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Shelly WAVEPMMINI Z-Wave Smart Power Meter

Product Specifications

- **Power supply**: 110-240 V AC, 50/60 Hz
- **Power consumption:** < 0.3 W
- **Power measurement (W**): Yes
- **External protection:** 10 A, tripping characteristic B or C, 6 kA interrupting rating, Energy limiting class 3
- **Max. measurement power:** 3840 W
- **Max. measurement current:** 16 A
- **Overheating protection:** Yes
- **Distance:** Up to 40 m indoors (131 ft.) (depends on local conditions)
- **CPU:** Maximum radio frequency power transmitted in frequency band(s) < 25 mW
- **Mounting:** Wall box
- **Screw terminals max. torque:** 0.4 Nm / 3.54 lb-in
- **Conductor stripped length:** 5 to 6 mm / 0.20 to 0.24 in
- **Shell material:** Plastic
- **Color:** Light grey
- **Humidity:** 30% to 70% RH
- **Max. altitude:** 2000 m / 6562 ft.

Product Usage Instructions

Installation Instructions

The Wave PM Mini can be retrofitted into standard electrical wall boxes, behind power sockets, light switches, or other places with limited space.

1. Refer to the wiring schemes (Fig. 1) in the user guide for detailed installation instructions.
2. Connect the loads to the O terminals of the Device and the Neutral wire as shown in Fig. 1.
3. Connect the Live wire to an L terminal of the Device.
4. Connect the Neutral wire to an N terminal of the Device.

Extended User Guide

For more detailed installation instructions, use cases, and comprehensive guidance on adding/removing the Device, refer to the extended user guide at: Wave PM Mini Extended User Guide.

LEGEND

- **Device terminals:**
  - **N:** Neutral terminal
  - **L:** Live terminal (110–240 V AC)
  - **O (O1):** Load circuit output terminals (bridged internally)
- **Wires:**
  - **N:** Neutral wire
  - **L:** Live wire (110-240 V AC)
- **Button:**
  - **S:** S button (Fig.2)

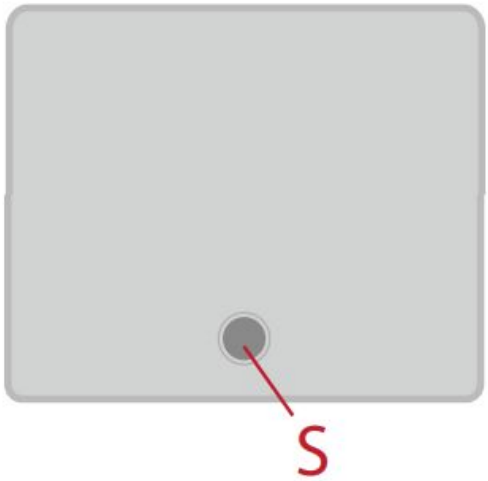

Fig.2/

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 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 the law, or refusal of legal and/or commercial guarantee (if any). Shelly Europe Ltd. is not responsible for any loss or damage in case of incorrect installation or improper operation of this device due to failure to follow the user and safety instructions in this guide.

TERMINOLOGY

- **Gateway** – 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, which is located on Z-Wave® devices and is used for various functions such as inclusion (adding), exclusion (removing), and resetting the device to its factory default settings. The term “S button” is used in this document.
- **Device** – In this document, the term “Device” is used to refer to the Shelly Qubino device that is the subject of this guide.

ABOUT SHELLY QUBINO

Shelly Qubino is a line of innovative microprocessor-managed devices that allow remote control of electric circuits with a smartphone, tablet, PC, or home automation system. They work on the Z-Wave® wireless communication protocol, using a gateway, which is required for the configuration of devices. 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 the 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 small form factor smart power meter, which allows remote monitoring of electric appliances' power consumption with a load of up to 16 A.

INSTALLATION INSTRUCTIONS

The Device can be retrofitted into standard electrical wall boxes, behind power sockets and light switches, or other places with limited space.
For the installation instructions, refer to the wiring schemes (Fig. 1) in this user guide.

- **WARNING!** Risk of electric shock. Make sure that after installing the device, its screw terminals are not accessible tousers and protected by accidental short circuits!
- **WARNING!** The operation of the service button must be managed by a professional installer. Risk of electric shock.
- **CAUTION!** Danger of electrocution. Mounting/installation of the Device to the power grid has to be performed with caution, by a qualified electrician.
- **CAUTION!** Danger of electrocution. Every change in the connections has to be done after ensuring there is no voltage present at the Device terminals.
- **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 open the Device. It does not contain any parts that can be maintained by the user. For safety and licensing reasons, unauthorized change and/or modification of the Device is not permitted.
- **CAUTION!** The load current circuit must be secured by a cable protection switch by EN60898-1 (tripping characteristic B or C, max. 10 A rated current, min. 6 kA interrupting rating, energy limiting class 3).
- **CAUTION!** No SELV/PELV circuits may be connected to the terminals of the inputs and outputs, including the extension inputs.
- **CAUTION!** Do not connect the Device to appliances exceeding the given max. Load!
- **CAUTION!** Do not shorten the antenna.
- **RECOMMENDATION:** Place the antenna as far away as possible from metal elements, as they can cause signal interference.
- **CAUTION!** Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.

- **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!** Before starting the mounting/installation of the device, check that the breakers are turned off and there is no voltage on their terminals. This can be done with a mains voltage tester or multimeter. When you are sure that there is no voltage, you can proceed to connect the wires.
- **CAUTION!** Do not allow children to play with the push-buttons/ switches connected to the Device. Keep the devices for remote control of Shelly Qubino (mobile phones, tablets, PCs) away from children.
- **RECOMMENDATION:** Connect the Device using solid single-core cables or stranded cables with ferrules. The cables should have insulation with increased heat resistance, not less than PVC T105°C (221°F).
  Away from children.
- **RECOMMENDATION:** For inductive appliances that cause voltage spikes during switching on/off, such as electrical motors, fans, vacuum cleaners, and similar ones, an RC snubber (0.1 µF / 100 Ω / 1/2 W / 600 VAC) should be connected in parallel to the appliance.
  Connect the load-s to the O terminals of the Device and the Neutral wire, as shown in Fig. 1.
  Connect the Live wire to an L terminal of the Device.
  Connect the Neutral wire to an N terminal of the Device.

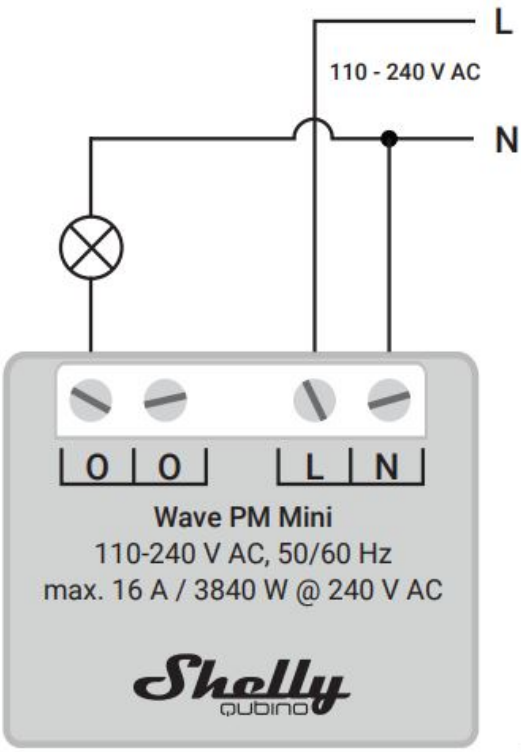

Fig.1/

EXTENDED USER GUIDE

For more detailed installation instructions, use cases, and comprehensive guidance on adding/removing the Device to/from a Z-Wave® network, factory reset, LED signalization, Z-Wave® command classes, parameters, and much more, refer to the extended user guide at:
https://shelly.link/WavePMMini-KB-US

SPECIFICATIONS

Power supply	110-240 V AC, 50/60 Hz
Power consumption	< 0.3 W
Power measurement (W)	Yes

External protection	10 A, tripping characteristic B or C 6 kA interrupting rating, Energy limiting cl ass 3
Max. measurement power	3840 W
Max. measurement current	16 A
Overheating protection	Yes
Distance	Up to 40 m indoors (131 ft.) (depends on local conditions)
Z-Wave® repeater	Yes
CPU	Z-Wave® S800
Z-Wave® frequency bands	908.42MHz, 912MHz, 920MHz
Maximum radio frequency power transmitted in frequency band(s)	< 25 mW
Size (H x W x D)	29x35x16 ±0.5 mm / 1.11×1.35×0.63 ±0.02 in
Weight	13 ±1 g / 0.46 ±0.04 oz
Mounting	Wall box
Screw terminals max. torque	0.4 Nm / 3.54 lbin
Conductor cross-section	0.5 to 1.5 mm^2 / 20 to 16 AWG
Conductor stripped length	5 to 6 mm / 0.20 to 0.24 in

Shell material	Plastic
Color	Light grey
Ambient temperature	-20°C to 40°C / -5°F to 105°F
Humidity	30% to 70% RH
Max. altitude	2000 m / 6562 ft.

SUPPORTED LOAD TYPES

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

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 PM Mini 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 no longer usable.

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 changes 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 according togdtheeinstructionsemay 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 to 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 the general RF exposure requirements. The device can be used in portable conditions.

MANUFACTURER

- Shelly Europe Ltd.
- Address: 51 Cherni Vrah Blvd., building 3floorsor 2 and 3, Lozenetz Region, Sofia

1407, Republic of 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.

FAQ

- **What types of loads are supported by the Wave PM Mini?**
  The Wave PM Mini supports resistive loads (incandescent bulbs, heating devices), inductive loads with RC Snubber (LED light drivers, transformers, fans, refrigerators, air-conditioners), and capacitive loads (capacitor banks, electronic equipment, motor start capacitors).
- **Is there overheating protection in the Wave PM Mini?**
  Yes, the Wave PM Mini comes with overheating protection to ensure safe operation.
- **Where can I find disposal and recycling information for the product?**
  The product manual includes important information about the disposal and recycling of the Wave PM Mini. Please refer to the manual for detailed guidelines.

Documents / Resources

	Shelly WAVEPMMINI Z-Wave Smart Power Meter [pdf] User Guide 2BDC6-WAVEPMMINI, 2BDC6WAVEPMMINI, WAVEPMMINI Z-Wave Smart Power Meter, WAVEPMMINI, Z-Wave Smart Power Meter, Smart Power Meter, Power Meter, Meter

References

- User Manual

Shelly

2BDC6-WAVEPMMINI, 2BDC6WAVEPMMINI, Meter, Power meter, Shelly, Smart Power Meter, WAVEPMMINI, WAVEPMMINI Z-Wave Smart Power Meter, Z-Wave Smart Power Meter

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