WARNINGS AND CAUTIONS

• TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER at circuit breaker or fuse and test that power is off before wiring!

• To be installed and/or used in accordance with appropriate electrical codes and regulations.

• If you are unsure about any part of these instructions, consult an electrician.

• Sensors must be mounted on a vibration free surface.

• All sensors must be mounted at least 6 feet away from air vents.

• DO NOT touch the surface of the lens. Clean outer surface with a damp cloth only.

• All sensors must be mounted at least 6 feet away from air vents.

USB VERSION

Step 3 cont’d

5. Push the wires into the hole in the ceiling tile and insert the threaded rod until the sensor is flush with the tile.

6. Insert wires through the hole in the included washer, then place the included washer over the rod and screw on the included hex nut.

7. Class II Wiring: Connect low-Voltage wires from Power Pack to Sensor per WIRING DIAGRAM as follows: Twist strands of each lead tightly and, with circuit conductors, push firmly into appropriate wire connector. Screw connections clockwise making sure that no bare conductor shows below the wire connectors. Secure each connector with electrical tape.

8. Rotate the sensor to the desired orientation. Note that the sensor base and back cover are keyed. To lock the device in place, ensure that the arrows are not aligned.

9. Restore power at circuit breaker or fuse to Power Pack. INSTALLATION IS COMPLETE.

B. Wallboard or Drop Ceiling Installation (Mounting Option B):

NOTE: You may use the mounting screws, nuts and washers included, or screws in combination with commercially available wall anchors.

1. Select location for mounting of sensor for your application (refer to Mounting Location Diagram).

2. Select location for mounting of sensor for your application (refer to Mounting Location Diagram).

3. Remove the back cover of the sensor. Hold the back cover and body of the sensor and rotate until the two arrows line up and pull apart.

4. Install back cover of the ceiling sensor to the wallboard or drop ceiling using the included screws, nuts and washers, or screws in combination with commercially available wall anchors.

5. Class II Wiring: Connect low-Voltage wires from Power Pack to Sensor per WIRING DIAGRAM as follows: Twist strands of each lead tightly and, with circuit conductors, push firmly into appropriate wire connector. Screw connections clockwise making sure that no bare conductor shows below the wire connectors. Secure each connector with electrical tape.

6. Push wire connections through the center hole of the back cover and into the ceiling.

7. Secure the sensor body to the back cover by aligning the arrows. Lock it by turning the sensor such that the arrows do not line up.

8. Rotate the sensor to the desired orientation.

9. Restore power at circuit breaker or fuse to Power Pack. INSTALLATION IS COMPLETE.

Wiring Diagram: Multiple Sensor, Single Power Pack

The Occupancy Sensor in a low-voltage ultrasonic sensor that works with the OSPx Series and CN100 power pack to automatically control lighting. The sensor turns the lights on and off whenever occupancy is detected and will turn them off after the ‘delayed-off time’ has expired.

The sensor continually analyses and adjusts to changing conditions. The sensor uses the latest microprocessor-based technology which permits it to continually adjust and optimize its performance. Ultrasonic (delta x y) motion detection gives maximum sensitivity that yields a sensor with excel lent performance.

INSTALLING YOUR OCCUPANCY SENSOR

NOTE: Use check boxes when Steps are completed.

Tools needed to install your Sensor

- Slotted/Phillips Screwdriver
- Electrical Tape
- Pliers
- Cutters

Parts Included List

- Sensor (1)
- #8-32 Washer and Nut (2)
- #8-32 x 1/2” Screw (2)
- Threaded Rod (1) and Hex Nut (1)
- #8-32 x 1-1/2” Screw (2)
- Plastic Washer (1)

DESCRIPTION

The Occupancy Sensor is a low-voltage ultrasonic sensor that works with the OSPx Series and CN100 power pack to automatically control lighting. The sensor turns the lights on and off whenever occupancy is detected and will turn them off after the ‘delayed-off time’ has expired.

The sensor continually analyses and adjusts to changing conditions. The sensor uses the latest microprocessor-based technology which permits it to continually adjust and optimize its performance. Ultrasonic (delta x y) motion detection gives maximum sensitivity that yields a sensor with excellent performance.

Step 1

1. WARNING: TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER at circuit breaker or fuse and test that power is off before wiring!

2. Preparing and Connecting Wires:

   a. Strip Gage (minimum bare wire base) (if necessary)

   b. Snap Gage (minimum bare live base)

   c. Insert the flared end of the threaded rod into the opening in the bottom of the sensor and twist to lock into place.

   d. Mounting Option Diagram A

   e. Mounting Option Diagram B

   f. Mounting Option Diagram C

Step 2

3. Typical Installations:

   a. Listed are 3 typical installation options. (A, B, and C). Choose one that best suits your needs. Other methods of installation may be possible but they have not been described here.

4. A Drop Ceiling Installation (Mounting Option A):

   a. Notify: Use the threaded rod included.

   b. Select location for mounting of sensor for your application (refer to Mounting Location Diagram).

   c. Use the supplied threaded rod or other methods to make a hole (1/2” to 1”) in the ceiling tile just large enough to pass the body of the threaded rod through.

   d. Insert the sensor wires through the flared end of the threaded rod. Position the threaded rod to the base of the sensor.

   e. Insert the flared end of the threaded rod into the opening in the bottom of the sensor and twist to lock into place.

Step 3

5. Step 3 cont’d


    a. Note: When using the Photocell function, connect the Gray wire of the sensor to the Blue wire of the power pack. DO NOT use the Blue wire of sensor.

    b. Note: Ensure to cap wires that is not being used.

FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
### ADAPTIVE FUNCTIONS

The Sensor continually analyzes the parameters of the motion-detection signal and adjusts its internal operation to maintain a detection of motion while minimizing the effects of noise (electrical noise, air currents, temperature changes, etc.).

**Operation:**

When the lights turn off, the sensor initially enters the "walk-through" mode. Once the room is occupied for a longer than 2.5 minutes, the sensor will exit the "walk-through" mode and enter the "Occupied" mode. When the sensor is first installed, the delayed-off time for the occupied mode is set. If the sensor is reprogrammed, the delayed-off time will change, based on how the sensor adapts to the room conditions. Whenever the sensor subsequently turns on, the value of the delayed-off time will be the selected value (refer to Occupancy Pattern Learning For Delayed Off Time).

The DIP switches can be used to change the delayed-off time in response to the occupancy and environmental conditions of the space in question. The sensor analyzes the motion signal properties and will minimize the delayed-off time duration when there is frequent motion detection. If the sensor is not detecting motion, the delayed-off time duration may be lengthened to prevent further false turnoffs.

**Occupancy Pattern Learning for Ultrasonic Technology:**

The sensor learns the occupancy patterns of a space during the course of a day, for a seven day period. At the end of the seven day period, the sensor will store the collected data and its occupancy pattern will be adjusted accordingly. The sensor will then be able to make the appropriate adjustments to the sensor settings.

**Adjustment Knob Settings**

Adjustment knob settings as per “recommended manual settings,” (refer to Table 3 and Figure 1).

### TABLE 3: ADJUSTMENT KNOB SETTINGS

<table>
<thead>
<tr>
<th>Knob Color</th>
<th>Symbol</th>
<th>Function</th>
<th>Knob Setting</th>
<th>Factory Default Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td></td>
<td>Time</td>
<td>Full OFF</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delayed</td>
<td>Full OFF</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motion</td>
<td>Full OFF</td>
<td>0.50</td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td>Light</td>
<td>Full OFF</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ultrasonic</td>
<td>Full OFF</td>
<td>100%</td>
</tr>
<tr>
<td>Blue</td>
<td></td>
<td>Amplitude</td>
<td>Full OFF</td>
<td>100%</td>
</tr>
</tbody>
</table>

### TEST MODE

**Test Mode:** To set the delayed-off time to 6 seconds for performing a walk test. While the sensor is in test mode, the LED will flash amber once a second.

1. **Ensure POWER IS ON.**
2. Remove front cover.
3. Locate Dip Switch 3 in Bank B (refer to Figure 1). B3 will be in the OFF position from the factory.
4. To enter Test Mode, move switch ON and back to OFF. The test mode has now been entered with a 6 second time-out. **NOTE:** B3 is always in the OFF position, then test mode can be entered by just moving it to the OFF position.

**Photicell (Light Override) adjustment:**

In order to use the Ambient Light Override function of the sensor, the motor must be adjusted to the power pack (DSPPK) using the gray wire instead of the blue wire. This feature allows the user to conserve energy by keeping the controlled lights off when not necessary. The sensor does this by measuring the amount of ambient light in the installed area and keeping the controlled lights off if there is enough ambient light available. To use this feature, the Photocell adjustment (blue) knob must be adjusted from the default setting. When the area is occupied for longer than 2.5 minutes, the controlled lights will turn off if ambient light present is less than the setting.

To set the Photocell level (used with the gray wire connection):

**NOTE:** This setting must be performed when the natural light is low enough to require artificial light.

1. Remove the cover from the sensor.
2. Make note of the position of the Green knobs. Rotate the Green knob full CCW and enter the sensor’s Test Mode as described above.
3. Rotate the Blue knob full CW.
4. Wait for the lights to turn ON.
5. Rotate the Green knob full CCW.
6. Slowly rotate the Blue knobs clockwise until the lights turn OFF. This is the correct setting.
7. Return the Green knobs to its original position.
8. Replace cover. Setting is complete.

---

**Adjustment switch settings (Table 2):**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Switch Functions</th>
<th>Switch Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Mode</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>B</td>
<td>Max Motion</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>C</td>
<td>Mode</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>D</td>
<td>Delayed Off Time</td>
<td>30 sec, 60 min</td>
</tr>
</tbody>
</table>

**Adjust Knob Rotation Direction:**

- MIN/NAX: 30 sec to 60 min
- DELAYED OFF TIME: 5 sec to 30 min

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**LIMITED 5 YEAR WARRANTY AND EXCLUSIONS**

Lutron warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Lutron is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Lutron’s obligation is to correct such defects by repair or replacement, at its option. For details visit Lutron’s website at www.leviton.com or call 1-800-528-2948. This warranty excludes and there is disclaimers applicable to identity of any kind, including merchantability and fitness for a particular purpose. If any implied warranty is required by applicable law, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. Lutron is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

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**PRODUCT INFORMATION**

- For technical assistance, contact us at 1 800-528-2948
- Visit our website at www.leviton.com

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