

## TECH SUPPORT

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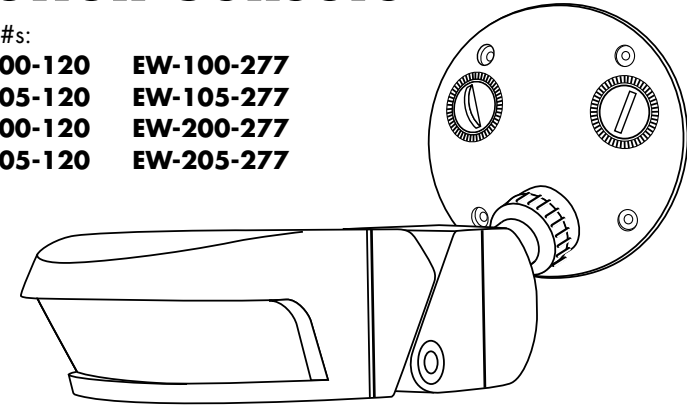
Fax: 1(972)422-1311

www.wattstopper.com

# Outdoor 180° & 270° PIR Motion Sensors

Model#s:

<b>EW-100-120</b>	<b>EW-100-277</b>
<b>EW-105-120</b>	<b>EW-105-277</b>
<b>EW-200-120</b>	<b>EW-200-277</b>
<b>EW-205-120</b>	<b>EW-205-277</b>



## SPECIFICATIONS

Voltage:

EW-100-120, EW-105-120, EW-200-120, EW-205-120 . . . . . 120VAC, 60Hz

EW-100-277, EW-105-277, EW-200-277, EW-205-277 . . . . . 277VAC, 60Hz

Mountable Locations . . . . . Wall, ceiling or under eaves

Operating Temperature . . . . . -40° to 130°F (-40° to 55°C)

Lens Coverage:

EW-100 & EW-105 . . . . . 180°

EW-200 & EW-205. . . . . 270°

Load Ratings . . . . . 0-1000W ballast or tungsten @120VAC

0-1000W ballast @277VAC

Motor Load: . . . . . 1/6 HP @120VAC

1/3 HP @277VAC

Current Consumption

Without Isolated Relay . . . . . 22 mA max.

With Isolated Relay . . . . . 34 mA max.

Time Delay Adjustment . . . . . 12sec.-16min.

Light Level Adjustment . . . . . 0.5FC-200FC

Isolated Relay on EW-100 & EW-200 (both -120 & -277 models)

Normally Open & Normally Closed contacts.

Isolated Relay Rating: . . . . . 1A @ 30VAC/DC

UL 773A Raintight Rated

IEC-IP-55 Rated



Santa Clara, CA 95050  
(800) 879-8585

U.S. Patents:  
4,787,722  
5,640,113

## The Watt Stopper®

*Putting a Stop to Energy Waste®*

00335r1 5/99

# Installation Instructions

## ⚠ CAUTION ⚠

READ ALL OF THE INSTALLATION INSTRUCTIONS BEFORE INSTALLING THIS PRODUCT. THIS UNIT USES HIGH VOLTAGE. IT SHOULD ONLY BE INSTALLED BY QUALIFIED PERSONS THAT ARE THOROUGHLY FAMILIAR WITH PROPER SAFETY PROCEDURES AND ELECTRICAL AND BUILDING CODES FOR THE INSTALLATION LOCATION.

**WARNING: TO AVOID FIRE, SHOCK, ELECTROCUTION, OR DEATH—TURN OFF POWER AT THE CIRCUIT BREAKER OR FUSE BOX AND TEST TO ENSURE POWER IS OFF BEFORE WIRING.**

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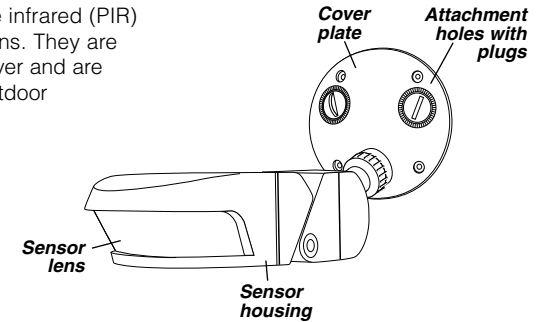
## BOX CONTENTS

- One (1) **EW-100-120, EW-105-120, EW-200-120, EW-205-120, EW-100-277, EW-105-277, EW-200-277 or EW-205-277**
- **Accessory bag:**
  - Cover plate for 4" round outdoor junction box, with two cover plate attachment hole plugs, cover plate gasket, cover plate screws & screw covers (4 ea), lens mask, wire nuts (3)
- **Installation instructions**

## UNIT DESCRIPTION

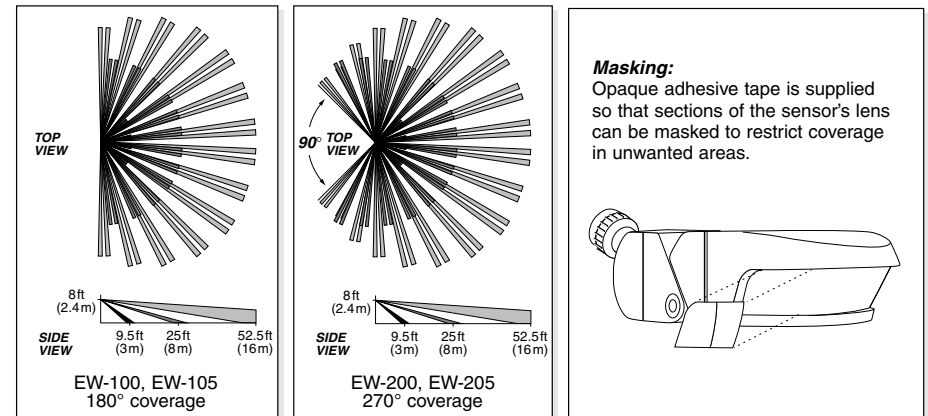
The EW sensors are **outdoor** passive infrared (PIR) motion sensors rated for wet conditions. They are **preassembled** with a junction box cover and are **ready to install** to standard round outdoor junction boxes.

The EW sensors utilize advanced PIR technology and a superior lens design to detect motion. PIR sensing is passive, and detects the difference between infrared energy in motion and the background space.



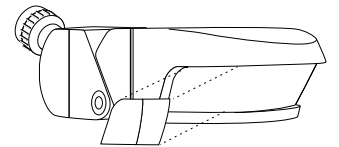
## COVERAGE PATTERNS

Coverages shown are maximum and represent coverage for walking motion. Actual coverages will vary depending on mounting heights, ambient temperature and weather conditions.



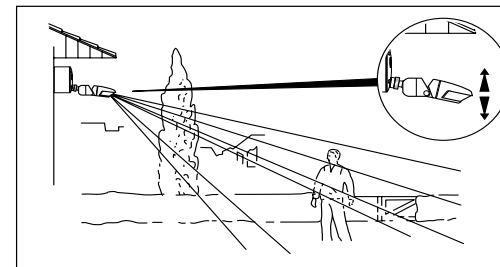
### Masking:

Opaque adhesive tape is supplied so that sections of the sensor's lens can be masked to restrict coverage in unwanted areas.



### Coverage adjustment:

The front of the sensor housing can be moved up and down for easy coverage adjustment.



## MOTION SENSOR PLACEMENT

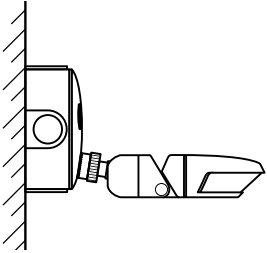
Careful consideration must be given to sensor placement. PIR sensors detect the difference between infrared energy in motion and the background space. To be detected, a person or vehicle must be within the sensor's coverage pattern and have an unobstructed view of the sensor.

### Mounting options

- Install onto a standard 4" round outdoor junction box.
- Mount to a flat, stable, vibration-free surface.
- Mount **vertically** or **horizontally**, usually to a wall, ceiling or under an eave.

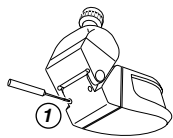
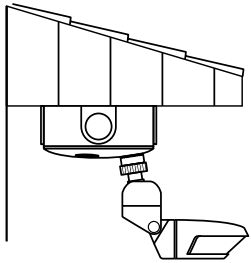
#### Vertically mounted:

The sensor comes assembled and ready for vertical cover plate mounting, as shown below.

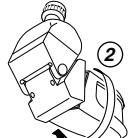


#### Horizontally mounted:

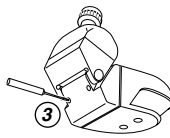
For horizontal mounting, such as under eaves, **rotate the sensor** housing as shown in the diagrams below. **Make sure that the gasket is seated properly.**



1  
Loosen the two screws at the back of the sensor.



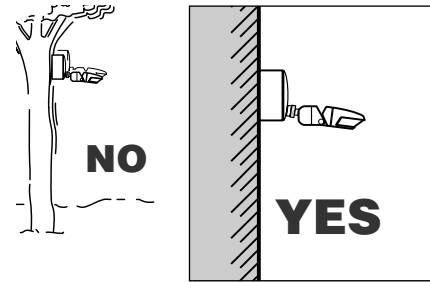
2  
Rotate the sensor housing 180°.



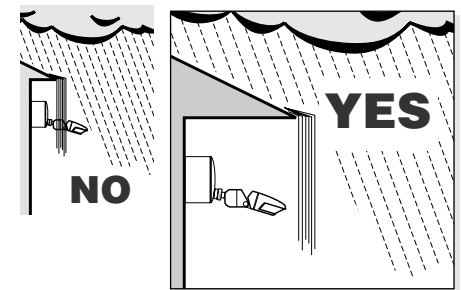
3  
Replace and tighten the screws.

## Mounting and sensor positioning guidelines

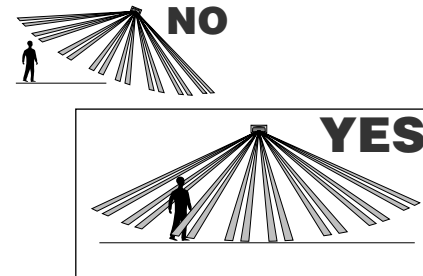
### Mount to flat, stable, vibration-free surface



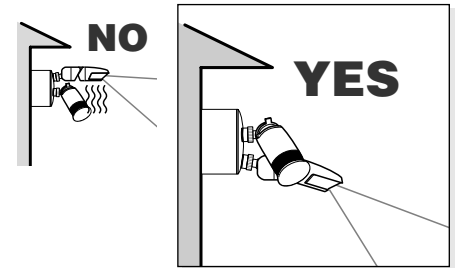
### Avoid runoff; sheltered locations preferred



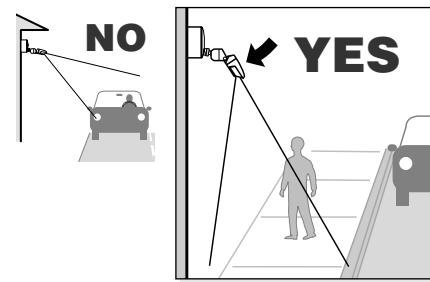
### Mount motion sensor level



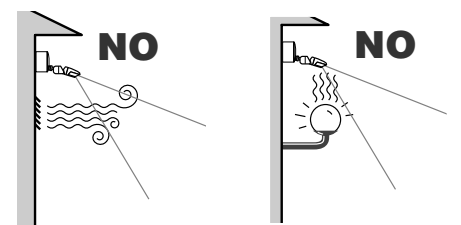
### Install lamps above sensor to avoid heat effects



### Aim motion sensor downward to limit sensing



### Do not mount by vents or above lamps

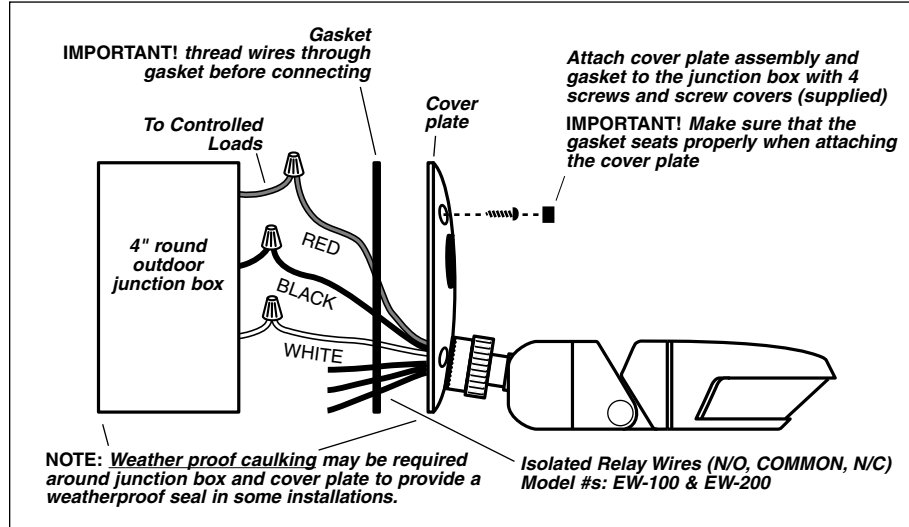


## WIRING AND INSTALLATION

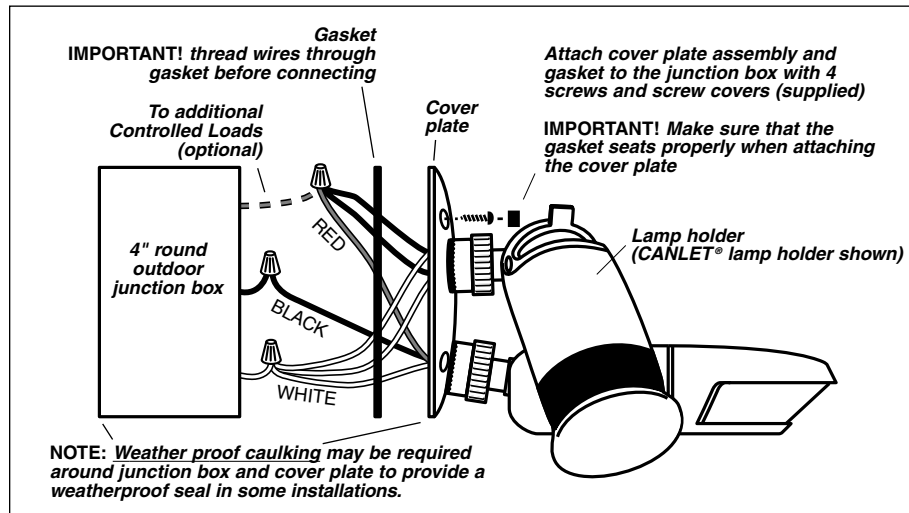


**TURN POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING SENSOR.  
SENSOR MUST BE INSTALLED BY QUALIFIED PERSONNEL ONLY.**

Wire connections for sensor (see instructions, page 6)



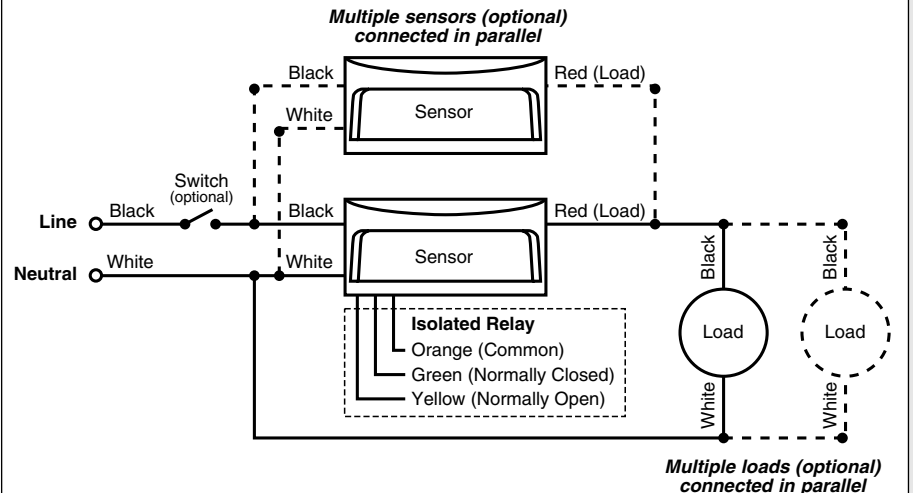
Wire connections when attaching lamp holders (Isolated relay wires not shown)



## WIRING AND INSTALLATION (continued)

Wire the sensor as shown below:

- **BLACK** wire from sensor to line voltage.
- **WHITE** wire from sensor to Neutral.
- **RED** wire is connected to lighting loads, if used, as shown (see diagram above and below), **not to exceed load rating** (see Specifications, front cover).
- **Isolated Relay** (see Specifications, front cover, for rating). Connect the wires necessary to the application that requires this output.
  - **ORANGE (Common)** (must be used for proper operation).
  - **GREEN (Normally Closed)** (Open when occupancy is detected).
  - **YELLOW (Normally Open)** (Closed when occupancy is detected).



**Note:** When power is restored to the sensor, the lights will turn on. If no motion is detected by the sensor, the lights will remain on for the set time delay period (or minimum of approximately one minute) and then turn off (see Security Override, page 9).

## TESTING AFTER INSTALLATION

To facilitate **coverage testing**, the **factory setting** for Time Delay is 12 seconds, and the Light Level is at Maximum.

If you want to test a sensor for intended detection or operation:

1. Make sure that the time delay is set to 12 seconds and the light level is set to maximum (clockwise to the sun ☀ icon). (The dials are located on the bottom of the sensor.)
2. Adjust sensor and lamp holders to the desired position.
3. Ensure that power has been restored to the sensor.
4. Move into the location to be tested; lights should turn on. Stand still. In about 12 seconds the lights should turn off. Move or walk and the lights should turn on. Repeat this process to test other locations. Make sensor coverage adjustments as needed (see Coverage adjustment and Masking, page 2).

**Note:** When power is restored to the sensor, the lights will turn on for the set time delay, or a minimum of approximately one minute (see Security Override, page 9).

**Note:** If the lights do not turn on with movement in the area after they have turned off in step 4, the level of daylight may be too high and the sensor's light level adjustment is keeping the sensor inactive. Wait until daylight levels have reduced before testing again.

5. See Dial Adjustments, below, for guidelines to adjust the **time delay** and **light level** to the desired settings for operation.

## DIAL ADJUSTMENTS

**Time Delay** and **Light Level** control dials are located on the bottom of the sensor.

### 1. Adjust Time Delay:

The time delay is the amount of time that elapses before lights turn off since the sensor last detected motion. This can be set from **12 seconds to 16 minutes**. **For normal operation, the time delay should be set to 1 minute or more.**

- In areas where there is mostly walk through movement, the time delay amount can be low.
- In areas where people may stop and remain for periods of time, the time delay should be set to a higher amount, preferably 16 minutes.

#### TIME DELAY DIAL



**Minimum: 12 seconds**  
**Maximum: 16 minutes**

### 2. Adjust Light Level:

Turning the light level adjustment dial raises or lowers a **daylight level** in the sensor. When the light of the day rises above this set level, the sensor becomes **inactive**; this keeps the lights off when there is enough daylight present.

We suggest initially setting the light level adjustment to **half way** between minimum and maximum. If a different setting is desired after installation, then follow the Making Changes procedures, next page.  
(continued next page)

#### LIGHT LEVEL DIAL



**Minimum = ☾**  
**Maximum = ☀**

### 2. Adjust Light Level (continued):

#### Making Changes

If you want the lights **to turn on sooner**—turn the dial toward the sun ☀ icon, as desired; this raises the **daylight level**. (Remember, the sensor must detect motion for lights to turn on.)

- The lights **turn on sooner** in the **evening**
- The lights **stay on longer** in the **morning**

If you want the lights **to turn on later**—turn the dial toward the moon ☾ icon, as desired; this lowers the **daylight level**. (Remember, the sensor must detect motion for lights to turn on.)

- The lights **turn on later** in the **evening**
- The lights **turn off sooner** in the **morning**

#### Notes:

- When testing adjustments, make sure not to block any of the daylight that is reaching the sensor or reflect any daylight into sensor's lens.
- The sensor requires about 5 seconds for light level adjustments to take effect. This feature prevents the lights from turning on and off with quick light reflections, from car windows for example.
- The sensor will not turn lights off until no motion is detected and the time delay elapses.

## SECURITY OVERRIDE

The EW sensors have an override-on feature which allows lights to be turned on for the set time delay period.

- If there is an installed **switch**—turning the switch **off then on**, turns the lights on. If no motion is detected by the sensor, the lights will remain on for the set **time delay period** (or minimum of approximately one minute) and then turn off.

This will also happen when power is restored after a power outage.

**Note:** If the lights do not turn on, the sensor may be inactive due to the daylight level. Turn the switch off for 5 seconds, then turn it on. The lights should turn on as described above.

## TROUBLESHOOTING

### Lights do not turn off:

1. The sensor may be detecting movement outside the desired coverage area. The sensor's lens may need to be masked to block unwanted coverage (see Masking, page 2). If this does not solve the problem, see step 2.
2. Test to see that the sensor is operating properly. Set the time delay to minimum (12 seconds). Remain still, or move out of range of the sensor. If there is no movement in the coverage area, the sensor should turn lights off in 12 seconds. Reset the time delay to the desired value.
  - If the lights do not turn off, have a person qualified to check high voltage connections verify that the sensor and lighting are wired correctly (see Wiring and Installation, page 5 & 6).**CAUTION:** Make sure power is turned off at the circuit breaker before checking wiring.
  - If the sensor is wired correctly, call our Technical Support number.

### Lights turn on when there is sufficient daylight:

1. Decrease the light level setting, as desired (counterclockwise toward the moon ☾ icon) (see Dial Adjustments, page 7 & 8).

### Lights do not turn on:

1. If there is a controlling switch installed, make sure that it is turned on.
2. If the lights do not turn on when lights are needed—increase the light level setting, as desired (clockwise toward the sun ☀ icon) (see Dial Adjustments, page 7 & 8).
3. Have a person qualified to check high voltage connections verify that the sensor and lighting are wired correctly (see Wiring and Installation, page 5 & 6).**CAUTION:** Make sure power is turned off at the circuit breaker before checking wiring.
  - If the sensor is wired correctly, call our Technical Support number.

## ORDERING INFORMATION

Catalog #	Description
EW-100-120	120VAC, 60Hz, 180° Outdoor/Indoor PIR Motion Sensor with Isolated Relay, includes cover plate
EW-105-120	120VAC, 60Hz, 180° Outdoor/Indoor PIR Motion Sensor, includes cover plate
EW-105-120	120VAC, 60Hz, 180° Outdoor PIR Motion Sensor, includes two lamp holders and cover plate
EW-200-120	120VAC, 60Hz, 270° Outdoor/Indoor PIR Motion Sensor with Isolated Relay, includes cover plate
EW-205-120	120VAC, 60Hz, 270° Outdoor/Indoor PIR Motion Sensor, includes cover plate
EW-205-120	120VAC, 60Hz, 270° Outdoor PIR Motion Sensor, includes two lamp holders and cover plate
EW-100-277	277VAC, 60Hz, 180° Outdoor/Indoor PIR Motion Sensor with Isolated Relay, includes cover plate
EW-105-277	277VAC, 60Hz, 180° Outdoor/Indoor PIR Motion Sensor, includes cover plate
EW-200-277	277VAC, 60Hz, 270° Outdoor/Indoor PIR Motion Sensor with Isolated Relay, includes cover plate
EW-205-277	277VAC, 60Hz, 270° Outdoor/Indoor PIR Motion Sensor, includes cover plate

When ordering, add (-W) for Arctic White or (-G) for Architectural Gray to catalog numbers.

## THIRD-PARTY ORDERING INFORMATION

Additional color-matched lamp holder accessories are available through your local distributor, or for further assistance call CANLET at 1-888-461-5307.

Outdoor incandescent lamp holders
Shrouds for PAR 20 & PAR 38 lamps
Round outdoor junction boxes & cover plates

## WARRANTY INFORMATION

The Watt Stopper, Inc. 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 The Watt Stopper, Inc. 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.