Shelly Wave Plug US Z Wave Smart Plug With Power Measurements User Manual

Contents

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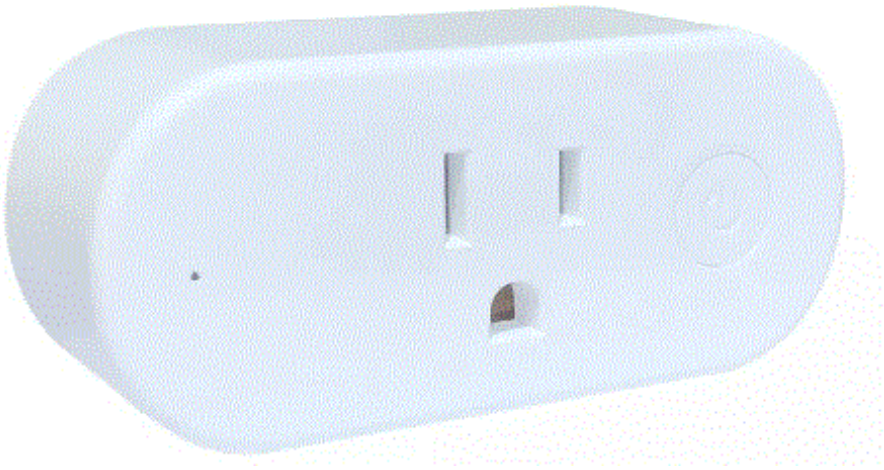


Device: Wave Plug US

- USA Part number/Ordering Code: QNPL-001X16US
- Z-Wave Product type ID: 0x0002
- Z-Wave Product ID: 0x0088
- Z-Wave Manufacturer: Shelly Europe
- Z-Wave Manufacturer ID: 0x0460

User and safety guide

Z-Wave® Plug US with power measurement
READ BEFORE USE
This document contains important technical and safety information about the Device, its safe use and installation.

CAUTION! Before beginning the installation, please read carefully and entirely this guide carefully and any other documents accompanying the Device. Failure to follow the installation procedures could lead to malfunction, danger to your health and life, violation of law, or refusal of legal and/or commercial guarantee (if any). Allterco Robotics EOOD is not responsible for any loss or damage in case of incorrect installation or improper operation of this Device due to failure of following the user and safety instructions in this guide.

Terminology and Abbreviations

- Device – In this document, the term “Device” is used to refer to the Shelly Qubino device that is a subject of this guide.
- Gateway (GW) – A Z-Wave® gateway, also referred to as a Z-Wave® controller, Z-Wave® main controller, Z-Wave® primary controller, or Z-Wave® hub, etc., is a device that serves as a central hub for a Z-Wave® smart home network. The term “gateway” is used in this document.
- S button – The Z-Wave® Service button, located on Z-Wave® devices is used for various functions such as adding (inclusion), removing (exclusion), and resetting the device to its factory default settings. The term “S button” is used in this document.
- Adding/Inclusion – The process of adding a Z-Wave device to a Z-Wave network -gateway. The words included, added, etc. are used in this regard.
- Removing/Exclusion – The process of removing a Z-Wave device from a Z-Wave network -gateway. The words excluded, removed, etc. are used in this regard.

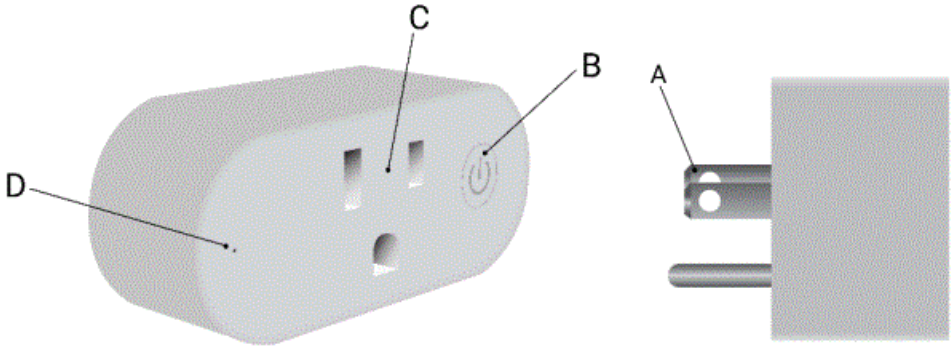
- Learn mode – a state that allows the Device to receive network information from the gateway.

About Shelly Qubino

Shelly Qubino is a line of innovative microprocessor-managed devices, which allow remote control of electric circuits with a smartphone, tablet, PC, or home automation system. They work on Z-Wave® wireless communication protocol, using a gateway. When the gateway is connected to the internet, you can control Shelly Qubino devices remotely from anywhere. Shelly Qubino devices can be operated in any Z-Wave® network with other Z-Wave® certified devices from other manufacturers. All mains-operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network. Devices are designed to work with older generations of Z-Wave® devices and gateways.

About the Device

The Device is a smart plug/outlet with power measurement and overheating protection, which allows remote control of electrical appliances through a mobile phone, tablet, PC, or home automation system.



Legend

- A: Plug
- B: S button
- C: Socket
- D: LED indication

Installation instruction

The Device is a smart plug suitable for controlling electrical house-hold appliances and measuring their power consumption. It can be plugged into standard IEC Type B sockets and accepts standard IEC Type B plugs.

- CAUTION! Use the Device only with a power grid and appliances that comply with all applicable regulations. A short circuit in the power grid or any appliance connected to the Device may damage it.
- CAUTION! Do not connect the Device to appliances exceeding the given max. load!
- CAUTION! Do not install the Device where it can get wet.
- CAUTION! Do not use the Device if it has been damaged!
- CAUTION! Do not attempt to service or repair the Device yourself!
- CAUTION! Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.
- CAUTION! Do not allow children to play with the device, especially with the S button. Keep the devices for remote control of Shelly Qubino (mobile phones, tablets, PCs) away from children.

- CAUTION! The product is intended for indoor use only.
- CAUTION! Protect the product from dirt and moisture! Do not use the product in a damp environment!
- CAUTION! Before cleaning the Device power off the connected appliance by pressing the S button, unplug it, and then unplug the Device itself. Never clean the Device, if it is connected to the mains! Use a wet soft cloth to clean the Device.
- CAUTION! Do not use aggressive detergents!
- CAUTION! Do not immerse the Device or wash it under running water!

Insert Wave Plug US into a power socket without an appliance/load connected to it. Then you can now plug an appliance into the Device socket. To power the appliance on press briefly the S button. The LED will turn blue if load is between 0W and 85% of the max. power consumption and red if the load is >85% of the max. power consumption.

About Z-Wave®

The Z-Wave® protocol is an interoperable, wireless, RF-based communications technology designed specifically for control, monitoring, and status reading applications in residential and light commercial environments. Mature, proven, and broadly deployed, Z-Wave® is by far the world market leader in wireless control, bringing affordable, reliable, and easy-to-use 'smart' products to millions of people in every aspect of daily life. Interoperability has always been at the core of the Z-Wave® protocol, alongside features like backward compatibility, security, and reliability. All Z-Wave® devices can be operated in any Z-Wave® network with other Z-Wave® certified devices, regardless of brand or manufacturer. All mains-operated nodes within the network will act as repeaters regardless of vendor to increase the reliability of the network. 4000+ Z-Wave-certified products are backward and forwards-compatible in the Z-Wave® ecosystem and well over 100 million devices are currently in the market. With over 20 years in the marketplace, Z-Wave® technology has best-in-class security measures to keep your home network smarter and safer.
Source: www.z-wavealliance.org, http://www.z-wave.com

Z-Wave® Adding / Removing / Factory reset

Adding the Device to a Z-Wave® network (inclusion)
Note! All Device outputs (O, O1, O2, etc. – depending on the Device type) will turn the load 1s on/1s off /1s on/1s off if the Device is successfully added to/removed from a Z-Wave® network.
Note! In case of Security 2 (S2) adding (inclusion), a dialog will appear asking you to enter the corresponding PIN Code (5 underlined digits) that are written on the Z-Wave® DSK label on the side of the Device and on the Z-Wave® DSK label inserted in the packaging.
IMPORTANT: The PIN Code must not be lost.

SmartStart adding (inclusion)
SmartStart-enabled products can be added to a Z-Wave® network by scanning the Z-Wave® QR Code present on the Device with a gateway providing SmartStart inclusion. No further action is required, and the SmartStart device will be added automatically within 10 minutes of being switched on in the network vicinity.

1. With the gateway application scan the QR code on the Device label and add the Security 2 (S2) Device Specific Key (DSK) to the provisioning list in the gateway.
2. Connect the Device to a power supply.
3. Check if the blue LED is blinking in Mode 1. If so, the Device is not added to a Z-Wave® network.
4. Adding will be initiated automatically within a few seconds after connecting the Device to a power supply, and the Device will be added to a Z-Wave® network automatically.
5. The blue LED will be blinking in Mode 2 during the adding process.
6. The violet LED will be blinking in Mode 1 if the Device is successfully added to a Z-Wave® network.

Adding (inclusion) with the S button

1. Connect the Device to a power supply.
2. Check if the blue LED is blinking in Mode 1. If so, the Device is not added to a Z-Wave® network.
3. Enable add/remove mode on the gateway.
4. To enter the Setting mode, quickly press and hold the S button on the Device until the LED turns solid blue.
5. Quickly release and then press and hold (> 2s) the S button on the Device until the blue LED starts blinking in Mode 3. Releasing the S button will start the Learn mode.
6. The blue LED will be blinking in Mode 2 during the adding process.
7. The violet LED will be blinking in Mode 1 if the Device is successfully added to a Z-Wave® network.

Note! In Setting mode, the Device has a timeout of 10s before entering again into Normal mode.

Removing the Device from a Z-Wave® network (exclusion)

- **Note**! The Device will be removed from your Z-Wave® network, but any custom configuration parameters will not be erased.
- **Note**! All Device outputs (O, O1, O2, etc. – depending on the Device type) will turn the load 1s on/1s off /1s on/1s off if the Device is successfully added to/removed from a Z-Wave® network.

Removing (exclusion) with the S button

1. Connect the Device to a power supply.
2. Check if the violet LED is blinking in Mode 1. If so, the Device is added to a Z-Wave® network.
3. Enable add/remove mode on the gateway.
4. To enter the Setting mode, quickly press and hold the S button on the Device until the LED turns solid blue.
5. Quickly release and then press and hold (> 2s) the S button on the Device until the blue LED starts blinking in Mode 3. Releasing the S button will start the Learn mode.
6. The blue LED will be blinking in Mode 2 during the removal process.
7. The blue LED will be blinking in Mode 1 if the Device is successfully removed from a Z-Wave® network.

Note! In Setting mode, the Device has a timeout of 10s before entering again into Normal mode.

Factory reset

Factory reset general
After the Factory reset, all custom parameters and stored values (kWh, associations, routings, etc.) will return to their default state. HOME ID and NODE ID assigned to the Device will be deleted. Use this reset procedure only when the gateway is missing or otherwise inoperable.

Factory reset with the S button
Note! Factory reset with the S button is possible anytime.

1. To enter the Setting mode, quickly press and hold the S button on the Device until the LED turns solid blue.
2. Press the S button multiple times until the LED turns solid red.
3. Press and hold (> 2s) S button on the Device until the red LED starts blinking in Mode 3. Releasing the S

button will start the factory reset.

4. During factory reset, the LED will turn solid violet for about 1s, then the blue and red LED will start blinking in Mode 3 for approx. 2s.
5. The blue LED will be blinking in Mode 1 if the Factory reset is successful.

Remote factory reset with parameter with the gateway
Factory reset can be done remotely with the settings in Parameter No. 120.

Z-Wave® Security 2 and Device Specific Key (DSK)

The Device supports the latest Security 2 (S2) feature. S2 is handled by the strong AES 128 Encryption protocol, which means that the S2 makes Z-Wave® the most secure IoT (Internet of Things) security platform out there. To fully utilize the product and its Security 2 feature, a Security 2-enabled Z-Wave® gateway must be used.

Authenticated Control

- Out-Of-Band DSK for adding (inclusion)
- May be used by most implementations.

The Device also supports Security 2 Authenticated, Unauthenticated, and Unsecure adding (inclusion).
Note! When adding the Device to a Z-Wave network with a gateway supporting Security 2 (S2), the PIN Code of the Z-Wave Device Specific Key (DSK) is required. You can find it on the label on the side of the Device and a copy is inserted in the packaging, which must not be lost. Do not remove the Z-Wave DSK label from the Device. As a backup measure, use the label in the packaging.

The first five digits of the key are highlighted or underlined to help the user identify the PIN Code part of the DSK text. The DSK is additionally represented with a QR Code as shown on the image.

Z-Wave DSK label and QR code (example)

1. A joining node requesting to join the S2 Access Control Class or the S2 Authenticated Class will obfuscate its Public Key by setting the bytes 1..2 to zeros (0x00) before transferring its key via RF.
2. The DSK may be used for out-of-band (OOB) authentication.
3. The including gateway may use a QR code scanning device to read the entire DSK of the joining device and match it with the obfuscated public key received via RF from the joining device.

- **NOTE**: This Device must be used in conjunction with a security-enabled Z-Wave gateway to fully utilize all implemented functions.
- **NOTE**: This Device is a security-enabled Z-Wave Plus® product that can use encrypted Z-Wave Plus messages

to communicate to other security-enabled Z-Wave Plus products.

- **NOTE**: DSK access via UI gateways, which implement the S2 and SmartStart security features, display an input dialog box, with a full or partial DSK key. Most of them display a partial DSK
  (they do not show the PIN code) when the Device is added with the S2-Authenticated security scheme. When added with the S2-Unauthenticated, some gateways show the complete DSK while others perform the complete adding (inclusion) process without prompting the user with the dialogue.

LED Signalization

General rules

- Switching between Normal and Settings modes is done by a single press on the S button
- Once in settings mode, the LED automatically turns off after 10s
- Press on the S button or device power cycle wakeup LED for 10s.

Normal mode LED status: Normal mode is defined by stable device function that can remain for an infinite time.

LED type: Blue and Red dimmable
Normal mode
Removed/Excluded
The LED will be blinking blue in Mode 1 for 10 sec after every power cycle.

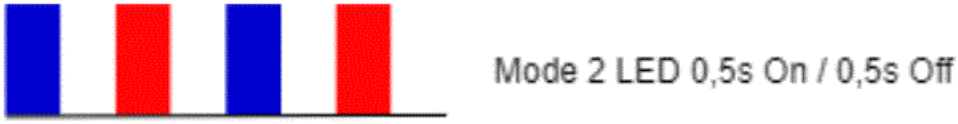
Added/Included
The LED will be blinking violet in Mode 1 for 10 sec after every power cycle.

- The relay is switched ON and power consumption is >85% of Max Power consumption
- The LED will be red solid on all the time starting 11 sec after every power cycle.
- Relay is switched ON and power consumption is between 0W and 85% of Max Power consumption
- The LED will be blue solid on all the time starting 11 sec after every power cycle.

Settings in progress
Factory reset and reboot
During factory reset, the LED will turn solid blue+red for approx. 1s (undefined in SW), then the blue and red LED will be blinking 0,1s On / 0,1s Off for about 2s.

Adding / Removing
During adding or removing, the LED will be blinking blue in Mode 2.

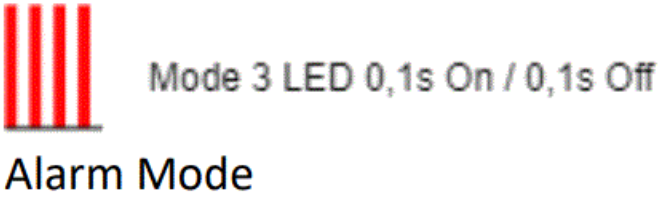
Firmware updating OTA
During the OTA update, the LED will be blinking blue and red in Mode 2.



Settings mode with S button

- Adding / Removing menu selected
- When the menu is selected the LED will be on blue, for a maximum of 10 seconds.
- Adding / Removing menu – while pressing S- button – Add/Remove process is selected
- When the menu is executing the LED will be blinking blue in Mode 3.

- Factory reset menu selected
- When the menu is selected the LED will be on red, for a maximum of 10 seconds.
- Factory reset – while pressing S – button – Factory reset process selected
- When the menu is executing the LED will be blinking red in Mode 3.



- Alarm Mode
- Overcurrent detected O
- The LED will be blinking red in Mode 4

- Overheat detected
- The LED will be blinking red in Mode 4

- Overvoltage detected
- The LED will be blinking red in Mode 4

Z-Wave® Parameters

- Parameter No. 17 – Restore the O (O1) state after a power failure
  This parameter determines if the on/off status is saved and restored for the load connected to O (O1) after a power failure.
- Values size: 1 Byte
- Default value: 0

Values & descriptions:

- 0 – Device saves last on/off status and restores it after a power failure
- 1 – The device does not save on/off status and does not restore it after a power failure, it remains off

Parameter No. 19 – O (O1) Auto OFF with timer
If the load O (O1) is ON, you can schedule it to turn OFF automatically after the period defined in this parameter. The timer resets to zero each time the Device receives an ON command, either remotely (from the gateway or associated device) or locally from the switch.

- Values size: 2 Byte
- Default value: 0

Values & their descriptions:

- 0 – Auto OFF Disabled
- 1 – 32535 = 1 – 32535 seconds or milliseconds – see Parameter no. 25. Set timer units to s or ms for O (O1) resolution 100ms.

Parameter No. 20 – O (O1) Auto ON with timer
If the load O (O1) is OFF, you can schedule it to turn ON automatically after the period defined in this parameter. The timer resets to zero each time the Device receives an OFF command, either remotely (from the gateway or associated device) or locally from the switch.

- Values size: 2 Byte
- Default value: 0

Values & their descriptions:

- 0 – Auto ON Disabled
- 1 – 32535 = 1 – 32535 seconds or milliseconds – see Parameter No. 25. Set timer units to s or ms for O (O1) resolution 100ms.

Parameter No. 23 – O (O1) contact type – NO/NC
The set value determines the relay contact type for output O (O1). The relay contact type can be normally open (NO) or normally closed (NC).

- Values size: 1 Byte
- Default value: 0

Values & descriptions:

- 0 – NO
- 1 – NC

Relay logic:

Par-NO/NC	Command (switch, Z-Wave…)	Device output state
NO (0)	OFF	OFF (0 V)
NO (0)	ON	ON (230 V)
NC (1)	OFF	ON (230 V)
NC (1)	ON	OFF (0 V)

Parameter No. 25 – Set timer units to s or ms for O (O1)
Set the timer units to seconds or milliseconds. Choose if you want to set the timer in seconds or milliseconds in Parameters No. 19, 20.

- Values size: 1 Byte
- Default value: 0

Values & descriptions:

- 0 – timer set in seconds
- 1 – timer set in milliseconds

Parameter No. 36 – O (O1) Power report on change – percentage
This parameter determines the minimum change in consumed power that will result in sending a new report to the gateway.

- Values size: 1 Byte
- Default value: 50

Values & descriptions:

- 0 – reports are disabled
- 1-100 (1-100%) – change in power

NOTE: When the Device reports the power consumption (W), it will also automatically report the voltage (V) and current (A).
NOTE: Regardless of the power consumption change in percentage, the report will not be sent more frequently than defined by Parameter No. 39.

Parameter No. 39 – Minimum time between reports (O) O1
This parameter determines the minimum time that must elapse before a new power report on O (O1) is sent to the gateway.

- Values size: 1 Byte
- Default value: 30

Values & descriptions:

- 0 – reports are disabled
- 1-120 (1-120s) – report interval

NOTE: This Parameter concerns Parameter No. 36.
NOTE: Setting the value to less than 30 can cause the Z-Wave network congestion state (slow Device response and decreased network stability).

Parameter No. 91 – Water Alarm
This parameter determines how the device should respond to the reports of alarm frames. The parameters consist of 4 bytes, the three most significant bytes are set according to the official Z-Wave protocol specification.
The notification types it reacts to are as follows,

Notification Type:

- NOTIFICATION_TYPE_WATER_ALARM 0x05

Notification Events:

- All except ALARM_NO_EVENT 0x00
- Values size: 4 Byte
- Default value: 0

Values & descriptions:

- 0 no action
- 1 open relay
- 2 close relay

Parameter No. 92 – Smoke Alarm
This parameter determines how the device should respond to the reports of alarm frames. The parameters consist of 4 bytes, the three most significant bytes are set according to the official Z-Wave protocol specification.

The notification types it reacts to are as follows,
Notification Type:

- NOTIFICATION_TYPE_SMOKE_ALARM 0x01

Notification Events:

- NOTIFICATION_EVENT_SMOKE_ALARM_SMOKE_DETECTED 0x01
- NOTIFICATION_EVENT_SMOKE_ALARM_SMODE_DETECTED_UNKNOWN_LOCATION 0x02

Values size: 4 Byte Default value: 0

Values & descriptions:

- 0 no action
- 1 open relay
- 2 close relay

Parameter No. 93 – CO Alarm
This parameter determines how the device should respond to the reports of alarm frames. The parameters consist of 4 bytes, the three most significant bytes are set according to the official Z-Wave protocol specification.
The notification types it reacts to are as follows,
Notification Type:

- NOTIFICATION_TYPE_CO_ALARM 0x02

Notification Events:

- All except ALARM_NO_EVENT 0x00

Values size: 4 Byte
Default value: 0

Values & descriptions:

- 0 no action
- 1 open relay
- 2 close relay

Parameter No. 94 – Heat Alarm
This parameter determines how the device should respond to the reports of alarm frames. The parameters consist of 4 bytes, the three most significant bytes are set according to the official Z-Wave protocol specification.
The notification types it reacts to are as follows,

Notification Type:

- NOTIFICATION_TYPE_HEAT_ALARM 0x04

Notification Events:

- NOTIFICATION_EVENT_HEAT_ALARM_RAPID_TEMPERATURE_RISE_LOCATION_PROVIDED 0x03
- NOTIFICATION_EVENT_HEAT_ALARM_RAPID_TEMPERATURE_RISE 0x04
- NOTIFICATION_EVENT_HEAT_ALARM_RAPID_TEMPERATURE_FALL_LOCATION_PROVIDED 0x0C
- NOTIFICATION_EVENT_HEAT_ALARM_RAPID_TEMPERATURE_FALL 0x0D

Values size: 4 Byte Default value: 0

Values & descriptions:

- 0 no action
- 1 open relay
- 2 close relay

Parameter No. 117 – Remote Device reboot
This parameter enables restarting or rebooting the Device without physical intervention. Use this parameter only for troubleshooting scope. After the device reboot value will be set to default

- Values size: 1 Byte
- Default value: 0

Values & descriptions:

- 0 – function inactive
- 1 – Remote device reboot

Parameter No. 120 – Factory Reset
Reset to factory default settings and remove from the Z-Wave network.
The parameter is Advanced and may be hidden under the Advanced tag.

- Values size: 1 Byte
- Default value: 0

Values & descriptions:

- 0 – Don’t do a Factory reset
- 1 – Do the Factory reset

Parameter No. 201 – Serial Number 1

- This parameter contains a part of device’s serial number.
- The parameter is Read-Only and cannot be changed.
- The parameter is Advanced and may be hidden under the Advanced tag.

Values size: 4 Byte Default value: Device specific

Values & descriptions:

- 0x00000000 – 0x7FFFFFFF

Parameter No. 202 – Serial Number 2

- This parameter contains a part of the device's serial number.
- The parameter is Read-Only and cannot be changed.
- The parameter is Advanced and may be hidden under the Advanced tag.

Values size: 4 Byte Default value: Device specific

Values & descriptions:

- 0x00000000 – 0x7FFFFFFF

Parameter No. 203 – Serial Number 3
This parameter contains a part of the device's serial number. The parameter is Read-Only and cannot be changed. The parameter is Advanced and may be hidden under the Advanced tag.

- Values size: 4 Byte
- Default value: Device specific

Values & descriptions:

- 0x00000000 – 0x7FFFFFFF

Z-Wave Command Class

1. ASSOCIATION_V2 [S0, S2]*
2. ASSOCIATION_GRP_INFO_V3 [S0, S2]*
3. BASIC_V2 [S0, S2]*
4. SWITCH_BINARY_V2 [S0, S2]*
5. CONFIGURATION_V4 [S0, S2]*
6. DEVICE_RESET_LOCALLY_V1 [S0, S2]*
7. FIRMWARE_UPDATE_MD_V5 [S0, S2]*
8. INDICATOR_V3 [S0, S2]*
9. MANUFACTURER_SPECIFIC_V2 [S0, S2]*
10. METER_V6 [S0, S2]*
11. MULTI_CHANNEL_ASSOCIATION_V3 [S0, S2]*
12. NOTIFICATION_V8 [S0, S2]*
13. POWERLEVEL_V1 [S0, S2]*
14. SECURITY_V1
15. SECURITY_2_V1
16. SUPERVISION_V1

17. TRANSPORT_SERVICE_V2
18. VERSION_V3 [S0, S2]*
19. ZWAVEPLUS_INFO_V2

*[S2] Security 2 Command Class
NOTE: MAPPING OF COMMAND_CLASS_BASIC

Supporting Command Class Basic
COMMAND_CLASS_BASIC is mapped into COMMAND_CLASS_SWITCH_BINARY, for enabling Switch (O) control:
Switch (O) will be turned ON or OFF, after receiving the BASIC_SET command:

Basic Command received	**Mapped Command (binary Switch)**
Basic Set (0xFF)	Switch binary Switch (0xFF)
Basic Set (0x00)	Switch binary Switch (0x00)
Basic GET	Basic Report (Current Value, Target Value)

Supporting Command Class Indicator
The Device supports the Command Class Indicator V3 (ID 0x50). When the Device receives an indicator set, the LED blinks according to the received indicator set.
Refer to the LED Signalization chapter.

Supporting Meter Command Class
The Device supports the meter command class and KWh is the default scale report send when the scale type is not present in the received Get.

Supported Scale Name	Scale Value
Watt	2
KWh	0
Volt	4
Ampere	5

Z-Wave Notifications Command class

Z-Wave Notification Type Name	**Z-Wave Notification Name**	**LED colour status**	**Device reaction**	**Action to restore**	**Device specific**	**Z-Wave definition**

Overheat detected

Heat Alarm	Overheat detected	Check the RGB LED signalization table	Switch OFF all outputs and send a notification	Any of the following activities reset this alarm: power cycle, Remote Device reboot (with Parameter No. 117), short press on the S button, press on any switch/push-button connected to any SW (SW, SW1, SW2, …) terminal.	YES	notification type=heat alarm Value=0x04, event=State Notification name=Overheat detected Value=0x02, Version=V2

Overcurrent detected O

Power Management	Overcurrent detected O (O1)	Check the RGB LED signalization table	Switch OFF the output O (O1) and send a notification	Any of the following activities reset this alarm: power cycle, Remote Device reboot (with Parameter No. 117), short press on the S button, press on any switch/push-button connected to any SW (SW, SW1, SW2, …) terminal.	YES	notification type=power management Value=0x08. event=State Notification name=Over- current detected Value=0x06, Version=V3

Overvoltage detected

Power Management	Overvoltage detected	Check the RGB LED signalization table	Switch OFF all outputs and send a notification	Any of the following activities reset this alarm: power cycle, Remote Device reboot (with Parameter No. 117), short press on the S button, press on any switch/push- button connected to any SW (SW, SW1, SW2, …) terminal.	YES	notification type=power management Value=0x08, event=State Notification name=Over- voltage detected Value=0x07, Version=V3

Z-Wave Associations

Associations are used for direct communication between the Device and other devices within your Z-Wave network without the need of the Z-Wave gateway. Max. number of associated devices per group is 9. This value is fixed and can not be configured. Each association group supports the association of up to 9 devices (nodes). To avoid network delays, we recommend limiting the number of associated devices to no more than 5 per group. “Lifeline Group” is reserved for controlling devices, such as Gateways and remote controllers, or devices who can interpret the reports sent. Association group 1 – “Lifeline Group” sends to the controlling device it’s command class notifications and or command class reports when said command classes are triggered. Max. 9 nodes are allowed.

Root device
Root device – Association Group 1 – Lifeline

1. INDICATOR_REPORT: LED status
2. DEVICE_RESET_LOCALLY_NOTIFICATION: triggered upon request.
3. SWITCH_BINARY_REPORT: status change report for output O (O1)
4. NOTIFICATION_REPORT: triggered on Overheat.
5. NOTIFICATION_REPORT: triggered on Overcurrent detected O (O1)
6. NOTIFICATION_REPORT: triggered on Overvoltage detected.
7. METER_REPORT: triggered by load power consumption (according to the settings of Parameters from No. 36 to 39)

Root device – Association Group 2
Association Group 2
Allowed nodes: 9
It is assigned to output O (O1) (uses Basic command class). Triggered by O (O1). Supports the following command classes:

- BASIC_SET: set On/Off state at the associated device

Supported load types

- Resistive (incandescent bulbs, heating devices)
- Inductive (LED light drivers, transformers, fans, refrigerators, air-conditioners)
- Capacitive (capacitor banks, electronic equipment, motor start capacitors)

Technical Specifications

Power supply	120 V ±10 %, 60 Hz
Power consumption	< 0.3 W
Power measurement [W]	Yes
Max switching voltage AC	140 V
Max switching current AC	15 A
Overheating protection	Yes
Overcurrent protection	Yes
Overvoltage protection	Yes
Distance	up to 40 m indoors (131 ft.) (Depends on local condition)
Z-Wave repeater:	Yes
CPU	Z-Wave S800
Z-Wave frequencies band(s)	908,4
Maximum radio frequency power transmitted in frequency bend(s)	< 25 mW
Size (H x W x D)	38x84x52 ±0.5 mm / 1.5×3.3×2.0 in ±0.02 in
Weight	70 ±1 g / 2.47 ±0.04 oz
Compatible sockets	NEMA 5-15 (Type-B)
Compatible plugs	NEMA 1-15 (Type-A) and NEMA 5-15 (Type-B)
Shell material	Plastic
Color	White
Ambient temperature	-20°C to 40°C / -5°F to 105°F
Humidity	30% to 70% RH
Max. altitude	2000 m / 6562 ft.

Important disclaimer

Z- Wave® wireless communication may not always be 100% reliable. This Device should not be used in situations in which life and/or valuables are solely dependent on its functioning. If the Device is not recognized by your

gateway or appears incorrectly, you may need to change the Device type manually and ensure that your gateway supports Z-Wave Plus® multi-channel devices.

Disposal & Recycling

This refers to the waste of electrical and electronic equipment. It is applicable in the US and other countries to collect waste separately.

This symbol on the product or in the accompanying literature indicates that the product should not be disposed of in the daily waste. Wave Plug US must be recycled to avoid possible damage to the environment or human health from uncontrolled waste disposal and to promote the reuse of materials and resources. It is your responsibility to dispose of the device separately from general household waste when it is already unusable.

FCC Notes

- 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
    - (2) this device must accept any interference received, including interference that may cause undesired operation.
- The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification or change to this equipment. Such modifications or change could void the user’s authority to operate the equipment.
- 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 following 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 exposure statement:
    - This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction

Manufacturer

Shelly Europe Ltd. (former Allterco Robotics EOOD) Address: 103 Cherni vrah Blvd., 1407 Sofia, Bulgaria Tel.: +359 2 988 7435
E-mail: zwave-shelly@shelly.cloud
Support: https://support.shelly.cloud/
Web: https://www.shelly.com
Changes in the contact data are published by the Manufacturer at the official website: https://www.shelly.com

Documents / Resources

	Shelly Wave Plug US Z Wave Smart Plug With Power Measurements [pdf] User Manual Wave Plug US Z Wave Smart Plug With Power Measurements, Wave Plug US, Z Wave Smart Plug With Power Measurements, Plug With Power Measurements, Power Measurements, Measurements

References

- Z-Wave Makes Smart Homes - Z-Wave
- Log in with Atlassian account
- Support
- Shelly - Explore the possibilities.
- User Manual