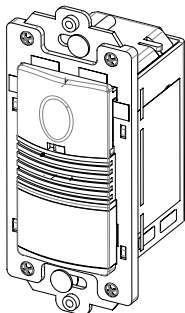


# PW-100D 2-Wire and PW-101D Universal Wall Switch Dimmer PIR Occupancy Sensors



## Specifications

### Voltages:

PW-100D & PW-101D ..... 120/277VAC, 50/60Hz

### Load Limits for each relay:

@120VAC.....700W Single Gang, 400W Two Gang,  
350W Three Gang

@277VAC..... 1200W Single Gang, 900W Two Gang,  
800W Three Gang

### Load Type Compatibility:

PW-100D..... Incandescent, Ballast and 2-wire  
Fluorescent Ballast\* (UL Pending)

PW-101D.....Incandescent, Ballast, Quartz  
Halogen, Magnetic Low Voltage, LED and 2-wire  
Fluorescent Ballasts\* (UL Pending)

Time Delay Adjustment..... 5 to 30 minutes

Walk-Through Mode ...3 minutes if no activity after 30 sec.

Test Mode ..... 5 sec. at initial power up or DIP switch reset

PIR Adjustment ..... High or Low (DIP switch)

Light Level Adjustment ..... 8fc to 180+fc

Alerts ..... Selectable Audible

Fade rates ..... 1.5 seconds to turn ON, 5 seconds to turn OFF

\* See **Compatible Two-wire fluorescent ballasts** table, back page.

# WattStopper®

US Patents:  
5640113 • 6617560

Installation Instructions

## UNIT DESCRIPTION AND OPERATION

The PW Passive Infrared Dimmable Wall Switch sensors use advanced passive infrared (PIR) technology.

The PW sensor can turn a load ON, and hold it ON as long as the sensor detects occupancy. After no movement is detected for the selected time delay, the lights switch OFF. A “walk-through” mode can turn lights OFF after only 3 minutes, if no activity is detected after 30 seconds following an occupancy detection.

The PW sensor contains dimming capability so that the user can set the ideal light level for any occasion. The user is able to set the desired preset level so that the lights will always turn ON to this level.

The PW has one relay and one ON/OFF button. Pressing a button toggles the state of the corresponding relay. Pressing and holding the button will dim the lights up or down. A double tap to the button will turn the lights ON to full bright.

PW sensors contain a light level sensor. If adequate daylight is present, the sensor holds the load OFF until light levels drop, even if the area is occupied. Users can override this function by pressing the ON/OFF button. See Light Level Adjustment.

### Time Delays

The PW sensor holds the load ON until no motion is detected for the selected time delay. Select the time delay using DIP switch settings.

<b>Test/20 min</b> (DIP 1,2,3, OFF)	A Test Mode with a short time delay of 5 seconds is set when DIP switches 1, 2, & 3 are OFF. It cancels automatically after ten minutes, or when you set a fixed time delay. When the Test Mode times out, the sensor assumes a 20 minute time delay. To restat Test Mode, change the time delay setting to any fixed amount and then return it to the Test setting.
<b>Fixed Time Delay</b> (DIP 1 ON, 2 & 3 OFF)	Time delays are 5, 10, 15, <b>20</b> (default), 25, or 30 minutes.

Shading indicates default operation and switch setting.

## Walk-Through

The Walk-Through mode shortens the time delay to reduce the amount of time the load is ON after a brief moment of occupancy, such as returning to an office to pick up a forgotten item then immediately exiting.

<b>Walk-Through Mode</b> (DIP 4 ON)	The PW sensor turns the load OFF three minutes after the area is initially occupied, if no motion is detected after the first 30 seconds. If motion continues beyond the first 30 seconds, the set time delay applies.
<b>No Walk-Through</b> (DIP 4 OFF)	Walk-Through mode disabled.

## PIR Sensitivity Adjustment

The PW sensor constantly monitors the controlled environment and automatically adjusts the PIR to avoid common ambient conditions that can cause false detections, while providing maximum coverage.

<b>High</b> (DIP 5 OFF)	Default setting. Suitable for most applications.
<b>Low, 50%</b> (DIP 5 ON)	Reduces sensitivity by approximately 50%. Useful in cases where the PIR is detecting movement outside of the desired area (also consider masking the lens) and where heat sources cause unnecessary activation.

## Preset Light Level

The PW dimmable sensor contains a preset light level feature that determines how bright the lights are when they initially turn ON. The user has the option to set a locked preset level (factory default is 85% brightness) or let the preset level be the last light level set before the lights were turned OFF.

To change the locked preset level, move DIP Switch #6 to the OFF position, set the lights to the desired level, and then move DIP Switch to the ON position.

<b>Locked preset light level</b> (DIP 6 ON)	The lights will always turn back ON to the locked preset level. Factory default preset is 85% brightness. This allows the lights to turn ON to the same level regardless of the light level when they were turned OFF.
<b>Last light level set</b> (DIP 6 OFF)	When the lights are turned ON the level is the last light level set before the load was turned OFF.

## Alerts

The PW can provide audible alerts as a warning before the load turns OFF.

<b>Audible Alerts</b> (DIP #7 ON)	Unit will beep at one minute*, at 30 seconds and at 10 seconds before turning OFF load. When Walk-Through is active, the unit beeps three times at 10 seconds before the load goes OFF.
<b>No Audible Alerts</b> (DIP #7 OFF)	No audible warnings provided.

## Turning the Load ON

The relay can be set either Auto ON or Manual ON. In either mode, the load can be turned ON or OFF using the ON/OFF button.

<b>Auto ON</b> (DIP 8 OFF)	Load turns ON and OFF automatically based on occupancy. If the load is turned OFF manually, it stays OFF until 5 minutes after the last occupancy detection, at which time the sensor timeouts. This prevents the load from turning ON automatically after it was deliberately turned OFF. Pressing the button to turn lights ON returns the sensor to Auto ON mode.
<b>Manual ON</b> (DIP 8 ON)	Occupants must press the ON/OFF button to turn ON the load. The sensor keeps the load ON until no motion is detected for the selected time delay. There is a 30 second re-trigger delay. If occupancy is detected during the delay, the sensor turns the load back ON. After the re-trigger delay elapses the ON/OFF button must be pressed to turn ON the load.

## Load Control

The type of load that is being controlled will determine the setting of the DIP Switch.

<b>Load Type</b> (DIP 9 ON)	Fluorescent.
<b>Load Type</b> (DIP 9 OFF)	Incandescent (Factory Default).

## COVERAGE PATTERNS

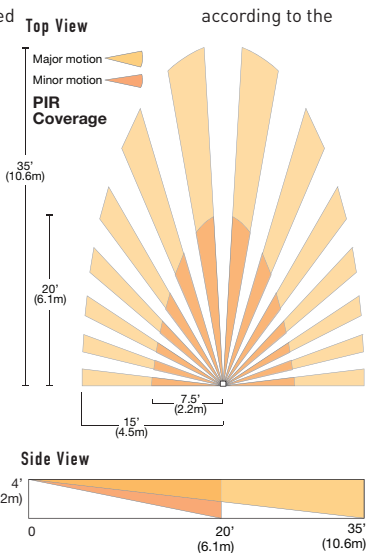
Coverage testing has been performed according to the NEMA WD 7 guideline. For best performance, use in spaces not larger than 15' x 12'.

### PIR Sensor

The sensor has a two-tiered, multi-cell viewing Fresnel lens with 180 degree field of view. The red LED on the sensor flashes when the PIR detects motion.

### Masking the lens

Opaque adhesive tape is supplied so that sections of the PIR sensor's view can be masked. This allows you to eliminate coverage in unwanted areas. Since masking removes bands of coverage, remember to take this into account when troubleshooting coverage problems.



## SAFETY FEATURE

Use the air gap switch feature to replace lamps safely. Move air gap switch to right position (OFF) and replace lamp. Return the air gap switch to left position (ON) after lamp replacement.

Visit our website for FAQs: [www.wattstopper.com](http://www.wattstopper.com)

## INSTALLATION

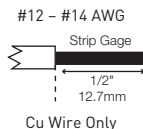


### WARNING

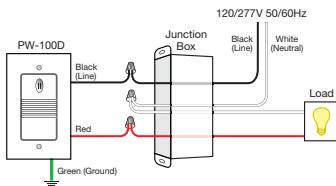


**TURN THE POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING THE SENSOR OR WORKING ON THE LOAD.**

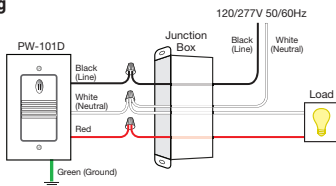
1. Make sure that the power has been turned OFF at the circuit breaker.
2. Connect wires to the PW flying leads as shown in the wiring diagram that is appropriate to the PW model and electrical supply. **The ground wire (green) must be fastened to ground for the sensor to work properly.**
3. Attach the sensor to the wall box by inserting screws into the two wide holes on the top and bottom of the attached metal bracket. Match them up with the holes in the wall box and tighten.
4. Turn the circuit breaker ON. Wait one minute, then push the Auto ON/OFF switch for each load and the lights will turn ON. There is a delay due to initial power-up of the sensor that only occurs during installation.
5. Test and adjust the sensor if necessary.



#### PW-100D Wiring



#### PW-101D Wiring



**CAUTION** - To Reduce the Risk of Overheating and Possible Damage to Other Equipment, Do Not Install to Control a Receptacle, or a Motor-Operated Appliance, a Non-dimmable Fluorescent Lighting Fixture, or a Transformer-Supplied Appliance..

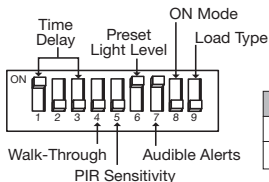
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# DIP SWITCH SETTINGS

Time Delay	1	2	3
Test/20 min	↓	↓	↓
5 minutes	↓	↓	↑
10 minutes	↓	↑	↓
15 minutes	↓	↑	↑
20 minutes	↑	↓	↓
25 minutes	↑	↓	↑
30 minutes	↑	↑	↓
Service	↑	↑	↑

Walk-Through	4
Enabled	↑
Disabled	↓

Service bypasses occupancy & light level functions. Control the load manually using the ON/OFF button.



PIR Sensitivity	5
Low, 50%	↑
High	↓

Preset Light Level	6
Locked level*	↑
Last level set	↓

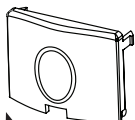
\*Factory default 85%

Audible Alert	7
Enabled	↑
Disabled	↓

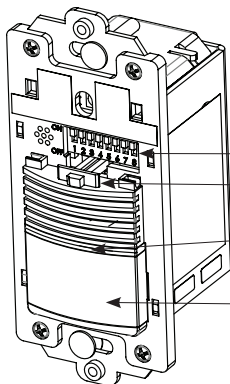
ON Mode	8
Manual On	↑
Auto On	↓

Load Type	9
Fluorescent	↑
Incandescent	↓

↑ = ON   ↓ = OFF   ◀ = Factory Setting



Button Hinges



- DIP Switches
- Air Gap Switch
- Detection LED
- PIR Lens

Call 800.879.8585 for Technical Support

## ADJUSTMENTS

### Sensor Adjustment

Remove the wall plate. Remove the button cap by firmly squeezing together the top sides of the button assembly. Gently pull it away from the unit.

When the adjustments are completed, replace the button cap by inserting its hinges into the tabs on the main unit and then squeeze the top of the button while pressing it into the unit. Reinstall the cover plate.

### Light Level Adjustment

The light level can be set with loads ON or OFF. To enable light level control and set the threshold: 1) Make sure the room is lit appropriately. 2) Put the sensor into TEST mode (see Time Delay switches). You have 5 minutes to complete the procedure. 3) Press and hold the ON/OFF button for 3 seconds, until you hear a beep. 4) Step away from the sensor. After 25 seconds a beep sounds, indicating that the threshold level is set. This threshold is retained, even if power is lost, until it is re-set or disabled.

To disable light level control, press and hold the Relay **1** button for **7 seconds**, until a double beep tone sounds.

### Reset to Default

To reset the PW to factory settings, press and hold the Relay **1** button for **20 seconds**, until a triple beep sounds. This resets the sensor occupancy history and disables light level control (the brightest ambient light will not hold the light OFF).

### Fluorescent Loads

If controlling a fluorescent load, change DIP Switch #9 to the ON position before powering up the device.



## **TROUBLESHOOTING**

### **Light do not turn ON with motion or button press (LED does not flash)**

1. Make sure that the air gap switch is set to the ON (left) position.
2. If lights still do not turn ON, call 800.879.8585 for technical support.

### **Lights do not turn ON with motion (LED does flash)**

1. Press and release each button to make sure that the correct lights come ON for each relay. **If the lights do NOT turn ON**, check wire connections, especially the Load connection. **If the lights turn ON**, verify that the correct ON Mode is selected in DIP switches 8 and 9.
2. Check to see if light level control is enabled: cover the sensor lens with your hand. If the lights come ON, adjust the light level setting.
3. If lights still do not turn ON, call 800.879.8585 for technical support.

### **Lights do not turn ON with motion (LED does not flash)**

1. Press and release each button to make sure that the correct lights come ON for each relay. If the lights turn ON, verify that Sensitivity is on High.
2. Check the wire connections, in particular, the Line connection. Verify that connections are tightly secured.
3. If lights still do not turn ON, call 800.879.8585 for technical support.

### **Lights do not turn OFF**

1. There can be up to a 30 minute time delay after the last motion is detected. To verify proper operation, set DIP switch 1 to ON, then reset switches 1, 2, and 3 to OFF to start Test Mode. Move out of view of the sensor. The lights should turn OFF in approximately 5 seconds.
2. Verify that the sensor is mounted at least six feet (2 meters) away from any heating/ventilating/air conditioning device that may cause false detection. Verify that there is no significant heat source (e.g., high wattage light bulb) mounted near the sensor.
3. If the lights still do not turn OFF, call 800.879.8585 for technical support.

### **Sensing motion outside desired areas**

1. Select PIR Sensitivity – Low (DIP switch 5 = ON) if necessary.
2. Mask the PIR sensor's lens to eliminate unwanted coverage area.

**Call 800.879.8585 for Technical Support**

## ORDERING INFORMATION

Catalog #	Description
PW-100D	Passive infrared dimmable wall switch sensor; 120/277VAC, 50/60Hz; 600W incandescent or two-wire fluorescent ballasts
PW-101D	Passive infrared dimmable wall switch sensor; 120/277VAC, 50/60Hz; 600W universal dimmer

Units come in White (-W), Light Almond (-LA), Ivory (-I), Grey (-G), Black (-B).  
Add color designator to catalog number when ordering.

Compatible with:	Two-wire fluorescent	UL Pending	
<b>Compatible Two-wire fluorescent ballasts</b>  <small>© Brands and trademarks are the property of their respective companies.</small>	<b>Advance Mark 10®</b>		
	REZ-132-SC	REZ-1TTS40	<b>Sylvania/Osram</b>
	REZ-2S32-SC	REZ-1TTS40-SC	QTP1x32T8/UNV DIM
	REZ-3S32-SC	REZ-2TTS40	QTP2x32T8/UNV DIM
	REZ-154	REZ-2TTS40-SC	QTP3x32T8/UNV DIM
	REZ-2S54	IEZ-2S24-D	QTP4x32T8/UNV DIM
	REZ-1Q18-M2		<b>Lutron TU-Wire®</b>
	REZ-2Q18-M2	<b>Advance Ambistar</b>	2W-T426-120-1-S
	REZ-1T42-M2	REB-2S26-M1-LS-DIM	2W-T426-120-2-S
	REZ-2Q26-M2	REB-2S26-M1-BS-DIM	2W-T432-120-1-S
REZ-2T42-M3		2W-T432-120-2-S	
		2W-T832-120-1-S	
		2W-T832-120-2-S	

## Warranty Information

WattStopper warrants its products to be free of defects in materials and workmanship for a period of five years. There are no obligations or liabilities on the part of WattStopper for consequential damages arising out of or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation or reinstallation.

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