LZW31-SN Dimming Switch

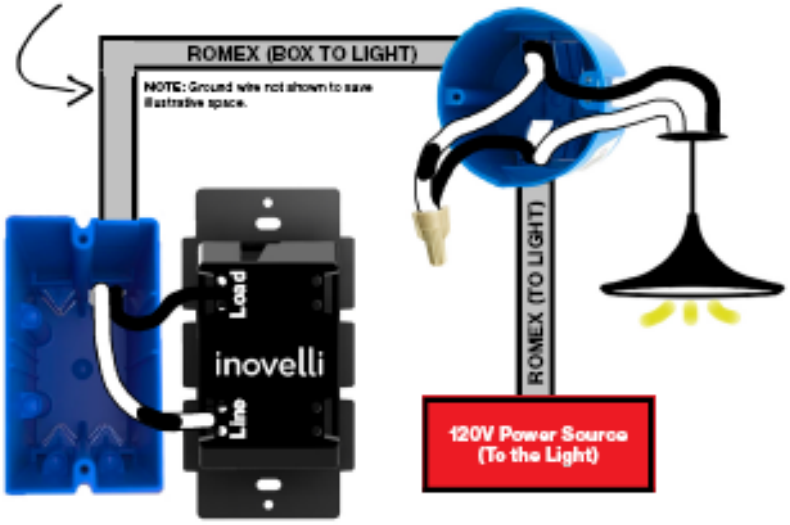
Wiring Instructions: Non-Neutral Installation (Quick Notes)

Please only use this if you do not have a neutral wire (usually white) in your house. If you do have a neutral wire, please move to page 6 as there are limitations when installing this switch without a neutral wire. These limitations include:

- You will need to install a bypass (sold separately) if you want to use bulbs under 25W
- You cannot use this switch in a 3-Way or any other multi-switch setting with a, "dumb" (existing) or auxiliary (add-on) switch (please use another Inovelli smart switch and see the site for installation instructions -- smart switch must be able to have the relay disabled). Please reach out for further explanation.
- You will not be able to use the Energy Monitoring feature

Option 1: Single-Pole Installation (No-Bypass)

No bypass is required if you are using a bulb that is over 25W. PLEASE NOTE: Most LED bulbs are only 8-12W, so you will need to either have multiple bulbs or install a bypass (sold separately) as shown in the, "Bypass Required" section.

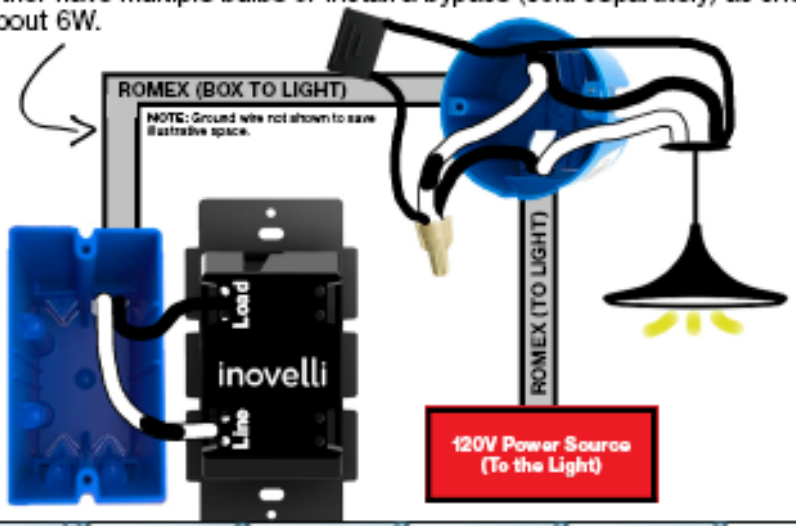


PRO-TIPS
(Please see WIRING KEY in Option 2 if necessary)

- Remember to turn off the power prior to installation and ensure all connections are made prior to turning the power back on. No need to be a hero!
- The Line wire is Hot. Please use a multimeter to locate it.
- Please remember to Ground all connections.
- Remember to start the inclusion process prior to flipping the power back on (see specific HUB instructions for more info).
- Use Wire-strippers to cut 1" for Screw Installation and 5/8" for Terminal Installation
- DO NOT unscrew the screw completely. It will ruin the switch. Remember clockwise = tight, counter-clockwise = loosen

Option 2: Single-Pole Installation (Bypass Required)

A bypass is required if you are using a bulb that is under 25W. PLEASE NOTE: Most LED bulbs are only 8-12W, so you will need to either have multiple bulbs or install a bypass (sold separately) as shown below. The bypass can get the required wattage down to about 6W.



WIRING KEY
(Please see PRO-TIPS in Option 1 if necessary)

Load

Line/Hot[1]

Romex Cable

Bypass[2]

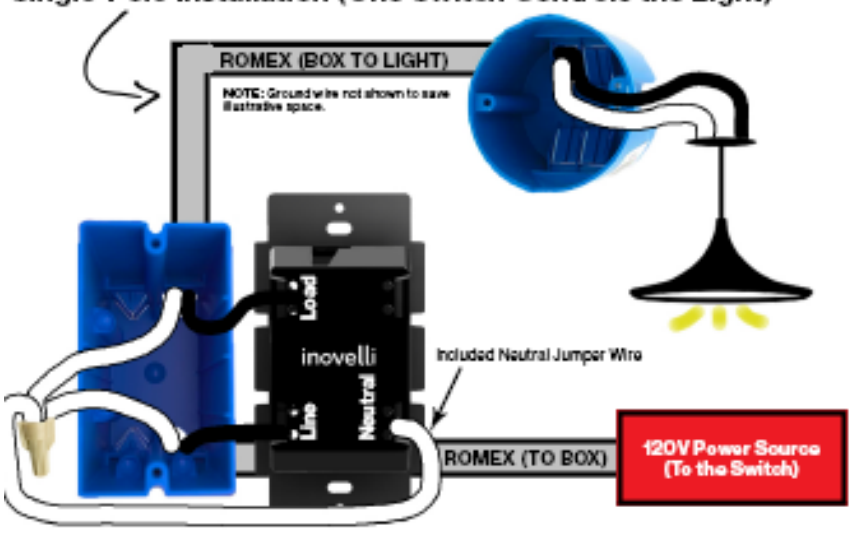
1. Line may also be black. Sometimes it's designated with a black piece of wiring tape, but sometimes it's not. **Please purchase a multi-meter to check for your safety.**
2. The bypass shown is from Aeotec. We've tested this version and it works great. We will also be releasing our own (hopefully prior to the launch of this product) but if it's not out in time, we highly recommend Aeotec's version, which can be found here: https://aeotec.com/z-wave-low-voltage-dimmer (or on Amazon)

Wiring Instructions: Neutral Installation (Quick Notes)

Please use this if you have a neutral wire (usually white) in your house. If you do have a neutral wire, please move to page 5. Here are some quick notes to read prior to installing your switch:

- If you do not see your wiring diagram here, please check online as we will constantly update and add schematics to our site and plan to have a forum where you can help each other. Again, we can no longer provide specific wiring or electrical help.
- If wiring a 3-Way or other multi-switch setup and want to keep your existing switch, in most cases you can leave your existing wiring the same. Just make sure to put your smart switch in the gang-box that has the line in it.
- If you have a wiring situation that you've successfully gotten to work, we'd love to hear about it to help others!

Single-Pole Installation (One Switch Controls the Light)



WIRING KEY & PRO TIPS

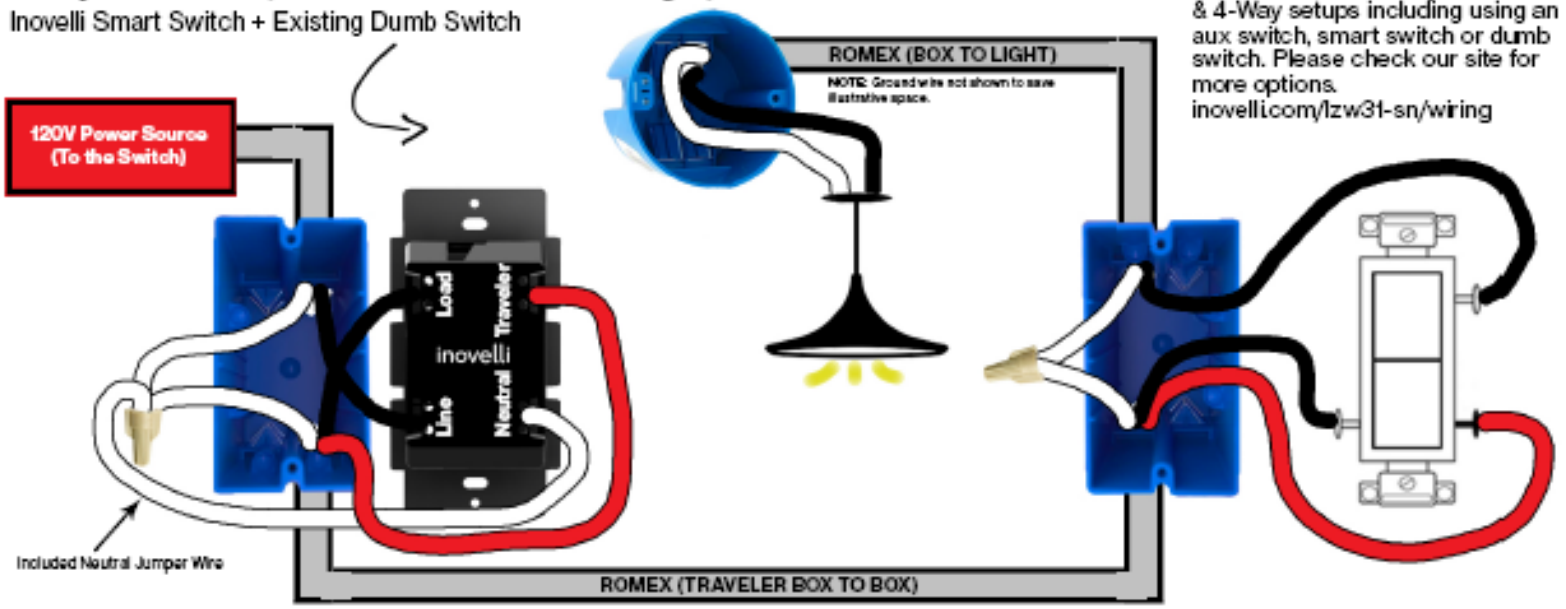
(Please see additional PRO-TIPS on Page 5 if necessary)

- Load
- Line/Hot
- Neutral
- Traveler (Shown in 3-Way Below)
- Romex Cable

- Remember to turn off the power prior to installation and ensure all connections are made prior to turning the power back on. No need to be a hero!
- The Line wire is Hot. Please use a multimeter to locate it.
- Please remember to Ground all connections.
- Remember to start the inclusion process prior to flipping the power back on (see specific HUB instructions for more info).

3-Way Installation (Two Switches Control the Light)

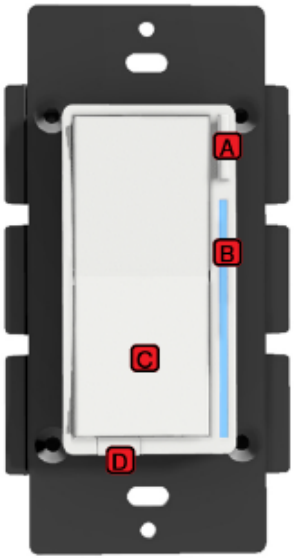
Inovelli Smart Switch + Existing Dumb Switch



NOTE: There are many different 3 & 4-Way setups including using an aux switch, smart switch or dumb switch. Please check our site for more options. inovelli.com/lzw31-sn/wiring

Getting to Know Your LZW31-SN Switch.

Now that you've wired up your switch, it's time to understand the basics of your new smart switch. For more advanced configurations, please see Pages 9-10.



* Please make sure your HUB supports these features. See website for more details.

A. Config Button: This button is used to enter the configuration menu on your switch. When you hold it down for 10-15 seconds, the LED Bar (B) will light up Yellow to indicate you're in config mode. Then follow the config menu on Page 10 to configure your switch to the way you'd like. In addition, the Config Button can be used to set your favorite scene*. Once your scene is setup, simply tap the button 1x and the scene will trigger.

B. RGB LED Notification Bar: This LED bar does multiple things. It serves as a visual display for the dimness level of your lights as well as offering visual notifications based on events that are setup via your HUB/Gateway* (ex: if your garage door is opened past 10pm, the LED Bar can blink Red). The bar can be further configured to be either disabled or set to a certain brightness level as shown on Page 10. Finally, the bar can be used to test Z-Wave Signal by holding the Config Button (A) for 5-10 seconds (Red = Not in Range, Green = In Range).

C. Responsive Paddle: The paddle works similar to a standard dimmer switch in that when you hold either up/down, the light switch will dim the lights to the level you'd prefer. However, when you tap the switch up, it will turn the light on to the last dim level and when you tap the switch down, it will shut the light off. The paddle can also act as a scene controller*. You may add up to ten (10) different scenes (Tap up 1x, 2x, 3x, 4x, or 5x and Tap down 1x, 2x, 3x, 4x, or 5x). Finally, the paddle can be removed if you'd like to change colors.

D. Air Gap Switch: This will cut power to the load your switch is wired to (ie: light bulb).

NOT SHOWN: Energy Monitoring* and Scene Control* is a built-in feature of this switch as well.

Steps 1: Gather Your Materials, Find an Appropriate Location, and Install Your Switch

Materials Needed: Gangbox with Neutral, Line & Load Wires, Cell Phone/Tablet/Computer, and a Z-Wave enabled HUB/Gateway.

- Locate an area to install your switch within the recommended distance (Pages 2-3) from your HUB/Gateway.
- Walls, furniture, and other obstructions may degrade the communication between the Switch and your HUB/Gateway, so please keep this in mind when selecting a location.
- Follow the recommended wiring instructions on page 5 -- **REMEMBER: TURN OFF ELECTRICITY BEFORE INSTALLATION!**

Step 2: Adding (Including) to the Network & Finishing the Setup Process (Using the SmartThings Classic App)

Now that the switch is physically installed, let's start the inclusion (pairing) process. Please make sure you are using the, "SmartThings Classic" app. If you'd like to use the Samsung Connect App, please check the WWST URL to see if Inovelli is listed: https://www.smartthings.com/products. If it's not, you will have to use the Classic app with a Device Handler.

- Open up your SmartThings Classic app and click on the, "My Home" tab followed by the, "Things" tab
- Scroll to the bottom and click on, "Add a Thing" or click on the (+) at the top right of the screen
- Turn the power back on ⚡ and auto-inclusion will activate. You will have 30 seconds before it times out. If it does time out, the backup method to pair/include the device is to press the UP (A) button 6 times within 2 seconds.
- You should now see that your device is detected (it should say, "Dimming Switch")
- After your device is detected, press, "Save" (or if you'd like to rename your device, please do so and click, "Save")
- Once you click, "Save" a pop-up will appear asking you to, "Confirm Paired Devices" -- Click, "OK"
- Now, you should be back at the, "My Home" screen and you should be able to see your switch!
- **Z-Wave Range Check:** Easily check whether or not your switch is within range by holding the Config Button (A) for 5-10 seconds. The LED bar will indicate: **RED** = Not in Range, or **GREEN** = Within Range (Good Signal).

Device Handler Installation (Abbreviated):

Below is a shortened way to install the device handler. For more in depth instructions, please visit the URL in the footer.

- Log into your IDE Account (https://graph.api.smartthings.com/) -- it's the same login/password as your mobile app
- Click on, "My Locations" and then select your location
  Next, click on, "My Device Handlers" and press the, "Create New Device Handler" button
- Now, open a new tab in your browser and go to: github.com/InovelliUSA/SmartThingsInovelli/tree/master/devicetypes/inovelliusa and find the device handler for, "LZW30-SN" and once you see the option for, "Raw", click on that button and copy the code*
- Next, go back to IDE and click on the, "From Code" tab and paste the code from GitHub
- Next, click, "Create", then, "Publish" and finally, "For Me" to finish the installation
- Finally, to activate the handler on your switch, go to, "My Devices" in IDE and find your Inovelli switch
- Click on the switch, scroll to the bottom and click, "Edit" -- then find, "Type" and then select the new device handler from the drop down and then click, "Update"
- Now, when you open up the switch menu in the app, you should see the Inovelli logo and a ton of cool config options

Switch Configuration Settings

There are a couple of ways to configure your switch. The first is via the switch itself, while the second is via your HUB or Gateway. On this page, we'll show you which parameters can be changed via the switch and how to change them while on Page 10, we'll define all of the parameters and list the Z-Wave command classes for reference. Let's begin!

Parameter #	# of Times to Press the Config Button	About	Description
1	1	Dimming Speed	How fast or slow the light turns on (ramp rate)
5	2	Minimum Dim Level	Minimum level the light switch will dim to
6	3	Maximum Dim Level	Maximum level the light switch will dim to
7	4	Invert Switch	Inverts the switch (Tap Down = On, Tap Up = Off)
9	5	Default Level (Local)	Disables the Internal Relay Locally (at the switch)
10	6	Default Level (Z-Wave)	Disables the Internal Relay Remotely (via the App)
11	7	Power On State	When power is restored, the switch reverts to either On, Off, or Last Level
13	8	LED Indicator Color	This will set the default color of the LED Bar
14	9	LED Indicator Intensity	This will set the intensity of the LED bar (ie: how bright it is)
15	10	LED Indicator Intensity (When Off)	This is the intensity when the switch is off

Figure 1.2 - Parameters that can be changed from the switch

NOTE: Below is the logic behind how to configure the above parameters (Figure 1.2) from the switch itself. Due to space constraints of this manual, we'll show you how to configure some of the more popular parameters. For more details, please visit our website which will have written and video tutorials for each parameter listed in Figure 1.2.

Configuration Logic

Once you master the logic behind how the configuration works, any of the parameters in Figure 1.2 can be changed.

- To enter configuration mode, hold down the config button (A) for 10-15 seconds and the LED Bar (B) will light up YELLOW
- From here, refer to Figure 1.2 to see what parameter you'd like to change and tap the config button that many times (look at the, "About" column to find the parameter you'd like to change and then go one column to the left -- highlighted in red -- to see how many times you need to press the Config Button (A). For example: If you want to change the Maximum Dim Level, press the config button (A) 3x or if you want to change the, "Power On State", press the Config Button (A) 7x and so on).
- Once your parameter has been selected, the LED Bar (B) will blink YELLOW -- now press up or down on the paddle to adjust the parameter settings (Figure 1.3 - highlighted in red) to your liking.
- Finally, once you've settled on a customization you like, it's time to save your configuration settings. To do this, hold the config button (A) again for 10 seconds and the LED Bar (B) will then blink to confirm.

Specific Example

Using the logic above, let's change the, "Minimum Dim Level" to 12% (switch never dims below 12%).

- Hold the Config Button (A) for 10 seconds to enter config mode (LED Bar will light up YELLOW)
- Looking at Figure 1.2, you'll notice that to edit, "Minimum Dim Level", you need to tap the config button 2x
- After tapping the Config Button (A) 2x, the LED Bar (B) will blink twice (See NOTE) to confirm
- Figure 1.3 (Page 10) shows that the Minimum Dim Level has a range of 1-45%. Each tap of the switch = 1 unit of measurement (in this case %), so you'd tap UP 12x on the paddle to reach 12%.
- As you are moving up to reach your desired %, the LED bar will also move up to give you an approximation of where you're setting the parameter to.
- Now, we'll save this configuration by holding down on the Config Button (A) for 10-15 seconds (LED Bar (B) will blink to confirm and save).

NOTE: To easily understand what parameter you're editing, the LED Bar will slow blink (ie: if you release your finger from the paddle and you're on parameter 6, the switch will blink 6x to show you).

Slow blinks = multiples of 10 / Fast blinks = single digits
Example: 34 = 3 slow blinks followed by 4 fast blinks

FCC COMPLIANCE STATEMENTS

This device complies with part 15 of the FCC Rules. Operation is subject to the 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.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 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

ISED COMPLIANCE STATEMENTS

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-003(B)/NMB-003(B)

This equipment complies with FCC& ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements de la FCC& ISED établies pour un environnement non contrôé. Cet équipement doit être installé et fonctionner à au moins 20 cm de distance d'un radiateur ou de votre corps.