AJAX WallSwitch User Manual

AJAX Wall Switch

Contents

Wall Switch

WallSwitch is a wireless indoor power relay featuring a power consumption meter. The miniature body of the device is adapted for installation in a European-type socket.

> Regardless of the type of electrical circuit, only a qualified electrician should install WallSwitch!

WallSwitch operates only within the Ajax security system (integration into third-party security systems is not provided), communicating with a **hub** via the protected **Jeweller** protocol. The communication range is up to 1,000 meters in the line of sight.

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

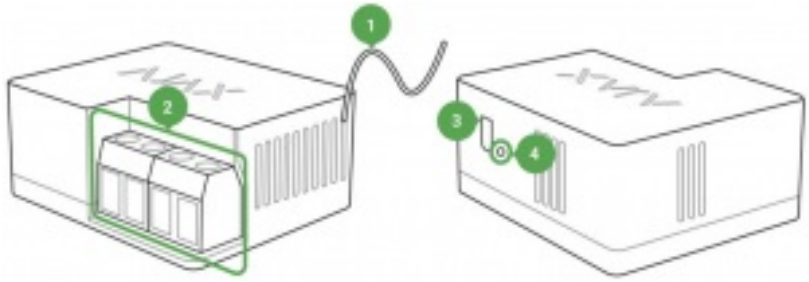
How to create and configure a scenario in the Ajax security system

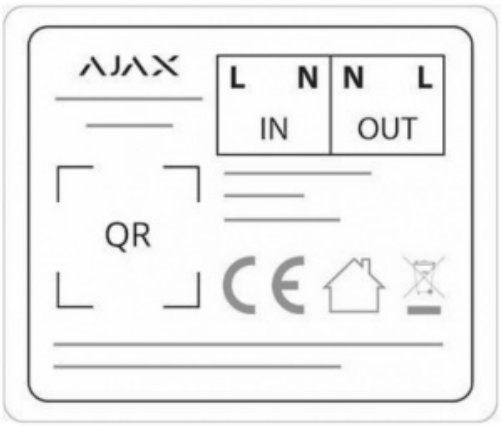
The Ajax security system can be connected to the central monitoring station of a security company.

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

WallSwitch input terminals are connected to the grid, and the output terminals are connected to the socket or electrical appliance/system. 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 features a protection system against voltage surge beyond the range of 184V – 253V or overcurrent above 13A. In this case, the power supply is interrupted, resuming after normalizing the voltage and current values.

The maximum resistive load on the relay is 3 kW.

You can check the power usage by the electrical appliance connected via WallSwitch through the app. There is a power consumption meter.

WallSwitch, with firmware version 5.54.1.0 and higher, can operate in pulse or
bistable mode. With this firmware version, you can also select the normal relay contact state:

- **Normally closed (NC)** — the contacts open when the relay is activated and closed when the relay is inactive.
- **Normally open (NO)** — the contacts close when the relay is activated and open when the relay is inactive

WallSwitch, with firmware version below 5.54.1.0, only works in bistable mode with a normally open contact.

How to find out the firmware version of the device?

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

Connecting to the hub

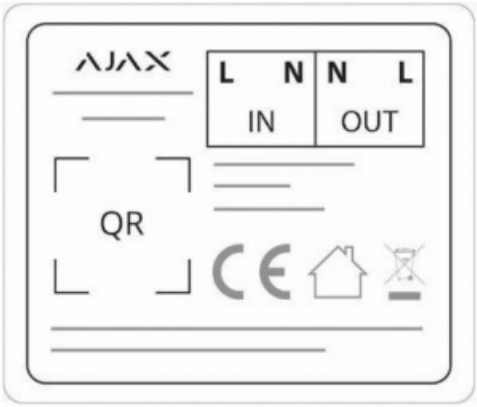
Before connecting the device

1. Switch on the hub and check its Internet connection (the logo glows white or green).
2. Install the **Ajax app**. Create the account, add the hub to the app, and create at least one room.
3. Make sure that the hub is not armed, and it does not update by checking its status in the Ajax app.

Only users with administrator rights can add a device to the app

To pair WallSwitch with the hub

1. Click **Add device** in the Ajax app.
2. Name the device, scan it, or enter the QR code manually (located on the case and packaging), select the room.



3. Click **Add** — the countdown will begin.
4. Press the functional button. If you can’t do this (the device is mounted in the wall), give WallSwitch at least 20 W load for five seconds (by connecting and disconnecting a working kettle or lamp).

For detection and pairing to occur, the device should be located in the coverage area of the hub’s wireless network (at the same object). The connection request is transmitted only at the moment of switching on the device.

If the device failed to pair, wait 30 seconds and then retry. WallSwitch will appear in the list of hub devices.

The device statuses update depends on the ping interval set in the hub settings. The default value is 36 seconds.

When switching on for the first time, WallSwitch contacts are open! When deleting WallSwitch from the system, contacts open!

States

1. Devices
2. WallSwitch

Parameter	Value
Jeweller Signal Strength	Signal strength between hub and device
Connection	Connection status between hub and device
Routed Through ReX	Displays the status of using the ReX range extender
Active	State of the relay (switched on/off)
Voltage	The input voltage of WallSwitch
Current	The input current of WallSwitch
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 t he power supply
Temporary deactivation	Displays the status of the device: active or completely disabled by the user
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

Relay Mode	**Selecting relay operation mode:** • **Pulse** — when activated, WallSwitch generates a pulse of a given duration • **Bistable** — WallSwitch, when activated, changes the state of contacts to the opposite Settings are a vailable with **firmware version 5.54.1.0 and high er**
Contact status	Normal contact state • Normally closed • Normally open
Pulse duration	Selecting the pulse duration in the pulse mode: From 0.5 to 255 seconds
Current protection	If active, power supply will be switched off if current e xceeds 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 t he inactive state — 0 – 500 V
Scenarios	Opens the menu for creating and configuring scenari os **Learn more**

Jeweller Signal Strength Test	Switches the device to the Jeweller signal strength test mode
User Manual	Opens the WallSwitch User Manual
Temporary deactivation	Allows the user to deactivate the device without removing it from the system. The device will not execute system commands and participate in automation scenarios. All notifications and alarms of the device will be ignored ***Please note that deactivated device will save it's current state (active or inactive)***
Unpair Device	Disconnects the relay from the hub and deletes its settings

Indication

The WallSwitch light indicator can light green depending on the device status.

When not paired with the hub, the light indicator blinks periodically. When the functional button is pressed, the light indicator lights up.

Functionality testing

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

The tests do not start immediately but within a period of 36 seconds when using default settings. The test time start depends on the settings of the detector ping interval (the **Jeweller** menu in the hub settings)

Jeweller Signal Strength Test

Installation of the Device

Regardless of the type of electrical circuit, only a qualified electrician should install WallSwitch!

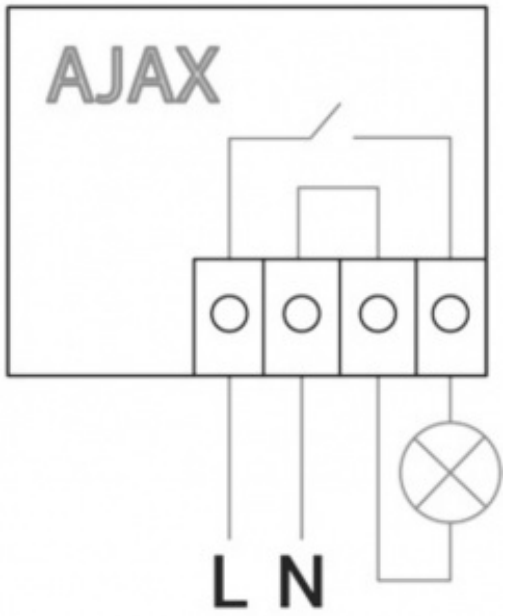
WallSwitch is designed for installation inside a socket box with the diameter 50 mm and more and the depth no less than 70 mm. The relay can also be installed within extension cords and other circuits powered by 230 V.

The communication range with the hub in the line of sight is up to 1,000 meters. Take this into account when choosing the location for WallSwitch.

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

Installation process

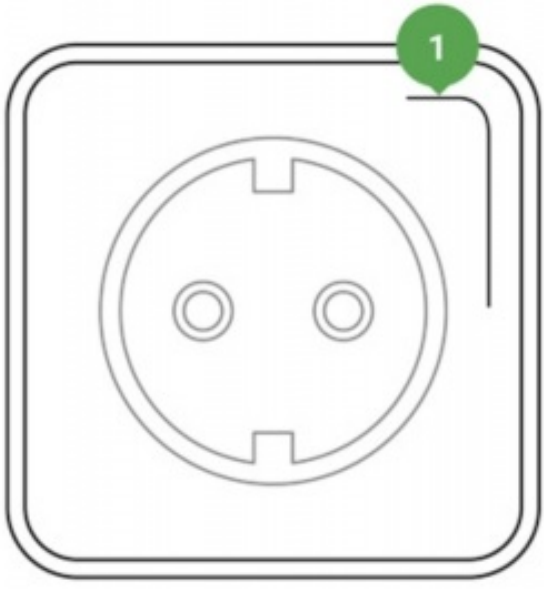
1. De-energize the cable to which WallSwitch will be connected.
2. Connect the grid wire to the WallSwitch terminals according to the following scheme:



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

Do not connect more than 3 kW load to 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.

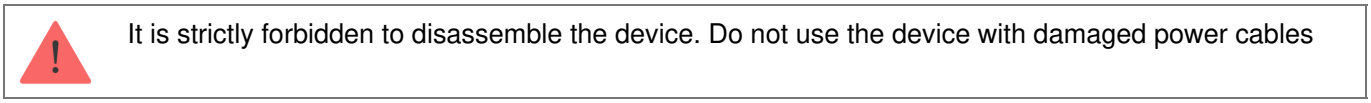
When installing WallSwitch in the box, lead out the antenna and place it under the plastic frame of the socket. The bigger the distance between the antenna and metal structures, the lower the risk of interfering (and impairment) of the radio signal.



1 – recommended antenna location

Do not shorten the antenna! Its length is optimal for operation within the used radio frequency range!

During the installation and operation of WallSwitch, follow the general electrical safety rules and the requirements of electrical safety regulatory acts.



Do not install the relay

1. Outdoors.
2. In metal wiring boxes and electrical panels.
3. In places with temperature and humidity exceeding the permissible limits.
4. Closer than 1 m to a 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
Operating modes	• Pulse and bistable (firmware version is 5.54.1.0 or higher. Manufacture date from March 5, 2020) • Only bistable (firmware version is lower than 5.54.1.0)

Pulse duration	0.5 to 255 seconds (firmware version is 5.54.1.0 or higher)
Electricity meter function	Yes
Power consumption	Yes: current, voltage,
parameters control	consumed power
The power consumption of the device in the standby mode	Less than 1 W
Frequency band	868.0 – 868.6 MHz or 868.7 – 869.2 MHz depending on the region of sale
Compatibility	Operates with all Ajax **hubs, and range extenders**
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 × 33 × 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

Documents / Resources

	AJAX WallSwitch [pdf] User Manual WallSwitch

References

- End user agreement - Ajax Systems
- All Ajax security system devices and detectors
- All Ajax security system devices and detectors
- Current product lines of the Ajax security system
- Ajax WallSwitch — Wireless power relay with energy monitor
- Software | Ajax Systems
- Warranty - Ajax Systems
- How to find out the device firmware version? | Ajax Systems Support
- How to create and configure a scenario in the Ajax system | Ajax Systems Support
- What is Jeweller Signal Strength Test | Ajax Systems Support
- User Manual