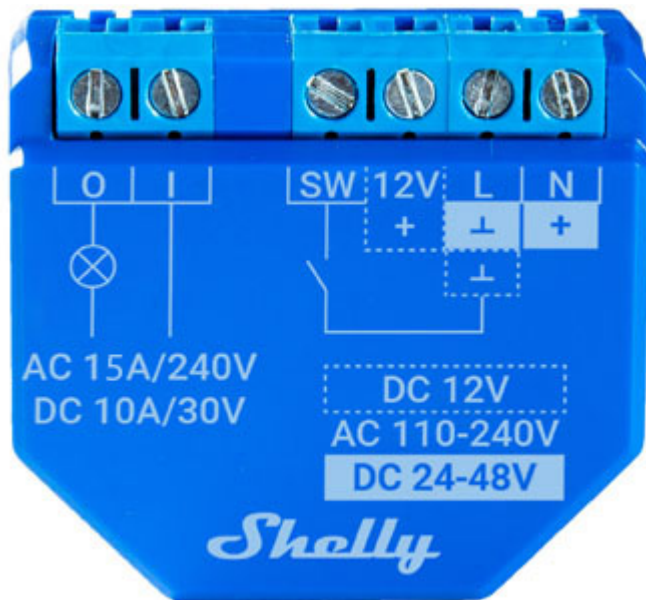




Knowledge Base / Devices / Shelly Plus devices

## Shelly Plus 1 UL



### Device identification

- Device name: **Shelly Plus 1 UL**
- Device model: **SNSW-001X15UL**
- Device SSID: **ShellyPlus1-XXXXXX**

### Short description

The Shelly Plus 1 UL is a UL-certified small form factor smart switch with potential-free contacts, which allows remote control of electric appliances through a mobile phone, tablet, PC, or home automation system. It can work standalone in a local Wi-Fi network or it can also be operated through cloud home automation services.

The Shelly Plus 1 UL can be accessed, controlled and monitored remotely from any place where the User has internet connectivity, as long as the device is connected to a Wi-Fi router and the Internet.



It can be retrofitted into standard electrical wall boxes, behind power sockets and light switches or other places with limited space.

The Shelly Plus 1 UL has embedded Web Interface which can be used to monitor and control the device, as well as adjust its settings.

## Main applications

- Residential
- MDU (Multi Dwelling Units - apartments, condominiums, hotels, etc.)
- Light commercial (small office buildings, small retail/restaurant/gas station, etc.)
- Government/municipal
- University/college

## Integrations

### Amazon Alexa supported capabilities

- Toggle Controller

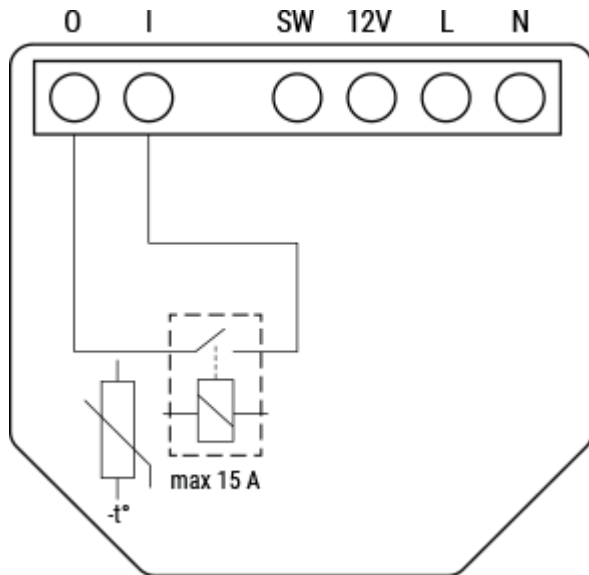
### Google Smart Home supported traits

- On Off

### Samsung SmartThings supported capabilities

- Switch

## Simplified internal schematics



## Device electrical interfaces

### Inputs

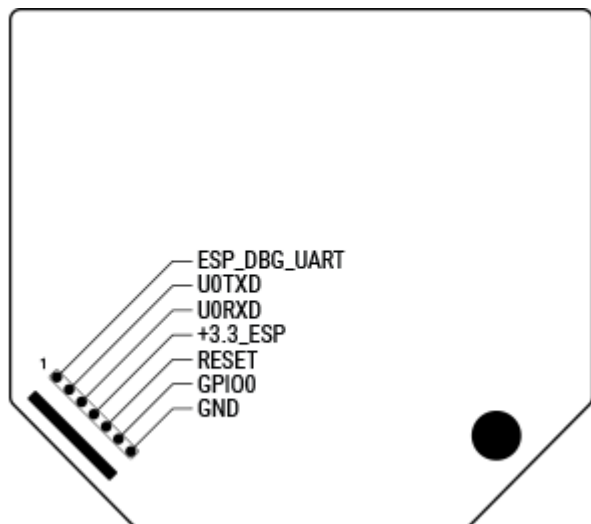
- 1 switch/button input on screw terminal: SW
- 1 potential-free contacts relay input on screw terminal: I
- 3 power supply inputs on screw terminals: N (+), L (⊘) and 12V

### Outputs

- 1 potential-free contacts relay output on screw terminal: O

### Add-on interface

- Shelly proprietary serial interface



**⚠CAUTION!** High voltage on the add-on interface when the Device is powered!

## Connectivity

- Wi-Fi
- Bluetooth

## Safety functions

- Overheating protection

## Supported load types

- Resistive (incandescent bulbs, heating devices)
- Capacitive (capacitor banks, electronic equipment, motor start capacitors)
- Inductive with RC Snubber (LED light drivers, transformers, fans, refrigerators, air-conditioners)

## User interface

### Inputs

- One (Reset) 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

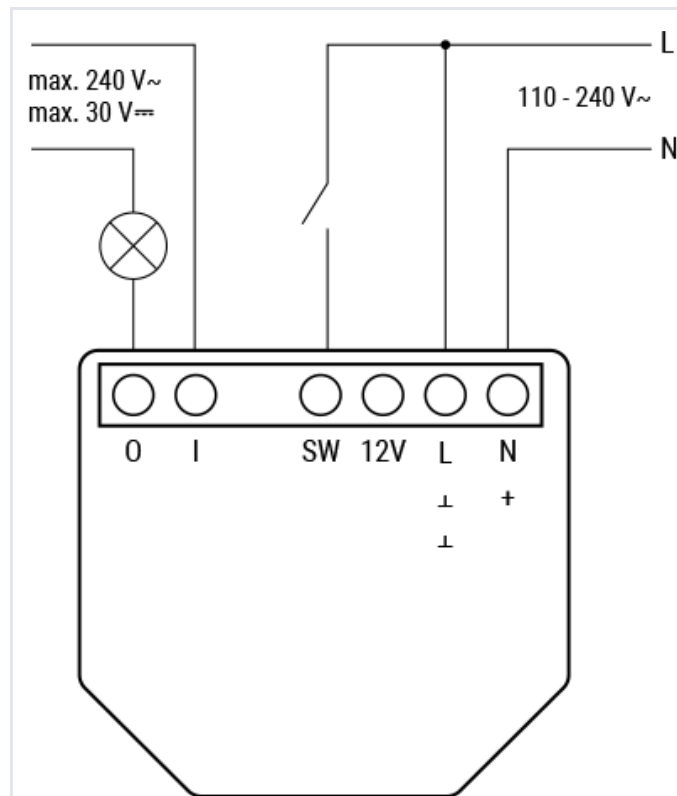


Type	Value
Physical	

Size (HxWxD):	37x42x16 / 1.46x1.65x0.63
Weight:	26 g / 0.92 oz
Mounting:	Wall console
Screw terminals max torque:	0.4 Nm / 3.5 lbin
Conductor cross section:	0.5 to 1.5 mm <sup>2</sup> / 20 to 14 AWG
Conductor stripped length:	5 to 6 mm / 0.20 to 0.24 in
Shell material:	Plastic
Color:	Blue
<b>Environmental</b>	
Ambient temperature:	-20 °C to 40 °C / -5 °F to 105 °F
Humidity	30 % to 70 % RH
Max. altitude	2000 m / 6562 ft
<b>Electrical</b>	
Power supply:	<ul style="list-style-type: none"><li>• 110-240 VAC, 50/60Hz</li><li>• 12 VDC stabilized</li><li>• 24-48 VDC</li></ul>
Power consumption:	< 1.2 W
<b>Output circuits ratings</b>	
Max switching voltage AC:	240 V (Single wire)
Max switching voltage DC:	30 V
Max switching current AC:	15 A

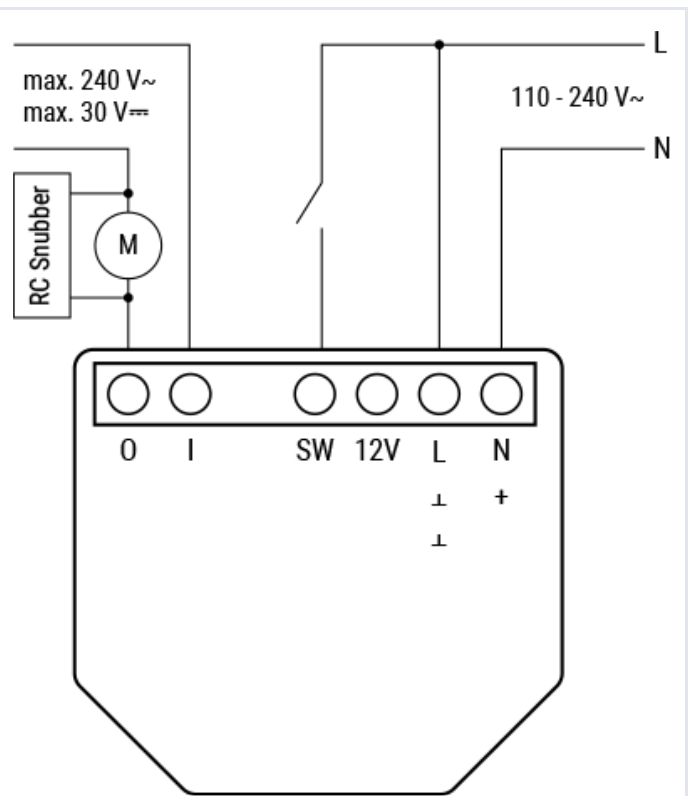
Max switching current DC:	10 A
<b>Sensors, meters</b>	
Internal-temperature sensor:	Yes
<b>Radio</b>	
RF band:	2400 - 2495 MHz
Max. RF power:	<20 dBm
Wi-Fi protocol:	802.11 b/g/n
Wi-Fi Range:	Up to 30 m / 100 ft indoors and 50 m / 160 ft outdoors (Depends on local conditions)
Bluetooth Protocol:	4.2
Bluetooth Range:	Up to 10 m / 33 ft indoors and 30 m / 100 ft outdoors (Depends on local conditions)
<b>MCU</b>	
CPU:	ESP32-U4WDH
Flash:	4 MB
<b>Firmware capabilities</b>	
Schedules:	20
Webhooks (URL actions):	20 with 5 URLs per hook
Scripting:	Yes
MQTT:	Yes
CoAP:	No

## Basic wiring diagrams



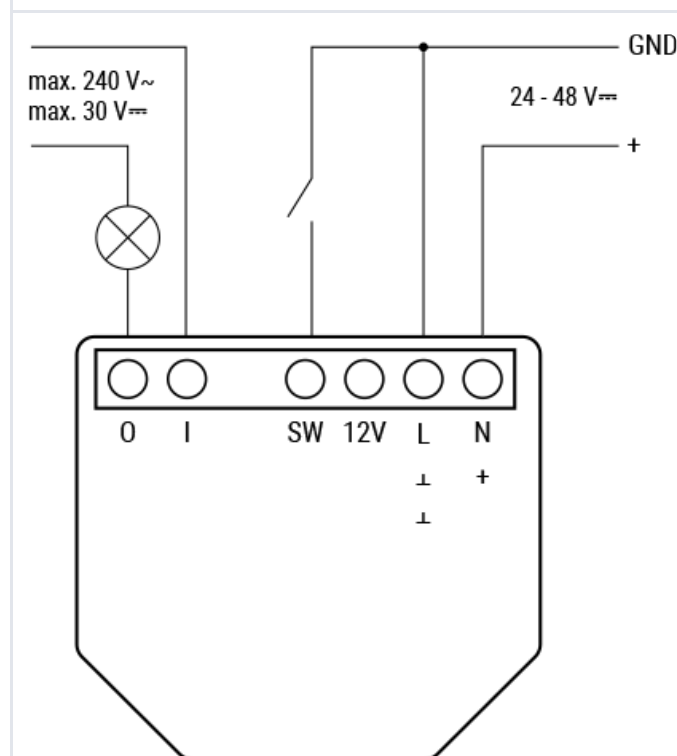
110-240 VAC power supply

Resistive load



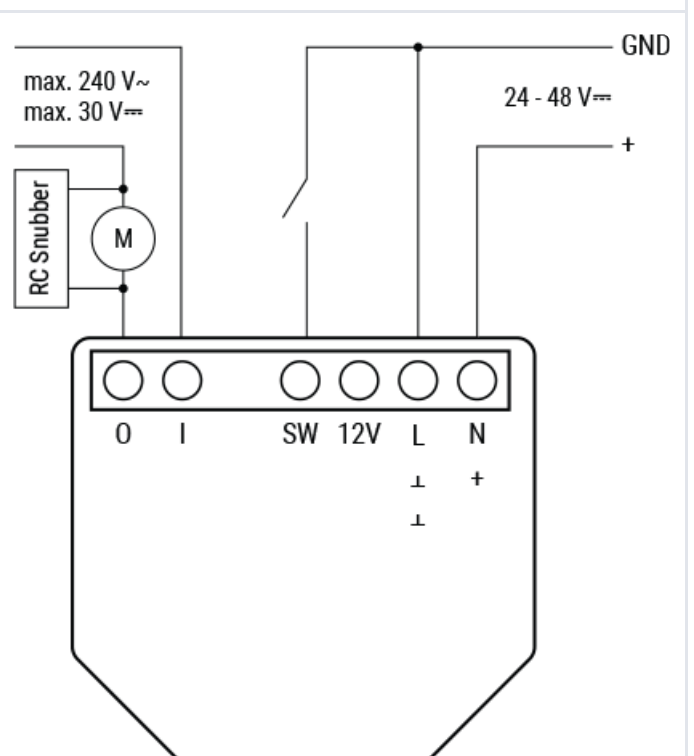
110-240 VAC power supply

Inductive load and RC snubber



24-48 VDC power supply

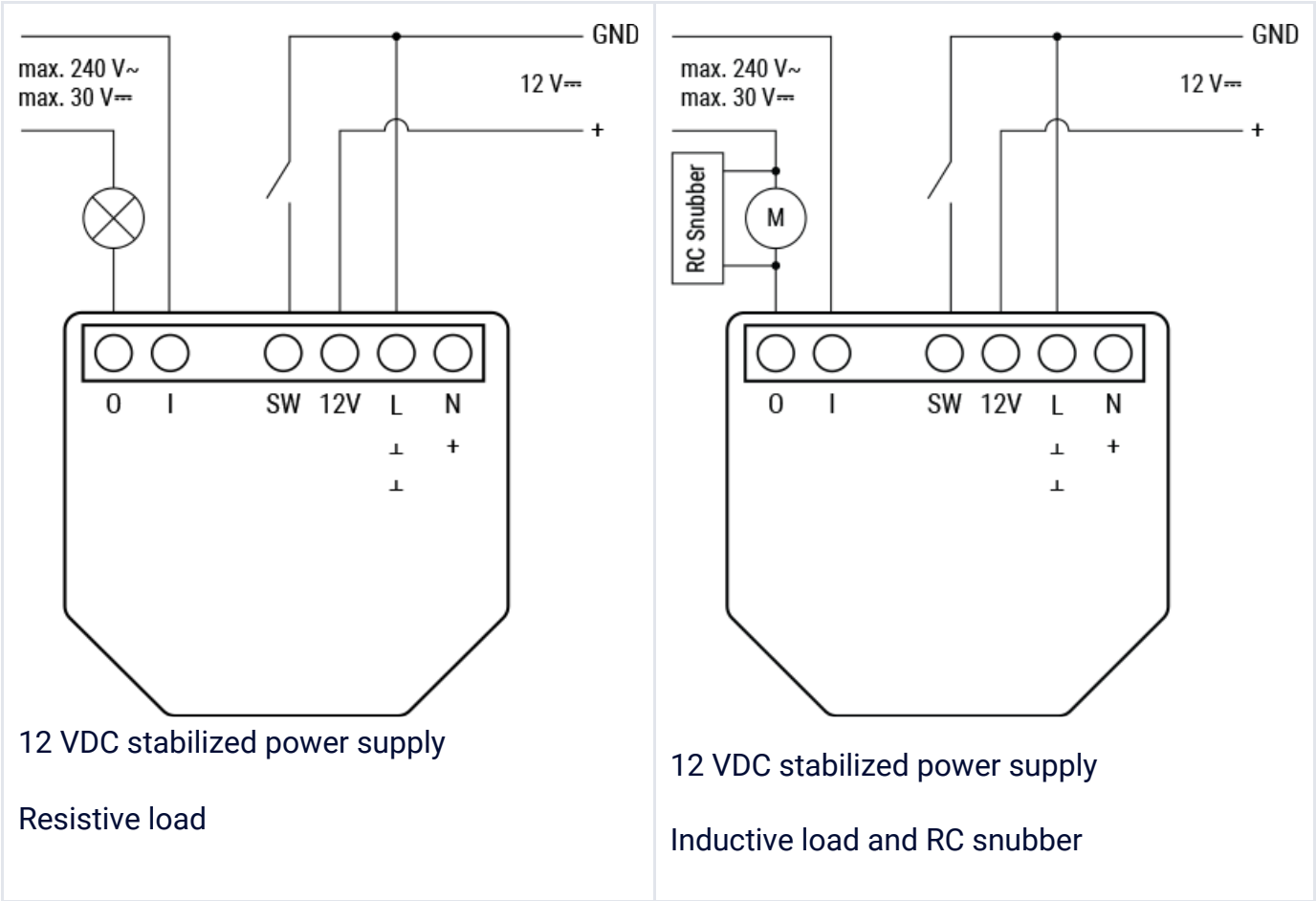
Resistive load



24-48 VDC power supply

Inductive load and RC snubber





Legend



Terminals		Wires	
I	Load circuit input terminal	L	Live (110 - 240 VAC) wire
O	Load circuit output terminal	N	Neutral wire
SW	Switch (controlling O) input terminal	+	12 / 24 - 48 VDC positive wire
+12V	12 VDC positive terminal	GND	12 / 24 - 48 VDC ground wire
L	Live (110-240 VAC) terminal		
N	Neutral terminal		
+	24 - 48 VDC positive terminal		

Terminals		Wires	
	12 / 24 - 48 VDC ground terminal		

## Supported load types

- Resistive (incandescent bulbs, heating devices)
- Capacitive (capacitor banks, electronic equipment, motor start capacitors)
- Inductive with RC Snubber (LED light drivers, transformers, fans, refrigerators, air-conditioners)

## Web Interface guide

[Read the Shelly Plus 1, Plus 1 UL web interface guide](#)

## Components and APIs

- [This device](#)
- [All Shelly devices and services](#)

## Printed user guide

- [Shelly Plus 1 UL bilingual user and safety guide.pdf](#)



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