

USER AND SAFETY GUIDE

2 CIRCUIT WI-FI RELAY SWITCH SHELLY PRO 2



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. Connectivity for all Shelly® Pro devices can be through Wi-Fi or LAN Internet connection, and Bluetooth can be used for the inclusion process.

Legend

Device terminals:

- **O1:** Load circuit 1 output terminal
- **O2:** Load circuit 2 output terminal
- **I1:** Load circuit 1 input terminal
- **I2:** Load circuit 2 input terminal
- **SW1:** Switch (controlling O1*) input terminal
- **SW2:** Switch (controlling O2*) input terminal
- **L:** Live (110-240V) terminal
- **N:** Neutral terminal
- **+12:** 12V (10.5V to 13.5V) DC power supply terminal
- **LAN:** Local Area Network RJ 45 connector

Wires:

- **N:** Neutral wire
- **L:** Live (110-240V) wire
- **L1(A):** Load circuit 1 live (110-240V) wire
- **L2(B):** Load circuit 2 live (110-240V) wire
- **L3(C):** Device power supply live (110-240V) wire
- **+**: 12V DC power supply positive wire
- **-**: 12 V DC power supply negative wire

** Can be reconfigured*

Installation Instructions

The Shelly Pro 2 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. Shelly can work as a standalone device or as an accessory to a home automation controller. Shelly Pro 2 is a two-channel relay with dry contacts and two-phase support.

⚠ 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 circuits (**fig.1**), connect the N terminal to the Neutral wire and the L terminal to the Device power supply circuit breaker. Connect the two switch circuits to the S1 and S2 input terminals and the Device power supply circuit breaker. Connect the first load circuit to the O1 terminal and the Neutral wire. Connect the I1 terminal to the first load circuit breaker. Connect the second load circuit to the O2 terminal and the Neutral wire. Connect the I2 terminal to the second load circuit breaker. Two different phases can be used for the two load circuits and a third one for the Device power supply circuit. If you are using AC to power the Device and switch mixed DC and AC load circuits (**fig.2**), connect the N terminal to the Neutral wire and the L terminal to the Device power supply circuit breaker. Connect the two switch circuits to the S1 and S2 input terminals and the Device power supply circuit breaker. Connect the DC load circuit to the O1 terminal and one of the DC load circuit power supply wires. Connect the I1 terminal to the other DC load circuit power supply wire.

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

Connect the AC load circuit to the O2 terminal and the Neutral wire. Connect the I2 terminal to the AC load circuit breaker. Two different phases can be used for the AC load circuits and for the Device power supply circuit. If you are using AC to power the Device and switch two DC load circuits (**fig.3**), connect the N terminal to the Neutral

wire and the L terminal to the Device power supply circuit breaker. Connect the two switch circuits to the S1 and S2 input terminals and the Device power supply circuit breaker. Connect the first DC load circuit to the O1 terminal and one of the first DC load circuit power supply wires. Connect the I1 terminal to the other first DC load circuit power supply wire. Connect the second DC load circuit to the O2 terminal and one of the second DC load circuit power supply wires. Connect the I2 terminal to the other second DC load circuit power supply wire.

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

Two different voltages can be used for the two DC load circuits. If you are using 12 V DC to power the Device, but want to switch two AC load circuits (**fig. 4**), connect the positive wire to the +12 terminal and the negative wire to the L terminal. Connect the two switch circuits to the S1 and S2 input terminals and the negative wire. Connect the first load circuit to the O1 terminal and the Neutral wire. Connect the I1 terminal to the first load circuit breaker. Connect the second load circuit to the O2 terminal and the Neutral wire. Connect the I2 terminal to the second load circuit breaker. Two different phases can be used for the two load circuits. If you are using 12 V DC to power the Device and switch mixed DC and AC load circuits (**fig.5**), 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 DC load circuit to the O1 terminal and one of the DC load circuit power supply wires. Connect the I1 terminal to the other DC load circuit power supply wire.

⚠ CAUTION *The DC load circuit voltage should not exceed 30 V and the current should not exceed 12 A.* Connect the AC load circuit to the O2 terminal and the Neutral wire. Connect the I2 terminal to the AC load circuit breaker. Two different voltages can be used for the DC load circuits and for the Device power supply circuit. If you are using 12 V DC to power the Device and switch two DC load circuits (**fig.6**), 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 first DC load circuit to the O1 terminal and one of the first DC load circuit power supply wires. Connect the I1 terminal to the other first DC load circuit power supply wire. Connect the second DC load circuit to the O2 terminal and one of the second DC load circuit power supply wires. Connect the I2 terminal to the other second DC load circuit power supply wire.

⚠ CAUTION *The DC load circuits voltage should not exceed 30 V and the current should not exceed 12 A. Two different voltages can be used for the two DC load circuits.*

⚠ 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 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

- Mounting - DIN rail
- Dimensions (HxWxL): 68.5x18.5x89.5 mm
- Power supply: 110 - 240 V, 50/60 Hz AC
12V DC (10.5 V - 13.5 V), 250 mA
- Electrical consumption: < 3 W
- Working temperature: 0 °C - 40 °C
- Controlling elements: 2 galvanically isolated relays
- Controlled elements: 2 circuits - 2 AC, 2 DC or mixed (1 AC and 1 DC)
- Max switching voltage: 240 V AC / 30 V DC
- Max current per channel: 16 A AC / 12 A DC)
- Total max. current of all outputs: 25 A
- Dry contacts: Yes
- Temperature Protection - YES
- Wi-Fi - YES
- Bluetooth - YES
- LAN - YES
- Scripting (mjs) - YES
- MQTT - YES
- CoAP - No
- URL Actions - 20
- Scheduling - 50
- Add-on support - YES
- CPU - ESP32
- Flash - 8MB
- Radio protocol: Wi-Fi 802.11 b/g/n
- Radio signal power: 1mW
- Frequency Wi-Fi : 2412-2472 MHz; (Max. 2495 MHz)
- RF output Wi-Fi: <20 dBm
- Operational range: (depending on terrain and building structure): up to 50 m outdoors, up to 30 m indoors
- Frequency Bluetooth: TX/RX: 2402- 2480 MHz (Max. 2483.5MHz)
- RF output Bluetooth: <10 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 a 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 a 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.

Out1 (red): Red light indicator will be on if the Output 1 relay is closed.

Out2 (red): Red light indicator will be on if the Output 2 relay is closed.

Declaration of conformity

Hereby, Allterco Robotics EOOD declares that the radio equipment type Shelly Pro 2 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-2/>

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.

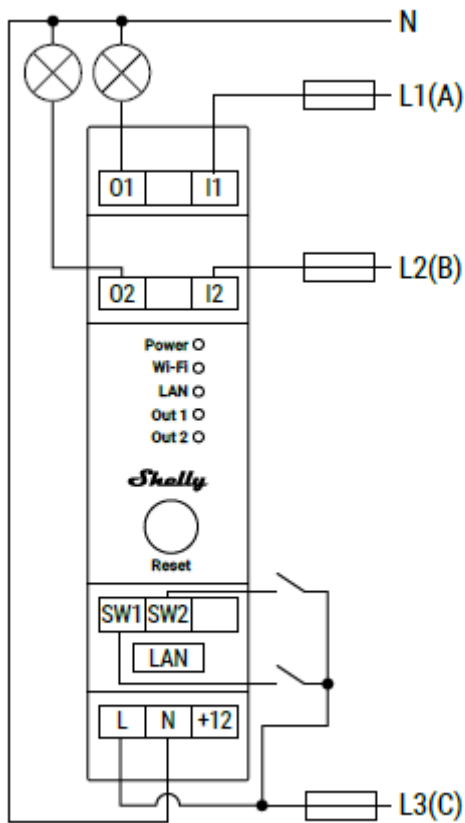


fig.1

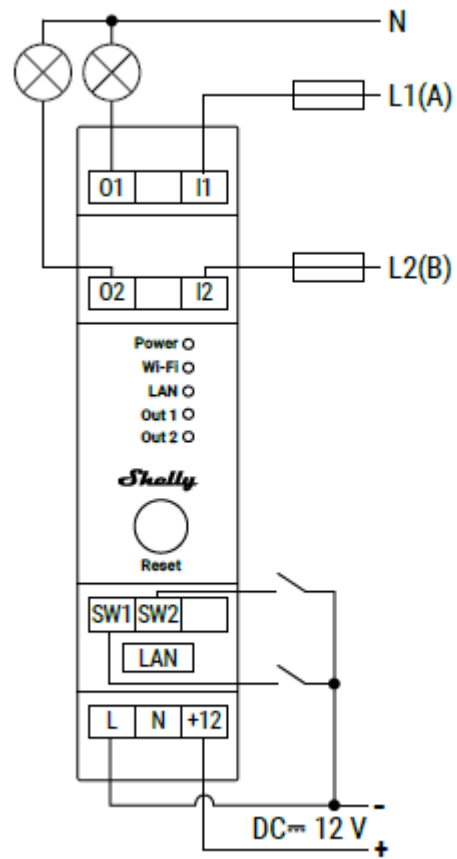


fig.4

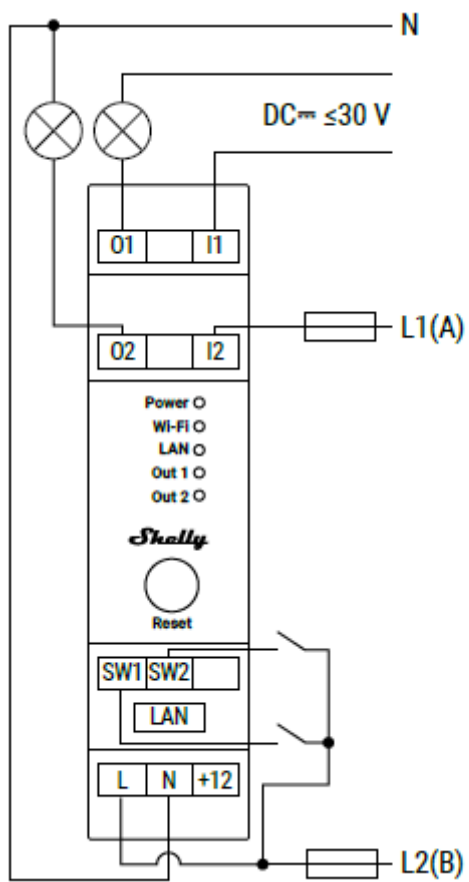


fig.2

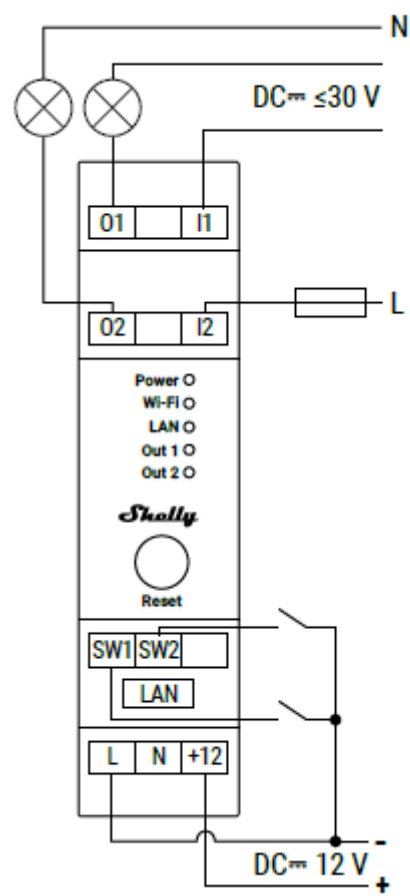


fig.5

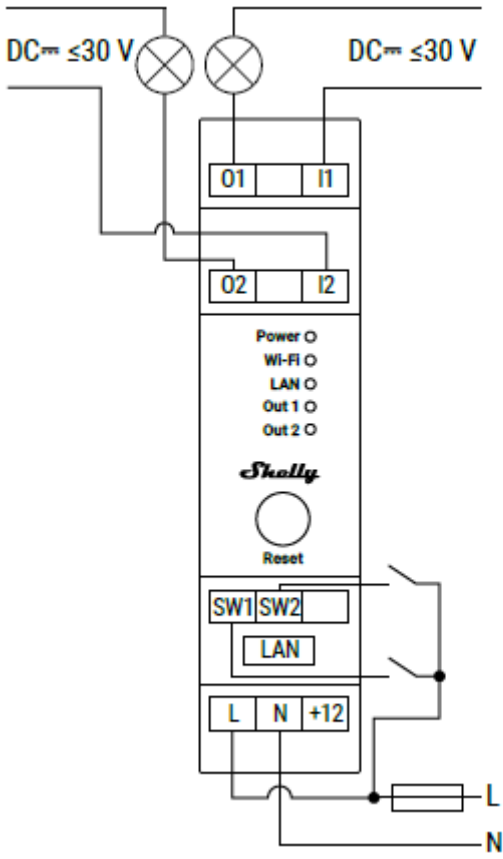


fig.3

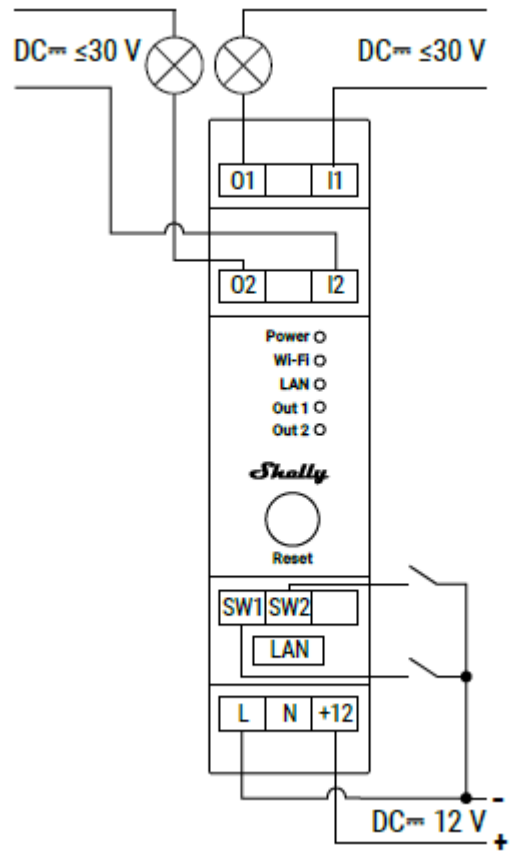


fig.6

SHELLY MOBILE APPLICATION FOR

Shelly^{PRO} 2



Introduction

Shelly devices can be controlled and managed directly in the local network or by using the Shelly cloud service accessible via the Internet. 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. See details at <https://shelly.cloud/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!

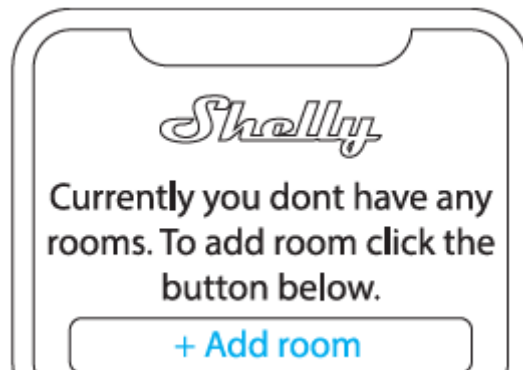
Forgotten password

In case you forget or lose your password, click the “Forgot Password?” link on the login screen and type the e-mail you 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.

⚠ATTENTION! *If you are unable to reset your password, you have to reset your device (as explained in “Device Inclusion” section, Step 1).*

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 available sensors in Shelly Cloud). Shelly Cloud allows easy control and monitoring using a mobile phone, tablet, or a PC. Shelly Pro 2 can be grouped with other devices in the application, as well as be set to trigger actions on other Shelly devices. Setting parameters for lights, controlling blinds, etc., is also supported.



Device inclusion

Step 1

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

⚠ WARNING! *In case the device has not created its own AP Wi-Fi network with SSID like **ShellyPro2-F008D1DB58A0**, please check if the device is connected according to the User and Safety Guide, Installation Instructions. If you still do not see an active Wi-Fi network with SSID like **ShellyPro2-F008D1DB58A0**, or you want to add the device to another Wi-Fi network, reset the device. If the device has been powered on, you have to restart it by powering it off and then again on. After that you have one minute to press 5 consecutive times the button/switch connected to the SW terminal. You should hear the relay trigger itself. After the trigger sound, Shelly Pro 2 will return to AP mode. If not, please repeat or contact our customer support at: support@shelly.cloud.*

Step 2

Please keep in mind that Shelly devices' inclusion is different on iOS and Android devices.

1. **iOS inclusion** - On your iOS device, open the Settings menu > WLAN and connect to the Wi-Fi network created by your Shelly device, i.e. **ShellyPro2-F008D1DB58A0 (fig. 1)**. Open your Shelly app again and type in your home Wi-Fi credentials (**fig. 2**).

fig. 1



fig. 2

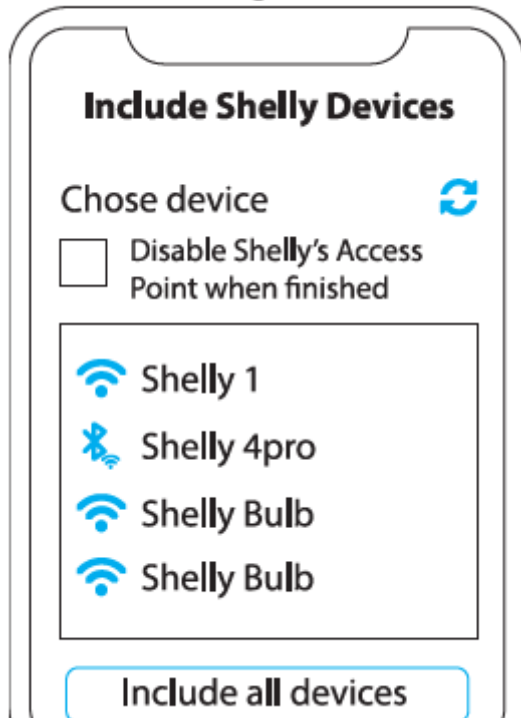


2. **Android inclusion** - From the hamburger menu on the main screen of your Shelly App choose "Add device". Then choose your home network and type in your password (**fig.3**). After that, pick the Shelly device you want to include. The name of the device will be similar to: **ShellyPro2-F008D1DB58A0** (**fig. 4**)

fig. 3



fig. 4



Step 3

Approximately 30 sec. after discovering any new devices on the local Wi-Fi network, a list will be displayed in the “Discovered Devices” room by default.



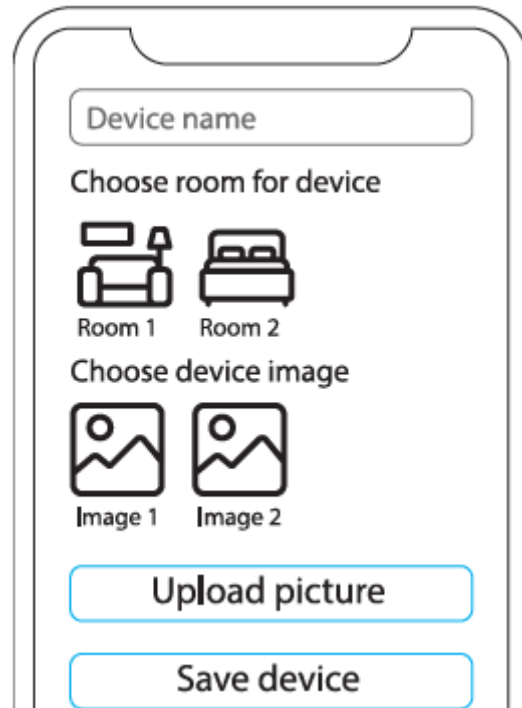
Step 4

Select “Discovered devices” and choose the device you want to include in your account.



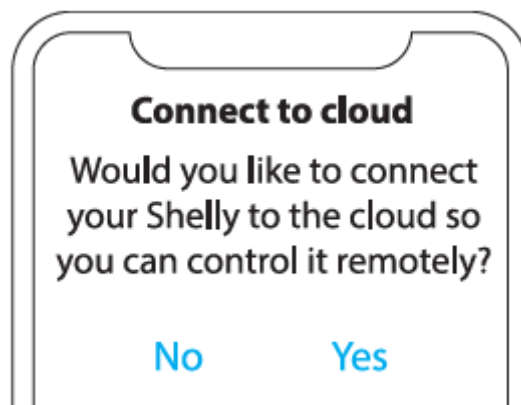
Step 5

Enter a name for the device (in the “Device Name” field). Choose a “Room” where the device will be positioned and controlled from. You can choose an icon or add a picture to make it easier to recognize. Press “Save device”.



Step 6

To control Shelly devices only through the local network, press “No”.



Device settings

After your Shelly device is added in the application, you can control it, change its settings, and automate the way it works. 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.

Internet

Configure Wi-Fi, AP, Cloud, Bluetooth, MQTT settings.

- **Wi-Fi Mode Client:** Connect the relay to your Wi-Fi network. Here, you can also set a static IP address.
- **Wi-Fi Client Backup:** An option to connect to an alternative network in case the primary network fails or is too slow.
- **Wi-Fi Mode AP:** The mode in which the device creates its own Wi-Fi connection point with the respective name (SSID).
- **Ethernet:** Connect the Shelly device to a network using an ethernet cable. This requires a device reboot! Here, you can also set a static IP address.
- **Cloud:** Connection to the cloud allows you to control your device remotely and to receive notifications and updates.
- **Bluetooth:** Enable/disable
- **MQTT:** Configure the Shelly device to communicate over MQTT.

Application Settings

- **Channel Name:** Set a name for the chosen channel
- **Appliance Type:** Choose from a given list what type of appliances your Shelly Pro 2 will be used with. The available options are "Socket, Lights, Heating, Entertainment". A custom type can be set as well.
- **PIN lock:** Restrict control of the Shelly device through the web interface by setting a PIN code. Click "Enable" and set the channel PIN lock, then click "Save".
- **Exclude from Event Log:** Do not show events from this device in the app.

Webhooks

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

Share

Share the control of your device with other users.

Settings

- **Button Type:** These settings define the way the attached switch or button controls the output state. The possible input modes are "button" and "switch", and the relay mode can be chosen depending on the preferred usage of the

device.

- **Invert Switch:** When the input is on, the output is off and when the input is off, the output is on. For the change to be applied, the physical switch has to be toggled once after 'invert' is set to 'true'.
- **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 2.
- **Factory Reset:** Remove Shelly Pro 2 from your account and return it to its factory settings.
- **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

Shelly can be set and controlled through a web browser.

Abbreviations used

- **Shelly ID** - the unique name of the device. It consists of 12 hexadecimal characters, the base MAC address of the device. It may include numbers and letters, for example **F008D1DB58A0**.
- **SSID** - the name of the Wi-Fi network, created by the device, for example **ShellyPro2-F008D1DB58A0**.
- **Access Point (AP)** - the mode in which the device creates its own Wi-Fi connection point with the respective name (SSID).
- **Wi-Fi** - the mode in which the device is connected to another Wi-Fi network.

Initial inclusion

Step 1

Install Shelly following the connection diagrams described in the instructions included with the device, and place it into the junction box. After turning the power on, Shelly will create its own Wi-Fi network (AP).

⚠ WARNING! *If you don't see the AP, please follow step 1 from the "Device Inclusion" section of this guide.*

Step 2

Shelly Pro 2 has created its own Wi-Fi network (AP), with a name (SSID) such as **ShellyPro2-F008D1DB58A0**. Connect it with your phone, tablet, or PC.

Step 3

Type **192.168.33.1** into the address field of your browser to load the web interface of Shelly.

General - Home page

This is the homepage of the embedded web interface. If it has been set up correctly, you will see information about the state of the two switches (ON/OFF) and common functionality menus. For individual functionality menus, choose one of the two channels.

Channel settings

Click on "Channel Settings". The general settings about the channel will be displayed here. You can configure I/O settings, channel's state, channel's name, etc.

- **Input/output settings** - input mode and relay type define the way the attached switch or button controls the output state. The possible input modes are "button" and "switch", and the relay mode can be chosen depending on the preferred usage of the device. "Set relay power on default" allows you to choose the default state of the relay when power is on.
- **Invert Switch:** When the input is on, the output is off and when the input is off, the output is on. For the change to be applied, the physical switch has to be toggled once after 'invert' is set to 'true'.
- **Channel Name:** Set a name for the chosen channel
- **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".

Timers

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).

Schedules

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 web hooks.

Device

Get information about your device's firmware version and location. Perform reboot and factory reset. Set your time zone and geo-location manually, or enable/disable automatic detection.

- **Authentication** - you can set credentials to lock your device or change already existing credentials.

Networks

Configure Wi-Fi, AP, Cloud, Bluetooth, MQTT settings.



