



CONTRACTOR:	
PROJECT:	DATE:
PREPARED BY:	MODEL:

SPECIFICATION & FEATURES

360° Dual-Technology PIR/Ultrasonic Occupancy Sensor

The VCMD50V 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 long as either or allow the sensor to turn a load on, and hold it on as both technologies detect occupancy. After no movement is detected for the selected time delay, the lights switch off.

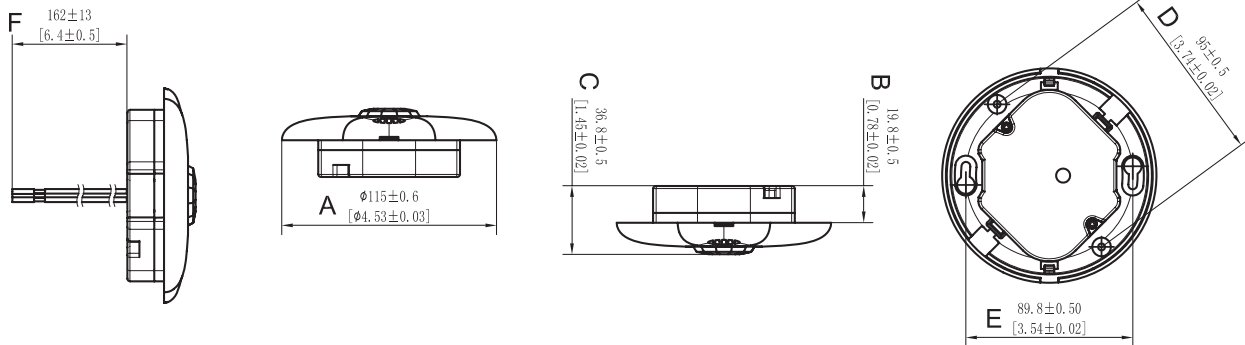


CERTIFICATIONS/WARRANTY

Warranty

Guaranteed for one year from the purchase date of the product, against mechanical defects in manufacturing.

LINE DRAWING



CONSTRUCTION

Finish

White

Sensor Technology

Passive Infrared/Ultrasonic

Lead Power Cable

4 Ft.

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SPECIFICATIONS

<p>Voltage 120/277VAC, 50/60Hz</p>	<p>Tungsten 800W-120VAC, 50/60Hz</p>	<p>Resistive 800W-120VAC, 50/60Hz</p>	<p>Electronic Ballast 800VA-120VAC, 1600VA-277VAC, 50/60Hz</p>
<p>Motor 1/4HP-120VAC, 50/60Hz2</p>	<p>Operating Temperature 32°to 131°F (0°to 55°C)</p>	<p>Adjustment Time Delay 5 Sec. to 30 Min.</p>	<p>Test Mode Delay time is 5 sec. lasts 30 Min. at each time by setting</p>
<p>PIR Adjustment 50% or 100% (DIP switch 1)</p>	<p>Ultrasonic Adjustment Minimum to Maximum (trimpot 1)</p>	<p>Light Level Adjustment 100 Lux --daylight (trimpot 2)</p>	<p>PIR Coverage 1600ft</p>
<p>Ultrasonic Coverage 1000ft</p>			

LOAD REQUIREMENTS

<p>Incandescent 800W - 120VAC</p>	<p>Fluorescent 800VA-120VAC, 1600VA- 277VAC, 50/60Hz</p>	<p>Motor 1/4HP-120VAC, 50/60Hz</p>	<p>LED 100W</p>
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COVER PATTERN

The VCMDC50V 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.

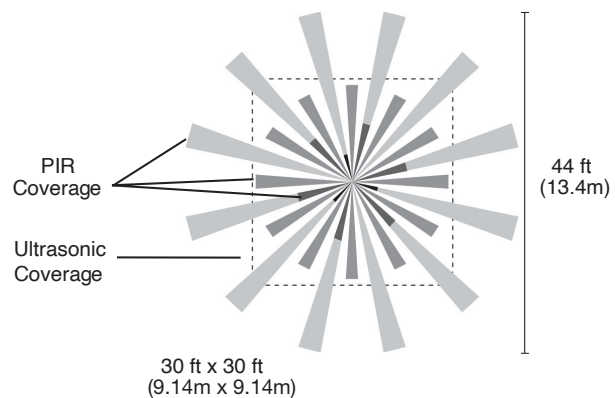


Figure 1

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PLACEMENT GUIDELINE

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 VCMDC50V 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 VCMDC50V 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.

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 2

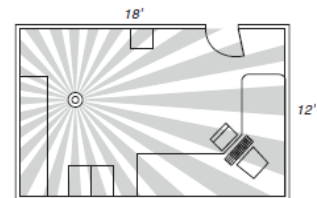
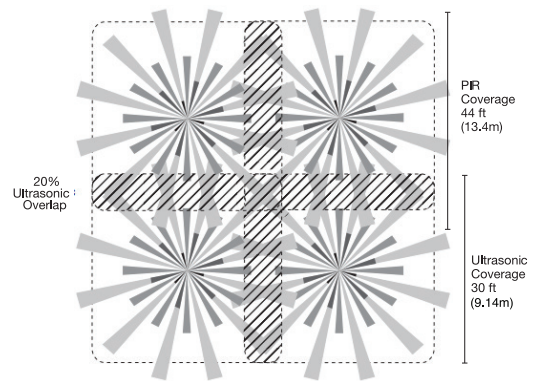


Figure 3



For large areas of coverage use multiple sensors.

WIRING DIRECTIONS

Warning: Turn off the power at the circuit breaker before installing.
Attention: éteignez l'alimentation du disjoncteur avant l'installation.
Refer to the wire diagram of the sensor (see figure 4), and connect the wires of ceiling sensors as followed by using the wire nuts provided.

1. Connect the Hot wire to the Black wire from the sensor.
2. Connect the Load wire to the Red wire from the sensor.
3. Connect the Neutral wire to the White wire from the sensor.

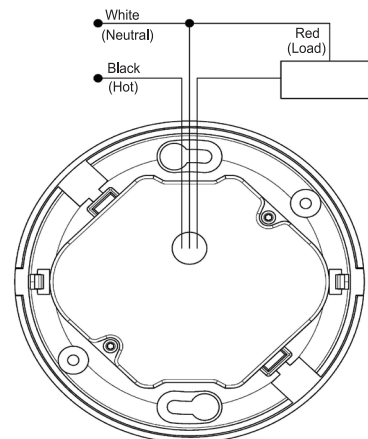


Figure 4

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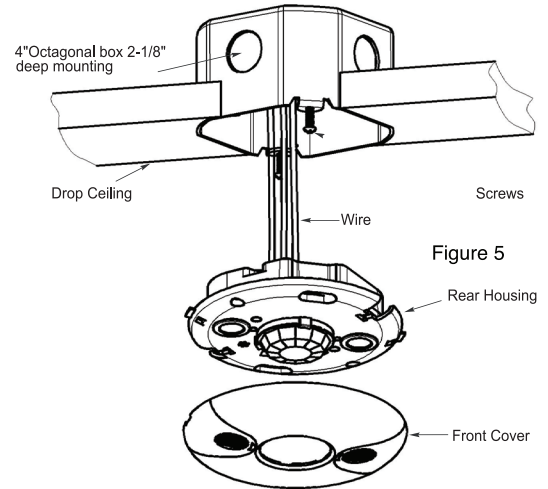


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MOUNTING

Using an Octagonal Junction Box

1. Pull the high voltage wires into the J-Box through the conduit knockout.
2. Connect the high voltage wires to the appropriate terminals on the sensor.
3. Loosen the appliance mounting screws attached to the J-Box.
4. Align the sensor in the J-Box so that the mounting screws on the box match the key holes on the sensor's rear housing.
5. Push the sensor up into the J-Box and twist it so that the mounting screws are seated in the keyhole slots.
6. Tighten the two screws to secure the sensor to the J-Box.
7. Snap the front cover onto the sensor(see Figure 6).



Ultrasonic Sensitivity Adjustment Trimpot 1

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)



SENSOR ADJUSTMENT

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.

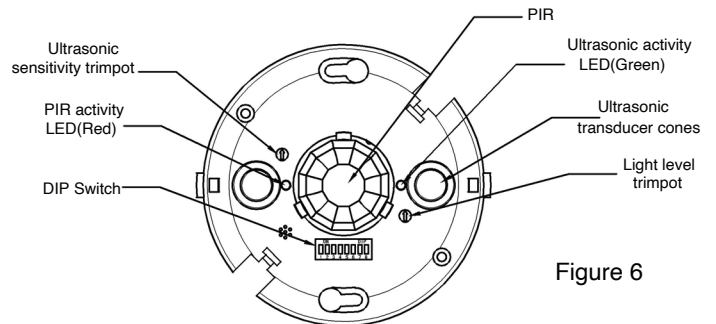


Figure 6

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DIP SWITCH SETTING

The VCMDC50V has 8 DIP switches under the cover. They are used to set PIR sensitivity, time delay, override and trigger mode feature settings.

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:

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	↑	↓	↑

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.

PIR Sensitivity	1	Time Delay	5	6	7
50%	↓	5 Sec/Autoset	↓	↓	↓
100%	↑	30 Seconds	↓	↓	↑
		5 Minutes	↓	↑	↓
		10 Minutes	↓	↑	↑
		15 Minutes	↑	↓	↓
		20 Minutes	↑	↓	↑
		25 Minutes	↑	↑	↓
		30 Minutes	↑	↑	↑

↓=OFF ↑=ON ◀=Factory Setting

Override: Switch 8

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

TROUBLESHOOTING

Lights do not turn on with occupancy:

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).

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TROUBLESHOOTING

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.

ORDERING INFORMATION

Part Code	IMS Code
VCMD50V	0320-3886

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