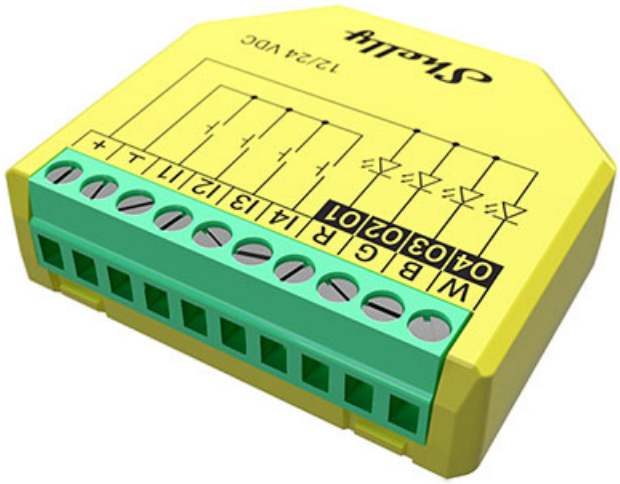
Shelly Plus RGBW PM

Device image



Device identification

Device name: **Shelly Plus RGBW PM**
Device model: **SNDC-0D4P10WW**
Device SSID: **ShellyPlusRGBWPM-XXXXXXXXXXXX**
Device Bluetooth ID: **0x1009**

Short description

Shelly Plus RGBW PM 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 - RGBW, RGB and Lights x4. In the Lights x4 profile, different led strips (groups of lights) can be controlled independently. Power measurement functionality allows real time track of the voltage, current and power consumption.

Main features

BLE Gateway: Facilitates communication between BLE and Wi-Fi-enabled devices.
Wi-Fi Range extender: Retransmits the Wi-Fi signal and extends its reach.
Scripting: Allows creating automation scenarios through scripts.
Basic Schedules: Supports weekly schedules and routines, including setting of brightness, transition duration, and flip value of the dimming signal.
Advanced Schedules: Supports detailed schedules and routines throughout the year with a broad range of time adjustments from seconds to moths, including setting of brightness, transition duration, and flip value of the dimming signal.
Shelly Plus Add-On compatible: The Device supports connection with the sensor interface to the Shelly Plus devices.
Auto on/off timers: Enables auto on/off timer setting.
Local actions: Allows creating automation scenarios within the local Wi-Fi network, including setting of brightness, transition duration, and flip value of the dimming signal.
Webhooks: Supports automation through lightweight, event-driven communication with other devices.
Independent control for each output (channel) in Lights x 4 profile: Provides separate control for each output for maximum flexibility.
Power measurement: Precise monitoring of energy consumption.
Independent control for RGB and White: Color brightness and white brightness now can be controlled independently with dimming up/down.
Night Mode: Enables to set a specific brightness of input lights during nighttime.

Switch/Button/Analog input mode: Allows flexible input control through switches, buttons or potentiometers (10kΩ analog input is recommended).
Min/Max brightness: Reframes the range of the dimming signal to get more precise brightness control on the output. Affects RGB in RGBW and RGB; brightness in Lights x4.
Button fade rate: Controls how quickly the output brightness changes while holding the button(s).

Use cases

Power monitoring: Monitor power consumption of all connected lights in real-time. This is useful for understanding energy usage patterns and promoting energy efficiency.
Space-efficient retrofitting: Install one of the smallest devices on the market into standard electrical wall boxes, behind power sockets, light switches, or other locations with limited space.
Wake-up and sleep routines: Use a wide range of color and brightness levels in Night mode to simulate sunrise or sunset by gradually changing the color and brightness. Implement circadian lighting, promoting better sleep-wake cycles and supporting overall well-being by adjusting light color and intensity throughout the day.
Child-friendly night lights: Create a comforting and child-friendly environment. Adjust colors to provide a soothing ambiance for children during bedtime.
Seasonal or entertainment decoration: Decorate homes or commercial spaces for different seasons or holidays by adjusting the RGBW lighting. For example, use warm tones for autumn and festive colors during holidays. Set dynamic and vibrant lighting patterns for parties, gatherings, or entertainment events.
Smart presence simulation: Set customized color and brightness levels at at any given time or based on sunrise/sunset. Enhance home security by simulating presence and turning lights on and off in a natural pattern.
Retail and commercial displays: Use the Device for visual merchandising in retail spaces. Showcase products with dynamic lighting to attract attention and create visually appealing displays.
Enhanced lighting control options: Integrate the Device with most of the frequently used home automation systems like Home Assistant, Google Home, Alexa, and SmartThings for expanded control options.
Dynamic art installations: Integrate the Device into art installations or exhibitions to add dynamic and interactive lighting effects, enhancing the visual impact and engagement.

Integrations

Amazon Alexa supported capabilities

Brightness Controller

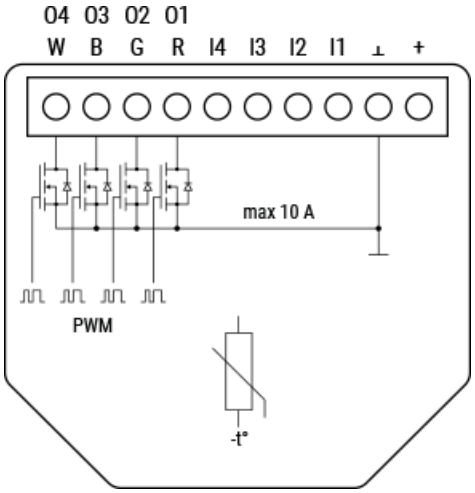
Google Smart Home supported traits

Brightness

Samsung SmartThings supported capabilities

Color Control

Simplified internal schematics



Device electrical interfaces

Device electrical interfaces

Inputs

4 switch/button inputs on screw terminals: **I1** and **I4**
2 power supply inputs on screw terminals: **(+)** and **(⏚)**

Outputs

4 outputs on screw terminals: **O1**, **O2**, **O3** and **O4**. Same are used for **R**, **G**, **B** and **W**

Connectivity

Wi-Fi
Bluetooth

Safety function

Overheating protection
Overcurrent protection

Supported load types

12/24 V mono-color LED strips
12/24 V RGB LED strips
12/24 V RGBW LED strips

User interface

Inputs

One (Control) button

Press and hold for 5 seconds to enable Device access point and Bluetooth connection.
Press and hold for 10 seconds to factory reset the Device.

Outputs

LED (monocolor) indication

AP (Access Point) enabled and Wi-Fi disabled:
1 second ON / 1 second OFF
Wi-Fi enabled, but not connected to a Wi-Fi network:
1 second ON / 3 seconds OFF
Connected to a Wi-Fi network:
Constantly ON
Cloud is enabled, but not connected:
1 second ON /5 seconds OFF
Connected to Shelly Cloud:
Constantly ON
OTA (Over the Air Update):
½ sec ON / ½ second OFF
Button pressed and held for 5 seconds:
½ second ON / ½ second OFF
Button presses and held for 10 seconds:
¼ second ON / ¼ second OFF

The list above starts with the initial device status and the lowest priority. Every next state cancels the previous one.

Specifications

Quantity	Value
Physical	
Size (HxWxD):	42x37x12 ±0.5 mm / 1.65x1.46x0.66 ±0.02 in
Weight:	17 g / 0.60 oz
Screw terminals max torque:	0.2 Nm / 1.8 lbin
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)
PWM frequency	22 kHz
Sensors, meters	
Voltmeter:	0-24 V
Voltmeter accuracy:	± 5%
Ammeter:	0-10 A
Ammeter accuracy:	± 10%
Power and energy meters:	Power measurement
No load threshold:	0.5 VA per channel
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 / 100 ft indoors and 50 m / 160 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 / 100 ft outdoors (Depends on local conditions)

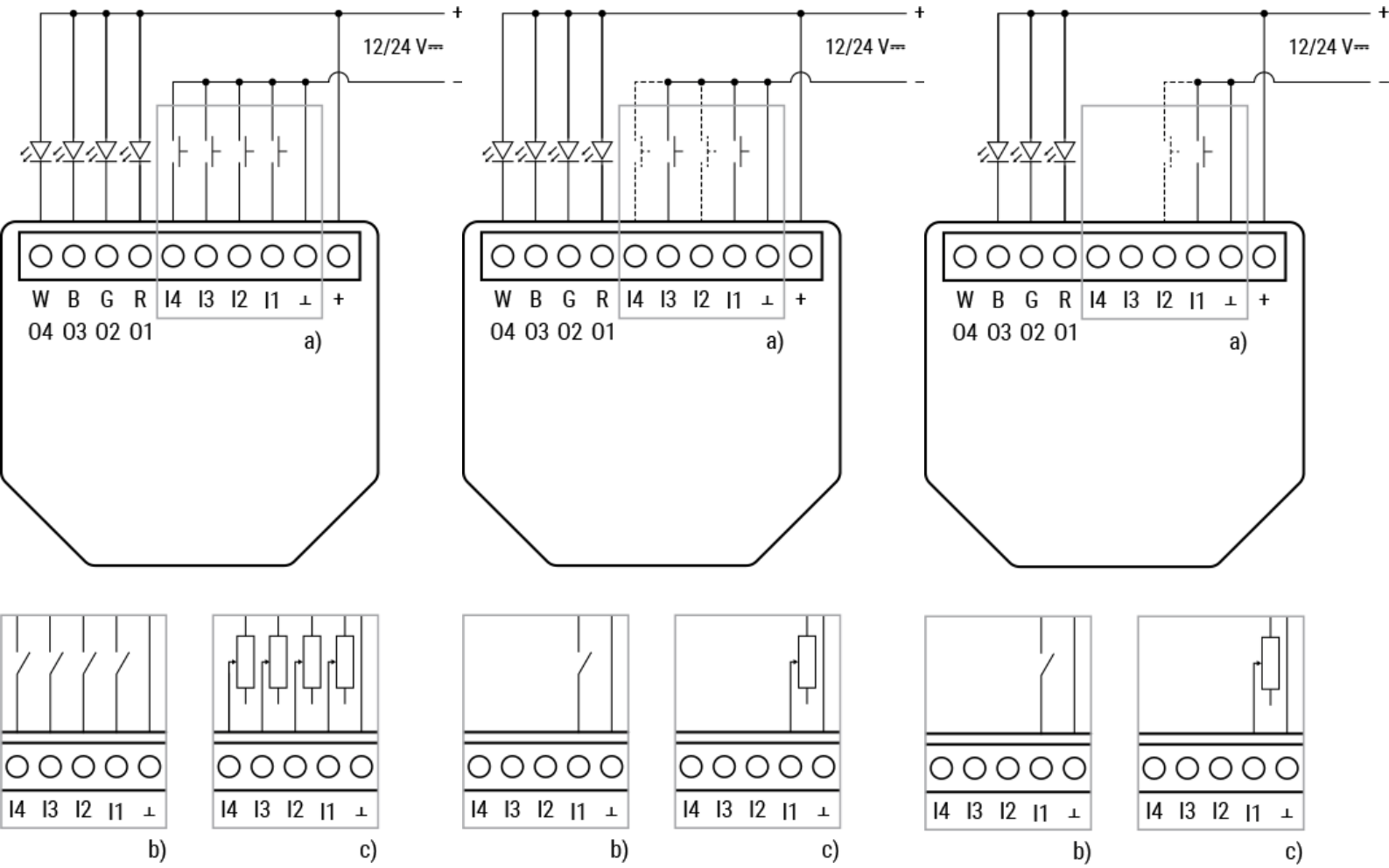
Microcontroller unit

CPU:	ESP-Shelly C38F
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
Scripting:	Yes

Basic wiring diagrams



Wiring in *Lights x 4* mode

Wiring in *RGBW* mode

Wiring in *RGB* mode

Legend

Terminals		Wires	
+	12/24 VDC positive terminal	+	Positive wire

⊥	12/24 VDC negative terminal	-	Negative wire
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 x4 mode)		

Troubleshooting

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Components and APIs

This device
All Shelly devices and services

Compliance and certification

Shelly Plus RGBW PM multilingual EU declaration of conformity.pdf

Printed user guide

Shelly Plus RGBW PM multilingual printed user and safety guide.pdf

Installation guides