

Single Pole (One Location) Wireless Signal Receiver Switch

Cat. No. WSS10 (Advanced)

Incandescent: 800W @ 120V – Ballast: 1200VA @ 120V, 2700VA @ 277V

120-277VAC, 50/60Hz, Motor: 1/4 HP @ 120V

INSTALLATION INSTRUCTIONS

WARNINGS AND CAUTIONS:

- **DISCONNECT POWER AT CIRCUIT BREAKER OR FUSE WHEN SERVICING, INSTALLING OR REMOVING THE WSS10.**
- To be installed and/or used in accordance with appropriate electrical codes and regulations.
- If you are unsure about any part of these instructions, consult an electrician.

WARNINGS AND CAUTIONS:

- WSS10-GDx products do not require a neutral wire, there is a minimum load requirement of 25 watts for these products.
- Recommended minimum wall box depth is 2-1/2".
- Use this device with **copper or copper clad wire only.**

PK-93664-10-00-0E

Description

Cat. No. WSS10 is the receiver switch. This switch has a single switch pad that toggles the relay and its corresponding load, ON and OFF. If the relay is OFF, the relay will turn ON when the push-button is pressed, and vice-versa. The Indicator LED will blink Red when a flag/packet is received from the sensor or remote switch. **NOTE:** the no-neutral version has a minimum load requirement of 25 watts.

Cat. No. WSCxx is the sensor(s). The Sensor Unit sends a flag/packet with the presence of motion to the receiver switch which then keeps the load ON. In the absence of motion, the Sensor Unit will stop sending flag/packets to the receiver switch; when the receiver switch no longer receives a packet, the Time Out will start, then time-out and turn the relay OFF. Time Delay starts as of the last motion detected in the space. The Motion Indicator LED will blink Red (1 blink per minute) every time motion is detected, sending a flag/packet to the receiver. The LED on the WSS10 receiver will blink Red, acknowledging the reception of a flag/packet.

- **WSCxx & WSS10 (together):** In Manual-On/Auto-Off mode, the button must be pressed to turn the lights ON. In the absence of flags/packets sent from the sensor, the receiver switch will Time-Out and turn the lights OFF.
- **WSCxx & WSS10 (together):** In Auto-On/Auto-Off mode, the sensor will send a flag/packet to the receiver to turn the lights ON. In the absence of flags/packets sent from the sensor, the receiver switch will Time-Out and turn the lights OFF. **NOTE:** The sensor must sense motion and send a packet to start the time delay and enable Auto-Off.
- **WSCxx & WSS10 (together):** Allow the 30 second vacancy confirmation feature which exists to turn the relay back ON in case of false OFF.

Self Powered Products: The sensor and remote switch are self powered devices using EnOcean technology.

- The Sensor utilizes a solar panel which powers the sensor from the rooms ambient light. The sensor will start to function within a minute of exposure to light. The total charge time for the sensor will vary depending on intensity of light and length of exposure to light. The minimum light requirement for the sensor is 40LUX (4FC).
- The remote switch utilizes kinetic energy from the mechanical switch when pushing the pad. This friction then stores enough energy to transmit another signal on the next press action of the pad, tested over 50,000 cycles.

Battery option: The use of (3) AAA batteries (not included) is not required but can be used in areas where no light is expected for long periods of time.

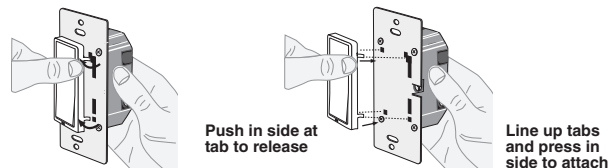
Low Voltage option: The 5-24VDC connection, is provided and recommended when used in areas where no light is expected for long periods of time.

Tools needed

Slotted/Phillips Screwdriver Electrical Tape Pliers Pencil
Cutters Ruler Wire Nuts

Changing the color of your Switch

Color change options are available from Leviton, consult you local Leviton Distributor. To change color of frame, proceed as follows:

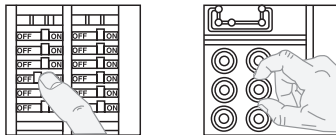


Installation

NOTE: Use check boxes when Steps are completed.

Step 1

WARNING: TO AVOID FIRE SHOCK OR DEATH; TURN OFF POWER at circuit breaker or fuse and test that power is off before wiring!



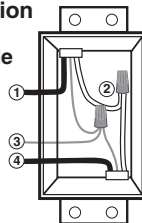
Step 2

Identifying your wiring application (most common):

NOTE: If the wiring in your wall box does not resemble this configuration, consult an electrician.

Single Pole

1. Line
2. Neutral
3. Ground
4. Load



Step 3

Single Pole Wiring Application:

- WSS10 Receiver Control Switch is only intended as a Single Pole device.

Multiple Location Wiring Application:

- WSS0S Wireless Remote Switch can be used for additional switches (3-way and 4-way), no wires necessary.

WIRING SWITCH:

Connect wires per WIRING DIAGRAM below as follows:

- Connect (Hot) wire from wall box to black wire on switch.
- Connect (Load) wire in wall box to blue wire on switch.
- Connect (Neutral) wire in wall box to white wire on switch.

NOTE: For No Neutral model, white wire will not be available (**Figure 2**).

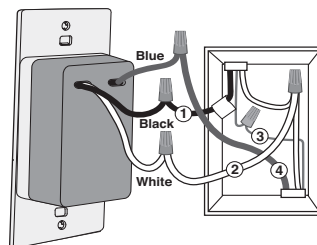


Figure 1 - With Neutral (white wire)

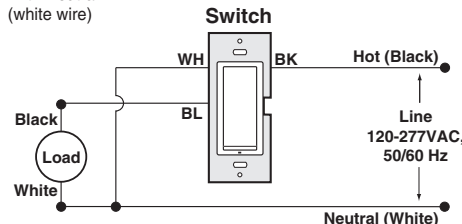
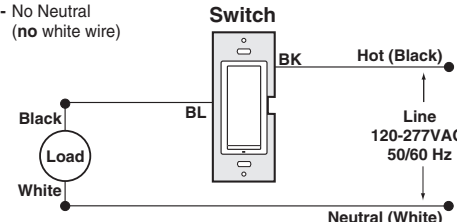


Figure 2 - No Neutral (no white wire)



Step 4

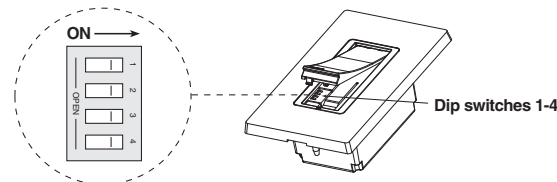
Dip Switch Settings:

NOTE: To access dip switch settings, lift up the bottom of the switch pad.

Auto-On / Auto-Off mode: Auto mode can be enabled using the dip switches, product comes from the factory in Manual-On/Auto-Off.

Walk-through: can be used only in Auto-On mode and is recommended only when using batteries or low voltage power connection.

Timeout: 2 (test), 10, 20, 30min; (Longer time delay is recommended for continuous self powering of the sensor and to ensure packets are sent to the receiver switch).



DIP SWITCH SETTINGS		
Dip Switch	OFF Position	ON Position
1	Auto-ON/Auto-Off	Manual-On/Auto-Off
2	Walk Through Off	Walk Through On
2 Min Time-Out		
3	X	-
4	X	-
10 Min Time-Out		
3	X	-
4	-	X
20 Min Time-Out		
3	-	X
4	X	-
30 Min Time-Out		
3	-	X
4	-	X

Factory settings:

WSS10: Manual On/AutoOff, Walk thru = disabled, Time delay = 10min.

WSCxx: Range (PIR sensitivity) = 75%

Factory setting operation:

When entering the room, the wireless receiver control switch will need to be manually turned ON. Once learned into the receiver switch, the Wireless occupancy sensor will send flag/packets to the receiver switch, keeping the lights on until the room is vacant. Once the sensor stops sending flag/packets, the receiver time out will start, then turn the lights OFF after timeout period.

Time-Outs:

The Sensor has four time-out settings: 2 (test), 10, 20, or 30 min. (longer timeout is recommended for self powering in dark spaces). The values of time-out is user selected through the use of the Dip Switch Settings. **NOTE:** Since the sensor is only sending a packet every minute, the 2 minute time delay is not sufficient for normal operation.

Walk-Through Time Delay:

The walk-through feature is only active in the Auto-On/Auto-Off mode with time delay of 10, 20 or 30min, is useful when a room is momentarily occupied. With this feature, the Sensor will turn the lights OFF shortly after the person leaves the room. The walk-through feature works in the following manner: When a person enters the room, the lights will turn ON. If the person leaves the room before the walk-through time-out of 2.5 minutes, the Sensor will turn the lights OFF within 2.5 minutes of no occupancy detected. If the room is occupied for longer than 2.5 minutes, the Sensor will enter the Occupied Mode with the time-out duration specified by the Dip Switch setting.

Step 5 WSS10 (Advanced) Programming Instructions:

1. Read all the Programming steps before taking any action to program the receiver.
2. Enter Programming Mode by pressing and holding the switch button for 15 Seconds, The LED on the switch will begin flashing Amber slowly 1x per second. This is the Mode Selection area of programming. Release the button.
3. Proceed to reading **Rocker Mode, Momentary Mode, Toggle Mode** and then **Scene Mode** instructions.

NOTE: Amber flashing LED represents the Mode Selection Area of programming, no buttons can be learned into a receiver with Amber flashing lights.

Rocker Mode Programming Instructions (LED flashing Amber 1x per second)

1. Read all Rocker Mode programming steps before taking any action to program receiver in Rocker Mode.
2. **Upon entering programming, the device will automatically begin in Rocker Mode (Amber flash 1x per sec).**
3. To Learn a transmitter switch in Rocker Mode press and hold the button for 5 seconds. The LED will change from Amber to Green* or Red** to signify you are now in the Learn area of programming. Release the button.
4. When learning a wireless Decora® style light switch to the receiver, press one end of a switch rocker. When learning a transmitter other than a wireless light switch, press the LEARN button on the transmitter (**see appropriate transmitter instruction sheet**). The LED will change/increase Green* flashing and the load will stay ON for about 3 seconds indicating that the receiver has stored the transmitter's unique ID in its memory. **NOTE:** Pressing the transmitter switch again will unlearn the unique ID. (refer to below: Clear One Transmitter from Programming Mode). **NOTE:** (If only one transmitter is desired then skip Step 5 and exit Learn Mode by following Step 7).
5. To program additional transmitters to communicate with this receiver in Rocker Mode, wait until LED flashing resumes. Repeat the instructions in Step 4 until the unique IDs of all desired transmitters are stored in the Rocker Mode memory of the receiver (up to 10).
6. **To program a additional transmitters to communicate with this receiver in another Mode, press the receiver button and return to Mode Selection area (Amber LED flashing).** The Amber LED will be flashing 1x per second for Rocker Mode. Pressing the receiver switch button will advance the Amber flashing to the next Programming Mode, Momentary Mode (Amber flash 2x per second). Follow Steps 3 and 4 to program transmitters to Momentary Mode.
7. To exit Learn Mode, just wait; the receiver automatically exits Learn Mode after 30 seconds (indicated by the ceasing of the LED flashing).

WEB VERSION

Step 5 Programming Instructions (cont'd):

Momentary Mode Programming Instructions (LED flashing amber 2x per second)

1. Read all **Rocker Mode programming steps** before taking any action to program the receiver in Momentary Mode.
2. While the receiver is in the Mode Selection Area (Amber LED flash 1x per second). To advance to Momentary Mode (LED flashing amber 2x per second), press the receiver switch button to advance the Amber LED to flashing 2x per second (Momentary Mode).
3. To Learn a transmitter switch in Momentary Mode press and hold the button for 5 seconds. The LED will change from Amber to Green* or Red** to signify you are now in the Learn area of programming. Release the button.
4. **Follow Steps 4-7 of "Rocker Mode Programming Instructions."**

Toggle Mode Programming Instructions (LED flashing amber 3x per second)

1. Read all **Rocker Mode programming steps** before taking any action to program the receiver in Toggle Mode.
2. While the receiver is in the Mode Selection Area (Amber LED flash 1x per second). To select Toggle Mode, press the receiver switch button to advance the Amber LED to flashing 3x per second (Toggle Mode).
3. To Learn a transmitter switch in Toggle Mode press and hold the button for 5 seconds. The LED will change from Amber to Green* or Red** to signify you are now in the Learn area of programming. Release the button.
4. **Follow Steps 4-7 of "Rocker Mode Programming Instructions."**

Selective Deleting: Follow the Learn Mode steps above to delete a transmitter from a receiver's memory. Upon pressing the button on the desired transmitter (See "Rocker Mode Programming Instructions", Step 4) the load will stay OFF indicating that the receiver has removed the transmitter's unique ID from its memory.

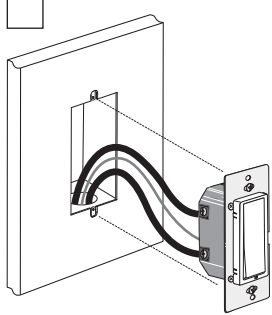
Clear All: Advance the Amber LED to flashing 5x per second, press and hold the receiver switch button for 5 seconds to enter the Clear Area. Release the button. To CLEAR ALL devices from memory press the receiver switch button for 5 seconds again. The entire memory of the receiver will be deleted. The receiver LED will flash Red** and then exit programming.

Clear One Transmitter from Programming Mode: First enter Programming (See steps 1-3 of "Programming Instructions"), then repeatedly press the button to advance the Amber LED flashes until the desired Mode is reached. Enter the Learn Mode by pressing and holding the receiver button for 5 seconds. Release the button. The LED will flash from Amber to Green** or Red** to signify you are now in the Learn area of programming. Hold down the transmitter switch button (or sensor learn button) you wish to unlearn. Release the button. This will clear the transmitter from the memory for that programming mode, leaving the other programming modes intact.

* **Green LED flashing indicates transmitters are Learned, the number of flashes represents the number of transmitters learned in that Programming Mode.**

** **Red LED flashing indicates there are no transmitters learned.**

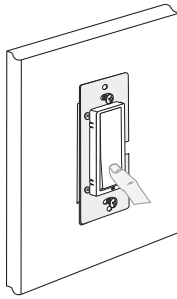
Step 6 Testing your WSS10 prior to mounting in wall box:



- Position all wires to provide room in outlet wall box for WSS10.
- Ensure that the word "TOP" is facing up on WSS10 strap.
- Partially screw in mounting screws in wall box mounting holes.

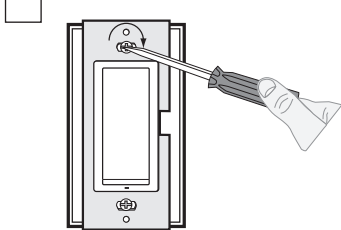
NOTE: Dress wires with a bend as shown in diagram in order to relieve stress when mounting WSS10.

Step 6 Testing your WSS10 (cont'd):



- Restore power at circuit breaker or fuse.
 - Press pad until locator LED is OFF. Lights should turn ON.
- If lights do not turn ON, refer to the TROUBLESHOOTING section.**

Step 7 Switch Mounting: TURN OFF POWER AT CIRCUIT BREAKER OR FUSE.



Tighten mounting screws to secure the device to the wall box.

Step 8 Wall Plate Mounting:

Place plastic/nylon Decora® wallplate over device and secure in place with screws provided.

Note: If a metal wall plate is used (**NOT RECOMMENDED**) it must be grounded, otherwise an ESD discharge to the wall plate could result in WSS10 unit failure.

Note: Usage of a metal wall plate (**NOT RECOMMENDED**) could result in reduction, or loss of receiving range for WSS10 wall switch.

Step 9 Restore Power:

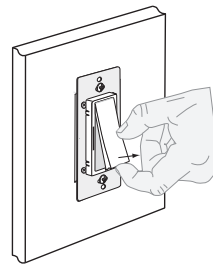
Restore power at circuit breaker or fuse. **Installation is complete.**

AIR-GAP SWITCH (WSS10 with No Neutral):

The WSS10 switches with No Neutral wire have a built in air-gap switch to disconnect voltage and current flowing to the load in the event of replacing the load (bulb, etc.) or to disconnect the load for safety reasons.

On the switch, engage the air-gap switch by gently pulling the bottom of the push pad until it lifts completely out of the frame and a click is heard. (refer to figure).

When the air-gap is engaged with the LOAD ON, the load should go OFF. This confirms the air-gap switch has been activated and the load is no longer receiving power.



Gently lift bottom of push pad out

Operation

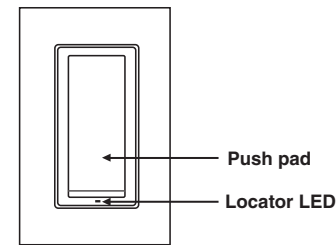
NOTE: The **locator LED** will illuminate when the load is in the OFF position to facilitate access in the dark.

Push Pad (Default settings)

Turn ON from OFF position:
Tap – Lights turn ON.

Turn OFF from ON position:
Tap – Lights turn OFF.

Cleaning: Clean with a damp cloth. **DO NOT** use chemical cleaners.



Troubleshooting

- **Lights Flickering**
 - If lights are flickering in the OFF state, check to insure minimum load requirements are met.
- **Occupancy Sensor**
 - **Sensor turns lights back on right after they turn OFF**
 - Adjust range (CCW) slightly to reduce range or relocate Sensor farther away from light or heat source.
 - **False Tripping when no one is around**
 - Adjust range (CCW) slightly to reduce sensitivity, relocate Sensor closer to light source, or re-configure sensor to MANUAL ON mode.

Technical Notes:

- Disable the Walk Thru feature (turn Dip Switch OFF)
- The No Neutral switch (WSS10-GD) decreases your range by about 20 feet (Design restriction when not having neutral available to work with)
- In an indoor environment, the wireless controls have a typical range of 30-150 feet. As the obstructions and/or noise interference is lighter or heavier the range will be more or less.
- Noise interference can be either line noise (from motors) or Radio Frequency (RF)
- Switches go into a reduced range mode when in programming (under 15 feet)
- Range can be reduced by overloading the switch (switch is only rated at 10A)
- Range can be reduced by metal objects (metal decreases the effectiveness of RF transmission)
- Output power is regulated by the FCC
- Receiver sensitivity is fixed
- Fixed Antennas are integrated into the product

Consider Factors affecting the Environment:

- device placement
- obstructions (metal, concrete, other construction materials)
- interference

Obstructions:

- Does the system work more reliably at close range (without obstructions)?
- Identify nearby metal, concrete and other objects possibly affecting signal strength
- Can either device be relocated (even slightly) away from obstructions to improve the system performance?

Interference:

- Does the system work better at certain times of the day?
- Look for pieces of equipment that may affect wireless performance when they are ON
- Try using a signal strength meter to measure 315MHz (RF) noise floor and quantify packet receiving reliability

Product variations:

- Replace one piece of hardware at a time to isolate any variation in

product performance

Dip Switch Settings:

- Verify proper dip switch settings on the Receiver Switch
- Dip Switch 1: In the left position (off) is Auto-On; in the right position (on) is Manual-On
- Dip Switch 2: In the left position (off) for Walk Through Off
- Dip Switch 3 and 4: These set the time delay; both in the left position (off) will be a 2 minute (test) time delay

Product LED indicators:

- Occupancy Sensor LED: Make sure LED flashes red once every 60 seconds to verify packet transmission
- Receiver Switch LED: Make sure LED locator flashes red verifying reception of a packet from Sensor or Remote
- Verify correct programming of device(s) using the Receiver Switch
- Enter programming and go to learn mode
- Verify flashing green LED locator which signifies device learned
- Press the learn button on the transmitter device to unlearn the device, green LED should flash one less or there should be a red LED (no devices learned)
- Press the transmitter device to relearn the device address again
- Green LED locator should flash again for the number of devices programmed

For additional information, contact Leviton's Techline at 1-800-959-6004 or visit Leviton's website at www.leviton.com

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FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving Antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/tv technician for help.

FCC CAUTION

Any changes or modifications not expressly approved by Leviton Manufacturing Co., Inc., could void the user's authority to operate the equipment.

FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at **Leviton Manufacturing of Canada Ltd to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9** or by telephone at **1 800 405-5320**.

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PK-93664-10-00-0E

LIMITED 5 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option, if within such five year period the product is returned prepaid, with proof of purchase date, and a description of the problem to **Leviton Manufacturing Co., Inc., Att: Quality Assurance Department, 201 North Service Road, Melville, New York 11747**. This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation.** The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.