



SENSORWORX®

# STAND-ALONE PHASE DIMMER & SWITCH

INSTALLATION & OPERATION INSTRUCTIONS

(Units w/ Date Code 220916 and later)

CATALOG NUMBERS	DESCRIPTIONS
SWX-864-ELV-xx	PHASE DIMMER & SWITCH - 120V - REVERSE PHASE (ELV) OR FORWARD PHASE

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

## OVERVIEW

The **SENSORWORX** phase dimmer provides manual dimming control of 120V lighting from a single location. With no minimum load requirements, this stand-alone dimmer is perfect for any lighting zone. Additionally, at less than one inch deep, the unit is significantly shallower than typical dimmers. This results in less crowded wall boxes and quicker installation. All **SENSORWORX** products are proudly made in the USA.

## FEATURES

### ELECTRICAL FEATURES

- Dims LED, CFL, ELV, & Incandescent Lighting Loads
- Selectable Reverse (default) and Forward Phase Dimming in Same Unit
- No Minimum Load Ratings - Relay Based Switching (i.e. non-Triac)
- Overload Protection Monitors & Protects Unit from Overheating

### PHYSICAL FEATURES

- Enclosure is 25-40% Shallower than Other Wall Dimmers (< 1" Depth into Wallbox)
- Modern Look and Individual Easy-Tap Buttons for On, Off, Raise, & Lower
- Matches Styling of other SWX Wall Devices
- Self-Grounding Mounting Strap
- Blue Locator LED when Lights are Off

### OPERATIONAL FEATURES

- White LED Indicator Changes Intensity as Dim Level is Adjusted
- Configurable Dimming Parameters including High/Low Trims, & Turn on Levels
- Programmable Dimming Curves
- Settings are Adjustable without Removing Cover Plate
- Unit Retains Level Setting after Power Outage

## SPECIFICATIONS

### ELECTRICAL

#### OPERATING VOLTAGE

120VAC, Single Phase, 50/60 Hz

#### MAX LOAD RATINGS

In Reverse Phase Mode (default)

375W LED / ELV

375W Incandescent/Halogen

In Forward Phase Mode (optional)

150W CFL / LED

Consult factory for MLV rating

**MIN LOAD RATINGS:** None

#### LOAD TYPES

Electronic Low Voltage

LED Driver/Lamps

CFL, Electronic/Magnetic Ballasts (Fluorescent)

Tungsten (Incandescent)

Halogen

MLV (consult factory)

#### ESD IMMUNITY

Tested to withstand electrostatic discharge without damage or memory loss.

#### SURGE IMMUNITY

Tested to withstand surge voltages without damage or loss of operation.

#### NON-VOLATILE MEMORY

Saves all settings even if power is disrupted.

### PHYSICAL

#### SIZE

2.74"H x 1.68"W x 1.39"D

(6.96 x 4.27 x 3.53 cm)

<1" Wallbox Mounting Depth

#### WEIGHT

4.5 oz

#### MOUNTING

Single Gang Switch Box

#### LED STATUS INDICATOR

Bi-color White & Blue

White LED Intensity

### ENVIRONMENTAL

#### OPERATING TEMP

32°F to 86°F (0°C to 30°C)

(for full load operation)

#### RELATIVE HUMIDITY

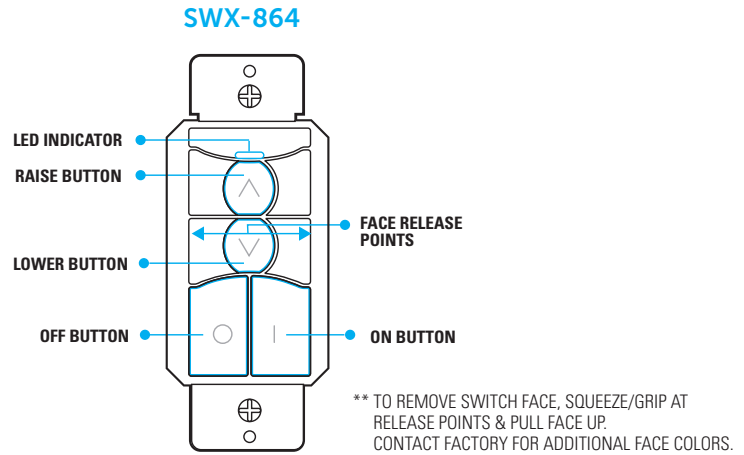
0-95% Non-Condensing

Indoor Use Only



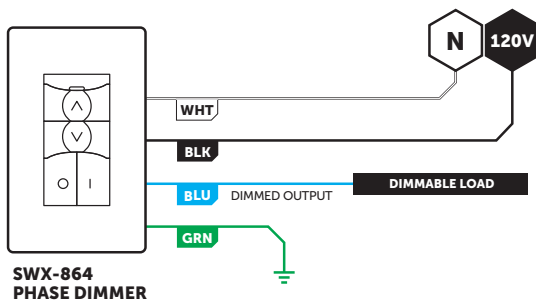
# INSTALLATION

- 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.



# WIRING

## DIMMING FROM A SINGLE LOCATION



## DIMMING FROM MULTIPLE LOCATIONS (e.g. 3-way)

This phase dimmer is not designed for installation or usage in multiway (e.g. 3-way) applications. For dimming in those applications, the **SENSORWORX** wireless phase dimmer (model series **SWX-874**) and a wireless companion dimmer (model series **SWX-854**) is required.

# DIMMING OPERATION NOTES

- Rapid dimming adjustments can be made by holding the UP or DOWN buttons.
- Small dimming adjustments are made by tapping the UP or DOWN buttons.
- The intensity of the white LED will change accordingly as dimming is adjusted.
- When the level reaches the high or low trim level the white LED will begin to blink.
- There are always 20 steps of dim level adjustment from high trim to low trim (or reverse). Rapid button presses may result in misses.
- For more responsive level adjustments when lighting is at the low end, it is recommended to use the logarithmic dimming curve.
- The logarithmic dimming curve should not be used with an LED driver that has a preprogrammed logarithmic dimming response.
- If unit reaches an elevated temperature due to overloading it will either drop to 40% dimming level or open the relay in order to reduce the temperature. If auto-dimming does not reduce the temperature within 5 minutes, the unit's relay will be opened. If unit is already at a dimmed state less than 40% when elevated temperature is reached, the unit will open its relay without further dimming first. The relay will remain open for at least one minute or until the unit's temperature has dropped to an acceptable operating level. If auto-dimming or turning off is observed, the dimming load should be reduced.

# CONFIGURATION

Dimmers have several configurable functions depending on the specific model. All functions' setting values can be accessed and changed through a push-button sequence and observing the LED feedback.

## CONFIGURATION PROGRAMMING

- 1 From the lists of Configuration Functions below, note the Button ID and number (#) of the Function to be changed. For example, HIGH TRIM setting is the Up Button, #3.
- 2 Enter programming mode by pressing and holding the ON button until the blue LED begins rapid flashing, then release.
- 3 Press and release the particular button (UP, DOWN, or ON) that is applicable the number of times for the chosen function. For example, press the UP button 3 times for the HIGH TRIM setting.
- 4 The LED will flash back white the number of times equal to the current setting number as it appears in each function's detailed table of values. For example, the default HIGH TRIM is setting #2 (100%). Following a short pause, this blink back sequence will repeat.
- 5 Interrupt blink back by pressing the applicable button the number of times corresponding to the new setting #. For example, UP button 3 times (for 90%).
- 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 changes to White, then release. The LED will then blink white twice as confirmation of success. Note: To Exit without saving during any step, wait until unit double flashes blue.

\*Note if the LED double flashes twice blue at any point, repeat the above procedure.

## CONFIGURATION FUNCTION OVERVIEW

The diagram shows a dimmer switch with a central LED indicator and three main buttons: an up arrow button, a down arrow button, and an on button (represented by a circle with a vertical line). The LED indicator is at the top, and the buttons are arranged vertically below it. The on button is at the bottom, and the up and down buttons are in the middle. The LED indicator is labeled 'LED INDICATOR', the on button is labeled 'OFF BUTTON', and the up and down buttons are labeled 'UP BUTTON FUNCTIONS' and 'DOWN BUTTON FUNCTIONS' respectively.

### UP BUTTON FUNCTIONS

FUNCTION NAME	BUTTON ID	FUNCTION #
Turn On Level	Up	2
High Trim	Up	3
Fade On Time	Up	4
Dimming Curve	Up	5

### DOWN BUTTON FUNCTIONS

FUNCTION NAME	BUTTON ID	FUNCTION #
Turn Off Scheme	Down	2
Low Trim	Down	3
Fade Off Time	Down	4

### ON BUTTON FUNCTIONS

FUNCTION NAME	BUTTON ID	FUNCTION #
Forward / Reverse (ELV)	On	4
LED Control	On	7
Factory Reset	On	8

# CONFIGURATION SETTING DETAILS (CONT.)

## FUNCTIONS ACCESSED THROUGH THE "ON" BUTTON

### FUNCTION #4 - PHASE DIMMING TYPE

SETTING #	DESCRIPTION	NOTES
2	Forward Phase	
3	Reverse Phase (ELV)	Default for model SWX-864-ELV.

### FUNCTION #7 - LED BEHAVIOR

The functionality of the indicator LED on the dimmer when no buttons are being pressed.

SETTING #	WHITE LED FUNCTION	BLUE LED FUNCTION
2	Intensity shows relative dim level	Provides location aid when controlled lights are off.
3	Disabled	Provides location aid when controlled lights are off.
4	Intensity show relative dim level	Disabled
5	Disabled	Disabled

### FUNCTION #8 - RESTORE FACTORY DEFAULTS

SETTING #	DESCRIPTION
3	Restore Factory Defaults

## FUNCTIONS ACCESSED THROUGH THE "UP" BUTTON

### FUNCTION #2 - TURN ON LEVEL

The lighting level upon initially turning on. Note, changes to this setting will not be observed until the lights have cycled off and back on one time.

SETTING #	VALUES	NOTES
2	100%	Light output at each % depends on luminaire.
3	Last User Level (default)	
4	~30%	
5	~40%	
6	~50%	
7	~60%	
8	~70%	
9	~80%	

### FUNCTION #3 - HIGH TRIM

The maximum level of the full dimming range that is allowed by the dimmer.

SETTING #	VALUES	NOTES
2	~100% (default)	Light output at each level depends on dimming curve selected and dimming performance of lighting being controlled.
3	~90%	
4	~80	
5	~70%	
6	~60%	
7	~50%	

### FUNCTION #4 - FADE ON TIME

The time it takes for a dimming output to reach its final level when turning on.

SETTING #	VALUES
2	0.75 Sec
3	1.5 Sec (default)
4	3 Sec
5	5 Sec
6	15 Sec

### FUNCTION #5 - DIMMING CURVE

The curve that dictates the dimming adjustment step size.

SETTING #	VALUES
2	Linear
3	Unused
4	Square Log (default)

# CONFIGURATION SETTING DETAILS (CONT.)

## FUNCTIONS ACCESSED THROUGH THE "DOWN" BUTTON

### FUNCTION #2 - TURN OFF SCHEME

The actions of the dimmer when the off switch press is pressed.

SETTING #	VALUES	NOTES
2	Drop to Off (default)	Dimming output drops to low trim setting and relay opens.
3	Fade to Off	Dimming output fades to low trim setting and relay opens.
4	Fade to Minimum	Dimming output fades to the unit's minimum level. Relay remains closed.
5	Fade to Low Trim (i.e. Partial Off)	Dimming output fades down to low trim setting. Relay remains closed.
6	Drop to Low Trim	Dimming output drops to the unit's low trim setting. Relay remains closed.
7	Drop to Minimum	Dimming output drops to unit's minimum level. Relay remains closed.

### FUNCTION #3 - LOW TRIM

The lowest % of the dimmers full range to which a user can dim.

SETTING #	VALUES	NOTES
2	Minimum (default)	
3	~10%	
4	~20%	
5	~30%	
6	~40%	
7	~50%	

Light output at each level depends on dimming curve selected and dimming performance of lighting being controlled.

### FUNCTION #4 - FADE OFF TIME

The time it takes the dimmer to reach the low trim level when the off button is pressed.

This setting is only active when the unit's **Turn Off Scheme** is set to one of the Fade settings.

SETTING #	VALUES
2	0.75 Sec
3	1.5 Sec (default)
4	3 Sec
5	5 Sec
6	15 Sec

