Passive Infrared (PIR) Single Relay Occupancy Sensing Wall Switch

General Information

- Read all instructions on both sides of this sheet first.
- Install in accordance with ALL local codes.
- For indoor use only.

Specifications

- **Technology:** Passive Infrared (PIR)
- **Electrical Ratings:**
  - 120 VAC
  - Incandescent/Magnetic Ballast - Max. load: 15A, 1800W, 60 Hz
  - LED/Compact Fluorescent/Electronic Ballast - Max. load: 10A, 200W, 60 Hz
  - Voltage: 120/277V, 1200W, 60 Hz
  - Motor Load: ½ HP @ 125 VAC
  - Light Level Sensing: 0 to 200 foot-candles
  - Operating Environment:
    - Temperature: 32°F to 104°F (0°C to 40°C)
    - Relative Humidity: 20% to 90%
    - Non-condensing
  - Housing: Durable, injection molded housing.
  - Polycarbonate resin complies with UL94VO
- **Size:** Mounting Plate/Strip Dimensions: 4.2" H x 1.8" W (106.5 mm x 46 mm)
- LED Indicators:
  - Green LED indicates load status and motion detection

Description

The Occupancy Sensing Wall Switch can replace a standard Wall Switch in any of the following applications:

- Single location – one Single Pole switch
- Two locations – one location is the sensor and the other location is a standard 3-way switch
- Two locations – replace both 3-way switches with sensors

In Automatic ON Mode, the lights turn ON automatically when a person enters the room. In Manual ON Mode, the lights are turned ON by pressing the Pushbutton. In either mode, the lights stay ON as long as the sensor detects motion in the room. When the room is vacated, the lights turn OFF automatically after a preset Time Delay interval.

The Daylighting feature prevents lights from turning ON, when the room is adequately illuminated by natural light.

Vacancy Mode prevents motion from automatically turning on the lights upon initial activation. To place the unit into vacancy mode, press and hold the ON/OFF button for 5 seconds until the indicator LED blinks. Release the button while the LED is blinking. Repeat this procedure to restore to normal automatic activation.

Override Mode is used to turn OFF all motion sensing and allows the device to be used as a regular ON/OFF switch or in the unlikely event of failure of the motion sensor. Press and hold the ON/OFF button for 5 seconds until the LED indicator blinks for the second time (the LED will also blink at the 5 second point). Release the button while the LED is blinking. Repeat this procedure to restore normal operation.

ON/OFF Button Disable Mode disables the ON/OFF button and sensor becomes automatic only control regardless of the setting for automatic or manual activation. This feature will not allow someone to turn light(s) OFF via the Pushbutton while people are in common areas such as restroom, break room, and copy room areas. To place the unit into ON/OFF Button Disable Mode, press and hold the ON/OFF button for 15 seconds until the LED indicator blinks for the third time (the LED will also blink at the 5 seconds and 10 seconds point) and then release the button while the LED is blinking. Repeat this procedure to restore normal operation.

Coverage

The OSW-P-1001-MV is designed for offices up to 300 square feet. Coverage testing has been performed according to the NEMA WD 7 Guideline.

Coverage Pattern

Maximum coverage area may vary somewhat according to room shape and the presence of obstacles.

Location

When installing the OSW-P-1001-MV in a new junction box, choose the switch location carefully to provide optimum coverage of the occupied area. When replacing an existing Wall Switch, bear in mind that there must be a clear Line-of-sight between the sensor and the area to be covered. Avoid pointing the OSW-P-1001-MV directly into the hallway where it may detect passers-by.

Installation

The OSW-P-1001-MV can be installed in any standard single gang box. It may be installed in the same manner as an ordinary Wall Switch.

- Wire the OSW-P-1001-MV as described in the wiring section.
- Mount the OSW-P-1001-MV in the junction box.

Wiring

**CAUTION:** Before installing or performing any service on a Greengate system, the power MUST be turned OFF at the branch circuit breaker. According to NEC 2008 and RoHS, if the branch circuit breaker is used as the main switch for a fluorescent lighting circuit, the circuit breaker should be marked “SWD”. All installations should be in compliance with the National Electric Code and all state and local codes.

**NOTE REGARDING COMPACT FLUORESCENT LAMPS:** The life of some compact fluorescent lamps (CFL) is shortened by frequent automatic or manual switching. Check with CFL and ballast manufacturer to determine the effects of cycling.

1. Make sure power is turned OFF at the branch circuit breaker.
2. Wire units as shown in wiring diagrams per applicable voltage requirements.
3. Mount unit to Wall Box.
4. Turn power back ON at the branch circuit breaker and wait 30 seconds for the unit to stabilize.
5. Make necessary adjustments. (See Checkout and Adjustments section)
6. Install Wall Switch plate.

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**DIAGRAM 1A: SENSOR IN ONE LOCATION**

<table>
<thead>
<tr>
<th>Neutral White</th>
<th>Light Red</th>
<th>3-Way Switch, Bear in mind that there must be a clear Line-of-sight between the sensor and the area to be covered. Avoid pointing the OSW-P-1001-MV directly into the hallway where it may detect passers-by.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Blue</td>
<td>3-Way Switch, Bear in mind that there must be a clear Line-of-sight between the sensor and the area to be covered. Avoid pointing the OSW-P-1001-MV directly into the hallway where it may detect passers-by.</td>
</tr>
<tr>
<td>Traveler</td>
<td>Ground</td>
<td></td>
</tr>
</tbody>
</table>

**DIAGRAM 2A: SWITCH IN LOCATION WITH HOT WIRE**

<table>
<thead>
<tr>
<th>Neutral White</th>
<th>Light Red</th>
<th>3-Way Switch, Bear in mind that there must be a clear Line-of-sight between the sensor and the area to be covered. Avoid pointing the OSW-P-1001-MV directly into the hallway where it may detect passers-by.</th>
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</tr>
<tr>
<td>Traveler</td>
<td>Ground</td>
<td></td>
</tr>
</tbody>
</table>

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**Coverage Pattern**

Maximum coverage area may vary somewhat according to room shape and the presence of obstacles.

The NEMA WD 7 Guide and related method were utilized to verify coverage pattern.
Daylight Sensing Adjustment:
- The daylight sensing feature prevents lights from turning ON when the room is adequately illuminated by natural light.
- **NOTE** - The factory setting for this adjustment is fully clockwise and permits motion detection to turn ON the lights regardless of the ambient light level in the room.
- Remove the ON/OFF Pushbutton to access the light level adjustment. See Fig. 5.
- This adjustment must be made when the light level in the room is at the desired level for the lights to turn ON.
- From the clockwise position, turn the dial on the left counter-clock-wise using a small Phillips screwdriver until the LED starts to flash. See Fig. 4.
- Step away from the sensor to allow the device to calibrate to the normal light level in the room. Do not obstruct the natural light. The calibration process starts when the LED and lights turn OFF, and will take approximately 15 seconds. After completion the lights will turn on.
- Replace the ON/OFF Pushbutton.

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Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Causes</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit breaker is turned OFF, or fuse is blown</td>
<td>Turn circuit breaker ON, or replace fuse</td>
<td></td>
</tr>
<tr>
<td>Light bulb is defective</td>
<td>Replace Light bulb</td>
<td></td>
</tr>
<tr>
<td>Poor connection</td>
<td>Verify all wiring connections</td>
<td></td>
</tr>
<tr>
<td>Control may be wired incorrectly</td>
<td>Check wiring</td>
<td></td>
</tr>
<tr>
<td>Daylight sensing prevents lights from turning ON</td>
<td>Re-adjust daylight sensing level</td>
<td></td>
</tr>
<tr>
<td>Manual On mode selected</td>
<td>Set device to Automatic On mode.</td>
<td></td>
</tr>
<tr>
<td>Time Delay has not expired</td>
<td>Make sure there is no motion during the Time Delay period</td>
<td></td>
</tr>
<tr>
<td>Control may be wired incorrectly</td>
<td>Check wiring</td>
<td></td>
</tr>
<tr>
<td>Switch is being triggered by air vent or other heat source</td>
<td>Move switch to the other switch location (if a 3-way), or determine the source triggering the switch, and alter the air flow.</td>
<td></td>
</tr>
<tr>
<td>Lights do not turn ON</td>
<td>Create movement in front of the sensor for 5 seconds</td>
<td></td>
</tr>
<tr>
<td>Time control is set for too short a delay</td>
<td>Set switch TIME control to longer time period</td>
<td></td>
</tr>
</tbody>
</table>

Remote switch does not work | Check wiring |

Limited Warranty

All products manufactured by Cooper Controls and identified with the Geargate brand are warranted to be free from defects in material and workmanship and shall conform to and perform in accordance with Seller’s written specifications for a period of: Five (5) years from date of shipment for all occupancy sensors and Three (3) years from date of factory invoice for our hardware and software on Lighting Control Panels. We warrant all our standard relays for a period of 10 years from date of factory invoice. We guarantee the performance of our system to specifications or your money back. This warranty will be limited to the repair or replacement, at Seller’s discretion, of any such goods found to be defective, upon their authorized return to Seller. This limited warranty does not apply if the goods have been damaged by accident, abuse, misuse, modification or misapplication, by damage during shipment or by improper service. There are no warranties, which extend beyond the hereinabove-limited warranty, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS. No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Seller or to assume for the Seller any other liability in connection with any of its goods except in writing and signed by the Seller. The Seller makes no representation that the goods comply with any present or future federal, state or local regulation or ordinance. Compliance is the Buyer’s responsibility. The use of the Seller’s goods should be in accordance with the provisions of the National Electrical Code, US, and other industry or military standards that are pertinent to the particular end use. Installation or use not in accordance with these codes and standards could be hazardous.