LOW VOLTAGE 4-BUTTON DIMMER (0-10V)
MOMENTARY OPERATION

SENSORWORX®

OVERVIEW

The **SENSOR**WORX 4-button wall station provides an attractive and intuitive 0-10V dimming control solution 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 dimmer that interfaces with the power pack controlling the room's lighting. Adding a switch to a low voltage sensor system also enables users to override a space's lighting off if necessary. Visually, the unit matches the **SENSOR**WORX line of wall switch sensors and wireless remote wall stations, ensuring a consistent style across multiple spaces on a project. Additionally, the unit's white LED indicator changes intensity as the dim level is adjusted and then changes to a blue location aid when lights are switched off.

BASIC OPERATION

The **SENSOR**WORX 4-button low voltage dimmer functions as a momentary switch with a pulse length of 250 msec. Typically, it is utilized along with any **SENSOR**WORX power pack with the auxiliary switch input option (e.g. model SWX-900-AX, SWX-950-AX). Low voltage wire (typically 18 AWG) is used to connect the unit to the low voltage power, common, and relay status outputs from the power pack. The unit also has a momentary switch output that is used to signal the power pack. 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. For applications configured for auto-on operation, the switch allows a user to override lights off regardless of occupancy. To achieve multi-way switching, adding a single button switch (model SWX-801) at each additional switch location is required. To facilitate dimming, the unit has a 0-10V output wire that is connected 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 low voltage dimmer can be added to any space where 0-10V lighting is present. Energy codes require either Manual On or Partial On to 50% for many spaces such as:

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

FEATURES

- **Less than 1" Depth in Wall**
- **Multiway Switching Capable (e.g., 3-way, 4-way)**
- **Intuitive 4-Button Operation (On/Off/Raise/Lower)**
- **Adjustable Dimming Turn on Levels**
- **Brightness of White Status LED Tracks Dimming Level**
- **Blue Locator LED when Lights are Off**
- **Matches Styling of other SWX Wall Devices**
- **Decorator Style Fits Common Wall Plates**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
5-24 VDC

CURRENT DRAW
< 12 mA

DIMMING LOAD
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

c(UL)US LISTED

MADE IN THE USA

TAA COMPLIANT

BAA COMPLIANT

BUILD AMERICA BUY AMERICA

RoHS COMPLIANT

LEAD FREE

TITLE 24 COMPLIANT
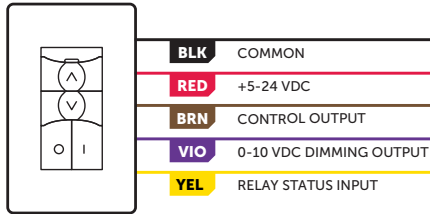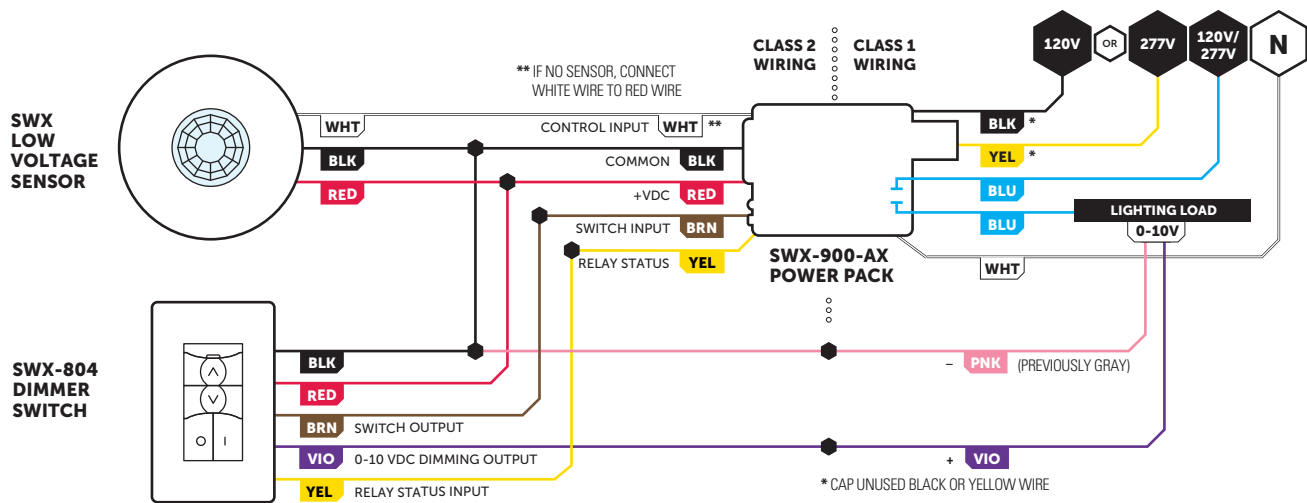
WIRING

STANDARD WIRING

The SWX-804 dimmer is intended to be used with **SENSOR**WORX 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.

BLK	COMMON
RED	+5-24 VDC
BRN	CONTROL OUTPUT
VIO	0-10 VDC DIMMING OUTPUT
YEL	RELAY STATUS INPUT

SWX-804 DIMMER SWITCH

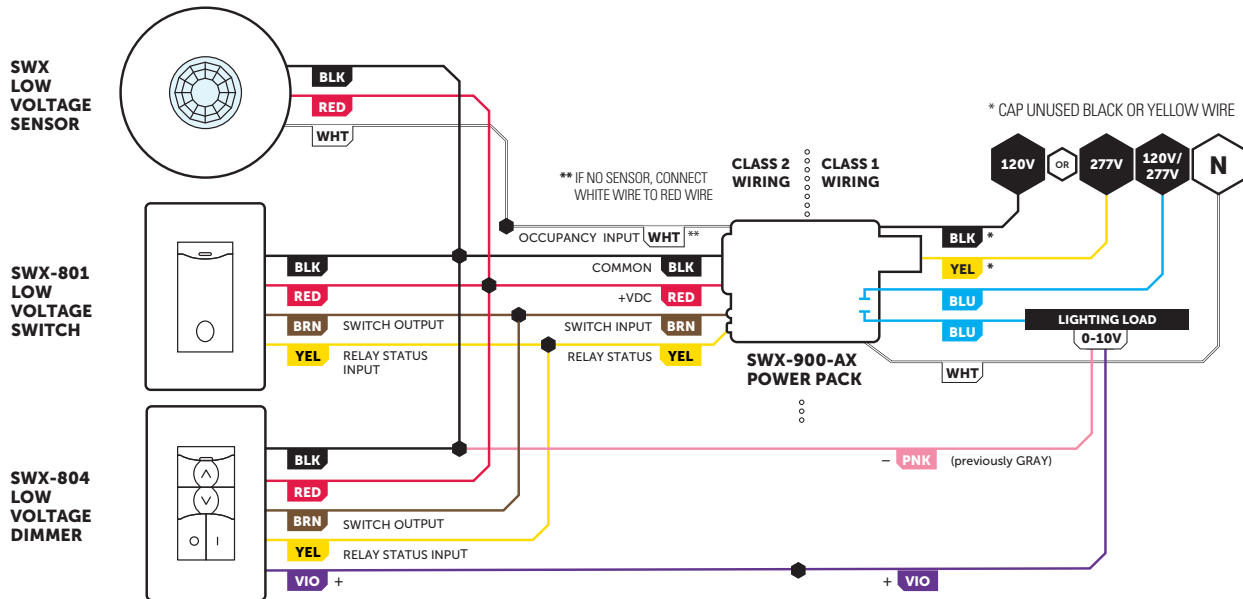## MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

- 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).
- **PLEASE NOTE:** A SWX-804 can be wired to a 3rd party (i.e. non-**SENSOR**WORX) power pack, panel, or load controller only if the yellow wire is connected to a low voltage relay status (i.e. pilot light) output. If the yellow wire is not connected at all (or is tied +VDC), pressing one of the On/Off buttons will toggle lights while the other will have no function.

SWX LOW VOLTAGE SENSOR

** IF NO SENSOR, CONNECT WHITE WIRE TO RED WIRE

WHT	CONTROL INPUT	**WHT**	**
BLK	COMMON	**BLK**	
RED	+VDC	**RED**	
	SWITCH INPUT	**BRN**	
	RELAY STATUS	**YEL**	

CLASS 2 WIRING | CLASS 1 WIRING

120V OR 277V 120V/277V N

SWX-900-AX POWER PACK

BLK	*
YEL	*
BLU	
BLU	

LIGHTING LOAD 0-10V

WHT

SWX-804 DIMMER SWITCH

BLK	
RED	
BRN	SWITCH OUTPUT
VIO	0-10 VDC DIMMING OUTPUT
YEL	RELAY STATUS INPUT

− **PNK** (PREVIOUSLY GRAY)

+ **VIO**

* CAP UNUSED BLACK OR YELLOW WIRE

WIRING _{CONT.}

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-804 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).

- <u>PLEASE NOTE:</u> A SWX-804 can be wired to a 3rd party (i.e. non-**SENSOR**WORX) power pack, panel, or load controller <u>only if</u> the yellow wire is connected to a low voltage relay status (i.e. pilot light) output. If the yellow wire is not connected at all (or is tied +VDC), pressing one of the On/Off buttons will toggle lights while the other will have no function.

OPERATION SETTINGS

This dimmer has several dimming parameters that can be adjusted to accommodate different applications or user preferences.

LED FUNCTIONALITY

- The unit has one white LED whose brightness is relative to the current dim level when lights are on (LED can be disabled).

- When lights are off, the LED changes color to blue as a location aid (can be disabled).

- There are two LED brightness settings for the blue location LED.

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.

DIMMING CURVE

- The dimming curve defines how the dimmer unit adjust its voltage output in response to button commands .

- Linear (default), Square Log

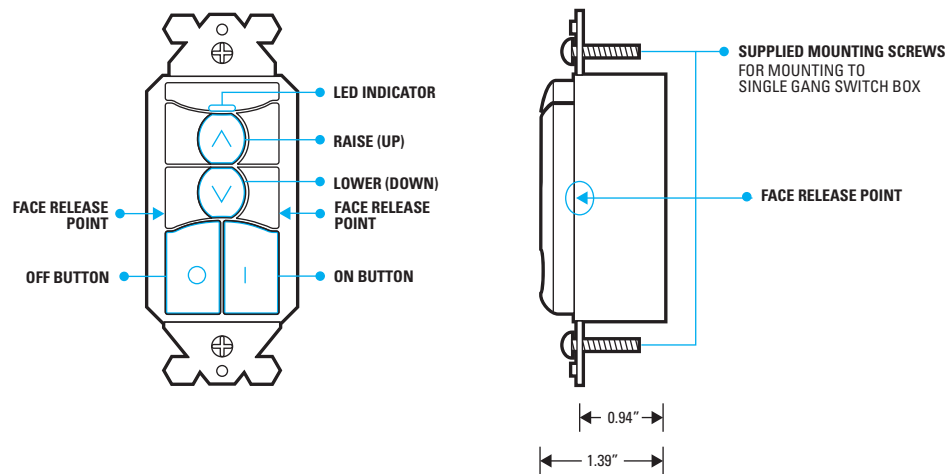## TURN ON/TURN OFF DIMMING OPERATION

- 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 signalling a connected power pack) or by dimming below a driver's electronic off level.

- Lighting can also be held at low-end trim level during unoccupied/off state (high/low operation).

- Alternative operation includes signalling connected power pack, but not altering dimming output upon off button press.

FADE ON/FADE OFF TIMES

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

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

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.
- Unit face is field removable in order to change colors. Contact factory for additional faces.

LED INDICATOR

RAISE (UP)

LOWER (DOWN)

FACE RELEASE POINT

FACE RELEASE POINT

OFF BUTTON

ON BUTTON

SUPPLIED MOUNTING SCREWS
FOR MOUNTING TO
SINGLE GANG SWITCH BOX

FACE RELEASE POINT

0.94"

1.39"

ORDERING INFO

SAMPLE MODEL # SWX-804-WH

		COLOR *		ADDITIONAL OPTIONS	
SWX-804	4-Button Low Voltage Switch & Dimmer (0-10V)	White	**- WH**	High Humidity Environment	**- HE**
		Ivory	**- IV**	10 Pack**	**-J10**
		Light Almond	**- LA**		
		Gray	**- GY**		
		Black	**- BK**		

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

ACCESSORY		COLOR	
SWX-199	Single Gang Wall Plate	White	**- WH**
SWX-894-D-FACE	Color Change Kit for SWX-804 Dimmer	Ivory	**- IV**
		Light Almond	**- LA**
		Gray	**- GY**
		Black	**- BK**