

# **User Manual**

## **Wireless Touch Panel Dimmer Switch with Power Meter (1-Gang) Model: Z825D**

20150907

FW V3.0

HW V0.3

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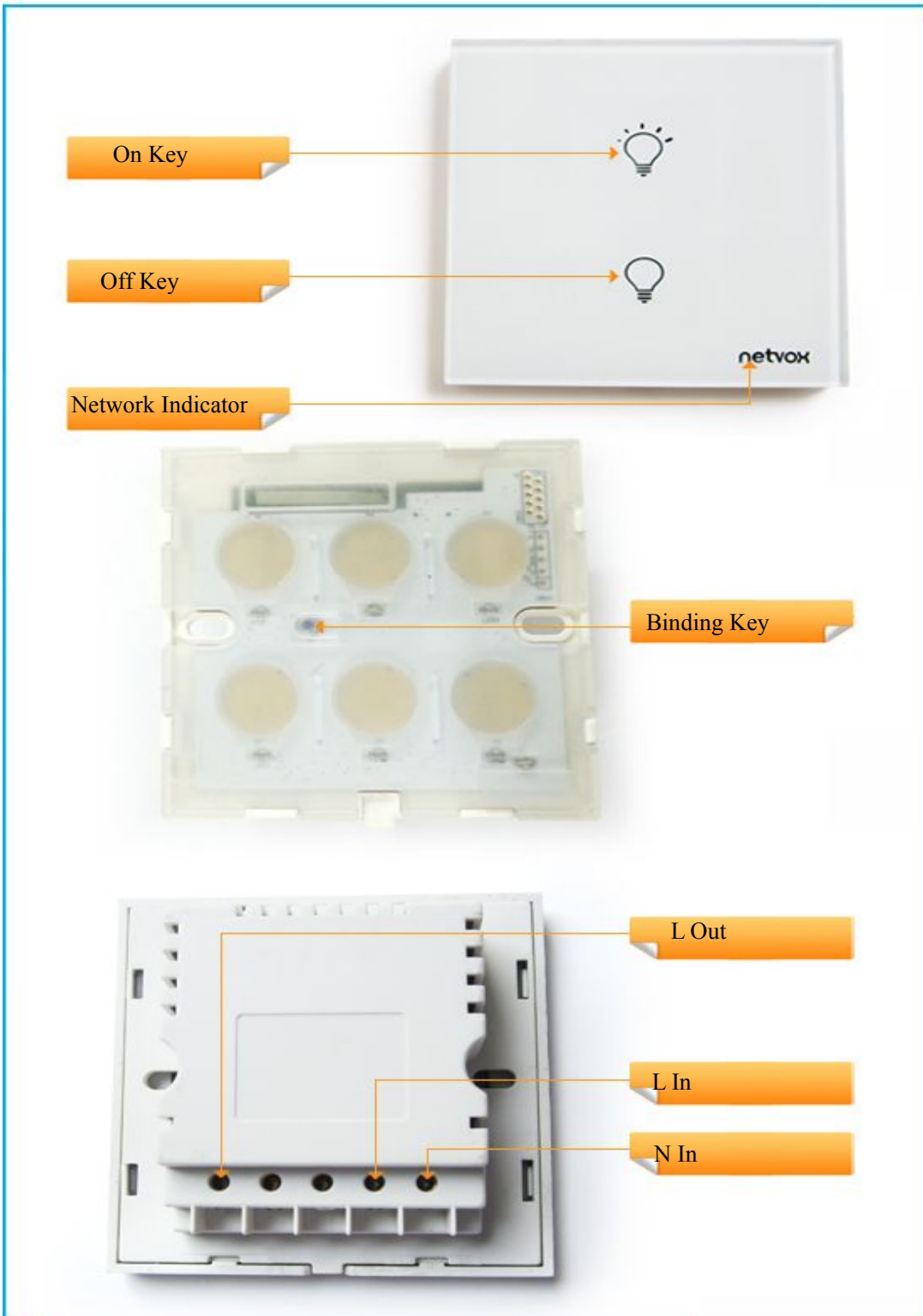
## 1. Introduction

Netvox Z825D, 1-gang touch panel dimmer switch, acts as a Router Device in ZigBee network. It allows users to turn On/Off or level control the electrical appliances which connect with its AC outputs. Based on ZigBee technology, users are also able to control the switches wirelessly using paired On/Off/level-control ZigBee enabled remote controller. Z825D is equipped with current/voltage/power/energy consumption monitoring feature. It helps people manage and save the power spending much easier.

### *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



### 3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 100~240VAC 50/60HZ
- Power consumption: 7mA@230V
- Resistive load: 8A/250VAC; P:2000W
- Inductive load: 5A/250VAC; P:1250W (COS $\phi$ =0.4)
- Monitoring range 100mA to 8A with  $\pm 1\%$  accuracy
- Relay Lifetime: 100,000 times
- Up to 210 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.
- Power on Z825D using 100~240 VAC power supply.
- Load Protection:  
The current is over 3A  $\rightarrow$  it will be off-load in 2 seconds
- After it is off-load, the Bit1 (Current OverLoad) of the parameter ACAlarmsMask will be checked:

Bit1 (Current OverLoad) is 1  $\rightarrow$  it sends the alarm message

Bit1 (Current OverLoad) is 0  $\rightarrow$  it doesn't send the alarm message

When it sends the alarm message  $\rightarrow$  AlarmCluster = 0x0B04; AlarmCode = 0xF0; Network Indicator flashes **10 times**.

- Z825D stores power consumption data once every 30 seconds.
- Z825D is using PWM dimming with leading Triac technology. Please DO NOT use improper light/lamp/device or it may cause damages. For example, regular LED lamp which does not support dimmer features, gas-discharge lamp, home appliance, computer, or on-off relay is not supported.
- The maximum electrical load of Z825D:
  - a. Resistive Load (incandescent light bulb): 3A/600W.

- b. Dimmable fluorescent lamp or dimmable LED lamp: 100W. Parallel connection is not recommended.
- c. DO NOT connect coil transformer for dimming.

## 5. Setting up Z825D

### 5-1. Join the ZigBee Network

After Z825D is turned on, it will search for an existing ZigBee network and send a request to join the network automatically. While Z825D is under the coverage from a coordinator or a router whose **permit-join feature is enabled**, Z825D 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 Z825D. It will start to search and join the network.
- Step3. The Network Indicator stays **cyan** after it is joined successfully.

### 5-2. Permit-Join

Z825D is designed to work as a router. To allow other devices to join the ZigBee network, users could enable the Permit-Join feature using the tips:

- A. Press the *Binding Key* to enable the Permit-Join feature. The Network Indicator will flash per second.
- B. The default Permit-Join period of time is 60 seconds.

**Note:** For pressing the *binding key*, please remove the touch panel cover first.

### 5-3. Binding

Z825D can be bound with the On/Off/Level-control device such as Netvox Z501C.

- Step1. Press and hold the Binding Key for 3 seconds. The Network Indicator will flash **once**.
- Step2. Release the Binding Key and then press the Binding Key again within 2 seconds.
- Step3. Enable the binding feature of the On/Off/ Level-control device.
- Step4. The Network Indicator flashes **5 times** after the binding is completed; otherwise, it will flash **10 times**.

**Note:** It supports 16 groups/ 16 scenes

## 5-4. Identify duration

Identify duration is used to identify the specific end device which is binding with Z825D. While setting the time duration N times. The network indicator will flash green N times.

## 5-5. Control

(1) The corresponding relation between Z825D indicator and level.

Level < 0, corresponding EP indicator shows **red**.

Level > 0, corresponding EP indicator shows **green**.

(2) The local dimming Z825D can bind with remote controller such as Z501A, Z501B, Z503 to control on / off and dimming function as below steps:

(a) Long press (>1s) ON button. Step level = 255, dimming transition time=5s from dark to bright, release ON button to stop dimming. If level already reaches maximum, once users press on button, network indicator flash once to imply it is already the brightest.

(b) Long press (>1s) OFF button. Step level = 255, dimming transition time=5s from bright to dark, release OFF button to stop dimming. If level already reaches minimum, once users press off button, network indicator flash once to imply it is already the most darkness.

**NOTE:** LED dimming action and corresponding level please refer to chapter 7.4.

(3) The default ON level is 0xFF. While short pressing the ON button, the brightness will gradually dim to previous ON level before turning off. Press ON again to fix the current brightness. If users are not satisfied the default mode. Users can customize the ON level any value from 0x00 to 0xFE.

## 5-6. Adjust backlight of touch keys

The backlight of touch keys can be adjusted from range 0x00 ~ 0xFE. Users can [press binding key for 6 seconds \(the light flash twice on 3<sup>rd</sup> and 6<sup>th</sup> second.\) to turn on /off backlight of touch keys.](#)

## 5-7. Power Metering Report Setting

Z825D reports the power consumption data to the ZigBee network.

The related Cluster ID:

- Simple Metering Cluster ID (0x0702)
- Electrical Measurement Cluster ID (0x0B04)

The related Attribute ID of Simple Metering Cluster ID:

- Current Attribute ID: 0xE000; unit: mA
- Voltage Attribute ID: 0xE001; unit: V
- Power Attribute ID: 0xE002; unit: W
- Energy Attribute ID: 0xE003; related to AttributeID CurrentSummationDeliver (0x0000); unit: Wh

The related Attribute ID of Electrical Measurement Cluster ID:

- Current Attribute ID: 0x0508
- Voltage Attribute ID: 0x0505
- Power Attribute ID: 0x050B
- Power Factor Attribute ID: 0x0510

The command to reset power consumption summation: 0xE0. The format is:

Bits:8	16	8	8	8
Frame control	Manufacturer code	Transaction Sequence number	Command identifier	Frame payload
				Action
0x05	0x109F		0xe0	0x00

(clusterid : 0x0702 , Action : 0x00)

### 5-8. Reset Power Consumption Summation

To reset the power consumption data, please follow the steps:

- (1) Press and hold the Binding Key for 20 seconds. The Network Indicator will flash **5 times** (on 3<sup>rd</sup>, 6<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup>, and 20<sup>th</sup> second).
- (2) After releasing the Binding Key, press On Key or Off Key within 3 seconds. The reset is completed.

### 5-9. Restore to Factory Setting

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

- (1) Press and hold the Binding Key for 15 seconds. The Network Indicator will flash **4 times** (on 3<sup>rd</sup>, 6<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup> second.)
- (2) After releasing the Binding Key, press On Key or Off Key within 3 seconds. The restore is completed.



## 6. Home Automation Clusters for Z825D

1. End Point(s) : 0x01
2. Device ID : Dimmer Light (0x0101)
3. End Point Cluster ID

Cluster ID for Z825D	
Server side	Client side
<b>EP 0x01 (Device ID: Dimmer Light (0x0101))</b>	
Basic (0x0000)	<i>None</i>
Identify (0x0003)	
Groups (0x0004)	
Scenes (0x0005)	
On/Off (0x0006)	
Level Control (0x0008)	
Commission (0x0015)	
Electrical Measurement (0x0B04)	
Diagnostics(0x0B05)	
Simple Metering (0x0702)	

Attributes of the Basic Device Information attribute set

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>ZCLVersion</i>	8-bit Unsigned integer	0x00 – 0xff	Read only	0x03	M
0x0001	<i>ApplicationVersion</i>	8-bit Unsigned integer	0x00 – 0xff	Read only	0x1F	O
0x0002	<i>StackVersion</i>	8-bit Unsigned integer	0x00 – 0xff	Read only	0x35	O
0x0003	<i>HWVersion</i>	8-bit Unsigned integer	0x00 – 0xff	Read only	0x03	O
0x0004	<i>ManufacturerName</i>	Character string	0 – 32 Bytes	Read only	netvox	O

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0005	<i>ModelIdentifier</i>	Character string	0 – 32bytes	Read only	Z825DE3 R	O
0x0006	<i>DateCode</i>	Character string	0 – 16 bytes	Read only	<a href="#">20150824</a>	O
0x0007	<i>PowerSource</i>	8-bit Enumeration	0x00 –0xff	Read only	0x01	M

## 7. Netvox App control

(1) After device added to the network, the device information will show up at the interface as below:



(2) The added device EP01 is a “Dimmable Light” device type. Choose it to enter control interface as below:

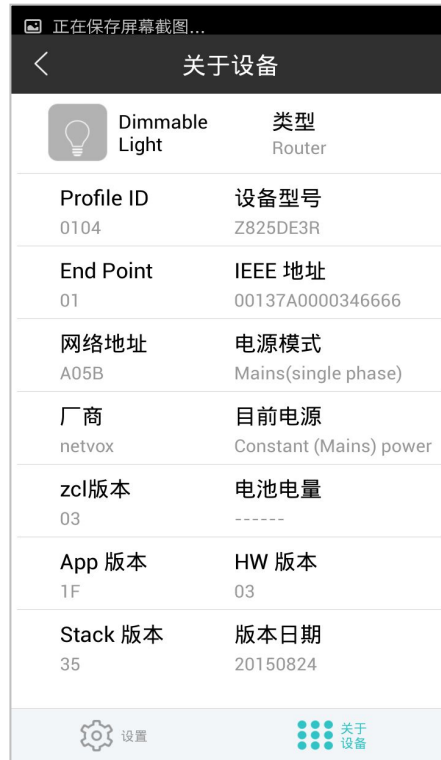


- Blue area shows the identity duration in order to identify the specific device to control, if it is setted to be 60

seconds and the light flash 60 times to show identity.

- Red area shows the function of on / off / toggle.
- Purple area shows the dimmable function. Users can stretch the bar to adjust the light.
- Darkness to the left, brightness to the right.
- Graduated time shows time duration of light changing.

(3) Click “about device” to view the device version information:



## 8. Loading property

<b>Rated Load ( AC ) ** Remark**</b>	<b>Max. Load with LEDs **Remark**</b>	<b>Max. Surge Endurabl</b>	<b>Surge Detecion</b>	<b>Overload Protection with Auto Power Cutoff</b>
400W/3A/250V	100W/4 LEDs	150A	Yes	Yes

## 9. 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.