



Low-voltage Wall Switch Occupancy Sensor



DESCRIPTION AND OPERATION

The RSEN-WLV is a self-contained motion-sensing lighting control which replaces a low-voltage 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-WLV 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-WLV 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 low-voltage wall switch
- For use in small rooms or offices up to 300 square feet
- For use with 24 VAC only
- 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-WLV 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

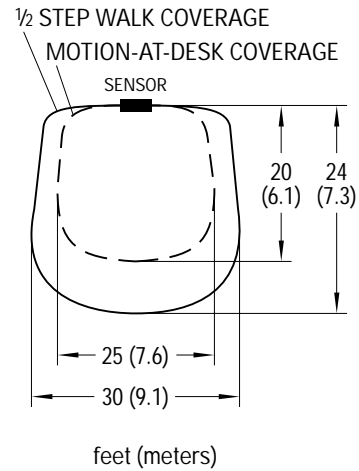
Wall switch: When installing the RSEN-WLV in a new junction box, choose the switch location carefully to provide optimum coverage of the occupied area. When replacing an existing wall switch, bear in mind that there must be a clear line of sight between the sensor and the area to be covered. Avoid pointing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

Relay and transformer: (Note: Use only GE RR series relays.) The relay and transformer are generally mounted above the ceiling on a junction box that contains a hot line, neutral and existing switch leg from which the lighting is controlled. If additional relays are required, they are mounted in the box that contains the appropriate switch leg. In installations where there are no existing switch legs, the relay and transformer may be mounted in a conveniently located junction box.

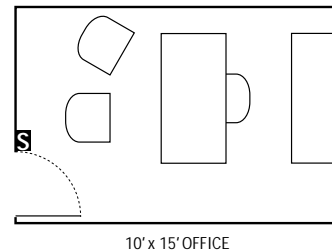
Alternative Relay Location: The RSEN-WLV may be wired back to a GE TLC relay panel in the electrical closet using low-voltage wiring. This is especially useful in retrofit situations, where the sensor replaces an existing low-voltage wall switch.

Note: The RSEN-WLV is NOT compatible with the terminals of the GE Softwired Switching System, as four wires are required to draw power for the sensor from this particular panel model. Use the RSENSOR-x series of ceiling sensors instead.

Sensor Coverage



Sensor Location



Mounting

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

The RSEN-WLV can replace one switch in any standard single or double gang box. It may be installed in the same manner as any 3-wire low-voltage wall switch. Wire the RSEN-WLV as described in the wiring section below.

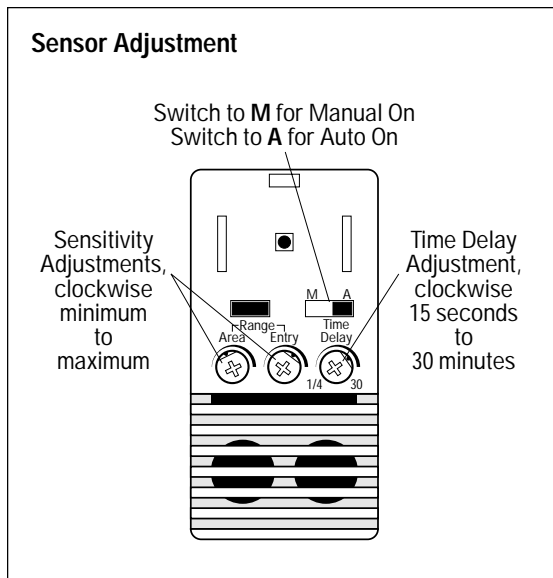
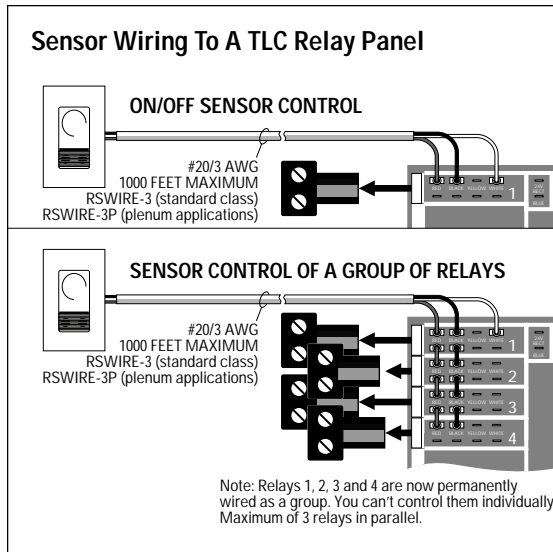
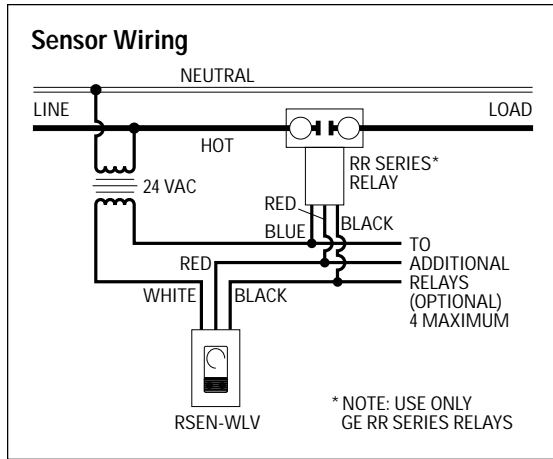
Wiring

CAUTION: The RSEN-WLV is for use with 24 VAC only. Do not use with any other voltage. Do not wire to control receptacle circuits.

Up to four GE RR-type relays may be connected to any one RSEN-WLV sensor switch.

RSEN-WLV is provided with Teflon-insulated pigtailed. The components are interconnected using #18 AWG Class 2 wiring per NEC 725. Use UL-recognized Teflon-insulated wire approved for plenum areas per NEC 725-2(b) where required. Wire RSEN-WLV, the relay, transformer and load as shown.

INSTALLATION (CONTINUED)



Checkout and Adjustment

Once installation is complete, restore power to the lighting circuit. Proper operation of the RSEN-WLV must be verified. Adjustments should be made with the HVAC system on.

Use only insulated tools to make adjustments.

- Adjustment controls are under the touchplate. Release the touchplate by depressing the latch at the top. "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.
- Move the "Mode" switch to the "Auto" or "A" position.
- 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.
- 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.
- 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.
- If the sensor is activated by passers-by in the hallway, reduce the "Entry Range" setting.
- 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 12-1 o'clock). People who remain very still for long periods may need a longer time delay.
- If preferred, the RSEN-WLV 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

If there is no power at the RSEN-WLV, check for 24 VAC at the transformer secondary. Ensure that power is coming into the transformer primary. If there is no voltage at the transformer, re-check all wiring and connections. 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-WLV.

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-WLV 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-WLV 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 relay, transformer or load. Disconnect the white wire from the transformer. Wait 5 seconds and reconnect. The relay should close on application of power and motion detection. If the relay does not close, check the wiring. Momentarily short the relay control leads. Red-to-white turns relay ON. If there are still no lights, check wiring on the load side of the relay contacts for continuity. Replace the relay, if necessary.
- If lights still do not turn on, replace the RSEN-WLV.

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 relay, transformer or load. Check all connections to the relay. Momentarily short the relay control leads. Black-to-white turns relay OFF. If lights turn off, the RSEN-WLV is defective and should be replaced.
- If lights still do not turn off, replace the RSEN-WLV.