Aeotec Smart Switch Gen5 ZW075-A02 Manual

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Aeotec

Smart Switch Gen5

SKU: ZW075-A02

Quickstart

This is a

On/Off Power Switch
for
U.S. / **Canada** / **Mexico**.

To run this device please connect it to your mains power supply.

To add this device to your network execute the following action:
N/A

Please refer to the
Manufacturers Manual for more information.

Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law.
The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material.
Use this equipment only for its intended purpose. Follow the disposal instructions.

Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

Product Description

Aeon Labs Smart Switch Gen5 is a Z-Wave device that can report the wattage energy usage and KWH usage to a Z-Wave Controller (especially a gateway), it can be controlled by other Z-Wave devices to turn on/off loads, it can bear up to 16A current of resistive loads. It also acts as a repeater that forwards Z-Wave command messages to destination nodes if the originating controller is out of range from the destination node.By taking advantage of the Z-Wave mesh network, commands can be routed to their destination via intermediary listening Z-Wave products. Products that are Z-Wave certified can be used and communicate with other Z-Wave certified devices.Also a tool that can be programmed, scheduled, controlled and communicated with from anywhere in the world.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state.** Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

Press and hold the Action button that you can find on the product's housing for 20 seconds and then release. This procedure should only be used when the primary controller is inoperable.

Safety Warning for Mains Powered Devices

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

N/A

Exclusion

N/A

Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action:

N/A

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.

3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, …). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group NumberMaximum NodesDescription

1	5	Group 1 is assigned to the Lifeline association group and every device has 5 nodes to associate.When t he switch is turned on or off using the action button, the switch will send a basic report of its status to the nodes in association group 1. To change what kind of signal is sent to the nodes in group 1, please see t he detailed description of configuration parameter 80.
2	5	When the product receives a controlling Basic Set CC/Switch Binary Set CC/ Scene Activation Set CC, which if cause the products load state to be changed, which will lead to send the Basic Set CC/Switch Bi nary Set CC /Scene Activation Set CC to nodes in group 2.

Special Operations as Z-Wave Controller

As long as this device is not included into a Z-Wave network of a different controller it is able to manage its own Z-Wave network as primary controller. As a primary controller the device can include and exclude other devices in its own network, manage associations, and reorganize the network in case of problems. The following controller functions are supported:

Inclusion of other devices

Communication between two Z-Wave devices only works if both belong to the same wireless network. Joining a network is called inclusion and is initiated by a controller. The controller needs to be turned into the inclusion mode. Once in this inclusion mode the other device needs to confirm the inclusion – typically by pressing a button.

If current primary controller in your network is in special SIS mode this and any other secondary controller can also include and exclude devices.

To become
primary a contoller have to be resetted and then include a device.

Turn the primary controller of Z-Wave network into inclusion mode, short press the products Action button that you can find on the product's housing.

Exclusion of other devices

The primary controller can exclude devices from the Z-Wave network. During exclusion the relationship between the device and the network of this controller is terminated. No communication between the device and other devices still in the network can happen

after a successful exclusion. The controller needs to be turned into the exclusion mode. Once in this exclusion mode the other device needs to confirm the exclusion – typically by pressing a button.

Attention: Removing a device from the network means that it is turned back into factory default status. This process can also exclude devices from it's previous network.

Turn the primary controller of Z-Wave network into exclusion mode, short press the products Action button that you can find on the product's housing.

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 … 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200â€ˆit may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 101: To set which report need to be sent.

This parameter is used to configure which reports need to be sent in Report Group 1.The values corresponding to the first four bits of the parameter value may be combined to create different combinations of reports that you wish to have sent.For example, instantaneous Current is the value 2 and instantaneous Watts is the value 4, so setting parameter 101 to a value of 6 will result in both instantaneous Current and instantaneous Watts to be reported.See the full description of the parameter values for other possible settings.
Size: 4 Byte, Default Value: 4

SettingDescription

8	Report Accumulated kWh
2	Report Instantaneous Current (Amperes)
4	Report Instantaneous Watts
1	Report Instantaneous Voltage

Parameter 102: To set which report need to be sent.

This parameter is used to configure which reports need to be sent in Report Group 2.The values corresponding to the first four bits of the parameter value may be combined to create different combinations of reports that you wish to have sent.For example, instantaneous Current is the value 2 and instantaneous Watts is the value 4, so setting parameter 102 to a value of 6 will result in both instantaneous Current and instantaneous Watts to be reported.See the full description of the parameter values for other possible settings.
Size: 4 Byte, Default Value: 8

SettingDescription

1	Report Instantaneous Voltage
4	Report Instantaneous Watts
8	Report Accumulated kWh
2	Report Instantaneous Current (Amperes)

Parameter 103: To set which report need to be sent.

This parameter is used to configure which reports need to be sent in Report Group 3.The values corresponding to the first four bits of the parameter value may be combined to create different combinations of reports that you wish to have sent.For example, instantaneous Current is the value 2 and instantaneous Watts is the value 4, so setting parameter 103 to a value of 6 will result in both instantaneous Current and instantaneous Watts to be reported.See the full description of the parameter values for other possible settings.
Size: 4 Byte, Default Value: 0

SettingDescription

1	Report Instantaneous Voltage
2	Report Instantaneous Current (Amperes)
4	Report Instantaneous Watts
8	Report Accumulated kWh

Parameter 111: Set the interval time of sending report.

This parameter is used to set the interval time of sending report in Report Group 1. (The unit of time is second).
Size: 4 Byte, Default Value: 300

SettingDescription

0 – 268435456	Interval Seconds

Parameter 112: Set the interval time of sending report.

This parameter is used to set the interval time of sending report in Report Group 2. (The unit of time is second).
Size: 4 Byte, Default Value: 600

SettingDescription

0 – 268435456	Interval Seconds

Parameter 113: Set the interval time of sending report.

This parameter is used to set the interval time of sending report in Report Group 3. (The unit of time is second).
Size: 4 Byte, Default Value: 600

SettingDescription

0 – 268435456	Interval Seconds

Parameter 2: Make Smart Switch blink

This parameter is used for customer to control the products load (e. g incandescent light) to blink with a certain

time when you set this parameter and send this command to the load.
Size: 2 Byte, Default Value: 3850

SettingDescription

0 – 255	Specify the time that Smart Switch should blink, in seconds.
256 – 32767	Specifies the cycle of on/off, the unit of it is 0.1 second.

Parameter 200: Partner ID

This parameter is used to configure the partner ID. (0== Aeon Labs Standard Product, 1~255== others).
Size: 1 Byte, Default Value: 0

SettingDescription

0	Aeon Labs Standard Product
1 – 255	Partner ID of Partner Product

Parameter 252: Enable/Disable Lock Configuration

This parameter is used to enable/disable Lock all configuration parameters.(0 =disable, 1 = enable)
Size: 1 Byte, Default Value: 0

SettingDescription

0	All configuration parameters are configurable.
1	All configuration parameters are not configurable (Locked).

Parameter 254: Device Tag

This parameter is used to save the device tag, which will be written/ assigned in factory/ manufacturer.
Size: 2 Byte, Default Value: 0

SettingDescription

0 – 32767	Device Tag

Parameter 255: Reset to default factory setting

This parameter is used to reset product to default factory setting. (There are just 2 values can be used).
Size: 4 Byte, Default Value: 0

SettingDescription

1431655765	Reset the product to default factory setting and be excluded from the Z-wave network.
1	Resets all configuration parameters to default setting.

Parameter 3: Current Overload Protection

This parameter is used for the overload protection, which means the load will be disconnected after 2 minutes when the current more than 15.5A.
Size: 1 Byte, Default Value: 0

SettingDescription

0	Overload Protection Disabled
1	Overload Protection is Enabled

Parameter 80: Enable/Disable to send notifications to associated devices to associated devices.

This parameter is used to Enable/Disable to send notifications to associated devices (in Group 1) when the state of Smart Switch Gen5s load is changed. (0=Send nothing, 1=Send hail CC, 2=Send basic report CC).
Size: 1 Byte, Default Value: 0

SettingDescription

0	Send Nothing (Disabled)
1	Send HAIL Command
2	Send BASIC Report Command

Parameter 90: Enable/Disable the function of parameter 91 and 92.

This parameter is used to Enable/Disable the function of parameter 91 and 92 (1=Enabled, 0=Disabled).
Size: 1 Byte, Default Value: 1

SettingDescription

0	Configuration Parameters 91 and 92 are Disabled
1	Configuration Parameters 91 and 92 are Enabled

Parameter 91: Induce an automatic report

This parameter is used to induce an automatic report when the change of the current power is more/less than the threshold in wattage.
Size: 2 Byte, Default Value: 25

SettingDescription

0 – 32767	The threshold can be set from 0 to 32767 watt.

Parameter 92: Induce an automatic report

This parameter is used to induce an automatic report when the change of the current power is more/less than the threshold in percentage.
Size: 1 Byte, Default Value: 5

SettingDescription

0 – 100	The threshold can be set from 0 to 100 percent.

Technical Data

Hardware Platform	ZM5202
Device Type	On/Off Power Switch
Network Operation	Always On Slave
Firmware Version	HW: 75 FW: 3.26
Z-Wave Version	6.51.00
Certification ID	ZC10-14060003
Z-Wave Product Id	0x0086.0x0103.0x004B
Frequency	XXfrequency
Maximum transmission power	XXantenna

Controlled Command Classes

- Basic
- Scene Activation
- Switch Binary

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways,Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.