

# ZigBee Relay (PRL-3ZBS)

## Introduction

PRL-3ZBS is a ZigBee Relay. The Relay can be connected to wired device and set to Normal Open (N.O.) status. After joining ZigBee network, the Relay can be controlled via ZigBee network to activate connected devices.

The Relay utilizes ZigBee technology for wireless signal transmission. ZigBee is a wireless communication protocol that is reliable, has low power consumption and has high transmission efficiency. Based on the IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission.

The Relay serves as an end device in the ZigBee network. It can be included in the ZigBee network to transmit or receive signal, but cannot permit any other ZigBee device to join the network through the Shutter Control.

## Parts Identification

### 1. LED indicator

The LED indicator is used to indicate Relay status:

- Flashes once: The Relay has reset.
- Flashes twice: The Relay has successfully joined a ZigBee network.
- Flashes once every 20 minutes:  
The Relay has lost connection to its current ZigBee network.

### 2. Function Button

The function button is used to reset the Relay to join an available ZigBee network.

Press and hold the button for 10 seconds then release to reset the Shutter Control.

### Connection Terminals

Connect the wire into the terminal, tighten the screw to close the clipper and hold wire in place. Unscrew to open the clipper to remove the wire connected to the terminal.

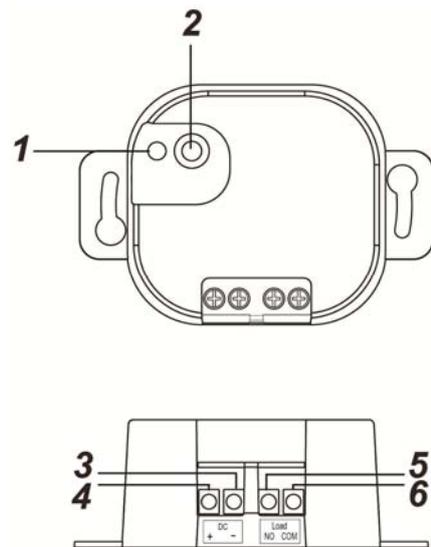
### 3. Ground (-)

### 4. 12V / 24V DC Input (+)

### 5. NO

For Normal Open connection with the device

### 6. Common



## Specification

- Power Source (External Power): 12/24V DC
- Power usage ~300mA fully active
- Relay Output: Potential-free SPDT relay, Maximum Operation Load: 5A (Resistive) at 24VDC or 240VAC
- Stranded Wire: 14-22 AWG
- Operating Temperature: -10°C to 45°C (14°F to 113°F)
- Humidity: Up to 85% non-condensing
- Dimension: 71mm x 49mm x 26mm

## Installation Environment

- The Relay Controller should be installed indoors in a dry location.
- It is recommended to install the device in a fire resistant plastic gangbox.
- Do not install the device in a metal gangbox for optimization of RF range.

## Caution

- All works on the device, including installation and maintenance, must be performed by a qualified and licensed electrician.
- To prevent electrical shock and/or equipment damage, disconnect electrical power at the main fuse or circuit breaker before installation and maintenance.
- Do not connect the device to loads exceeding supported load current.

## Installation

Wire the Relay according to instructions below (refer to the diagram for more information):

1. Choose to use 12V or 24V DC input. Turn off the power input before connection, then wire the DC input accordingly.
2. Depend on the device you wish to control via the Relay, select NO terminal and wire the Relay with the device to establish Normal Open connection with device.
3. After completing DC power and device wiring, turn on the power input to power on the Relay.

### <IMPORTANT NOTE>

- ⚠ Wiring of the Relay should only be performed by certified technician with proper knowledge and training in electric equipment.

## ZigBee Network Setup

### ● **ZigBee Device Guideline**

ZigBee is a wireless communication protocol that is reliable, has low power consumption and has high transmission efficiency. Based on the IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and are coordinated for data exchange and signal transmission.

### ● **Joining the ZigBee Network**

As a ZigBee device, the Relay needs to join a ZigBee network to receive commands. Please follow the steps below to join the Relay into a ZigBee network.

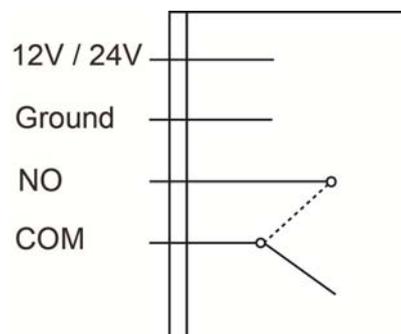
1. Connect DC power input to the Relay according to Installation instruction above, turn on the DC power to power up the Relay.
2. Press and hold the function button for 10 seconds as the Relay resets and starts searching for existing ZigBee network. Please make sure the permit-to-join feature on the router or coordinator of your ZigBee network is enabled.
3. If the Shutter Control successfully joins a ZigBee network, the LED Indicator will flash twice to confirm.
4. After joining the ZigBee network, the Relay will be registered in the network automatically. Please check the ZigBee network coordinator, system control panel or CIE (Control and Indicating Equipment) to confirm if joining and registration is successful.
5. After joining the ZigBee network, if the Relay loses connection to the current ZigBee network, the LED indicator will flash every 20 minutes. Please check your ZigBee network condition and Shutter Control signal range to correct the condition.

### ● **Removing Device from ZigBee Network (Factory Reset)**

To remove the device from current ZigBee network, the Relay Toggle Switch must be put to Factory Reset to complete device removal. Factory Reset function will clear the device of its stored setting information and prompt the device to search for new ZigBee network.

**Before removing device, make sure the Relay Toggle Switch is within current ZigBee network signal range**

1. Delete the device from current control panel / CIE.
2. Press and hold the function button for 10 seconds, then release the button to reset the device.
3. Upon reset, the device will clear current ZigBee network setting and transmit signal to ZigBee coordinator to remove itself from current ZigBee network. It will then actively search for available ZigBee network again and join the network automatically.



## Operation

### ● **Relay Control**

- After the Relay Control has successfully joined a ZigBee network, the coordinator/control panel can remotely control the Relay to turn On, Off or toggle between On and Off condition. Please refer to your ZigBee coordinator/control panel for detail.

### ● **Operation Load**

- The Relay requires at least 300mA of DC power input to function.
- The Relay has a maximum capacity of 5A.

## Appendix (For developers only)

### ● **Relay Cluster ID**

Device ID: On Off Output :0x0002	
Endpoint:0x0A	
<b>Server Side</b>	<b>Client Side</b>
<b>Mandatory</b>	
Basic (0x0000)	None
Identify(0x0003)	
On/Off(0x0006)	
<b>Optional</b>	
Groups(0x0004)	None

### ● **Attribute of Basic Cluster Information**

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>ZCLVersion</i>	Unsigned 8-bit integer	0x00 –0xff	Read only	0x01	M
0x0001	<i>ApplicationVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x00	O
0x0003	<i>HWVersion</i>	Unsigned 8-bit integer	0x00 –0xff	Read only	0	O
0x0004	<i>ManufacturerName</i>	Character String	0 – 32 bytes	Read only	Vesta Technology	O
0x0005	<i>ModelIdentifier</i>	Character String	0 – 32 bytes	Read only	(Model Version)	O
0x0006	<i>DateCode</i>	Character String	0 – 16 bytes	Read only		O
0x0007	<i>PowerSource</i>	8-bit	0x00 –0xff	Read only		M
0x0010	<i>LocationDescription</i>	Character String	0 – 32 bytes	Read / Write		O
0x0011	<i>PhysicalEnvironment</i>	8-bit	0x00 –0xff	Read / Write	0x00	O
0x0012	<i>DeviceEnabled</i>	Boolean	0x00 –0x01	Read / Write	0x01	M

### ● **Attribute of Identify Cluster Information**

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>IdentifyTime</i>	Unsigned 16-bit integer	0x00 –0xffff	Read / Write	0x0000	M

### ● **Attribute of On/Off Cluster Information**

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>OnOff</i>	Boolean	0x00 –0x01	Read only	0x00	M

### ● **Attributes of the Groups cluster Information**

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>NameSupport</i>	8-bit bitmap	x0000000	Read only	-	M