WallSwitch User manual

Updated May 15, 2020

WallSwitch is a device that combines a wireless power on/off relay for electrical appliances and a power consumption meter. The miniature body of the device is adapted for installation in a European type socket.

> WallSwitch should be only installed by a qualified electrician! Regardless of the type of the electrical circuit in which the device is installed.

WallSwitch operates only with the Ajax security system (it may not be used in any third-party security systems), by connecting via the protected **Jeweller** protocol to the **hub**. Communication range – up to 1,000 meters, absent any obstacles.

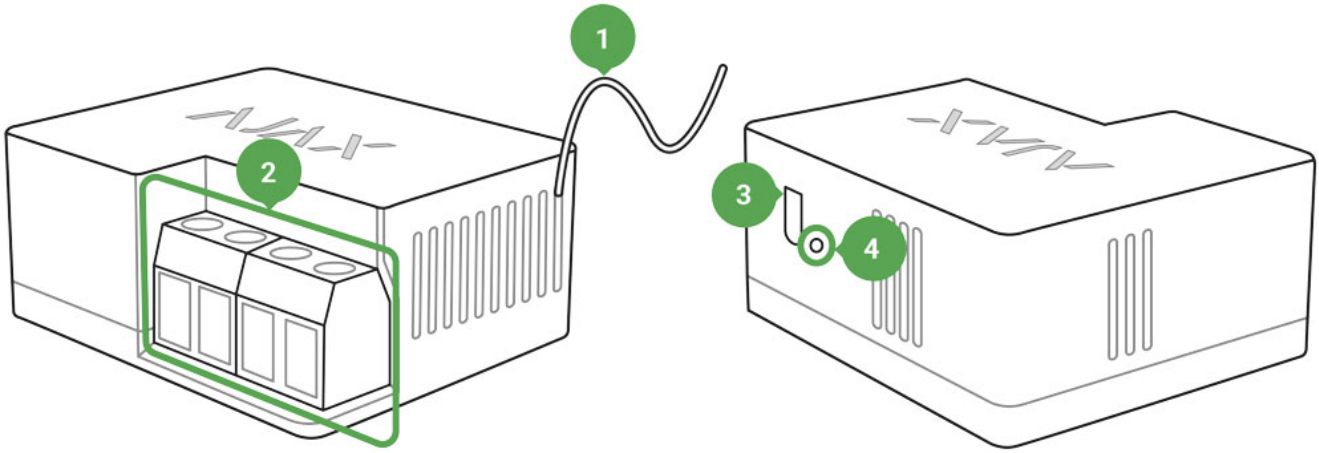
Use scenarios to program actions of **automation devices** (Relay, WallSwitch or Socket) in response to an alarm, pressing of the **Button** or by schedule. A scenario can be created remotely in the Ajax app.

How to create and configure a scenario in the Ajax security system

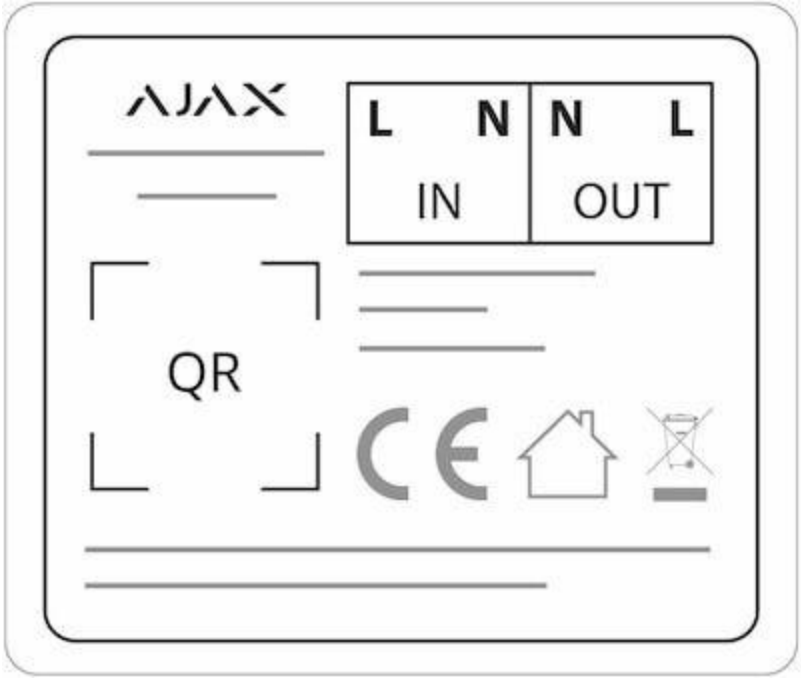
The Ajax security system is self-sustaining, but the user can connect it to the central monitoring station of a private security company.

Buy power relay WallSwitch

Functional Elements



1. Antenna
2. Terminal blocks
3. Functional button
4. Light indicator



IN terminals:

- **L terminal** — power supply phase terminal.
- **N terminal** — power supply neutral terminal.

OUT terminals:

- **N terminal** — connected device neutral output contact terminal.
- **L terminal** — connected device phase output contact terminal.

Operating Principle

The WallSwitch input terminals are connected to the mains, and the output terminals are connected to the socket or electrical appliance/electrical system of the room. WallSwitch closes/opens the electric circuit, controlling the power supply by the command of the security system user through the **Ajax app**. The state of WallSwitch contacts can be switched manually: by holding the function button for 2 seconds. To make WallSwitch react to alarm or schedule automatically, you can configure a scenario.

WallSwitch is furnished with a protection system against voltage variation beyond the range of 184V – 253V or overcurrent protection above 13A. In this case, the

power supply is interrupted, resuming after normalization of the voltage and current values.

The maximum resistive load on the relay is 3 kW.

You may view the consumed power of the electrical appliances connected via WallSwitch through the application. There is a consumed electricity meter in place.

At low loads (up to 25 W), current and power consumption indications may be displayed incorrectly due to hardware limitations.

Connecting to the hub

Before starting connection:

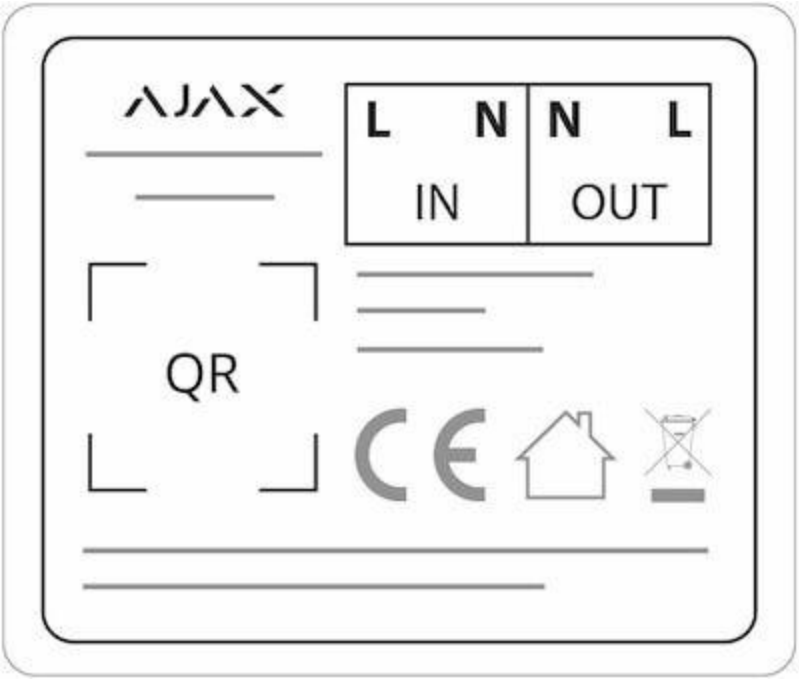
1. Following the hub instruction recommendations, install the **Ajax application** on your smartphone. Create an account, add the hub to the application, and create at least one room.
2. Go to the Ajax application.
3. Switch on the hub and check the internet connection (via Ethernet cable and/or GSM network).
4. Ensure that the hub is disarmed and does not start updates by checking its status in the mobile application.
5. Connect WallSwitch to the power supply and wait for 30 seconds.

Only users with administrative privileges can add the device to the hub.

How to connect the WallSwitch to the hub:

1. Select the **Add Device** option in the Ajax application.

2. Name the device, scan/write manually the **QR Code** (located on the body and packaging), and select the location room.



3. Select **Add** — the countdown will begin.
4. Press the WallSwitch functional button (or apply the load to the device no less than 20 W, e.g. by switching on an iron or electric kettle).

For the detection and interfacing to occur, the device should be located within the coverage area of the wireless network of the hub (at a single protected object).

Request for connection to the hub is transmitted for a short time at the time of switching on the device.

If the connection to the hub fails, wait for 30 seconds and retry the connection procedure.

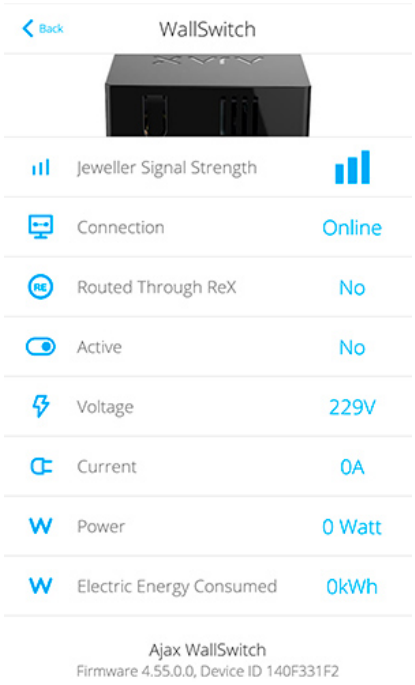
The WallSwitch connected to the hub will appear in the list of devices of the hub in the application. Update of the detector statuses in the list depends on the device inquiry time set in the hub settings, with the default value – 36 seconds.

When switching on for the first time, the relay is in open status! After deleting WallSwitch

from the system, the Ajax switch opens the relay!

States

1. Devices
2. WallSwitch

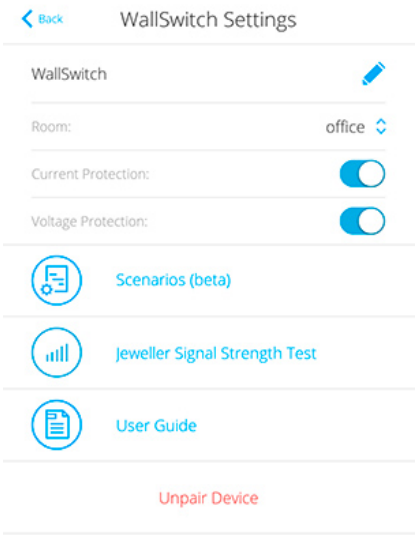


Parameter	Value
Jeweller Signal Strength	Signal strength between the hub and the relay
Connection	Connection status between the hub and the relay
Routed Through ReX	Displays the status of using the ReX range extender
Active	State of the relay (turned on/off)
Voltage	The current input voltage level of WallSwitch
Current	Current at the relay input
Power	Current consumption in W
Electric energy consumed	The electric power consumed by the device connected to the relay. The counter is reset when the relay loses the power

Firmware	Device firmware version
Device ID	Device identifier

Settings

1. Devices
2. WallSwitch
3. Settings



Setting	Value
First field	Device name, can be edited
Room	Selecting the virtual room to which the device is assigned
Current protection	If active, power supply will be switched off if the strength of current exceeds 13 A, in the inactive state the threshold is 19,8 A (or 16 A, if continues for 5 seconds)
Voltage protection	If active, power supply will be switched off in case of a voltage surge beyond the range of 184 – 253 V, in the inactive state — 0 – 500 V

Scenarios	Opens the menu for creating and configuring scenarios
Jeweller Signal Strength Test	Switches the device to the Jeweller signal strength test mode
User Manual	Opens the WallSwitch User Manual
Unpair Device	Disconnects the relay from the hub and deletes its settings

Indication

The WallSwitch light indicator may light up green depending on the device status.

The green LED of WallSwitch will blink intermittently if it is not assigned to the hub. When the functional button is pressed, the green LED lights up.

Functionality testing

The Ajax security system allows conducting tests for checking the functionality of connected devices.

The tests do not start straight away but within a period of 36 seconds when using the standard settings. The test time start depends on the settings of the detector scanning period (the paragraph on “**Jeweller**” settings in hub settings).

Jeweller Signal Strength Test

Installation of the Device

WallSwitch should be only installed by a qualified electrician! Regardless of the type of the electrical circuit in which the device is installed

WallSwitch is designed for installation inside a socket box with the diameter 50 mm and more and the depth no less than 70 mm. The relay can also be installed

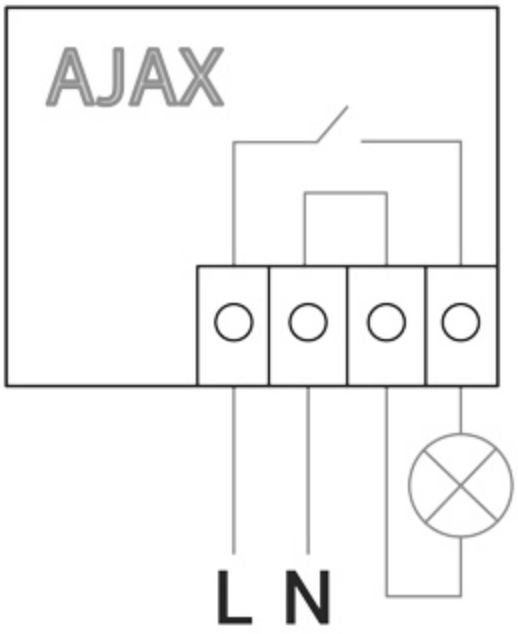
within extension cords and other circuits powered by 230 V.

Communication range with the hub absent any obstacles between the devices – up to 1,000 meters. Take account of this when choosing the location for WallSwitch.

If the device has a low or unstable signal strength, use a radio signal range extender ReX.

Installation process:

1. De-energize the cable to which WallSwitch will be connected.
2. Connect the cable of the power system of the room to the WallSwitch terminals according to the following scheme:

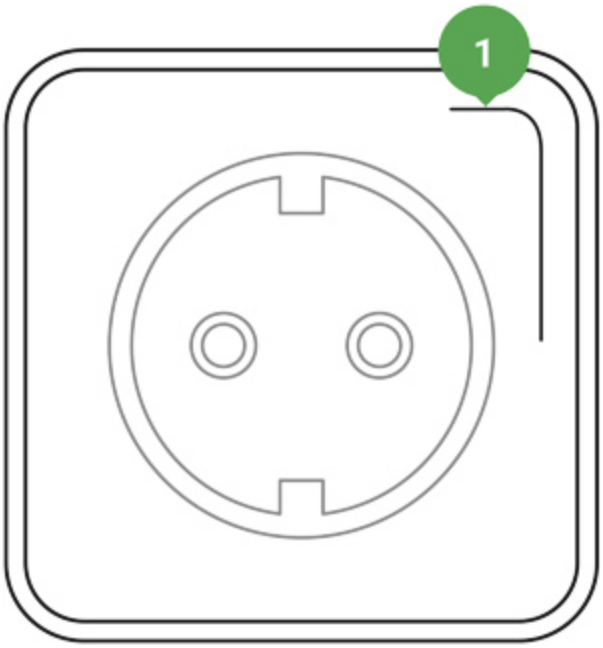


3. Connect a socket to the WallSwitch using bundled connecting wires or an electrical appliance using a cable with the sufficient cross-section. It's recommended to use cables with cross-section of 1.5 – 2 mm².

Do not connect more than 3 kW load to the WallSwitch. When connecting the load, strictly observe the connection diagram since an incorrect connection may cause the device to malfunction and/or damage the property.

[/geo_show]

In installing the WallSwitch in the socket box, lead out the antenna to the outside and place it under the plastic frame of the socket. The more distanced the antenna is from metal structures, the lower is the risk of screening (and impairment) of the radio signal.



1 — recommended antenna location

> ⚠ In no case, do not shorten the antenna! Its length is optimal for operation within the used radio frequency range!

During installation and operation of WallSwitch, please adhere to general rules of electrical safety when using electrical appliances, as well as the requirements of electrical safety regulations.

> ⚠ It is expressly forbidden to disassemble the device. Do not use the device with damaged power cables.

Do not install the relay:

1. Outside
2. In metal wiring boxes and electrical panels
3. In places with temperature and humidity exceeding the permissible limits
4. Closer than 1 m from the hub

Maintenance

The device does not require maintenance.

Tech specs

Actuating element	Electromagnetic relay
The service life of the relay	200,000 switching-ons
Supply voltage	110 – 230 V AC ± 10% 50/60 Hz
Voltage protection	For 230 V mains: max — 253 V, min — 184 V For 110 V mains: max — 126 V, min — 77 V
Maximum load current	13 A
Maximum current protection	Yes, 13 A
Power output (resistance load 230 V)	Up to 3 kW
Electricity meter function	Yes
Power consumption parameters control	Yes: current, voltage, consumed power
The power consumption of the device in the standby mode	Less than 1 W·h
Frequency band	868.0 – 868.6 MHz or 868.7 – 869.2 MHz depending on the region of sale
Compatibility	Operates only with **Hub**, **Hub Plus**, **Hub 2** and **ReX**
Maximum RF output power	Up to 25 mW
Modulation	GFSK

Radio signal range	Up to 1,000 m (any obstacles absent)
Shell protection rating	IP20
Operating temperature range	From 0°C to +64°C
Maximum temperature protection	Yes, 65°C
Operating humidity	Up to 75%
Overall dimensions	39 x 33 x 18 mm
Weight	30 g

Complete Set

1. WallSwitch
2. Connecting wires – 2 pcs
3. User Manual

Warranty

Warranty for the “AJAX SYSTEMS MANUFACTURING” LIMITED LIABILITY COMPANY products is valid for 2 years after the purchase.

If the device does not work correctly, you should first contact the support service—in half of the cases, technical issues can be solved remotely!

The full text of the warranty

User Agreement

Technical support: **support@ajax.systems**