GE **Total Lighting Control**

Line-voltage Wall Switch Occupancy Sensor

DESCRIPTION AND OPERATION

The RSEN-W12 is a self-contained motion-sensing lighting control which replaces a conventional wall switch for energy savings and convenience. Lights turn off automatically after a room is vacated.

Built-in sensors produce low intensity, inaudible sound and detect changes in sound waves caused by motion, such as walking into the room, reaching for a telephone, turning in a chair. The sensor does not respond to audible sound.

In the Automatic ON mode, the lights turn on automatically when a person enters the room. In the Manual ON mode, lights are turned on by pressing the touchplate on the switch. Modes can be changed by flipping the concealed switch under the touchplate. In either mode, lights will remain on as long as motion is detected in the room. When no motion is detected, the lights will turn off automatically after the pre-set time delay. Following this, a "grace period" of approximately ten seconds allows lights to be turned on again by motion.

At any time, lights may be turned off while the room is occupied by pressing the touchplate. The RSEN-W12 is fully self-resetting; lights turned off manually in Automatic ON mode will stay off while the room remains occupied. After the room is vacated and the preset time delay and grace period have elapsed, the lights will remain off until turned on automatically the next time someone enters the room.

The RSEN-W12 can be used with a standard toggle switch to split the lighting load for rooms that are wired for two switches as shown in the wiring diagram.

FEATURES

- *Replaces a conventional wall switch*
- *For use in small rooms or offices up to 300 square feet*
- *One model for either 120 VAC or 277 VAC*
- *Choice of automatic ON or manual ON modes*
- *Separate time delay and sensitivity adjustments*
- *For indoor use only*

Before proceeding, read the enclosed installation instructions. For GE TLC Service, call: 1-877-584-2685 (USA) or 1-800-661-619 (Canada).

INSTALLATION

Coverage

The RSEN-W12 is designed for offices or small rooms up to 300 square feet. Although total coverage of minor motion is 450 square feet, wall switches are normally mounted off-center in a room which reduces the coverage attainable.

Basic Installation Steps

1. Turn off power at the circuit breaker.
2. Wire and mount the switch in standard junction box.
3. Restore power to the circuit.
4. Adjust settings and test.

Location

When installing the RSEN-W12 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 switch directly into the hallway where it may detect passers-by.

Mounting

CAUTION: Before installing or performing any service on an RSEN-W12, power must be turned off at the circuit breaker panel.

The RSEN-W12 can replace one switch in any standard single or double gang box. It may be installed in the same manner as an ordinary wall switch. Wire the RSEN-W12 as described in the wiring section.
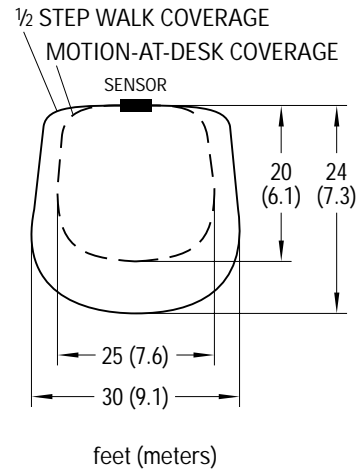
Ratings

120 VAC Ballast or Tungsten
   Maximum Load: 800 Watts
   Minimum Load: One ballast or one incandescent lamp
277 VAC Ballast only
   Maximum Load: 1200 Watts
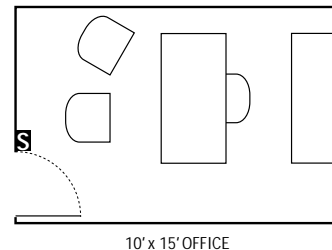   Minimum Load: One ballast

Wiring

CAUTION: The RSEN-W12 is designed for use with either 120 VAC or 277 VAC only. Do not use with any other voltage. Do not wire to control receptacle circuits.

Verify that the connected load does not exceed the RSEN-W12 ratings. Use twist-on wire connectors for all connections. All installations should be in compliance with the NEC and all state and local electrical codes. The RSEN-W12 can be wired to control both an exhaust fan and lighting provided the total load does not exceed the maximum load rating (in Amps) for the automatic wall switch.

Sensor Coverage

½ STEP WALK COVERAGE
MOTION-AT-DESK COVERAGE
SENSOR

20 (6.1)   24 (7.3)

25 (7.6)

30 (9.1)

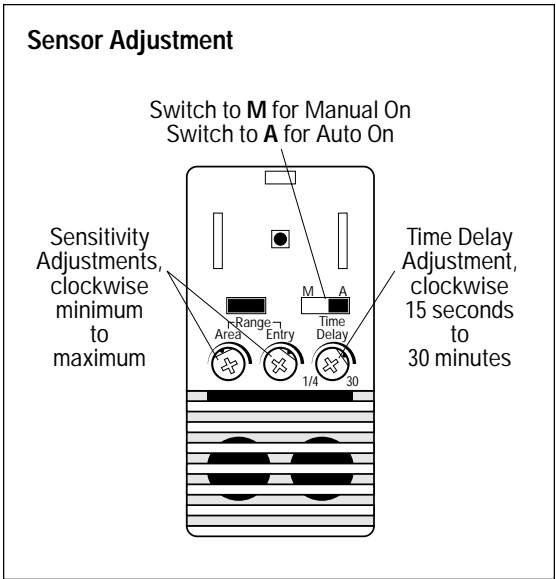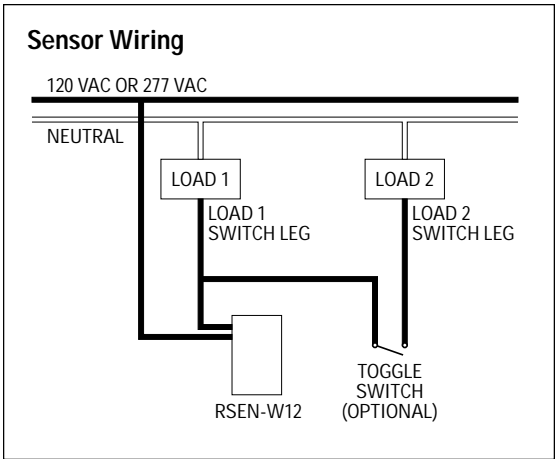feet (meters)

Sensor Location

S

10' x 15' OFFICE

One Circuit – One Lighting Load: Connect one wire to the switchleg for the load. Connect the other wire to the hot lead. Connections are not polarity sensitive.

One Circuit – Two Lighting Loads: The combination of Load 1 and Load 2 must not exceed the maximum load rating. Consult with the building manager and occupant to determine which lights should be off (Load 2) when the toggle switch adjacent to the RSEN-W12 is open (OFF).

Caution: If a room is wired for two circuits using two separate hot leads, it is very important to connect only one circuit to the RSEN-W12. Split one circuit into two switchlegs and cap the unused hot lead inside the box.

The RSEN-W12 must always control Load 1, while its control of Load 2 is selected manually by opening and closing the toggle switch. Connect one wire to the switchleg for Load 1 and one side of the toggle switch for Load 2. Finally, connect the other wire from the RSEN-W12 to the hot lead. Connections are not polarity sensitive.

INSTALLATION (CONTINUED)

Sensor Wiring

120 VAC OR 277 VAC

NEUTRAL

LOAD 1

LOAD 2

LOAD 1
SWITCH LEG

LOAD 2
SWITCH LEG

RSEN-W12

TOGGLE
SWITCH
(OPTIONAL)

Sensor Adjustment

Switch to **M** for Manual On
Switch to **A** for Auto On

Sensitivity
Adjustments,
clockwise
minimum
to
maximum

Time Delay
Adjustment,
clockwise
15 seconds
to
30 minutes

M   A

Range
Area   Entry

Time
Delay

1/4   30

Checkout and Adjustment

Once installation is complete, restore power to the lighting circuit. Proper operation of the RSEN-W12 must be verified. Adjustments should be made with the HVAC system on. **Use only insulated tools to make adjustments.**

1. *Adjustment controls are under the touchplate. "Time Delay" ranges from 15 seconds (for testing) to 30 minutes. Using a small screwdriver, set "Time Delay" to 15 seconds by turning the control completely counterclockwise until it stops at minimum setting (approximately 8 o'clock). Turn control for "Area Range" until flat edge of control is at 10 o'clock. Turn "Entry Range" until flat edge of control is at 9 o'clock.*

2. *Move the "Mode" switch to the "Auto" or "A" position.*

3. *The area of coverage can be determined by watching the LED indicator on the front of the sensor while moving around the room. The LED lights only when the sensor detects motion. Adjust the "Area Range" control to the lowest setting that provides adequate motion detection of a person working in the room. Do not set higher than necessary.*

4. *Leave the room. The lights should go out in approximately 15 seconds. Wait at least 12 seconds after the lights go out. Walk normally back into the room and verify that the lights turn on automatically. If not, the "Entry Range" should be increased slightly. Do not set higher than necessary.*

5. *If the LED blinks when there is no movement in the room, it is possible that the sensor is being activated by air flow from the HVAC system. Reduce the "Area Range" setting until the LED goes off and stays off with no motion.*

6. *If the sensor is activated by passers-by in the hallway, reduce the "Entry Range" setting.*

7. *Set "Time Delay" to the desired setting for normal use. If lights go out while the room is occupied, increase setting slightly until an optimum interval is obtained. Recommended time delay is usually 6-8 minutes (approximately 10 o'clock). People who remain very still for long periods may need a longer time delay.*

8. *If preferred, the RSEN-W12 may be set to Manual ON for maximum energy savings by moving the "Mode" switch to the "M" position. In this setting, the occupant must push the touchplate to turn on lights upon entering the room.*

TROUBLESHOOTING

Emergency Manual ON

An override jumper is located underneath the touchplate. This jumper should remain in place at all times, except in the event of unit malfunction. Remove the jumper to bypass the sensor and turn the lights on.

LED Will Not Go On

Verify that the lighting circuit has power. Verify that the sensor is properly adjusted. Press the touchplate to turn on the lights manually. If the LED does not light, replace the RSEN-W12.

Lights Will Not Turn ON

- *If the lights will not turn on automatically after someone enters the room, press the touchplate to see if lights will turn on. If so, the RSEN-W12 could be set to Manual ON mode. Check under the touchplate to verify the setting.*
- *If set to Automatic ON mode, the sensor may have been overridden by someone pressing the touchplate; allow the RSEN-W12 to time out to verify normal operation.*
- *If the lights do not turn on after pressing the touchplate, confirm that no other switches or equipment are interrupting or bypassing power to the sensor or the load.*
- *If lights still do not turn on, replace the RSEN-W12.*

Lights Will Not Turn OFF

- *If lights will not turn off after the set time delay, and the LED has not lit during the time period, press the touchplate to turn off the lights manually.*
- *If lights turn off, refer to items 5 and 6 under "Checkout and Adjustment."*
- *If lights do not turn off, verify that the override jumper under the touchplate has not been removed.*
- *Confirm that no other switches or equipment are interrupting or bypassing power to the RSEN-W12 or the load.*
- *If lights still do not turn off, replace the RSEN-W12.*