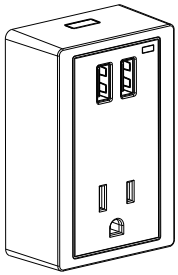


USER MANUAL

SMART PLUG

HKZW-SO01 - V1.3

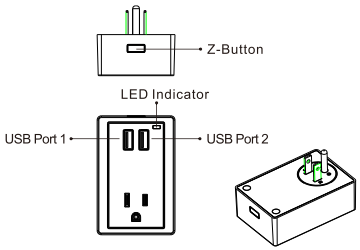
Smart plug is a Z-Wave Switch plugin module specifically used to enable Z-Wave command and control (on/off) of any plug-in tool. It can report wattage consumption or kWh energy usage.

HKZW-SO01 is a Smart plug based on Z-Wave plus specification.

The features list:
(1) Supports 1xAC output and 2xUSB outputs;
(2) AC output switch on/off by manual or Z-Wave command;
(3) Led indicates the working status;
(4) Z-Wave plus compatible (500 serials product);
(5) Supporting power meter;
(6) Supporting repeater role;
(7) Supporting firmware OTA;

Ⅰ. GENERAL INFORMATION ABOUT SMART PLUG

1. Product layout



2. Specifications

Power supply:	120V +/-10%, 60Hz
Rated load current:	15A
Power consumption:	≤1.5W
Power output (plug for resistive load):	1800W
Power output: (USB port 1):	5W 5+/-0.25V 1.0A
Power output: (USB port 2):	12W 5+/-0.25V 2.4A
Storage environment:	-20℃~60℃ 0%~80%
Operational temperature:	-10℃~40℃
Radio protocol:	Z-Wave
Radio frequency:	908.42MHz
Range:	More than 150m outdoors About 40m indoors (depending on building materials)
Dimensions:	82*55*28mm

Ⅱ. INSTALLATION

(1) Insert your device into a socket,
(2) Add device into your Z-Wave network if necessary,
(3) Connect load to the plug, make sure the load does not exceed 1800W,
(4) Set the connected device switch to ON,
(5) To turn on connected device manually turn on the Plug using Z button. Once the Plug is turned on, LED indicator will turn on,
(6) Press Z button to turn off the Plug manually,
(7) Once the Plug is turned off, LED indicator will turned off as well.

Ⅲ. Z-WAVE NETWORK INCLUSION

Smart Plug can be included into the Z-Wave network manually via the Z-Button. In addition, the Smart Plug may be included in auto inclusion mode, by simply connecting the power supply.

To include the smart plug into a Z-Wave network please complete following tasks:
Included as a non-secure device
Automatic Z-Wave network inclusion:
(1) Insert the Plug into a socket,
(2) Set the Z-Wave network main controller into learning mode (see Z-Wave network controller operating manual).
(3) Auto-inclusion will be activated, i.e. Plug automatically starts looking for Z-Wave network controller. Auto-inclusion activation is signaled by a single, LED indicator blink fast.
(4) Set the Z-Wave network main controller into learning mode (see Z-Wave network controller operating manual).
(4) Smart Plug 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 learning mode (see Z-Wave network controller operating manual).
(3) Triple click the Z-button
(4) Smart Plug 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.
(4) Smart Plug 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 the Z-Wave network.

TIP:
1. If the LED indicator not blinking when inserting a Plug into a socket, it means the plug was already added in other existing network. So you need to take it out of inclusion mode then add it to your Z-Wave network.
2. Smart Plug can be include as a secure device only when the main controller supported the secure mode.

Ⅳ. REMOVING FROM Z-WAVE NETWORK

To remove Smart Plug from the Z-Wave network:

(1) Insert the Plug into a socket,
(2) Set the Z-Wave network controller into the learn-mode (see Z-Wave controller operating manual)
(3) Triple click the Z button.

Ⅴ. RESETTING SMART PLUG

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

To reset Smart Plug:
(1) Insert the Plug into a socket,
(2) Press and hold the Z button for more than 20 seconds,
(3) If holding time more than one second, the LED will blink faster and faster. If holding time more than 20seconds, the LED indicator will be on for 3 seconds. Then it blinking slowly.

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

Ⅵ. ASSOCIATION

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

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

Ⅵ. ADVANCED CONFIGURATION

Smart Plug 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 Plug keep detecting the load power, once the current exceeds 16.5A for more than 5s, smart plug'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 Plug memorizes its state after a power failure.
1 - Smart Plug does not memorize its state after a power failure. Connected device will be on after the power supply is reconnected.
2 - Smart Plug does not memorize its state after a power failure. Connected device will be off after the power supply is reconnected.

NERAL SETTINGS:

Parameter No. 20 Overload protection
Smart Plug keep detecting the load power, once the current exceeds 16.5A for more than 5s, smart plug'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 Plug memorizes its state after a power failure.
1 - Smart Plug does not memorize its state after a power failure. Connected device will be on after the power supply is reconnected.
2 - Smart Plug 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 Plug can send notifications to association device (Group Lifeline) when state of smart plug'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 plug being included into a Z-Wave network, the LED in the device will indicator the state of load.

0 - The LED will follow the status (on/off) of its load.
1 - When the state of Switch's load changed, The LED will follow the status (on/off) of its load, but the red LED will turn off after 5 seconds if there is no any switch action.

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 plug 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 plug 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. 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]**

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 Caution.

1.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.

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

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.