



# LOW VOLTAGE DIMMER (0-10V) & SWITCH

MOMENTARY OPERATION



**SENSORWORX®**

## OVERVIEW

The **SENSORWORX** low voltage dimmer & switch provide attractive companion wall stations for a low voltage sensor system. Many spaces now require by code (e.g., ASHRAE 90.1, IECC, Title 24) manual on, partial-on, or full range dimming user operation in addition to an occupancy sensor providing automatic off control. The simplest way of achieving this is by adding a low voltage wall station that interfaces with the power pack controlling the rooms lighting. Adding a switch to a low voltage sensor system also enables users to override a space's lighting off if necessary. Functioning as a momentary switch, the one-button wall station is intuitive to use and provides pleasant tactile feedback. Visually, the unit matches the **SENSORWORX** line of wall switch sensors, ensuring a consistent style across multiple spaces on a project. Additionally, the single button switch has an integrated locator LED with multiple color and intensity settings. The three-button dimming unit has an integrated 0-10V output, intuitive raise/lower buttons, and a five LED level indicator.

## BASIC OPERATION

The **SENSORWORX** one-button low voltage wall station functions as a momentary switch with a pulse length of 250 msec. Typically, it is utilized along with any **SENSORWORX** power pack with the auxiliary switch input option (e.g. model SWX-900-AX). Using a four-conductor low voltage wire (typically 18 AWG), low voltage power, common, and relay status is wired from the power pack to the switch. The switch output is then wired back to the power pack's auxiliary switch input. For applications requiring Vacancy (e.g., Manual On) operation, the switch signals the power pack to turn on lighting after the unit's button is pressed. To achieve multi-way switching, two or more units can be wired in parallel.

On the three-button dimming units, an additional 0-10V output wire is provided to connect directly to fixtures. By default, the lights will always come on to the last dim level, however the unit can be programmed to turn-on to a preset level in order to accommodate partial-on applications.

## APPLICATIONS

A wall station can be added to any space where a low voltage control system is used. Energy codes require either Manual On or Partial On to 50% for many spaces such as:

- Private Office
- Conference Room
- Storage Room
- Open Office
- Classroom
- Break Room



## FEATURES

- **Decorator Style Fits Common Wall Plates (not included)**
- **Less than 1" Depth in Wall**
- **Multiway Switching Capable (e.g., 3-way, 4-way)**
- **Intuitive Operation**
- **Five Segment White LED Indication of Dim Level**
- **Blue Locator LED when Lights are Off**
- **Matches Styling of SWX Wall Switch Sensor**

## SPECIFICATIONS

### ELECTRICAL

#### OPERATING VOLTAGE

5-24 VDC

#### CURRENT DRAW

< 6mA (SWX-801) @ default settings  
< 8mA (SWX-801) @ increased LED brightness setting  
< 12mA (SWX-803)

#### DIMMING LOAD (Model # SWX-803 only)

50mA, (0-10 VDC ballasts or drivers compliant with IEC 60929 Annex E.2)

#### MOMENTARY PULSE LENGTH

250 msec

### ENVIRONMENTAL

#### OPERATING TEMP

32°F to 122°F (0°C to 50°C) - Standard  
-40° F/C (with -HE Option)

#### RELATIVE HUMIDITY

0-95% Non-Condensing, Indoor Use Only

### PHYSICAL

#### SIZE

2.74"H x 1.68"W x 1.39"D  
(6.96 x 4.27 x 3.53 cm)  
Fits Decorator Switch Plate Opening

#### DEPTH IN WALL

0.94" (23.88 mm)

#### WEIGHT

2.5 oz

#### MOUNTING

Single Gang Switch Box

# OPERATION SETTINGS

The one-button switch has configurable settings for its LED operation. The three-button switch also has several dimming parameters that can be adjusted to accommodate different applications or user preferences.

## LED FUNCTIONALITY

- Single button switch (SWX-801) has an LED that is white when lights are on and is a blue locator LED when lights are off.
- Dimming switch (SWX-803) has five white LEDs that indicate the current dim level.
- Locator LED can also be programmed to be white and/or brighter.
- Locator LED can also be disabled.

## HIGH-END & LOW-END TRIM

- High-end trim enables energy saving task tuning by setting a maximum level (100%-50%) that which users are allowed to raise lights.
- Low-end trim enables minimum user level of dimmer to be raised.

## TURN ON/TURN OFF DIMMING OPERATION

- Sensor turns on lighting to last user level or can be programmed to a preset level (100%, 50%, or custom).
- Sensor can turn off lighting by switching off power (by opening relay) or dimming below electronic off level.
- Lighting can also be held at low-end trim level during unoccupied/off state (High/Low).

## FADE ON/FADE OFF TIMES

- Adjustable time for level to ramp up to turn-on level (0.75, 1.5, 3, 5, or 15 sec).
- Adjustable time interval for level to ramp down to off (0.75, 1.5, 3, 5, or 15 sec).

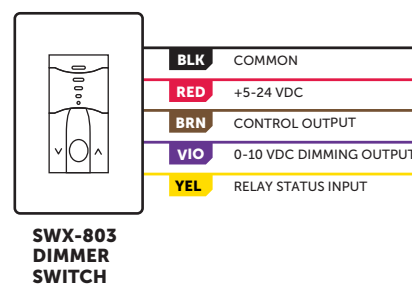
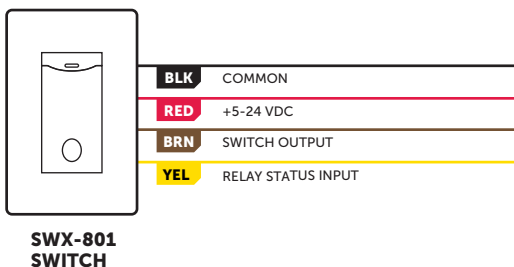
## DIMMING CURVE

- The dimming curve defines how the dimmer adjust its voltage output in response to button commands.
- Linear (default), Square Log

# WIRING

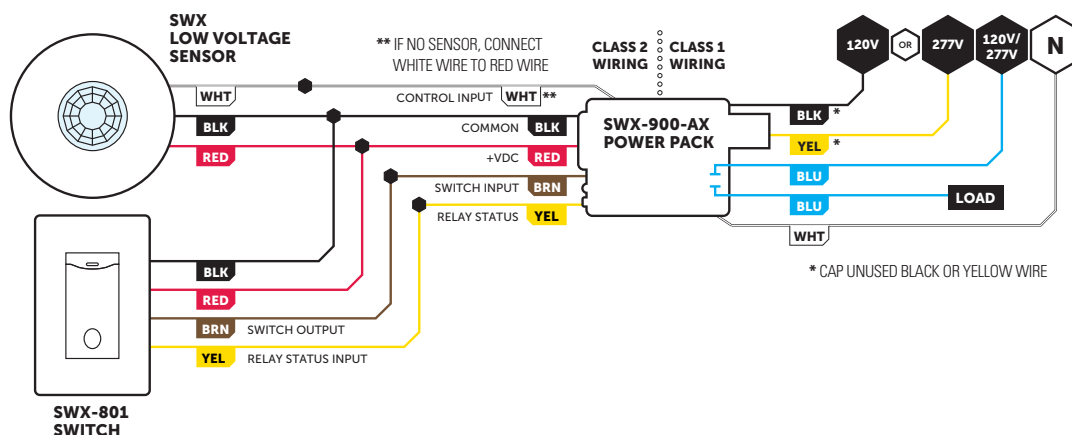
## STANDARD WIRING

The SWX-801 switch and SWX-803 dimmer are intended to be used with **SENSORWORX** model SWX-900-AX series or SWX-950-AX series power packs. Usage with 3rd party power packs, panels, or load controllers may result in limited or altered functionality. See notes below.



## MANUAL ON APPLICATION (VACANCY)

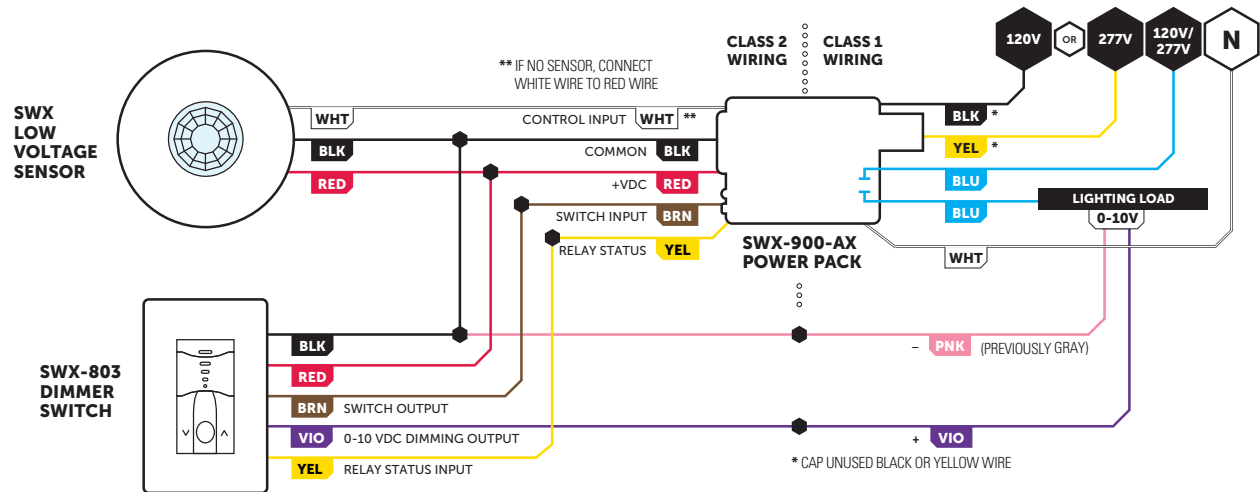
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- Additional SWX-801 switches can be wired in parallel to achieve 3-way (or more) operation.
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- If wiring a SWX-801 to a 3rd party (i.e. non-**SENSORWORX**) power pack, panel, or load controller without a relay status output, the LED will no longer toggle between white and blue when lights are switched. Tying the yellow wire to the red wire (+VDC) will force the LED to stay white. Leaving it disconnected will force the LED to stay blue.



## WIRING CONT.

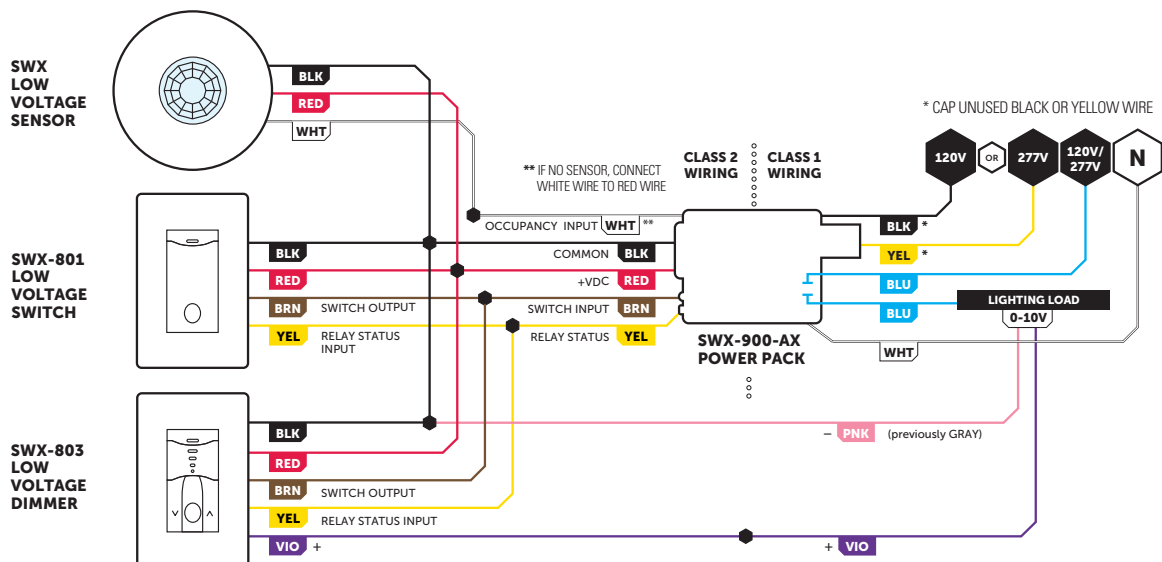
### MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

- Lights turn on to last selected level (default) or to preset level (e.g., partial on).
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy or partial-on operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- If wiring a SWX-803 to a 3rd party (i.e. non-**SENSORWORX**) power pack, panel, or load controller without a relay status output, tying the yellow wire to the red wire (+VDC) is required for operation. Additionally, the TURN OFF SCHEME is required to be set to Setting 5 (see full instruction sheets).



### 3-WAY, MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

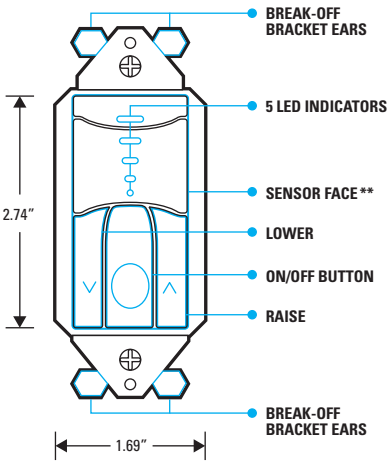
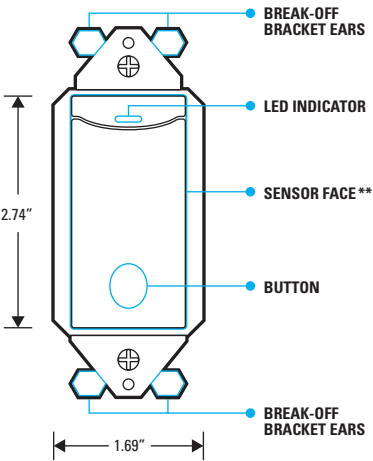
- Lights turn on to last selected level (default) or to preset level (e.g., partial on).
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy or partial-on operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- Only one SWX-803 dimmer can be included in 3-way configuration, otherwise dimmer with lowest current dim setting will always be reflected in lights (i.e. low-man wins)
- If wiring a SWX-803 to a 3rd party (i.e. non-**SENSORWORX**) power pack, panel, or load controller without a relay status output, tying the yellow wire to the red wire (+VDC) is required for operation. Additionally, the TURN OFF SCHEME is required to be set to Setting 5 (see full instruction sheets).



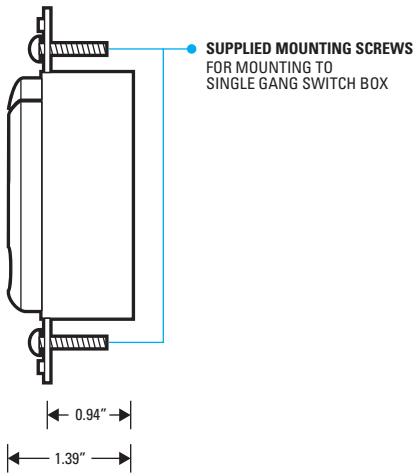
# INSTALLATION

Designed to mount in 1-gang wall box with 3.28" hole spacing. Units can also share multiple gang wall boxes with other devices.

## FRONT



## SIDE



\*\* SENSOR FACE IS FIELD REMOVABLE IN ORDER TO CHANGE COLORS. CONTACT FACTORY FOR ADDITIONAL FACES

# ORDERING INFO

SAMPLE MODEL # SWX-801-WH

|         |   | COLOR *           | ADDITIONAL OPTIONS             |
|---------|---|-------------------|--------------------------------|
| SWX-801 | Low Voltage Decorator Switch - Momentary On/Off | White - WH        | High Humidity Environment - HE |
| SWX-803 | Low Voltage Decorator Switch & Dimmer (0-10V)   | Ivory - IV        | 10 Pack** - J10                |
|         |   | Light Almond - LA |                                |
|         |   | Gray - GY         |                                |
|         |   | Black - BK        |                                |
|         |   | Red - RD          |                                |

\*\*WALLPLATE NOT INCLUDED  
\*\* THE CONTRACTOR PACK OPTION (-J10) REDUCES JOB SITE WASTE AND INVENTORY TIME

| ACCESSORY      | COLOR                               |
|----------------|-------------------------------------|
| SWX-199        | Single Gang Wall Plate              |
| SWX-899-FACE   | Color Change Kit for SWX-801 Switch |
| SWX-899-D-FACE | Color Change Kit for SWX-803 Dimmer |
|                | White - WH                          |
|                | Ivory - IV                          |
|                | Light Almond - LA                   |
|                | Gray - GY                           |
|                | Black - BK                          |
|                | Red - RD                            |

