

USER AND SAFETY GUIDE

1 CIRCUIT WI-FI RELAY SWITCH

SHELLY PRO 1



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 care fully 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® devices can be accessed, controlled and monitored remotely from any place the User has Internet connectivity, as long as the devices are connected to a Wi-Fi router and the Internet. Shelly® devices have integrated web servers, through which the user may adjust, control and monitor them. The cloud function could be used, if it is activated through the web server of the device or the settings in the Shelly Cloud mobile application. The user can register and access Shelly Cloud using either Android or iOS mobile application, or with any internet browser at <https://my.shelly.cloud/> Shelly® Devices have two Wi-Fi modes - Access Point (AP)

and Client mode (CM). To operate in Client Mode, a Wi-Fi router must be located within the range of the device. 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>

Control your home with your voice

Shelly® devices are compatible with Amazon Echo 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.

Legend:

Device terminals:

- **N**: Neutral terminal
- **L**: Live (110-240V) terminal
- **+12**: 12V (10.5V to 13.5V) DC power supply terminal
- **SW1**: Switch (controlling O*) input terminal
- **SW2**: Switch* input terminal
- **O**: Load circuit output terminal
- **I**: Load circuit input terminal

Wires:

- **L**: Live (110-240V) wire
- **L1(A)**: Load circuit live (110-240V) wire
- **L2(B)**: Device power supply live (110-240V) wire
- **+**: 12 V DC power supply positive wire
- **-**: 12 V DC power supply negative wire

* *Can be reconfigured*

Installation Instructions

The Shelly Pro 1 smart relay (the Device) by Allterco Robotics EOOD is intended to be mounted into a standard switchboard on DIN rail, next to the circuit breakers in order to control the electric power through it. Shelly can work as a standalone device or as an accessory to a home automation controller.

⚠ CAUTION! *Do not install the device at a place that is possible to get wet.*

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

⚠ 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! *Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.*

⚠ CAUTION! *The Device may be connected to and may control electric circuits and appliances only if they comply with the respective standards and safety norms.*

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

Connect the Device to the power grid and install it in the switch board as shown in the schemes and following the Safety Instructions. 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 wiring the cables. If you are using AC for the Device and the load circuit (**fig.1**), connect the N terminal to the Neutral wire and the L terminal to the Device power supply circuit breaker. Connect the 2 switch circuits to the S1 and S2 input terminals and the Device power supply circuit breaker. Connect the load circuit to the O terminal and the Neutral wire. Connect the I terminal to the load circuit breaker. Two different phases can be used for the load circuit and the Device power supply circuit. If you are using AC to power the Device, but want to switch a DC load circuit (**fig.2**), connect the N terminal to the Neutral wire and the L terminal to the circuit breaker. Connect the 2 switch circuits to the S1 and S2 input terminals and the circuit breaker. Connect the load circuit to the O terminal and one of the load circuit power supply wires. Connect the I terminal to the other load circuit power supply wire.

⚠ CAUTION! *The load circuit voltage should not exceed 30 V DC and the current should not exceed 12 A.*

If you are using 12 V DC to power the Device, but want to switch an AC load circuit (**fig. 3**), connect the positive wire to the +12 terminal and the negative wire to the L terminal. Connect the 2 switch circuits to the S1 and S2 input terminals and the negative wire. Connect the load circuit to the O terminal and the Neutral wire. Connect the I terminal to the circuit breaker. If you are using 12 V DC to power the Device and want to switch a DC load circuit (**fig. 4**), connect the Device power supply positive wire to the +12 terminal and the Device power supply negative wire to the L terminal. Connect the 2 switch circuits to the S1 and S2 input terminals and the Device power supply negative wire. Connect the load circuit to the O terminal and one of the load circuit power supply wires. Connect the I terminal to the other load circuit power supply wire.

⚠ CAUTION! *The load circuit voltage should not exceed 30 V DC and the current should not exceed 12 A.*

If you are using 12 V DC to power the Device, but want to switch an AC load circuit (**fig. 3**), connect the positive wire to the +12 terminal and the negative wire to the L terminal. Connect the 2 switch circuits to the S1 and S2 input terminals and the negative wire. Connect the load circuit to the O terminal and the Neutral wire. Connect the I terminal to the circuit breaker. If you are using 12 V DC to power the Device and want to switch a DC load circuit (**fig. 4**), connect the Device power supply positive wire to the +12 terminal and the Device power supply negative wire to the L terminal. Connect the 2 switch circuits to the S1 and S2 input terminals and the Device power supply negative wire. Connect the load circuit to the O terminal and one of the load circuit power supply wires. Connect the I terminal to the other load circuit power supply wire.

⚠ CAUTION! *The load circuit voltage should not exceed 30 V DC and the current should not exceed 12 A.*

⚠ RECOMMENDATION *For inductive loads, which cause voltage spikes during switching, such as electrical motors, fans, vacuum cleaners, refrigerators and similar ones, RC snubber (0.1µF / 100Ω / 1/2W / 600V AC) should be wired in parallel with the load. RC snubbers can be purchased at <https://shop.shelly.cloud/rc-snubber-wifi-smart-home-automation>.*

Initial Inclusion

You can choose to use Shelly® with the Shelly Cloud mobile application and Shelly Cloud service. Instructions on how to connect your device to the Cloud and control it through the Shelly App can be found in the “App Guide” included in the box. You can also familiarize yourself with the instructions for Management and Control through the embedded Web interface at 192.168.33.1 in the Wi-Fi network, created by the Device.

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

Specifications

- Dry contact: Yes
- Power supply: 110-240 V AC, 50/60 Hz; 12V DC (DC range: +10.5 V ÷ 13.5 V, 250mA)
- Max switching current: 16 A
- DC output: 0 V ÷ 30 V; 12A
- Dimensions (HxWxL): 68.5x18.5x89.5 mm
- Mounting - DIN rail
- Wi-Fi - YES
- Bluetooth - YES
- LAN - YES
- Temperature Protection - YES

- Scripting (mjs) - YES
- MQTT - YES
- CoAP - No
- URL Actions - 20
- Scheduling - 50
- Add-on support - YES
- CPU - ESP32
- Flash - 8MB
- Operational range: (depending on terrain and building structure): up to 50 m outdoors, up to 30 m indoors
- Electrical consumption: < 3 W
- Working temperature: 0°C - 40°C
- Controlled elements: 1 electrical circuit (max 30 V in DC mode).
- Controlling elements: 1 relay
- Radio signal power: 1mW
- Radio protocol: Wi-Fi 802.11 b/g/n
- Frequency Wi-Fi : 2412-2472 MHz; (Max. 2495 MHz)
- Frequency Bluetooth: TX/RX: 2402-2480 MHz (Max. 2483.5 MHz)
- RF output Wi-Fi: <20 dBm
- RF output Bluetooth: <5 dBm

LED INDICATORS

Power (red): Red light indicator will be on if power is connected.

Wi-Fi (blue): Blue light indicator will be on if the Device is in AP mode.

Wi-Fi (red): Red light indicator will be on if the Device is in STA mode and not connected to a local Wi-Fi network.

Wi-Fi (yellow): Yellow light indicator will be on if the Device is in STA mode and connected to the local Wi-Fi network. Not connected to Shelly Cloud or Shelly Cloud disabled.

Wi-Fi (green): Green light indicator will be on if the Device is in STA mode and connected to the local Wi-Fi network and to the Shelly Cloud.

Wi-Fi (flashing): 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.

Output (red): Red light indicator will be on if the Output relay is closed.

DECLARATION OF CONFORMITY

Hereby, Allterco Robotics EOOD declares that the radio equipment type Shelly Pro 1 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-1/>

Manufacturer: Allterco Robotics EOOD

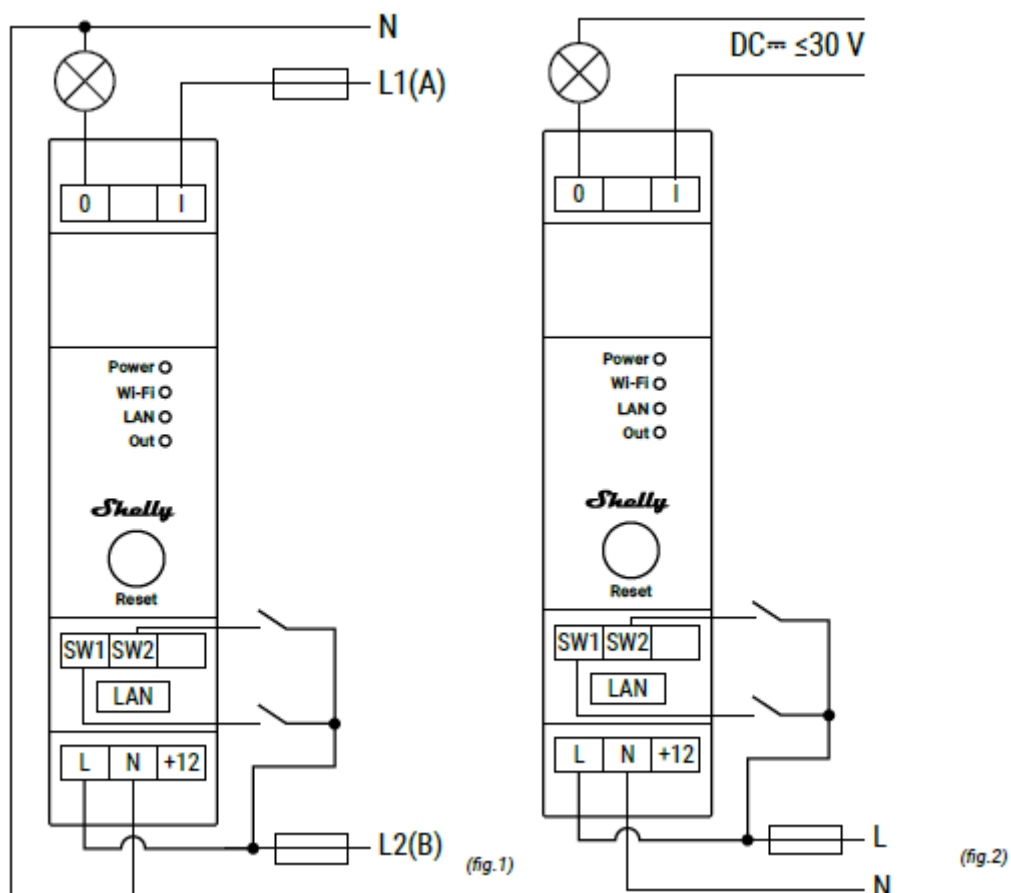
Address: Bulgaria, Sofia, 1407, 103 Cherni vrah Blvd. **Tel.:** +359 2 988 7435

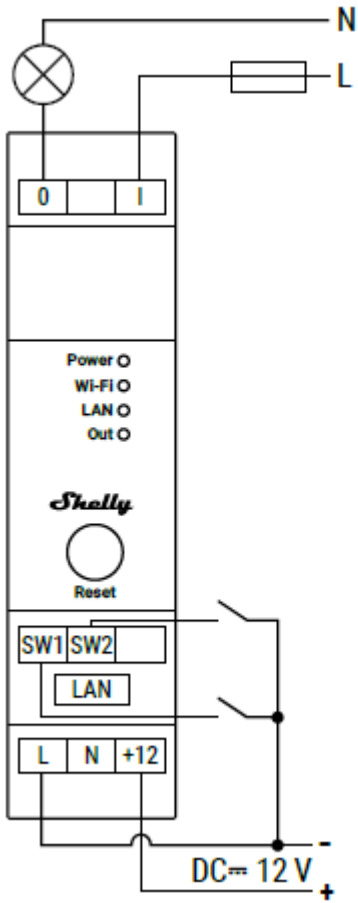
E-mail: support@shelly.cloud

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

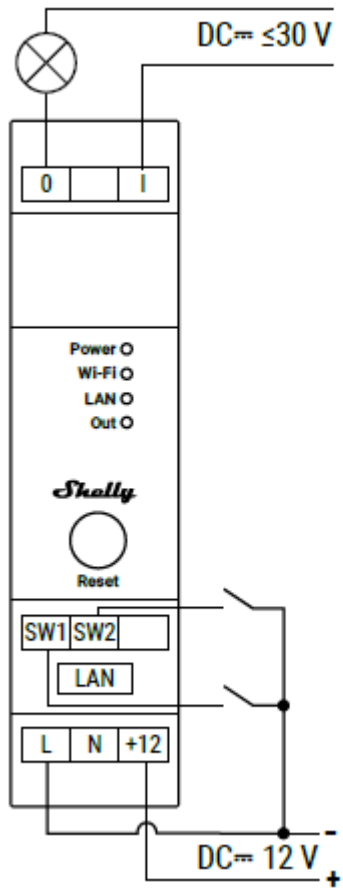
Changes in the contact data are published by the Manufacturer at the official website of the Device <http://www.shelly.cloud>

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





(fig.3)



(fig.4)

SHELLY MOBILE APPLICATION FOR

Shelly ^{PRO} 1



Introduction

Download the Shelly Cloud Application by scanning the QR code above, or access the devices through the Embedded web interface, explained further down in the user guide. Shelly devices are compatible with Amazon Echo and Google Home supported functionalities, as well as other home automation platforms and voice assistants. See details at <https://shelly.cloud/support/compatibility/>

Registration

The first time you load the Shelly Cloud mobile app, you have to create an account which can manage all your Shelly devices. You need to use an actual e-mail because that e-mail will be used in case of a forgotten password!

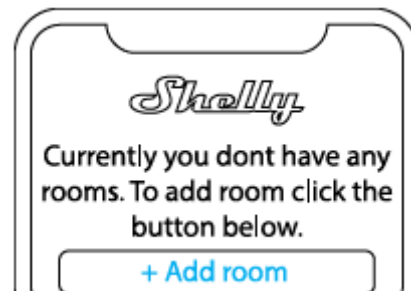
Forgotten Password

In case you forget or lose your password, click the “Forgot Password?” link on the login screen and enter the e-mail used in your registration. You will receive an e-mail with a link to a page where you can reset your password. The link is unique and can be used only once.

First steps

After registering, create your first room (or rooms), where you are going to add and use your Shelly devices. Shelly Cloud allows you to create scenes for automatic control of devices at predefined hours or based on other parameters like temperature, humidity, light, etc. (with upcoming add-ons or available sensors on shelly.cloud. Shelly Cloud allows easy control and monitoring using a mobile phone, tablet, or PC. Shelly Pro 1 can be grouped with other devices in the application. It

can also be set to trigger actions on other Shelly devices, run schedules, scenes, and webhooks.



THE SHELLY APP

Abbreviations:

AP - Access Point. The mode in which the Device creates its own Wi-Fi network.

Device Inclusion:

Step 1

When the installation of Shelly Pro 1 is done and the power is turned on, Shelly will create its own Wi-Fi Access Point (AP).

Step 2 Make sure the Location and Local Network for the Shelly Cloud app are enabled in your phone settings. Please keep in mind that the inclusion process is different for iOS and Android devices.

1. iOS inclusion - Select “Add device” from the hamburger menu on the top right of your Shelly Cloud App. Enter your home network name and password, and click the “NEXT” button. Select “Shelly Pro 1” from the dropdown list. A message will pop up asking for your permission to connect to the AP of your Shelly Pro 1 (e.g **ShellyPro1-f008d1d8bd68**). Click the “Join” button.

fig. 1



fig. 2

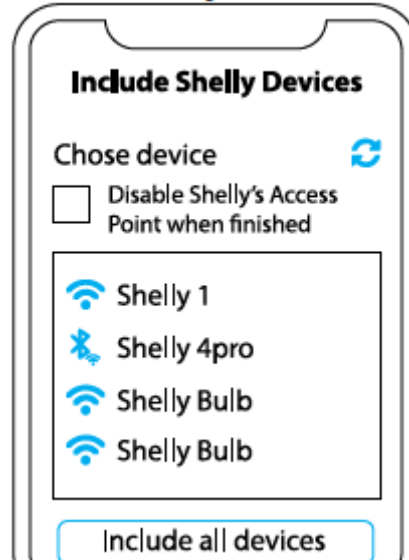


2. Android inclusion - Select “Add device” from the hamburger menu on the top right of your Shelly Cloud App. Select your home network from the dropdown list and enter its password. Next, you will see listed all of the available devices. Choose your Shelly Pro 1 device from the list and click “Yes” when asked for inclusion. A message will pop up asking for your permission to connect to your Shelly Pro 1’s AP address (e.g. **ShellyPro1-f008d1d8bd68**). Click the “Yes” button.

fig. 3



fig. 4



Step 3

Once this process is completed, approximately 10 seconds later, a pop up (button) will appear on the top of the page with "Discovered devices" on the home screen of the Shelly Cloud App. click the "Discovered devices" button and find your Shelly device in the list. If you do not see it, try again by clicking the "SCAN" button.



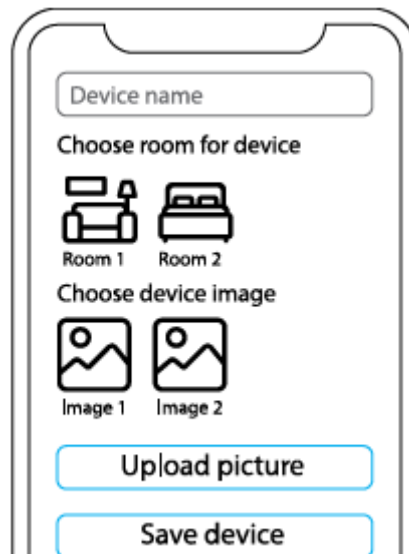
Step 4

You can choose which available device from the list to include. If a newer firmware update is available, the app will first let you update and then add the device. Click the “ADD DEVICE” button to move to the next step of the inclusion process.



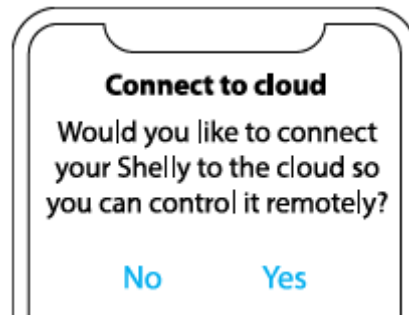
Step 5

Enter a name for the device in the “device name” field. Select a room which the device will be added to. For easy recognition of the device select an image from the list of existing ones or upload your own. Click the “DONE” button.



Step 6

If you'd like to connect your device to the cloud and control it remotely, click "Yes". In case you want to control your devices only locally, click "No".



Device settings

Once your Shelly Pro 1 is added to the Shelly Cloud, you can control it, change its settings, and automate the way it works from any place where you have internet connection. To switch the device on and off, use the ON/OFF button. For device management, simply click on the device's name. From there you may control the device, as well as edit its appearance and settings.

Timer: Allows you to manage the power supply automatically. You may use:

- **Auto ON:** After turning off, the relay output will be automatically turned on after a predefined time (in seconds).
- **Auto OFF:** After turning on, the relay output will be automatically turned off after a predefined time (in seconds)

Schedule: This function requires a working connection to the Internet. Shelly may turn on/off automatically at a predefined time and day throughout the week. Additionally, Shelly may turn on/off automatically at sunrise/sunset, or at a specified time before or after sunrise/sunset. You may add up to 20 weekly schedules.

Webhooks: Use events to trigger http endpoints. You can add up to 20 webhooks.

Internet:

- **Wi-Fi 1:** Allows the device to connect to an available Wi-Fi network. Enter the network details in the respective fields and click the "APPLY" button.
- **Wi-Fi 2:** Allows the device to connect to an available Wi-Fi network, as a secondary (backup), if your primary Wi-Fi network becomes unavailable. Enter the network details in the respective fields and click the "APPLY" button.
- **Access Point:** You can enable the device AP mode and change the password of the Wi-Fi network created by Shelly Pro1. Click the "APPLY" button to enable the device AP mode.

- **Ethernet:** Enable or disable Ethernet (LAN) connection. Changing this setting will reboot the device.
- **MQTT:** Configure the Shelly device to communicate over MQTT.
- **Cloud:** Enables or disables the connection to Shelly Cloud. Connection to Shelly Cloud allows you to control your device remotely and receive notifications and updates.

Application Settings:

- **PIN lock:** Restrict control of the Shelly device through the web interface by setting a PIN code. After typing the details in the respective fields, press “Restrict Shelly”.
- **Sync name:** Keep the device name in sync with the name given in the app.
- **Input state Display:** Turn on indicator for the current status of the physical switch connected to Shelly Pro 1. When enabled, a small line appears under the power button icon. A red line indicates the physical switch is off, while a green line indicates the physical switch is on.
- **Exclude from Event Log:** Do not show events from this device in the app.
- **Share:** Share the control of your device with other Shelly Cloud users.

Settings:

- **Input/Output Settings:** These settings define the way the attached switch or button controls the output state. The possible input modes are “button” and “switch”.
- **Invert switch:** If enabled, the device will consider the switch is on, while it is actually switched off and vice versa.
- **Device Name:** Set a name for your device.
- **Firmware version:** Shows your current firmware version. If a newer version is available, you can update your Shelly device by clicking Update.
- **Geo Location And Time Zone:** Set your timezone and geo-location manually, or enable/disable automatic detection.
- **Device Reboot:** Reboot your Shelly Pro 1.
- **Factory Reset:** Remove Shelly Pro 1 from your account and return it to its factory settings. This will delete all set data.
- **Device Information:** Here you can view the ID, IP and other settings of your device. Upon clicking “Edit device”, you can change the room, name or image of the device.

THE EMBEDDED WEB INTERFACE

If your Shelly Pro 1 is in AP (Access Point) mode, connect your PC or mobile device to the Wi-Fi network with the name (SSID) such as **ShellyPro1-f008d1d8bd68**. Enter <http://192.168.33.1> into the address field of your browser to load the web interface

of Shelly Pro 1. If you can't find the Shelly Pro 1 AP, it may already be connected to your home Wi-Fi network and its AP mode disabled. Find your Device IP address in the Wi-Fi network. You can use a simple tool to find shelly devices in the local network: https://shelly.cloud/documents/device_finders/ShellyFinderWindows.zip (Windows) and https://shelly.cloud/documents/device_finders/ShellyFinderOSX.zip (Mac OSX). Enter the device IP address into the address field of your browser to load the web interface of Shelly Pro 1. If you can't find the Shelly Pro 1 AP or its IP address in your home Wi-Fi network, you can enable the AP mode by pressing and holding the device Reset button for 5 seconds.

GENERAL- HOME PAGE

In the home page of the Shelly Pro 1 Web Interface, you can monitor the device status, check different settings, and switch on/ off the device relay. The device connection status is displayed in the header bar between the logo and the time.

- Gray AP icon indicates the AP mode is disabled. Blue AP icon indicates the AP mode is enabled.
- Gray Wi-Fi icon indicates the Wi-Fi connection is disabled. White Wi-Fi icon indicates the Wi-Fi connection is enabled, but not established. Blue Wi-Fi icon indicates the device is connected to a Wi-Fi network.
- Gray Bluetooth icon indicates the Bluetooth connection is disabled. Blue Bluetooth icon indicates the Bluetooth connection is enabled.
- Gray cloud icon indicates the connection to Shelly Cloud is disabled. White cloud icon indicates the connection to Shelly Cloud is enabled, but not established. Blue cloud icon indicates the device is connected to Shelly Cloud.
- Gray LAN icon indicates the LAN connection is disabled. White LAN icon indicates the LAN connection is enabled, but not established. Blue LAN icon indicates the device is connected to a LAN.
- Gray Mqtt icon indicates the Mqtt is disabled. Blue Mqtt icon indicates that Mqtt is enabled.”

Clicking on an icon takes you to the corresponding settings.

Channel settings

- **Input output settings:** Select button or switch input mode. Set how the relay behaves in response to the button or switch input, as well as relay output default state when the device is powered on.
- **Invert switch:** If enabled, the device will consider the switch is on, while it is actually switched off and vice versa.
- **Channel name:** Enter a custom name for the channel. Default one is “switch_0”.
- **Consumption type:** Select the type of the appliance(s) controlled by this device. Will

be used for grouping, filtering, consumption calculations in Shelly Cloud with future features.

Timers

Allow you to manage the power supply automatically. You may use:

- **Auto ON:** After turning off, the relay output will be automatically turned on after a predefined time (in seconds).
- **Auto OFF:** After turning on, the relay output will be automatically turned off after a predefined time (in seconds).

Schedules

This function requires a working connection to the Internet. Shelly may turn on/off automatically at a predefined need time and day throughout the week. Additionally, Shelly may turn on/off automatically at sunrise/sunset, or at a specified time before or after sunrise/sunset. You may add up to 20 weekly schedules.

Webhooks

Use events to trigger http endpoints. You can add up to 20 web hooks.

Device:

- **SNTP server:** Synchronizes a computer's system time with a server. Default is set to time.google.com
- **Device Name:** Set a name for your device.
- **Firmware version:** Shows your current firmware version. Allows you to check if a newer version is available and update your Shelly device.
- **Location:** Set your city and time zone.
- **Device Reboot:** Reboot your Shelly Pro 1.
- **Factory Reset:** Remove Shelly Pro 1 from your account and return it to its factory settings. This will delete all set data.
- **Authentication:** Set credentials to lock your device or change already existing credentials.
- **Debug:** Allows the debugging log to be viewed through MQTT, Websocket, or UDP.
- **Map input:** Choose which button/switch input controls the output.

Networks

- **Wi-Fi 1:** Allows the device to connect to an available Wi-Fi network. Enter the network details in the respective fields and click the "APPLY" button.
- **Wi-Fi 2:** Allows the device to connect to an available Wi-Fi network, as a secondary

(backup), if your primary Wi-Fi network becomes unavailable. Enter the network details in the respective fields and click the “APPLY” button.

- **Access Point:** You can enable the device AP mode and change the password of the Wi-Fi network created by Shelly Pro1. Click the “APPLY” button to enable the device AP mode.
- **Ethernet:** Enable or disable Ethernet (LAN) connection. Changing this setting will reboot the device.
- **Cloud:** Enables or disables the connection to Shelly Cloud. Connection to Shelly Cloud allows you to control your device remotely and receive notifications and updates.
- **Bluetooth:** Enables or disables Bluetooth connectivity.
- **MQTT:** Configure the Shelly device to communicate over MQTT.

Scripts

Shelly Pro devices feature scripting capabilities. Scripts enhance significantly the number of tasks that can be solved using Shelly devices. You can find more at <https://shelly-api-docs.shelly.cloud/gen2/Scripts/ShellyScriptLanguageFeatures/>