PSS-29ZBS Power Switch

Introduction

PSS-29ZBS is a ZigBee Power Switch. It is capable of receiving wireless signals from the coordinator in the Zigbee network to toggle On/Off of appliances that are attached to it.

The Power Switch 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 Power Switch 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 Power Switch.

Parts Identification

1. Function Button aka LED indicator

The Function Button also doubles as the LED Indicator. The function button is used to control the Power Switch. The LED indicator is used to indicate Power Switch status.

Case A

LED Indication:

The LED indicator lights up in the following conditions:

- On:
   The Power Switch is turned on.
- Off:
   The Power Switch is turned off.
- Flashes twice:
   The Power Switch has successfully joined a ZigBee network.
- Flashes once every 20 minutes:
   The Power Switch is not joined into any ZigBee network, or has lost connection to its current ZigBee network.
- Flashes three times
   The Power Switch has successfully bound with a controller
- Flashes five times
   The Power Switch was unable to bind with a controller

Case B

Function Button Usage:

- Press the button to toggle on/off the Power Switch
- Press and hold the button for 10 seconds then release to reset the Power Switch.
- Press and hold the button for 3 seconds then release to bind with a controller

Case C
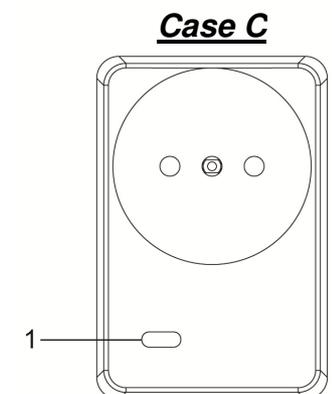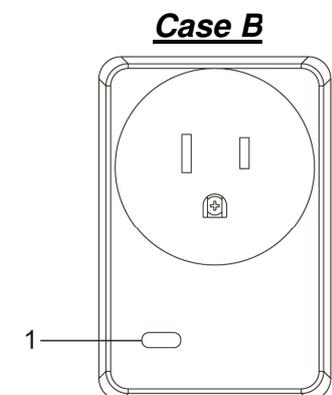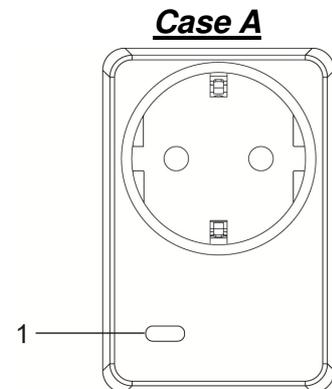
ZigBee Network Setup

● *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 Power Switch needs to join a ZigBee network to receive commands and transmit energy consumption information. Please follow the steps bellow to join the Power Switch into a ZigBee network.

1. Plug in the Power Switch into a power outlet.
2. Press and hold the function button for 10 seconds as the Power Switch 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 Power Switch successfully joins a ZigBee network, the LED Indicator will flash twice to confirm.
4. After joining the ZigBee network, the Power Switch 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. If registration and joining to the network is unsuccessful, the Power Switch LED indicator will flash every 20 minutes after warming up to indicate the situation. Please check your ZigBee network coordinator, system control panel or CIE setting to ensure the permit-to-join function is available, and then use the Factory Reset function below to join the ZigBee network.

● *Binding with Controller*

After joining the ZigBee network, the Power Switch can bind itself with a controller device which can be used to turn on/off the Power Switch. To bind the Power Switch and the device:
1. Press and hold the Function Button for 3 seconds, then release the button. The Power Switch will send binding request to the coordinator.
2. Refer to your controller manual to send binding request for the device within 16 seconds.
3. If binding is successful, the Power Switch LED indicator will flash 3 times to confirm. You can now use the controller to adjust power output level for the Power Switch.
4. If binding is unsuccessful, the Power Switch LED indicator will flash 5 times. Please retry the binding process.

● *Factory Reset*

If you want to remove the Power Switch from current network and join a new network, you need to use the Factory Reset function to clear the Power Switch from its stored setting and information first before it can join another network. To perform Factory Reset:
1. Press and hold the switch button for 10 seconds, release the button until the LED Indicator flash once.
2. The Power Switch has been reset to factory default setting with all its previous network information removed. It will now actively search for available ZigBee network again and join the network automatically.
3. If the Power Switch successfully joins a ZigBee network, the LED Indicator will flash twice to indicate.
4. If the Power Switch cannot find an available ZigBee network, the LED Indicator will flash every 20 minutes to indicate.

Operation

● *Installation*
  ● Plug the Power Switch into a power outlet.
  ● Plug the appliance into the socket of the Power Switch. The appliance must be in ON status.

● *Appliance Control*
  ● After the Power Switch has successfully joined a ZigBee network, the coordinator can remotely turn on/off the Power Switch to control the appliance
  ● You can also press the button on the Power Switch to toggle its on/off status
  ● If you have bound a controller with the Power Switch, you can also use the controller to turn on/off the Power Switch.
  ● If the Power Switch is removed from power outlet, after replugging the Power Switch, its previous on/off status will be restored within 1 minute

● *Maximum Operation Load*
  ● For 110V: the maximum operation load is 1760W and 16A.
  ● For 230V: the maximum operation load is 3680W and 16A.

Appendix (For developers only)

- ### *Power Switch Cluster ID*

Device ID: On Off Output :0x0002	
Endpoint:0x0A	
Server Side	**Client Side**
Mandatory	
Basic (0x0000)	*None*
Identify(0x0003)	
Groups(0x0004)	
Scenes(0x0005)	
On/Off(0x0006)	
Optional	
None	*None*

- ### *Attribute of Basic Cluster Information*

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0x01	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 –0xff	Read only	0x00	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0	O
0x0004	*ManufacturerName*	Character String	0 – 32 bytes	Read only	Climax Technology	O
0x0005	*ModelIdentifier*	Character String	0 – 32 bytes	Read only	PSS_00.00.00.14TC	O
0x0006	*DateCode*	Character String	0 – 16 bytes	Read only		O
0x0007	*PowerSource*	8-bit	0x00 –0xff	Read only		M
0x0010	*LocationDescription*	Character String	0 – 32 bytes	Read / Write		O
0x0011	*PhysicalEnvironment*	8-bit	0x00 –0xff	Read / Write	0x00	O
0x0012	*DeviceEnabled*	Boolean	0x00 –0x01	Read / Write	0x01	M

- ### *Attribute of Identify Cluster Information*

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

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

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

- ### *Attributes of the Scenes cluster Information*

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*NameSupport*	8-bit bitmap	x0000000	Read only	0x00	M
0x0001	*CurrentScene*	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x00	M
0x0002	*CurrentGroup*	Unsigned 16-bit	0x0000 – 0xfff7	Read only	0x00	M

		integer				
0x0003	*SceneValid*	Boolean	0x00 – 0x01	Read only	0x00	M
0x0004	*NameSupport*	8-bit bitmap	x0000000	Read only	-	M

● *Attribute of On/Off Cluster Information*

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

Federal Communication Commission Interference Statement

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

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
"This equipment complies with FCC RF radiation exposure limits set forth for
 an uncontrolled environment. The antenna(s) used for this transmitter must be
installed to provide a separation distance of at least 20 cm from all persons and
 must not be co-located or operating in conjunction with any other antenna or transmitter."

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.