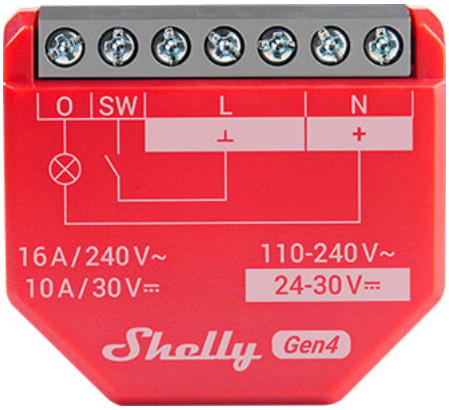
# Shelly 1PM Gen4




## Device identification

- Device name: **Shelly 1PM Gen4**
- Device model: **S4SW-001P16EU**
- Device SSID: **Shelly1PMG4-XXXXXXXXXXXX**
- Device Bluetooth ID: **0x1029**

## Short description

Shelly 1PM Gen4 is a small form factor smart switch with power measurement, 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.

Shelly 1PM Gen4 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.

Shelly 1PM Gen4 has embedded Web Interface which can be used to monitor and control the device, as well as adjust its settings.

The device has multi-protocol wireless MCU which provide Zigbee and Bluetooth connectivity ensuring a secure connection.

This device is compatible with Matter.

## Main features

- **Wi-Fi Connectivity:** The device can connect to your home Wi-Fi network, allowing you to remotely monitor humidity and temperature data through a smartphone app or other compatible devices.
- **Bluetooth Connectivity:** Bluetooth and BLE gateway are available for inclusion purposes, which may be useful during the setup process.
- **Zigbee Connectivity:** Zigbee is available for inclusion purposes, which may be useful during the setup process.
- **Integration with Smart Home Platforms:** You can integrate the Shelly 1PM Gen4 with popular smart home platforms, including Google, Alexa, and Samsung SmartThings. This enables voice control and automation capabilities through these platforms.
- **Smart Switch with Power Measurement:** Acts as a smart switch with the added capability of measuring power consumption, allowing you to monitor the energy usage of connected appliances.

- **Compact Design:** Designed as a small form factor switch, making it suitable for retrofitting into standard electrical wall boxes, behind power sockets, light switches, or other confined spaces.
- **Remote Control:** Enables remote control of electric appliances via a mobile phone, tablet, PC, or home automation system.
- **Local and Cloud Control:** Can function independently in a local Wi-Fi network and can also be operated through cloud home automation services.
- **Improved Processor:** Upgraded with an improved processor and support for Zigbee connectivity.
- **Remote Access:** Allows remote access, control, and monitoring from any location with internet connectivity, provided the device is connected to a Wi-Fi router and the internet.
- **Embedded Web Interface:** Features an embedded web interface for monitoring, control, and adjustment of settings.
- **Wireless Connectivity:** The device supports Wi-Fi (802.11 b/g/n) and Bluetooth 5.0 protocols with specified indoor and outdoor range capabilities.
- **BLE Gateway:** Bridge between your Shelly BLU devices and the wider Shelly ecosystem. It receives Bluetooth signals and sends them to the cloud or locally to another non-bluetooth device.
- **Wi-Fi Range extender for IoT devices:** A Wi-Fi extender is employed to expand the reach of your Wi-Fi network by receiving your current Wi-Fi signal, enhancing its strength, and then transmitting the enhanced signal over a wider area.
- **Zigbee Range extender for IoT devices:** A Zigbee extender is employed to expand the reach of your Zigbee network by receiving your Zigbee signal, enhancing its strength, and then transmitting the enhanced signal over a wider area.
- **Scripting:** https://shelly-api-docs.shelly.cloud/gen2/Scripts/ShellyScriptLanguageFeatures/
- **Wide range of integrations:** The device can be integrated with 3rd party home systems, documented HTTP API, MQTT(s), Web Hooks over HTTP and HTTPS, UDP
- **Schedules:** Allows scheduling of complex operations to be executed in predefined time window. Users can specify time windows based on date, time of day, weekdays, hours, minutes and seconds.
- **Virtual Components:** https://shelly-api-docs.shelly.cloud/gen2/DynamicComponents/Virtual/
- **KNX net/IP support:** https://shelly-api-docs.shelly.cloud/gen2/Integrations/KNX/

# Use cases

- **Appliance Control:** Use it to remotely control and automate the operation of various electric appliances such as lights, fans, or other devices.
- **Power Monitoring:** Monitor the power consumption of connected appliances in real-time. This is useful for understanding energy usage patterns and promoting energy efficiency.
- **Home Automation:** Integrate the Shelly 1PM Gen4 into your home automation system to create custom scenes and schedules for your devices.
- **Energy Efficiency:** Leverage the power measurement feature to identify energy-hungry appliances and make informed decisions to improve overall energy efficiency in your home.
- **Remote Monitoring:** Keep an eye on your devices even when you're away from home. The remote access feature allows you to monitor and control connected appliances from anywhere with internet connectivity.

# 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

Yes

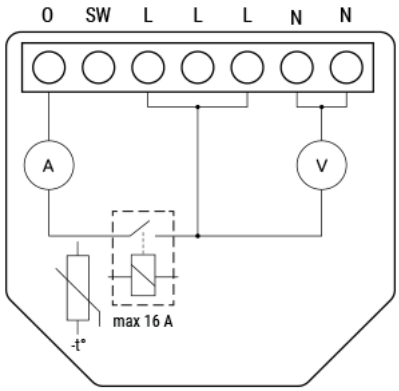
## Google Smart Home supported traits

Yes

### Samsung SmartThings supported capabilities

Yes

## Simplified internal schematics




## Device electrical interfaces

### Inputs

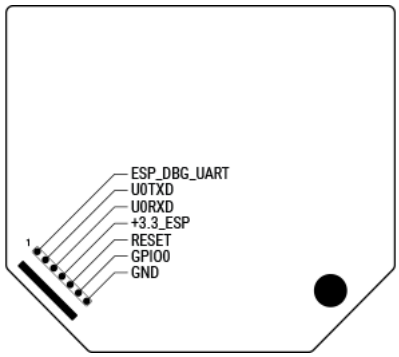
- 1 switch/button input on screw terminal: SW
- 5 power supply inputs on screw terminals: 2 N (+) and 3 L (⏚)

### Outputs

- 1 relay output with power measurement 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
- Zigbee
- Matter

- Overheating protection

- Overvoltage protection
- Overcurrent protection
- Overpower protection

# Supported load types

- Resistive (incandescent bulbs, heating appliances)
- Capacitive (capacitor banks, electronic equipment, motor starting capacitors)
- Inductive with RC Snubber (LED light drivers, transformers, fans, refrigerators, air-conditioners, washing machines, tumble dryers)

# 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.
  - Press 5 consecutive times to switch the Device from Matter firmware (default) to Zigbee.
  - Press 3 consecutive times to put the Device in Zigbee inclusion mode. The Device stays in this mode for 2 minutes and you can find it in the Home Automation platform through the Zigbee Hub.

## 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

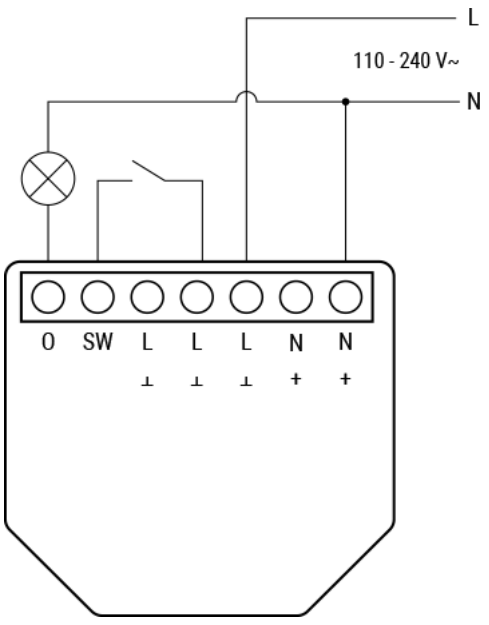
| **Quantity** | **Value** |
|---|---|
| **Physical** | |
| Size (HxWxD): | 37x42x16 mm / 1.46x1.65x0.63 inch |

| | |
|---|---|
| Weight: | 27 g / 0.95 oz |
| Screw terminals max torque: | 0.4 Nm / 3.5 lbin |
| Conductor cross section: | 0.2 to 2.5 mm² / 24 to 14 AWG (solid, stranded, and bootlace ferrules) |
| Conductor stripped length: | 6 to 7 mm / 0.24 to 0.28 in |
| Mounting: | Wall console |
| Shell material: | Plastic |
| Shell color: | Red |
| Terminals color: | Grey (Mouse Grey) |
| **Environmental** | |
| Ambient working temperature: | -20 °C to 40 °C / -5 °F to 105 °F |
| Humidity: | 30 % to 70 % RH |
| Max. altitude: | 2000 m / 6562 ft |
| **Electrical** | |
| Power supply: | • 110-240 V~<br>• 24-30 V⎓ |
| Power consumption: | < 1 W |
| Neutral not needed: | No |
| External protection: | Cable protection switch in accordance with EN60898-1 (tripping characteristic B or C, max. 16 A rated current, min. 6 kA interrupting rating, energy limiting class 3) |
| **Output circuits ratings** | |
| Max. switching voltage: | • 240 V~<br>• 30 V⎓ |
| Max. switching current: | • 16A (240 V~) |

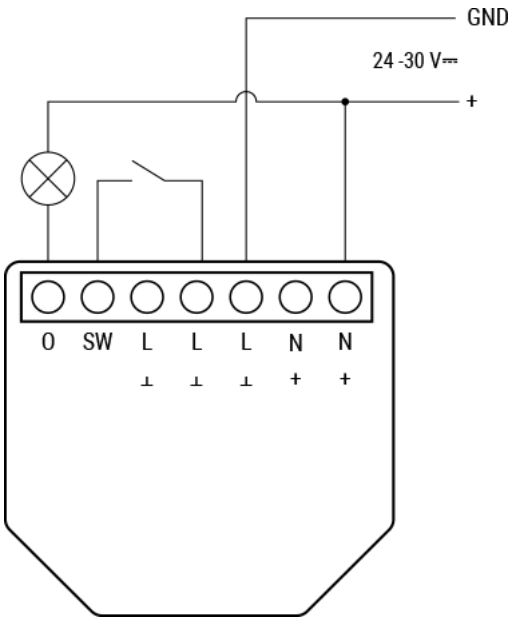
| | |
|---|---|
| | • 10A (30 V⎓) |
| **Sensors, meters** | |
| Voltmeter (AC): | Yes |
| Ammeter (AC): | Yes |
| Internal-temperature sensor: | Yes |
| **Radio** | |
| **Wi-Fi** | |
| Protocol: | 802.11 b/g/n |
| RF band: | 2412 - 2472 MHz |
| Max. RF power: | < 20 dBm |
| Range: | Up to 30 m / 100 ft indoors and 50 m / 160 ft outdoors<br>(Depends on local conditions) |
| **Bluetooth** | |
| Protocol: | 5.0 |
| RF band: | 2402 - 2480 MHz |
| Max. RF power: | < 4 dBm |
| Range: | Up to 10 m / 33 ft indoors and 30 m / 100 ft outdoors<br>(Depends on local conditions) |
| **Zigbee** | |
| Protocol: | 802.15.4 |
| Zigbee repeater: | Yes |
| RF bands: | 2400 to 2483.5 MHz |
| Max. RF power: | < 20 dBm |

| | |
|---|---|
| Range: | Up to 100 m / 328 ft indoors and 300 meters / 984 ft outdoors<br>(Depends on local conditions) |
| **Microcontroller unit** | |
| CPU: | ESP-Shelly-C68F |
| Flash: | 8MB |
| **Firmware capabilities** | |
| Schedules: | 20 |
| Webhooks (URL actions): | 20 with 5 URLs per hook |
| Scripting: | Yes |
| MQTT: | Yes |

## Basic wiring diagrams




110-240 V~ power supply




24-30 V⎓ power supply

## Legend

| **Terminals** | | **Wires** | |
|---|---|---|---|
| I | Load circuit input terminal | L | Live wire (110-240 V~) |

| | | | |
|---|---|---|---|
| **O** | Load circuit output terminal | + | 24-30V ⎓ positive wire |
| **SW** | Switch (controlling O) input terminal | **N** | Neutral wire |
| **L** | Live terminal (110-240 V~) | **GND** | 24-30 V ⎓ ground wire |
| **N** | Neutral terminal | | |
| **+** | 24-30 V⎓ positive terminal | | |
| **⏚** | 24-30V⎓ ground terminal | | |

## Components and APIs

- This device
- All Shelly devices and services

## Compliance

Shelly 1PM Gen4 multilingual EU declaration of conformity.pdf

Shelly 1PM Gen4 UK PSTI ACT Statement of compliance.pdf

## Printed user guide

Shelly 1PM Gen 4 multilingual printed user and safety guide.pdf

## Installation guides