Catalog Number: Date: Project:

WALL SWITCH OCCUPANCY SENSOR

LOW VOLTAGE

intelligent lighting controls

OVERVIEW

The **Intelligent Lighting Controls** family of wall switch occupancy/vacancy sensors provides a simple and cost effective lighting control solution for many applications. Just like its line voltage counterpart, the low voltage **ILC** wall switch sensor is designed with contractors in mind. Less than 1" deep, the unit is 25-40% shallower than typical dimmers and sensors, resulting in less crowed wall boxes. **ILC** products utilize the latest passive infrared technology and digital signal processing techniques to provide unmatched motion detection performance. These units are also available with an integrated microphone to provide overlapping passive acoustic occupancy detection for rooms with obstructions or where occupant motion is limited.

BASIC OPERATION

Sensors detect movement in the infrared energy that radiates from occupants as they move within the devices field-of-view. Once occupancy is identified, the sensor signals a connected power/relay pack to switch on the connected lighting. All stand alone units can also be configured to operate in Vacancy Mode (e.g., require lights be manually switched on). Once lights are on and if equipped with passive dual technology (PIR/Acoustic), the unit's microphone is enabled to further enhance detection. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies. Ambient daylight detection can also be enabled in equipped units so that lights are held off in rooms with sufficient light contribution from windows or skylights. A Multi-Switch/Sensor option is also available to achieve more advanced control applications.

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
12-24 VAC/VDC

CURRENT DRAW
2mA (PIR model)
10mA (Dual Tech. models)

OUTPUT
Logic High VDC (Occupied Mode)

RECOMMENDED POWER PACK
ILC-SWX-900 (for Stand Alone apps.)
ILC-SWX-900-AX (for Multi-Way apps.)

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C)

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)
Not Including Mounting Strap

WEIGHT
4.5 oz

MOUNTING
Single Gang Switch Box

FEATURES

PHYSICAL FEATURES

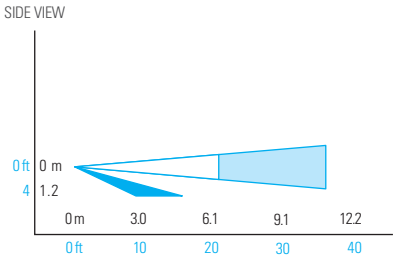
- **Enclosure is 25-40% Shallower than Other Sensors (< 1" Depth into Wallbox)**
- **Unique Bat-Wing Shaped Lens Provides Enhanced Peripheral Detection**
- **Modern Look and Intuitive Easy-Tap Buttons for On/Off, Raise, & Lower**
- **Rugged Vandal Resistant Lens**
- **Settings are Adjustable Without Removing Cover Plate**

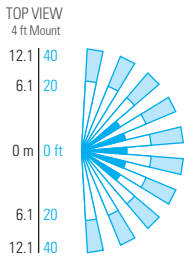
OPERATIONAL FEATURES

- **Wall-To-Wall Passive Infrared Small Motion Detection**
- **Passive Acoustic Detection (Optional) - Prevents False Offs when No Motion is Present**
- **100% Passive Detection Methods - No Interference Potential from External Devices**
- **Configurable Sensor Settings Including Time Delays and Occupancy/Vacancy Operating Modes**
- **Blue Locator LED when Lights are Off**
- **Optional Wiring Connections for Multi-way or Multi-Sensor Applications**

COVERAGE PATTERNS

- 30" to 48" (0.76 - 1.22 m) recommended mounting height
- Wall to wall (~180 degree) coverage
- Small motion (e.g., hand movement) detection up to 20 ft (6.10 m), ~625 ft^2
- Large motion (e.g., walking) detection greater than 36 ft (10.97 m), ~ 2025 ft^2
- Overlapping acoustic detection of occupants over entire coverage area
- Advanced signal processing filters out nuisance noises while not effecting overall sensitivity

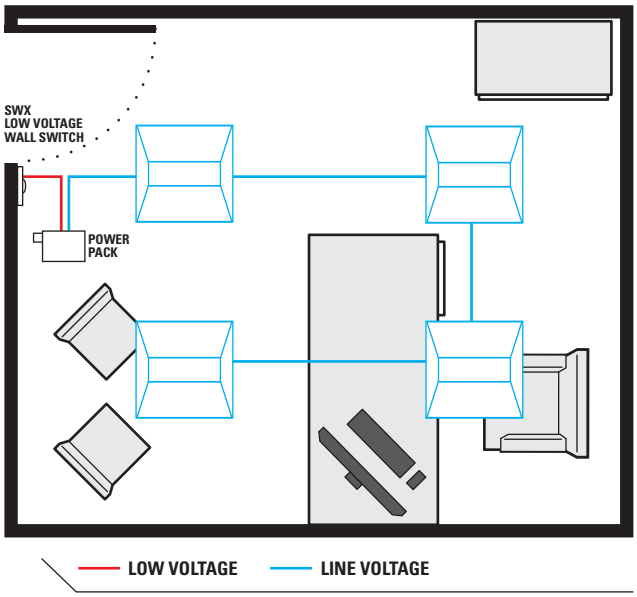




APPLICATIONS

A wall switch sensor is typically used in a small room or enclosed space. A Passive Infrared (PIR) only sensor is sufficient for spaces where line of site is maintained and occupants are periodically moving (e.g., copy rooms, storage rooms). Dual technology sensors are necessary where occupants may be partially blocked from the sensor's direct view or where they may be stationary (e.g., private offices or restrooms with stalls).

- Private Restrooms
- Copy Rooms
- Restroom with Stalls
- Small Meeting Room
- Small Office
- Vestibule
- Storage Room
- Break Room



ORDERING INFO

SAMPLE MODEL # ILC-SWX-101-1-WH

	PRODUCT		DETECTION		DEFAULT OPERATIONAL MODE		VOLTAGE		APPLICATION		COLOR*	
ILC-SWX	Wall Switch Sensor	**-1**	Passive Infrared (PIR)	**0**	Auto On (Occupancy)	**1**	12-24V	**- 1**	Stand-Alone	**<blank -**	White	**- WH**
			Passive Infrared (PIR) + Daylight	**1**[1]	Manual On (Vacancy)	**3**[2]			Multi-Switch or Multi-Sensor	**MS**[1,2]	Ivory	**- IV**
			Dual Technology (PIR/Acoustic)	**2**	Vacancy Only (CA Title 20/24)	**4**[2]					Lt. Almond	**- LA**
			Dual Technology (PIR/Acoustic) + Daylight	**3**[1]							Gray	**- GY**
											Red	**- RD**
											Black	**- BK**

ADDITIONAL OPTIONS

PACKAGE COUNT	
Single Pack	**Blank**
10 Pack**	**-J10**

NOTES 1: DAYLIGHT DETECTION NOT AVAILABLE WITH MULTI-SWITCH/SENSOR (-MS) OPTION)
2: FOR MULTI-SWITCH/SENSOR (-MS) UNITS, VACANCY OPERATION MUST BE CONFIGURED ON THE CONNECTED SWX-900-AX POWER PACK

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

ACCESSORIES

WALL PLATE		COLOR	
ILC-SWX-199	Single Gang Wall Plate	White	**- WH**
		Ivory	**- IV**
		Light Almond	**- LA**
		Gray	**- GY**
		Red	**- RD**
		Black	**- BK**

MODEL NUMBER DETAIL TABLE

MODEL #	DETECTION TYPE		DEFAULT OPERATING MODE [1,2]		APPLICATION	WIRING DIAGRAM
	PIR	ACOUSTIC	NAME	DESCRIPTION		
ILC-SWX-101-1	•		Occupancy	Auto On	Stand-Alone	A
ILC-SWX-101-1-MS	•		Occupancy	Auto On	Multi-Switch / Sensor	B
ILC-SWX-103-1	•		Vacancy	Manual On	Stand-Alone	A
ILC-SWX-111-1	•		Occupancy	Auto On	Stand-Alone	A
ILC-SWX-121-1	•	•	Occupancy	Auto On	Stand-Alone	A
ILC-SWX-121-1-MS	•	•	Occupancy	Auto On	Multi-Switch / Sensor	B
ILC-SWX-123-1	•	•	Vacancy	Manual On	Stand-Alone	A
ILC-SWX-131-1	•	•	Occupancy	Auto On	Stand-Alone	A

1. ALL MODES ARE ENERGY CODE COMPLIANT
2. MODES ON ALL UNITS ARE FIELD CONFIGURABLE

CODE COMPLIANCE

This wall switch sensor can be used to meet many requirements of ASHRAE 90.1 (2016), IECC (2015), and Title 24 (2016).

- Occupancy Operation: Auto On/Auto Off
- Vacancy Operation: Manual On/Auto Off

ASHRAE® STANDARD 90.1 - 2016

IECC® 2015 STANDARD

TITLE 20 LISTED TITLE 24 COMPLIANT

WIRING

DIAGRAM A:
STAND-ALONE SENSOR WIRING

It is not recommended to connect a second low voltage sensor to the stand-alone model low voltage wall switch sensor as the second sensor will override the switches on/off button when occupied. For multi-sensor applications, models with the ***-MS*** option should be utilized.

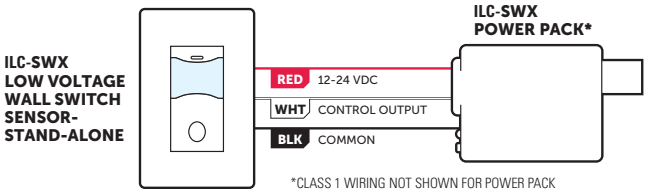
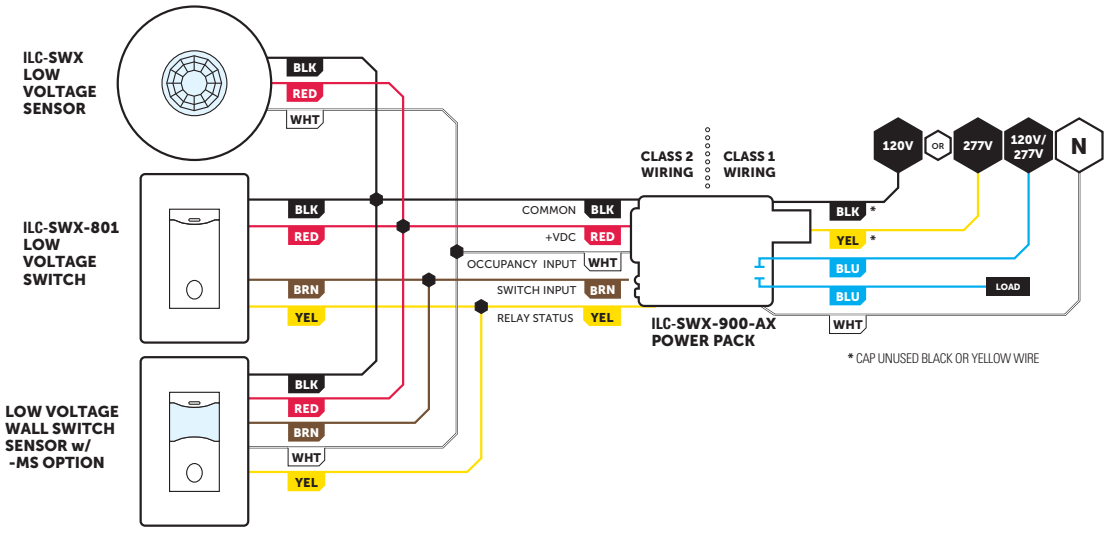


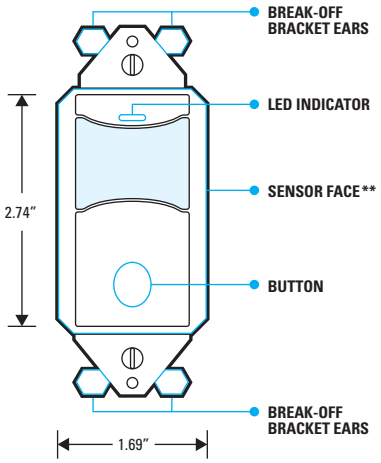
DIAGRAM B:
MULTI-SWITCH AND MULTI-SENSOR APPLICATIONS

- Multi-Switch applications include one or more low voltage wall switch sensors (***-MS*** option required) and/or one or more low voltage switches (ILC-SWX-801).
- It is recommended that all low voltage switches be within the line-of-sight of the sensor.
- Multi-Sensor applications include one or more low voltage wall switch sensors (***-MS*** option required) and/or one or more low voltage sensors (e.g. ILC-SWX-201-1).
- ILC-SWX-900-AX model power packs should always be used with sensors with multi-switch/multi-sensor (***-MS)*** option. Note that vacancy (manual on) operation is configured at the power pack and not at the wall sensor.

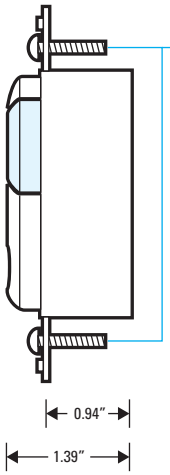


INSTALLATION

FRONT



SIDE



KEY INSTALLATION FEATURE

25-40% SHALLOWER THAN OTHER WALL SWITCH SENSORS

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

OPERATION SETTINGS

TIME DELAY

- Test mode, 30 sec, 5-30 minutes
- 5 sec test mode expires after 10 minutes

AMBIENT LIGHT (DAYLIGHT) DETECTION

- Sensor holds lights off when ambient light is present
- Manual threshold levels or auto-selection of threshold level
- Disabled when in Vacancy (Manual On) mode
- Available with stand alone versions only

TURN-ON SENSITIVITY

- When enabled, this setting reduces the sensor's PIR sensitivity for initial turn-ons in order to eliminate false on caused by reflective surfaces like windows
- Unit returns to full sensitivity after initial turn-on

LED FUNCTIONALITY

- White LED blinks upon occupancy detection
- Blue LED serves as a switch locator when lights are off
- LED functionality can be disabled

OPERATIONAL MODES

Intelligent Lighting Controls wall switch sensors are intelligent devices that provide both excellent energy savings and enhanced user convenience. In stand alone models, users can choose from several pre-programmed operational modes that best fit their preferences and applicable energy codes. In multi-sensor/switch (***-MS)*** models, Vacancy and Occupancy modes are achievable by configuration of the connected ILC-SWX-900-AX power pack.

Vacancy Mode
Manual On / Automatic Off operation. Lights can also be switched off manually. This mode provides increased energy savings but requires the user to initially turn on the lights. Models ILC-SWX-103, ILC-SWX-104, ILC-SWX-123, and ILC-SWX-124 default to Vacancy mode.

Occupancy Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is temporarily disabled to allow the person a few seconds to leave the room before switching back to Automatic On operation. However, if the person remains in the space the unit will stay in a manual on state until the switch is pressed again. This mode is the default operation of ILC-SWX-101, ILC-SWX-111, ILC-SWX-121, and ILC-SWX-131 models.

Automatic On w/ Exit Time Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is disabled for a fixed 30 seconds.

Override Off Mode
Automatic On and Automatic Off operation until lights are switched off manually, at which point Automatic On functionality is disabled until the switch is pressed again.

Disabled Switch Mode
Automatic On and Automatic Off operation only. Switch functionality to manually turn on/off lights is disabled.

Presentation Mode
If lights are switched off manually, the Automatic On functionality is disabled until the space becomes unoccupied and the sensor's time delay expires.

Intelligent Lighting Controls | 5229 Edina Industrial Blvd. Edina, MN 55439
952.829.1900 | www.ilc-usa.com

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