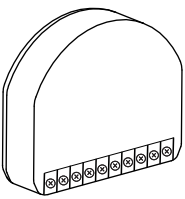


USER MANUAL



RGBW DIMMER ZEN31



www.getzooz.com  
ask@getzooz.com



FEATURES

- Manual or Z-Wave on/off, brightness, and RGBW color control
- Perfect for programming your existing RGBW LED strip
- Energy monitoring in live mode and over time
- Double tap to full brightness feature + **optional scene control**
- Remembers and restores on/off status after power failure
- Built-in Z-Wave Plus signal repeater to extend network range
- S2 security protocol and AES-128 bank-grade encryption

SPECIFICATIONS

- Model Number: ZEN31
- Z-Wave Signal Frequency: 908.42 MHz
- Power: 12 / 24 V DC (Do **NOT connect to 120 V AC** high-voltage power!)
- **Maximum Load:** 10 A total between all channels (6 A per channel max); 120 W total when powered by 12 V DC / 240 W total when powered by 24 V DC
- Range: Up to 100 feet line of sight
- Operating Temperature: 32-104° F (0-40° C)
- Installation and Use: Indoor only
- Dimensions: 1.67” x 1.5” x 0.69”

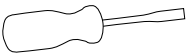


# CAUTION

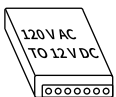
This is an electrical device - please use caution when installing and operating the RGBW Dimmer. Remote control of appliances and lighting fixtures may result in unintentional or automated activation of power. Do not use this Z-Wave device to control electric heaters or other appliances which produce the risk of fire, burns, or electrical shock when unattended. To reduce risk of overheating and possible damage to other equipment, **do NOT install this unit to control a receptacle; a motor-operated appliance; a 120 VAC lighting fixture; or any load powered by AC voltage.**

INSTALLATION

**WHAT YOU’LL NEED:**



Small flat screwdriver



12 or 24 V DC power adapter



3-wire romex or old 3-wire plug to power the adapter



6 x 16 AWG jumpers to connect everything together



12 or 24 V DC LED strip which draws less than 120 W total at 12 V DC (or 240 W total at 24 V DC)



## BEFORE YOU INSTALL

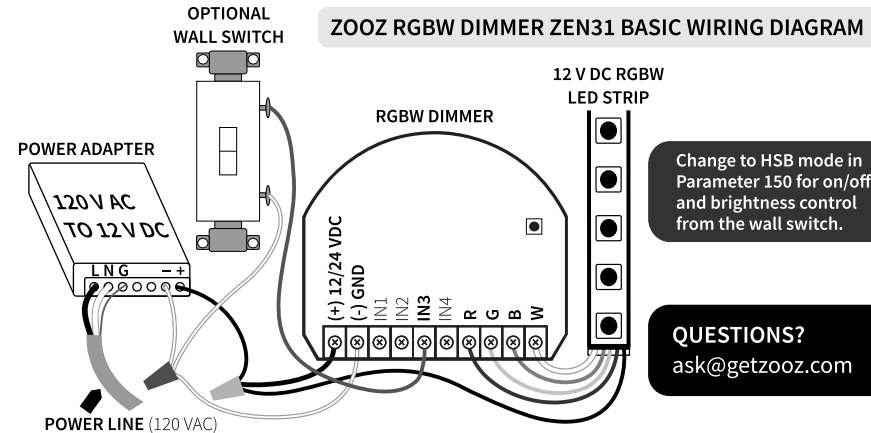
This RGBW dimmer is intended for installation in accordance with the National Electric Code and local regulations. It is recommended that a licensed electrician perform this installation.

WIRING: READ IT!

- 1. CHECK THE LOAD:** Low voltage lights only (120 W total at 12 V DC or 240 W total at 24 V DC), DON’T CONNECT THIS RGBW DIMMER TO 120 VAC LIGHTS!
- 2. POWER OFF:** Turn the circuit power off in the breaker panel before you start if you’re working with an electrical box or unplug the power supply from the receptacle if you’re working with a plug-in adapter.
- 3. CHECK THE WIRES:** If using a plug-free power adapter, you’ll need to connect it to line, neutral, and ground as indicated in the instructions for the device. Please make sure you identified all of these wires on your source romex cable or plug cable.



- 4. CONNECT THE POWER ADAPTER:** If using a plug-free power adapter, make the connections from the 120 V AC power source to the appropriate line, neutral, and ground terminals on the power adapter. If using a plug-in power supply, skip this step.
- 5. CONNECT THE RGBW DIMMER:** Use 2 16 AWG jumper wires to connect the RGBW dimmer to the power adapter. Connect the “+” low voltage terminal on the power supply with the “(+) 12/24 VDC” terminal on the RGBW Dimmer, and the “-” low voltage terminal on the power supply with the “(-) GND” terminal on the RGBW Dimmer.
- 6. CONNECT THE RGBW LED STRIP:** Connect the red, green, blue, and white wires from the LED strip with the R G B W terminals on the Dimmer. Use a wire nut to connect the power (usually black) wire from the LED strip with connections to the (+) 12/24 VDC terminal on the RGBW Dimmer and the “+” low voltage terminal on the power supply.
- 7. CONNECT THE WALL SWITCH (OPTIONAL):** Connect one of the terminals / screws on the wall switch with the **IN3** terminal on the RGBW Dimmer. Use a wire nut to connect the other terminal / screw on the wall switch with connections to the (-) GND terminal on the RGBW Dimmer and the “-” low voltage terminal on the power supply. **Do NOT power the wall switch with 120 VAC!** The RGBW Dimmer can be connected to regular on/off switches or momentary push-button switches (to enable dimming from the switch).
- 8. REVIEW ALL CONNECTIONS:** Please verify that you’ve identified all wires and terminals correctly before restoring power to the adapter and testing the set-up. **Make sure that a 24 V DC LED strip is powered by a 24 V DC power supply.**



Z-WAVE CONTROL

**1. ADD DEVICE to your hub**

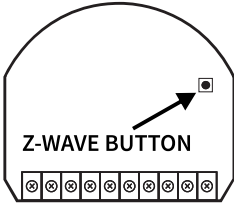
**Initiate inclusion (pairing)** in the app (or web Interface). Not sure how? ask@getzooz.com If you’re using Smart Start on an S2 hub, it may ask you to enter the DSK key printed on the back cover sticker or scan the QR code next to it to complete secure inclusion.

**2. ACTIVATE the dimmer**

Make sure the RGBW Dimmer is powered up. **Click the Z-Wave button 3 times quickly** to include the device. The LED will blink yellow to indicate communication with the hub. It will blink green (for non-secure, S0, or S2 unauthenticated inclusion) or magenta (for S2 authenticated) once the device is successfully included to your network. It will blink red if inclusion is not successful.

Get step-by-step instructions for adding the RGBW Dimmer to **SmartThings, Vera,** and other hubs at [www.support.getzooz.com](http://www.support.getzooz.com)





HOW IT WORKS

We recommend using the RGBW Dimmer in **HSB mode** (see Parameter 150) with a momentary wall switch (such as our ZAC99 accessory switch) connected to the **IN3** terminal for best experience. Click it once to turn the light on (to the last color and brightness setting) or off. Click the switch 2 times quickly to go to full brightness. Press and hold to dim the light. See advanced settings for scene control options.

TROUBLESHOOTING

- The RGBW dimmer won’t add to your system? Try this:**
1. Initiate **EXCLUSION** and **click the Z-Wave button 3 times quickly**.
  2. Click the Z-Wave button **4-5 times quickly** when adding the device.
  3. Bring the gateway controller (hub) **closer** to the device, it may be out of range.
  4. Get troubleshooting tips for your hub at [www.support.getzooz.com](http://www.support.getzooz.com)

EXCLUSION (REMOVING / UNPAIRING DEVICE)

1. Bring your Z-Wave gateway (hub) close to the RGBW Dimmer if possible
2. Put the Z-Wave hub into **exclusion mode** (not sure how to do that? ask@getzooz.com)
3. Click the **Z-Wave button** on the device **3 times quickly**
4. Your hub will confirm exclusion, the LED indicator on the RGBW Dimmer will light up in red, and the device will disappear from your controller's device list

FACTORY RESET

If your primary controller is missing or inoperable, you may need to reset the device to factory settings. To complete the reset process manually, **press and hold the Z-Wave button** to enter reset mode. **Release** the button when the LED indicator glows **yellow**. Then **quickly click the Z-Wave button again** to confirm factory reset. Wait a few seconds until the device resets and restarts - the LED indicator will light up in red when it’s ready.

*NOTE: All previously recorded activity and custom settings will be erased from the device's memory.*

To **reset the kWh energy use meter** **press and hold the Z-Wave button** to enter reset mode. **Release** the button when the LED indicator glows **green**. Then **quickly click the Z-Wave button again** to confirm the reset.

## ADVANCED SETTINGS

Please refer to your controller's user guide for advanced programming instructions as they are a little different for every software.

**Not sure where to start? Go to [www.support.getzooz.com](http://www.support.getzooz.com) for detailed instructions on how to change the settings on SmartThings, Vera, and more.** Or just email us: [ask@getzooz.com](mailto:ask@getzooz.com)

## ASSOCIATION

This RGBW Dimmer supports Group 1 (your hub)with up to 1 devices for lifeline communication and Groups 2-10 with up to 5 devices per group for direct association with the RGBW Dimmer. Group 2 is reserved for association and sync with other Zooz RGBW Dimmers (not for use with other devices). Groups 3, 5, 7, and 9 are reserved for on/off operation sync from inputs 1-4 (IN1-IN4). Groups 4, 6, 8, 10 are reserved for brightness (dimming) sync from inputs 1-4 (IN1-IN4). **Get detailed association settings and commands at [www.support.getzooz.com](http://www.support.getzooz.com)**

## CUSTOMIZE YOUR RGBW DIMMER

### On Off Status After Power Failure

**Parameter 1:** Set the on off status for the RGBW Dimmer after power failure.

**Values:** 0 – forced to OFF (regardless of state prior to power outage); 1 – remembers and restores on/off status after power failure; 2 – forced to ON (regardless of state prior to power outage); default: 0  
**Size:** 1 byte dec.

### Switch / Input Type for IN1\*

**Parameter 20:** Choose the input / switch type you want to connect to the IN1 terminal.  
**Values:** 0 – analog sensor with no pull-up; 1 – analog sensor with pull-up; 2 – momentary switch (default); 3 – toggle switch (state changes whenever the switch is toggled); 4 – toggle switch (light on when the switch is toggled up, light off when the switch is toggled down);  
**Size:** 1 byte dec.

*\*Use parameters 21-23 to adjust input types for IN2-IN4 with the same values.*

### Scene Control

**Parameter 40:** Assign scene activation trigger for IN1 terminal\*. Enter the sum of values to enable more than 1 trigger.  
**Values:** 0 – scene control disabled. 1 – click / toggle the connected switch once to trigger a scene; 2 – click / toggle the connected switch twice to trigger a scene; 4 – click / toggle the connected switch 3 times to trigger a scene; 8 – hold and release the connected momentary switch to trigger a scene; default: 15.

**Size:** 1 byte dec.

*\*Use parameters 41-43 to assign scene triggers to IN2-IN4 with the same values.*

### Find out how to make scene control work on your hub at [www.support.getzooz.com](http://www.support.getzooz.com)

### Power Report Frequency

**Parameter 62:** Choose how often you want your RGBW Dimmer to report power consumption (W) to your controller. The number entered as value corresponds to the number of seconds. So if 3600 is entered by default, the RGBW Dimmer will report power consumption every hour. Power reports are sent in at least 30-second intervals.  
**Values:** 0 – disabled (it will not report power consumption based on the frequency setting); 30 – 32400 (seconds); default: 3600  
**Size:** 2 byte dec.

### Energy Report Threshold

**Parameter 65:** Choose how you want your RGBW Dimmer to report energy use (kWh) to your hub. The number entered as value corresponds to decimal values in energy usage change. So if 10 is entered by default, the RGBW Dimmer will report any change in energy use over 0.1 kWh. Energy reports are sent in at least 30-second intervals.  
**Values:** 0 – disabled (it will not report energy use based on value change); 1 – 500 (0.01 - 5 kWh); default: 10.  
**Size:** 2 byte dec.

### Energy Report Frequency

**Parameter 66:** Choose how often you want your RGBW Dimmer to report energy (kWh) to your controller. The number entered as value corresponds to the number of seconds. So if 3600 is entered by default, the RGBW Dimmer will report energy use every hour (independent of the threshold set in parameter 65). Energy reports are sent in at least 30-second intervals.  
**Values:** 0 – disabled (it will not report energy use based on the frequency setting); 30 – 32400 (seconds); default: 3600.  
**Size:** 2 byte dec.

### RGBW / HSB Wall Switch Mode

**Parameter 150:** Choose how switches connected to the input terminals control your LED strip. In the default RGBW mode, each switch connected to each input terminal controls the RGBW channels separately (so IN1 for red, IN2 for green, etc) with a single click for ON/OFF, double click to full brightness, and press-and-hold to dim (momentary switches only). In the HSB mode, IN1 controls hue, IN2 – saturation, IN3 – brightness, IN4 – white with single click for last set value or value 0, double click to max value, and press-and-hold to set custom value.  
**Values:** 0 – RGBW mode (default); 1 – HSB mode  
**Size:** 1 byte dec.

### Find out more about manually setting the colors and brightness on your RGBW strip from the connected wall switch on [www.support.getzooz.com](http://www.support.getzooz.com)

### Ramp Rate

**Parameter 151:** Adjust the ramp rate for your RGBW dimmer (fade-in / fade-out effect for on / off operation). Values correspond to the number of seconds it take for the dimmer to reach full brightness or turn off when operated from the connected wall switch.  
**Values:** 0 – instant on/off; 1 – 127 (seconds). Default: 3.  
**Size:** 2 byte dec.

**Parameter 152:** Adjust the ramp rate for your RGBW dimmer when operated remotely from the Z-Wave hub.  
**Values:** 0 – instant on/off; 1 – 127

(seconds). Default: 3.  
**Size:** 2 byte dec.

### Preset Programs

**Parameter 157:** Enable one of the preset animated color programs to set the mood with a click.  
**Values:** 0 – preset programs disabled (default); 6 – fireplace; 7 – storm; 8 – rainbow; 9 – polar lights; 10 – police (strobing red, white, and blue);.  
**Size:** 1 byte dec.

### Find more advanced settings at [www.support.getzooz.com](http://www.support.getzooz.com)

This device requires the following **command classes** to be supported and recognized by your Z-Wave controller:

COMMAND\_CLASS\_ZWAVEPLUS\_INFO  
COMMAND\_CLASS\_SWITCH\_MULTILEVEL  
COMMAND\_CLASS\_ASSOCIATION  
COMMAND\_CLASS\_MULTI\_CHANNEL\_ASSOCIATION  
COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO  
COMMAND\_CLASS\_MULTI\_CHANNEL  
COMMAND\_CLASS\_TRANSPORT\_SERVICE  
COMMAND\_CLASS\_VERSION  
COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC  
COMMAND\_CLASS\_CRC\_16\_ENCAP  
COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY  
COMMAND\_CLASS\_APPLICATION\_STATUS  
COMMAND\_CLASS\_POWERLEVEL  
COMMAND\_CLASS\_CONFIGURATION  
COMMAND\_CLASS\_CENTRAL\_SCENE  
COMMAND\_CLASS\_SECURITY  
COMMAND\_CLASS\_SECURITY\_2  
COMMAND\_CLASS\_PROTECTION  
COMMAND\_CLASS\_SUPERVISION  
COMMAND\_CLASS\_FIRMWARE\_UPDATE  
COMMAND\_CLASS\_NOTIFICATION  
COMMAND\_CLASS\_COLOR\_SWITCH  
COMMAND\_CLASS\_METER  
COMMAND\_CLASS\_SENSOR\_MULTILEVEL  
COMMAND\_CLASS\_BASIC

## ⚠ WARNING

- This product should be installed indoors upon completion of any building renovations.
- Prior to installation, the device should be stored in a dry, dust-and-mold-proof place.
- Do not install the device in a place with direct sun exposure, high temperature, or humidity.
- Keep away from chemicals, water, and dust.
- Ensure the device is never close to any heat source or open flame to prevent fire.
- Ensure the device is connected to an electric power source that does not exceed the maximum load power.
- No part of the device may be replaced or repaired by the user.



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 reliability of the network.

This product features the latest Security 2 (S2) framework to remove smart home network hacking risks. This device is equipped with a unique authentication code for trusted wireless communication. A security enabled Z-Wave controller must be used to fully utilize this feature.

**This is a UL certified device.** UL, just like ETL, is a Nationally Recognized Testing Laboratory. The UL mark is proof of product compliance with North American safety standards.

## WARRANTY

This product is covered under a 12-month limited warranty. To read the full warranty policy or file a warranty claim, please go to [www.getzooz.com/warranty](http://www.getzooz.com/warranty)

IN NO EVENT SHALL ZOOZ OR ITS SUBSIDIARIES AND AFFILIATES BE LIABLE FOR ANY INDIRECT, INCIDENTAL, PUNITIVE, SPECIAL, OR CONSEQUENTIAL DAMAGES, OR DAMAGES FOR LOSS OF PROFITS, REVENUE, OR USE INCURRED BY CUSTOMER OR ANY THIRD PARTY, WHETHER IN AN ACTION IN CONTRACT, OR OTHERWISE EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. ZOOZ'S LIABILITY AND CUSTOMER'S EXCLUSIVE REMEDY FOR ANY CAUSE OF ACTION ARISING IN CONNECTION WITH THIS AGREEMENT OR THE SALE OR USE OF THE PRODUCTS, WHETHER BASED ON NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY, BREACH OF AGREEMENT, OR EQUITABLE PRINCIPLES, IS EXPRESSLY LIMITED TO, AT ZOOZ'S OPTION, REPLACEMENT OF, OR REPAYMENT OF THE PURCHASE PRICE FOR THAT PORTION OF PRODUCTS WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. ALL CLAIMS OF ANY KIND ARISING IN CONNECTION WITH THIS AGREEMENT OR THE SALE OR USE OF PRODUCTS SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING WITHIN THIRTY (30) DAYS FROM ZOOZ'S DELIVERY, OR THE DATE FIXED FOR DELIVERY IN THE EVENT OF NONDELIVERY. All information, including, but not limited to, information regarding the features, functionality, and/or other product specifications are subject to change without notice. The manufacturer reserves the rights to revise or update the product, software, or documentation without any obligation to notify any individual or entity.

### UL NOTE

A. Purpose of control: Operating Control (lighting control) for LED, RGB, RGBW strips, halogen lights, and other resistive loads. B. Construction of control: Independently mounted control for flush mounting. C. Type I.C Action. D. Pollution Degree 2. E. Impulse Voltage: 330 V. F. Field-installed conductors must be separated from uninstalled or bare live parts of a different circuit.

### 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. STORE INDOORS WHEN NOT IN USE. SUITABLE FOR DRY LOCATIONS ONLY. DO NOT IMMERSE IN WATER. NOT FOR USE WHERE DIRECTLY EXPOSED TO WATER. This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:  
1. This device may not cause harmful interference,  
2. This device must accept any interference received, including interference that may cause undesired operation. 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 according to instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in any given installation. If this equipment causes harmful interference to radio or television reception, the user may try to correct the interference by taking one or more of the following measures:  
- Reorient or relocate receiving antenna  
- Increase the separation between equipment and receiver  
- Connect equipment into a separate outlet or circuit from receiver  
- Consult the dealer or an experienced radio/TV technician for additional assistance

### Industry Canada (IC) Compliance Notice

This device complies with Industry Canada license-exempt RSSs. 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. Cet appareil est conforme aux normes d'exemption de licence RSS d'Industry Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

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QUESTIONS? FEEDBACK?  
[ask@getzooz.com](mailto:ask@getzooz.com)

**Analog Sensor Voltage Reporting / Trigger Threshold**

Parameter 63: Choose how you want your RGBW Dimmer to report voltage changes from the connected analog sensors and trigger status change on the output. The number entered as value corresponds to decimal values in voltage change. So if 5 is entered by default, the RGBW Dimmer will report any change in voltage of the connected sensor over 0.5 V. This setting is only in effect if at least one of Parameters 20 – 23 is set to value 0 or 1 (input is set to analog sensor mode).

Values: 0 – disabled (it will not report voltage based on value change); 1 – 100 (0.1 – 10 V); default: 5.  
Size: 2 byte dec.

**Analog Sensor Report Frequency**

Parameter 64: Choose how often you want your RGBW Dimmer to report voltage changes from the connected analog sensors to your hub. The number entered as value corresponds to the number of seconds. So if 3600 is entered as value, the RGBW Dimmer will report voltage from connected analog sensors every hour (independent of the threshold set in parameter 63). Voltage reports are sent in at least 30-second intervals. This setting is only in effect if at least one of Parameters 20 – 23 is set to value 0 or 1 (input is set to analog sensor mode).

Values: 0 – disabled (it will not report voltage based on the frequency setting); 30 – 32400 (seconds); default: 0.  
Size: 2 byte dec.

**Ramp Rate Continued**

Parameter 151: You can also set the physical ramp rate in minutes instead of seconds. Use the below values for this extended functionality.

Values: 128 – 254 (1 – 127 minutes); default: 3 (seconds, see primary description).  
Size: 2 byte dec.

Parameter 152: You can also set the Z-Wave ramp rate in minutes instead of seconds. Use the below values for this extended functionality.

Values: 128 – 254 (1 – 127 minutes);

default: 3 (seconds, see primary description).  
Size: 2 byte dec.

**Single Click ON Trigger for Associated Devices**

Parameter 154: Set the status or brightness level triggering other associated devices in your network if the dimmer is turned ON with a single click. Each of the 4 available bytes refers to one channel, starting with IN1 and ending with IN4. This setting applies to basic set and switch multilevel commands sent to associated devices in the appropriate association group.

Values: 0 – 99 (for brightness level), 255 (for on) per byte; default: 4294967295 (0xFF FF FF FF – 255 for all channels).  
Size: 4 byte dec.

**Single Click OFF Trigger for Associated Devices**

Parameter 155: Set the status or brightness level triggering other associated devices in your network if the dimmer is turned OFF with a single click. Each of the 4 available bytes refers to one channel, starting with IN1 and ending with IN4. This setting applies to basic set and switch multilevel commands sent to associated devices in the appropriate association group.

Values: 0 – 99 (for brightness level), 255 (for on) per byte; default: 0 (0xFF FF FF FF – 0 for all channels).  
Size: 4 byte dec.

**Double Click ON Trigger for Associated Devices**

Parameter 156: Set the status or brightness level triggering other associated devices in your network if the dimmer is turned ON with a double click. Each of the 4 available bytes refers to one channel, starting with IN1 and ending with IN4. This setting applies to basic set and switch multilevel commands sent to associated devices in the appropriate association group.

Values: 0 – 99 (for brightness level), 255 (for on) per byte; default: 1667457891 (0x63 63 63 63 – 99 for all channels).  
Size: 4 byte dec.