Shelly PRO 2PM WiFi Smart Relay User Guide

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PRO 2PM WiFi Smart Relay

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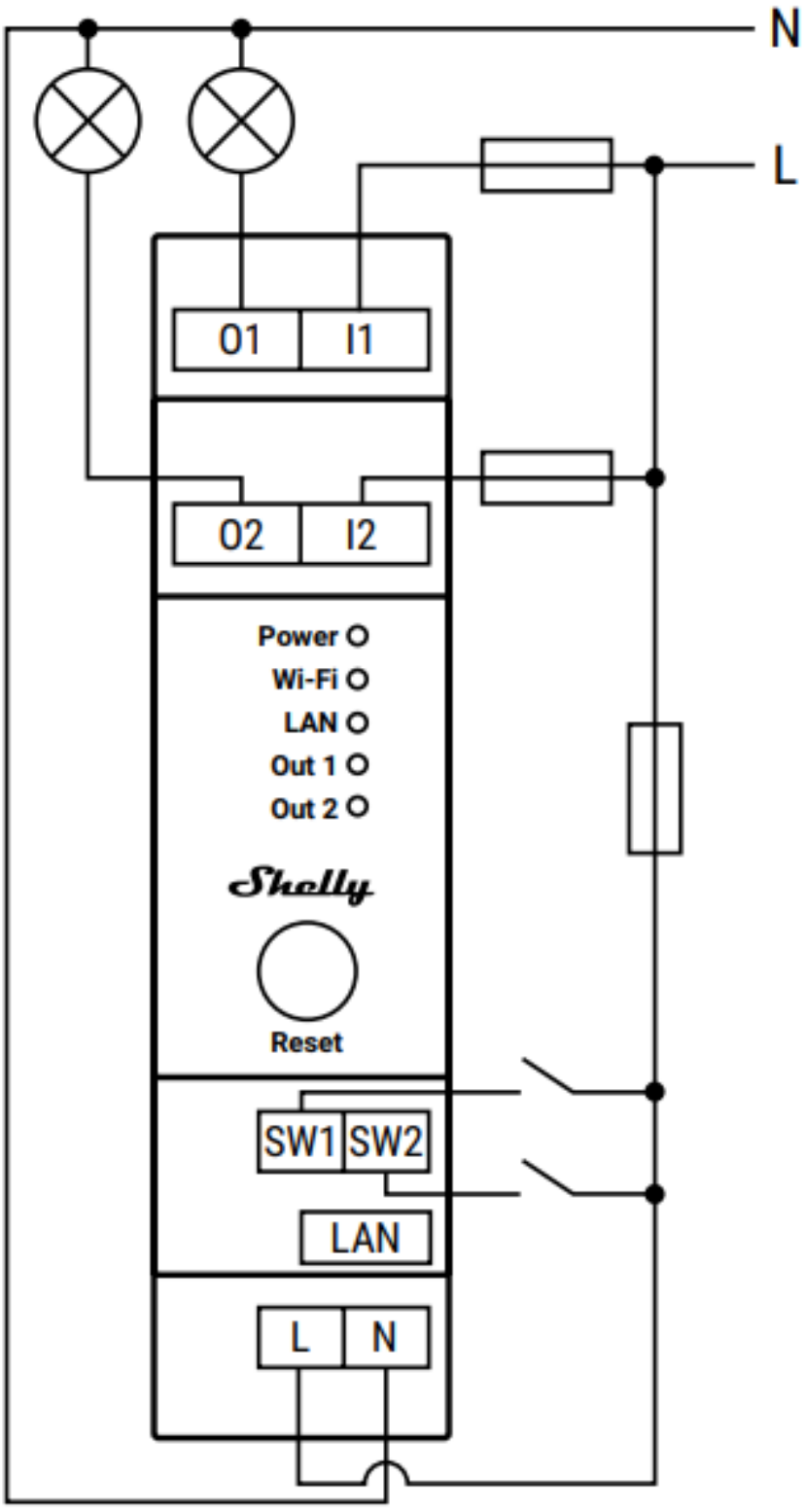
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Fig. 1

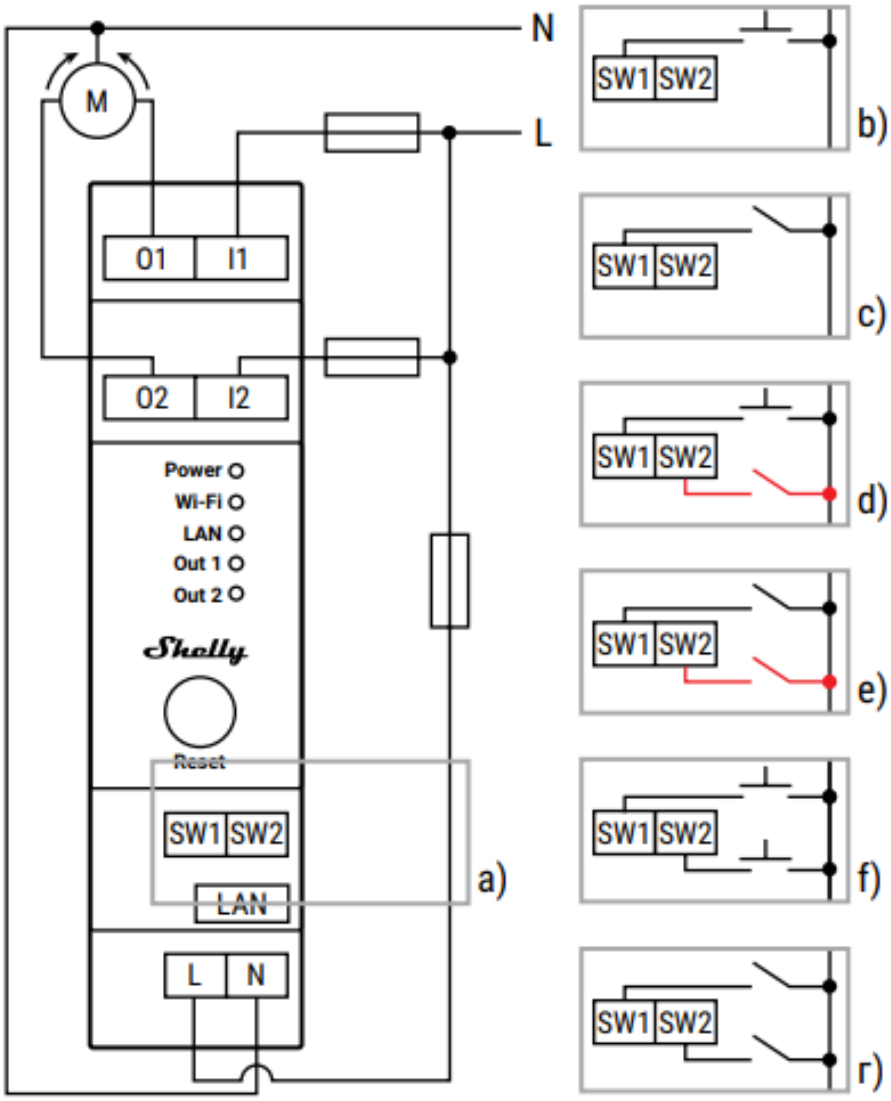


Fig. 2

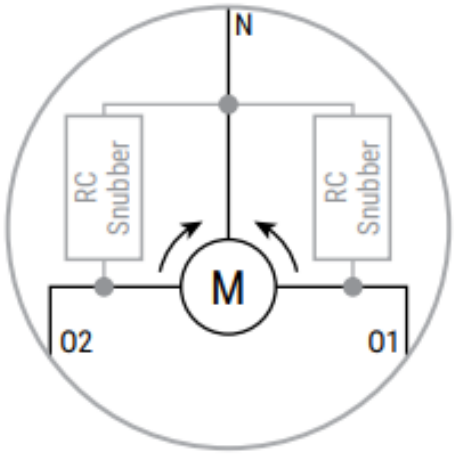


Fig. 3

Legend
Device terminals:

- O1, O2: Load output terminals
- I1, I2: Load input terminals
- SW1, SW2: Switch input terminals controlling O1 and O2
- L: Live (110-240 VAC) terminal
- N: Neutral terminal

- LAN: Local Area Network RJ 45 connector Cables:
- N: Neutral cable
- L: Live (110-240 VAC) cable

USER AND SAFETY GUIDE
DIN MOUNTABLE 2-CIRCUIT WI-FI SMART RELAY WITH POWER MEASUREMENT FUNCTIONALITY
SHELLY® PRO 2PM
Read before use
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 circuits 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 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** when connected directly to the device access point, or at the device IP address on the local Wi-Fi network. 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.
Control your home with your voice
Shelly® devices are compatible with Amazon Alexa and Google Home supported functionalities.
Please see our step-by-step guide on: **https://shelly.cloud/support/compatibility/**.
Shelly® Pro Series
Shelly® Pro series is a line of devices suitable for homes, offices, retail stores, manufacturing facilities, and other buildings. Shelly® Pro devices are DIN mountable inside the breaker box, and highly suitable for new building construction. All Shelly® Pro devices can be controlled and monitored through Wi-Fi and LAN connections. Bluetooth connection can be used for the inclusion process. Shelly® Pro 2PM (the Device) is a DIN rail mountable 2-circuit smart relay with power measurement and cover control functionalities. Enhanced with the second generation firmware flexibility and LAN connectivity, it provides the professional integrators with much more options for end customer solutions.
Schematic – to the left

Installation Instructions

⚠ **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.

CAUTION! Allow at least 10 mm of space around each Pro device if you expect currents higher than 5 A per channel.

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 Shelly® Pro 2PM as a 2-circuit relay, connect the N terminal to the Neutral cable and the L terminal to the Device power supply circuit breaker as shown on Fig. 1. Connect the first load circuit to the O1 terminal and the Neutral cable. Connect the I1 terminal to the first load circuit breaker. Connect the second load circuit to the O2 terminal and the Neutral cable. Connect the I2 terminal to the second load circuit breaker. Connect the two switches/buttons to the S1 and S2 terminals and the Device power supply circuit breaker.

CAUTION! Use one and the same phase for both load circuits and the Device power supply circuit.

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 / 100 / 1/2 W / 600 VAC) 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® Pro2PM can work in 3 modes: detached, single input or dual input.

In detached mode, the Device can be controlled through its Web Interface 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, but they can be used for URL actions. If you want to use the Device in detached mode connect the device as shown on Fig. 2 a). Connect the N terminal to the Neutral cable and the L terminal to the Device power supply circuit breaker. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*. Connect the I1 terminal to one of circuit breakers and the I2 terminal to the other circuit breaker.

If you want to use the Device in single input mode connect the device as shown on Fig. 2 b) for a button input or Fig. 2 c) for a switch input. Connect the N terminal to the Neutral cable and the L terminal to the Device power supply circuit breaker. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*. Connect the I1 terminal to one of circuit breakers and the I2 terminal to the other circuit breaker.

Connect the button or the switch to the S1 terminal and the Device power supply circuit breaker.

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

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

In single input mode Shelly® Pro 2PM provides safety switch functionality. To utilize it, connect the device as shown on Fig. 2 d) for a button input or Fig. 2 e) for a switch input. Connect the N terminal to the Neutral cable and the L terminal to the Device power supply circuit breaker. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*. Connect the I1 terminal to one of circuit breakers and the I2 terminal to the other circuit breaker.

Connect the controlling button or switch to the S1 terminal and the Device power supply circuit breaker. Connect the safety switch to the S2 terminal and the Device power supply circuit breaker. 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. 2 f) for a button inputs or Fig. 2 g) for a switch inputs. Connect the N terminal to the Neutral cable and the L terminal to the Device power supply circuit breaker. Connect the common motor terminal/cable to the Neutral cable. Connect motor direction terminals/cables to the O1 and O2 terminals*. Connect the I1 terminal to one of circuit breakers and the I2 terminal to the other circuit breaker.
Connect the first button or switch to the S1 terminal and the Device power supply circuit breaker. Connect the second button or switch to the S2 terminal and the Device power supply circuit breaker. 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® Pro 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® Pro 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.

⚠ **RECOMMENDATION:** To avoid voltage spikes during switching on/off the cover bi-directional motor, two RC snubbers (0.1µF / 100 / 1/2W / 600V AC) should be connected between the common and the two direction terminals/cables of the cover motor as shown on Fig. 3.
The RC snubbers can be purchased at **https://shop.shelly.cloud/rc-snubber-wifi-smart-home-automation**

Initial Inclusion

If you choose to use the Device with the Shelly Cloud mobile application and Shelly Cloud service, instructions on how to connect the Device to the Cloud and control it through the Shelly App can be found in the “App Guide”
The Shelly Mobile Application and Shelly Cloud service are not conditions for the Device to function properly. This Device can be used stand-alone or with various other home automation platforms and protocols.
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.

LED indication

- Power (red): Red light indicator will be on if power supply is connected.
- Wi-Fi (varies):
  – Blue light indicator will be on if in AP mode.
  – Red light indicator will be on if in STA mode and not connected to a Wi-Fi network.
  – Yellow light indicator will be on if in STA mode and connected to a Wi-Fi network. Not connected to Shelly Cloud or Shelly Cloud disabled.
  – Green light indicator will be on if in STA mode and connected to a Wi-Fi network and to the Shelly Cloud.
  – The light indicator will be flashing Red/Blue if OTA update is in progress.
- LAN (green): Green light indicator will be on if LAN is connected.
- Out (red): Red light indicator will be on if the Output relay is closed.

Reset button

- Press and hold for 5 sec for AP mode.
- Press and hold for 10 sec for factory reset.

Specification

- Mounting: DIN rail
- Dimensions (HxWxL): 68.5×18.5×89.5 mm
- Working temperature: -20°C – 40°C
- Max altitude: 2000 m
- Power supply: 110 – 240 VAC, 50/60Hz
- Electrical consumption: < 3 W
- Max switching voltage: 240 VAC
- Max switching current per channel: 16 A
- Max total current trough both channels: 25 A
- Max RF output power Wi-Fi: 13.34 dBm
- Radio protocol: Wi-Fi 802.11 b/g/n
- Wi-Fi frequency: 2412 – 2472 Hz (Max. 2483 MHz)
- Operational range (depending on local construction):
  – up to 50 m outdoors,
  – up to 30 m indoors
- Bluetooth: v.4.2
- Bluetooth modulation: GFSK, /4-DQPSK, 8-DPSK
- Bluetooth frequency: TX/RX – 2402 – 2480MHz
- Max RF output power Bluetooth: 3.75 dBm
- LAN/Ethernet (RJ45): Yes
- Dry contacts: No
- Power metering: Yes
- Overpower protection: Yes
- Overcurrent protection: Yes
- Overvoltage protection: Yes
- Overtemperature Protection: Yes
- Scripting (mjs): Yes
- MQTT: YES
- Webhooks (URL actions): 20 with 5 URLs per hook
- Schedules: 20
- CPU: ESP32
- Flash: 8 MB

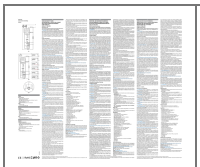
Declaration of conformity

Hereby, Allterco Robotics EOOD declares that the radio equipment type Shelly Pro 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 **https://shelly.cloud/knowledge-base/devices/shelly-pro-2pm/**
Manufacturer: Allterco Robotics EOOD
Address: Bulgaria, Sofia, 1407, 103 Cherni vrah Blvd.

Tel.: +359 2 988 7435
E-mail: support@shelly.cloud
Official website: https://www.shelly.cloud
Changes in the contact data are published by the Manufacturer at the official website.

*The Device outputs can be reconfigured to match the required rotation direction. **Interaction with the button, the switch or a control in the Web Interface or in the App (has to command the cover in the opposite to the direction before the safety switch engagement)

Documents / Resources

	Shelly PRO 2PM WiFi Smart Relay [pdf] User Guide PRO 2PM WiFi Smart Relay, PRO 2PM, PRO 2PM Relay, WiFi Relay, Smart Relay, Relay

References

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- Welcome to Shelly Technical Documentation | Shelly Technical Documentation
- Shelly Pro 2PM
- Shelly Smart Control
- Shelly Cloud - Shelly
- Shelly - Shelly