Smart Switch is a Z-Wave Switch module specifically used to enable Z-Wave command and control (on/off) of any plug-in tool. It can report wattage consumption or kWh energy usage.
Smart Switch is also a security Z-Wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

The features list:
(1) Supports 1xAC output;
(2) AC output switch on/off by manual or Z-Wave command;
(3) RGB LED indicates the Z-WAVE network range;
(4) RGB LED indicates the load power;
(5) Z-Wave plus compatible (500 serials product);
(6) Supporting power meter;
(7) Supporting repeater role;
(8) Supporting firmware OTA;

Smart Switch User Manual

HKZW-SW02U

Ⅰ. GENERAL INFORMATION ABOUT SMART SWITCH

1. Product layout

FRONT   RIGHT   Z BUTTON AND INDICATOR

BOTTOM
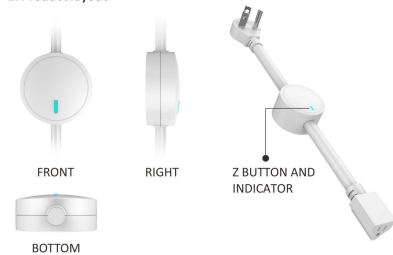
2. Specifications

Power supply:	AC 120V ±10%, 60H
Rated load current:	15A MAX
Power consumption:	≤1.5W
Power output (plug for resistive load):	1800W
Storage environment:	-20℃~60℃ 0%~80%
Operational temperature:	-10℃~40℃
Radio protocol:	Z-Wave Plus
Radio frequency:	908.42MHz
Range:	More than 150m outdoors About 30m indoors (depending on building materials)
Dimensions:	500mm(L)*65mm(W)*27mm(H)

Ⅱ. INSTALLATION

(1) Power on the Switch.
(2) Add device into your Z-Wave network if necessary.
(3) Connect load to the device, make sure the load does not exceed 1800W.
(4) Set the connected device to ON if necessary.
(5) Click Z button to turn off the switch manually, once the Smart Switch is turned off, the RGB LED indicator will turn Pink.

Ⅲ. Z-WAVE NETWORK INCLUSION

Smart Switch can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Included as a non-secure device
Smart Switch can be included into the Z-Wave network manually via the Z-Button. In addition, the Smart Switch may be included in auto inclusion mode, by simply connecting the power supply.
To include the Smart Switch into a Z-Wave network please complete following tasks:

Automatic Z-Wave network inclusion:
(1) Set the Z-Wave network main controller into inclusion mode (see Z-Wave network controller operating manual).
(2) Power on the Switch.
(3) Auto-inclusion will be activated, i.e. Switch automatically starts looking for Z-Wave network controller. Auto-inclusion activation is signaled by a single, RGB LED indicator blink fast in blue.
(4) Smart Switch should be recognized and automatically included into the Z-Wave network.

Manual Z-Wave network inclusion:
(1)Connect the power supply.
(2)Set the Z-Wave network main controller into inclusion mode (see Z-Wave network controller operating manual).
(3)Triple click the Z-button, RGB LED indicator should blink fast in blue.
(4)Smart Switch should be recognized and included into the Z-Wave network.

Included as a secure device
(1)Connect the power supply.
(2)Set the Z-Wave network main controller into and node secure mode (see Z-Wave network controller operating manual).
(3)Press and hold the Z-button for more than 3 seconds, RGB LED indicator should blink fast in green。
(4)Smart Switch should be recognized and included into the Z-Wave security network.
After the inclusion process complete, Plug's auto-inclusion function will be deactivated, i.e. Plug will not try to include itself into a Z-Wave network.

> **! NOTE**
> If you want your Smart Switch to be a security device that use secure/encrypted message to communicate in a Z-Wave network, then a security enabled Z-Wave controller is needed.

Ⅳ. REMOVING FROM Z-WAVE NETWORK

To remove Smart Switch from the Z-Wave network:

(1) Insert the Plug into a socket.
(2) Set the Z-Wave network controller into the exclusion mode (see Z-Wave controller operating manual).
(3) Triple click the Z button.
(4) RGB LED indicator will blink yellow till the removing process is completed, than the indicator will keep yellow for 3 seconds.

Ⅴ. RESETTING SMART SWITCH

Reset procedure clears the Smart Switch's memory, including Z-Wave network controller information and energy consumption data. To reset Smart Switch:

(1) Power on the device,
(2) Press and hold the Z button for more than 20 seconds,
(3) If holding time more than 20seconds, the RGB LED indicator will keep yellow for 2 seconds, which means resetting is complete.

> **! TIP:**
> Once the reset procedure is completed, device's relay will turn off. The reset feature works only when the plug has been included into a Z-Wave network.

> **! NOTE:**
> Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

Ⅵ. ASSOCIATION

Association command class allows Smart Switch to communicate with other Z-Wave devices directly, such as sending BASIC REPORT whenever the Smart Switch is turn on or off.

Smart Switch supports 1 association grouping.
The max number of associated nodes is 5.

Ⅶ. POWER INDICATION

Smart Switch's RGB LED indicator will show different light colors when it connect loads with different power.
There are 8 light color indications:

Pink – Smart Switch's output is OFF.
Blue – 0~300W.
Cyan – 300~600W.
Green – 600~900W
Yellow – 900~1200W
Red – 1200~1500W
Purple – 1500~1800W
Purple blink – exceeds 1800W

Ⅷ. TESTING Z-WAVE NETWORK RANGE

Smart Switch' RGB LED indicator can signals its communication quality with the Z-WAVE main controller.
To start testing: press and hold the Z button for 6 to 9 seconds, release when the RGB LED indicator turns to violet.

Blink in green – Smart Switch establish a direct communication with the main controller, and still under checking.
Keep green – The green light should last about 2 seconds, which means the direct communication is stable.
Blink in orange – Smart Switch can communicate with the main controller in intermediate radio transmit power level, and still under checking.
Keep orange – The communication quality is moderate.
Keep Red – The communication is fail.

> **! TIP:**
> 1.This function works only when Smart Switch has been included into a Z-WAVE network.
> 2.Click the Z button to exit the test.

Ⅸ. ADVANCED CONFIGURATION

Smart Switch offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

GENERAL SETTINGS:
Parameter No. 20 Overload protection
Smart Switch keep detecting the load power, once the AC current exceeds 16.5A for more than 5s, Smart Switch's relay will turn off.

0 - The function is disabled
1 - The function is enabled.

Default setting: **1**
Parameter size: **1 [byte]**

Parameter No. 21 Setting device status after power failure
Define how the Plug reacts after the power supply is back on.

0 - Smart Switch memorizes its state after a power failure.
1 - Smart Switch does not memorize its state after a power failure. Connected device will be on after the power supply is reconnected.
2 - Smart Switch does not memorize its state after a power failure. Connected device will be off after the power supply is reconnected.

Default setting: **0**
Parameter size: **1 [byte]**

Parameter No. 24 Notification when Load status change
Smart Switch can send notifications to association device (Group Lifeline) when state of Smart Switch's load change.

0 - The function is disabled.
1 - Send Basic report.
2 - Send Basic report only when Load condition is not changed by Z-WAVE Command.

Default setting: **1**
Parameter size: **1 [byte]**

Parameter No. 27 Indicator modes
After Smart Switch being included into a Z-Wave network, the RGB LED indicator will indicate the situation of load.

0 - The Smart Switch will work in Power indication mode (Point Ⅶ). .
1 - The Smart Switch will work in Power indication mode (Point Ⅶ) for 5 seconds, when the state of Smart Switch's load changed. RGB LED indicator will turn off if there is no more switch action in 5 seconds.
Default setting: **0**
Parameter size: **1 [byte]**

POWER AND ENERGY REPORTS SETTINGS:
Parameter No. 151 Threshold of power report
Power threshold to be interpreted, when the change value of load power exceeds the setting threshold, the Smart Switch will send meter report to association device (Group Lifeline).

Available settings: **0 - 65535** (0 - 65535W)
0 - The function is disabled.

Default setting: **50** (50W)
Parameter size: **2 [byte]**

Parameter No. 152 Percentage threshold of power report
Power percentage threshold to be interpreted, when change value of the load power exceeds the setting threshold, the Smart Switch will send meter report to association device (Group Lifeline).

Available settings: **0 - 255** (0 - 255%)
0 - The function is disabled.

Default setting: **10** (10%)
Parameter size: **1 [byte]**

Parameter No. 170 Reset parameter No.171 and 172
Parameter NO.171 and 174 will be restored to default settings.

Available settings: **85**
Parameter size: **1 [byte]**

Parameter No. 171 Power report frequency
The interval of sending power report to association device (Group Lifeline).

Available settings: **5- 2678400** (5 - 2678400s)
0 - The function is disabled.

Default setting: **30** (30s).
Parameter size: **4 [byte]**

Parameter No. 172 Energy report frequency
The interval of sending energy report to association device (Group Lifeline).

Available settings: **5- 2678400** (5 - 2678400s)
0 - The function is disabled.

Default setting: **300** (300s).
Parameter size: **4 [byte]**

Parameter No. 173 Voltage report frequency
The interval of sending voltage report to association device (Group Lifeline).

Available settings: **5- 2678400** (5 - 2678400s)
0 - The function is disabled.

Default setting: **0** (disabled).
Parameter size: **4 [byte]**

Parameter No. 174 Electricity report frequency
The interval of sending electricity report to association device (Group Lifeline).

Available settings: **5- 2678400** (5 - 2678400s)
0 - The function is disabled.

Default setting: **0** (disabled).
Parameter size: **4 [byte]**

Ⅹ. FCC NOTICE (for USA)

FCC Part 15.19 Warning Statement

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.

FCC Part 15.21 Warning Statement

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

FCC Part 15.105 Warning Statement

Note: 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.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement.
To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between
the radiator and your body.