

## OVERVIEW

The WSX family of wall switch occupancy sensors provides simple and cost effective solutions for commercial and residential lighting control applications. All WSX family sensors have a stylish low profile appearance, soft-click buttons, and provide small motion detection up to 20 ft (6.10 m), making them perfect for private offices, private rest rooms, closets, copy rooms, or any other small enclosed space. Additionally, all WSX family sensors have a patent-pending wiring method that enables them to function either with or without a neutral connection. WSX units come pre-configured for wiring without a neutral, however if connection to neutral is required by code, contractors can convert the unit in seconds.

## SPECIFICATIONS

Size:	2.74" H x 1.68" W x 1.63" D (6.96 cm x 4.27 cm x 4.14 cm) (not including ground strap)
Weight:	5 oz
Mounting:	Single Gang Switch Box
Mounting Height:	30-48 in (76.2-121.9 cm)
Maximum Load/Pole:	(Relay) 800 W @ 120VAC, 1200 W @ 277VAC, 1500 W @ 347VAC
Minimum Load:	None
Motor Load:	1/4 HP
Max Sink Current:	50 mA
0-10V Dim Min Output:	<0.3 V
Frequency:	50/60 Hz (timers are 1.2x for 50Hz)
Temperature Rating:	0°C-60°C

ROHS Compliant

## Warranty

5-year limited warranty. Complete warranty terms located at:

[www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)

**Note:** Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

**AcuityControls™**

*Sensor Switch™*

## WSX D Dimming Occupancy Wall Switch



## ORDERING INFORMATION

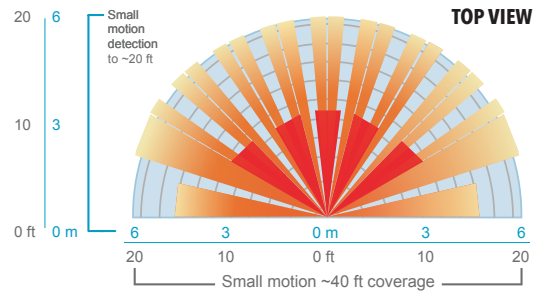
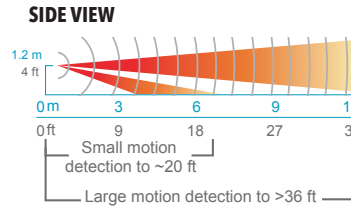
WSX D				Example: WSX PDTD 347 WH 8H				
Series	Detection Mode		eldoLED		Dimming		Operating Mode	
WSX Wall Switch Occupancy Sensor	[blank] Passive Infrared (PIR) PDT Dual Technology		[blank] None EZ <sup>1</sup> eldoLED Driver Compatibility		D Dimming		[blank] Automatic On SA Manual On VA Vacancy	
Voltage	Color <sup>3</sup>			Max Dim Level <sup>5</sup>		Min Dim Level <sup>5</sup>		
[blank] 120/277 VAC 347 <sup>2</sup> 347 VAC	WH White IV Ivory GY Gray	AL Almond BK Black RD <sup>4</sup> Red		[blank] 10 VDC 9H 9 VDC 8H 8 VDC 7H 7 VDC		[blank] 0 VDC 1V 1 VDC 2V 2 VDC 3V 3 VDC	4V 4 VDC 5V 5 VDC 6V 6 VDC	

### NOTES:

1. Max Dim Level default set to 9.1VDC. Min Dim Level default set to 1.5VDC
2. Wall plated included for white or ivory only for 347 VAC units
3. Matching wall plate provided for 120/277 VAC units
4. Special order
5. For setting other than default, minimum order quantity of 30 units

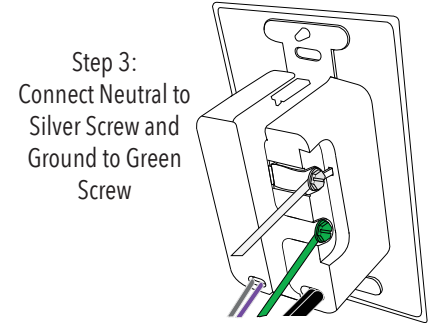
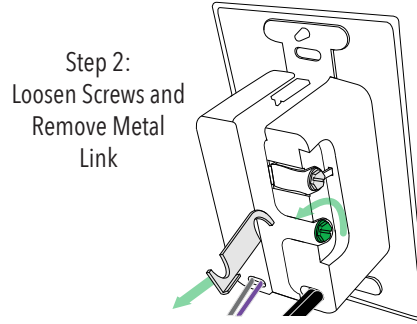
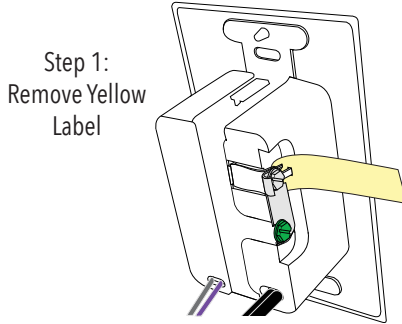
## COVERAGE PATTERNS

- Small motion (e.g. hand movements) detection up to 20 ft (6.10 m), ~625 ft<sup>2</sup>
- Large motion (e.g. walking) detection greater than 36 ft (10.97 m), ~2025 ft<sup>2</sup>
- Wall-to-wall PIR coverage
- Units with -PDT (Passive Dual Technology) option (also called Microphonics) provide overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on.
- Tested to NEMA WD 7-2011

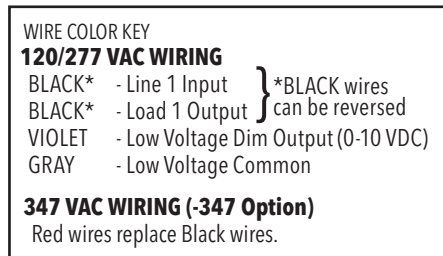
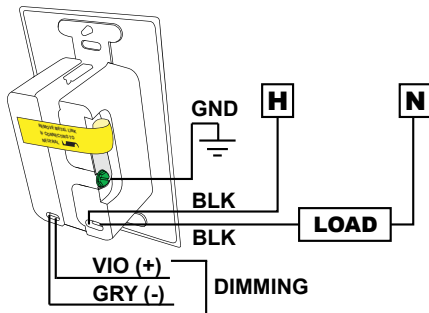


## CONVERSION FROM GROUND ONLY (NO NEUTRAL) TO NEUTRAL WIRING

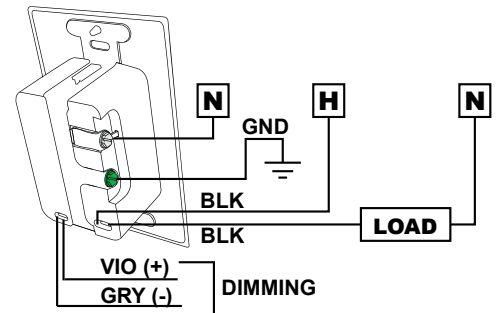
This product is pre-configured for wiring without a neutral; however, if connection to neutral is required by code, the unit easily converts in seconds.



### WIRING TO GROUND (NO NEUTRAL)



### WIRING TO NEUTRAL

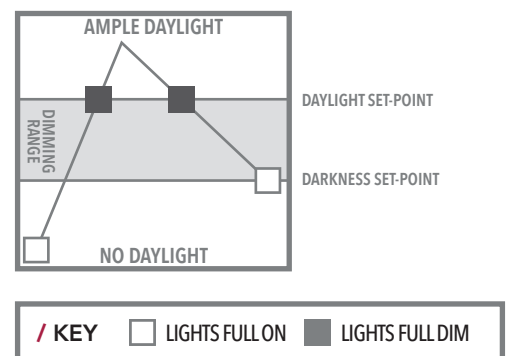


NOTES:

- 1.) Per NEC requirements, the 0-10V violet and gray wires must be installed as Class One.
- 2.) The 0-10V control wires must not exceed 250 ft (76 m) in length and must be sized at no less than 20AWG.

## Adaptive Daylight Harvesting (ADH)

With Sensor Switch's Adaptive Daylight Harvesting (ADH), automatic dimming has never been more reliable - even in a wall switch. It works by establishing two state change set-points; daylight and darkness. The light level in the space will then be automatically maintained by **intelligently controlling** the dim level of the electric light source. Set-points can be established using the "Set Now" option or programmed using desired light levels as measured in foot candles (fc).



## OPERATIONAL SETTINGS

### 2 = Occupancy Time Delay

The length of time an occupancy sensor will keep the lights on after it last detects occupancy.

1 - Test Mode**	5 - 7.5 min	9 - 17.5 min	13 - 27.5 min
2 - 30 sec	6 - 10.0 min*	10 - 20.0 min	14 - 30.0 min
3 - 2.5 min	7 - 12.5 min	11 - 22.5 min	
4 - 5.0 min	8 - 15.0 min	12 - 25.0 min	

\*\*Test mode sets Occupancy Time Delay to 30 seconds, and increases photocell transition rate in addition to disabling the microphone on units with Dual Technology.

### 3 = On Mode

#### Automatic On<sup>1</sup>

Sensor automatically turns the lights on when it detects occupancy.

#### Manual On

Sensor requires pressing the button to turn the lights on.

#### Reduced Turn-On

Sensor is set to initially only detect large motions, effectively ignoring any reflected Passive Infrared (PIR) signals. Occupants will still be detected immediately when they enter the room as their PIR signal is large. Once lights are on, the sensor returns to maximum sensitivity.

- |                   |                     |
|-------------------|---------------------|
| 1 - Automatic On* | 3 - Reduced Turn-On |
| 2 - Manual On     |                     |

### 4 = Switch Modes

#### Switch Enable (Override Off)<sup>1</sup>

Button will turn lights off and keep them off until pressed again. The lights will remain off until the button is pressed again, restoring the sensor to Automatic On mode.

#### Switch Disable

User is prevented from turning off the lights via the push-button.

#### Predictive Mode

Pressing the push-button switch overrides the lights off and temporarily disables the occupancy detection. After 10 seconds, the occupancy detection reactivates and monitors for an additional 30 seconds. If no occupancy is detected during this period, the sensor will revert to Automatic On operation. If occupancy is detected, the sensor will remain in Override Off mode and requires the switch to be pressed again in order to restore the sensor to Automatic On.

#### Predictive Mode with Expiration

Pressing the push-button switch overrides the lights off and temporarily disables the occupancy detection. After 10 seconds, the occupancy detection reactivates and monitors for an additional 30 seconds. If no occupancy is detected during this period, the sensor will revert to Automatic On operation.

- |                    |                                      |
|--------------------|--------------------------------------|
| 1 - Switch Enable  | 3 - Predictive Mode                  |
| 2 - Switch Disable | 4 - Predictive Mode with Expiration* |

### 5 = Darkness Set-Point/ Inhibit Set-Point

The ambient light level at which the sensor sets the lights to the High Trim setting.

1 - Set Now**	5 - 8 fc	9 - 48 fc	13 - 128 fc
2 - 0.1 fc	6 - 16 fc	10 - 64 fc	14 - 192 fc
3 - 1 fc	7 - 24 fc*	11 - 80 fc	15 - 256 fc
4 - 4 fc	8 - 32 fc	12 - 96 fc	

\*\*Set Now will automatically select the Darkness Set-Point based on the current conditions in the room. Lights will go to full bright and sensor will rapid flash for 15 seconds allowing occupant to move out of direct view of sensor. Once the set-point selection is completed, the sensor will double-blink in confirmation.

### 6 = Daylight Set-Point

The ambient light level at which the sensor sets the lights to the Low Trim setting.

1 - Set Now**	5 - 8 fc	9 - 48 fc	13 - 128 fc
2 - 0.1 fc	6 - 16 fc	10 - 64 fc*	14 - 192 fc
3 - 1 fc	7 - 24 fc	11 - 80 fc	15 - 256 fc
4 - 4 fc	8 - 32 fc	12 - 96 fc	

\*\*Set Now will automatically select the Daylight Set-Point based on the current conditions in the room. Lights will go to full dim and sensor will rapid flash for 15 seconds allowing occupant to move out of direct view of sensor. Once the set-point selection is completed, the sensor will double-blink in confirmation.

### 7 = Photocell Mode

#### Inhibit Only

Prevents lights from automatically coming on when light level is above the Inhibit Set-Point.

#### Adaptive Daylight Harvesting

Dims lights from high trim to low trim setting according to Darkness and Daylight set-points.

- |                  |                                  |
|------------------|----------------------------------|
| 1 - Disabled*    | 3 - Adaptive Daylight Harvesting |
| 2 - Inhibit Only |                                  |

### 8 = Dim to Off Occupancy Time Delay

After the Occupancy Time Delay (Function 2) has expired, this setting specifies the amount of time lights are held at Low Trim (Function 16) before turning off.

- |             |              |                               |
|-------------|--------------|-------------------------------|
| 1 - 0 sec*  | 5 - 7.5 min  | 9 - 17.5 min                  |
| 2 - 30 sec  | 6 - 10 min   | 10 - 20 min                   |
| 3 - 2.5 min | 7 - 12.5 min | 11 - Stays at dim (never off) |
| 4 - 5 min   | 8 - 15 min   |                               |

### 9 = Restore Defaults

Returns all functions to original settings.

- |                       |  |
|-----------------------|--|
| 1 - Maintain Current* |  |
| 2 - Restore Defaults  |  |

### 10 = Minimum On Time

Required initial time for lamps to be on after each switch on, regardless of occupancy status. Once met, lights resume following occupancy time delay.

- |                       |            |
|-----------------------|------------|
| 1 - 0 min (disabled)* | 4 - 45 min |
| 2 - 15 min            | 5 - 60 min |
| 3 - 30 min            |            |

### 11 = LED Operation

Indicates behavior of device's LED.

- |                           |  |
|---------------------------|--|
| 1 - Occupancy Indication* |  |
| 2 - Disabled              |  |

### 12 = Dual Technology (Microphonics™)

The secondary method of occupancy detection that allows the sensor to hear occupants.

- |             |                             |
|-------------|-----------------------------|
| 1 - Normal* | 4 - Low                     |
| 2 - Off     | 5 - Phase Off (15-10-5 min) |
| 3 - Medium  |                             |

### 13 = Microphone Grace Period

Time period after lights are automatically turned off that they can be voice reactivated.

- |             |            |
|-------------|------------|
| 1 - 0 sec   | 5 - 40 sec |
| 2 - 10 sec* | 6 - 50 sec |
| 3 - 20 sec  | 7 - 60 sec |
| 4 - 30 sec  |            |

### 14 = Manual On Grace Period

Time period after lights automatically turn off that they can be reactivated by motion. Applicable only when sensor is in Manual On (Semi Auto) mode.

- |           |             |
|-----------|-------------|
| 1 - 0 sec | 3 - 15 sec* |
|-----------|-------------|

### 15 = Dimming Range Max (High Trim)

The maximum output level of the sensor.

- |             |           |                |                         |
|-------------|-----------|----------------|-------------------------|
| 1 - 0 VDC   | 5 - 3 VDC | 9 - 7 VDC      | 13 - 10 VDC*            |
| 2 - 1 VDC   | 6 - 4 VDC | 10 - 8 VDC     |                         |
| 3 - 1.5 VDC | 7 - 5 VDC | 11 - 9 VDC     |                         |
| 4 - 2 VDC   | 8 - 6 VDC | 12 - 9.1 VDC** | **Default for EZ option |

### 16 = Dimming Range Min (Low Trim)

The minimum output level of the sensor.

- |               |           |              |                         |
|---------------|-----------|--------------|-------------------------|
| 1 - 0 VDC     | 5 - 3 VDC | 9 - 7 VDC    | 13 - 10 VDC             |
| 2 - 1 VDC*    | 6 - 4 VDC | 10 - 8 VDC   |                         |
| 3 - 1.5 VDC** | 7 - 5 VDC | 11 - 9 VDC   |                         |
| 4 - 2 VDC     | 8 - 6 VDC | 12 - 9.1 VDC | **Default for EZ option |

### 17 = Predictive Exit Time

Time period after manually switching lights off for occupant to leave the space. Applicable only when sensor is in Predictive Off mode.

- |           |             |            |
|-----------|-------------|------------|
| 1 - 5 sec | 4 - 8 sec   | 7 - 15 sec |
| 2 - 6 sec | 5 - 9 sec   | 8 - 20 sec |
| 3 - 7 sec | 6 - 10 sec* | 9 - 30 sec |

### 18 = Predictive Grace Time

Time period after Predictive Exit Time that sensor rescans the room for remaining occupants. Applicable only when sensor is in Predictive Off mode.

- |            |             |            |
|------------|-------------|------------|
| 1 - 0 sec  | 4 - 20 sec  | 7 - 50 sec |
| 2 - 5 sec  | 5 - 30 sec* | 8 - 60 sec |
| 3 - 10 sec | 6 - 40 sec  |            |

### 19 = Fade On Rate

Time required for light to reach preset level.

- |               |            |
|---------------|------------|
| 1 - 0.75 sec* | 3 - 5 sec  |
| 2 - 2.5 sec   | 4 - 15 sec |

### 20 = Fade Off Rate

Time required for light to turn off.

- |              |            |
|--------------|------------|
| 1 - 0.75 sec | 3 - 5 sec  |
| 2 - 2.5 sec* | 4 - 15 sec |

### 21 = Start Level

Level of light output when occupancy is initially detected. Not applicable in Automatic Dimming Control (ADH) mode.

- |         |         |         |            |
|---------|---------|---------|------------|
| 1 - 10% | 4 - 40% | 7 - 70% | 10 - 100%* |
| 2 - 20% | 5 - 50% | 8 - 80% |            |
| 3 - 30% | 6 - 60% | 9 - 90% |            |

### \* Default Setting

1. Not Applicable with Vacancy (VA) Option

# PROGRAMMING INSTRUCTIONS

Operational settings can be changed via the push-button sequence outlined below (note the example used is for changing occupancy time delay).

