# INTERMATIC®

## 360° Passive Infrared Line Voltage Occupancy Sensor With Light Level Feature

**IOS-CMP-U**

# MODEL: IOS-CMP-U

## INSTALLATION AND CONFIGURATION INSTRUCTIONS

### Ratings:
Input Voltage: 120/277 VAC, 60 Hz
Electronic Ballast (LED): 800 VA, 120 VAC; 1600 VA, 277 VAC
Tungsten (Incandescent): 800 W, 120 VAC
Fluorescent / Ballast: 800 VA, 120 VAC; 1600 VA, 277 VAC
Resistive (Heater): 10 A, 120 VAC
Motor: 1/4 HP, 120 VAC
Adjustable Light Level – 10 fc - 150 fc
Adjustable Time Delay - 15 sec - 30 min
Sensitivity Adjustment - 50% or 100% (DIP switch 1)
Coverage - Up to 1200 ft$^2$

⚠ **WARNING** *Risk of Fire, Electrical Shock or Personal Injury*
- Turn OFF power at circuit breaker or fuse and test that the power is OFF before wiring.
- To be installed and/or used in accordance with appropriate electrical codes and regulations.
- If you are not sure about any part of these instructions, consult a qualified electrician.
- Use this device only with copper or copper clad wire.
- INDOOR USE ONLY

**Figure 1**

### DESCRIPTION:
The IOS-CMP-U 360° Passive Infrared (PIR) Line Voltage Occupancy Sensors control lighting systems based on occupancy and ambient light levels. When movement is detected, the sensor turns the lights ON. If no movement is detected for a user-specified time, the lights are turned OFF. The occupancy sensor provides a 360° coverage pattern, up to 1200 square feet.

### MOUNTING THE SENSOR

NOTE: A junction box and Phillips screwdriver are needed to complete this procedure.

1. Make sure power is turned off at the main disconnect.
2. Remove the screws on the occupancy sensor cover and remove the cover from the sensor.
3. Observe these guidelines when mounting the sensor:
- The occupancy coverage area may be more or less than the sensing distances shown in Figure 1 due to potential coverage area obstacles, such as furniture or partitions.
- Place the sensor 4 to 6 feet away from air supply ducts to prevent false activations.
- If you mount the sensor outside of 8 to 10 feet from the floor, it affects the coverage pattern.
- Decreasing the mounting height decreases the sensor range and increases the sensitivity to smaller motions. Mounting the sensor at heights more than 12 to 14 feet reduces sensitivity
- Each occupant should be able to clearly view the sensor to guarantee no obstruction in the area
- Avoid placing the sensor directly in line with an open door through which it has a clear view out. This may cause the sensor to detect people walking by the door.
- To obtain complete coverage in large areas, install multiple sensors to create an overlap with each adjacent sensor's coverage area.
4. Connect high voltage wires to the appropriate terminals on the sensor. See the table below and Figure 4.

| Connect | To |
|---|---|
| Hot wire of main power | **Black wire on the sensor** |
| Load wire | **Red wire on the sensor** |
| Neutral wire to load and main power | **White wire on the sensor** |
| **Gray wires (if applicable)** | **Terminals on the momentary switch** |

5. Loosen the mounting screws attached to the junction box.
6. Align the sensor the mounting screws in the box over the keyholes on the sensor's rear housing.
7. Push the sensor into the junction box and align the mounting screws on the junction box with the keyhole slots on the sensor so that the screws are seated in the keyhole slots. Tighten mounting screws.
8. Re-install the front cover on the sensor and secure with the screws previously removed.

### ADJUST THE LIGHT LEVEL
The Light Level feature enables the user to adjust the level of light needed to be detected before the sensor turns lighting ON. Remove the cover from the sensor and adjust the lighting from the light level dial on the sensor (see Figure 5). You can set the dial anywhere between + or – to obtain the optimal brightness configuration for the room (see Figure 3).

### SENSOR ADJUSTMENT
Follow this procedure to verify the sensor coverage and customize the settings.
1. Remove the screws on the front cover and remove the cover.
2. Make sure all the furniture in the sensing area is installed, the lighting circuits are turned on and the HVAC systems are in the Override position.
3. If there is a VAV (Variable Air Volume) system, set it to the highest airflow.
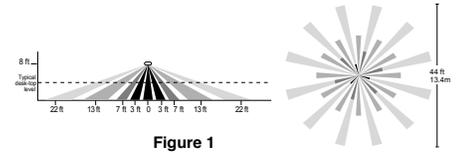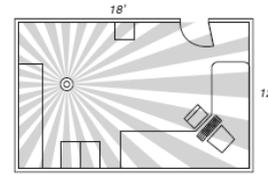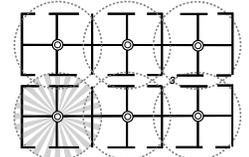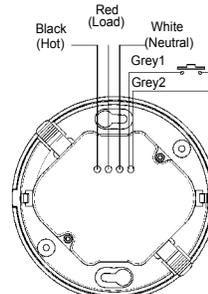
**Figure 2**

**Figure 3**

Black (Hot), Red (Load), White (Neutral), Grey1, Grey2
**Figure 4**

Light
**Figure 5**

4"Octagonal box 2-1/2" deep mounting
Drop Ceiling
Screws
Wire
Rear Housing
Front Cover
**Figure 6**
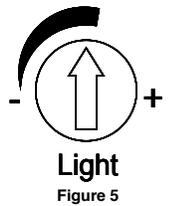
10 Min, 20 Min, TEST, 30 Min
Time Delay Adjustment
Keyhole slots(for mounting to 4" octagonal box)
PIR lens
PIR Activity LED(Red)
Light
Light level Adjustment
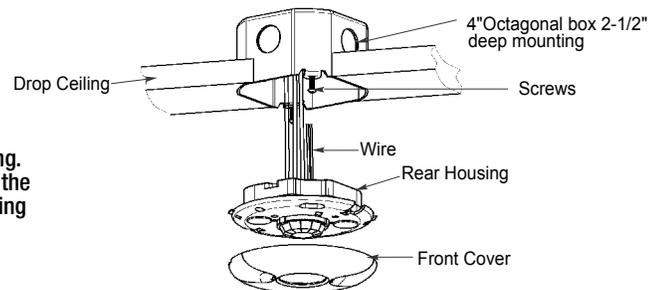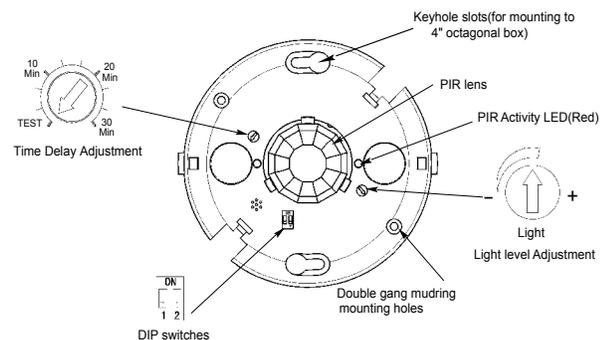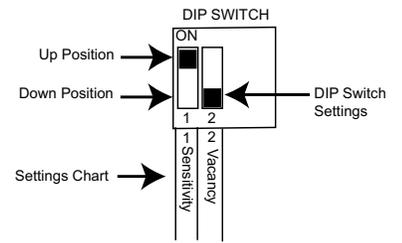Double gang mudring mounting holes
DN 1 2
DIP switches
**Figure 7**

**ADJUSTING DIP SWITCH SETTINGS**
The occupancy sensor features 2 DIP switch settings. Each setting can be set to an up or down position to configure the DIP switch setting. Follow these steps to adjust the DIP switch settings.



1. Adjust the sensitivity level DIP Switch (1). The Up position sets the sensitivity to 50%, while the down position adjusts the sensitivity level to 100%.

| DIP SWITCH 1 - SENSITIVITY LEVEL SETTINGS | |
|---|---|
| 50% | UP position |
| 100% | Down positions |

2. 2. Adjust the Vacancy feature DIP Switch (2).

NOTE: Turn this DIP switch to ON if you have a momentary switch. This enables overrides.

| DIP SWITCH 2 - VACANCY LEVEL SETTINGS | |
|---|---|
| Enable | UP position |
| Disable | Down positions |

3. Install the front on the sensor and secure with the screws.

**TESTING THE OCCUPANCY SENSORS**
1. Ensure the PIR Activity is enabled, the Red LED flashes, and the PIR Sensitivity is set to MAX (DIP switch 1 OFF).
2. Ensure the Time Delay is set for TEST MODE.
3. Ensure the Light Level is the default (maximum).
4. Remain stationary until the lights turn OFF. The Red LED and Load are ON.
5. Once the lights turn off, move around the coverage area. The lights will illuminate.
6. When testing and adjustment is complete, reset DIP Switches and Light Level to the desired settings and replace the cover on the sensor.

<div align="center"><strong>TROUBLESHOOTING</strong></div>

| | |
|---|---|
| The PIR activity LED does not flash properly, | The warm-up period has not been completed<br>Make sure the circuit breaker is on<br>Set the PIR sensitivity to Max/Autoset (DIP switch 1 OFF)<br>Check all sensor connections |
| There is improper PIR activity, LED flashes | Make sure the light level adjustment is set properly by covering the PIR lens and PIR activity LED to verify if lights turn on. If lights still turn on, adjust the light level. |
| The sensor is activating without detecting movement. | The PIR sensitivity is set too high. Adjust the PIR sensitivity.<br>The sensor is mounted too close to HVAC or VAV vents with heavy air flow. Relocate the sensor.<br>Set the DIP switch 1 to ON |