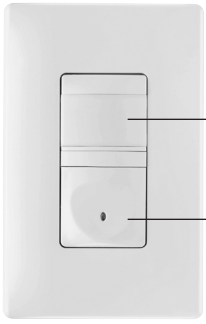
**Please read all instructions before installing**

# RW3U600 Multi-way Wall Switch Occupancy Sensor with Manual ON/OFF

Installation Instructions




## SPECIFICATIONS

| | |
|---|---|
| Voltage | 120VAC, 60Hz |
| Load (Single Pole Circuit) | |
| Incandescent or fluorescent | 0-600 Watts |
| Fan motor | 1/6 hp |
| Time Delay Adjustment | 15 sec., 5 min., 15 min., 30 min. |
| Light Level Adjustment | 10 fc to 150 fc |
| Environment | Residential Indoor use only |
| Operating Temperature | 32° to 131°F (0° to 55°C) |
| Humidity | 95% RH, non-condensing |
| Tools Needed | |
| Insulated Screwdriver | |
| Wire Strippers | |

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## DESCRIPTION AND OPERATION

The RW3U600 Multi-way Wall Switch Occupancy Sensors are designed to replace standard multi-way (3-way, 4-way) switches. They are ideal for any room with multiple entries such as living and dining rooms, family rooms, bedrooms, bathrooms, hallways, and any other indoor space where occupancy sensor-based controls are desirable.

The RW3U600 has 2 modes of operation - vacancy or occupancy sensor. While the sensor is **factory preset as a Vacancy Sensor** with manual ON operation, it can be adjusted to work as an occupancy sensor that turns the controlled load ON automatically upon detection of occupancy in the area.

In vacancy sensor mode, you can press the ON/OFF button to turn the light or fan (controlled load) ON and OFF like a standard switch. In occupancy sensor mode, the lights will turn on automatically when the space becomes occupied. The RW3U600 automatically turns OFF the controlled load after the coverage area has been vacant for a period of time (Time Delay). If motion is detected within 30 seconds after it automatically turns OFF, the RW3U600 automatically turns the load back ON.

### Lighted Switch

To help you locate the RW3U600 in a dark room, the green LED illuminates the ON/OFF button while the controlled load is OFF. When the controlled load is ON, the LED is OFF.

#### Operating Modes

For multi-way operation, the Operating Mode must be the same in all sensors related to the same load. There are two operating modes to select from:

**MODE 1** Vacancy sensor (Manual-ON/OFF, Auto-OFF): The user must press the ON/OFF button to turn the load ON. The RW3U600 keeps the load ON until no motion is detected by any of the related RW3U600s for the time delay period. There is also a 30 second reset delay after the automatic shut-off. If motion is detected during this time, the sensor turns the load back on automatically. After the 30 second reset delay has elapsed, the ON/OFF button must be pressed to turn ON the load.

**MODE 2** Occupancy sensor (Auto-ON/OFF with manual control and reset to auto after 5 minutes of vacancy): The load turns ON and OFF automatically based on occupancy detection. Once turned ON the RW3U600 keeps the load ON until no motion is detected by any of the related RW3U600s for the time delay period. If the load is turned OFF manually, automatic-ON is re-enabled when no motion is detected for 5 minutes. This prevents the load from being turned on after it was deliberately turned OFF.

### Time Delay

The time delay can be selected by the user during set up. It can be adjusted to any of these fixed values:15 seconds/5 minutes/15 minutes/30 minutes. All of the sensors related to the same load must be set for the same time delay. For additional information on how to adjust it, please read the SENSOR ADJUSTMENT & PROGRAMMING section of this installation manual.

### Light Level

When the operating mode is set for occupancy sensor, Mode 2 (Auto-ON) this feature prevents the sensor from automatically turning the lights ON if there is already enough light in the area.

In a multi-way application, each sensor monitors the light level at it's location. If any sensor related to the load detects motion AND the measured light level in that sensor's area is lower than it's Light Level setting, the load turns ON.

To adjust the light level, please read the SENSOR ADJUSTMENT & PROGRAMMING section of this installation manual.

### Coverage Area

The RW3U600 has a maximum coverage range of 180 degrees and a coverage area of 600 square feet (56 square meters). The sensor must have a clear and unobstructed view of the coverage area. Objects blocking the sensor's lens may prevent detection thereby causing the light to turn OFF even though someone is in the area.

**Windows, glass doors, and other transparent barriers will obstruct the sensor's view and prevent detection.**

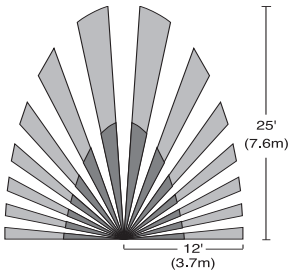


**Fig. 1: Sensor Coverage Area**

## INSTALLATION & WIRING

**WARNING**

**Disconnect power to the wall switch box by turning OFF the circuit breaker or removing the fuse for the circuit before installing the RW3U600, replacing lamps, or doing any electrical work.**

1. **Prepare the switch box.**
   After the power is turned OFF at the circuit breaker box, remove the existing wall plate and mounting screws. Pull the old switch out from the wall box.

2. **Identify the type of circuit.**
   You may connect the RW3U600 to a single pole or multi-way circuit. These instructions describe only the 3-way circuit application. For information about other applications, consult technical support. If you are unable to clearly identify some or all of the wires mentioned in this manual, you should consult with a qualified electrician.

   In a 3-way circuit (see Fig. 2), two traveler wires connect to both switches. Another wire provides power from the circuit box to one of the switches. A wire connects from one switch to the load. A ground wire may also be connected to a ground terminal on the old switches. A neutral wire should also be present in both wall boxes.

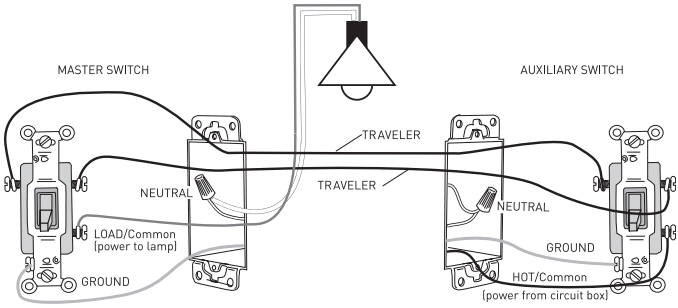


**Fig. 2: Typical 3-Way Switch Wiring**

**CAUTION**

**For your safety: Connecting a proper ground to the sensor provides protection against electrical shock in the event of certain fault conditions. If a proper ground is not available, consult with a qualified electrician before continuing installation.**

### 3. Prepare the Wires.

Tag the wires currently connected to the existing switch so that they can be identified later. Disconnect the wires. Make sure the insulation is stripped off of the wires to expose their copper cores to the length indicated by the "Strip Gage," in Fig. 3. (approx. 1/2 inch).

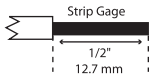


**Fig. 3: Wire Stripping**

### 4. Wire the sensor.

Twist the existing wires together with the wire leads on the RW3U600 sensors as indicated below. Cap them securely using wire nuts provided. (See Fig. 4 & 5)

- Connect the green or non-insulated (copper) GROUND wire from the circuit to the green terminal on the RW3U600s.
- Connect the NEUTRAL wire from the circuit and from the lamp (LOAD) to the white wire on the **master** RW3U600.

  **The term "master" designates the RW3U600 that connects to the load.**
- Connect the neutral wire from the circuit to the white wire on the auxiliary RW3U600.
- Connect the power wire from the circuit box (HOT) to the black wire on the auxiliary RW3U600 and to the TRAVELER 1 wire.
- Connect the TRAVELER 1 wire from the black wire of the auxiliary RW3U600 to the black wire of the master RW3U600.
- Connect the lamp power (LOAD) to the red wire on the master RW3U600.
- Cap the red wire on the auxiliary RW3U600.
- Connect the TRAVELER 2 wire coming from the yellow wire of another RW3U600 to the yellow wire of the RW3U600 that you are wiring.

### 5. Put the RW3U600s into their respective wall boxes.

Position them with the lens positioned above the ON/OFF button (lens at top, ON/OFF button at bottom). Secure to the wall box with the screws provided.

### 6. Make any necessary adjustments.

See the SENSOR ADJUSTMENT & PROGRAMMING section for information.

**Initial Power-up**

There is an initial warm-up period. If the sensor is in Mode 2 "Automatic ON" it may take up to a minute before the lights turn ON. However, the lights can be turned ON/OFF manually by pressing the "ON/OFF Button" at anytime when power is supplied to the unit.

### 7. Attach the new cover plate.

Secure it with the screws provided.

### 8. Restore power to the circuit.

Turn on the breaker or replace the fuse.

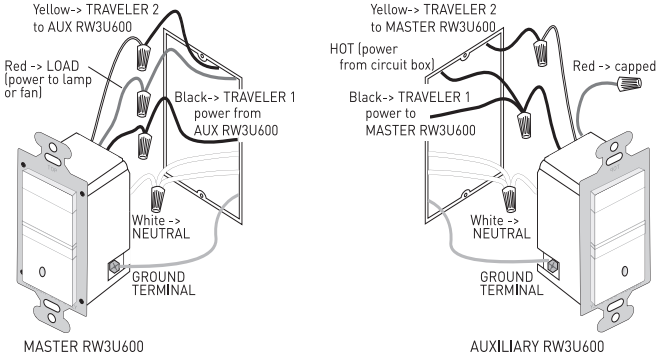


**Fig. 4: Sensor orientation, wire connections and wall box assembly**

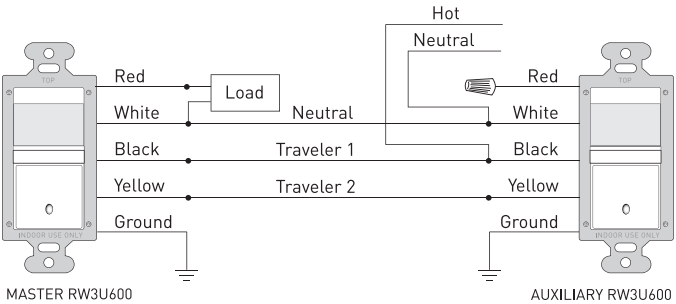


**Fig. 5: Reference wiring diagram**

## SENSOR ADJUSTMENT & PROGRAMMING

To program the RW3U600, you use controls located under the ON/OFF button. The wall switch cover plate must be removed to gain access to the mode button and adjustment trimpots under the ON/OFF button.

**For multi-way operation, the Operating Mode and the Time Delay adjustments should be the same in all sensors related to the same load.**

1. Firmly grasp the side edges of the Lock Bar and gently pull it away from the switch face until it clicks. Do NOT attempt to pull the Lock Bar off of the switch!
2. Firmly grasp the side edges of the ON/OFF button. Slide the button downward approximately 1/2 inch to expose the mode button and adjustment trimpots.

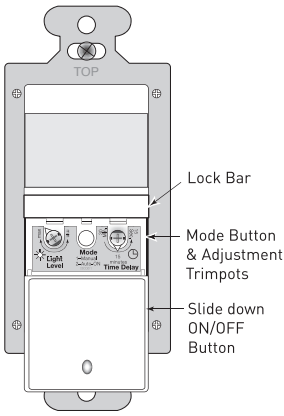


**Fig. 6: Sensor Adjustment Controls**

### Setting up the Operating Mode

Select the operating mode by pressing the Mode button. The green LED behind the switch button blinks to indicate the selected mode:

- One blink indicates Mode 1 (Vacancy Sensor Operation), Manual-ON/OFF, Auto-OFF.
- Two blinks indicates Mode 2 (Occupancy Sensor Operation), Auto-ON/OFF with manual control and reset to auto (after 5 minutes of vacancy).

To change the operating mode, press the Mode button. The LED blinks to indicate the selected mode. After that, the unit operates in the indicated mode.

### Adjusting the Time Delay

Turn the right trimpot counter-clockwise to reduce the amount of time the lights will remain on after the last motion detection (minimum = 15 seconds). Turn the same trimpot clockwise to increase this time delay (maximum = 30 minutes). You can only select the following values: 15 seconds/5 minutes/15 minutes/ 30 minutes.

**Warning: Do not overturn the Time Delay adjustment trimpot!**

### Adjusting the Light Level

This feature is factory set at maximum, so that even the brightest light will not prevent the sensor from turning the load ON when it detects occupancy. If this feature is not needed, leave the light level at maximum, fully clockwise.

The light level must be adjusted when lights would normally be turned OFF because there is enough natural illumination. Each RW3U600 may have a different light level setting.

1. Set all RW3U600s to Mode 1 (Manual-ON) - except for the one that you're adjusting.

   Set the RW3U600 you're adjusting so that it is in Mode 2 (Automatic-ON).
2. Reduce the time delay to 15 seconds.
3. Adjust the Light Level trimpot to minimum (fully counter-clockwise) on the unit that you're adjusting. Move out of the coverage area. Let the sensor time out so lights are OFF and then wait 30 seconds more.
4. Without casting a shadow on the sensor, enter the area. The lights should remain OFF. Adjust the Light Level trimpot clockwise in small increments. After each adjustment, wait 5-10 seconds to see if the lights turn ON.

   Continue this procedure until the lights turn ON. At this setting the light will not turn ON automatically with occupancy the if light level measured at this sensor is above the current natural illumination.
5. Repeat the process (beginning with step 1) for each RW3U600 in your multi-way configuration until the Light Level has been adjusted properly in all of them.
6. When you have finished adjusting the Light Level of all the RW3U600s, return them all to Mode 2.
7. Reset the time delay to the desired setting in all units.

**Warning: Do not overturn the Light Level adjustment trimpot!**

## TEST MODE

To test the detection coverage:

1. Press and hold the ON/OFF button. After 10 seconds the lighted switch turns off. The load turns ON if it was not already ON. The sensor is now in a TEST mode that lasts 5 minutes. (You can end the TEST mode sooner by pressing the ON/OFF button for another 10 seconds).

**During the TEST mode, the controlled load turns ON for 5 seconds each time the sensor that initiated the TEST mode detects occupancy.**

2. Move out of the coverage area or stand very still. The controlled load turns OFF after 5 seconds if no motion is detected.
3. Move into the coverage area for the unit that initiated the TEST mode. The controlled load turns ON for 5 seconds each time the sensor detects motion. After 5 seconds expire without motion detection, the load turns OFF. The controlled load turns ON automatically with the next motion detection and stays ON for 5 seconds.
4. Repeat as necessary to ensure that the desired coverage areas are within detection range.

You can do this test for each RW3U600 in your multi-way configuration. So that you can determine the actual coverage area for each multi-way switch individually, only the RW3U600 that is in TEST mode will control the load.

## TROUBLESHOOTING

**Lighted switch is OFF, no load response to ON/OFF button press:**

- Make certain that the circuit breaker is on and functioning.

**Lighted switch is ON, no load response to ON/OFF button press:**

- Check the light bulb and/or motor switch on the fan mechanism.

**Load will not turn OFF automatically:**

- Press ON/OFF button. If the controlled load turns OFF, go to next step.
- The time delay can be set from 15 seconds to 30 minutes. Check the time delay setting for each RW3U600 in your multi-way configuration. Ensure that all RW3U600s have the same time delay setting.
- Ensure that there is no movement within the coverage area for all the sensors related to the load for the set time delay. Hot air currents and heat radiant devices can cause false detection. Make sure the sensor is at least 6 feet (2 meters) away from devices that are a significant heat source (e.g. heater, heater vent, high wattage light bulb).

**Load will not turn ON automatically when the area is occupied and the sensors are in Mode 2 (lighted switch is ON):**

- Press ON/OFF button. If the load turns ON, check the Light Level setting. The light level can prevent the sensor from turning ON the load automatically.

  Make sure the sensor lenses are not blocked and that you are within the coverage area of at least one sensor.
- If the load does not turn ON when you press the ON/OFF button, check the light bulb and/or motor switch on the fan mechanism.

**If load does not respond properly after following troubleshooting, turn OFF power to the circuit then check wire connections or call technical support.**

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Pass & Seymour/Legrand will remedy any defect in workmanship or material in Pass & Seymour/Legrand products which may develop under proper and normal use within five years from the date of purchase by a consumer:

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