

NA Smart Plug (Z-Wave)

User Guide



Smart plug is a Z-Wave switch based on Z-Wave wireless technology. It can report wattage consumption or kWh energy usage.

Smart Plug 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.

Smart Plug is also a security Z-Wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

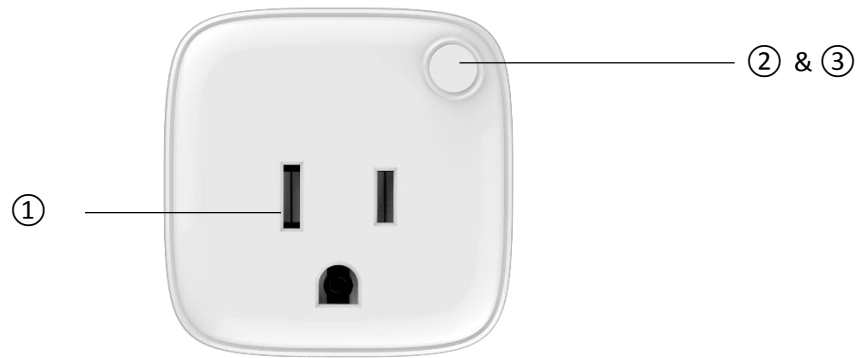
If you want your Smart Plug to be a security device that use secure/encrypted message to communicate in a Z-Wave network, then a security enabled Z-Wave controller is needed.

Feature list:

- 1) Supports 1xAC output.
- 2) AC output switch on/off by manual and/or Z-Wave command.
- 3) Led indicates the working status.
- 4) Supporting power meter.
- 5) Supporting repeater role.
- 6) Supporting firmware OTA.

1. FAMILIARIZE YOURSELF WITH YOUR SMART PLUG

Smart Plug Layout



- ① **Socket:** Converts your traditional outlet and enables your plugged-in appliance to become Smart and controllable with the App
- ② **Button:** Press once to switch on or off; press and hold to reset
- ③ **Indicator Light:** when the plug is operating, the light is blue; when the device is turned off, the light changes to red

2. TECHNICAL SPECIFICATIONS

Power supply:	230V±10%, 50Hz
Rated load current:	10A
Power consumption:	≤1.5W
Power output	2300W
Operational temperature:	-10°C-40°C
Radio protocol:	Z-Wave
Radio frequency:	908.42MHz (US) 868.42MHz (EU)
Range:	About 40m indoors (depending on building materials)

3. All functions of each trigger

Trigger	Description
Power on	<p>In the network: NOP</p> <p>Not in the network:</p> <ol style="list-style-type: none"> 1. Send Node Info frame. 2. To add the product to the Z-Wave network: <ol style="list-style-type: none"> a. Make sure that the Smart Plug has been connected to the power supply. b. Set the Z-Wave network main controller into inclusion mode.

	<p>c. Power on.</p> <p>d. The LED will blink fast until the inclusion is completed and then the LED will keep turning on or off. Otherwise, the LED will still blink slowly, in which you need to repeat the process from step b</p>
Short press one time	<p>In the network: Change the state of Smart Plug's load.</p> <p>Not in the network:</p> <ol style="list-style-type: none"> 1. Change the state of Smart Plug's load. 2. Send Node Info frame. 3. To add the product to the Z-Wave network: <ol style="list-style-type: none"> a. Make sure that the Smart Plug has been connected to the power supply. b. Set the Z-Wave network main controller into inclusion mode. c. Short press the Button. d. The LED will blink fast until the inclusion is completed and then the LED will keep turning on or off. Otherwise, the LED will still blink slowly, in which you need to repeat the process from step b
Short press 3 times within 1 second	<p>In the network:</p> <ol style="list-style-type: none"> 1. Send Node Info frame. 2. To remove the product from the Z-Wave network: <ol style="list-style-type: none"> a. Insert the Smart Plug to power socket, the LED will follow the status (on or off) of its load's power level. b. Set the Z-Wave network main controller into exclusion mode. c. Short press Button 3 times within 1.5 second. d. The LED will blink fast until the exclusion is completed, then the LED will keep on blinking slowly. Otherwise, the LED will keep on blink fast for 35 seconds and then follow the status (on or off) of its load status. <p>Not in the network:</p> <ol style="list-style-type: none"> 1. Change the state of Smart Plug's load. 2. Send Node Info frame. 3. To add the product to the Z-Wave network: <ol style="list-style-type: none"> a. Make sure that the Smart Plug has been connected to the power supply. b. Set the Z-Wave network main controller into inclusion mode. c. Short press Button 3 times within 1.5 second. d. The LED will blink fast until the inclusion is completed and then the LED will keep turning on or off. Otherwise, the LED will still blink slowly, in which you need to repeat the process from step b
Press and hold for 5 seconds	<p>Reset Smart Plug to factory default:</p> <ol style="list-style-type: none"> 1. Make sure that the Smart Plug has been connected to the power supply. 2. Press and hold the Button for 5 seconds. 3. If holding time is more than one second, the LED will blink faster and faster. If holding time is more than 5 seconds, the LED will be solid for 3 seconds to indicate that the resetting is successful. Otherwise, repeat step 2.

	<p>Note: Reset to factory will remove Smart Plug from the Z-Wave network. Use this procedure only in the event that the network primary controller missing or otherwise inoperable.</p>
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4. SECURITY AND NON-SECURITY FEATURES OF SMART PLUG

1. The function of the Smart Plug as a security and non-security device is identical.
2. When a node includes into a S2 Z-Wave network, the node supports S2 authenticated class and so do the supported CCs.
3. Commands List

	Included Non-Secure Network	Included Secure Network
Non-secure supported Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO_V2 COMMAND_CLASS_SWITCH_BINARY_V1 COMMAND_CLASS_ASSOCIATION_V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1 COMMAND_CLASS_TRANSPORT_SERVICE_V2 COMMAND_CLASS_VERSION_V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 COMMAND_CLASS_METER_V3 COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 COMMAND_CLASS_POWERLEVEL_V1 COMMAND_CLASS_CONFIGURATION_V1 COMMAND_CLASS_SCENE_ACTUATOR_CONF_V1 COMMAND_CLASS_SCENE_ACTIVATION_V1 COMMAND_CLASS_SECURITY0_V1 COMMAND_CLASS_SECURITY2_1 COMMAND_CLASS_SUPERVISION_V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4	COMMAND_CLASS_ZWAVEPLUS_INFO_V2 COMMAND_CLASS_TRANSPORT_SERVICE_V2 COMMAND_CLASS_SECURITY0_V1 COMMAND_CLASS_SECURITY2_V1 COMMAND_CLASS_SUPERVISION_V1
Security Supported Report Command Classes		COMMAND_CLASS_SWITCH_BINARY_V1 COMMAND_CLASS_ASSOCIATION_V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1 COMMAND_CLASS_VERSION_V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 COMMAND_CLASS_METER_V3 COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 COMMAND_CLASS_POWERLEVEL_V1 COMMAND_CLASS_CONFIGURATION_V1 COMMAND_CLASS_SCENE_ACTUATOR_CONF_V1 COMMAND_CLASS_SCENE_ACTIVATION_V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4

5. NOTE FOR SPECIAL COMMANDS

5.1 Association Command

The Smart Plug supports only one association group.

Grouping Identifier	Max Nodes	Send Commands
Group 1	0x05	<ol style="list-style-type: none">1. When the state of Smart Plug (turn on or off the load) is changed:<ol style="list-style-type: none">1. Set Configuration parameter 24 to 0: Reserved2. Set Configuration parameter 24 to 1: Send Basic Report3. Set Configuration parameter 24 to 2: Send Basic Report only when Load condition is changed not by Z-Wave Command, such as short pressing.2. Sending Meter Report.3. Sending Device Reset Locally.

5.2 Basic Command

Basic CC maps to Switch Binary CC

5.3 Configuration Command

Smart Plug offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controller's configuration interface.

NOTE: ALL NUMBERS BELOW ARE DECIMAL.

Parameter No. 01 Overcurrent protection

Smart Plug keep detecting the load power, once the AC current exceeds 11 A for more than 4 seconds, smart plug's relay will turn off.

Possible values:

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

Default value: 1

Parameter size: 1 [byte]

Parameter No. 02 Setting device status after power failure

Define how Smart Plug reacts after the power supply is back on.

Possible values:

- 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 value: 0

Parameter size: 1 [byte]

Parameter No. 03 Notification when Load status change

Smart Plug will send notification to associated device (Group Lifeline) when the status of smart plug's load is changed.

Possible values:

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

Default value: 1

Parameter size: 1 [byte]

Parameter No. 04 LED Load indicator mode selection

Possible values:

- 0 - The LED status follows the load change.
- 1 - when operating the load, The LED lights for 5 seconds and then turns off.

Default value: 0

Parameter size: 1 [byte]

Parameter No. 16 The value here represents minimum change in wattage (in terms of wattage) for a meter report (watt) to be sent

When the change value of load power exceeds the setting value, smart plug will send meter report (watt) to associated device (Group Lifeline).

Possible values:

-32768 to 32767 (0 - 65535W)

-32768 to -1 : 65535 to 32768

1 to 32767: 1 to 32767

0 - The function is disabled.

Default value: 50 (50W)

Parameter size: 2 [byte]

Parameter No.17 The value here represents minimum change in wattage percent (in terms of percentage) for a meter report (watt) to be sent
When the change value of the load power exceeds the setting value, smart plug will send meter report to associated device (Group Lifeline).

Possible values:

-128 - 127 (0 - 255%)

-128 to -1 : 255% to 128%

1 to 127: 1% to 127%

0 - The function is disabled.

Default value: 10 (10%)

Parameter size: 1 [byte]

Parameter NO.100 Setting the parameters 101~104 to default.

Possible values: 85

Parameter size: 1 [byte]

Parameter No. 101 Setting time for sending meter report (watt)

The interval time of sending meter report (watt) to associated device (Group Lifeline).

Possible values:

5- 2678400 (5 - 2678400s)

Default value: 600(10 minutes).

Parameter size: 4 [byte]

Parameter No. 102 Setting time for sending meter report (KWh)

The interval of sending meter report (KWh) to association device (Group Lifeline).

Possible values:

5- 2678400 (5 - 2678400s)

Default value: 3600(one hours).

Parameter size: 4 [byte]

Parameter No. 103 Setting time for sending meter report (voltage)

The interval of sending meter report (voltage) to association device (Group Lifeline).

Possible values:

5- 2678400 (5 - 2678400s)

Default value: 3600(one hours).

Parameter size: 4 [byte]

Parameter No. 104 Setting time for sending meter report (current)

The interval time of sending meter report (current) to associated device (Group Lifeline).

Possible values:

5- 2678400 (5 - 2678400s)

Default value: 3600(one hours).

Parameter size: 4 [byte]

Parameter No.254 Enable/disable the configuration command

Lock/unlock all configuration parameters.

Possible values:

0–Unlock.

1 – Lock.

Default value: 0

Parameter size: 1[byte]

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