SENSORWORX®

LOW VOLTAGE DIMMER (0-10V) & SWITCH

INSTALLATION & OPERATION INSTRUCTIONS

CATALOG NUMBERS	DESCRIPTIONS
SWX-801-xx	LOW VOLTAGE MOMENTARY SWITCH
SWX-803-xx	LOW VOLTAGE 0-10V DIMMING SWITCH

* xx = color (WH, IV, LA, GY, RD, BK)

ADDITIONAL OPTIONS
- **HE:** High Humidity Environment

OVERVIEW

The **SENSOR**WORX 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 **SENSOR**WORX 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.

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

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

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

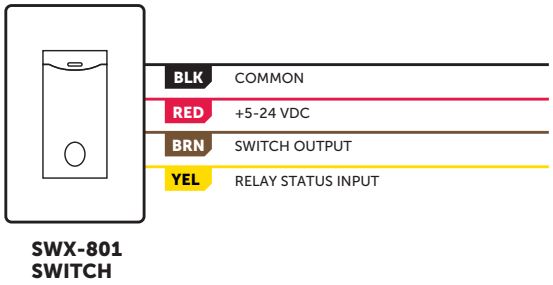
FEATURES

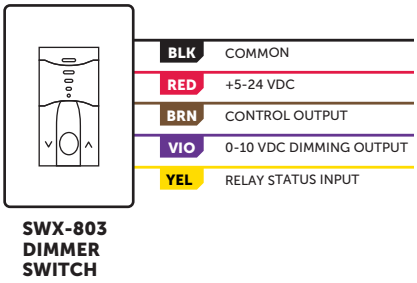
- **Decorator Style Fits Common Wall Plates (not included)**
- **Less than 1" Depth in Wall**
- **Multi-way Switching Capable (e.g., 3-way, 4-way)**
- **Intuitive Operation**
- **Matches Styling of SWX Wall Switch Sensor**
- **White Status LED when Lights are On**
- **Blue Locator LED when Lights are Off**
- **Modern Look and Intuitive Easy-Tap Button for On/Off, Raise, & Lower**
- **Five Segment White LED Indication of Dim Level**
- **Configurable Dimming Parameters (High/Low Trims, Turn on Levels, Fade Rates, and Curve Types)**
- **Settings are Adjustable Without Removing Cover Plate**

WIRING

STANDARD WIRING

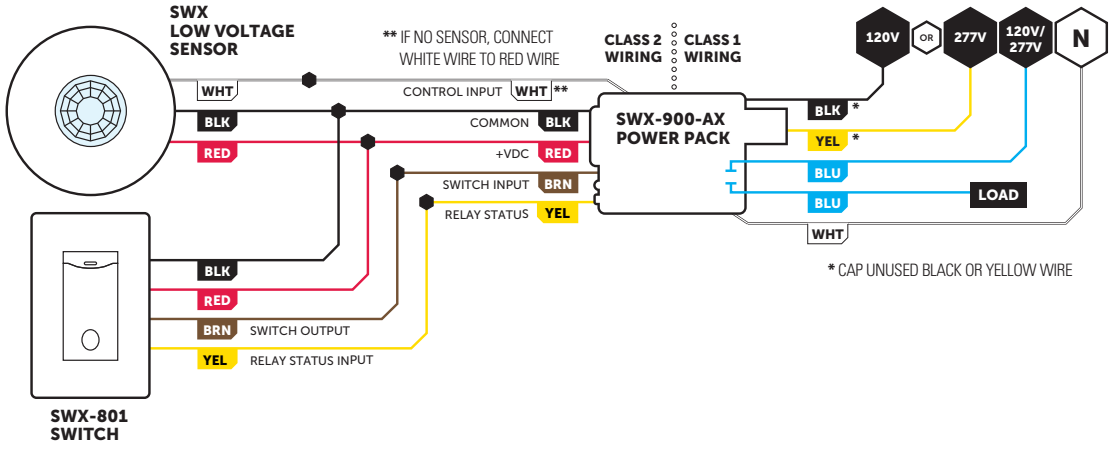
The SWX-801 switch and SWX-803 dimmer are intended to be used with **SENSOR**WORX model SWX-900-AX series or SWX-950-AX series power packs. Usage with 3rd party power packs, panels, or load controllers may result in limited or altered functionality. See notes below.





MANUAL ON APPLICATION (VACANCY)

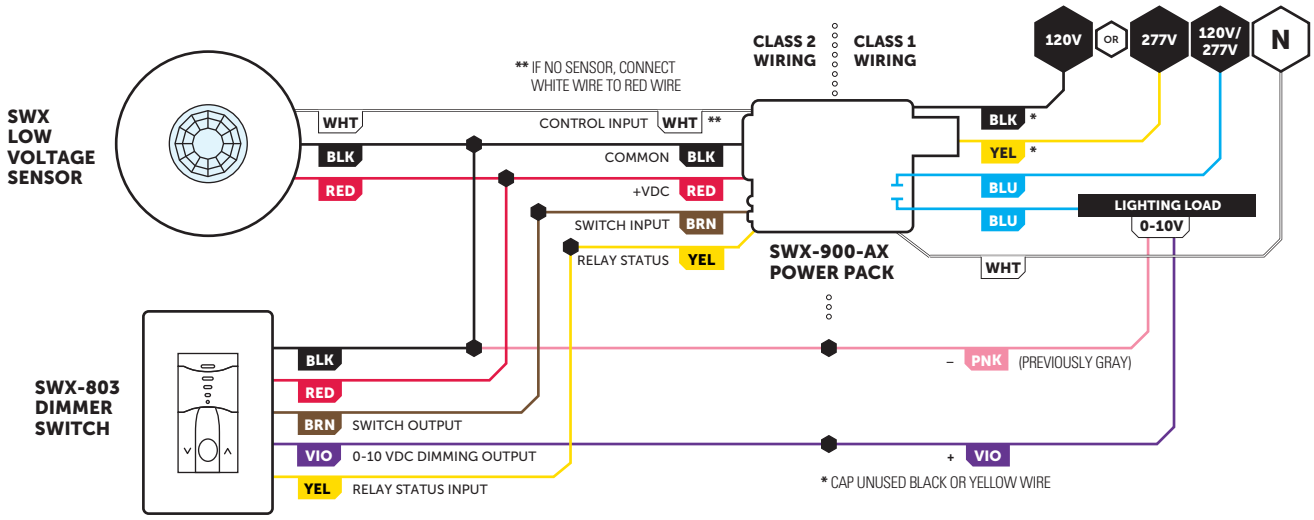
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- Additional SWX-801 switches can be wired in parallel to achieve 3-way (or more) operation.
- If wiring a SWX-801 to a 3rd party (i.e. non-**SENSOR**WORX) 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

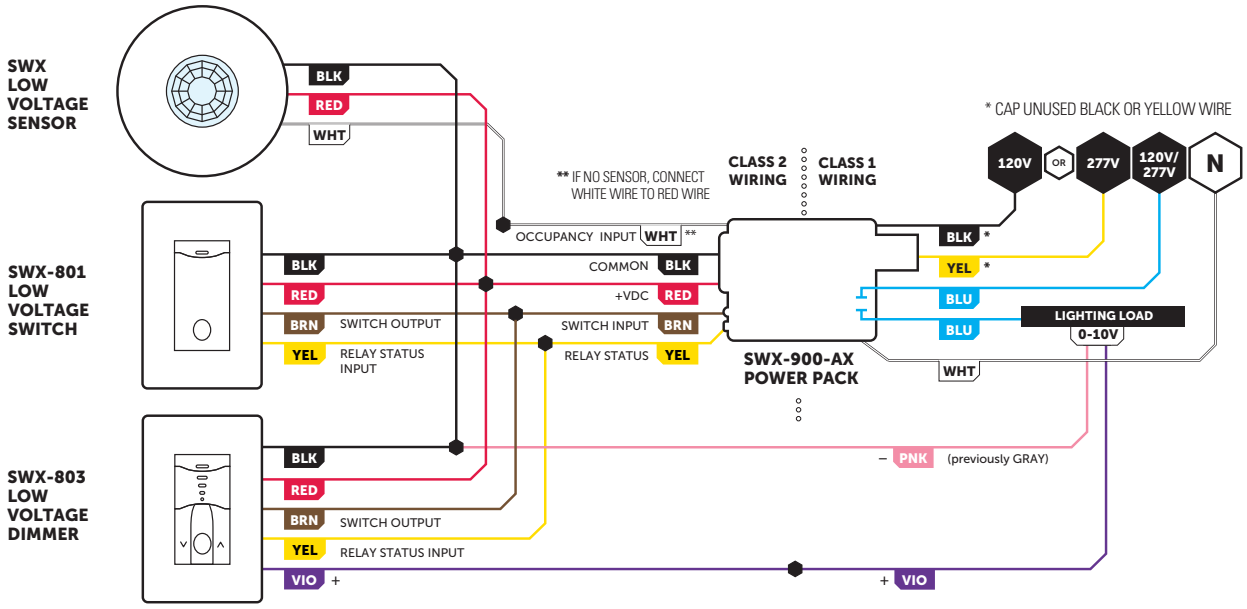
MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

- 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-**SENSOR**WORX) 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 configuration settings table).



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

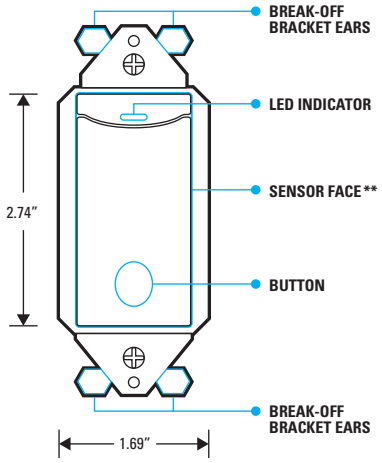
- Lights turn on to last selected level (default) or to preset level (e.g., partial on).
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy or partial-on operation, the SWX-900-AX's 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-**SENSOR**WORX) 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 configuration settings table).

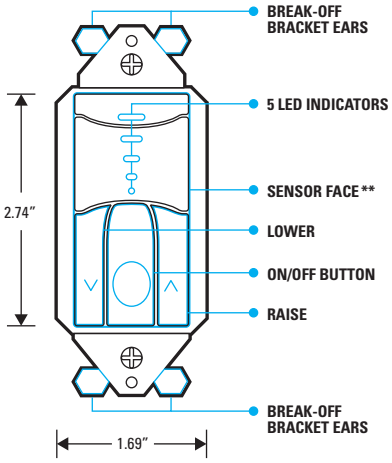


INSTALLATION

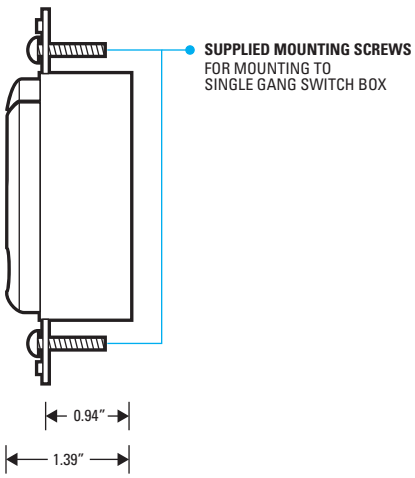
Designed to mount in 1-gang wall box with 3.28" hole spacing. Units can also share multiple gang wall boxes with other devices.

FRONT





SIDE



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

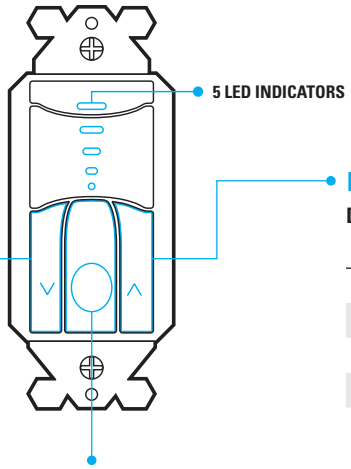
CONFIGURATION

CONFIGURATION PROGRAMMING

1. From the lists of Configuration Functions below, note the Button Position and number (#) of the Function to be changed. For example, HIGH TRIM setting is the Right Button, #3.
2. Enter programming mode by pressing and holding the CENTER button until the blue LED begins rapid flashing.
3. Press and release the applicable button for the chosen function. For example, press the RIGHT button 3 times for the HIGH TRIM setting.
4. The LED will flash back the setting number of the current value as it appears in each function's detailed table of values (see following pages). For example, the default HIGH TRIM is setting #2 (10V) for the RIGHT button.
5. Press and release the applicable button the number of times equal to the new setting #. For example, RIGHT button 4 times (for 9V).
6. The LED will flash back the new setting number as confirmation.
7. To save and exit programming mode, press and hold the function's applicable button again until the LED flashes rapidly. The LED will then blink white twice as confirmation of success.

NOTE IF THE LED DOUBLE FLASHES TWICE BLUE AT ANY POINT, REPEAT THE ABOVE PROCEDURE.

CONFIGURATION FUNCTION OVERVIEW



LEFT BUTTON

DIMMING

FUNCTION NAME	BUTTON POSITION	FUNCTION #
Turn Off Scheme	Left	2
Low Trim	Left	3
Fade Off Time	Left	4

RIGHT BUTTON

DIMMING

FUNCTION NAME	BUTTON POSITION	FUNCTION #
Turn On Dimming Level	Right	2
High Trim	Right	3
Fade On Time	Right	4
Dimming Curve Type	Right	5

CENTER BUTTON

FUNCTION NAME	BUTTON POSITION	FUNCTION #
LED	Center	7
Factory Reset	Center	8

CONFIGURATION SETTINGS CONT.

CENTER FUNCTION #7 - LED FUNCTION

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 be white and/or brighter.

SETTING #	DESCRIPTION	NOTES
2	White LED when lights on, blue locator LED when off, normal brightness	Default
3	Blue LED when lights on, white locator LED when off, normal brightness	Not a valid option for SWX-803
4	LEDs turn off shortly after state or dimming change (i.e. no persistant status or locator LED)	
5	White LED when lights on, blue locator LED when off, increased brightness	
6	Blue LED when lights on, white locator LED when off, increased brightness	Not a valid option for SWX-803

CENTER FUNCTION #8 - RESTORE FACTORY DEFAULTS

SETTING #	DESCRIPTION
3	Restore Factory Defaults

LEFT FUNCTION #2 - TURN OFF SCHEME

SETTING #	VALUES	NOTES
2	Unit fades dimming output to low trim and signals connected power pack to open.	Default
3	Unit fades dimming output down to 0 volts (i.e. below a connected driver's electronic off level). Connected power pack is not signaled.	
4	Unit fades dimming output down to low trim level. Connected power pack is not signaled.	
5	Unit signals connected power pack to open while leaving dimming output unchanged.	Required when connecting to 3rd party power pack.

RIGHT FUNCTION #2 - TURN ON DIMMING LEVEL

SETTING #	VALUES	NOTES
2	Fade on to 100% of High Trim	
3	Fade on to 50% of High Trim	
4	Fade on to last user level	Default
5	Fade on to current (custom) level	Saves unit's current dim level

LEFT BUTTON FUNCTION #3 - LOW TRIM

SETTING #	VALUES	NOTES
2	Saves current level as low trim	
3	0% (~0V)	Light output at each level depends on driver/ballast and luminaire. Voltage levels are different if Square Log Dimming Curve is selected.
4	10% (~1V) Default	
5	20% (~2V)	
6	30% (~3V)	
7	40% (~4V)	
8	50% (~5V)	

RIGHT BUTTON FUNCTION #3 - HIGH TRIM

SETTING #	VALUES	NOTES
2	Saves current level as high trim	
3	100% (~10V) Default	Light output at each level depends on driver/ballast and luminaire. Voltage levels are different if Square Log Dimming Curve is selected.
4	90% (~9V)	
5	80% (~8V)	
6	70% (~7V)	
7	60% (~6V)	
8	50% (~5V)	

LEFT FUNCTION #4 - FADE OFF TIME

SETTING #	VALUES	NOTES
2	0.75 Sec	
3	1.5 Sec	Default
4	3 Sec	
5	5 Sec	
6	15 Sec	

RIGHT FUNCTION #4 - FADE ON TIME

SETTING #	VALUES	NOTES
2	0.75 Sec	
3	1.5 Sec	Default
4	3 Sec	
5	5 Sec	
6	15 Sec	

RIGHT FUNCTION #5 - MANUAL DIMMING RESPONSE CURVE

SETTING #	VALUES	NOTES
2	Linear	Default
3	Unused	
4	Square Log	