LZW30-SN

Instructions

Next Gen Smart Lighting

We're excited to have you on this journey with us and we're here for you every step of the way. Not only are we smart home owners ourselves, but we build all of our products alongside 1,000's of passionate community members. To see how the project came to life and how everyone contributed, please see Page 62 or visit: inov.li/lightsout. It's truly amazing working with people of all walks of life and even more humbling to see everyone's dedication to making some of the best smart home products.

Thank you so much for your trust in us and welcome to the next generation of smart lighting with Inovelli.

Eric H. - Founder/CEO
Eric M. - Founder/CTO

Table of Contents

For the most recent instructions visit:
inov.li/lzw30sn

DSK information can be found on Page 43

Navigating this Manual

We designed this manual as if we were installing the switch ourselves. We suggest reviewing the full manual before beginning the installation process. There are five areas this manual covers:

1. Getting to know your switch
2. Figuring out your wiring
3. Manually connect your switch (after wiring installation)
4. Connecting to your hub/gateway
5. Configuring your switch (optimize the settings)

As we continue to work with hub manufacturers, and improve our products. It may be necessary to periodically update this manual. You can always find the latest version of this manual by visiting: inov.li/lzw30sn

Reprinted - 2023.10.08

Quick Setup & Inclusion.

Quick Setup Notes

We get it, you're ready to go. No need to flip through the manual, you want the abridged version. **This section assumes you have your** **switch wired correctly and the blue LED Bar is lit up.**

It also assumes you know how to enter the Z-Wave pairing mode on your hub/gateway (and have a Z-Wave compatible hub/gateway).

To see which hubs are compatible, please visit: inov.li/lzw30snhubs

While these instructions likely won't change, for the most up-to-date instructions, we recommend visiting: inov.li/lzw30snQS

Including Your Switch

Auto-Pairing: The switch will start the inclusion process when the config button (C) is pressed three times consecutively. To indicate the switch is in inclusion mode, the LED Bar (D) will pulse blue. Once the switch is in inclusion mode, start the Z-Wave inclusion process on the hub at any time. If successful, the LED Bar (D) will flash green.

If the switch is unsuccessful during inclusion, you can exclude (reset) the switch by putting your gateway in exclusion mode and pressing the config button (C) three times. The LED Bar (D) will pulse blue and then flash green if successful or red if not. After exclusion, you can try inclusion again.
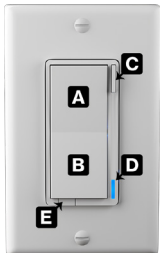
Getting to Know Your Switch

Please use the next couple pages to get to know your smart switch.

A. Light On: Tap 1x to turn on your light. In addition, it can be used to activate scene control (multi-taps and holds) where up to 7 scenes can be added*.

B. Light Off: Tap 1x to turn off your light. In addition, it can be used to activate scene control (multi-taps and holds) where up to 7 scenes can be added*.

C. Config / Favorites Button: Used to configure certain parameters of the switch. In addition, it can be used to activate scene control (multi-taps and holds) where up to 1 scene can be added*.

D. RGB LED Bar: Multi-functional LED bar that shows if the light is on or off. In addition, it can be used as a notifier* for various events (ie: turn red when alarm is armed, pulse purple if garage is left open, etc).

E. Air Gap: This can be pulled out to cut power to the load and is there for safety purposes.
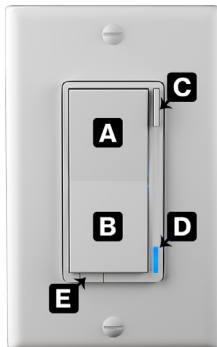
* Hub must support these features. Please see pg. 37.

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Wiring Notes

Due to the number of ways these switches can be wired, all schematics are housed online and you can access the schematics by visiting: inov.li/lzw30snwiring

To work your way through this section, first read the warnings, then familiarize yourself with the vernacular used.

Finally, please do not attempt to install these switches if you are unfamiliar with electrical as serious injury can occur.

Safety Reminder

Consult a qualified electrician if necessary as **we are unable to give wiring advice outside of schematics.**

If you are unsure how electrical circuits work, please do not try installing this device. As exciting as it is to have a smart switch installed, it can be dangerous and even life-threatening if you do not install it correctly. Improper installation will void the product's warranty.

Please read through the warnings on the next few pages before installing your switch. We can't stress enough how dangerous installation can be if you don't know what you're doing.

Warnings

Caution - Please Read: This device (LZW30-SN) is intended for installation in accordance with the National Electric Code and local regulations in the United States, or the Canadian Electrical Code and local regulations in Canada. If you are unsure or uncomfortable about performing this installation consult a qualified electrician. This product is made for indoor use only and is not designed or approved for use on power lines other than 120VAC, 60Hz, single phase. Attempting to use this LZW30-SN on non-approved power lines may have hazardous consequences.

Attention – Information importante: Cet appareil (LZW30-SN) est conçu pour être installé conformément au « National Electric Code » et aux réglementations locales aux

États-Unis, ou au Code canadien de l'électricité et aux réglementations locales canadiennes. Si vous ne vous sentez pas à l'aise ou qualifiés pour effectuer cette installation, veuillez consultez un électricien qualifié. Ce produit est conçu pour une utilisation intérieure uniquement et n'est pas conçu ou approuvé pour une utilisation avec une ligne électrique ayant un voltage autre que 120 VCA, 60 Hz, monophasé. L'utilisation du LZW30-SN avec une ligne électrique non approuvée peut avoir des résultats dangereux.

Other Warnings: Risk of Fire, Electrical Shock & Burns

Autres avertissements: Risque d'incendie, de choc électrique et de brûlures

Warnings (Continued)

Recommended Installation Practices: Use only indoors or in an outdoor rated box. Turn off the circuit breaker. Installing this switch and module with the power on will expose you to dangerous voltages. Connect only copper or copper-clad wire to the switch or module.

To reduce the risk of overheating and possible damage to other equipment, do not install to control a receptacle, a flourescent lighting fixture or a transformer supplied appliance and do not use the LZW30-SN load output to control no more than indicated.

- 600 Watts (Incandescent)
- 300 Watts (LED)
- 150 Watts (CFL)
- 300 Watts (Inductive)

Dimming an inductive load (by connecting to the light load wire),

such as a fan or transformer, appliance, motor or any device not specifically designed for dimming, could cause damage to the dimmer, the load bearing device, or both. To install your On/Off Switch (LZW30-SN), you'll need to identify the following four wires (NOTE: Neutral is not mandatory, but recommended):

- **Line:** Usually black and can also be called the, "hot" or "live" and carries 120VAC electricity into the electrical box
- **Neutral*:** Usually white and is commonly daisy chained from box to box, usually appearing as a white wire bundle.
- **Load:** Usually black, blue or red
- **Ground:** Bare copper wire or metal fixture (if grounded)

* Neutral is mandatory. See page 29 for additional details.

Warnings (Continued)

If you are having difficulties identifying wires, please consult an electrician.

Pratiques d'installation recommandées: Utiliser uniquement à l'intérieur ou à l'extérieur dans une boîte adaptée aux conditions extérieures. Éteignez le disjoncteur. L'installation de cet interrupteur et de ce module alors que le courant est allumé vous exposera à des tensions dangereuses. Connectez uniquement un fil de cuivre ou gainé de cuivre au commutateur ou au module.

Pour réduire le risque de surchauffe et d'endommager d'autres équipements, il est important de connecter des lumières incandescentes ayant moins de 600 watts, des lumières DEL ayant moins de 300 watts, des ampoules fluocompactes ayant moins de 150

watts ou un ventilateur utilisant moins de 1 ampère et ce dernier avec l'interrupteur en mode marche/arrêt uniquement.

La gradation d'une charge inductive, comme un ventilateur ou un transformateur, pourrait endommager le gradateur, l'interrupteur ou les deux appareils. Veuillez régler l'interrupteur en mode marche/arrêt si vous utilisez un ventilateur.

Pour installer votre variateur (LZW30-SN), vous devrez identifier les quatre fils suivants (REMARQUE : le neutre n'est pas obligatoire, mais recommandé) :

- **Ligne:** généralement noire et peut également être appelée « chaud » ou « sous tension » et transporte l'électricité 120 VCA

Warnings (Continued)

dans le boîtier électrique

- **Neutre:** habituellement blanc et connecté en série d'une boîte à l'autre, les fils sont habituellement attachés ensemble dans la boîte électrique
- **Charge:** habituellement noire, bleue ou rouge
- **Mise à terre:** fil de cuivre nu ou boîtier métallique (si celui-ci est mis à la terre)

Si vous rencontrez des difficultés à identifier les fils, veuillez consulter un électricien.

Équipement médical: Veuillez ne pas utiliser cet interrupteur pour contrôler de l'équipement médical ou nécessaire à la survie. Les appareils Z-Wave ne doivent jamais être utilisés pour contrôler la marche or l'arrêt d'équipement médical et/ou nécessaires à la survie.

Vocabulary

Before we go into actual steps, it's important to be familiar with the vernacular used on the following pages. Please see below:

- **Line:** This is your hot wire (120V) - aka: "live" wire
- **Load:** This is the wire that runs from your light switch to what you're controlling (ie: bulb(s), fan, etc)
- **Neutral:** This is the wire that carries current back to the power source (you may not have this in your house)
- **Single-Pole:** One switch controlling one or more load(s)
- **Multi-Way:** Refers to 3-Way (2 switches, 1 load), 4-Way (3 switches, 1 load), or 5-Way setups (4 switches, 1 load)
- **Toggle ("Dumb") Switch:** Refers to your existing switch (ie: the switch(es) you had before replacing with your smart switch(es))
- **Aux Switch:** Refers to the Inovelli Aux Switch (inov.li/aux)

Step 1 - Determine Wiring Type

The first step is to determine how many switches control your load(s) (aka: light(s)).
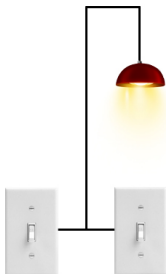
Using the diagram on the next page, please determine what your wiring type is and remember this selection:

- **Single-Pole:** One switch controls one load (load may contain more than one light, etc).
- **Multi-Way:** Two or more switches control one load (load may contain more than one light, etc). We will use the term, "multi-way" instead of 3-Way, 4-Way, 5-Way, etc as the programming of the switch is the same regardless.
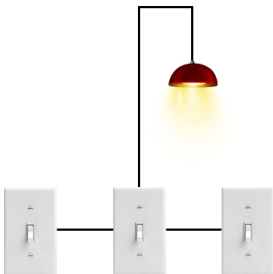
Wiring Type (Circle One): Single-Pole or Multi-Way

Single-Pole

One switch
controls one (or
more) load(s).

Multi-Way

Two or more switches control one (or more)
load(s).

Step 2 - Determine Switch Layout

NOTE: If you determined in Step #1 that your switch is single-pole, you can skip this step. This step is for multi-way setups only.

Using the diagram on the next page, please determine what your wiring layout is and remember this selection:

- **Smart Switch + Toggle Switch:** One smart switch and one (or more) toggle/existing switch (one already in your wall).
- **Smart Switch + Aux Switch:** One smart switch and one (or more) aux/add-on switch (Model #: AUX01 or inov.li/aux).
- **Smart Switch + Smart Switch:** Two (or more) smart switches.

See inov.li/lzw30snlayout for the pro/cons of each setup. You may not mix/match (ie: Smart + Aux + Toggle) in the same circuit.

Switch Layout (Circle One): Toggle, Aux, or Smart Switch(es)

Smart + Toggle Switch

One Inovelli smart switch & one (or more) toggle/existing switch.

Smart + Aux Switch

One Inovelli smart switch & one (or more) Inovelli aux switch (AUX01).

Smart Switches

Two (or more) Inovelli smart switches.

Step 3 - AC Power Type

In this step, we will determine if you have a neutral wire, which is typically white and located in the back in your switch gang-box (typically in a bundle of wires tied together).

Here are some signs you may have a neutral wire:

- If your house was built in the mid-1980's or later
- If there is an outlet (receptacle) near the switch
- If switches are in the same gang-box (regardless of the year your house was built)

See the next page for details on checking for a neutral wire.

AC Power Type: Neutral or No Neutral
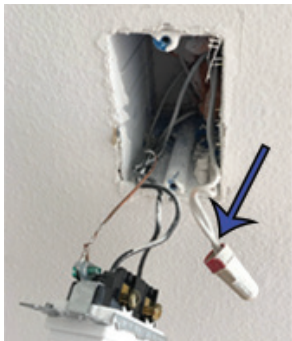
After turning off your breaker, pull out the switches (**WARNING:** there may be multiple circuits in one gang-box -- please ensure all circuits are turned off). Check the back of your gang-box for a bundle of white wires. These are typically neutrals.

Step 4 - Compatibility Check

In this step, we will determine if your switch can be installed with your current wiring setup. If not, you can see some alternate solutions on how to accomplish compatibility.

Taking the answers you circled in Steps 1-3, please see the chart on the next page to see if your switch is compatible with your setup.

Example: If you circled, "Multi-Way", "Toggle Switch" and "Neutral", you will see that your wiring is compatible. However, if you circled, "Multi-Way", "Toggle Switch" and "No Neutral", you will see that your wiring is not compatible and you will need to purchase a non-neutral compatible switch (VZW31-SN or VZM31-SN).

Wiring Type	Switch Layout	Power Type	Supported
Single-Pole		Neutral	**Yes**
		No Neutral	**No**
Multi-Way (3+ Way)	Toggle (Switch)	Neutral	**Yes**
		No Neutral	**No**
	Aux (Switch)	Neutral	**Yes**
		No Neutral	**No**
	Smart (Switch)	Neutral	**Yes**
		No Neutral	**No**

IMPORTANT: This switch cannot be used in a non-neutral setting. If you do not have a neutral wire, please purchase our Red or Blue Series 2-1 Switches.

Step 5 - Switch Installation

The last step is to physically install your switch. After you've determined your wiring type, switch layout, AC Power type and whether or not you have a compatible setup, it's time to look at the wiring schematics and install your switch.

As mentioned, there are many different ways your switch can be wired that if we posted them here, we'd have an encyclopedia of a manual, so all of our schematics are housed online. <u>UL specifies the tightening torque for the screws to be 0.8 N.m (7.08 lbf-in).</u>

Keep note of your answers from the prior steps and go to: <u>inov.li/lzw30snwiring</u> and match up your answers to the correct schematic section.

Hub/Gateway Setup

Hub/Gateway Setup Notes

As manufacturers update their hub/gateway platforms, the setup process may change. We recommend checking our website for the latest directions, by visiting the relevant short-links below.

If you don't see your hub, please go to: inov.li/lzw30snOT

SmartThings	Home Asst. Z-Wave JS	Home Asst. Z-Wave JS UI	Hubitat
inov.li/ lzw30snST	inov.li/ lzw30snZWJS	inov.li/ lzw30snZWJSUI	inov.li/ lzw30snHE

SmartThings Instructions

COMPATIBLE HUBS: Samsung SmartThings Hub V1, V2 and Samsung or Aeotec Hub V3 (NOTE: You will need to install an Edge Driver to ensure full functionality of the switch. For more info, please go to: inov.li/lzw30snSTPrereqs).

First, tap the Config Button (C) 3x until the LED Bar (D) pulses blue, then proceed to the instructions below:

- Open the SmartThings app and click on the devices icon ⊞
- Tap on the (+) button and click, "Add Device"
- Click, "Scan nearby"
- If successful, the LED Bar (C) will turn green and your app will show the new switch (feel free to rename it)

Home Assistant Instructions

COMPATIBILITY: We recommend either Z-Wave JS or Z-Wave JS UI (formerly Z-Wave JS2mqtt). NOTE: you will also need a compatible Z-Wave stick - a full list can be found here: Z-Wave JS = inov.li/lzw30snZWJSsticks or Z-Wave JS UI = inov.li/lzw30snZWJSUIsticks).

You didn't think we'd be able to fit the HA instructions in here, did you?! Please visit our website :)

Z-Wave JS Instructions

inov.li/lzw30snZWJS

Z-Wave JS UI Instructions

inov.li/lzw30snZWJSUI

Hubitat Instructions

COMPATIBLE HUBS: Hubitat C3, C4, C5 and C7 (NOTE: You may need to install a Device Driver to ensure full functionality of the switch. We recommend doing this prior to pairing. For more info, please go to: inov.li/lzw30snHEPrereqs).

First, tap the Config Button (C) 3x until the LED Bar (D) pulses blue, then proceed to the instructions below:

- Login to your Hubitat portal and click on the devices tab ☼ Devices
- Tap on the (+) Add Device button and click, "Z-Wave" under, "Add device manually"
- Click, "Start Z-Wave Pairing" and your hub should go into pairing mode, find and initialize the device
- If successful, the LED Bar (D) will turn green and your app will show the new switch (feel free to rename it)

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Advanced Features

Advanced Features Notes

NOTE: The advanced features shown below are what is built into the switch firmware, and may or may not be supported by your hub/gateway. We've confirmed they're supported on SmartThings, Hubitat, and Home Assistant.

These switches are packed with a ton of amazing features, which include scene control (multi-tap), animated notifications, smart bulb mode, energy monitoring, and approximately 20 different parameters to customize your switch.

The manual does not have enough room to list out and explain all the parameters and advanced features. However, the following pages will direct you to the proper URL's. An overview can be found at the following URL: inov.li/lzw30snAF

Switch Parameters

There are approximately 13 different parameters on this switch, making it one of the most customizable switches out there.

They can be found on Page 47 in this manual or by visiting: inov.li/lzw30snparameters

If your hub does not support parameter changes, you can program a lot of these directly from the configuration button. Please visit: inov.li/lzw30snLC

Other Advanced Features

To setup some of the other advanced features, such as: Animated Notifications, Scene Control, Smart Bulb Mode and Z-Wave Associations, please see the URL's below as the instructions will be different depending on the hub you're using.

- **Animated Notifications:** inov.li/lzw30snAN
- **Scene Control:** inov.li/lzw30snSC
- **Z-Wave Associations:** inov.li/lzw30snZA

As noted on page 45, your switch has the ability to program parameters from the configuration button. To learn more, please visit: inov.li/lzw30snLC

About Z-Wave & This Device

As mentioned in the beginning of the manual, we're all smart home owners ourselves and have an amazing community of people who are eager to help and share their setups.

If you ever run into any issues, please do not hesitate to submit a ticket, or post in the community. We'd love to hear from you.

Community Link: inov.li/community

Submit a Ticket: inov.li/support (or scan the QR Code below)

Thanks again for your support and we look forward to helping you get the most out of our smart home!

DSK Location

The DSK information required for some inclusion methods can be found either on the product (QR Code located at the bottom front-left of the switch), or on the back of the box at the bottom left (QR Code located at the bottom right). Please keep this in a safe space or write it down for your records.

Z-Wave Association Groups

Grouping Identifier	Max Nodes	Send Commands
Group 1	5	1. Central Scene Notification
		2. Basic Report
		3. Device Reset Locally
		4. Protection Report
Group 2	5	Basic Set

Group 1: Lifeline
Members of this group will receive unsolicited messages related to the status of the switch

Group 2: Basic Set
Sends On & Off commands to associated devices
1. Single press on the up button sends BasicSet (0xFF)
2. Single press on the down button sends BasicSet (0x00)

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Z-Wave Parameters

As mentioned on page 39, there are over 13 parameters on this switch depending on the firmware version. An overview of the parameters can be found on pages 47 through 49, but the most up-to-date parameter documentation can be found on our website here: inov.li/lzw30snparameters

#	Name	Range	Default	Size	FW Version
1	Power On State	1-100	0	1	1.15+
2	Invert Switch	0-1	0	1	1.15+
3	Auto Off Timer	0-32767	0	2	1.15+

#	Name	Range	Default	Size	FW Version
4	Association Behavior	0-15	15	1	1.15+
5	LED Indicator Color	0-255	170	2	1.15+
6	LED Indicator Intensity	0-10	5	1	1.15+
7	LED Indicator Intensity (Off)	0-10	1	1	1.15+
8	LED Strip Effect	Varies	0	4	1.15+
10	Active Power Reports	0-100	10	1	1.15+

#	Name	Range	Default	Size	FW Version
11	Periodic Power/ Energy Reports	0-32767	3600	2	1.15+
12	Energy Reports	0-100	10	1	1.15+
13	Special Load Type	0-1	0	1	1.17+
51	Switch Delay	0-1	1	1	1.19+

Security 2 Command Classes

Command Class	
Z-Wave Plus Info	5E
Switch Binary	26
Configuration	70
Central Scene	5B
Association	85
Association Group Info	59
Transport Service	55
Version	86
Manufacturer Specific	72

Command Class	
Device Reset Locally	5A
Application Status	22
Powerlevel	73
Security 0	98
Security 2	9F
Supervision	6C
Firmware Update Meta Data	7A
Meter	32
Protection	75

Manufacturer Compatibility

This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network. Each module is designed to act as a repeater, which will re-transmit a radio frequency (RF) signal by routing the signal around obstacles and readio dead spots to ensure that the signal is received at its intended destination. The Inovelli Red Series Dimmer Switch is a security enabled Z-Wave Plus™ device. A security enabled Z-Wave Plus controller must be used in order to fully utilize the product.

Factory Reset / Exclusion Info

To factory reset your device, first, hold the Configuration / Favorites Button (C) for 20 seconds until the LED Bar (D) turns red and let go. The switch should blink red a few times indicating it has been factory reset. You may also use a certified Z-Wave controller to remove the device from your network to factory default. Only use these procedures in the event that the primary controller is missing or otherwise inoperable.

Exclusion will reset your device as well and can be done directly from the hub. This is helpful if you're running into issues with inclusion. To exclude a device, start the exclusion process on your hub and press the Configuration / Favorites Button (C) 3x rapidly. The LED Bar (D) will start pulsing blue and if successful, it will flash green. If unsuccessful it will flash red.

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Product & Contact Info.

Product & Contact Info Notes

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If you ever run into any issues, please do not hesitate to submit a ticket, or post in the community. We'd love to hear from you.

Community Link: inov.li/community

Submit a Ticket: inov.li/support

Thanks again for your support and we look forward to helping you get the most out of our smart home!

FCC/IC Statements

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. 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.

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 or consult the dealer or an experienced radio/ TV technician for help. This equipment should be installed and

operated with minimum distance 8in (20cm) between the radiator and your body.

IC Caution: This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

DECLARATION DE CONFORMITE D'INDUSTRIE CANADA: Ce périphérique a été testé et reconnu conforme aux limites spécifiées dans RSS-210. Son utilisation est soumise aux deux conditions suivantes: (1) il ne doit pas provoquer d'interférences gênantes et (2) il doit tolérer les interférences, notamment celles susceptibles d'en perturber le fonctionnement.

Product Info

Name: Smart On/Off Switch
SKU #: LZW30-SN
Power: 120V AC, 60Hz
Signal (Frequency): 908.42 MHz
Operating Temperature Range: 32-104 °F (0-40 °C)
Maximum Load (Watts): 600W Incandescent, 300W LED, 150W CFL, 300W Inductive
Range: Up to 100 meters line of sight between the Wireless Controller (HUB) and the closest Z-Wave Repeater.
Certifications: UL Listed (#E508406), FCC/IC & Z-Wave Plus Certified

For indoor use. Specifications subject to change without notice due to continuing product improvement.

Company Info / Warranty

If you run into any issues, feel free to reach out to us at: contact@inovelli.com. We typically answer tickets within 24-48 hours and are staffed by actual smart home owners.

All Inovelli products come with a one (1) year warranty (defined as 365 days). This warranty protects you from breakdowns in the material or workmanship under normal use. This warranty is limited in a couple areas. Purchases must be made from Inovelli or an authorized reseller. The product should be used in the manner directed in the instructions. The product must only be used and/or installed in the United States or Canada.

For full warranty info, please visit: inov.li/warranty

Project Lights Out

Project, "Lights Out" started as a rally cry that we were going to turn the lights out on other smart home switches with this product because it would be that good. Our approach to building products is that we want something we'd put in our own home (we're all smart home owners) and we want to build our products with you taking the ride with us. That is, these are community built products in which 100's, if not 1000's of people outside of Inovelli have contributed to.

This switch is our first opportunity to build from scratch a true community as assembled product from both a hardware and firmware side. To see the project come to life, feel free to visit the project page: inov.li/lightsout

Thank You.

inovelli®