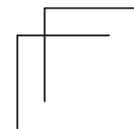
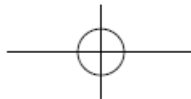
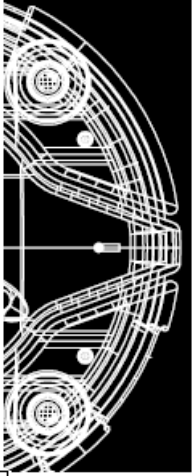
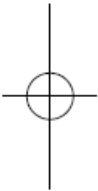


Power Monitor Switch

User's Manual



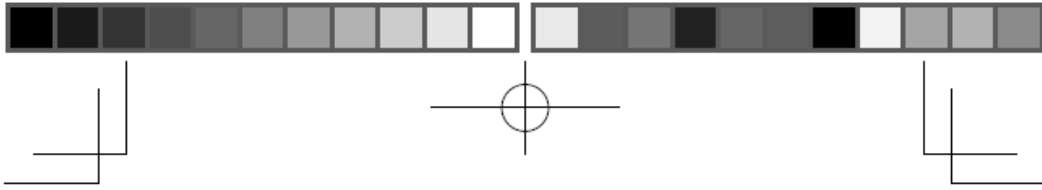
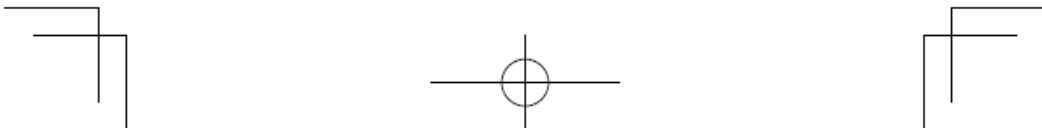
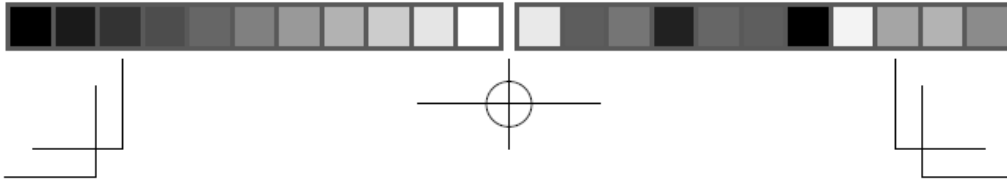


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Before attempting to connect, operate or adjust this product, please save and read the User's Manual completely. The style of the product shown in this User's Manual may be different from the actual unit due to various models.

Safety instructions

Always read the safety instructions carefully:

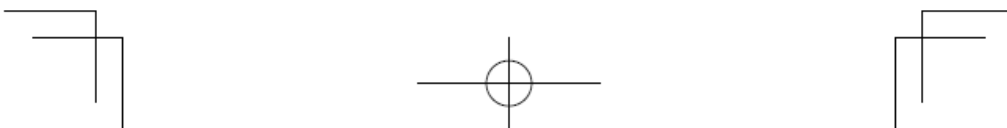
- Keep this User's Manual for future reference
- Keep this equipment away from humidity
- If any of the following situation arises, get the equipment checked by a service technician:
 - The equipment has been exposed to moisture.
 - The equipment has been dropped and damaged.
 - The equipment has obvious sign of breakage.
 - The equipment has not been working well or cannot get it to work according to the User's Manual.

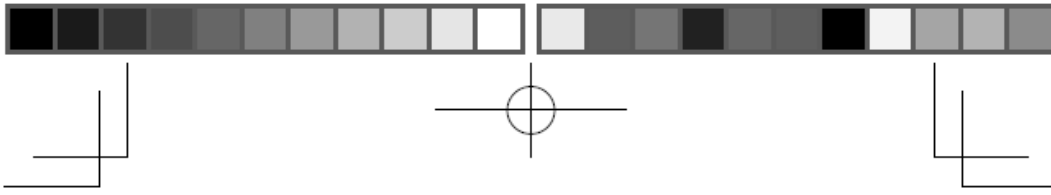
Copyright

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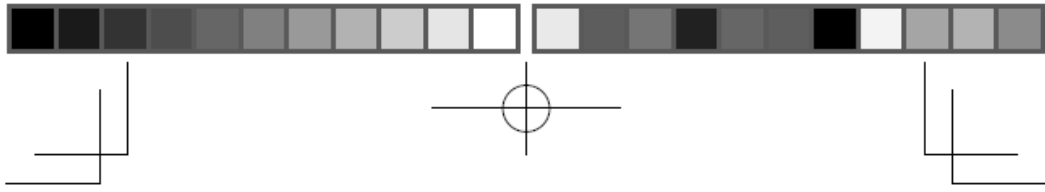


Introduction

The Power Monitor Switch is a device which combines the AC outlet switch and power measurement functions. It bases on Z-Wave® wireless technology and enables you to find out what appliances are actually worth keeping lugging in and can save your energy costs. It also allows you to turn on/off the attached appliance, electronic device or lamp wirelessly by using a Z-Wave® protocol remote controller. In short, you can monitor the power consumption of your appliances easily and turn on/off at your home through PC connectivity with Z-Wave® USB dongle, Z-Wave® remote controller, or through Internet with gateway when you are away from home.

Features

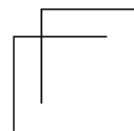
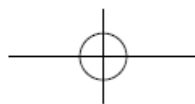
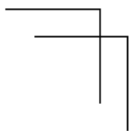
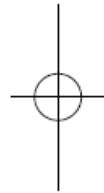
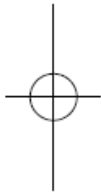
- Protect the house automatically via cutting off the power when the appliance overloads. (When Red LED is flashing, it enters “overload protection” mode)
- Users can define the value of overload to decide when it should cut off the power of appliance.
- Using a patent design to reduce the spark when users turn on the appliance and extend appliance’s lifetime.
- Show the power consumptions of electronic appliance that plug into this product.
- Calculate the cost of power consumed in time periods of hour, day, week, month and year.
- Display the values of the measurements on the remote site.
- Support electronic appliance with maximum loading of 1600W.

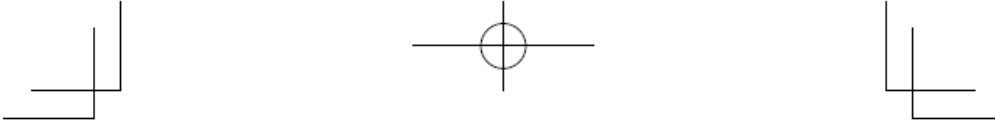


- Control On/Off function manually with knob button, or remote control by PC equipped with Z-Wave® certified USB dongle, or by Home gateway.
- Simply plug in the wall outlet and attach the electronic appliance.
- Fully compatible with any Z-Wave® certified devices.
- Act as a wireless signal repeater to ensure the intended destination is received.
- All products other than this product itself are sold separately.

Package contents

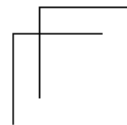
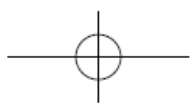
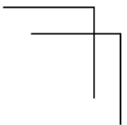
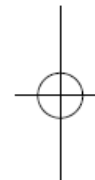
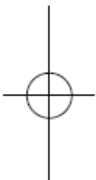
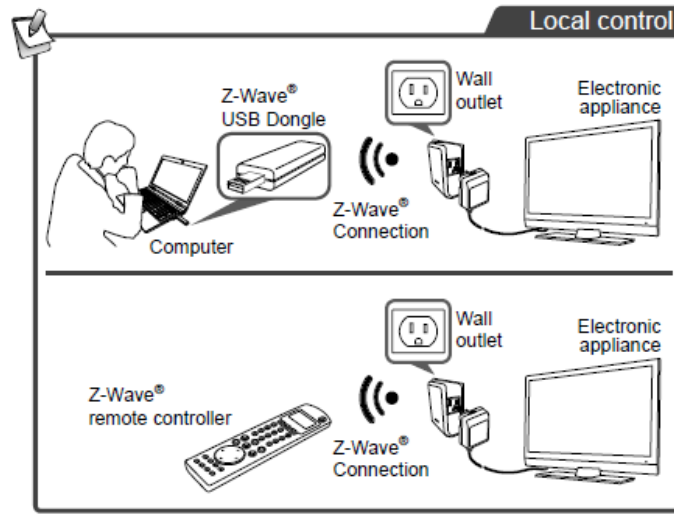
- Power Monitor Switch x1
- User's Manual x1

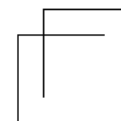
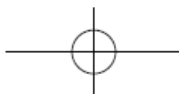
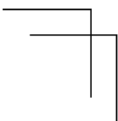
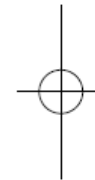
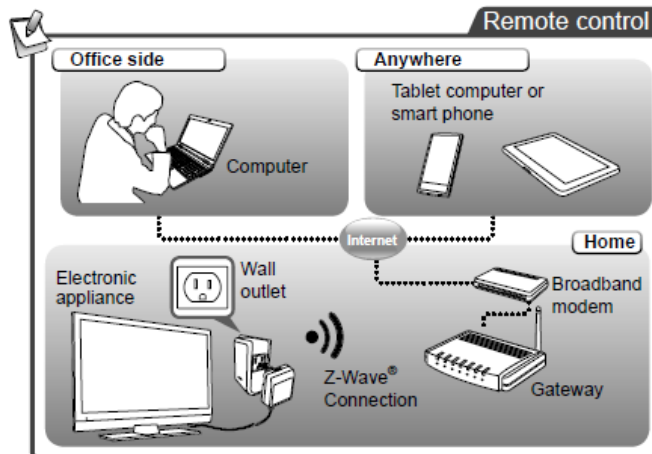
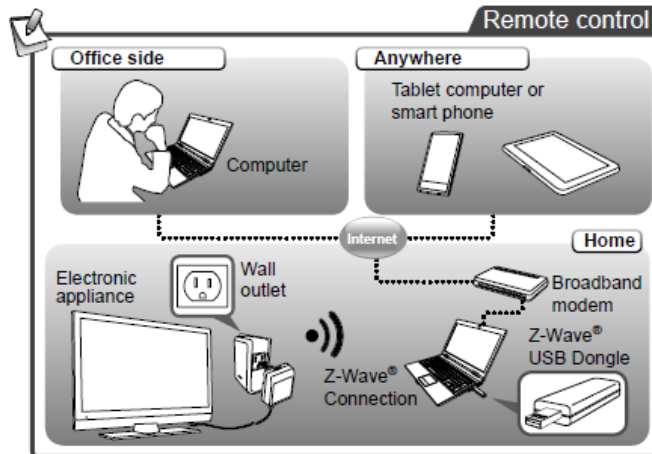
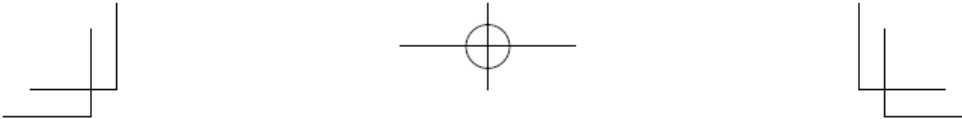


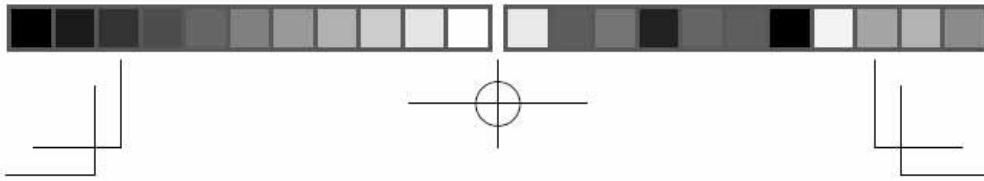


Connection diagram

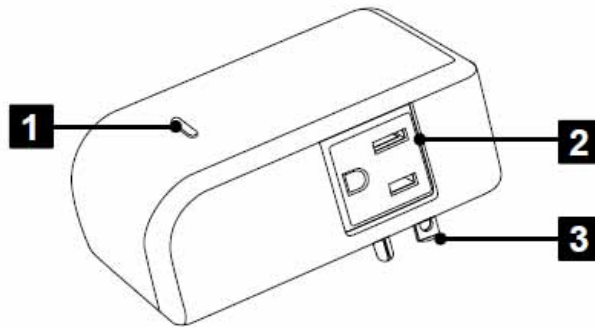
The illustrations below show the application of Power Monitor Switch at home or office. Note that this diagram is an example only. The application may be different from the actual conditions.







Product overview



1 Switch Button

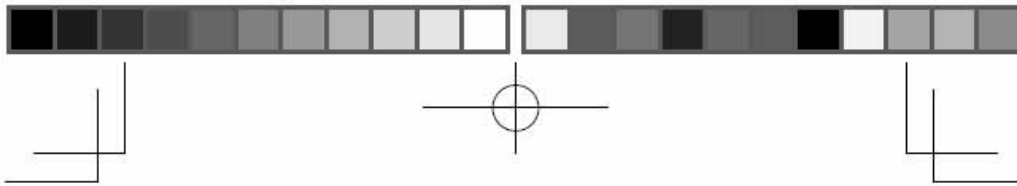
- Press to turn the connected device on or off.
- Indicate the status of connection or operation. For more details of indicator, refer to **LED indicator** chapter.
- Press to include or exclude a Z-Wave® network.

2 Z-Wave® Enabled Outlet

This outlet is used to plug in the device you wish to monitor, such as a lamp. **DO NOT** exceed the loading of wattage more than 1600W when connecting to an electronic appliance.

3 Plug

Plug the Power Monitor Switch into any available wall outlet.



Basic operation

Include to or Exclude from a Z-Wave® Network



Inclusion: Add a Z-Wave® enabled device to join a Z-Wave® network.

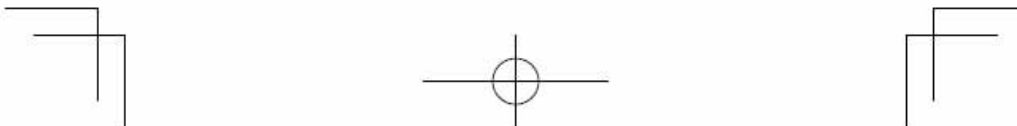
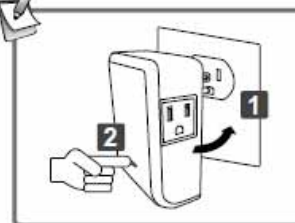
Exclusion: Disconnect a Z-Wave® enabled device from the network.

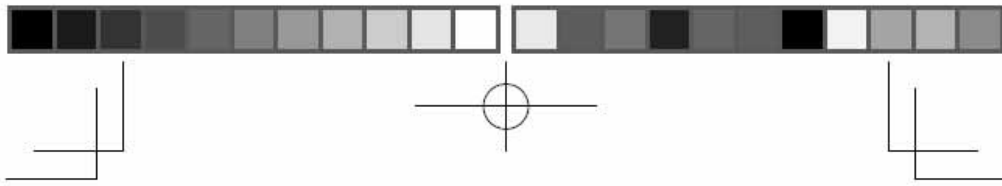
Note: Make sure a Z-Wave® remote controller has been installed and included to an available Z-Wave® network before joining the Power Monitor Switch. Not all Z-Wave® enabled remote controllers have the same installation process. Actual instructions may vary, it depends on the software that Z-Wave® controller provided.

1. Plug the Power Monitor Switch into a desired location.

2. Press the <Switch> button to include a Z-Wave® network.

3. Once the Power Monitor Switch has been detected, the confirm information will display on the controller's panel or utility software.



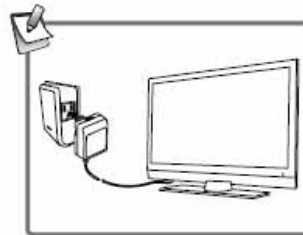


4. To exclusion the Z-Wave® network, operate the exclusion procedure from your controller first, and then press **<Switch>** button on the Power Monitor Switch.

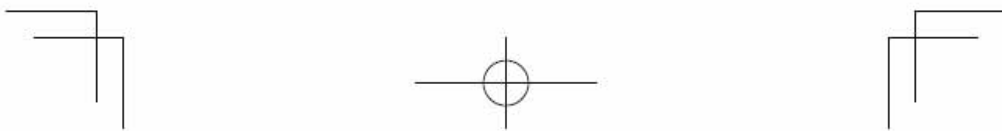
Getting started

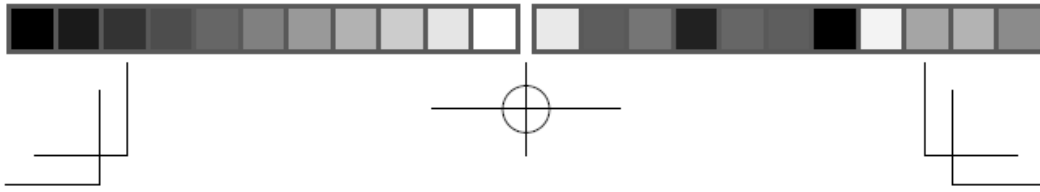
1. Include the Power Monitor Switch to an available Z-Wave network. For more details, refer to **Include to or Exclude from a Z-Wave® Network** chapter.
2. Configure the Power Monitor Switch to a specific button or other else on the controller's panel or utility software. Refer to the controller's instruction manual for more details.

3. Plug the electric appliance that you desire to detect the electric current, voltage or power consumption.

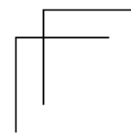
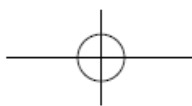
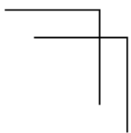
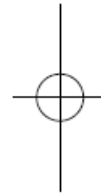
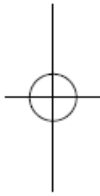


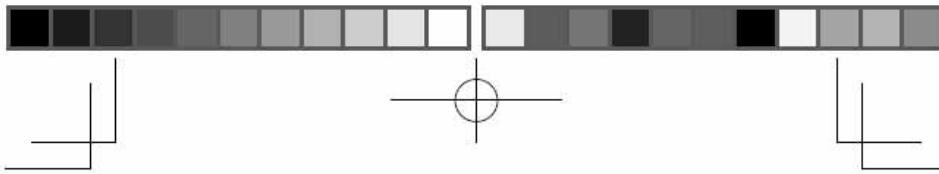
Note: The protection mode will be enabled automatically if the power loading is exceeded 1600 watts. For more details, refer to the chapter of **Overload protection**.





4. The Power Monitor Switch will become a little bit hot which is normal after using a while.
5. To turn off the appliance which has been plugged on the Power Monitor Switch, pressing the <Switch> button directly. Alternatively, turn off it from Z-Wave® remote controller or Z-Wave® utility on the PC.





Advanced operation

Association

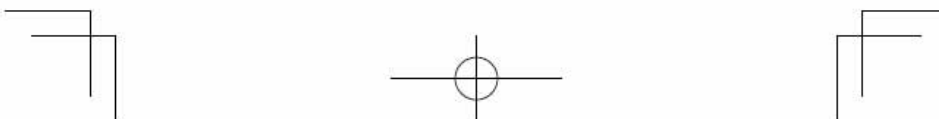


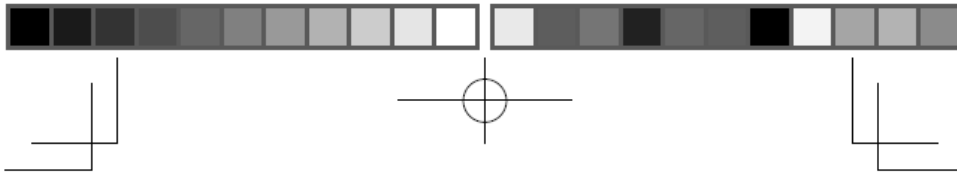
Association:

Define the relationship between devices after joining to Z-Wave® network. Device can be assigned as master/slave, and the slave can be controlled by the master.

In a Z-Wave network, the Power Monitor Switch can be associated with a master device (controller) which regard as the upper group. In this upper group, the Power Monitor Switch can be used as a bridge to transmit the commands from master to remote a lower group. To achieve the remoting, setup the association using Z-Wave® controller or utility software. The supported amount of associated of associated appliances in the upper group is depending on your controller. For more detailed Z-Wave commands, refer to controller's or utility software user's manual.

1. Associate the Power Monitor Switch with a controller for upper group, and other appliances for lower group.
2. Include the lower group under the Power Monitor Switch. The supported appliances in the lower group is up to 5.

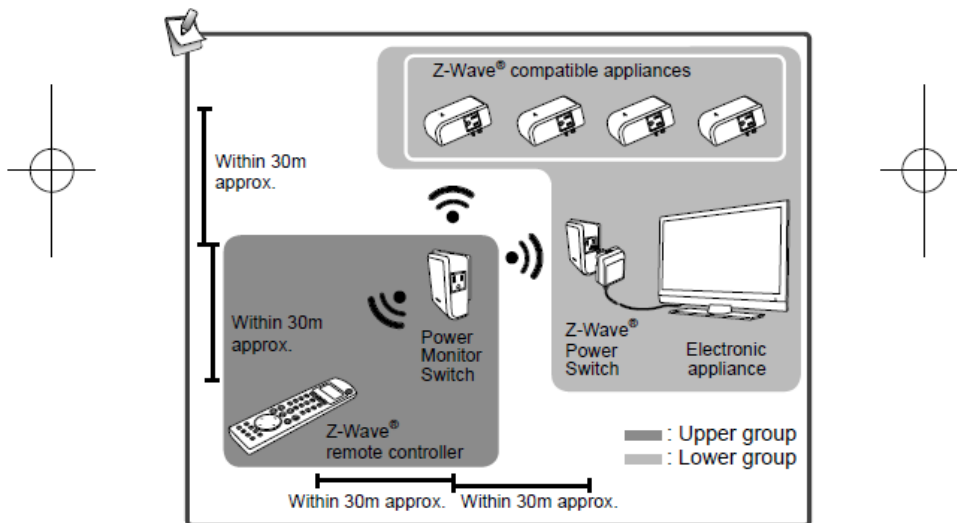


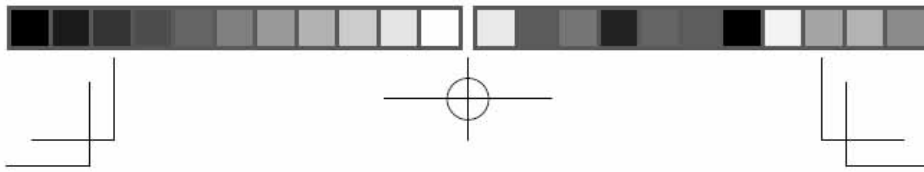


3. Once the setup is completed, you can:

- 3-1. Turn on or off the appliances in the lower group through the Power Monitor Switch by the controller.
- 3-2. Press <Switch> button directly on the Power Monitor Switch, and all devices associated with the Power Monitor will be turned on or off simultaneously.

Association diagram





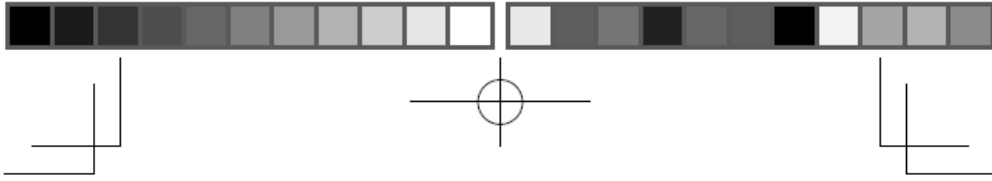
Overload protection

Factory default

The Power Monitor Switch has self-control function which will remind and cut the power automatically if the power is exceeds 1600W.

Status	Action
3000W	Cuts the power off immediately
2500~2999W	Cuts the power off after 3 seconds
2200~2499W	Cuts the power off after 10 seconds
2000~2199W	Cuts the power off after 30 seconds
1800~1999W	Cuts the power off after 1 minute
1700~1799W	Cuts the power off after 10 minutes
1601~1699W	Cuts the power off after 30 minutes

Note: During the warning period before the power off, the Power Monitor Switch will work normally once reducing the power consumption under 1600W.

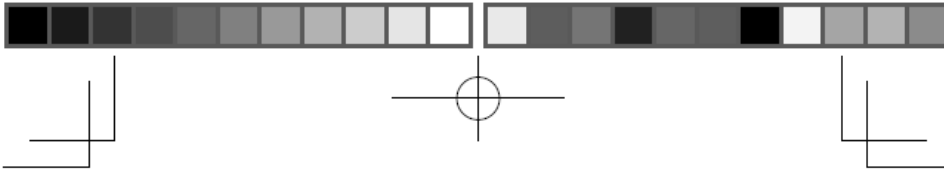


User definition

Except the default settings of overload protection, the Power Monitor Switch allows user to add other protection modes up to 5 from Z-Wave® compatible utility software. Refer to the descriptions below to enter or adjust the parameters to the corresponding items on the controller's application.

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION_SET							
Parameter Number							
Enable	Reserved			1	0	0	
Configuration Value 1							
Configuration Value 2							
Configuration Value 3							
Configuration Value 4							

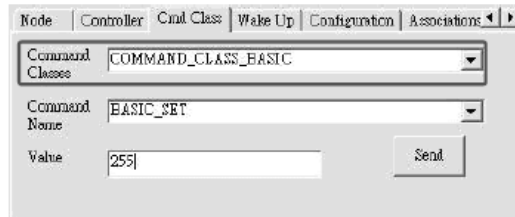
- **Parameter number:** Specify the number of overload protection between 1-5.
- **Enable:** Enable (1) or disable (0) the overload protection you have set in the utility software.
- **Size:** Payload size
- **Configuration Value (payload data):**
 - Value 1: Set the value of watt (hi-byte)
 - Value 2: Set the value of watt (low-byte)
 - Value 3: Set the value of shutdown time (hi-byte)
 - Value 4: Set the value of shutdown time (low-byte)



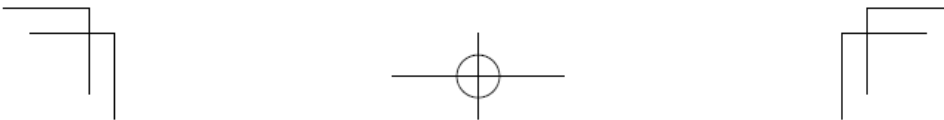
Command classes

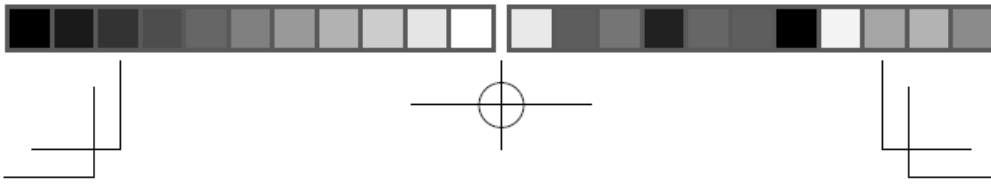
Command class is a programming protocol which allows the Power Monitor Switch to communicate with other compatible Z-Wave® devices. To program the Power Monitor Switch, choose one of the command classes below, and then adjust the parameters. For more detailed configurations, refer to the controller's instruction manual.

- COMMAND_CLASS_MULTI_CHANNEL
- COMMAND_CLASS_BASIC
- COMMAND_CLASS_SENSOR_MULTILEVEL
- COMMAND_CLASS_ASSOCIATION
- COMMAND_CLASS_METER_V3
- COMMAND_CLASS_CONFIGURATION
- COMMAND_CLASS_VERSION
- COMMAND_CLASS_MANUFACTURER_SPECIFIC






Note: The utility interface shown here is an example. The actual interface of utility may vary due to the different Z-Wave® controller provider.










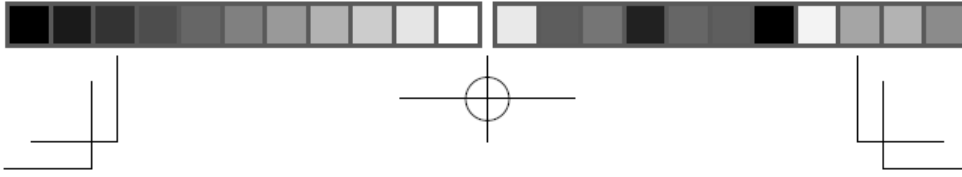


LED indicator

Refer to the table below to see the status of LED lights.

- Lights up: 
- Lights off: 
- Flashing: 

	Green LED	Red LED
Power on		
Power off		
Inclusion		
Exclusion		
Transmitting / Receiving / Including / Excluding		
Over loading		



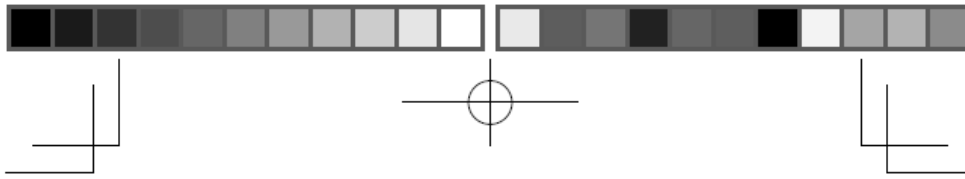
Addition information

Z-Wave®

Z-Wave® is a state-of-the-art wireless technology used as a standard for wireless home control. It is a next-generation wireless ecosystem that lets all your home electronics talk to each other, and to you, via a controller or gateway. It uses simple, reliable, low-power radio waves that easily travel through walls, floors and cabinets. All products featuring the Z-Wave® logo are certified to work with one another.

Wireless range

The Power Monitor Switch is made wireless by Z-Wave® technology. Typically, the transmission distance is approximately 100 feet (30m). When installing the module consider an open area with little obstruction for the best signal and performance. Avoiding the obstruction between the module and controller may make a positive effect on wireless performance and range.



Regulatory compliance

FCC conditions

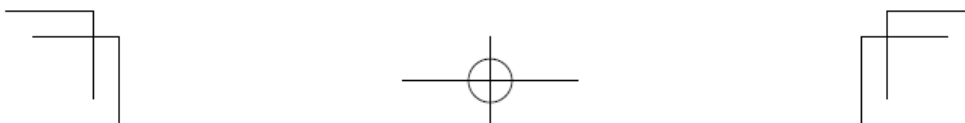
This equipment has been tested and found to comply with Part 15 Class B of the FCC Rules. Operation is subject to the following two conditions:

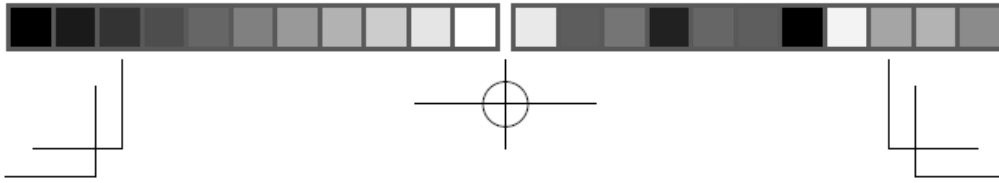
- (1) This device may not cause harmful interference
- (2) This device must accept any interference received and include interference that may cause undesired operation.



WEEE information

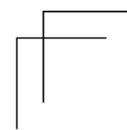
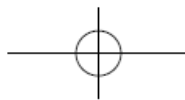
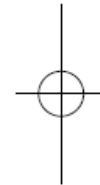
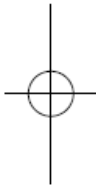
For EU (European Union) member users: According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.





Specification

Item	Description
Protocol	Z-Wave®
Module Type	Plug connection
Power Monitor Range	Type: True RMS Voltage: 90VAC~120VAC Watt: 0.1W~1600W (cont.) Current: 0.001A~15A Max load: 1600W
LED Indicator	Bicolor LED (Green / Red)
Switch	On / Off / Inclusion / Exclusion button
Frequency	908.42MHz (US)
Operating Rang	Up to 100 feet (30m)
Data Rate	40kbps
Application	Indoor use
Working Environment	Operating Temperature: 0~40°C Storage Temperature: -10~80°C
Dimensions (LxWxH)	Approx. 101 x 69 x 40mm (exclude the height of wall outlet plug)
Housing	PC8600
Flame Class	UL 94 V-0
Compliance	FCC, UL



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 or more 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:

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.

Non-modification Statement:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

