Shelly
B0124 RGBW PM
Wi-Fi Bluetooth
Operated Controller

Shelly B0124 RGBW PM Wi-Fi Bluetooth Operated Controller User Guide

Contents

Shelly B0124 RGBW PM Wi-Fi Bluetooth Operated Controller

Legend

Device terminals

- +: 12/24 VDC positive terminal
- ⊥: 12/24 VDC negative terminal
- I1, I2, I3, I4: Switch/button/potentiometer input terminals for light control
- R, G, B: Red, Green, and Blue channel outputs (when in ‘‘RGB’’ or ‘‘RGBW’’ mode)
- W: White channel output (when in ‘‘RGBW’’ mode)
- O1, O2, O3, O4: Light outputs (when in ‘‘Lights’’ mode)

Wires
• +: Positive wire
• -: Negative wire

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 guide.

- This sign indicates safety information This sign indicates an important note.
- **CAUTION!** Installation of the Device must be performed carefully by a qualified electrician.
- **CAUTION!** The Device operates at 12 or 24 VDC. Do not connect it directly to the power grid.
- **CAUTION!** Before making any changes to the connections, ensure there is no voltage present at the Device terminals.
- **CAUTION!** Connect the Device only in the way shown in these instructions. Any other method could cause damage and/or injury.
- **CAUTION!** Before installing the Device, check that there is no voltage on the wires you want to connect. When you are sure that there is no voltage, proceed to the installation.

- **CAUTION!** Do not use the Device if it shows any sign of damage or defect.
- **CAUTION!** The Device may be connected to and control only electric circuits and appliances that comply with the applicable standards and safety norms.
- **CAUTION!** The Device is intended only for indoor use.
- **CAUTION!** Keep the Device away from dirt and moisture.

Product Description

Shelly Plus RGBW PM (the Device) is a Wi-Fi/Bluetooth-operated RGBW controller. It can be connected like any LED controller and allows the lighting to be controlled directly from a mobile device or tablet. It supports 3 profiles – “Lights”, “RGB”, and “RGBW”. Power measurement functionality allows real-time tracking of the voltage, current, and power consumption. 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 Device 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 APIs for the devices, their integration, and cloud control. For more information, visit **https://shelly-api-docs.shelly.cloud**.

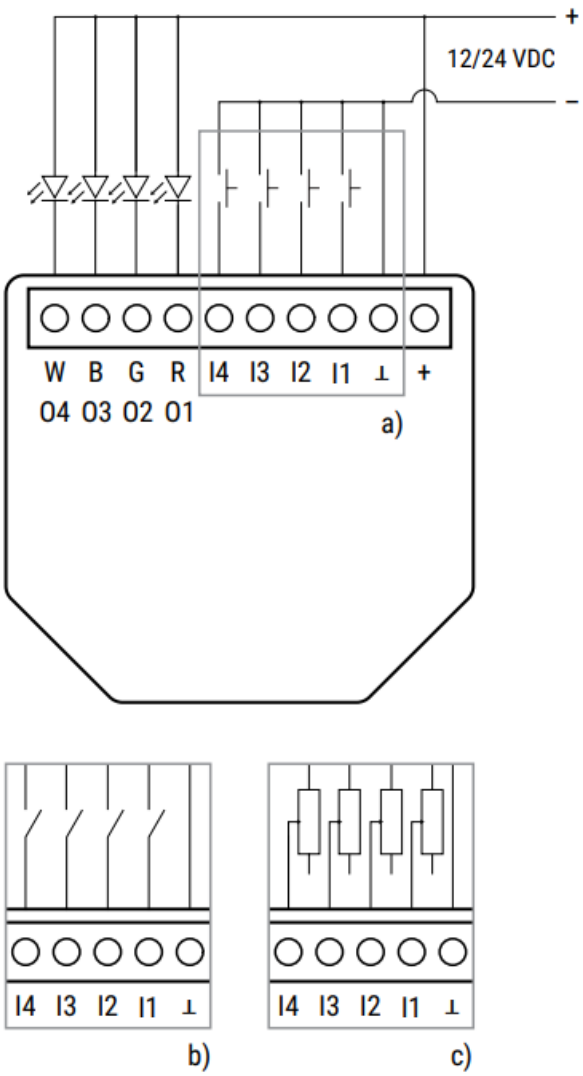
- The Device comes with factory-installed firmware. To keep it updated and secure, Shelly Europe Ltd. provides the latest firmware updates free of charge. Access the updates through either the embedded web interface or the Shelly Smart Control mobile application. Installation of firmware updates is the 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).
- When connecting wires to the Device terminals, consider the specified conductor cross-section and stripped length. Do not connect multiple wires to a single terminal.
- Do not use buttons or switches with built-in LED or neon glow lamps. Connect the + wire to the + terminal and the ⊥ wire to the terminal of the Device.+

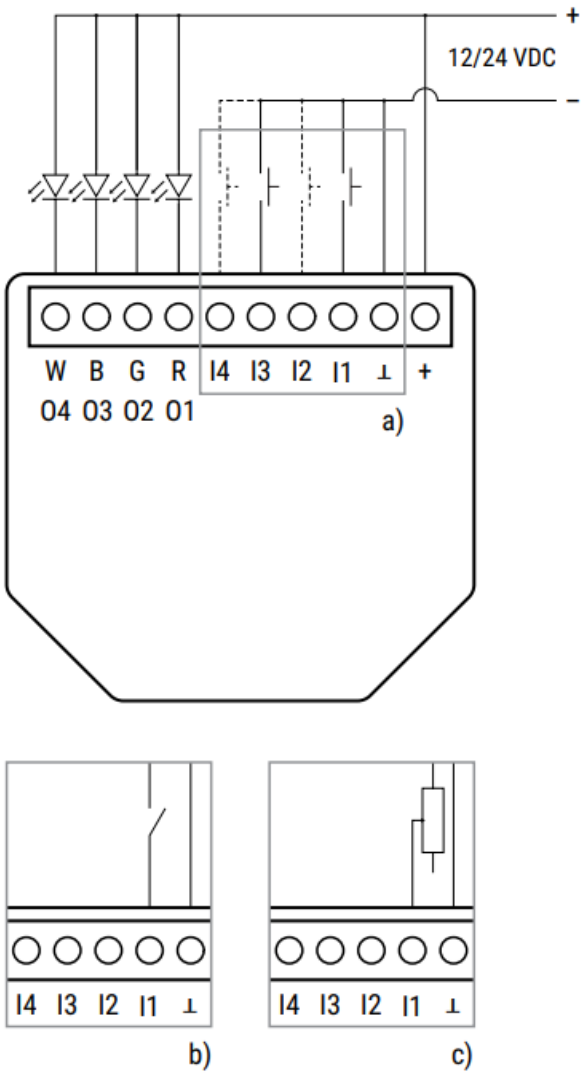
Wiring diagram

Lights mode:
In Lights mode, the Device can control up to 4 different LED strips (groups of lights) independently. Connect the positive wire of the LED strips to the + wire and the negative to the corresponding Device outputs O1, O2, O3, and O4 as shown in Fig. 1 a). Connect either a button (single-button dimming only possible) as shown in Fig 1. a), a switch as shown in Fig. 1 b), or a potentiometer as shown in Fig. 1 c) to each input I1, I2, I3, and I4 which controls the corresponding output O1, O2, O3, and O4.



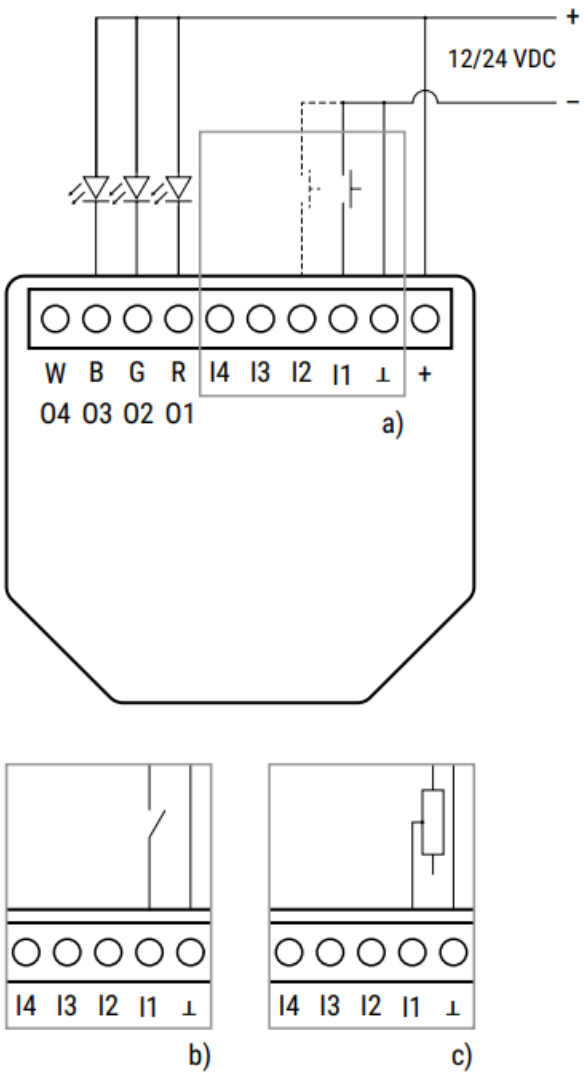
RGBW mode

In RGBW mode, the Device can control a single RGBW LED strip. Connect the positive wire of the LED strip to the + wire and the R, G, B, and W ones to the corresponding Device outputs R, G, B, and shown in Fig. 2 a). You can use either single or dual-button dimming to control the brightness of the RGB and the white lights independently as shown in Fig. 2 a). For single-button dimming, connect a button to I1 for the RGB light and a button to I3 for the white light. For dual-button dimming, connect 2 buttons to I1 and I2 for the RGB light, and 2 buttons to I3 and I4 for the white light. Pressing the buttons connected to I1 and I3 increases the brightness, and of the ones connected to I2 and I4 decrease it. If you want to just turn on/off the LED strip, connect a switch to I1 as shown in Fig 2. b).* The RGB and the white lights are turned on/ off by the switch simultaneously. If you want to use a potentiometer to smoothly control the brightness of the LED strip, connect one to I1 as shown in Fig 2. c).* The RGB and the white lights are dimmed by the potentiometer simultaneously.



RGB mode

In RGB mode, the Device can control a single RGB LED strip. Connect the positive wire of the LED strip to the + wire and the R, G, and B ones to the corresponding Device outputs R, G, and B as shown in Fig. 3 a). You can use either single or dual-button dimming for brightness control as shown in Fig. 3 a). For single-button dimming, connect a button to I1 and for dual-button dimming, connect another one to I2. In dual-button dimming pressing the button connected to I1 increases the brightness, and of the one connected to I2 decreases it. If you want to just turn on/off the LED strip, connect a switch to I1 as shown in Fig 3. b).* If you want to use a potentiometer to smoothly control the brightness of the LED strip, connect one to I1 as shown in Fig 3. c).*



- You can adjust the brightness and the color independently in you mobile application or the Device web interface.

Specifications

Physical

- Size (HxWxD): 42x37x12 mm / 1.65×1.46×0.47 in
- Weight: 16 g / 0.56 oz
- Screw terminals max torque: 0.2 Nm / 1.8 lb
- Conductor cross-section: 0.1 to 1 mm² / 30 to 16 AWG (solid, stranded, and bootlace ferrules)
- Conductor stripped length: 6 mm / 0.24 in
- Mounting: In-wall
- Shell material: Plastic
- Shell color: Yellow
- Connectors color: Green

Environmental

- Ambient working temperature: -20°C to 40°C / -5°F to 105°F

- Humidity: 30% to 70% RH

Electrical

- Power supply: 12/24 VDC
- Power consumption: < 1.2 W

Output circuits ratings

- Max. control voltage: 24 VDC
- Max. control current: 4 A per channel (10 A total)
- PMW frequency: 22 kHz

Sensors, meters

- Power and energy meters: Power measurement
- Internal-temperature sensor: Yes

Radio Wi-Fi

- Protocol: 802.11 b/g/n
- RF band: 2401 – 2495 MHz
- Max. RF power: < 20 dBm
- Range: Up to 30 m / 98 ft indoors and 50 m / 164 ft outdoors (Depends on local conditions)

Bluetooth

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

Microcontroller unit

- CPU: ESP32
- Clock frequency: 160 Mhz
- RAM: 400 KB
- Flash: 4 MB

Firmware capabilities

- Schedules: 20
- Webhooks (URL actions): 20 with 5 URLs per hook
- Scripting: Yes
- MQTT: 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/app-guide**. The Shelly mobile application and Shelly Cloud service are not conditions for the Device to function properly. This Device can be used standalone or with various other home automation platforms.

Troubleshooting

In case you encounter problems with the installation or operation of the Device, check its knowledge base page: **https://shelly.link/plus_rgbw_pm**

Declaration of Conformity
Hereby, Shelly Europe Ltd. declares that the radio equipment type Shelly Plus RGBW PM 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.link/plus_rgbw_pm_DoC**

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- **E-mail:** **support@shelly.cloud**
- **Official website:** **https://www.shelly.com** Changes in contact information are published by the Manufacturer on the official website.

Documents / Resources

	**Shelly B0124 RGBW PM Wi-Fi Bluetooth Operated Controller** [pdf] User Guide B0124, B0124 RGBW PM Wi-Fi Bluetooth Operated Controller, RGBW PM Wi-Fi Bluetooth Operated Controller, Wi-Fi Bluetooth Operated Controller, Bluetooth Operated Controller, Controller

References

- **Shelly Control**
- **Welcome to Shelly Technical Documentation | Shelly Technical Documentation**
- **Shelly Smart Control Guide**
- **Plus devices**
- **Plus devices**
- **User Manual**