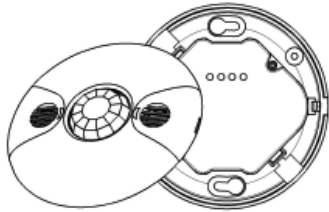


## Specifications and Installation: RNET-OCC-LV-DT-CM 360° Dual-Technology PIR/Ultrasonic Low Voltage Occupancy Sensor



### SPECIFICATIONS

Voltage.....	24VDC
Current Consumption.....	20mA
Power Supply .....	RNET-OCC-PP Power Pack
Operating Temperature.....	32°to 131°F (0°to 55°C)
Adjustment Time Delay.....	5 Sec. to 30 Min.
Test Mode .....	Delay time is 5 sec. lasts 30 Min. at each time by setting
PIR Adjustment.....	50% or 100% (DIP switch 1)
Ultrasonic Adjustment .....	Minimum to Maximum (trimpot 1)
Light Level Adjustment.....	100 Lux –daylight (trimpot 2)
PIR Coverage.....	1600ft <sup>2</sup>
Ultrasonic Coverage .....	1000ft <sup>2</sup>

### DESCRIPTION

The RNET-OCC-LV-DT-CM 360° Dual-Technology Occupancy Sensor combines advanced passive infrared (PIR) and ultrasonic technologies into one unit. The combined technologies help to avoid false triggering. Selectable operating modes allow the sensor to turn a load on, and hold it on as long as either or both technologies detect occupancy. After no movement is detected for the selected time delay, the lights switch off.

The RNET-OCC-LV-DT-CM Operated on 24V supplied by RNET-OCC-PP Power Packs.

### COVERAGE PATTERN

The RNET-OCC-LV-DT-CM provides a 360° coverage pattern. The coverage shown represents walking motion at mounting height of 9 feet. For building spaces with lower levels of activity or with obstacles and barriers, coverage size may decrease.

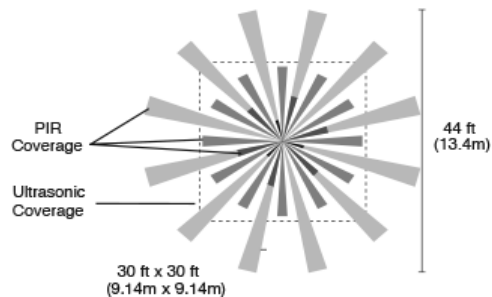


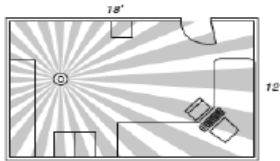
Figure 1

## PLACEMENT GUIDELINES

Depending upon obstacles such as furniture or partitions, the area of coverage may be less or more than the sensing distances shown in the coverage pattern. This must be considered when planning the number of sensors and their placement. It is also recommended to place the sensor 4 to 6 feet away from air supply ducts as rapid air currents or the differences in temperatures may cause false activations.

Mount the sensor to the ceiling. The RNET-OCC-LV-DT-CM is designed for a ceiling height of about 8-10 feet. Mounting above or below this range will significantly affect the coverage patterns. Be aware that as you decrease the mounting height, you decrease the range and increase the sensitivity to smaller motions. Conversely, when you increase the height, you increase the range and decrease the sensitivity to smaller motions. At heights of more than 12-14 feet, you may start to significantly reduce sensitivity. As a general rule, each occupant should be able to clearly view the sensor.

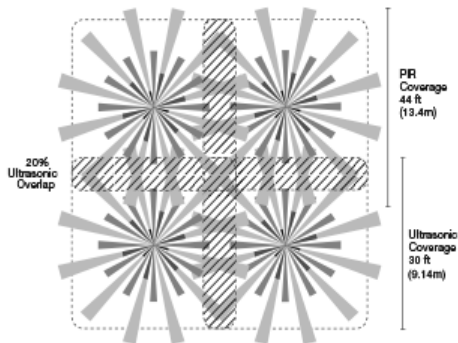
Often the best location to install a RNET-OCC-LV-DT-CM in a closed office is off-center (see Figure 2). Avoid placing a sensor directly in line with an open door through which it has a clear view out, as the sensor may detect people walking by.



**Figure 2**

Open Office Area Coverage:

To get complete coverage in an open office area, install multiple sensors so that there is an overlap with each adjacent sensor's coverage area. See the Figure 3.



**Figure 3**

For large areas of coverage use multiple sensors.

### Ultrasonic Sensitivity Adjustment Trimpot 1

Adjustable: Minimum to Maximum (clockwise)

Note: Turn toward right for greater room space.

Turn toward left to avoid false alert in smaller room and near the door way or heat source.

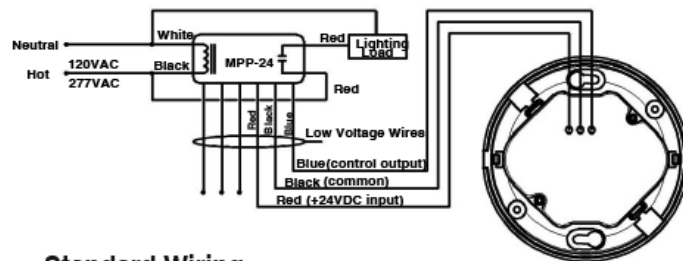
### Ambient Light Level Adjustment Trimpot 2

Adjustable: 100Lux to daylight (clockwise)

## WIRING DIRECTIONS

**CAUTION!**  
TURN POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING POWER PACKS OR SENSORS.

Each RNET-OCC-PP power pack can supply power for 6 RNET-OCC-LV-DT-CM sensors.  
When using more sensors than this, multiple power packs are required.



### Standard Wiring:

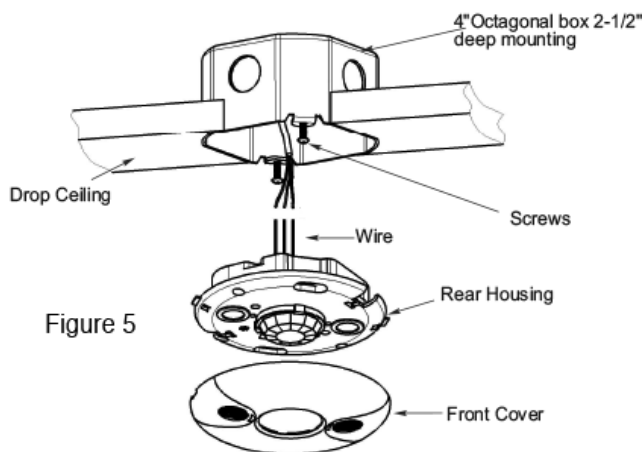
RED — +24VDC Input  
BLACK — Common  
BLUE — Control Output

Figure 4

## MOUNTING

### Using an Octagonal Junction Box

1. Pull the low voltage wires from power pack into the Octagonal Junction Box through the conduit knockout.
2. Connect the low voltage wires to the appropriate wires on the sensor.
3. Loosen the appliance mounting screws attached to the Octagonal Junction Box.
4. Align the sensor in the Octagonal Junction Box so that the mounting screws on the box match the holes on the sensor's rear housing.
5. Push the sensor up into the Octagonal Junction Box and twist it so that the mounting screws are seated in the hole slots.
6. Tighten the two screws to secure the sensor to the Octagonal Junction Box.
7. Snap the front cover onto the sensor



## SENSOR ADJUSTMENT

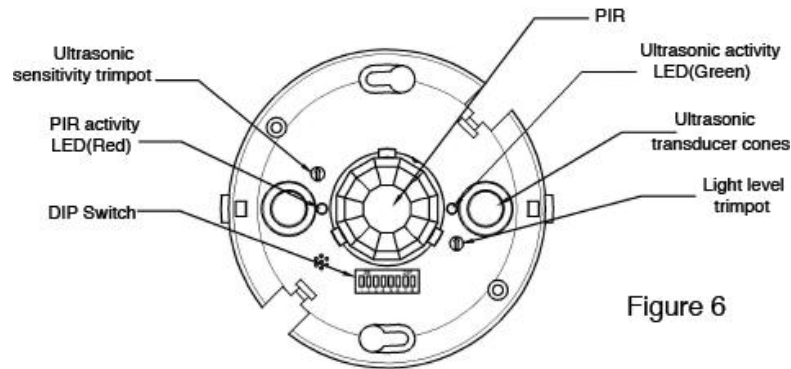


Figure 6

There is a 40-second warm-up period when power is first applied.

The sensors are factory preset to allow for quick installation in most applications. To make adjustments, open the Front Cover. Set the DIP Switch to the desired settings. See "DIP Switch Setting" below.

## DIP SWITCH SETTING

The RNET-OCC-LV-DT-CM has 8 DIP switches under the cover. They are used to set PIR sensitivity, time delay, override and trigger mode feature settings.

Trigger Mode	Initial Trigger	Maintain Load Output	2	3	4
Option 1	Both	Either	↓	↓	↓
Option 2	Either	Either	↓	↓	↑
Option 3	PIR	Either	↓	↑	↓
Option 4	PIR	PIR	↓	↑	↑
Option 5	Ultrasonic	Ultrasonic	↑	↓	↓
Option 6	Both	Both	↑	↓	↑

PIR Sensitivity	1
50%	↓
100%	↑

Time Delay	5	6	7
5 Sec/Autoset	↓	↓	↓
30 Seconds	↓	↓	↑
5 Minutes	↓	↑	↓
10 Minutes	↓	↑	↑
15 Minutes	↑	↑	↓
20 Minutes	↑	↑	↑
25 Minutes	↑	↑	↑
30 Minutes	↑	↑	↑

↓=OFF ↑=ON ◀=Factory Setting    ■=Recommended

### PIR Sensitivity setting: Switch 1

50%, sensor's coverage is smaller, just about half of the widest range.  
 100%, the maximum range of sensor's PIR coverage is 1600 square feet.

### Trigger Mode: Switches 2, 3, 4

The sensor has 6 trigger options, set with DIP switches 2, 3 and 4.  
 In the trigger mode DIP switch setting table:

- **Both** requires motion detection by the PIR and the Ultrasonic.
- **Either** requires motion detection by only one technology.
- **PIR** requires motion detection by the PIR.
- **Ultrasonic** requires motion detection by the Ultrasonic.

### Time Delay: Switches 5, 6, 7

The sensor will hold the lights on as long as occupancy is detected. The time delay countdown starts when no motion is detected. After no motion is detected for the length of the time delay, the sensor will turn the lights off.

### Override: Switch 8

To override all sensor functions, set to ON position (DIP Switch 8).

## TROUBLESHOOTING

### Lights do not turn on with occupancy:

#### Neither LED flash:

1. Check that the circuit breaker has been turned back on.
2. Check all sensor and power pack wire connections.
3. Check for 24VDC input to the sensor between the red and black low voltage wires.
  - If 24VDC is present, replace the sensor.
  - If 24VDC is not present, check the high voltage connections to the power pack.
  - If high voltage connections are good and high voltage is present, replace the power pack.

#### Red LED does not flash:

1. When power is initially applied to the sensor, there is a warm-up period of 40 seconds before the LED becomes active.
2. Make sure PIR sensitivity is set to 100% (DIP Switch 1).

#### Green LED does not flash:

1. Ultrasonic sensitivity setting may need to be increased. Turn clockwise as needed.

### Lights do not turn off automatically:

#### Green LED flashes:

1. Reduce ultrasonic sensitivity by turning counter-clockwise until it only flashes when movement occurs.

#### Red LED flashes:

1. Reduce PIR sensitivity by setting to 50%(DIP Switch 1)

#### Lights do not turn off:

1. Check all sensor and power pack wire connections.
2. Disconnect power pack blue wire.
  - If lights do not turn off, check power pack wiring. Replace the power pack if necessary.
  - If lights turn off, the problem may be the sensor or wiring between the sensor and power pack.
3. Reconnect the blue wire.
  - Turn sensitivity and time delay to minimum, and allow the sensor to time out.
  - If lights turn off, the sensor is working properly -adjust sensitivity and time delay for the sensor.
  - If lights do not turn off, check the wiring between the sensor and power pack.
  - If wiring is correct, replace the sensor.

### Unwanted Sensor Activations (LED flashes):

#### Possible causes:

1. Sensor located too close to HVAC or VAV vents with heavy air flow.
2. The ultrasonic sensitivity may be too high.
3. The PIR sensitivity may be set too high.

#### Possible solutions:

1. Relocate the sensor.
2. Reduce the ultrasonic sensitivity as needed.
3. Mask the lens to reduce PIR coverage.



## WARRANTY INFORMATION

Our company warrants this product to be free of defects in materials and workmanship for a period of two (2) years. There are no obligations or liabilities on the part of our company for consequential damages arising out of, or in connection with, the use or performance of this product or other indirect damages with respect to loss of property, revenue or profit, or cost of removal, installation or reinstallation.