

# Bringing Energy Efficient Lighting Control Solutions Home



RESIDENTIAL WALL SWITCH SENSORS AND TIME SWITCHES

 **WattStopper**

■ PUTTING A STOP TO ENERGY WASTE®

 **legrand®**





## Bringing energy efficient lighting control solutions home

**Watt Stopper/Legrand, long-time leader in commercial lighting control, now helps homeowners put a stop to energy waste.**

Homeowners are always looking for ways to reduce their growing energy bills without breaking the bank. Watt Stopper/Legrand has the solution.

Turning lights off in empty rooms with convenient vacancy, occupancy or time-based control, our residential wall switch sensors and time switches combine simplicity with features that make sense in every living space. With a range of universal application and application-specific models, Watt Stopper/Legrand provides convenient control for every room in the home.



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## Three control choices, greater application flexibility

Watt Stopper/Legrand residential sensors and time switches replace standard wall switches in a wide range of residential applications.



**1**  
**Wall Switch  
Vacancy Sensors**

Vacancy sensors detect when a space becomes vacant, and turn lighting off automatically after a preset time delay elapses. Users can manually turn lights on or off at any time by operating the ON/OFF button.



**2**  
**Wall Switch  
Occupancy Sensors**

Wall switch occupancy sensors detect when a room becomes occupied, and turn on the controlled lighting automatically. If no occupancy is detected for five additional minutes, lighting automatically switches off.



**3**  
**Time  
Switches**

Time switches are suitable choices in spaces where vacancy or occupancy sensors are inappropriate. Users can select from simple push-button timers for uncomplicated applications to LCD display programmable timers in spaces where more flexibility is desired.



## Inside and out, designed with the homeowner in mind



Watt Stopper/Legrand switches have low-profile styling with uniform, color-matched lens and device. Homeowners will love the uncluttered look that provides a clean, seamless appearance.

Products are available in:



Black

Ivory

Light Almond

White

### Passive Infrared Technology (PIR)

We've integrated the latest PIR technology into all of our home

sensors at Watt Stopper/Legrand. PIR senses absence or presence by detecting the difference between heat emitted from a person in motion and the background space. PIR sensing relies on a clear line-of-sight view.

We've also incorporated a unique Fresnel lens into our sensors that divides the coverage area into multiple zones, enhancing detection of small movement and preventing lights from turning off while the room is still occupied.

Homeowners will benefit from superior performance that will bring greater comfort and convenience to their homes without taxing their budgets.

### Ideal for the entire home

Bathrooms, bedrooms, laundry rooms all benefit from controls that save energy and enhance efficiency and convenience in today's busy households.





# Homeowners reap benefits of energy efficient lighting control

Long used in commercial applications, lighting controls are now being applied in homes to realize the same benefits.

### Energy savings

Reducing lighting usage can reduce energy bills. In the aggregate, lighting controls in the residential sector can reduce peak demand at regional and national levels.

#### Typical reduction in lighting usage

- Laundry Rooms 30-40%
- Bathrooms 40-50%
- Garages 30-40%
- Bedrooms 40-50%
- Closets 20-30%
- Pantries 20-30%

### Convenience

Watt Stopper/Legrand residential wall switch sensors and time switches require little or no ongoing adjustment



or maintenance for homeowners. They operate transparently for residents, eliminating the inconvenience of repeatedly turning off lights that others may have left on.

### Trouble-free performance

With exceptionally reliable operation, Watt Stopper/Legrand controls provide years of effective, trouble-free performance.

### Compatible with most standard lighting

Our wall switches work with a wide range of standard residential lighting types, so homeowners can use them throughout the home.

### Ease of installation

Watt Stopper/Legrand residential wall switch sensors and time switches include installation time-savers such as fixed time delays and application-specific models that streamline installation and eliminate costly call-backs.

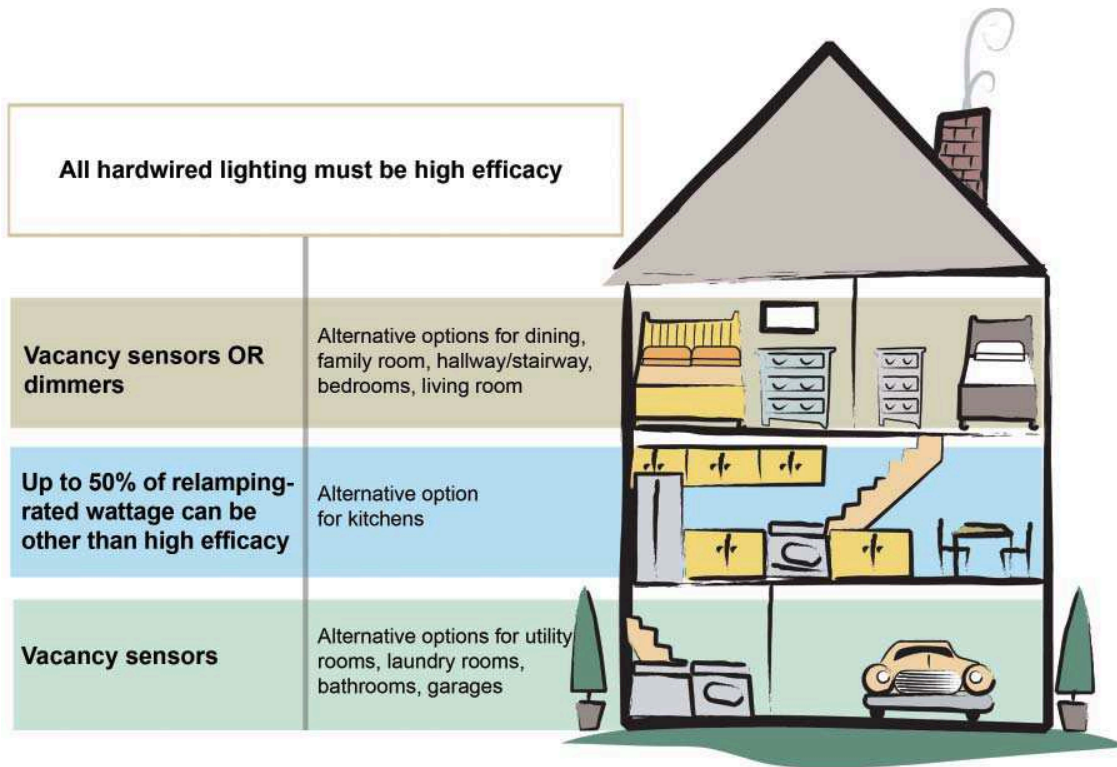




**Energy code compliance**

Homeowners will be thankful for the lower energy consumption, while you can appreciate that the new Watt Stopper/ Legrand family of wall switch sensors and time switches offers the best solutions for residential code compliance.

Our vacancy sensors comply with California Title 24-2005, the toughest energy code in the nation. Our wall switch vacancy sensors and time switches provide least-cost code compliance and energy savings.



California Title 24-2005 requirements for residential lighting control



## New feature choices solve homeowners' concerns for effortless lighting control

Watt Stopper/Legrand's residential wall switch sensors and time switches offer convenience and simplicity. With the widest selection of models available on the market, a low-profile

decorator design that features uniform, color-matched device and lens, and an industry-exclusive five-year warranty, we have an energy efficient control for every room in the home.

### Light level sensing

Some models contain an optional built-in light level sensor that will hold off the lighting load when adequate daylight exists. This daylighting feature is easily adjustable.

### Nightlight

Numerous models offer optional LED nightlights that automatically turn on when lighting turns off for enhanced negotiability throughout bedrooms and bathrooms.

### Multiway

Replace existing 3-way switches with Multiway Vacancy Sensors which offer automatic lighting shutoff as well as multiway control. Two vacancy sensors controlling one load ensure optimal coverage of random traffic areas, such as hallways or stairways, or large spaces with multiple entries such as living rooms, family rooms or Jack and Jill bathrooms.

### Dual relay

Increase energy savings by controlling two loads from a single switch location. Dual relay wall switch sensors offer push-button control for lighting and exhaust fans simultaneously.







## Dimming

Adjust lighting levels for enhancing ambience as well as energy savings

## Lighted switches

Our models feature discreet lighted switches so occupants can find switch buttons easily in darkened rooms.

## Selectable time intervals

Multiple time interval options enable residents to easily choose the amount of time they need each time they enter a specific room.

## Audible and visual alerts

Time switches provide alerts of impending lighting shutoff so occupants are never left in the dark.





## Wall switches provide comfort anywhere at home

In **bedrooms**, a wall switch vacancy sensor with night-light offers comforting nighttime lighting.



In **bathrooms** where the wall switch has a view of the entire space, replace the switch with an application-specific wall switch vacancy sensor.



Control lighting and exhaust fans in **laundry rooms** with a Dual Relay Wall Switch Sensor for convenient, hands-free ON and OFF operation.





In **family rooms**, replace wall switches with dimming vacancy sensors to add convenient preset dimming control with automated shutoff.



Bring convenience to **hallway or stairway lighting** with multiway wall switch vacancy sensors that provide both automatic OFF and multiway control.



Spaces such as **closets** and **garages** are ideal for time-based control. With a programmable digital time switch replacing a standard wall switch, homeowners can eliminate wasted lighting.



## Design guidelines for residential sensors and time switches

When beginning a residential control project, designers, contractors and homeowners will benefit from considering several steps:

- Step 1** Select a control strategy; determine how the room is used.
- Step 2** Identify special features/functions needed for each space.
- Step 3** Select the appropriate product.
- Step 4** Evaluate any installation considerations.
- Step 5** Set up, program and adjust the wall switch sensors and time switches.





**Step 1** Select the control strategy.

When choosing between occupancy sensing and time-based control, ask the following questions about the space where the control will be used:

**• Is there clear line of sight throughout the space?**

If there is, a PIR wall switch sensor will be ideal. A clear line of sight means that the sensor has an unobstructed view throughout the coverage zone. No obstacles, such as walls, doors or furniture should block the view. A switch’s line of sight may be blocked, for instance, in a bathroom where a shower enclosure has glass doors.

**• How is the room or space used?**

Some spaces, such as a laundry room, closet or garage, may be used infrequently and for short intervals. Other rooms, such as bathrooms, will be used more frequently but for widely varied time periods. The matrix below suggests which control choice matches up with different usage patterns in a space.

**• Is code compliance required?**

Currently, the State of California requires automated lighting controls in residential buildings (see Page 7).

**Room Type and Control Strategy**

| Room                 | Control Strategy Recommended  |
|----------------------|---|
| Hallway              | Wall switch vacancy sensor with multiway operation  |
| Master Bedroom       | Wall switch vacancy sensor  |
| Child’s Bedroom      | Wall switch vacancy sensor with nightlight  |
| Jack & Jill Bathroom | Wall switch vacancy sensor with multiway operation  |
| Master Bathroom      | Wall switch vacancy sensor with nightlight  |
| Family/Great Room    | Dimming wall switch vacancy sensor  |
| Dining Room          | Wall switch vacancy or occupancy sensor<br>Dimming wall switch vacancy sensor or occupancy sensor |
| Powder Room          | Seven-button preset time switch   |
| Laundry Room         | Time switch/wall switch occupancy sensor/wall switch vacancy sensor (California)                  |
| Garage               | Programmable time switch  |
| Pantry               | Seven-button preset time switch   |
| Living Room          | Wall switch vacancy or occupancy sensor<br>Dimming wall switch vacancy sensor or occupancy sensor |
| Closet               | Seven-button preset time switch   |



# Design guidelines for residential sensors and time switches

## Step 2 Identify special features/ functions for each space.

The feature matrix below identifies the range of features and functions available in Watt Stopper/Legrand residential wall switch sensors and time switches, and the specific benefits associated with them. Thinking about how the space will be used and what functionality is desired can help contractors and homeowners select the ideal control for each space.



## Step 3 Select the product.

Once you've identified the strategy and features, use the product matrix on pages 18-19 to select the specific models best suited for each application.

### Features of Residential Wall Switch Sensors and Time Switches

| Feature                           | Benefit  |
|-----------------------------------|--|
| Auto-ON Operation                 | Enables hands-free entry and exit from room                                    |
| Fixed Settings and Manual ON      | Simplifies installation and setup; California Title 24 Compliant               |
| Light Level Sensing               | Increases energy savings in areas with abundant natural light                  |
| Dimming                           | Combines present dimming and automatic shutoff for ambience and energy savings |
| Lighted Switch                    | Allows easy switch location in darkened room                                   |
| Nightlight                        | Provides easy nighttime navigation   |
| Multiway Operation                | Provides convenient control from any entrance in a multiple entrance space     |
| Dual Relays                       | Enables control of two loads simultaneously, such as lights and exhaust fans   |
| Alerts                            | Affords timely visual or audible warning to occupant of impending shutoff      |
| Tamper-resistant Lens             | Prevents damage from prying fingers  |
| Color-coordinated Lens and Device | Provides clean, attractive appearance  |



## Step 4 Evaluate installation considerations.

### Wiring

When installing Watt Stopper/Legrand residential wall switch sensors and time switches, keep in mind that most models require a neutral. Only the RS-100BA and RS-100U do not require neutrals.

### Minimum Load

A few of the models have a minimum load requirement. This means that the switch cannot be used to control a lamp with wattage lower than that specified.

### Maximum Load

All of our models have a maximum load requirement. This means that the sensor or time switch cannot be used to control wattage in excess of that limit. For all -100 models, this is 500 watts. For all other models, this is 600 watts.

### Load Type

The -100 sensor models only control incandescent lamps. All other sensor and time switches can control most standard lamp types, including incandescent, fluorescent, compact fluorescent (CFL), magnetic low voltage (MLV), electronic low voltage (ELV) and motors up to 1/6 hp.

### Coverage Area

The wall switch sensors offer a maximum coverage range of 180 degrees and a coverage area of 600 square feet (56 square meters). The sensor needs a clear and unobstructed view of the coverage area. It is important to remember that windows, glass doors and other transparent barriers will obstruct the sensor's view and prevent detection, causing the light to turn off even though someone is in the area.

## Tip!

Use a model with a fixed 30-minute time delay, or lengthen the time delay on models with adjustable parameters, when using wall switch sensors in bathroom settings.





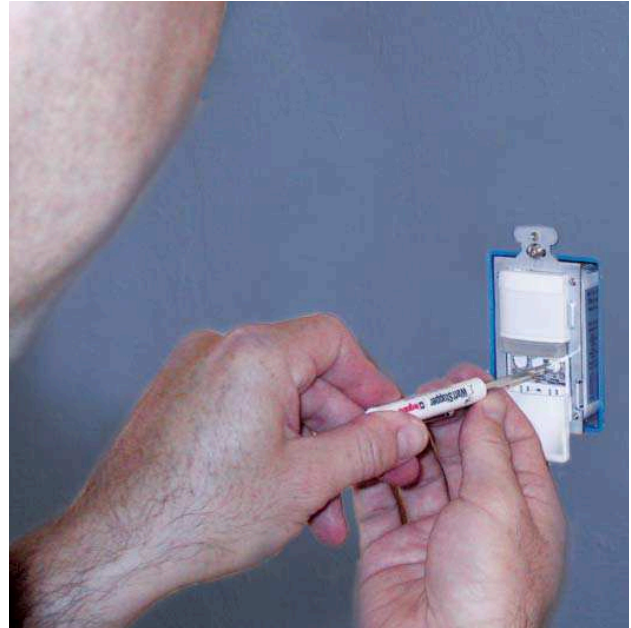
# Design guidelines for residential time switches and sensors

**Step 5** Set up, program and adjust wall switch sensors and time switches

### Setting Adjustable Time Delays

One of the most important adjustments with a wall switch sensor is the length of the time delay. A shorter interval results in greater energy savings but may also turn lighting off when a room is still occupied or while the sensor's line of sight is temporarily obstructed.

The following table suggests average time delays for specific residential spaces based on the types of activity usually taking place and the length an occupant stays in the



space. Generally speaking, the longer the duration of the stay and the lack of motion involved, the longer the time delay.

**Time Delays for Wall Switch Occupancy and Vacancy Sensors**

| Room                 | Duration of Stay     | Length of Time Delay |
|----------------------|----------------------|----------------------|
| Hallway              | less than 5 minutes  | 5 minutes            |
| Master Bedroom       | 15 minutes - 8 hours | 30 minutes           |
| Child's Bedroom      | 15 minutes - 8 hours | 30 minutes           |
| Jack & Jill Bathroom | 5-30 minutes         | 30 minutes           |
| Master Bathroom      | 5-30 minutes         | 30 minutes           |
| Dining Room          | 1-3 hours            | 20-30 minutes        |
| Powder Room          | 5-30 minutes         | 30 minutes           |
| Laundry Room         | less than 30 minutes | 15-20 minutes        |
| Garage               | less than 10 minutes | 5 minutes            |
| Pantry               | less than 10 minutes | 5 minutes            |
| Living Room          | 1-3 hours            | 15-20 minutes        |
| Family/Great Room    | 1-3 hours            | 20-30 minutes        |





Watt Stopper/Legrand's new line of residential wall switch sensors and time switches **MAKES SENSE** for any home:

- superior performance, support and service from a long-time leader in lighting controls
- multiple choices for many applications throughout any home
- code-compliant home lighting controls to facilitate more flexibility in lighting design
- energy savings and lower energy consumption for homeowners
- attractive low profile styling with color-matched lens and device available in three colors








Convenient  
control for  
every room in  
the home





# Product Matrix

## Wall Switch Vacancy Sensors

|  | Application-Specific Vacancy Sensor   | Application-Specific Vacancy Sensor   | Application-Specific Vacancy Sensor   | Universal Application Vacancy Sensor   | Universal Application Vacancy Sensor  | Universal Application Vacancy Sensor  | Universal Application Nightlight Vacancy Sensor                                     |
|--|---|---|---|--|---|---|---|
|  |  |  |  |  |  |  |  |

| Product Description | sensor for single-pole circuits | sensor for single-pole circuits | sensor for single-pole circuits w/ nightlight | sensor for single-pole circuits | sensor for single-pole circuits w/ nightlight | sensor with dual relays | sensor with dual relays and nightlight |
|---------------------|---------------------------------|---------------------------------|---|---------------------------------|---|-------------------------|--|
|---------------------|---------------------------------|---------------------------------|---|---------------------------------|---|-------------------------|--|

### Ordering Information

| Model Number                            | RS-100BA | RS-150BA | RS-150BA-N | RS-250 | RS-250-N | RS-350 | RS-350-N |
|---|----------|----------|------------|--------|----------|--------|----------|
| <b>Load Size</b>                        | 25-500W  | 0-600W   | 0-600W     | 0-600W | 0-600W   | 0-600W | 0-600W   |
| <b>Load Type</b>                        |          |          |            |        |          |        |          |
| Incandescent                            | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Fluorescent                             |          | ●        | ●          | ●      | ●        | ●      | ●        |
| CFL                                     |          | ●        | ●          | ●      | ●        | ●      | ●        |
| MLV                                     |          | ●        | ●          | ●      | ●        | ●      | ●        |
| ELV                                     |          | ●        | ●          | ●      | ●        | ●      | ●        |
| 1/6 hp                                  | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Voltage: 120VAC; 60 Hz                  | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Neutral required:                       |          | ●        | ●          | ●      | ●        | ●      | ●        |
| Coverage: 180°, 600 ft                  | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| <b>Control Type</b>                     |          |          |            |        |          |        |          |
| Vacancy                                 | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Occupancy                               |          |          |            |        |          |        |          |
| Time                                    |          |          |            |        |          |        |          |
| <b>Features</b>                         |          |          |            |        |          |        |          |
| Fixed 30-minute time delay              | ●        | ●        | ●          |        |          |        |          |
| Fixed 5-minute time delay               |          |          |            |        |          |        |          |
| Adjustable time delay                   |          |          |            | ●      | ●        | ●      | ●        |
| Nightlight                              |          |          | ●          |        | ●        |        | ●        |
| Lighted Switch                          | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Light level sensing                     |          |          |            | ●      | ●        | ●      | ●        |
| Automatic ON operation                  |          |          |            |        |          |        |          |
| Manual ON operation                     | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Adjustable Manual ON/ Auto ON operation |          |          |            | ●      | ●        | ●      | ●        |
| Zero crossing                           | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Low-profile styling                     | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| Color-matched lens and device           | ●        | ●        | ●          | ●      | ●        | ●      | ●        |
| ON/OFF Button                           | ●        | ●        | ●          | ●      | ●        | ●      | ●        |



### Wall Switch Occupancy Sensors

### Time Switches

Multiway Vacancy Sensor

Decorator Single Pole Momentary Switch

Dimming Wall Switch Vacancy Sensor

Application-Specific Occupancy Sensor

Application-Specific Occupancy Sensor

Seven-Button Preset Time Switch

Programmable Time Switch



sensor with multiway operation

momentary switch for use with RH-250 multiway vacancy sensor

sensor with preset dimming control

sensor for single-pole circuits

sensor for single-pole circuits

sensor for single-pole circuits

digital time switch with programmable time intervals

**RH-250**

**RH-253**

**RD-200**

0-600W

0-600W

25-500W

**RS-100U**

**RS-150U**

25-500W

0-600W

**RT-50**

**RT-100**

0-600W

0-600W

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