Aeotec

BY AEON LABS

Smart Dimmer 6

View the expanded manual:
http://aeotec.com/support

IMPORTANT!

This product has been fully tested and certified to work with Z-Wave by the Z-Wave Alliance. It is crafted using Z-Wave Plus, the latest device version of Z-Wave. As such, if the product does not work with your gateway, please be sure to check with your gateway manufacturer that they have integrated this device with their gateway for full operation.
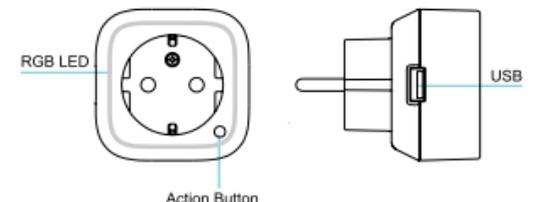
① Aeotec by Aeon Labs Smart Dimmer.

Aeotec Smart Dimmer 6 is a low-cost Z-Wave® Dimmer plug-in module specifically used to enable Z-Wave command and control (on/off/dim) of any incandescent bulbs, dimmable LED bulbs, halogen bulbs with or without transformers. It can report immediate wattage consumption or kWh energy usage over a period of time. In the event of power failure, non-volatile memory retains all programmed information relating to the unit's operating status.

Its surface has a Smart RGB LED, which can be used for indicating the output load status or strength of the wireless signal. You can configure its indication colour according to your favour.

The Smart Dimmer 6 is a security Z-wave device and supports Over The Air (OTA) feature for the products firmware upgrade.

② Familiarize yourself with your Smart Dimmer.

③ Quick start.

Getting your Smart Dimmer up and running is as simple as plugging it into a wall socket and linking it to your Z-Wave network. The following instructions tell you how to add your Smart Dimmer to your Z-Wave network via Aeotec by Aeon Labs' Z-Stick or Minimote controller. If you are using other products as your main Z-Wave controller, such as a Z-Wave gateway, please refer to the part of their respective manual that tells you how to add new devices to your network.
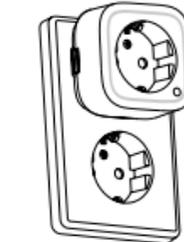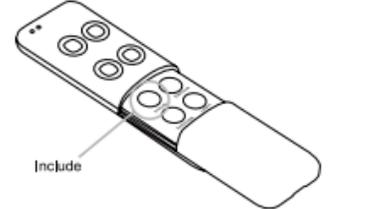
If you're using a Z-Stick:

1. Decide on where you want your Smart Dimmer to be placed and plug it in to a wall socket. Its RGB LED will blink when you press the Action Button on the Smart Dimmer.
2. If your Z-Stick is plugged into a gateway or a computer, unplug it.
3. Take your Z-Stick to your Smart Dimmer.
4. Press the Action Button on your Z-Stick.
5. Press the Action Button on your Smart Dimmer.
6. If Smart Dimmer has been successfully added to your Z-Wave network, its RGB LED will no longer blink. If the adding was unsuccessful, the red LED will be solid for 2 seconds and then remain colourful gradient status, repeat the instructions from step 4.
7. Press the Action Button on the Z-Stick to take it out of inclusion mode, and then return it to your gateway or computer.

If you're using a Minimote:

1. Decide on where you want your Smart Dimmer to be placed and plug it in to a wall socket. Its RGB LED will blink when you press the Action Button on the Smart Dimmer.
2. Take your Minimote to your Smart Dimmer.
3. Press the Include button on your Minimote.
4. Press the Action Button on your Smart Dimmer.
5. If Smart Dimmer has been successfully added to your Z-Wave network, its RGB LED will no longer blink. If the adding was unsuccessful, the red LED will be solid for 2 seconds and then remain colourful gradient status, repeat the instructions from step 4.
6. Press any button on your Minimote to take it out of inclusion mode.

With your Smart Dimmer now working as a part of your smart home, you'll be able to configure it from your home control software. Please refer to your software's user guide for precise instructions on configuring Smart Dimmer to your needs.

The colour of RGB LED will change according to the output load power level when it is in Energy mode:

Version	LED indication	Output (W)
US	Green	[0W, 180W)
	Yellow	[180W, 240W)
	Red	[240W, 300W)
AU	Green	[0W, 345W)
	Yellow	[345W, 460W)
	Red	[460W, 575W)

Version	LED indication	Output (W)
EU	Green	[0W, 345W)
	Yellow	[345W, 460W)
	Red	[460W, 575W)

You can also configure the brightness of RGB LED when the Smart Dimmer is in Energy mode, Momentary Indicate mode, or Night Light mode.

## Removing your Smart Dimmer from a Z-Wave network.

Your Smart Dimmer can be removed from your Z-Wave network at any time. You'll need to use your Z-Wave network's main controller to do this and the following instructions which will tell you how to do this using an Aeotec by Aeon Labs' Z-Stick or Minimote controller. If you are using other products as your main Z-Wave controller, please refer to the part of their respective manuals that tells you how remove devices from your network.

If you're using a Z-Stick:

1. If your Z-Stick is plugged into a gateway or a computer, unplug it.
2. Take your Z-Stick to your Smart Dimmer.
3. Press and hold the Action Button on your Z-Stick for 3 seconds and then release it.
4. Press the Action Button on your Smart Dimmer.
5. If your Smart Dimmer has been successfully removed from your network, its RGB LED will remain the colourful gradient status. If the removal was unsuccessful, the RGB LED will be solid, repeat the instructions from step 3.
6. Press the Action Button on the Z-Stick to take it out of removal mode.

If you're using a Minimote:
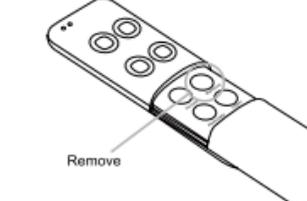
1. Take your Minimote to your Smart Dimmer.
2. Press the Remove Button on your Minimote.
3. Press the Action Button on your Smart Dimmer.
4. If your Smart Dimmer has been successfully removed from your network, its RGB LED will remain the colourful gradient status. If the removal was unsuccessful, the RGB LED will be solid, repeat the instructions from step 2.
5. Press any button on your Minimote to take it out of removal mode.

④ Advanced functions.

Changing RGB LED mode.

You can change the mode of how the RGB LED acts through configuring the Smart Dimmer. There are 3 different modes: Energy mode, Momentary indicate mode, and Night light mode.

Energy mode will allow the LED to follow the state of the Smart Dimmer, when the dimmer is on, the LED will be on, and while the dimmer is off, the current colour LED will be off and then the purple LED remains on. Momentary indicate mode will momentarily turn the LED on for 5 seconds then turn off after every state change in the dimmer. Night light mode will allow the LED to be turned on and off during your selected time of day you have configured for it.

Parameter 81 [1 byte dec] is the parameter that will set one of the 3 different modes. If you set this configuration to:

(0) Energy Mode
(1) Momentary Indicate Mode
(2) Night Light Mode

Security or Non-security feature of your Smart Dimmer in Z-wave network.

If you want your Smart Dimmer as a non-security device in Z-wave network, you just need to press the Action Button once on Smart Dimmer when you use a controller/gateway to add/include your Smart Dimmer.

In order to take full advantage of the Smart Dimmers functionality, you may want your Smart Dimmer as a security device that uses secure/encrypted message to communicate in your Z-wave network, so a security enabled controller/gateway is needed. You need to press the Smart Dimmer's Action Button 2 times within 1 second when your security controller/gateway starts the network inclusion.

Reset your Smart Dimmer.

If at some stage, your primary controller is missing or inoperable, you may wish to reset all of your Smart Dimmer's settings to their factory defaults. To do this, press and hold the Action Button for 20 seconds and then release it. Your Smart Dimmer will now be reset to its original settings, and the green LED will be solid for 2 seconds and then the RGB LED remains the colourful gradient status as a confirmation.

⑤ **Technical specifications.**

Model number: ZW099.
Max standby power: 0.8W.
USB output: DC 5V±5%, 1A.
Operating temperature: 32°F to 104°F/0°C to 40°C.
Relative humidity: 8% to 80%.
Supported load type: Incandescent bulbs, dimmable LED bulbs, halogen bulbs with or without transformers.
Operating distance: Up to 300 feet/100 meters outdoors.

AC input:

Version	Input	Working band
AU	230V 50Hz, Max: 2.5A	921.42MHz
BR	220V 60Hz, Max: 2.5A	921.42MHz
CN	220V 50Hz, Max: 2.5A	868.42MHz
EU	230V 50Hz, Max: 2.5A	868.42MHz
IL	230V 50Hz, Max: 2.5A	868.42MHz
IN	230V 50Hz, Max: 2.5A	865.22MHz
UK	230V 50Hz, Max: 2.5A	868.42MHz
US	120V 60Hz, Max: 2.5A	908.42MHz

⑥ **Warranty.**

If you are in need of any technical support during or subsequent to your products' warranty, please get in touch with our support team via http://aeotec.com/support. The Company you bought this product from has also guaranteed to assist you with any of your support needs, and you can also contact them for accordingly.

This guarantee made by the company who you purchased the product from includes the transfer of Aeon Labs' full warranty to that Company. They've guaranteed that they'll be able to assist you, the Customer, with all technical support and repair needs on our behalf.

Aeon Labs warrants to the original purchaser of Products, that is the Company who you have purchased from, that for the Warranty Period (as defined below), the Products will be free from material defects in materials and workmanship. The foregoing warranty is subject to the proper installation, operation and maintenance of the Products in accordance with installation instructions and the operating manual supplied. Warranty claims must be made to the Company who you have purchased from in writing within thirty (30) days of the manifestation of a problem.

Aeon Labs' sole obligation under the foregoing warranty is, at Aeon Labs' option, to repair, replace or correct any such defect that was present at the time of delivery, or to remove the Products and to refund the purchase price to Company.

The Warranty Period begins on the date the Products is delivered and continues for 12 months. Any repairs under this warranty must be conducted by an authorized Aeon Labs service representative and under Aeon Labs' RMA policy. Any repairs conducted by unauthorized persons shall void this warranty.

Excluded from the warranty are problems due to accidents, acts of God, civil or military authority, civil disturbance, war, strikes, fires, other catastrophes, misuse, misapplication, storage damage, negligence, electrical power problems, or modification to the Products or its components.

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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. 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.
- Consul the dealer or an experienced radio/TV technician for help.

Warning

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

Certifications (regional):

Z-Wave and Z-Wave Plus are registered trademarks of Sigma Designs and its subsidiaries in the United States and other countries

Intertek
4005555
Conforms to UL Std. 60730-1 and 498A
Certified to CSA Std. E60730-1 and C22.2 #42

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Version: 501009900002-AB   www.aeotec.com

Association information

Configuration parameters information

5.3 Association Command Class

Smart Dimmer supports 2 association groups and can add Max 5 nodes for each group.

Association Group	Nodes	Send Mode	Send commands
Group 1	[1,5]	Single Cast	When the state of Smart Dimmer(on/off/dim the load) is changed: 1. Set Configuration parameter 80 to 0: Send Nothing (default). 2. Set Configuration parameter 80 to 1: Send Hail CC. 3. Set Configuration parameter 80 to 2: Send Basic Report. 4. Set Configuration parameter 80 to 3: Send Hail CC when using the Action Button to change the output load state.
Group 2	[1,5]	Single Cast	Forward the Basic Set, Switch Multilevel Start Level Change, Switch Multilevel Stop Level Change, Switch Multilevel Set to associated nodes in Group 2 when the Smart Dimmer receives the Basic Set, Switch Multilevel Start Level Change, Switch Multilevel Stop Level Change, Switch Multilevel Set commands from the main controller. (E.g. Send forward Basic Set to control the other nodes in association Group 2)

Parameter Number Hex / Decimal	Description	Default Value	Size
0x02 (2)	Make Dimmer blink. Configuration Value 1: 1-255 Configuration Value 1 is to Specify the time that Dimmer need blink. The unit is Second; Configuration Value 2: 1-255 Configuration Value 2 is to Specify the Cycle of on/off; the unit of it is 0.1 second. For example: if we set Configuration Value 1 to '15',Configuration Value 2 to '10',then Dimmer will open 0.5 second, close 0.5 second, and repeat for 14 times. Note: This parameter is a Set only parameter.	0x0F0A	2
0x03 (3)	Current Overload Protection. Output Load will be turned off automatically when the Current overrun 2.6A and the time more than 2 minutes. 0 = Disabled 1 = Enabled.	0	1
0x14 (20)	Configure the output load status after re-power on 0 = last status 1 = Always on 2 = Always off	0	1
0x21 (33)	Set the RGB LED color value for factory testing. Value1: Reserved Value2: Red value Value3: Green value Value4: Blue value Note: this is a Set-only parameter.	-	4

0x50 (80)	To set which notification report can be sent to associated Nodes in association Group 1 when the state of Smart Dimmer's load is changed Report (Valid values 0-3). 0 = Send Nothing 1 = Send Hail CC. 2 = Send Basic Report CC. 3 = Send Hail CC when using the Action Button to change the output load state.	0	1
0x51 (81)	Configure the state of LED when it is in 3 modes below. 0 = Energy mode, the LED will follow the status (on/off) of its load. 1 = Momentary indicate mode, when the state of Dimmer's load changed, The LED will follow the status (on/off) of its load, but the LED will turn off after 5 seconds if there is no any switch action. 2 = Night light mode.	0	1
0x53 (83)	Configure the RGB value when it is in Night light mode. Value1: Red color value Value2: Green color value Value3: Blue color value	Value1=0x1B Value2=0x14 Value3=0x1B	3
0x54 (84)	Configure the brightness level of RGB LED (0%-99%) when it is in Energy Mode/momentary indicate mode. Value1: Green color value. Value2: Yellow color value. Value3: Red color value	Green=50 Yellow=50 Red=50	3
0x5A (90)	Enables/disables parameter 91 and 92 below 1 = Enabled 0 = Disabled.	0	1

0x5B (91)	The value here represents minimum change in wattage (in terms of wattage) to induce a Meter Report. (Valid values 0-60000).	25 (W)	2
0x5C (92)	The value here represents minimum change in wattage percent (in terms of percentage) to induce a Meter Report (Valid values 0-100).	5 (%)	1
0x64 (100)	Set 101-103 to default.	N/A	1
0x65 (101)	Which reports need to send in Report group 1 (See flags in table below).	0x00 00 00 00	4
0x66 (102)	Which reports need to send in Report group 2 (See flags in table below).	0x00 00 00 00	4
0x67 (103)	Which reports need to send in Report group 3 (See flags in table below).	0x00 00 00 00	4
0x6E (110)	Set 111-113 to default.	N/A	1
0x6F (111)	The time interval of sending Report group 1 (Valid values 0x01 - 0x7FFFFFFF).	0x00 00 00 03	4
0x70 (112)	The time interval of sending Report group 2 (Valid values 0x01 - 0x7FFFFFFF).	0x00 00 02 58	4
0x71 (113)	The time interval of sending Report group 3 (Valid values 0x01 - 0x7FFFFFFF).	0x00 00 02 58	4
0xC8 (200)	Partner ID 0 = Aeon Labs Standard Product 1 = Others.	0	1
0xFC (252)	Enable/disable Configuration Locked. 0 = Disable 1 = Enable	0	1
0xFE (254)	Device Tag	0	2
0xFF (255)	1. Value = 0x55555555, Default=1, Size=4 Reset to factory default setting and removed from the z-wave network 2. Value = 0, Default=1, Size1 Reset to factory default setting	N/A	4
		N/A	1

Configuration Values for parameter 101-103:

	7	6	5	4	3	2	1	0
configuration Value 1(MSB)	Reserved							
configuration Value 2	Reserved							
configuration Value 3	Reserved							
configuration Value 4(LSB)	Reserved d	Reserved	Reserved	Reserved	Auto send Meter REPORT (kWh)	Auto send Meter REPORT (Watt)	Auto send Meter REPORT (Current)	Auto send Meter REPORT (Voltage)