SAVANT

Wireless Configurable Keypads and Dimmers - Quick Reference Guide

Box Contents

- (1) Dimmer (faceplate not included)
- (5) Wire Nuts
- (2) Double Height Keypad Buttons
  for configurable keypads only (WPB, WIB)
- (1) Quick Reference Guide (this document)

Specifications

Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% Relative Humidity (non-condensing)
Location	Indoor Use Only
Pollution	Degree 2

Dimensions and Weights				
	Height	Width	Depth	Weight
WPB, WIB WPD, WID WPS, WIS	4.13 in (10.50 cm)	2.36 in. (6.00 cm)	1.57 in. (3.99 cm)	.30 lbs (.136 kg)
WPK, WIK	4.13 in (10.50 cm)	2.36 in. (6.00 cm	1.80 in (4.57 cm)	.30 lb. (.136 kg)
Shipping	7.0 in. (17.78 cm)	4.5 in (11.43 cm)	3.0 in. (7.62 cm)	.60 lb. (.272 kg)

Recommended Back Box Depth
Keypads require a standard U.S. electrical back box.

- – Recommended - 3.5 in. (8.89 cm) deep
- – Minimum 2.25 in. (5.72 cm) deep
- – Type 1 enclosure for control

Mounting
Independently mounted (vertical position only)

Installation	
Operating Control	Type 1.B action
Software	Class A

Power	
Input	120V AC at 60 Hz
Power: Load (Max)	See the Derating Table later in this document.
Rated impulse voltage	2500V

Standards	
Wireless	802.11 b/g/n 2.4 GHz (only)
Security	WPA™, WPA2™, WPA1™ +WPA2™, WEP

Regulatory		
Safety and Emissions	FCC Part 15	UL
	FC	c (UL) us LISTED
Contains FCC ID:	TLZ-CU277B	
Contains IC:	6100A-CU277B	
RoHS	Compliant	

Minimum Supported Release
da Vinci 9.0

Products

Adaptive Dimming	
Configurable Keypad	(WPB-xxA106, WIB-xxA106)
Dimmer	(WPD-xxA102, WID-xxA102)
Dial Keypad	(WPK-xxA105, WIK-xxA105)

Supported Load Types	
Standard Configuration	Incandescent, Electronic/Magnetic Low Voltage, Dimmable CFL, Dimmable LED (minimum load size = none)
No Neutral Configuration	Incandescent only (minimum load size = 25 watts)

MLV Dimming	
Configurable Keypad	(WPB-xxT106, WIB-xxT106)
Dimmer	(WPD-xxT102, WID-xxT102)
Dial Keypad	(WPK-xxT105, WIK-xxT105)

Supported Load Types	
Standard Configuration	Incandescent, Magnetic Low Voltage, Dimmable CFL, Dimmable LED (minimum load size = 8 watts)
No Neutral Configuration	Incandescent only (minimum load size = 25 watts)

ⓘ **HELPFUL!** MLV type dimmers provide a better quality of dimming than Adaptive type dimmers when controlling MLV type loads.

Regulatory

The following statements apply to all Savant Wireless Dimmers, Switches, and Keypads.

FCC Regulations

15.19. These devices comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interferences that may cause undesired operation. 15.21. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 15.105. This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. 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 circuit different from that to which receiver is connected.
- – Increase the separation between the equipment and the receiver.
- – Consult the dealer or experienced radio/TV technician for help.
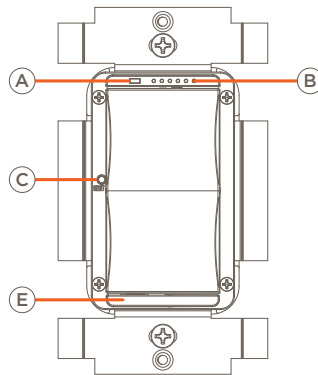
IC Regulations:

RSS-Gen 7.1.3. These devices comply with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) These devices may not cause interference, and (2) These devices must accept any interference, including interference that may cause undesired operation of the device. RSS-21- Annexe 9: A 9.4. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
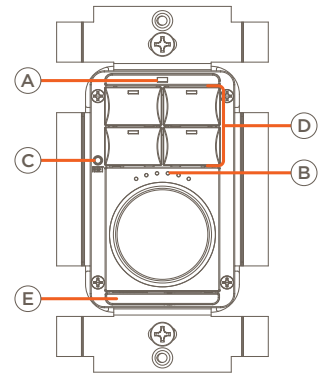
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Hardware Overview

Front Panel
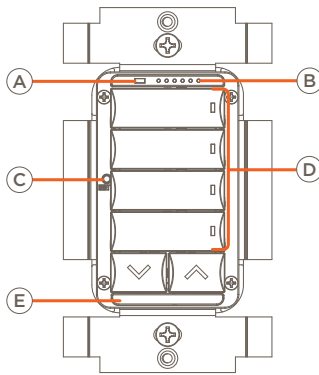
| WPB-xxx106, WIB-xxx106 | WPD-xxx102, WID-xxx102 | WPK-xxx105, WIK-xxx105 |

A
Ambient Light Sensor - Detects the ambient light level in the room and adjusts the brightness of both the button LEDs and the LEDs in the array on the front panel.
- As the room brightens, the LED's brightness increases.
- As the room dims, the LED's brightness decreases.

The sensor is enabled and disabled from within Blueprint's **Lighting and Shades Device Manager**.

B
LED Array - These six LEDs on the front panel can indicate any of the following:
- The amount of power applied to the load. The LEDs light from left to right as power is increased and switch off from right to left as power is decreased.
- The amount of power applied to the load for any scenes created in Blueprint.
- The status of the keypad during the setup and provisioning process. See the LED Sequencing section.

C
Reset Button - The reset button has two functions:

(Press and hold) - Press and hold the reset button for 5 seconds then release. Once released, the switch reboots and both the LED array on the front panel and the LEDs on the buttons will cycle through a sequence of colors (red > green > blue > white). When complete the keypad reverts to provisioning mode, all network settings and programming is cleared, and the LED array blinks a pattern corresponding to the state of the keypad. See the LED Sequencing table on the next page.

(Press and release) - Press and release the reset button to:
- Force an adaptive phase dimmer keypad to test the characteristics of its connected load and determine whether forward or reverse phase dimming is most suitable.
- Force the keypad to determine and configure control parameters for no neutral operation (when applicable).
- Clear the configuration programmed in the keypad.

TIP: Press and release the reset button after installing, moving, or changing any load wired to the keypad. In some cases, pressing and releasing the reset button will fix issues such as flickering or when the load not performing optimally.

D
Button LED - When provisioned to a network but not configured or bound to a Savant Pro system, the button LEDs track the state of the output load wire (red wire). When configured and bound to a Savant Pro system, the state of the button LED is defined by the selection made in the LED Behavior field of Blueprint's **Lighting and Shades Device Manager**.

E
Service Switch - Toggle to apply or disconnect power from the keypad. When changing a load, Savant recommends toggling the service switch off, replacing the load, and then toggling the service switch back on. Doing this calibrates the keypad to the new load. In addition, if the keypad is in an unrecognizable state, toggle the service switch Off and then back On so the keypad can reboot and recalibrate.

Rear Panel
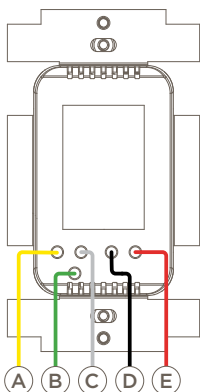
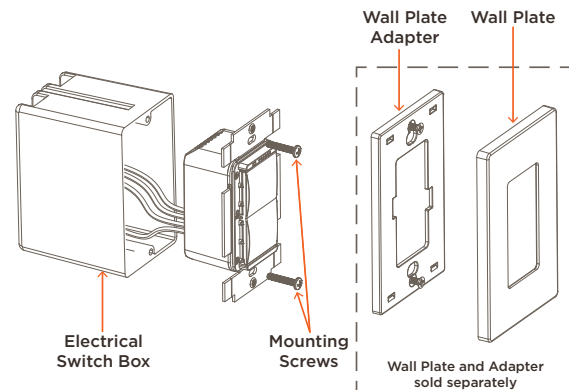|		
A	Yellow	**Traveler** - Wire to one or more Auxiliary Controls for multi-location control.
B	Green	**Ground** - Wire to Gnd.
C	White	**Neutral** - Return path for voltage. Connect to the neutral wires.
D	Black	**Line** - Wire to hot from AC power source.
E	Red	**Load** -Wire to one side of the load.

Wires are all a five inch #16 AWG stranded wire.

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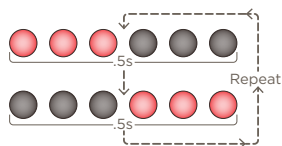# Electrician Removal/Installation

⚡ **ELECTRIC SHOCK!** The 120V AC, 60 Hz source power poses an electrical shock hazard that has the potential to cause serious injury to installers and end users.

⚠️ **IMPORTANT NOTES!**
- A licensed electrician is required to install any Savant wireless lighting devices. Isolate and turn off power at the main breaker panel prior to installing any electrical devices.
- Use #14 AWG or larger solid copper wire (80°C) for the supply, neutral, and ground connections. Strip wires to ⅝ in (16.0 mm).

1. At the main breaker panel, switch off the breaker that supplies power to the dimmer or switch being replaced.
2. Unscrew the wall plate and remove. Verify power is removed using a 120V AC tester.
3. Unscrew the two 6-32 flat head screws and pull out the existing electrical switch/dimmer.
4. Disconnect and label each wire as they are removed from the existing switch/dimmer. Labeling the wires ensures they will be installed onto the new switch/dimmer correctly, especially if the circuit employs a 3-way configuration.
5. Using the supplied wire nuts or an approved alternative, connect the in-wall wires removed in step 4 to the leads coming from the new Savant wireless switch/dimmer. See the Wiring Diagrams and Rear Panel sections for more information.
6. Insert the switch/dimmer into the electrical switch box and secure using the 6-32 flat head screws provided. DO NOT use a powered screw driver. A powered screw driver can over tighten the screws.
7. Install the wall plate adapter. When installing, ensure the adapter completely covers the metal yoke.
8. From the main breaker panel, switch on the breaker that was switched off in step 1 above.
9. Toggle the service switch on the front panel to the ON position. With power applied, the switch/dimmer will go through a boot sequence and both the button LEDs and LED array on the front panel will cycle red > green > blue > white.
10. After the boot sequence completes, the LED Array will blink red in an alternating pattern. This pattern indicates the keypad is in a state where an IP Address is currently not assigned. **NOTE:** Provisioning is accomplished later in the process.
11. Press the buttons on the front panel and verify the load reacts appropriately.
12. If the switch/dimmer being installed is an Adaptive type device, or if the device is wired in a no neutral configuration, press and release the reset button. This calibrates the switch/dimmer to the connected load (forward or reverse phase). If the device is wired in a no neutral type circuit, press the reset button to force the keypad to determine the control parameters for no neutral operation.
13. Install the wall plate once all steps above are complete. Once installed, if the keypad is not already provisioned to the local Wi-Fi network, provisioning information is available in the Wireless Keypad Provisioning Guide available on the Savant Community.

Wall Plate Adapter   Wall Plate

Electrical Switch Box   Mounting Screws   Wall Plate and Adapter sold separately

## LED Sequencing (LED Array)

Three LEDs alternate red left to right.

The keypad is not communicating with the local wireless network and needs to be provisioned. After a short time (up to one minute), the blinking stops. To check the status of the switch/dimmer after the LEDs stop blinking, press any button on the keypad and the LEDs will begin blinking again.
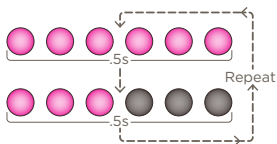
**Three LEDs on left are solid magenta and three LEDs on the right blink magenta.**

The keypad is connected to the local network (IP Address assigned) but not bound to the configuration running on the Host.
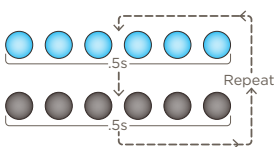
All LEDs blink

Indicates the type of load connected is not supported. Try toggling the service switch or pressing and releasing the reset button on the front panel. This reboots and calibrates the keypad to the type of load connected to the output wire.

NOTE: When the keypad is programmed and connected to a Savant system, the color shown may be different but the blinking sequence remains the same.
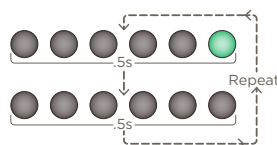
Rightmost LED blinks green.

Boot loader mode. The keypad is ready/receiving an update.

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Wiring Diagrams

Standard and no neutral installations are shown below. For more wiring diagrams, see the **Wireless Keypad Wiring Guide** available on the Savant Community or in the Savant Store available at Savant.com.

Single Dimmer Installation Example
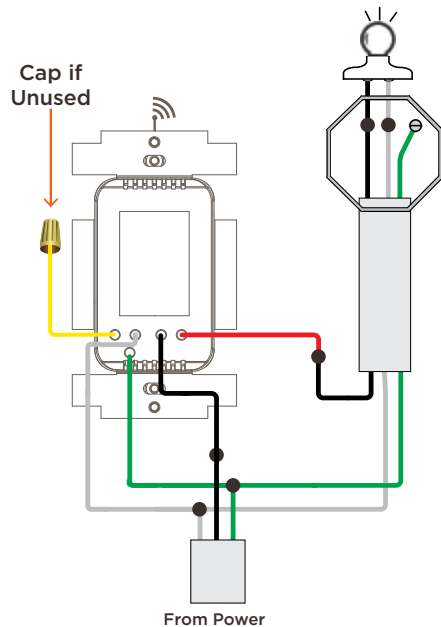
No Neutral Dimmer Installation Example
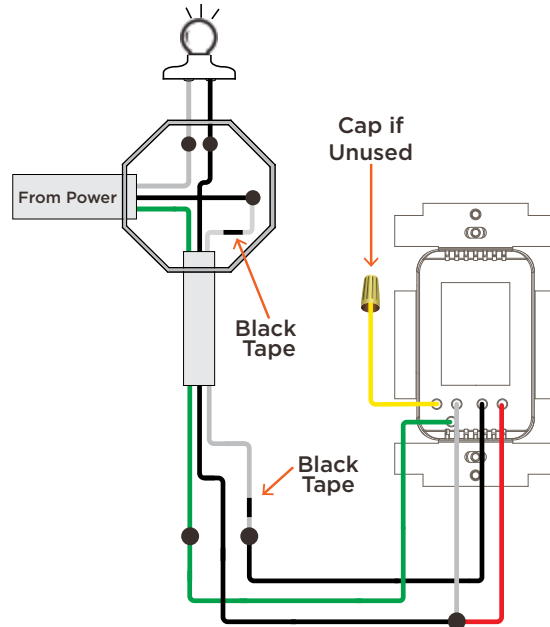
⚠ IMPORTANT!

- **No Neutral Configuration** - Only incandescent-type loads are supported. Connecting a non-incandescent type load into a no-neutral configuration will cause the LEDs in the LED array on the front panel to blink rapidly, and power is not applied to the keypad.
- Cap any unused wires with a wire nut.

Multi-Gang Installations

Derating is required when combining more than one keypad into a multi-ganged electrical box. Derating is the process of removing the tabs from one or both sides of each device so they fit into the electrical switch box. Examples of 2, 3, and 4-gang scenarios are shown below. The orange arrows shows which tabs to remove in each case.
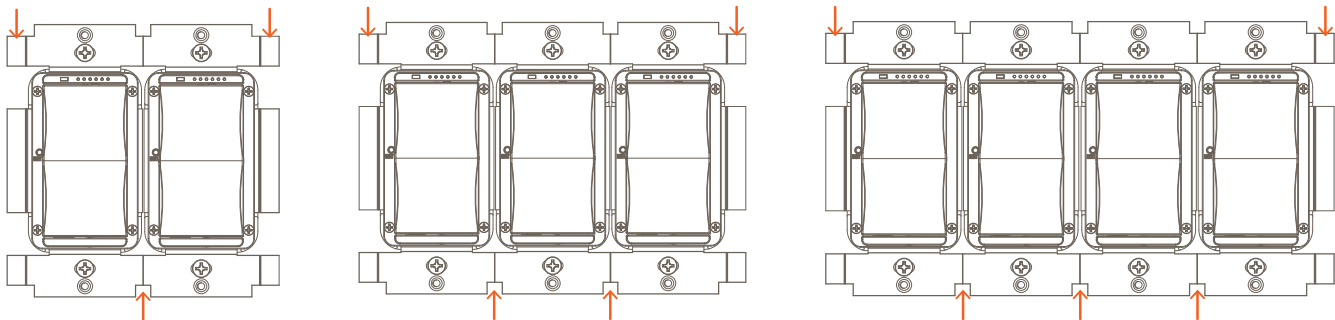
- Remove the tabs from both sides of any device positioned beside each other in an electrical box.
- Do NOT remove the tabs from outside edge of devices positioned on the far ends of an electrical box.

Derating Table

Device	Load Type	1-Gang	2-Gang	3-Gang	4-Gang
Adaptive Dimmer	Incandescent	550W	500W	450W	450W
	CFL/LED	150W	150W	150W	150W
	Magnetic Low Voltage	600VA (450W)	550VA (400W)	500VA (375W)	500VA (375W)
	Electronic Low Voltage	450W	400W	375W	375W
	Incandescent No Neutral	375W	350W	325W	325W
MLV Dimmer	Incandescent	600W	550W	500W	500W
	CFL/LED	150W	150W	150W	150W
	Magnetic Low Voltage	600VA (450W)	550VA (400W)	500VA (375W)	500VA (375W)
	Incandescent No Neutral	400W	375W	350W	350W