Shelly 2PM Gen3 2 Channel Smart Relay Switch with Power Metering User Guide

Contents

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Safety information

For safe and proper use, read this guide, and any other documents accompanying this product. Keep them for future reference. Failure to follow the installation procedures can lead to malfunction, danger to health and life, violation of law, and/or refusal of legal and commercial guarantees (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 queue.

-  A This sign indicates safety information.
-  This sign indicates an important note.
- WARNING! Risk of electric shock. Installation of the Device to the power grid must be performed carefully by a qualified electrician.
- WARNING! Before making any changes to the connections, ensure there is no voltage present at the Device terminals.
- CAUTION! Connect the Device only to 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 can cause fire, property damage, and electric shock.
- CAUTION! The Device may be connected to and control only electric circuits and appliances- es that comply with the applicable standards and safety norms.
- CAUTION! Do not connect the Device to appliances that exceed the specified maximum electric load
- CAUTION! Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.
- WARNING! Before installing the Device, turn the circuit breakers off. Use a suitable test device to make sure there is no voltage on the wires you want to connect. When you are sure that there is no voltage, proceed to\ the installation.
- ACAUTION! The Device and the appliances connected to it, must be secured by a cable protection switch in accordance with EN60898-1 (tripping characteristic B or C, max. 16A rated current, min. 6 kA interrupting rating, energy limiting class 3).

- CAUTION! Do not use the Device if it shows any sign of damage or defect.
- CAUTION! Do not attempt to repair the Device yourself.
- CAUTION! The Device is intended only for indoor use.
- CAUTION! Keep the Device away from dirt and moisture.
- CAUTION! Do not allow children to play with the buttons/switches connected to the Device. Keep the devices (mobile phones, tablets, PCs) for remote control of Shelly away from children.

Product Description

- Shelly 2 PM Gen3 (the Device) is a small form factor 2-channel smart switch with power measurement and cover control.
- It can control 2 electrical circuits, including a bi-directional AC motor, motorized blinds, Venetian blinds, and roller shutters.
- 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).
- The Device can be retrofitted into standard electrical wall boxes, behind power sockets and light switches, or in other places with limited space.
- The Device has an embedded web interface used to monitor, control, and adjust the Device. The web interface is accessible at http://192.168.33.1 when connected directly to the Device access point or at its IP address when you and the
- Devices are connected to the same network. The Device can access and interact with other smart devices or automation systems if\ they are in the same network infrastructure. Shelly Europe Ltd. provides APLs for the devices, their integration, and cloud control. For more information, visit **https://shelly-api-docs.shelly.cloud**.
- The Device comes with factory-installed firmware. To keep it updated and secure, Shelly Europe Ltd. provides the latest firmware updates free of charge.
- Access the updates through either the embedded web interface or the Shelly Smart Control mobile application.
- Installation of firmware updates is the user’s responsibility. Shelly Europe Ltd.
- shall not be liable for any lack of conformity of the Device caused by the failure of the user to install the available updates in a timely manner.

Installation instructions

- To connect the Device, we recommend using solid single-core wires or stranded wires with ferrules. The wires should have insulation with increased heat resistance, not less than PVC T105°C (221 °F).
- Do not use buttons or switches with built-in LED or neon glow lamps.
- When connecting wires to the Device terminals, consider the specified conductor cross-section and stripped length.
- Do not connect\ multiple wires into a single terminal.
- For security reasons, after you successfully connect the Device to the local Wi-Fi network, we recommend that you disable or password-protect the Device AP (Access Point).
- To perform a factory reset of the Device, press and hold the Reset/control button for 10 seconds
- To enable the access point and the Bluetooth connection of the Device, press and hold the Reset/control button for 5 seconds. Do not use L terminal(s) of the device to

power other devices

- The Device has two operation profiles:
- Switch control profile
- Cover control profile

Switch control profile:
If you want to use the Device as a switch to control 2 load circuits, connect the device as described below.

For AC circuits (Fig. 1):

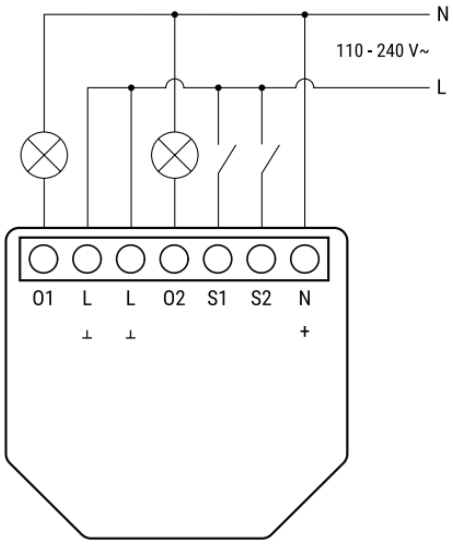

Fig. 1. Dual-channel switch, 110-240 V~ power supply

1. Connect the two L terminals to the Live\ wire and the N terminal to the Neutral wire.
2. Connect the first load circuit to the 01 terminal and the Neutral wire.
3. Connect the second load circuit to the 02 terminal and the Neutral wire.
4. Connect the first switch to the S1 terminal and the Live wire.
5. Connect the second switch to the S2 terms- nal and the Live wire

For DC circuits (Fig. 2):

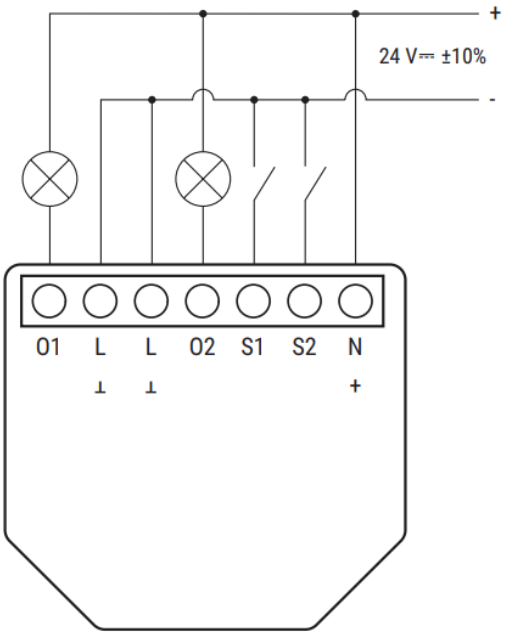

Fig. 2. Dual-channel switch, 24-30 V⎓ power supply

1. Connect the two⊥ terminals to the Negative wire.
2. Connect the + terminal to the Positive wire.
3. Connect the first load circuit to the 01 terminal and the Positive wire.
4. Connect the second load circuit to the 02 terminal and the Positive wire.
5. Connect the first switch to the S1 terminal and the Negative wire.
6. Connect the second switch to the S2 terminal and the Negative wire.

   Note that power measurement is not available in DC power.

Cover control profile
As a cover controller, the Shelly 2 PM has the following Control button modes:

- Single
- Dual
- Detached

To use the Device in Single input mode, con- nect it as shown on Fig. 3 b) for a Button in- out or Fia. 3 c for a Switch inout:

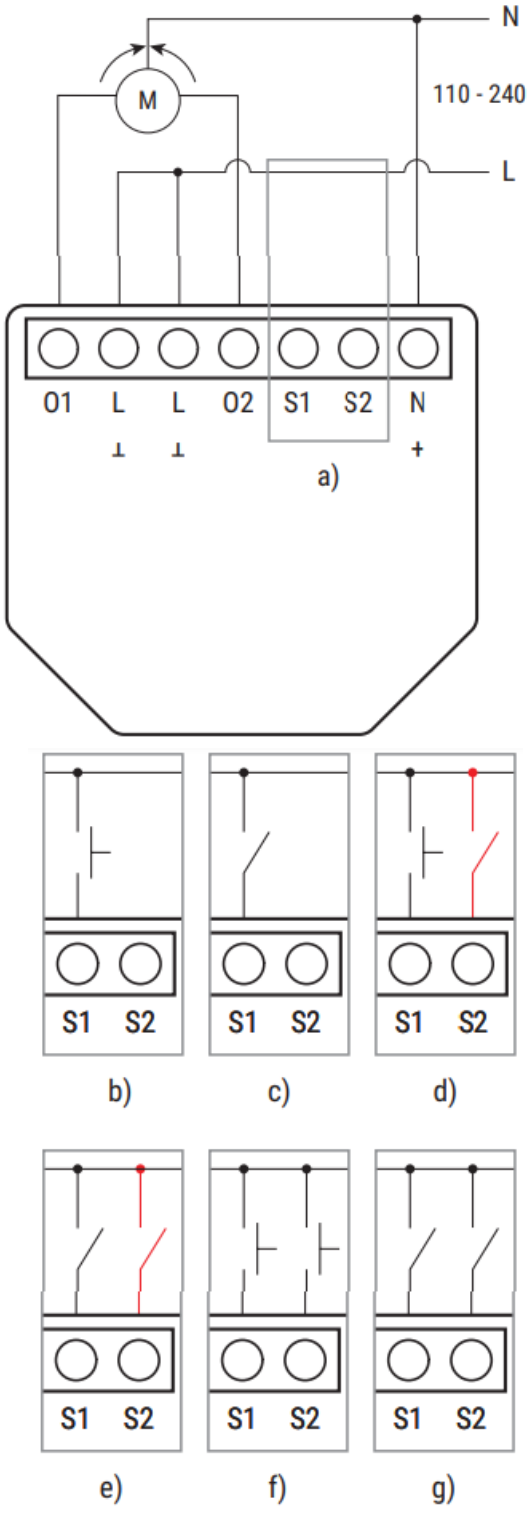

Fig. 3. Cover control profile

1. Connect the two L terminals to the Live wire and the N terminal to the Neutral wire.
2. Connect the button or the switch to the S1 or the S2 terminal and the Live wire. If the input is configured as a Button in the Device settings, each button press cycles through open, stop, close, stop, etc. If the input is configured as a Switch, each switch toggle cycles through open, stop, close, stop, etc. In Single input mode Shelly 2PM Gen3 has Safety switch functionality. To use it, connect the Device as shown on Fig. 3 d) for a button input or Fig. 3 e) for a switch input:
    1. Connect the two L terminals to the Live wire and the N terminal to the Neutral wire.
    2. Connect the common motor terminal/wire to the Neutral wire.
    3. Connect motor direction terminals/wires to the 01 and 02 terminals*
    4. Connect the Safety switch to the S2 terminal and the Live wire.

The safety switch can be configured to:

- Stop the movement until the safety switch is disengaged or until a command is sent**. If configured in the Device settings, the movement can resume 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 configured in the Device settings. To use the Device in Dual input mode, con- nect it as shown on Fig. 3 f) for a button input or Fig. 3 g) for a switch input:
    1. Connect the two L terminals to the Live wire and the N terminal to the Neutral wire.
    2. Connect the common motor terminal/wire to the Neutral wire.
    3. Connect motor direction terminals/wires to the 01 and 02 terminals*.
    4. Connect the first button/switch to the Sl terminal and the Live wire.
    5. Connect the second button/switch to the S2 terminal and the Live wire.

Button input configuration:

- 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 in the opposite direction while the cover is moving: Reverses the cover movement until the endpoint is reached.

Switch input configuration:

- Move the cover in the corresponding direction until the endpoint is reached.
- Turning the switch off: Stops the cover movement. Both switches turned on: The Device respects 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, turn the other switch off and on again.
- In Dual input mode, the Device supports Slat control that allows for precise adjustment of\ slats in Venetian blinds.

This function has the following settings:

- Open time – the duration in seconds for the slats to transition from fully open to fully closed position.
- Close time – the duration in seconds for\ the slats to transition from fully closed to fully opened position:
    - Default: 1.5 seconds
    - Accepted range: 0.5-10 seconds Step – controls the incremental movement of the slats in percent between the two endpoints:
    - Fully closed position (0%)
    - Fully opened position (100%)

Button input configuration:

- Pressing a button when the cover is static: Moves the slats in the corresponding direction by the predefined step.

- Pressing the button for the same direction while the cover is moving: Stops the\ cover.
- Pressing the button for the opposite direc- tion while the cover is moving: Reverses the cover movement until the endpoint is reached.
- Pressing and holding the button moves the slats and the cover in the correspond- ing direction until the endpoint is reached.

Switch input configuration:

- Moves the slats and the cover in the corresponding direction until the endpoint is reached.
- Turning the switch off: Stops the cover\ movement.
- Both switches turned on: The Device respects 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, turn the other switch off and on again.

In Detached mode, the Device can only be controlled through its web interface and its app. Buttons or switches connected to the Device will not control the motor rotation.\ To use the Device in Detached mode, connect it as shown on Fig. 2 a):

1. Connect the two L terminals to the Live wire and the N terminal to the Neutral wire.
2. Connect the common motor terminal/wire\ to the Neutral wire.
3. Connect motor direction terminals/wires to the 01 and 02 terminals*.

Obstacle detection

Shelly 2 PM Gen 3 can detect obstacles. If an obstacle is present, the cover movement stops. If configured in the Device settings, the movement changes its direction until the endpoint is reached. Obstacle detection\ can be enabled or disabled in one or both directions.

Specifications

Physical

- Size (HxWxD): 37x42x16 mm/
- 1.46×1.65xo.63 in
- Weight: 30 g/ 1.06 oz
- Screw terminals max torque: 0.4 Nm / 3.5 Ibin
- Conductor cross-section: 0.2 to 2.5 mm2 / 24 to 14 AWG (solid, stranded, and bootlace ferrules)
- Conductor stripped length: 6 to 7 mm / 0.24 to 0.28 in
- Mounting: Wall console / In-wall box
- Shell material: Plastic
- Shell color: Black

Environmental

- Ambient working temperature: -200C to 400C / -50F to 1050F
- Humidity: to RH

- Max. altitude: 2000 m/ 6562 ft
- Electrical

Power supply:

- 24 vm
- Power consumption: < 1.4 W
- Output circuits ratings
- Max. switching voltage:
- Max. switching current:
- 16A (240V9
- IOA (30V—)

Sensors, meters

- Internal-temperature sensor: Yes
- Voltmeter (AC): Yes
- Ammeter (AC): Yes

Safety functions

- Overheating protection: Yes (AC)
- Overvoltage protection: Yes (AC)
- Overcurrent protection: Yes (AC)
- Overpower protection: Yes
- Obstacle detection Yes (cover mode)
- Safety switch Yes (cover mode)

Radio

Wi-Fi

- Protocol: 802.11 b/g/n
- RF band: 2400-2495 MHz
- Max. RF power: < 20 dBm
- Range: Up to 50 m / 164 ft outdoors, up to 30 m / 98 ft indoors (depending on local conditions)

Bluetooth

- Protocol: 4.2
- RF band: 2400 – 2483.5 MHz
- Max. RF power: <4 dBm
- Range: Up to 30 m / 98 ft outdoors, up to
- 10 m / 33 ft indoors (depending on local conditions)

Microcontroller unit

- CPU: ESP-Shelly-C38F
- Flash: 8 MB

Firmware capabilities

- Schedules: 20
- Webhooks (URL actions): 20 with 5 URLs\ per hook
- Wi-Fi range extender: Yes
- BLE Gateway Yes
- Scripting: Yes
- MQTT: Yes
- Encryption: Yes

Shelly Cloud inclusion

- The Device can be monitored, controlled, and set up through our Shelly Cloud home automation service.
- You can use the service through either our Android, iOS, or Harmony OS mobile application or through any internet browser at **https://control.shelly.cloud/**.
- If you choose to use the Device with the application and Shelly Cloud service, you can find instructions on how to connect the Device to the Cloud and control it from the Shelly app in the application guide: **https://shelly.link/appguide**.

Troubleshooting

In case you encounter problems with the in- stallation or operation of the Device, check its knowledge base page: **https://shelly.link/2PM_Gen3**

CONTACT

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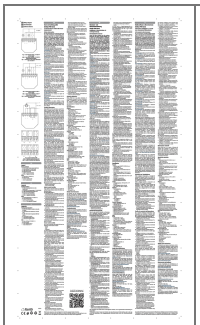
Documents / Resources

	Shelly 2PM Gen3 2 Channel Smart Relay Switch with Power Metering [pdf] User Guide O1, O2, S1, 2PM Gen3 2 Channel Smart Relay Switch with Power Metering, 2PM Gen3, 2 Channel Smart Relay Switch with Power Metering, Smart Relay Switch with Power Metering, Relay Switch with Power Metering, Power Metering

References

- User Manual