the current level.
5. Set the desired time delay.
6. Readjust the angle of the sensor if necessary.

● Avoid mounting the sensor too close to lighting fixtures.

Troubleshooting

Lights do not turn on with occupancy, and the following condition exists:

LED does not flash:

When power is initially applied to the sensor, there is a warm-up period of up to 90 seconds before the LED is active.
1. Check the sensitivity settings, increase (clockwise) as needed.
2. Check wiring connections

LED does flash:

1. The light level setting or the sensitivity may be too low.
2. If the sensor's light level feature has been employed, the lights connected to the light level output might be held off because of the level of ambient light in the controlled area.
   - To test whether the light level adjustment is the problem, cover the PIR lens with your hand for 5 seconds to see if the lights turn on, or turn the light level adjustment toward maximum (clockwise). If the lights turn on, the light level setting was keeping the lights off.
   - Increase the light level setting slightly or follow the procedures under "sensor adjustment" to adjust the light level setting.
   - The sensitivity adjustment should be set to maximum, unless a decrease is made due to unwanted sensor activations
3. Check wiring connections.

Lights do not turn off automatically:

1. The sensor may be experiencing activations from outside the controlled area or from some type of interference (see “unwanted sensor activation”)
2. Check all wiring connections

Unwanted sensor activations (LED flashes):

Possible causes	Possible solutions
Improper sensor location or angle adjustment causing detection outside of desired coverage area	Mask the lens to reduce PIR coverage(see “masking the lens”)
Sensitivity set too high	Reduce the sensitivity(counterclockwise) as needed(see “ sensor adjustment”)
Sensor located too close to vents with heavy air flow	Relocate the sensor

Override:

To override all sensor functions, set DIP switch #5 to on.

This bypasses the occupancy and light level control functions of the sensor, but still allows the lights to be manually controlled with light switch.