

## Catalog Numbers • Les Numéros de Catalogue • Números de Catálogo: UW-100/UW-100-347/UW-200

Country of Origin: Made in China • Pays d'origine: Fabriqué en Chine • País de origen: Hecho en China

### DESCRIPTION AND OPERATION

The UW Ultrasonic Wall Switch sensors employ 40kHz ultrasonic technology in a single-gang wall switch unit. The UW 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 UW-100 has one relay and one **ON/OFF** button. The UW-200 contains two relays and two **ON/OFF** buttons to allow control of one or two loads independently. Pressing a button toggles the state of the corresponding relay.

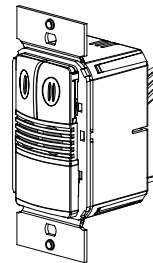
UW sensors contain a light level sensor. If adequate daylight is present, the sensor holds the load **OFF** until light levels drop, even if the area is occupied. In the UW-200, light level only affects the load on Relay 2. Users can overrule this function by pressing the **ON/OFF** button. See Light Level Adjustment.

#### Turning ON the Load (ON Mode)

The relays are programmed independently for either **Auto ON** or **Manual ON**. In either mode, the load can be turned **ON** or **OFF** using the **ON/OFF** button.



UW-100 & UW-100-347



UW-200

### SPECIFICATIONS

**Voltages:**

- UW-100 & UW-200..... 120/277VAC, 50/60Hz
- UW-100-347 ..... 347VAC, 50/60Hz

**Load Limits for each relay:**

- @120VAC .....0-800W tungsten or ballast, 1/6 HP
- @277VAC .....0-1200W ballast
- @347VAC .....0-1500W ballast

**Load Type Compatibility:**

- Incandescent, fluorescent, magnetic, or electronic ballast
- Horsepower Rating (each relay) ..... 1/6 HP @120VAC

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

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

Test Mode... 5 sec. for 10 min. with DIP Switch setting

**Ultrasonic Adjustment** .... Minimum to Maximum (trimpot), OFF

Frequency .....40kHz

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

**Alerts** ..... Selectable Audible & Visual

US Patents: 5640113, 6617560

<b>Manual ON</b> DIP #8 <b>ON</b> for Relay 1  DIP #9 <b>ON</b> for Relay 2	With an <b>ON Mode</b> DIP Switch in the <b>ON</b> position, the occupant must press the <b>ON/OFF</b> button to turn <b>ON</b> the load. The sensor keeps the load <b>ON</b> until no motion is detected for the selected time delay. There is a 30-second re-trigger delay. If occupancy re-triggers during the delay (see Trigger Mode), the sensor turns the load back <b>ON</b> . After the re-trigger delay elapses the <b>ON/OFF</b> button must be pressed to turn <b>ON</b> the load.
<b>Auto ON</b> DIP #8 <b>OFF</b> for Relay 1  DIP #9 <b>OFF</b> for Relay 2	With an <b>ON Mode</b> DIP Switch in the <b>OFF</b> position, the load turns <b>ON</b> and <b>OFF</b> automatically based on occupancy. If the load is turned <b>OFF</b> manually, Presentation Mode operation applies. This prevents the load from turning <b>ON</b> automatically after it was deliberately turned <b>OFF</b> . Pressing the button to turn lights <b>ON</b> returns the sensor to <b>Auto ON</b> mode.

\*\* UW-100: Switch 8 is not used. UW-200: Switch 8 default is **ON** to comply with CA Energy Commission Title 24 bi-level switching requirements.

Model #	Relay	Default ON Mode	DIP Switch #	Setting
UW-100	1	Manual <b>ON</b>	8	<b>ON</b>
UW-100-347	1	Manual <b>ON</b>	8	<b>ON</b>
UW-200	1	Auto <b>ON</b>	8	<b>OFF</b>
	2	Manual <b>ON</b>	9	<b>ON</b>

**NOTE:** Shaded cells in the following tables indicate default operation and switch setting.

#### Presentation Mode

This is a feature of the **Auto ON** mode. When both relays are manually turned **OFF** the UW holds the lights **OFF** until no motion has been detected for the duration of the Time Delay. With subsequent occupancy, the UW turns the load **ON**. If both relays are **ON** and one relay is manually turned **OFF** this relay remains **OFF** until both the Time Delay and retrigger delay expires for the relay that is **ON**, after that time the **ON Mode** control settings again apply.

#### Time Delays

The UW sensor holds the load **ON** until no motion is detected for the selected time delay. Select the time delay using DIP Switch settings. In the UW-200, both relays use the same delay.

<b>Test/20 min</b> (DIP#1, 2, & 3 <b>OFF</b> )	A Test Mode with a short time delay of 5 seconds is set when DIP Switches 1, 2, & 3 are <b>OFF</b> . 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 restart 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 & 2 <b>OFF</b> , 3 <b>ON</b> )	Time delays are 5, 10, 15, <b>20</b> (default), 25, or 30 minutes.

### 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 <b>ON</b> )	The UW sensor turns the load <b>OFF</b> 3 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 <b>OFF</b> )	Walk-Through mode disabled.

### Visual Alerts

The UW sensor can provide a visual alert as a warning one minute before the load turns **OFF**.

<b>Visual Alerts</b> (DIP #5 <b>ON</b> )	When only one minute is left in the time delay, the load connected to the relay turns <b>OFF</b> for one second. This provides a one minute warning before the load(s) are turned <b>OFF</b> by the sensor.
<b>No Visual Alerts</b> (DIP #5 <b>OFF</b> )	No visual alert for delay expiration warning.

### Audible Alerts

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

<b>Audible Alerts</b> (DIP #6 <b>ON</b> )	Unit will beep at one minute*, at 30 seconds and at 10 seconds before turning <b>OFF</b> load. When Walk-Through is active, the unit beeps three times at 10 seconds before the load goes <b>OFF</b> . *If Visual Alert is also <b>ON</b> , the one-minute time-out warning beep is replaced by the visual alert.
<b>No Audible Alerts</b>	No warnings provided.

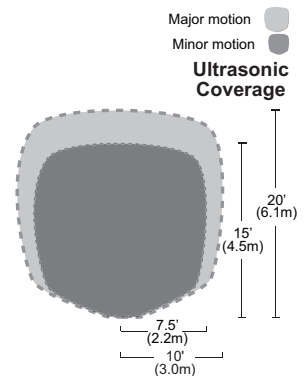
## COVERAGE PATTERNS

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

### Ultrasonic Sensor

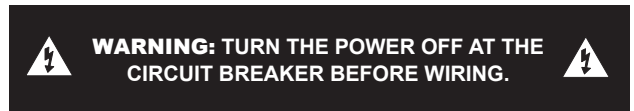
The sensor has two ultrasonic transceivers operating at 40kHz. Detection sensitivity can be adjusted using the trimpot under the **ON/OFF** buttons.

Top View

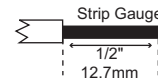


## INSTALLATION

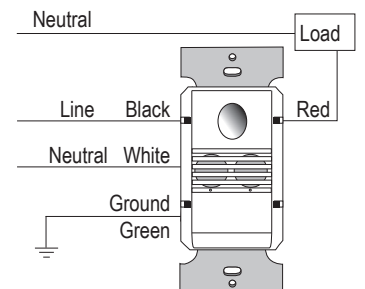
1. Make sure that the power has been turned **OFF** at the circuit breaker.
2. Connect wires to the UW flying leads as shown in the wiring diagram that is appropriate to the UW model and electrical supply.
3. Attach the UW to the wall box by inserting screws into the two wide holes on the top and bottom of the attached metal bracket.
4. Match them up with the holes in the wall box and tighten.
5. Turn the circuit breaker **ON**.
6. Wait one minute, then push the **ON/OFF** button for each load and the lights will turn **ON**.
7. Test and adjust the sensor if necessary.
8. Install industry standard decorator wall switch cover plate (not included).



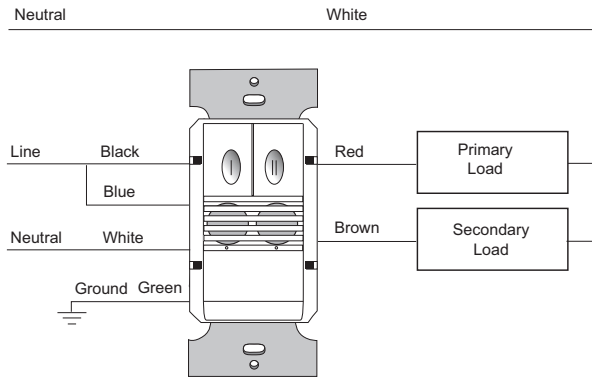
#12 — #14 AWG



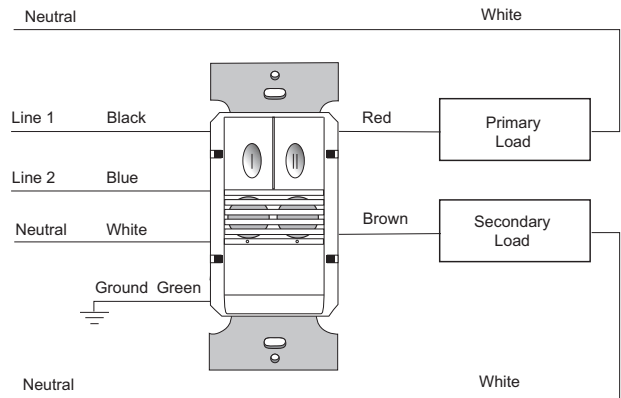
Cu Wire Only



UW-100 and UW-100-347 Wiring



**UW-200 Bi-Level Wiring**



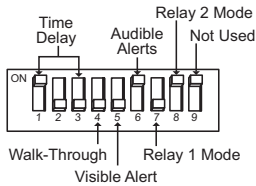
**UW-200 Dual Circuit Wiring**

## DIP SWITCH SETTINGS

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

Walk-Through	4
Enabled	↑
Disabled	↓

⊗ Service bypasses occupancy & light level functions. Control loads manually using **ON/OFF** buttons.



Visible Alert	5
Enabled	↑
Disabled	↓

Audible Alert	6
Enabled	↑
Disabled	↓

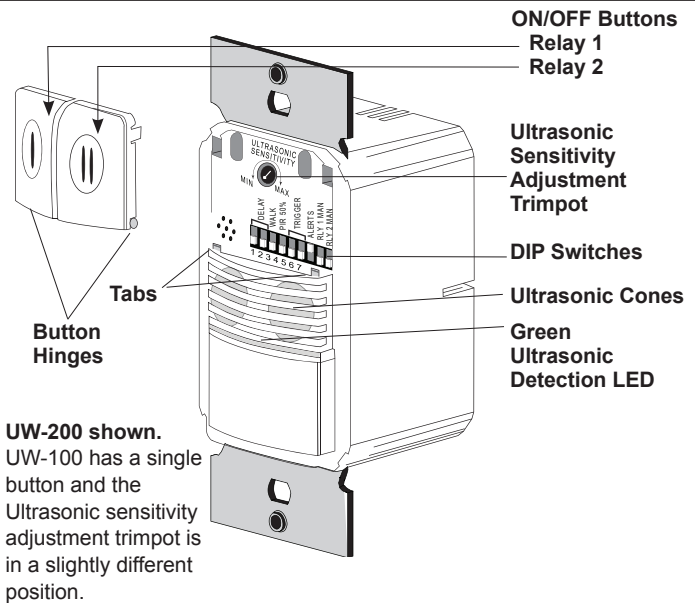
Relay 1 Mode	7
Manual On	↑
Auto On	↓

UW-200 ONLY

Relay 2 Mode	8
Manual On	↑
Auto On	↓

No Function	9
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Factory Settings:  
 ▲ All models  
 ▲ UW-100 series  
 ▲ UW-200 series



**UW-200 shown.**  
 UW-100 has a single button and the Ultrasonic sensitivity adjustment trimpot is in a slightly different position.

## 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.  
You have 5 minutes to complete the procedure.
3. Press and hold the **ON/OFF** button (Relay 1 button on the UW-200) 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.
5. Set the Time Delay DIP Switches to the desired Time Delay.

In the UW-200, light level control only affects Relay 2.

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

### Reset to Default

Use the DIP Switch Settings table to return features to factory settings. To reset the UW, press and hold the Relay 1 button for 10 seconds, until a triple beep sounds. This resets the sensor and disables light level control (the brightest ambient light will not hold the light **OFF**).

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## TROUBLESHOOTING

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### 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 7 and 8.
2. Check to see if light level control is enabled: cover the sensor lens with your hand.
3. If the lights come **ON**, adjust the light level setting.  
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.  
Make sure that the correct lights come **ON** for each relay.
2. If the lights turn **ON**, set Ultrasonic Sensitivity to max.
3. Check the wire connections, in particular, the Neutral and Line connections. Verify that connections are tightly secured.
4. 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.
2. Move out of view of the sensor.  
The lights should turn **OFF** in approximately 5 seconds.
3. 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.
4. Verify that the Ultrasonic Sensitivity trimpot is not pointing at "Service" (green LED is always **ON**).  
If so, rotate the trimpot to its middle setting. The Service setting allows users to operate the sensor as a service switch in the unlikely event of a failure.
5. Verify that DIP Switches 1,2, and 3 are not set to "Service" (all Switches **ON**).  
If they are, change them to an appropriate Time Delay setting.
6. If the lights still do not turn **OFF**, call 800.879.8585 for Technical Support.

### Sensing motion outside desired areas

Adjust the Ultrasonic Sensitivity. Rotate trimpot counterclockwise to reduce sensitivity.

### Red LED is lit all the time and the sensor features don't work

1. Check DIP Switches 1,2,3.  
If they are all **ON** the unit is in Service Mode. Set the DIP Switches to a valid Time Delay setting.
2. If re-setting the Time Delay switches does not clear the LED, call Technical Support.

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## COVER PLATES

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Wattstopper DW series wall switches fit behind industry standard decorator-style switch cover plates. Cover plates are not included. Units come in the following colors, which are indicated by the final suffix of the catalog number (shown here in parentheses): White (-W), Light Almond (-LA), Ivory (-I), Grey (-G), Black (-B).

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