WARNINGS AND CAUTIONS:

For Occupancy Sensors installed to control Emergency Lighting Equipment:
If this equipment is being used for Emergency Lighting and Power Equipment, please adhere to the following information. This equipment is rated for only 25C if used on Emergency Lighting Equipment. Apply the "Emergency Circuits" label (provided) to the front cover.

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

a) **READ AND FOLLOW ALL SAFETY INSTRUCTIONS.**
b) DO NOT use outdoors.
c) DO NOT mount near gas or electric heaters.
d) Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
e) The use of accessory equipment not recommended by manufacturer may cause an unsafe condition.
f) DO NOT use this equipment for other than the intended use.

SAVE THESE INSTRUCTIONS

All servicing shall be performed by qualified service personnel. If any Emergency Circuits are fed or controlled from this panel, it must be located electrically where fed from a UPS, generator, or other guaranteed source of power during emergencies and power outage situations.

Ceiling Mounted Line Voltage Vacancy Sensor
California Title 20 Compliant
No Minimum Load Required

INSTALLATION INSTRUCTIONS

Rating: 6A-6AX 250V ☼ ⊏═⊐ Ⓜ 720-1440 W/VA 120-240 50Hz

120 V 60 Hz	8 A, Electronic Ballast	277 V 60 Hz	5 A, Electronic Ballast
	800 W/VA, Tungsten, Ballast		1200 VA, Ballast
	1/4 Hp		1/3 Hp

CATALOG ITEMS

Cat. No.	Description	Voltage Range	Current Consumption	Coverage	Suggested Mounting Location
O4C10-MDW	2-Way Multi-Tech	120-277V, 50/60 Hz	60-30 ma	1000 sq. ft.	Mount in center of room/area, 8-12 ft height
O4C15-IDW	Extended Range	120-277V, 50/60 Hz	60-30 ma	1500 sq. ft.	Mount in center of room/area, 8-12 ft height
O4C20-MDW	2-Way Multi-Tech	120-277V, 50/60 Hz	60-30 ma	2000 sq. ft.	Mount in center of room/area, 8-12 ft height

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.
- Do not terminate using data type wire, such as Cat 5/5E.
- Do not mount sensors closer than 10 feet to each other.
- All sensors must be mounted at least 6 feet away from air vents, air handlers, and reflective surfaces (windows/mirrors).

NOTES

- Do not touch the surface of the lens. Clean outer surface with a damp cloth only.
- **Operating Temperature:** 32˚ to 104˚F (0˚ to 40˚C)
- Compatible with electronic and magnetic ballasts, electronic and magnetic low-voltage transformers, incandescent lamps, and fans.

LEVITON®

PK-93874-10-00-2C

TOOLS NEEDED TO INSTALL YOUR SENSOR

- Slotted/Phillips Screwdriver
- Small Slotted Screwdriver
- Wire stripper
- Cutters

PARTS INCLUDED LIST

- Sensor (1)
- Mid-Range Lens (1)
- 360˚ Perforated Mask (1)
- 4" x 4" Mounting Plate (1)
- Emergency Label (1)
- Low Voltage Connector (1)
- #6-32 x 1-1/2" Screw (2)
- Half Mask (1)
- Tubing Barrier (1)

DESCRIPTION

The Line Voltage Vacancy Sensor monitors the space for vacancy. The lights can be turned ON manually by pressing the low-voltage/momentary toggle switch. The sensor turns the lights OFF when vacancy is detected and the delayed-off time has expired. The sensor continually analyzes and adjusts to changing conditions. The sensor uses the latest microprocessor-based technology which permits it to continually adjust and optimize its performance. The combination of ultrasonic (doppler shift) motion detection which gives maximum sensitivity and infrared motion detection which gives higher false triggering immunity yields a sensor with excellent performance.

INSTALLING YOUR OCCUPANCY SENSOR

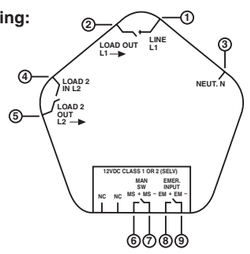
NOTE: Use check boxes ☑ when Steps are completed.

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

☐

Step 2 **Identifying your wiring:**

☐ **1**. Line (Hot) - L1
2. Load - L1 ➞
3. Neutral - N
4. Load - L2
5. Load - L2 ➞
6. Manual Switch +
7. Manual Switch –
8. Emergency Interface +
9. Emergency Interface –



Step 3 **Preparing and connecting wires:**

☐
- Make sure that the ends of the wires from the electrical box are **straight (cut if necessary)**.
- Remove insulation from each wire in electrical box as shown.
- Wire per Specifications:

- Line, Neutral, Load Wires (Copper)
Wire range: #12-18 AWG, 3.3 - 0.75 mm square
Torque rating: 20 lb-in, 23 kgf-cm.

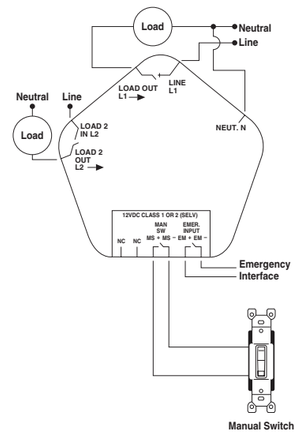
- Control Wires (Manual Switch and Emergency Interface)
Wire range: #16-26 AWG, 4.0 - 0.12 mm square
Torque rating: 2.5 lb-in, 2.88 kgf-cm.

Step 4 **Installing your sensor:**

☐ Connect wires per WIRING DIAGRAM as follows:

1. Insert wires into proper terminals. Use a screwdriver to turn terminal screws clockwise and secure wires.
a) Line wire to Line terminal.
b) Neutral wire to Neutral terminal.
c) Load wires to Load terminals. **NOTE:** Both loads **MUST** be fed from the same phase.
d) Manual Switch and Emergency Interface to their respective marked terminals. **NOTE:** When wiring Manual Switch and Emergency Interface Class 2, use the provided tubing for insulation inside the junction box. **NOTE:** Wires need to be inserted from the top through the wire holes provided on the sensor and clamped down using the washer to the terminals.

Wiring Diagram

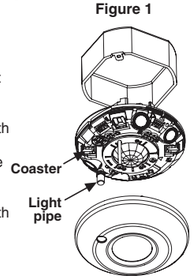


Mount Sensor in Electrical Box

To mount inside 4" octagon 2.125" deep ceiling electrical box, refer to **Figure 1**.

- Dress line voltage wires to provide enough clearance in electrical box when device is installed.
- Partially thread two #8-32 screws (not included) into the mounting holes of the electrical box.
- Pull out the two coasters that align with the two screws.
- Align sensor so that it fits between the mounting holes of the electrical box and insert over mounting screws.
- Push in the two coasters that align with the two screws.
- Tighten mounting screws firmly.

Figure 1

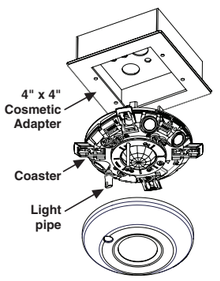


Mount Sensor in Electrical Box with Mud Ring

To mount inside 4" square 1.5" deep ceiling electrical box with mud ring, refer to **Figure 2**.

- Ensure that conduit/cable entry clamp is located in corner of electrical box.
- Dress line voltage wires to provide enough clearance in electrical box when device is installed.
- Install a two-gang mud ring (not included) on electrical box.
- Partially thread the two #6-32 screws provided into the mounting holes of the electrical box.
- Pull out the two coasters that align with the two screws.
- Align sensor so that it fits between the mounting holes of the electrical box and insert over mounting screws.
- Push in the two coasters that align with the two screws.
- Tighten mounting screws firmly.

Figure 2



VACANCY SENSOR OPERATION

Manual switch press will turn the lights ON. The sensor turns the lights OFF when vacancy is detected and the delayed-off time has expired.

- **Delayed-Off time:** The sensor is designed to turn the lights OFF if no motion is detected after a specified time. This length of time is called the delayed-off time and is set using the timer (Black) knob on the sensor.
- **Walk-through Mode:** The walk-through feature is useful when a room is momentarily occupied. The walk-through feature works as follows: When a person enters the room and turns the lights ON with the manual switch. If the person leaves the room before the default walk-through timeout of 2.5 minutes, the sensor will turn the lights OFF 2.5 minutes later. If the person stays in the room for longer than 2.5 minutes, the sensor will proceed with the standard operation.
- **Reset Device State:** To reset Auto adapting settings to factory default.
- **Manual ON/OFF Switch:** Use to turn the lights ON or OFF by pressing the low voltage momentary/toggle switch. Pressing manual switch will reset the time delayed OFF timer and lights will turn OFF after the delayed-off timer expires.
- **Emergency Interface:** This input is intended for use with BMS (Building Management System) or any contact closure to force the lights ON in case of emergency. Lights will stay ON until emergency signal is cleared.
- **Manual ON:** Occupants **must** press the low voltage switch to turn the load ON. When the occupancy sensor is the only input keeping the load ON, the load turns OFF when the sensor time delay expires. If the sensor input re-triggers within 30 seconds after the load turns OFF, the load turns ON again. After the 30 seconds expires with no sensor input, press the momentary switch to turn the load ON.

Modes of Operation: Selectable using Bank B Dip Switches
Forced Mode: Both Loads will be overridden to a Forced ON or Forced OFF State. Refer to **Table 2** for switch settings.
1. Ensure power is ON.
2. Remove front cover.
3. Locate dip switch 1 in Bank B. B1 will be in the OFF position (Normal Mode) from the factory.
4. To enable Forced Mode, move the switch to ON.

Forced State: Override ON/Override OFF, Refer to **Table 2** for switch settings.
1. Enable Forced Mode.
2. Locate dip switch 2 in Bank B. B2 will be in the OFF position from the factory.
3. To select the OFF state, move the switch to OFF. To select the ON state, move the switch to ON.

Test Mode: To set the delayed-off time to 4 seconds for performing a walk test. While the sensor is in test mode, the LED will flash YELLOW once every second. Refer to **Table 2** for switch settings.
1. Ensure power is ON.
2. Remove front cover.
3. Locate dip switch 3 in Bank B. B3 will be in the OFF position from the factory.
4. To enter Test mode, move switch to ON. If B3 is already in the ON position, then Test mode can be entered by just moving it to the OFF and then ON position. The timer will remain in the 4 second Test mode for 15 minutes, then automatically exit Test mode and reset to the delayed-off time setting as defined by the Black timer knob. To manually take the timer out of the 4 second Test mode, simply move switch B3 back to OFF. **NOTE:** Entering Test mode will reset all adapted settings.

LEDs State: LEDs are enabled from the factory, to disable the LEDs move the B4 dip switch to ON.
Reset Device State: If a sensor is moved to a new location it should be reset before entering Test Mode.

AUTO ADAPTING

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

Operation

When the sensor is first installed, the delayed-off time is based on the Time adjustment settings. While the sensor is in use, the delayed-off time will change, based on how the sensor adapts to the room conditions. The adapted settings can be reset by moving B3 from OFF to ON to OFF position.

Occupancy Pattern Learning For Delayed-Off Time

The sensor will automatically change the Delayed-Off Time in response to detected occupancy patterns. The Delayed-Off Time will be decreased if large periods of vacancy are detected, which will result in energy savings. The Delayed-Off Time will be increased if false-off conditions are detected.

Occupancy Pattern Learning for the Sensor

The sensor learns the occupancy patterns of a space during the course of a day, for a seven day period. The sensor will adjust the sensitivity to make it less likely to turn ON during a historically vacant time period.

LED INDICATORS

RED - Blinks upon PIR detection. LED can be disabled by moving B4 to ON **(See Table 2)**. Solid for 3 minutes then blinks for 3 minutes during photocell manual calibration. Solid when device malfunctions.
GREEN - Blinks upon US detection. LED can be disabled by moving B4 to ON **(See Table 2)**. Solid for 24 hours during photocell auto calibration.
YELLOW - Blinks in test mode. Solid with emergency interface/BMS input on.
BLUE - Blinks when the knob setting has changed.

SETTINGS

Default Settings:
Adjust knob settings as per "recommended manual settings," **(refer to Figure 3 and Table 1)**.
All switches in the OFF position, except A3, A4 are set to ON **(refer to Table 2)**.

Figure 3 - Knob Settings

Delayed Off Time (Black Knob) | **PIR Sensitivity (Red Knob)** | **US Sensitivity (Green Knob)**

TABLE 1: ADJUSTMENT KNOB SETTINGS

Knob Color	Symbol	Function	Knob Setting	Factory Default Setting
Green		Set Ultrasonic Range	Range Setting Full CCW = min. (OFF) Full CW = max.	50%
Red		Sets Infrared Range	Range Setting Full CCW = min. (OFF) Full CW = max.	75%
Black		Delayed - OFF Time	Full CCW = min. (30 sec) Full CW = max. (30 min)	50% (10 min)

TABLE 2: SWITCH SETTINGS

SWITCH	SWITCH FUNCTIONS	SWITCH SETTINGS	
	Bank A	**OFF**	**ON**
A1	Single/Multi-Tech Mode	Multi-Tech	Single Tech
A2	PIR/Ultrasonic Mode	PIR	Ultrasonic
A3	Manual Mode	Auto Adapting Enabled	Auto Adapting Disabled
A4	Walk-Through	Walk-Through Enabled	Walk-Through Disabled
	Bank B	**OFF**	**ON**
B1	Forced Mode	Normal	Override Enabled (B2)
B2	Forced State	Override OFF	Override ON
B3	Test Mode	Disabled	Enabled OFF ➞ ON
B4	LEDs State	LEDs Enabled	LEDs Disabled
B5	Reset Device State	OFF ➞ ON ➞ OFF	

Figure 4 (Cat. No. O4C10) Field-of-View Ranges
Extended range lens (black frame), mounting height (8-12 ft)

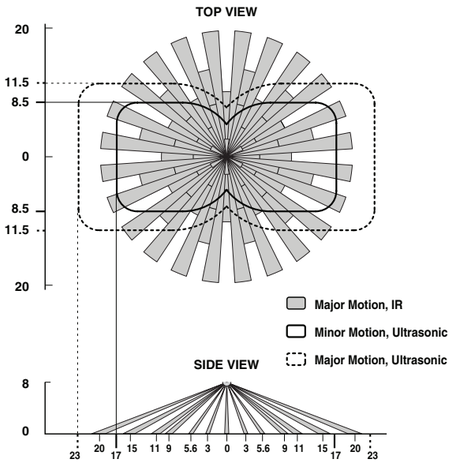


Figure 5 (Cat. No. O4C20) Field-of-View Ranges
Extended range lens (black frame), mounting height (8-12 ft)

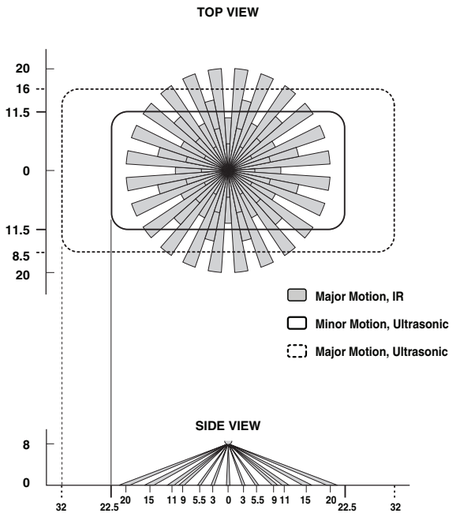


Figure 6 - (Cat. No. O4C15) - Field-of-View Ranges
Extended range lens (black frame), mounting height (8-12 ft)

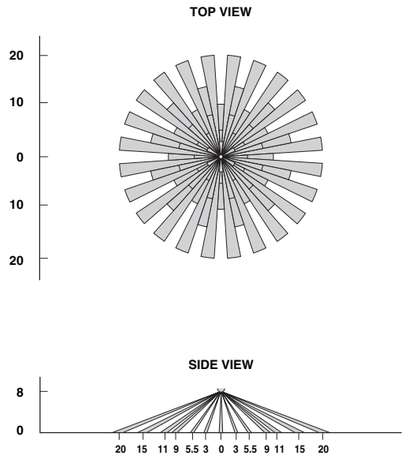
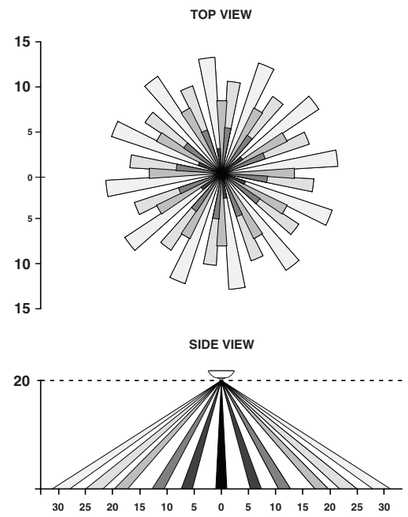


Figure 7 - (Mid-Range Lens) Field-of-View Ranges
Mid range lens (red frame), mounting height (13-20 ft)



Note: This lens is included with all PIR models

Figure 8 - Changing PIR Lens
To change lens, turn lens and line up arrows, then pull lens from sensor

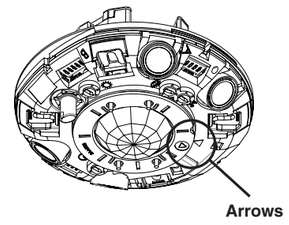
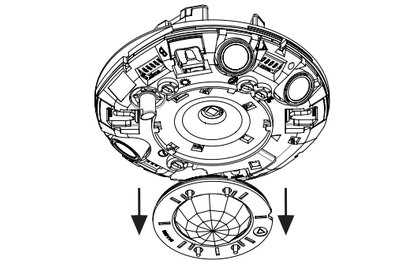


Figure 9 - Mounting Location Diagram



TROUBLESHOOTING

- **Lights do not turn ON**
  - Circuit breaker or fuse has tripped.
  - Forced Mode is enabled with the Forced State set to OFF. To disable the Forced Mode refer to **Table 2** for switch settings.
- **Lights stay ON**
  - Constant motion. **To Test:** Reduce RED and/or GREEN knob by 25%; remove motion source. If unsatisfactory, move sensor.
  - Infrared sensor can "see" into hallway. **To Test:** Put sensor in Timer Test mode and walk hallway. If lights continue to come ON, move sensor.
  - Forced Mode is enabled with the Forced State set to ON. To disable the Forced Mode refer to **Table 2** for switch settings.
- **Light turns ON too long**
  - Timer setting too high. **To Test:** Check switch settings. Typical setting is 10 minutes.
  - LED illuminates solid RED for longer than 5 minutes, device malfunction, contact technical assistance.

PRODUCT INFORMATION

- For technical assistance, contact us at ***1-800-824-3005***
- Visit our website at ***www.leviton.com***

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. Any changes or modifications not expressly approved by Leviton could void the user's authority to operate this equipment.

PATENTS

This product may be covered by US PAT. Nos. 8,154,154; 7,924,155; 8,227,731; 7,608,807 and 8,115,626.

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.**

PK-93874-10-00-2C

LIMITED 5 YEAR WARRANTY AND EXCLUSIONS

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 excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **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 duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. **Leviton 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.