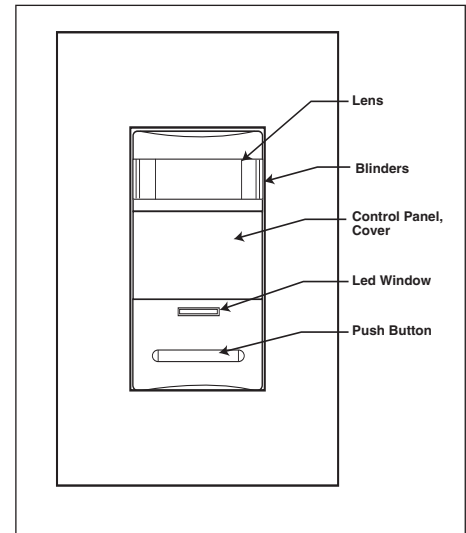


### IPP10 Application Note

#### INTRODUCTION

The Decora® IPP10 is a Manual-ON Occupancy Sensor that was developed to comply with California Title 24, Section 119 Mandatory Requirements and Section 150 Residential Lighting Specifications.

The IPP10 installs in place of a single-pole wall switch and fits in a standard wallbox. It has the added benefit that if you forget to turn the lights OFF, they will turn OFF automatically if motion is not detected within the coverage area (900 sq ft) within the set time out limit. There are four selectable time-out options: 30 seconds (test only), 10, 20 or 30 minutes.



#### CALIFORNIA TITLE 24

California Title 24 requires that new homes built effective October 1, 2005, be wired with high efficacy lighting (fluorescent and compact fluorescent or high intensity (HID) lamps). If non-high efficacy lighting has been installed, a Manual-ON/Automatic OFF occupancy sensor switch, or a dimmer switch must be installed to comply with the standard. Special lighting requirements for specific rooms are defined in the following chart according to Title 24, Section 150 Residential Lighting. You can read further into these standards by going to: [http://www.energy.ca.gov/title24/residential\\_manual/](http://www.energy.ca.gov/title24/residential_manual/)

#### Required Lighting Specifications by Area in Residence

Area	Requirement	Alternate Options
Kitchen	<ul style="list-style-type: none"> <li>High Efficacy Lighting.</li> <li>Electronic ballasts for all lamps rated 13 watts or greater.</li> <li>Recessed luminaries in all insulated ceilings approved for zero clearance insulation cover (IC) and certified airtight.</li> </ul>	<ul style="list-style-type: none"> <li>50% of total rated wattage must be high efficacy luminaries</li> <li>Remaining 50% may be Manual-ON/Automatic OFF Occupancy Sensors or dimmers, provided that they are controlled by switches separate from those controlling the high efficacy lighting</li> </ul>
Living/Family Room Dining Room Bedroom Hallway/Stairs	<ul style="list-style-type: none"> <li>Switches controlling high efficacy lighting must be separate from switches controlling low efficacy lighting.</li> </ul>	<ul style="list-style-type: none"> <li>Manual-ON/Automatic OFF Occupancy Sensor</li> <li>Dimmer</li> </ul>
Bathroom Garage Laundry Room Utility Room		<ul style="list-style-type: none"> <li>Occupancy Sensor that is certified to comply with section 119 (d). Must contain Manual-ON/Automatic OFF only and cannot be set in "always ON" state.</li> <li>Permanently installed luminaries that are not high efficacy lighting shall be allowed in closets less than 70 square feet.</li> </ul>
Exterior		<ul style="list-style-type: none"> <li>Controlled by a motion sensor AND photo control (lighting NOT attached to a building i.e., landscape lighting, is exempt from this requirement).</li> </ul>

# Application Note For IPP10

## HOW IT WORKS

The IPP10 uses passive infrared (PIR) detection technology which senses heat and temperature differences to monitor a room for occupancy. A specialized Fresnel lens divides the field of view into sensor zones. After the switch has been manually turned ON, when a person passes into or out of a sensor zone, the sensor detects motion and keeps the lights ON. The lights will remain ON as long as there is an occupant moving through the sensor zones.

## Manual-ON Operation

The unit will not turn the lights ON automatically when motion is detected. Lights can only be turned ON by manually pressing the push-button. The lights will remain ON as long as the unit detects activity in the sensor zones.

## Manual/Automatic-OFF

The IPP10 will shut the lights OFF automatically after the space becomes vacant and the delayed OFF time expires. Lights can also be turned OFF manually at any time by pushing the press-button. If motion is detected within 30 seconds after the lights have turned OFF (due to absence of motion), the lights will turn back ON. If 30 seconds expires when lights have turned OFF (due to absence of motion), the lights will then have to be turned ON manually.

## BLINDERS

The blinders reduce the motion detection area when adjusted. This can be useful in rooms that have large open entryways or larger open rooms like a kitchen/dining room combination. By adjusting the blinders to the closed position, the IPP10 will have a narrower field of motion detection. This can be useful when walking through an attached dining room. If undesired motion is still detected after adjusting the blinders you may want to reduce the range. To adjust the blinders, open or close the Blinder Adjustment Levers (Figure 1).

## RANGE SELECTIONS

The IPP10 is equipped with five range selections that will apply to any application. Factory default sets the range between 4 and 7. Below is a chart illustrating the distance of a room by length and width and the coverage with the blinders open or the blinders closed. The sample chart below is based on a 15'x20' room with the IPP10 located next to the entrance door. The room was tested to measure the distance limitations on the IPP10 given the range selections. To adjust the range, dial down for a smaller coverage area and up for a larger coverage area (Figure 1 below).

Range from device length X width	Room = 15'LX20'W	Coverage Area	
	Slash /	Blinders Open	Blinder Closed
4	15'X10'	10'X8'	10'X6'
Factory Default	15'X12'	15'X10'	15'X6'
7	15'X15'	15'X12'	15'X6'
10	>15'x15'	15'X15'	15'X6'

To program the range, time-out interval and adjust the blinders, remove the wall plate and remove the control panel cover with a small flathead screwdriver (Figure 1).

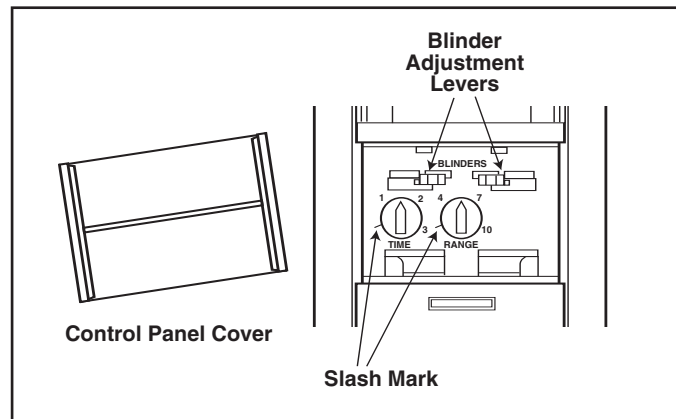


Figure 1

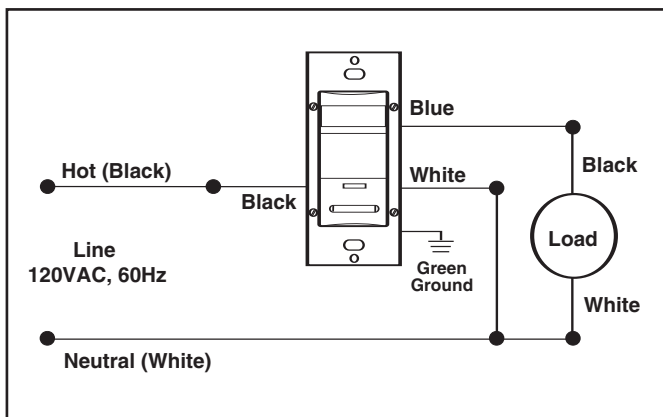
## INSTALLATION CONSIDERATIONS

### WALL BOX

- An extended depth wall box is recommended for installing the IPP10 device. For proper mounting of device there must be adequate room for wires. A minimum of 18 cubic inches (3 inches depth) is recommended for a single gang box.
- Verify that wall box is not skewed when installed.
- Wall box must be level and flush to wall surface or recessed in order for proper fit.

### WIRING DIAGRAM FOR IPP10

- IPP10 is a single pole one location switch that requires a Neutral (white) wire connection. *There must be a neutral wire present in the wall box for device to operate correctly.*
- Before installing the IPP10, disconnect power to the switch by turning off the circuit breaker. If you are not sure how to disconnect power or work with line voltage (120 volts AC), please contact a qualified electrician to avoid endangering yourself and others.



### LOCATION OF IPP10

#### For All Locations

- The IPP10 PIR sensor operates on a line-of-site principle, so it must have a clear, unobstructed view in order to detect occupancy.
- Install at least 6 feet away from a climate control source (i.e. radiators, air exchangers, air conditioners, etc.). Hot or cold drafts can appear to the sensor as body motion.

- Do not install directly under a lighting source that is 100 watts or greater. Temperature changes can be detected by the device.
- The IPP10 can be used for switching incandescent and fluorescent and low voltage lighting with electronic or magnetic ballasts.

#### Kitchen

- Do not install IPP10 near a stove or appliance that generates heat.
- Install the IPP10 in a location where it will NOT sense motion from an adjoining room (i.e. dining room, great room or family room).

#### Bathroom

- Make certain a shower curtain or glass shower door do not obstruct the field of view.
- Consider programming the IPP10 with the maximum time out period of 30 minutes before the lights will automatically turn OFF. If you spend more than 30 minutes regularly bathing or reading, consider installing a Leviton Dimmer instead.

#### Bedroom

- Make certain the blinders are set for full open (default setting).
- Consider programming the IPP10 with the maximum time out period of 30 minutes before the lights will automatically turn OFF. If you spend more than 30 minutes sitting still at a computer, watching TV, or reading, you should consider installing a Leviton Dimmer instead.

#### Laundry/Utility Room or Garage

- A short time out setting is recommended