

User Manual

On/Off Switch & Dimmer Switch

Model: Z812B

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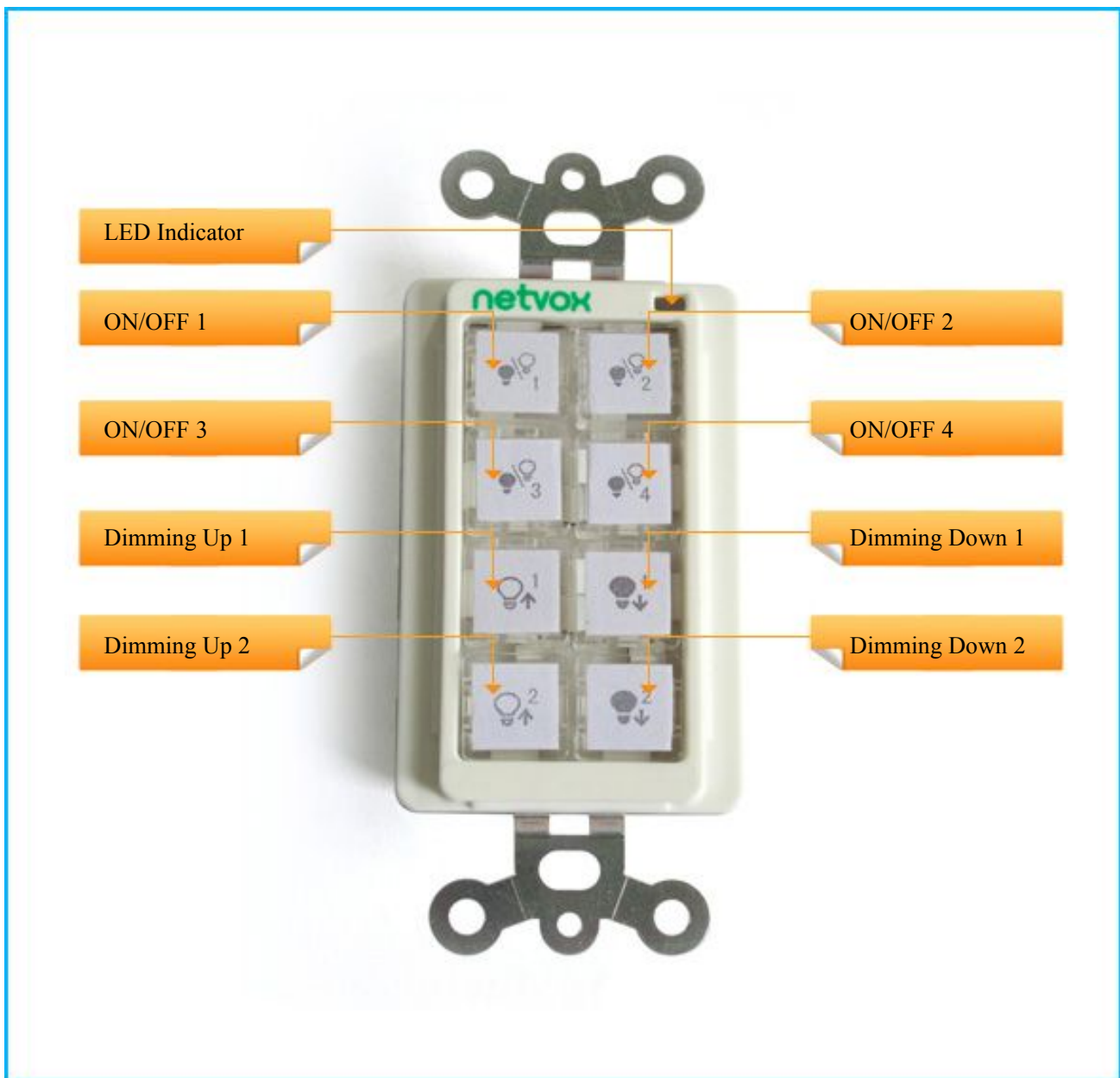
1. Introduction









Netvox Z812B, ZigBee Home Automation enabled in-wall switch module, acts as a Router Device in ZigBee network. Z812B is a highly reliable battery powered wall switches 4 toggle on/off soft-switches and 2 pairs of dimmable switch. These soft switches control paired power outlets wirelessly.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Product Appearance



-  /  /  /  are individual On/Off switches (End Point) for remotely controlling the On/Off device.
-  and  are the 1st set of dimmer switch (End Point) for remotely controlling the dimmable device.
-  and  are the 2nd set of dimmer switch (End Point) for remotely controlling the dimmable device.

3. Specification

- Fully IEEE 802.15.4 compliant (ZigBee Pro)
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 2 x 1.5V AA batteries
- Standby power consumption: 5uA
- Up to 200 meters wireless transmission range in non-obstacle space
- Easy installation and configuration

4. Installation

- This device is NOT truly waterproof/ resistant and is for indoor use.

5. Setting up Z812B

5-1. Join the ZigBee Network

After Z812B is turned on, it will search for an existing ZigBee network and send a request to join the network automatically. While Z812B is under the coverage from a coordinator or a router whose **permit-join feature is enabled**, Z812B will be permitted to join the network.

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).



Step2. Power on Z812B or press both  &  to turn on it. The indicator will flash **5 times**.

It will broadcast its IP/IEEE address and start to search and join the network.

Step3. The indicator will flash **5 times** again after it is joined successfully. Otherwise, the indicator will not flash.

5-2. Binding

The first 4 sets of On/Off switches can be bound with the devices which support On/Off command.

The rest 2 sets of dimmer switches can be bound with the dimmable devices.

Step1. Press and hold either switch of the set for 3 seconds to broadcast the binding request. The indicator will flash **once**. For example, press and hold *Dimming Up 1* for 3 seconds to bind the 1st set of the dimmer switch.

Step2. Enable the binding feature of the device which you would like to bind with.

Step3. The indicator flashes **5 times** after the binding is completed; otherwise, the indicator will flash **10 times**.

5.3. Sleeping Mode

Z812B is designed to go into sleeping mode for power-saving in some situations:

- A. When it doesn't find a network to join → Z812B will go to sleeping mode.
- B. While the device is in the network → the sleeping period is 5 minutes; it will wake up every 5 minutes to keep online.
- C. Once Z812B was joined to a network and by any chance the network is no longer existed or the device is out of the network → Z812B will wake up every 15 minutes to find the network it joined before. It never keeps in sleeping mode and continues to find its network every 15 minutes. This condition would consume up to 30 times power spending compared to normal-operating status. To prevent this unwanted power consumption, we recommend that users manually power off the device.

5.4. Wake up Z812B





When users would like to setup or acquire data from the device which is in sleeping mode, we have to wake up the device as the following steps:





Step1. Press both  & . The indicator flashes **5 times**.

Step2. Z812B will broadcast the IP address and the IEEE address.

Z812B would be in active status for 2 minutes for communication.

5-5. Control

Press  /  /  /  to remotely turn On/Off the device which is bound with the switch.

Press  /  /  /  to remotely level Up/Down the dimmable device which is

bound with the switch.

5.6. Battery

Low-power report: When the operating voltage is lower than 2.1V, Z812B will send a low-power report to the CIE device.

- Z812 checks the voltage every hour.
- Z812 checks the voltage when any button is applied.

5-7. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Press and hold both  &  for 3 seconds.







Step2. After the indicator flashes **once**, release both buttons.

Step3. The indicator will generate 20 fast flashes, and the restore is completed.

6. Home Automation Clusters for Z812B

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by Z812B.

(1)End Point(s) & Device ID

End Point	Switch	DeviceID
0x01		On/Off Switch (0x0000)
0x02		On/Off Switch (0x0000)
0x03		On/Off Switch (0x0000)
0x04		On/Off Switch (0x0000)
0x05		Dimmer Switch (0x0104)
0x06		Dimmer Switch (0x0104)

EndPoint (Device ID 0x0000) Cluster ID

Cluster ID for Z812B	
Server side	Client side
End Point (0x01~0x04) (Device ID: On/Off Switch (0x0000))	
Basic(0x0000)	On/off(0x0006)
Identify(0x0003)	
Diagnostics (0x0B05)	
End Point 01	
Power configuration(0x0001)	
Commission (0x0015)	
Poll control(0x0020)	

EndPoint (Device ID 0x0104) Cluster ID

Cluster ID for Z812B	
Server side	Client side

End Point (0x05~0x06) (Device ID: Dimmer Switch (0x0104))	
Basic(0x0000)	
Identify(0x0003)	Level control (0x0008)
Diagnostics (0x0B05)	

Attributes of the Basic Device Information attribute set

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>ZCLVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	<i>ApplicationVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	20	O
0x0002	<i>StackVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	51	O
0x0003	<i>HWVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	13	O
0x0004	<i>ManufacturerName</i>	Character string	0 – 32 bytes	Read only	netvox	O
0x0005	<i>ModelIdentifier</i>	Character string	0 – 32 bytes	Read only	Z812BE3E D	O
0x0006	<i>DateCode</i>	Character string	0 – 16 bytes	Read only	20140509	O
0x0007	<i>PowerSource</i>	8-bit Enumeration	0x00 – 0xff	Read only	0x03	M
0x0010	<i>LocationDescription</i>	Character string	0 – 16 bytes	Read/write	Empty string	O
0x0011	<i>PhysicalEnvironment</i>	8-bit Enumeration	0x00 – 0xff	Read/write	0x00	O
0x0012	<i>DeviceEnabled</i>	Boolean	0x00 – 0x01	Read/write	0x01	M

7. Important Maintenance Instructions

- Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.
- Do not use or store the device in dusty or dirty areas.
- Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.
- Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.
- Do not drop, knock, or shake the device. Rough handling would break it.
- Do not use strong chemicals or washing to clean the device.
- Do not paint the device. Paint would cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational. For damaged device, please contact the authorized service center in your area.