Printed user guide EN source

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1	**User and safety guide** 🔗
2	**Shelly 2PM Gen4**
3	2-channel Smart switch with Power measurement
4	Referred to in this document as "the Device"
5	⚠ **This sign indicates safety information.**
6	ℹ **This sign indicates an important note.**
7	**Safety information** 🔗
8	**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 guide.**
9	⚠ **WARNING!** Risk of electric shock. Installation of the Device to the power grid must be performed carefully by a qualified electrician.
10	⚠ **WARNING!** Before making any changes to the connections, ensure there is no voltage present at the Device terminals.
11	⚠ **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.
12	⚠ **CAUTION!** The Device may be connected to and control only electric circuits and appliances that comply with the applicable standards and safety norms.
13	⚠ **CAUTION!** Do not connect the Device to appliances that exceed the specified maximum electric load.
14	⚠ **CAUTION!** Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.

15	⚠️ **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.
16	⚠️ **CAUTION!** 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. 16 A rated current, min. 6 kA interrupting rating, energy limiting class 3).
17	⚠️ **CAUTION!** Do not use the Device if it shows any sign of damage or defect.
18	⚠️ **CAUTION!** Do not attempt to repair the Device yourself.
19	⚠️ **CAUTION!** The Device is intended only for indoor use.
20	⚠️ **CAUTION!** Keep the Device away from dirt and moisture.
21	⚠️ **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.
22	**Product description** 🔗
23	**Shelly 2PM Gen4** (the Device) is a Matter-compatible small form factor 2-channel smart switch with power measurement and cover control. Equipped with a multi-tocolprotocol wireless MCU, it supports Zigbee and Bluetooth connectivity for a secure connection. The Device 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.
24	The Device has an embedded web interface to monitor, control, and adjust its settings. 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 accessed from 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 APIs for the devices, their integration, and cloud control. For more information, visit https://shelly-api-docs.shelly.cloud.
25	ℹ️ 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.

| 26 | **Wiring diagram** 🔗 |

| 27 | Fig. 1. Dual-channel switch, 110-240 V~ power supply |

| 28 | Fig. 2. Dual-channel switch, 24-30 V⎓ power supply |

| 29 | Fig. 3. Cover control profile |

| 30 | **Legend** 🔗 |

| 31 | **Device terminals** |

| 32 | **O1, O2:** Load circuit output terminals |

| 33 | **L:** Live terminal (110-240 V~) |

| 34 | **S1, S2:** Switch input terminals |

| 35 | **N:** Neutral terminal |

| 36 | **+:** 24V⎓ positive terminal |

| 37 | **⊥:** 24V⎓ negative terminal |

| 38 | **Wires** |

| 39 | **L:** Live wire (110-240 V~) |

40	**N:** Neutral wire
41	**+:** 24 V⎓ positive wire
42	**-:** 24 V⎓ ground wire
43	**Installation instructions** 🔗
44	ℹ️ 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).
45	ℹ️ Do not use buttons or switches with built-in LED or neon glow lamps.
46	ℹ️ 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.
47	ℹ️ 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).
48	ℹ️ To perform a factory reset of the Device, press and hold the Reset/control button for 10 seconds.
49	ℹ️ To enable the access point and the Bluetooth connection of the Device, press and hold the Reset/control button for 5 seconds.
50	ℹ️ Do not use L terminal(s) of the device to power other devices
51	The Device has two operation profiles:
52	• Switch control profile • Cover control profile
53	**Switch control profile:**
54	If you want to use the Device as a switch to control 2 load circuits, connect the device as described below.
55	For AC circuits **(Fig. 1)**:
56	1. Connect the two **L** terminals to the **Live** wire and the **N** terminal to the **Neutral** wire.
57	2. Connect the first load circuit to the **O1** terminal and the **Neutral** wire.
58	3. Connect the second load circuit to the **O2** terminal and the **Neutral** wire.
59	4. Connect the first switch to the **S1** terminal and the **Live** wire.
60	5. Connect the second switch to the **S2** terminal and the **Live** wire.
61	For DC circuits **(Fig. 2)**:
62	1. Connect the two ⊥ terminals to the **Negative** wire.

63	2. Connect the **+** terminal to the **Positive** wire.
64	3. Connect the first load circuit to the **O1** terminal and the **Positive** wire.
65	4. Connect the second load circuit to the **O2** terminal and the **Positive** wire.
66	5. Connect the first switch to the **S1** terminal and the **Negative** wire.
67	6. Connect the second switch to the **S2** terminal and the **Negative** wire.
68	ℹ️ Note that power measurement is not available in DC power.
69	**Cover control profile**
70	As a cover controller, the Shelly 2PM has the following Control button modes: • Single • Dual • Detached
71	To use the Device in **Single** input mode, connect it as shown in **Fig. 3 b)** for a Button input or **Fig. 3 c)** 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 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 Gen4 has Safety switch functionality. To use it, connect the Device as shown in **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 **O1** and **O2** 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.
72	To use the Device in **Dual** input mode, connect it as shown in **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 **O1** and **O2** terminals*. 4. Connect the first button/switch to the **S1** 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 for the opposite direction while the cover is moving: Reverses the cover movement until the endpoint is reached.

Switch input configuration:

- Moves 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.

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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 direction 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 corresponding direction until the endpoint is reached.

Switch input configuration:

- Turning the switch on: 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.

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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 in **Fig. 2 a)**:

1. Connect the two **L** terminals to the **Live** wire and the **N** terminal to to the **Neutral** wire.
2. Connect the common motor terminal/wire to the **Neutral** wire.
3. Connect motor direction terminals/wires to the **O1** and **O2** terminals*.

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Obstacle detection

Shelly 2PM Gen4 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 for one or both directions.

76	*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).
77	**Adding Zigbee Device** 🔗
78	- To switch the Device from Matter firmware (default) to Zigbee, press 5 times the Reset button. The Device stays in pairing mode for 2 minutes, and you can find it in your home automation platform through the Zigbee Hub. If you cannot find the Device, press the Reset button 3 times. - To remove the Device, go to its page and delete it from your home automation platform.
79	ℹ️ In Zigbee mode, the AP of the Device is not available by default. To enable it, the you should hold the Reset button for 5 seconds.
80	**Setting up the Device via Matter** 🔗
81	ℹ️ Before you start, make sure you have: 2.4 GHz Wi-Fi network - A Matter-compatible hub connected to the Internet - A mobile device with Bluetooth enabled and a Matter-compatible app installed
82	1. Enable the access point of the Device by pressing and holding the Reset/control button for 5 seconds. 2. Scan the Matter QR code inside the box. 3. Follow the instructions that appear on your screen to complete the process.
83	ℹ️ Keep the QR code for future reference. If you reset the device, you will need that code again.
84	**Specifications** 🔗
85	**Physical**
86	Size (HxWxD): 37x42x16 mm / 1.46x1.65x0.63 in
87	Weight: 30 g / 1.06 oz
88	Screw terminals max torque: 0.4 Nm / 3.5 lbin
89	Conductor cross section: 0.2 to 2.5 mm² / 24 to 14 AWG (solid, stranded, and bootlace ferrules)
90	Conductor stripped length: 6 to 7 mm / 0.24 to 0.28 in
91	Mounting: Wall console / In-wall box
92	Shell material: Plastic
93	Shell color: Black
94	**Environmental**
95	Ambient working temperature: -20°C to 40°C / -5°F to 105°F
96	Humidity: 30% to 70% RH

97	Max. altitude: 2000 m / 6562 ft
98	**Electrical**
99	Power supply: • 110-240V~ • 24 V⎓ ±10%
100	Power consumption: < 1. 4 W
101	**Output circuits ratings**
102	Max. switching voltage: • 240 V~ • 30 V⎓
103	Max. switching current: • 10 A (per channel) • 16 A (total)
104	**Sensors, meters**
105	Internal-temperature sensor: Yes
106	Voltmeter (AC): Yes
107	Ammeter (AC): Yes
108	**Safety functions** 🔗
109	Overheating protection: Yes (AC)
110	Overvoltage protection: Yes (AC)
111	Overcurrent protection: Yes (AC)
112	Overpower protection: Yes
113	Obstacle detection: Yes (cover mode)
114	Safety switch: Yes (cover mode)
115	**Radio**
116	**Wi-Fi**
117	Protocol: 802.11 b/g/n/ax
118	RF band: 2412 - 2462 MHz
119	Max. RF power: < 20 dBm
120	Range: Up to 50 m / 164 ft outdoors, up to 30 m / 98 ft indoors (depending on local conditions)
121	**Bluetooth**

122	Protocol: 5
123	RF band: 2402 - 2480 MHz
124	Max. RF power: <4 dBm
125	Range: Up to 30 m / 98 ft outdoors, up to 10 m / 33 ft indoors (depending on local conditions)
126	**Zigbee**
127	Protocol: 802.15.4
128	RF bands: 2400 to 2483.5 MHz
129	Max. RF power: < 20 dBm
130	Range: Up to 100 m / 328 ft indoors and 300 meters / 984 ft outdoors (Depends on local conditions)
131	**Microcontroller unit**
132	CPU: ESP-Shelly-C68F
133	Flash: 8 MB
134	**Firmware capabilities**
135	Schedules: 20
136	Webhooks (URL actions): 20 with 5 URLs per hook
137	Wi-Fi range extender: Yes
138	BLE Gateway: Yes
139	Scripting: Yes
140	MQTT: Yes
141	Encryption: Yes
142	**Shelly Cloud inclusion** 🔗
143	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/app-guide.
144	**Troubleshooting** 🔗
145	In case you encounter problems with the installation or operation of the Device, check its knowledge base page:
146	https://shelly.link/2PM_Gen4

147	**Declaration of Conformity** 🔗
148	Hereby, Shelly Europe Ltd. declares that the radio equipment type for Shelly 2PM Gen4 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:
149	https://shelly.link/2PM_Gen4_DoC
150	**Manufacturer:** Shelly Europe Ltd. **Address:** 51 Cherni Vrah Blvd., bldg. 3, fl. 2-3, Sofia 1407, Bulgaria **Tel.:** +359 2 988 7435 **E-mail:** support@shelly.cloud **Official website:** https://www.shelly.com Changes in contact information are published by the Manufacturer on the official website. All rights to the trademark Shelly® and other intellectual rights associated with this Device belong to Shelly Europe Ltd.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC Warning
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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: 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 in accordance with 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.