



SENSORWORX®

LINE VOLTAGE FIXTURE MOUNT SENSORS

INSTALLATION & OPERATION INSTRUCTIONS

CATALOG NUMBERS	DESCRIPTIONS
SWX-501-*	UNIVERSAL 360° FIXTURE MOUNT SENSOR, PASSIVE INFRARED, LINE VOLTAGE
SWX-501-HL-*	UNIVERSAL 360° FIXTURE MOUNT SENSOR, PASSIVE INFRARED, LINE VOLTAGE, HIGH/LOW/OFF OPERATION (0-10V)
SWX-511-*	UNIVERSAL 360° FIXTURE MOUNT SENSOR, PASSIVE INFRARED + PHOTOCCELL, LINE VOLTAGE

*Additional options include:
HE: Humid Environment

OVERVIEW

SENSORWORX sensors detect movement in the infrared energy that radiates from occupants as they move within the device's field-of-view. Once occupancy is identified, the sensor's internal relay switches power on to the connected lighting. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled. Optional daylight detection is also available that turns off controlled lighting if sufficient ambient light is present in the space.

FEATURES

- **Universal Lens Works for High Bay, Low Bay, & AisleWay Applications**
- **Greater Detection Range & Density than Leading Highbay 360° & Aisleway sensors**
- **Digital Passive Infrared (PIR) Detection**
- **Snap-In Chase Nipple Makes Installation Quick**
- **Integrated Bracket Drops Sensor Below Bottom of Fixture**
- **Electronically Timed Switching Designed for LED Fixture Control**
- **Convenient Test Mode and Adjustable Time Delays**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE

MVOLT (120-277 VAC)

LOAD RATINGS

800W @ 120 VAC
1000W @ 208 VAC (2-Phase)
1200W @ 277 VAC

LOAD TYPES

Tungsten
Ballast
LED

DIMMING COMPATIBILITY

(Units with -HL option)
0-10 VDC Ballasts or Drivers
Compliant with IEC 60929
Annex E.2

ENVIRONMENTAL

OPERATING TEMP

-10° to 122°F (14° to 50°C)

RELATIVE HUMIDITY

0-95% Non-Condensing,
Indoor Use Only

PHYSICAL

SIZE

4.00" Diameter x 3.00" H
(10.16 x 7.62 cm)

WEIGHT

5.00 oz

COLOR

White

OTHER

LISTINGS

Meets ASHRAE Standard 90.1
& CEC Title 24 Requirements

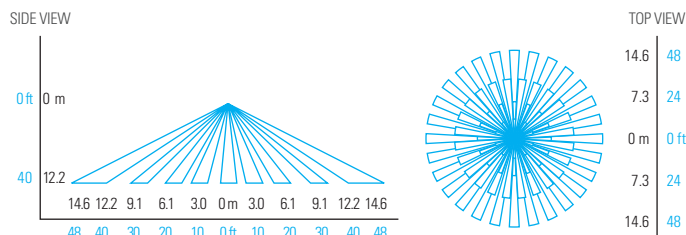


COVERAGE PATTERNS

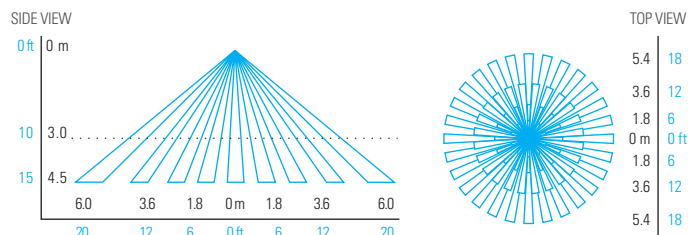
UNIVERSAL LENS

- Detects walking size motion or larger (e.g., forklifts)
- Single lens provides detection at mounting heights from 8 ft to 40 ft +
- Detection range improves when walking askew to sensor compared to directly at it
- Typical coverage radius ~1.2 x mounting height

HIGH BAY MOUNTING

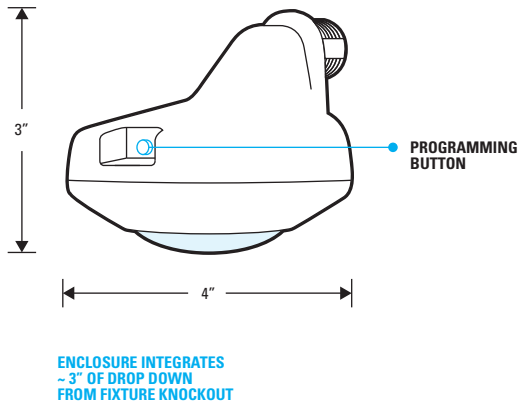


LOW BAY MOUNTING

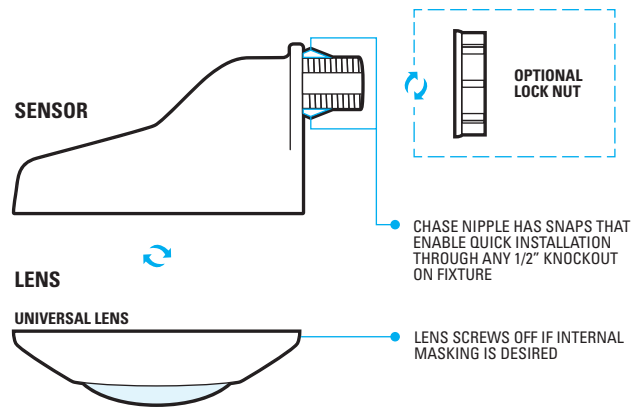


INSTALLATION

FRONT

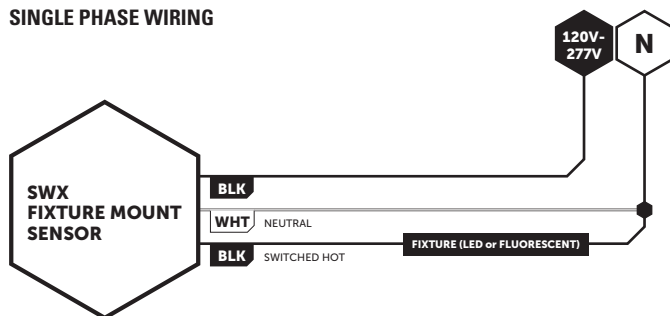


SIDE

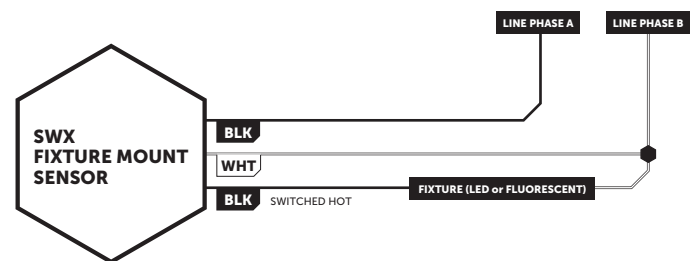


WIRING

SINGLE PHASE WIRING

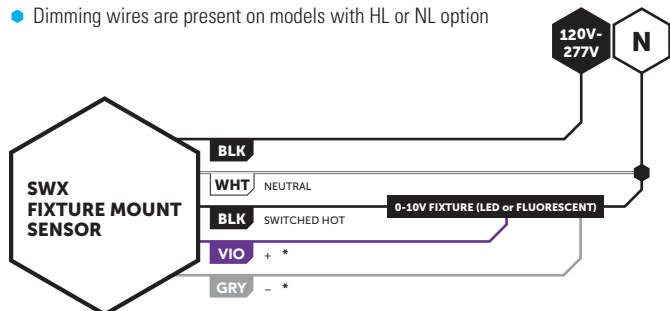


2-PHASE WIRING (208 VAC)



DIMMING WIRING

- Dimming wires are present on models with HL or NL option



* VIO/GRY DIMMING WIRES (0-10V) SHOULD BE TREATED AS CLASS 1

TESTING & TROUBLESHOOTING

TEST MODE

A test mode with a 5 second time delay is provided in order to efficiently perform walk testing. The sensor will blink White on any detected occupancy. Note that while in test mode all LED activity related to ambient light override (photocell) functionality is overridden.

TO PUT A SENSOR IN TEST MODE FOR 10 MINUTES:

- Press sensor's pushbutton 2 times, then wait two seconds
- Press button 1 time to start test mode. After 10 minutes, the sensor's time delay will revert to previous setting

AMBIENT LIGHT OVERRIDE

Do not mount sensor such that it is directly viewing into the lights it is controlling. This will cause the measured level of controlled/artificial light to be extremely high, thus preventing the sensor from ever turning lights off from ambient light.

RESET

To restore factory settings, press and release the pushbutton 8 times, wait 2 seconds, then press and release the pushbutton 3 times again.

CONFIGURATION SETTINGS

TIME DELAY CONFIGURATION

1. Read through the Time Delay Settings list and note the number of the desired time delay setting (e.g., default is 4 = 10 minutes)
2. Press and release the unit's pushbutton twice, then wait 2 seconds.
The White LED will blink back the number of the current setting
3. At any time after blinking starts, enter number of new setting
(from Time Delay Settings)
4. New setting is saved after White LED blinks new setting back 3 times.
If Blue LED double flashes at any time, start process over

FUNCTION #2 - TIME DELAY SETTINGS

SETTING #	DESCRIPTION
1	Test Mode**
2	30 sec
3	5 min
4	10 min [Default]
5	15 min
6	20 min
7	30 min

** 5 SEC TIME DELAY, EXPIRES AFTER 10 MIN

OPERATION MODE CONFIGURATION

Sensors equipped with a photocell or dimming have additional operational modes and different defaults than standard sensors. To change between modes, use the following procedure:

1. Read through the FUNCTION #3 - OPERATIONAL MODE table and note the number of the desired operational mode
2. Press and release the unit's pushbutton 3 times, then wait 2 seconds. The White LED will blink back the number of the current setting
3. At any time after blinking starts, enter number of new setting
(e.g., 2 for OCCUPANCY - ON/OFF) from OPERATIONAL MODES table
4. New setting is saved after White LED blinks new setting back 3 times. If Blue LED double flashes at any time, an error condition exists and process must be repeated

FUNCTION #3 - OPERATIONAL MODES

SETTING #	DESCRIPTION	MODEL # NOTES
2	Occupancy - On/Off	Default for SWX-501
3	Occupancy + Ambient Light Override (Photocell)	Default for SWX-511
4	Occupancy - High/Low	
5	Occupancy - High/Low/Off	Default for SWX-501-HL

LED INDICATION

By default, the sensor blinks its White LED whenever it detects PIR motion. The intensity of this LED can be decreased or disabled.

TO CHANGE LED INDICATION SETTINGS:

- Press unit's pushbutton 7 times, then wait two seconds. The White LED will blink back the number of current setting
- Change to new setting by pressing the button equal times to numbered choices listed on the right
- New setting will be saved after White LED blinks back number three times. If Blue LED double flashes at any time, start process over

FUNCTION #7 - LED INDICATION SETTINGS

SETTING #	DESCRIPTION
2	White LED for all occupancy, low intensity level
3	NA
4	Disable LED
5	White LED for all occupancy, high intensity level

CONFIGURATION SETTINGS CONT.

HIGH/LOW/OFF OPERATION

Model # SWX-501-HL sensors are equipped with a 0-10V dimming output capable of controlling 0-10V dimmable fixtures. By default, these sensors operate in High/Low/Off mode. In this mode the sensor drops the lighting level to a low setting after the occupancy time delay expires. Then, after a second time delay, the sensor will shut the fixture off completely. The sensor can also be configured to never turn lighting completely off (i.e. stay at low trim setting during unoccupied periods). Alternatively, leaving the sensor's relay disconnected will cause the fixture to stay at the full dim setting (but never turn completely off) for the duration of the unoccupied period.

Several settings related to this operation are configurable:

TO CONFIGURE SETTINGS RELATED TO HIGH/LOW/OFF OPERATION:

1. Tap the unit's push button the number of times corresponding to the Function # to be changed (e.g 5 times for High Trim function). See below for function tables.
2. The LED will blink back white the number of times equal to the current setting (e.g., 2 times for 10 Volts). Following a short pause, this blink back sequence will repeat.
3. Interrupt this blink back by pressing the button the number of times corresponding to the new desired setting (e.g., 3 times for 9 volts). The LED will blink back white the setting number as confirmation (repeats 3 times).

FUNCTION #5 - HIGH TRIM

The dimming voltage the sensor maintains when in the occupied state.

SETTING #	DESCRIPTION
2	10 Volts*
3	9 Volts
4	8 Volts
5	7 Volts
6	6 Volts
7	5 Volts

FUNCTION #6 - LOW TRIM

The dimming voltage the sensor drops to once the occupancy time delay expires.

SETTING #	DESCRIPTION
2	0 Volts
3	1 Volt
4	2 Volts
5	3 Volts*
6	4 Volts
7	5 Volts

FUNCTION #9 - SECONDARY TIME DELAY

The amount of time the sensor's dimming voltage will stay at the low trim level before turning the lights completely off (assuming space remains unoccupied).

SETTING #	DESCRIPTION
2	0 Sec
3	30 Sec
4	2.5 Minutes*
5	5 Minutes
6	10 Minutes

CONFIGURATION SETTINGS CONT.

AMBIENT LIGHT OVERRIDE (PHOTOCELL) OPERATION

During periods of occupancy, sensors with an integrated photocell (models SWX-511) will turn lights on/off depending on the amount of ambient light detected. This operation makes them ideal for lighting near skylights, windows, or large bay doors. Lights will turn off when the measured light level is high enough for 5 min. such that turning the lights off will not drop the level below the selected setpoint. During this 5 min. transition time

the LED will blink blue at 0.5 second intervals. After lights are turned off, the sensor's LED double blinks blue every 15 seconds as an indication that sufficient ambient light is the reason the lights are being held off. If the ambient light level falls below the setpoint for more than 30 seconds, lights will switch back on. During this transition time the LED also will blink blue at 0.5 second intervals.

SETPPOINT CONFIGURATION

The minimum overall light level that is to be maintained in a space by the sensor is referred to as the "setpoint". This value is user selectable or can be chosen by the Auto-Setpoint function that is built into the sensor. The sensor also constantly keeps track of the controlled / artificial lighting level so that it knows what the drop in overall light level will be when it turns lights off.

1. Read through the below setpoint values list and note the number of the desired setpoint (e.g., default is 8 = 25 fc).
2. Press and release the unit's pushbutton 4 times, then wait 2 seconds. The White LED will blink back the number of the current setting.*
3. At any time after blinking starts, enter number of new setting (from Setpoint Value Table).
4. New setting is saved after White LED blinks new setting back 3 times. If Blue LED double flashes at any time, an error condition exists and process must be repeated.

SETPPOINT VALUE TABLE

SETTING #	DESCRIPTION
2	Run Auto-Setpoint*
3	0.5 fc
4	1.0 fc
5	2.5 fc
6	5 fc
7	15 fc
8	25 fc (default)
9	50 fc

*If Auto-Setpoint has been previously run, the value will be blinked back in two alternating digits:
Blue LED = 10's digit (1-9 blinks or rapid blink or 0)
White LED = 1's digit (1-9 blinks or rapid blink or 0)

*AUTO-SETPPOINT SELECTION DETAILS

- A Once setting 3 "Run Auto-Setpoint" has been selected (by following above steps 1-4), the sensor's LED will alternate blue and white for 30 seconds. During this time user should move away from sensor.
- B Lights will then be cycled in order for sensor to calculate the controlled (artificial) light level. This is done by subtracting the light level with the lights off (relay open) from the light level with the lights on (relay closed).
- C A setpoint will then be chosen using the following conditions:
 - If controlled level is less than 3 fc, the application is considered open loop and the setpoint will be set to 50% of the measured level with the relay closed (plus a margin to prevent cycling). Setting will be between 0.5 fc and 44 fc.
 - If controlled level is between 3 and 30 fc, setpoint will be set to that level times 1.25.
 - If controlled level is greater than 30 fc the blue LED will flash twice indicating it is too high to provide a functional setpoint.
- D Unit will immediately start operating with new setpoint (i.e. blue LED may begin flashing indicating it will transition lights soon)
- E To check auto selected setpoint, press and release button 4 times. Setpoint will be blinked back in two alternating digits:
Blue LED = 10's digit (1-9 blinks or rapid blink or 0)
White LED = 1's digit (1-9 blinks or rapid blink or 0)

