

3-Way Z-Wave Smart Dimmer Switch

• ZW31 •



Z-WAVE® Z-WAVE INTEROPERABILITY

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase the reliability of the network. This Device supports Lifeline (association group 1) supporting 1 node for lifeline communication. Group 1 must be assigned the Node ID of the primary controller where unsolicited notifications will be sent. The Z-Wave controller should set this association automatically after inclusion. Lifeline association only supports the "Device Reset Locally" function. Refer to the instructions of your controller for any available details on how this can be set.

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For more details, please refer to the manual parts.
If you have any questions during installation, Please contact us ask@nie-tech.com

Part 1. Introduction

Basic Operation

The connected light can be turned ON/OFF in two ways:
1. Manually from the front panel of the In-wall Switch
2. Remotely with a Z-Wave Controller

Manual Control

The Front Panel Paddle Switch allows the user to:
Turn ON/OFF the connected fixture

Air-Gap Switch:

The "air gap switch" will cut power to the device if it's pulled up. It's located right below the main switch itself, often next to the LED. Pull up for Bulb replacement, push down for normal use.

CHANGING THE COLOR OF THE PADDLE(OPTIONAL)

This step is optional. Before you start you may want to change the color of the paddle to match your wallplate or decor.

1. Push side tabs in on one side and then the other to release paddle. Lift the cover up and off.
2. Simply put the new paddle onto the switch by side tabs and snap securely into place. Once this step has been completed please proceed to part 2 wiring.

Model: ZW31

Power: 120VAC, 60Hz
Frequency: 908.42 MHz
Maximum Load: 150W LED, 500W incandescent (300W with both sides of heat sink tabs off)
Minimum Load: 5W for LED bulbs
Range: Up to 100 feet line of sight Operating
Temperature Range: 32-104° F (0-40° C)

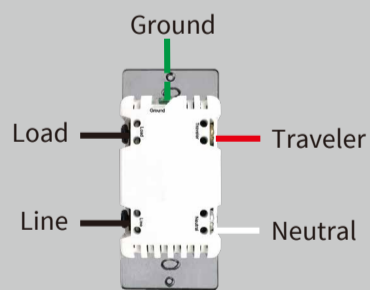
For indoor use.

Specifications subject to change without notice due to continuing product improvement
Approval: Z-Wave Plus Certified

A Few Quick Reminders

A quick note before we give out the wiring schematics. Please do not try installing this device if you are unsure of how electrical circuits operate within your home. As exciting as it is to have a smart switch installed, it can be dangerous and even life-threatening if you do not install this correctly. Please consult a qualified electrician if necessary. With that said, here are a few other warnings we'd like to point out for your safety:

HOW TO INSTALL THE WIRES



- Line (hot) — black (connected to power)
- Neutral — white
- Load — black (connected to lighting)
- Traveler — red/other (only in 3-way installations)



1. **Unscrew:** carefully turn the screw counterclockwise to leave enough space for the wire to be inserted. Do not unscrew the screws completely.
 2. **Press down:** Once loosened, use your finger so it catches the thread.
 3. **Insert the wire:** make sure the wire is completely straight, then insert it into the terminal while holding down the screw. Do not wrap the wire around the screw!
 4. **Tighten:** Turn the screw clockwise to tighten the wire. Make sure the wires are locked!
- Note:** There are 2 holes for each terminal can be used in the connection. You can use a jump wire or the second hole at the terminal to connect.

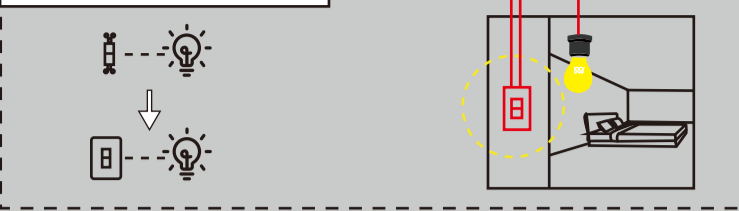
Note before installation

- 1) The Z-Wave In-wall Smart Switch must not exceed **150W LED, 500W** incandescent.
- 2) The switch box required: 1-gang U.S. wall box. **3 1/2 in** deep recommended, **2 1/4 in** deep minimum. (The switch is designed only for use with permanently installed fixtures.)
- 3) Work with **regular 3-way on/off** for 2 locations control. It can only be connected with regular 3-way on/off switch, **don't use a smart switch or a dimmer switch! Couldn't work with an add-on switch!**
- 4) The colors of your wires may not match the ones in our diagrams so please make sure you've **identified all wires correctly** based on their source, not color only.
- 5) Please check your original 3-way wiring circuit in your home before installation, and then **follow the wiring diagram option 1 or 2** in the manual.
- 6) Install the smart switch in the switch box which directly connects to the power **Line and Neutral**.
- 7) This switch **requires a Neutral for installation**, or the installation will not succeed.
- 8) Not recommended for fan.

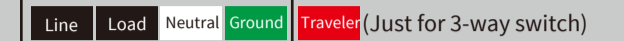
If you have any questions, please contact us at ask@nie-tech.com

Part 2. Wiring Diagram

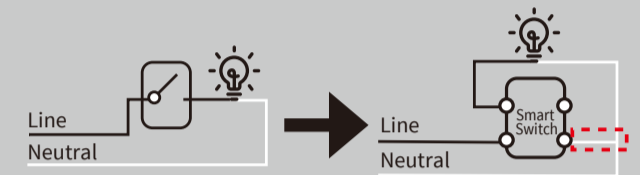
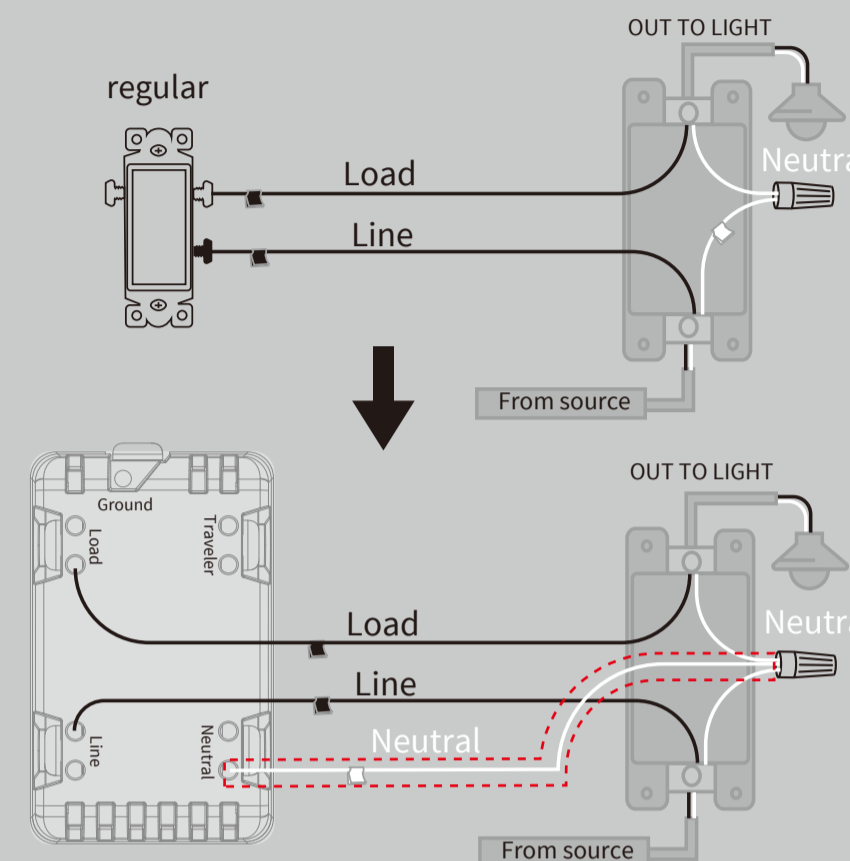
Single-pole wiring



1. **Tool:** Please prepare a flat head screwdriver.
2. **Turn power OFF** at circuit breaker or fuse box.
3. **Remove wallplate.**
4. **Remove the switch mounting screws.**
5. **Disconnect the wires and label them after remove the old switch.** (Please use our sticker)



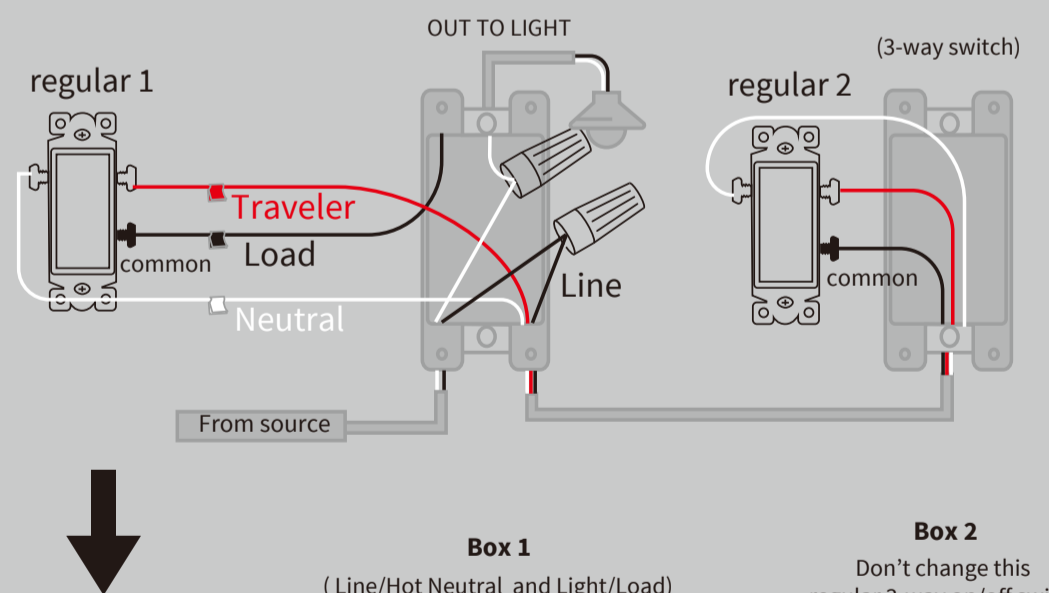
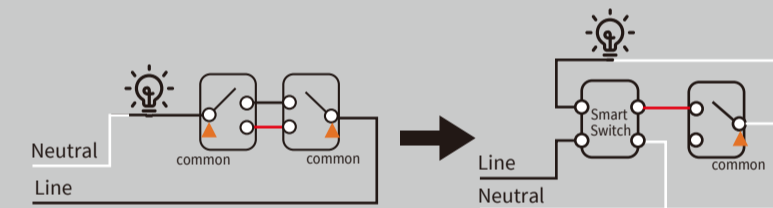
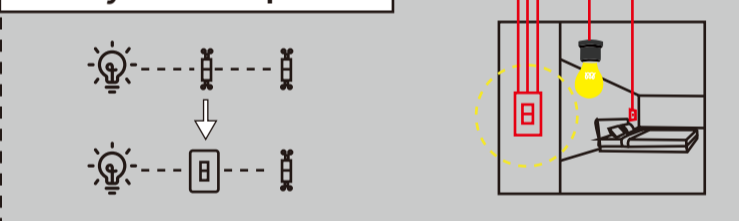
6. **Carefully remove the switch from the switch box.** (DO NOT disconnect the wires.)
7. **There are up to five screw terminals on the smart switch, these are marked** (Please check **<HOW TO INSTALL THE WIRES>**)
8. **Fix the wallplate with screws after wiring succeed.** (Please use our screws.)
9. **The Ground was excluded from the diagram to simplify the illustration.** Please Make sure all ground wires are connected to all switches respectively.



IMPORTANT

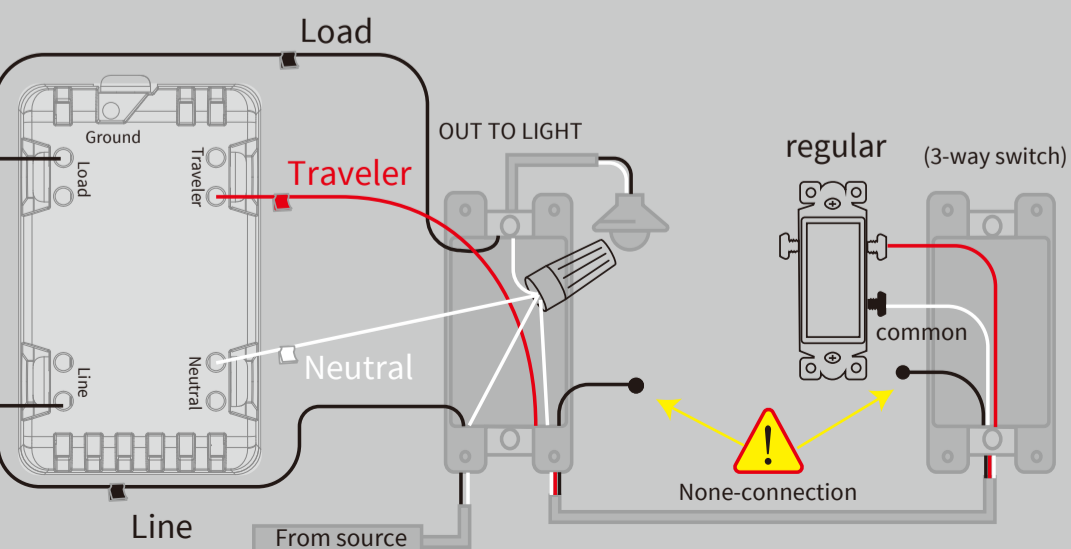
- 1) **Neutral required.** If the box do not have a Neutral, please stop! Connect the **white wire to neutral terminal** (use a white jump wire form the package or the second hole at the terminal to connect.)
- 2) Insert the Line wire to Line terminal and Load wire to Load terminal. **LOAD and LINE Can't be swapped**, please make sure to identify them correctly!

3-Way switch option 1

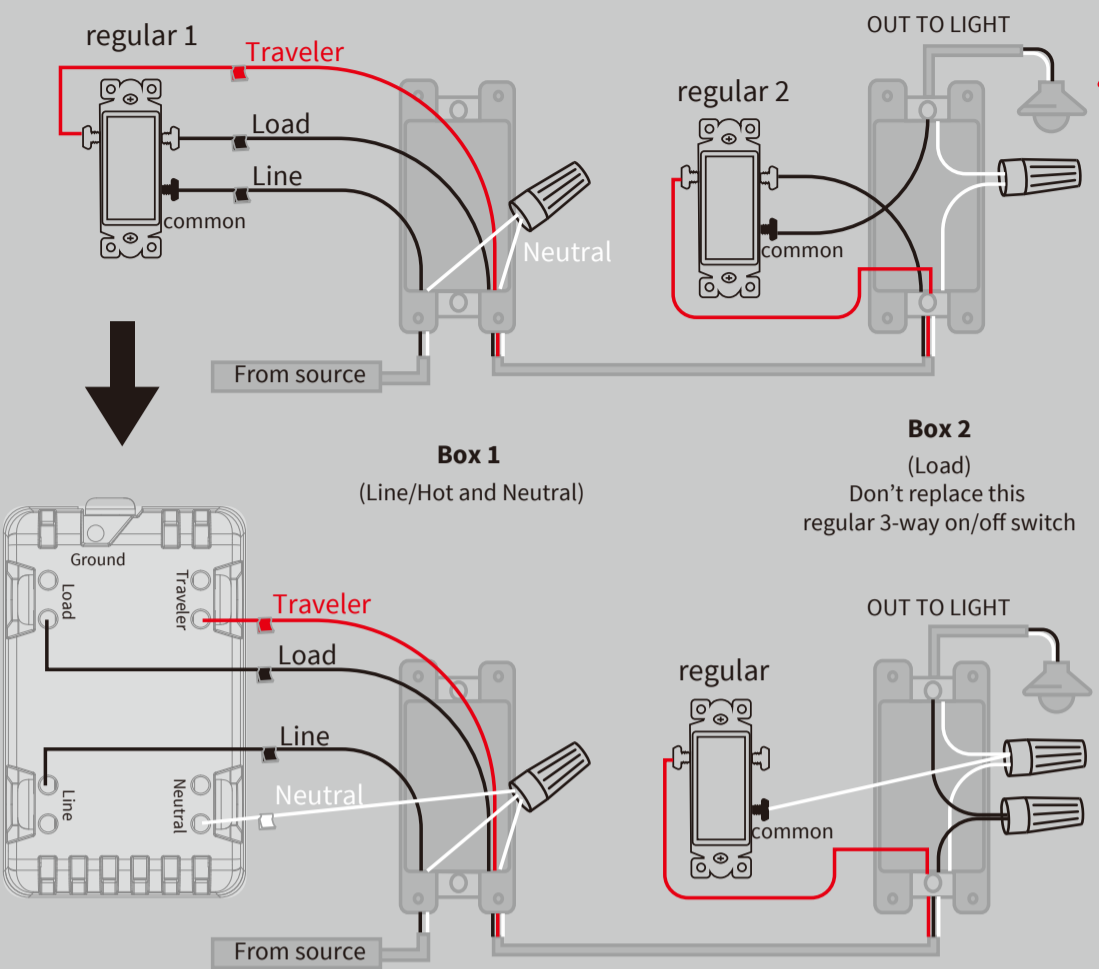
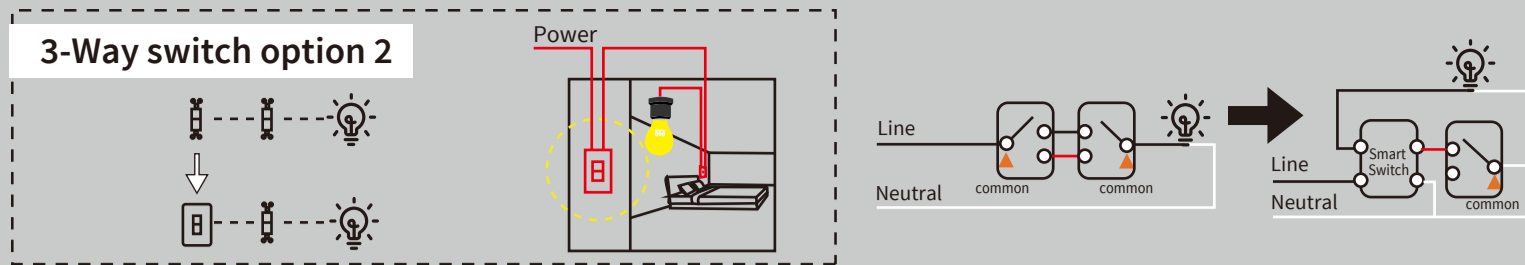


IMPORTANT

- 1) **Neutral required.** If the switch box do not have a Neutral, please stop! Connect the **white wire to neutral terminal** (use a white jump wire form the package or the second hole at the terminal to connect.)
- 2) Insert the Line wire to Line terminal and Load wire to Load terminal. **LOAD and LINE Can't be swapped**, please make sure to identify them correctly!
- 3) Install the smart switch in the switch box which directly connects to the power **Line, Load and Neutral**.
- 4) Only work with **regular 3-way on/off** for 2 locations control. It can only be connected with regular 3-way on/off switch, **don't use a smart switch or a dimmer switch! Couldn't work with an add-on switch!**



3-Way switch option 2



IMPORTANT

- Neutral required.** If the switch box do not have a Neutral, please stop! Connect the **white wire to neutral terminal** (use a white jump wire form the package or the second hole at the terminal to connect.)
- Insert the Line wire to Line terminal and Load wire to Load terminal. **LOAD and LINE Can't be swapped**, please make sure to identify them correctly!
- Install the smart switch in the switch box which directly connects to the power **Line and Neutral**.
- Only work with **regular 3-way on/off** for 2 locations control. It can only be connected with regular 3-way on/off switch, **don't use a smart switch or a dimmer switch! Couldn't work with an add-on switch!**

Part 3. Manual Control

Operation	LED Status(Blue)	Switch
press down	ON (Default)	power off (Default)
press up	OFF (Default)	power on (Default)
hold	/	dimmer up or dimmer down
press 2x quickly	/	send scene 1 / scene 2
press 3x quickly (see below)	flash quickly	inclusion /exclusion
press 5x quickly	flash slowly	Min / Max brightness level setting
press 6x quickly	flash two times	change LED status
press 7x quickly	flash two times	change locally button function
press 8x quickly	flash two times	restores state after power failure
parameter change	flash two times	configuration succeed
tap-tap and hold 10 seconds	flash quickly	factory default

Adding your device to a Z-Wave network

Make your controller/hub into the "inclusion" mode, triple press the Up/Down push button quickly to include it in the network.

To exclude and reset the device

Make your controller/hub into the "exclusion" mode, triple press the Up/Down push button quickly to exclude it from the network.

To return your switch to factory defaults

1. Tap-tap and hold the upper paddle for at least 10 seconds.

Note: This should only be used in the event your network's primary controller is missing or otherwise inoperable.

Scene:
Scene 1: Tap-Down-2
Scene 2: Tap-Up-2

Works with Alexa & Google Assistant
 It must be connected to a supported hub in order to interact with the Amazon Alexa / Google Home services.

Min / Max brightness level setting

- Press the button 5 times (up/down) quickly, the blue indicator light flashes slowly, enter the setting "Min brightness" mode, and the load lamp automatically adjusts to the min brightness.
- Press the up or down button to adjust the brightness of the bulb, select the appropriate brightness to set the min brightness.
- Quick Press the button 5 times (up/down) to confirm it (the min brightness setting is completed). It will be entered into the "Max Brightness" setting automatically, the bulb will adjust to the max brightness.
- Press the up or down button to adjust the brightness of the bulb, and select the appropriate brightness to set the max brightness.
- Press the button 5 times (up/down) to confirm.
- After confirmation, the brightness of the bulb will automatically be adjusted from the set min brightness to the max brightness, then from the max brightness to the min brightness, finally stays at the set min brightness. The blue indicator light stops flashing.
- Min / Max brightness level settings are completed.

Remark: If the setting is not confirmed at Step 3/Step 5, the setting mode will be exited after 10S, and the adjusted value will not be saved.

Part 4. Troubleshooting

Possible Problem	Possible Cause	Solution
1. The connected LED is flashed/too bright when set it to the Minimum brightness level.	LED brightness minimum setting is incorrect.	Please set the minimum brightness level according to the manual.
2. Couldn't pair with hub/your hub cannot recognize the device.	The device needs to be resetted before pairing.	Please reset the device according to the manual.
3. The device couldn't trun lights on/off manually.	Wiring errore	Please check the wiring diagram on the manual.
4. The smart switch is working and the 3-way switch does not.	3-way Wiring error	Please check the wiring diagram on the manual.

WARRANTY

Our Products warrants this product to be free from manufacturing defects for a period of one year from the original date of consumer purchase. This warranty is limited to the repair or replacement of this product only and does not extend to consequential or incidental damage to other products that may be used with this product. This warranty is in lieu of all other warranties, expressed or implied. Some states do not allow limitations on how long an implied warranty lasts or permit the exclusion or limitation of incidental or consequential damage, so the above limitations may not apply to you. This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Part 5. Parameter Settings

The indicator will flashes 2 times after each parameter set successfully.

Parameter	Available settings	Operation
Parameter 1: Button Function Setting This parameter can access you to set the up button to turn the light on/off.	Size=1 Value=0 (Default)The up button turn the light on and down button turn lights off. Value=1 -----The up button turn the light off and down button turn lights on. Value=2 -----The up/down button both can changes the state of the light.	Quick press the switch button 7 times Please note: the switching of each value is in order, a quick press on button 7 times will switch once. eg: Switching from value 0 to value 2 needs 2 switching.
Parameter 2: LED Indicator Status Setting This parameter can access you to choose the led indicator to be on when the switch(light) is on/off, or LED indicator remains on/off all times.	Size=1 Value=0 (default) LED is On when the switch(light) Off and LED is Off when the switch (light) On. Value=1 -----LED is On when switch(light) On and LED is Off when the switch(light) Off. Value=2 -----LED is always Off. Value=3 -----LED is always On.	Quick press the switch button 6 times Please note: the switching of each value is in order, a quick press on button 6 times will switch once. eg: Switching from value 0 to value 3 needs 3 switching.
Parameter 4: Auto Turn-Off Timer. This parameter can access you to set a timer to make the switch turn off automatically after the switch turned on.The numberentered as value corresponds to number of minutes.	Size=4 Values: 0 - 65535 (minutes); Value=0 (minutes) - default setting	Set up on the hub
Parameter 6: Auto Turn-On Timer. This parameter can access you to set a timer to make the switch turn on automatically after the switch turned off.The numberentered as value corresponds to number of minutes.	Size=4 Values: 0 - 65535 (minutes); Value=0 (minutes) - default setting	Set up on the hub
Parameter=7 Association Setting	Size=1 Default = 1 Value=00 - none Value=01 - local Value=02 - 3way Value=03 - 3way & local Value=04 - z-wave hub Value= Value=05 - z-wave hub & local Value=06 - z-wave hub & 3-way Value=07 - z-wave hub & local & 3way Value=08 - timer Value=09 - timer & local Value=10 - timer & 3-way Value=11 - timer & 3-way & local Value=12 - timer & z-wave hub Value=13 - timer & z-wave hub & local Value=14 - timer & z-wave hub & 3-way	Set up on the hub
Parameter 8: Restores State after Power Failure This parameter can access you to set the switch to be on/off after power failure.	Size=1 Value=1-----The switch is off regardless of the state prior to power failure. Value=2(default) memory state before power failure This switch will be return to state prior to the power failure after power is restored.	Quick press the switch button 8 times Please note: the switching of each value is in order, a quick press on button 8 times will switch once. eg: Switching from value 0 to value 2 needs 2 switching.
Parameter 11: Multilevel minimum value can be set This parameter can access you to set Min / Max brightness level setting	Size=1, Value=0 disable Value=1 / Value=99 Default = 10	Quick press the switch button 5 times
Association Group: Linking devices: direct control of other devices within the Z-Wave system network.	Group 1 supports 1 node ID, Group 2 Supports maximum of 5 node ID's Association group_1:Z-Wave Plus Lifeline Association Group 2:Send Basic Set ON / Off	Set up on the hub

Generic Device Class:
 0x11- GENERIC_TYPE SWITCH_MULTILEVEL
 Specific Device Class:
 0x01-SPECIFIC_TYPE POWER_SWITCH_MULTILEVEL

Command Classes:
 0x5E - COMMAND_CLASS_ZWAVEPLUS_INFO
 0x26 - COMMAND_CLASS_SWITCH_MULTILEVEL
 0x85 - COMMAND_CLASS_ASSOCIATION
 0x8E - COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION
 0x59 - COMMAND_CLASS_ASSOCIATION_GRP_INFO
 0x55 - COMMAND_CLASS_TRANSPORT_SERVICE
 0x86 - COMMAND_CLASS_VERSION
 0x72 - COMMAND_CLASS_MANUFACTURER_SPECIFIC
 0x5A - COMMAND_CLASS_DEVICE_RESET_LOCALLY
 0x73 - COMMAND_CLASS_POWERLEVEL
 0x70 - COMMAND_CLASS_CONFIGURATION
 0x5B - COMMAND_CLASS_CENTRAL_SCENE
 0x9F - COMMAND_CLASS_SECURITY_2
 0x6C - COMMAND_CLASS_SUPERVISION
 0x7A - COMMAND_CLASS_FIRMWARE_UPDATE_MD

FCC / IC

This device complies with part 15 of the FCC and Industry Canada license-exempt RSS standard(s). 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.

FCC NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

- 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

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:

Important note: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

CONTROLLING APPLIANCES

Please exercise EXTREME CAUTION when using Z-Wave devices to control appliances. Reason being is because the appliance you want to control may be in a separate room and if unintentional behavior occurs (such as a device turning on or off - either intentionally via schedules, or unintentionally via network error) this event may lead to a hazardous condition. For these reasons, please note the following suggestions:

- 1) Do not include Z-Wave devices in Groups or Scenes if they control appliances.
- 2) Do not use Z-Wave devices to control electric heaters or any other appliances which may present a hazardous condition due to unattended, unintentional, or automatic power control

CAUTION - PLEASE READ!

This device (ZW31) 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.

WARNING - SHOCK HAZARD

TURN OFF THE POWER to the circuit for the switch and lighting fixture at the service panel (circuit breaker) prior to installation.

ALL WIRING CONNECTIONS MUST BE MADE WITH THE POWER OFF to avoid personal injury and/or damage to the switch.

OTHER WARNINGS

Risk of Fire
 Risk of Electrical Shock
 Risk of Burns

MEDICAL EQUIPMENT

Please DO NOT use this switch to control Medical or Life Support equipment. Z-Wave devices should never be used to control the On/Off status of Medical and/or Life Support equipment.

If you have any questions, please contact us at
ask@nie-tech.com