



Shelly 2 Circuit WiFi Relay Switch with Power Measurement and Cover Control Capability User Guide

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2 Circuit WiFi Relay Switch with Power Measurement and Cover Control Capability

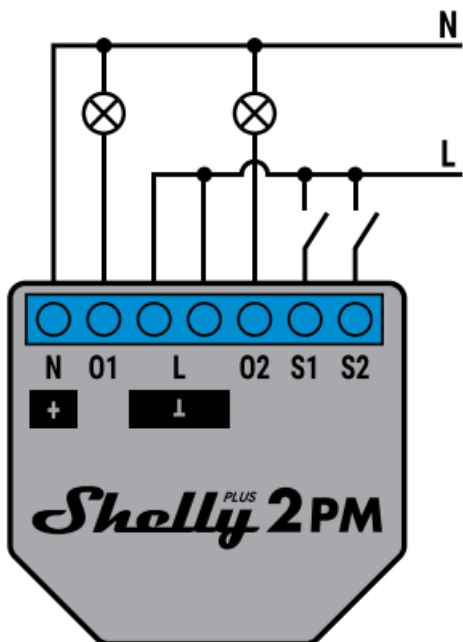


fig. 1

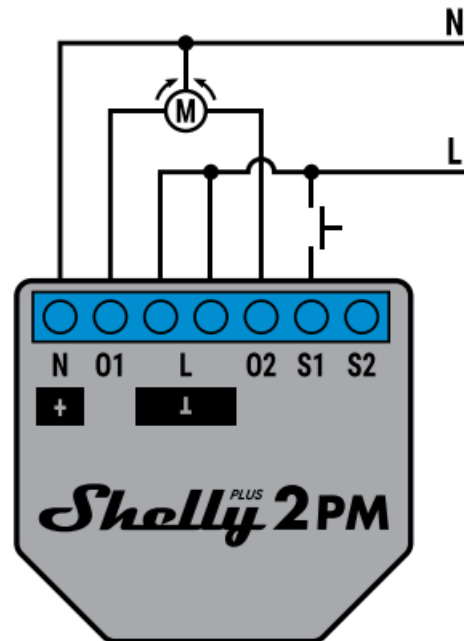


fig. 4

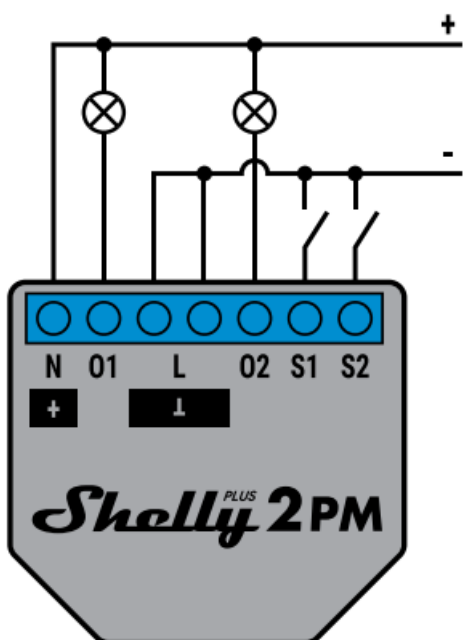


fig. 2

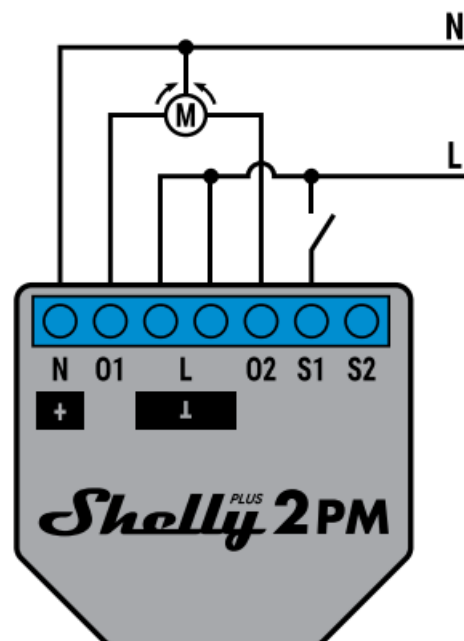


fig. 5

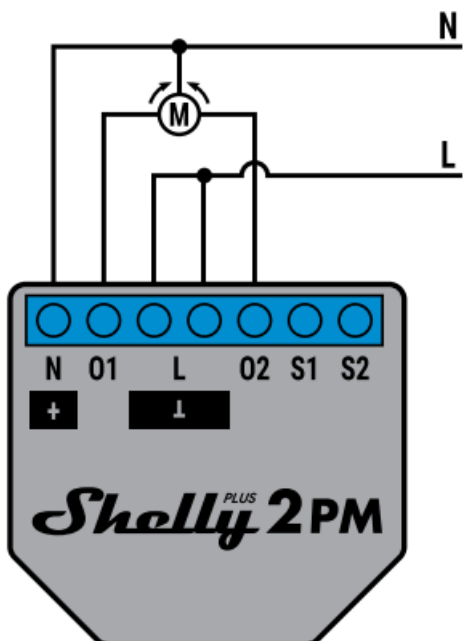


fig. 3

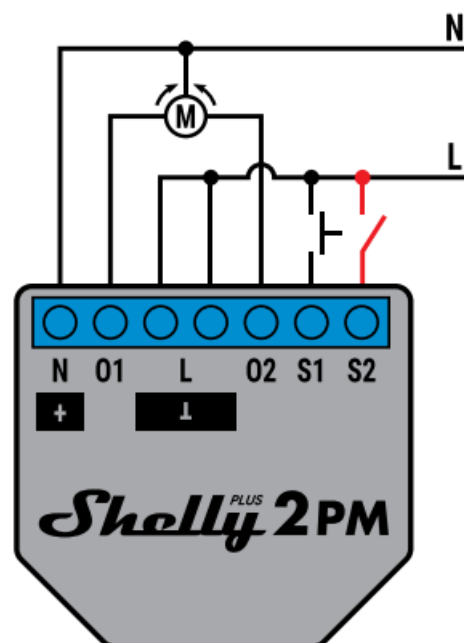


fig. 6

This document contains important technical and safety information about the device, its safety use and installation.

⚠CAUTION! Before beginning the installation, please read this guide and any other documents accompanying the device carefully and completely. 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). 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.

Product Introduction

Shelly® is a line of innovative microprocessor-managed devices, which allow remote control of electric appliances through a mobile phone, tablet, PC, or home automation system. Shelly® devices can work standalone in a local Wi-Fi network or they can also be operated through cloud home automation services. Shelly Cloud is such a service that can be accessed using either Android or iOS mobile application, or with any internet browser at <https://home.shelly.cloud/>. Shelly® devices can be accessed, controlled and monitored remotely from any place where the User has internet connectivity, as long as the devices are connected to a Wi-Fi router and the Internet. Shelly® devices have embedded Web Interface accessible at <http://192.168.33.1> in the Wi-Fi network, created by the device in Access Point mode, or at the URL address of the device in the Wi-Fi network it is connected to. The embedded Web Interface can be used to monitor and control the device, as well as adjust its settings.

Shelly® devices can communicate directly with other Wi-Fi devices through HTTP protocol. An API is provided by Allterco Robotics EOOD. For more information, please visit: <https://shelly-api-docs.shelly.cloud/#shelly-family-overview>.

Shelly® devices are delivered with factory-installed firmware. If firmware updates are necessary to keep the devices in conformity, including security updates, Allterco Robotics EOOD will provide the updates free of charge through the device embedded Web Interface or Shelly Mobile Application, where the information about the current firmware version is available. The choice to install or not the Device firmware updates is User's sole responsibility. Allterco Robotics EOOD shall not be liable for any lack of conformity of the Device caused by failure of the User to install the provided updates in a timely manner.

Shelly® Plus line offers PM products capable of real-time precise power measurement.

Control your home with your voice

Shelly® devices are compatible with Amazon Alexa and Google Home supported functionalities.

Please see our step-bystep guide on: <https://shelly.cloud/support/compatibility/>.

Schematics

See the schematics at the beginning of the user guide.

Legend

Device terminals:

- **O1** : Load circuit 1 output terminal
- **O2** : Load circuit 2 output terminal
- **S1** : Switch (controlling O1) input terminal
- **S2** : Switch (controlling O2) input terminal
- **L** : Live (110-240 VAC) terminals
- **N** : Neutral terminal
- **+** : 24 VDC positive terminal
- **⬇** : 24 VDC negative terminal

Cables:

- **N** : Neutral cable
- **L** : Live (110-240 VAC) cable

- + : 24 VDC positive cable
- – : 24 VDC negative cable

Installation Instructions

Shelly® Plus 2PM (the Device) can control 2 electrical circuits, including a bi-directional AC motor. Each circuit can be loaded up to 10 A (16 A total for both circuits) and its power consumption can be measured individually (AC only). It can be retrofitted into a standard in-wall console, behind power sockets and light switches or other places with limited space.

⚠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 which comply with all applicable regulations. A short circuit in the power grid or any appliance connected to the Device may damage the Device.

⚠CAUTION! Do not connect the Device to appliances exceeding the given max load!

⚠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 at a place that is possible to get wet.

⚠RECOMMENDATION Connect the Device using solid single-core cables with increased insulation heat resistance not less than PVC T105°C.

Before starting installing/mounting the Device, wire check that the breakers are turned off and there is no voltage on their terminals. This can be done with a phase meter or multimeter. When you are sure that there is no voltage, you can proceed to connecting the cables.

If you want to use the Device as a relay switch to control 2 load circuits, connect the Device as shown on Fig. 1 for AC circuits and on Fig. 2 for DC circuits.

⚠CAUTION! Use the same power supply for the two load circuits and the Device.

For AC circuits connect both L terminals to the Live cable and the N terminal to the Neutral cable. Connect the first load circuits to the O1 terminal and the Neutral cable. Connect the second load circuits to the O2 terminal and the Neutral cable. Connect the first switch to the S1 terminal and the Live cable. Connect the second switch to the S2 terminal and the Live cable.

For DC circuits connect both L terminals to the Negative cable and the N terminal to the Positive cable. Connect the first load circuits to the O1 terminal and the Positive cable. Connect the second load circuits to the O2 terminal and the Positive cable. Connect the first switch to the S1 terminal and the Negative cable. Connect the second switch to the S2 terminal and the Negative cable.

⚠RECOMMENDATION: For inductive appliances that cause voltage spikes during switching on/off, such as electrical motors, fans, vacuum cleaners and similar ones, RC snubber (0.1µF/100Ω/1/2W/600V AC) should be connected parallel to the appliance.

The RC snubber can be purchased at <https://shop.shelly.cloud/rc-snubber-wifi-smart-home-automation>

As a cover controller Shelly® Plus 2PM can work in 3 modes: detached, single input or dual input.

In detached mode, the Device can be controlled through its WebUI and the App only. Even if buttons or switches are connected to the Device, they will not be allowed to control the motor rotation in detached mode.

If you want to use the Device in detached mode connect the device as shown on Fig. 3: Connect both L terminals to the Live cable and the N terminal to the Neutral cable. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals.*

If you want to use the Device in single input mode connect the device as shown on Fig. 4 for a button input or Fig. 5 for a switch input. Connect both L terminals to the Live cable and the N terminal to the Neutral cable. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*.

Connect the button or the switch to the S1 or the S2 terminal and the Live cable.

If the input is configured as a button in the Device settings, each button press cycles open, stop, close, stop...

If the input is configured as a switch, each switch toggle cycles open, stop, close, stop...

In single input mode Shelly® Plus 2PM provides safety switch functionality. To utilize it, connect the device as shown on Fig. 6 for a button input or Fig. 7 for a switch input. Connect both L terminals to the Live cable and the N terminal to the Neutral cable. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*.

Connect the controlling button or switch to the S1 terminal and the Live cable. Connect the safety switch to the S2

terminal and the Live cable.

The safety switch can be configured to:

- Stop the movement until the safety switch is disengaged or until a command is sent** and, if allowed in the Device settings, the movement is resumed in the opposite direction until the end position is reached.
- Stop and immediately reverse the movement until the end position is reached. This option requires reverse movement to be allowed in the Device settings.

The safety switch can also be configured to stop the movement in only one of the directions or in both.

If you want to use the Device in dual input mode, connect the device as shown on Fig. 8 for a button inputs or Fig. 9 for a switch inputs. Connect both L terminals to the Live cable and the N terminal to the Neutral cable.

Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*.

Connect the first button/switch to the S1 terminal and the Live cable. Connect the second button/switch to the S2 terminal and the Live cable.

In case the inputs are configured as buttons:

- Pressing a button when the cover is static, moves the cover in the corresponding direction until the endpoint is reached.
- Pressing the button for the same direction while the cover is moving, stops the cover.
- Pressing the button for the opposite direction, while the cover is moving, reverses the cover movement until the endpoint is reached.

In case the inputs are configured as switches:

- Turning a switch on moves the cover in the corresponding direction until an endpoint is reached.
- Turning the switch off stops the cover movement.

If both switches are turned on, Shelly® Plus 2PM will respect the last engaged switch. Turning off the last engaged switch stops the cover movement, even if the other switch is still on. To move the cover in the opposite direction, the other switch has to be turned off and on again.

Shelly® Plus 2PM can detect obstacles. If an obstacle is present, the cover movement will be stopped and, if configured so in the Device settings, reversed until the endpoint is reached. Obstacle detection can be enabled or disabled for only one of the directions or for both.

Troubleshooting

In case you encounter problems with the installation or operation of Shelly® Plus 2PM, please check its knowledge base page:

www.shelly.cloud/knowledge-base/devices/shelly-plus-2pm/

*The Device outputs can be reconfigured to match the required rotation direction.

*Interaction with the button, the switch or a control in the WebUI or in the App (has to command the cover in the opposite to the direction before the safety switch engagement)

Initial Inclusion

If you choose to use the Device with the Shelly Cloud mobile application and Shelly Cloud service, instructions how to connect the Device to the Cloud and control it through the Shelly App can be found in the "App Guide". Shelly Mobile Application and Shelly Cloud service are not conditions for the Device proper functioning. This Device can be used with various other home automation services and applications.

⚠ **CAUTION!** Do not allow children to play with the buttons/switches connected to the Device. Keep the Devices for remote control of Shelly (mobile phones, tablets, PCs) away from children.

Specifications

- Dimensions (HxWxD): 41x36x17 mm
- Power supply: 110 – 240 VAC, 50/60 Hz or 24 VDC $\pm 10\%$
- Power metering: Yes
- Cover mode: Yes
- Electrical consumption: < 1.4 W
- Working temperature: -20°C – 40 °C
- Controlling elements: 2 relays
- Controlled elements: 2 circuits or a bi-directional AC motor
- Max switching voltage: 240 VAC / 30 VDC
- Max current per channel: 10 A
- Total max current: 16 A
- Dry contacts: No
- Temperature Protection: Yes
- Wi-Fi: Yes
- Bluetooth: Yes
- Radio protocol: Wi-Fi 802.11 b/g/n
- Radio signal power: 1 mW
- Frequency Wi-Fi : 2412-2472 MHz; (Max. 2495 MHz)
- RF output Wi-Fi: < 15 dB
- Operational range (depending on terrain and building structure): up to 50 m outdoors, up to 30 m indoors
- Bluetooth: v4.2
- Bluetooth modulation: GFSK, $\pi/4$ -DQPSK, 8-DPSK
- Frequency Bluetooth: TX/RX: 2402- 2480 MHz (Max. 2483.5MHz)
- RF output Bluetooth: < 5 dB
- Scripting (mjs): Yes
- MQTT: Yes
- CoAP: No
- Webhooks (URL actions): 20 with 5 URLs per hook
- Schedules: 20 with 5 calls per schedule
- Add-on support: Yes
- CPU: ESP32
- Flash: 4 MB

Declaration of conformity

Hereby, Allterco Robotics EOOD declares that the radio equipment type Shelly® Plus 2PM is in compliance with Directive 2014/53/ EU, 2014/35/EU, 2014/30/EU, 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address www.shelly.cloud/knowledge-base/devices/shelly-plus-2pm/

Manufacturer: Allterco Robotics EOOD

Address: Bulgaria, Sofia, 1407, 103 Cherni vrah Blvd.

Tel.: +359 2 988 7435

E-mail: support@shelly.cloud

Web: <https://www.shelly.cloud>

Changes in the contact data are published by the Manufacturer at the official website <https://www.shelly.cloud>.

All rights to trademark Shelly® and other intellectual rights associated with this Device belong to Allterco Robotics EOOD.

Shelly®



Documents / Resources

	<p>Shelly 2 Circuit WiFi Relay Switch with Power Measurement and Cover Control Capability [pdf] User Guide</p> <p>2 Circuit WiFi Relay Switch with Power Measurement and Cover Control Capability, 2 Circuit WiFi Relay Switch, WiFi Relay Switch, Relay Switch with Power Measurement and Cover Control Capability, Relay Switch, Relay, Switch</p>
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References

- [Shelly - Shelly](#)
- [Shelly Home](#)
- [Welcome to Shelly Technical Documentation | Shelly Technical Documentation](#)
- [Shelly Smart Control](#)
- [Shelly Cloud - Shelly](#)
- [Shelly - Shelly](#)