**WARNING AND CAUTIONS**

- To be installed and/or used in accordance with electrical codes and regulations.
- Disconnect power when servicing luminaire or changing bulbs.
- Use this device with copper or copper clad wire only.
- Do not attempt to disassemble or repair, clean outer surface with a damp cloth only.

**INSTALLATION INSTRUCTIONS**

**DESCRIPTION**

Leviton’s High Bay Occupancy Sensors, Cat. No. HB011, are specifically designed for high mounted areas such as warehouses, manufacturing and other high ceiling applications. The HB011 installs directly to an industrial luminaire or an electrical junction box. It is a self-contained sensor and relay that detects motion using the passive infrared (PIR) to sense sources (such as a person entering a room) within its field-of-view (monitored area) and automatically switches lights ON. The controlled lights will remain ON until motion is detected and the scheduled time delay has expired. The daylight sensor is sensitive to ambient light and has a threshold level that can be user-adjusted. The HB011 is supplied with two interchangeable lens rings that allow the user to select between a 360-degree High Bay or Low Bay pattern and an aisle pattern with the included aisle mask. The Sensor’s High Bay lens and aisle lens is designed for 20 ft. to 40 ft. mounting heights for a symmetrical pattern which will provide coverage of 50’ to 60’ diameter (refer to Figure 4 and 5). The Low Bay lens is designed for 8 ft. to 20 ft. mounting heights for a symmetrical pattern which will provide coverage of 30’ to 50’ diameter (refer to Figure 6). The Sensor is sensitive to the heat emitted by the human body. In order to initially trigger the Sensor, the source of heat must move from one zone of detection to another. Note that occupancy sensors respond to rapid changes in temperature, so care should be taken not to mount the device near a climate control source (i.e. radiators, air exchanges, and air conditioners). Hot or cold drafts will look like body motion to the device and will take not to mount the device near a climate control source (i.e. radiators, air exchanges, and air conditioners). Hot or cold drafts will look like body motion to the device and will take not to mount the device near a climate control source (i.e. radiators, air exchanges, and air conditioners). High or cold drafts will look like body motion to the device and will take not to mount the device near a climate control source (i.e. radiators, air exchanges, and air conditioners). Hot or cold drafts will look like body motion to the device and will take not to mount the device near a climate control source (i.e. radiators, air exchanges, and air conditioners).

**FEATURES**

- Fixture or electrical box mounted Passive Infrared Occupancy Sensor
- Integrated Photodetector
- Adjustable Time Delay
- Auto Calibration
- Pre-wired signal stranded wire leads
- 21” length (HB011-PDX, PD2) - 42” length (HB011-BDX, BD2)
- Optional aisle mask
- 0-10V Dimming
- Visual LED indications for easy troubleshooting
- H.I.S. (High Inrush Stability) Technology
- Zero Crossing
- Robust Mechanical Latching Relays
- LED indicator light blinks when sensor detects motion, visible from long distance
- To disable photocell or cancel Auto Calibration turn the PHOTO SETPOINT knob from OFF position to any DDL setpoint (this can be done when power is removed)
- The LED will be solid GREEN and Lights will be forced ON for 24 hours indicating the device has entered Auto Calibration Mode
- When Auto Calibration is complete, the LED will resume normal operation. The device is now self-adjusting
- To reset to factory default, power ON the device and turn the PHOTO SETPOINT knob to Off position for 5 seconds.
- NOTE: Solid BLUE LED indicates failed calibration due to ambient light falling below 5 lux

**INSTALLATION**

**FEATURES**

- Fixture or electrical box mounted Passive Infrared Occupancy Sensor
- Integrated Photodetector
- Adjustable Time Delay
- Auto Calibration
- Pre-wired signal stranded wire leads
- 21” length (HB011-PDX, PD2) - 42” length (HB011-BDX, BD2)
- Optional aisle mask
- 0-10V Dimming
- Visual LED indications for easy troubleshooting
- H.I.S. (High Inrush Stability) Technology
- Zero Crossing
- Robust Mechanical Latching Relays
- LED indicator light blinks when sensor detects motion, visible from long distance
- To disable photocell or cancel Auto Calibration turn the PHOTO SETPOINT knob from OFF position to any DDL setpoint (this can be done when power is removed)
- The LED will be solid GREEN and Lights will be forced ON for 24 hours indicating the device has entered Auto Calibration Mode
- When Auto Calibration is complete, the LED will resume normal operation. The device is now self-adjusting
- To reset to factory default, power ON the device and turn the PHOTO SETPOINT knob to Off position for 5 seconds.
- NOTE: Solid BLUE LED indicates failed calibration due to ambient light falling below 5 lux

**NOTE:**

- NOTE: Solid BLUE LED indicates failed calibration due to ambient light falling below 5 lux during Auto Calibration.
- Failure of sensor or significant change in light source like relamping requires re-calibration by resetting to factory default.
- If the calibration process does not successfully complete due to power outage, it will restart at the next power-up if the knob is not in the OFF position.
- To disable photocell or cancel Auto Calibration turn the PHOTO SETPOINT knob to Off position.
- The DDL can be adjusted by turning the PHOTO SETPOINT knob.

**FACTORY SETTINGS**

**LED INDICATORS**

- RED Blink - PIR Detection
- RED Solid - Device Failure
- GREEN Blink 24 hr - Auto Calibration
- BLUE Blink 1x30s - PC Held Off Mode
- BLUE Solid - Delay Setting Change
- YELLOW Solid 15s - Power Timer
- YELLOW Solid - Power Timer

**INTEGRAL PHOTOCEL**

- OVERLOAD OCCURS IF THE MAXIMUM POSSIBLE AMOUNT OF LIGHT IS NOT DETECTED.

**LED WIRE TABLE**

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Red (Black)</th>
<th>Yellow (White)</th>
<th>Green (White)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>M</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>IN</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>M</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

5. Restore power at circuit breaker or fuse.

**NOTE:**

- NOTE: Allow approximately 30 seconds for charge-up. If the lights turn ON and the LED blinks when a hand is waved in front of the lens, then the Sensor was installed properly.
- If the operation is different, refer to the TROUBLESHOOTING SECTION.
- The Sensor is factory preset to work without any adjustments. If you desire to change the factory settings, refer to the SETTINGS AND CALIBRATION section.
**ACCURACY OPERATION**

Motion detection by the infrared sensor will turn the lights ON as well as keep them ON.

- **Time Delay Off Time (T1):** The sensor is designed to dim or turn off the lights OFF if no motion is detected after a specified time. This length of time is called the Time Delay Off Time and is set using the TIME DELAY knob.
- **Partial Off Time (T2):** When motion is not detected and T1 time has expired, the sensor can be configured to maintain light at a minimum dim level for a period of time known as Partial Off Time (T2). When T2 expires, lights will turn OFF.

**PHOTOCELL OPERATION**

During daylight, the photocell controls a 0-10 VDC dimmable ballast or LED Driver to achieve maximum Energy savings while maintaining a minimum light level referred to as the "DOL." When no daylight is available, the photocell allows the load to operate at its full brightness level. As daylight increases in the room, the photocell dims the load. When the minimum dim level is reached (and one of the Dim to Off modes is selected), the device will switch off the lights when the light level is above the DOL for 30 seconds. The lights will then be turned on, with the light source set at its minimum dim level. The photocell will increase the light output until the DOL is reached. As the light levels change, the photocell will reduce or increase the dim level in order to maintain the DOL. The light levels changes occur at 5 minutes rate and make the light level transitions unnoticeable to room. The photocell holds the lights OFF when sufficient ambient light is present if motion is detected in vacancy state.

**MODES OF OPERATION**

Selecting the MODE knob:

- **Mode 1 - Doff, T2 = 0:**
  - During daylighting, the lights will turn OFF. On vacancy, the lights will turn OFF after T1 expires.
  - Lights will turn OFF after 30 minutes.

- **Mode 2 - Dimm, T2 = 0:**
  - During daylighting, the lights will dim to a minimum level. Upon vacancy, the lights will turn OFF after T1 expires.
  - Lights will turn OFF after 60 minutes.

- **Mode 3 - Doff, T2 = 60:**
  - During daylighting, the lights will turn OFF. Upon vacancy, the lights will dim to min after T1 expires.
  - Lights will turn OFF after 60 minutes.

- **Mode 4 - Dimm, T2 = 60:**
  - During daylighting, the lights will dim to Min. Upon vacancy, the lights will turn OFF after T1 expires.
  - Lights will turn OFF after 60 minutes.

- **Mode 5 - Dimm, T2 = infinity:**
  - During daylighting, the lights will dim to Min. Upon vacancy, the lights will dim to min after T1 expires.
  - In this mode, lights will not turn OFF.

**NOTE:** Motion detection by the infrared sensor will reset T1 and T2.

**PHOTOCELL TEST MODE**

- Can be initiated from PHOTO SETPOINT knob and lasts for two minutes.
- While active, the dimming fade rate will be reduced to 30 seconds and LED blinks yellow.

**TROUBLESHOOTING**

- **Lights do not turn ON**
  - Circuit breaker or fuse has tripped. Turn the breaker ON. Ensure the lights being controlled are in working order (i.e., working bulbs, ballasts, etc.).
  - Photocell is in overload mode (light not needed). See LED indicators Table.
  - Lens is dirty or obstructed. Inspect the lens visually and clean if necessary, or remove the obstruction.
  - Sensor is wired incorrectly or may be defective. Confirm that the sensor’s wiring is done correctly and inspect visually for problems.

- **Lights stay ON**
  - The line voltage has dropped. Perform the necessary tests to assure the line voltage has not dropped 10% beneath the specified voltage.
  - Sensor may be mounted too close to an air conditioning or heating vent. Move the sensor or close the vent.
  - Sensor is wired incorrectly or may be defective. Confirm that the sensor’s wiring is done correctly and inspect visually for problems.

- **If the lights stay ON when enough light is present check the following:**
  - Wiring and settings.
  - Poor sensor location (Ensure proper installation and calibration).
  - Photocell is in failed calibration mode (Blue LED is solid ON).
  - Photocell is not calibrated.
  - DOL multiplier is set too high. Adjust DOL knob to a lower setpoint.

- LED illuminates solid Red for longer than 5 minutes
  - Device malfunction. Contact Technical Assistance - 1-800-824-3005

**CERTIFICATIONS**

- **Line Voltage Units**
  - All models meet all requirements and pass certification testing per UL 773A and CSA 22.2 No. 205.

- **FOR CANADA ONLY**
  - For warranty information and/or product returns, residents of Canada should contact Leviton in writing at Leviton Manufacturing of Canada Ltd to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9 or by telephone at 1 800 405-5320.

- **FOR CANADA ONLY**
  - There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the limitation of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years from the date of sale.

- **FOR CANADA ONLY**
  - Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option. For details visit www.leviton.com or call 1-800-824-3005. This warranty only applies when any laws or regulations require. There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the limitation of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years.

- **FOR CANADA ONLY**
  - Leviton is not liable for incidental, 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.

For Technical Assistance Call: 1-800-824-3005 (U.S.A. Only) www.leviton.com

PK-0216S 10-00SA