Relay User Manual

Updated June 17, 2022

Relay is a wireless, low-voltage relay featuring potential-free (dry) contacts. Use Relay to remotely switch on/off appliances powered by a 7–24 V⎓ source. Relay can operate both in pulse and bistable mode. The device communicates with a hub via **Jeweller** radio protocol. In the line of sight, the communication distance is up to 1,000 m.

The Relay contacts are not galvanically connected to the device itself, so they can be connected to the input control circuits of various equipment to imitate a button, toggle switch, etc.

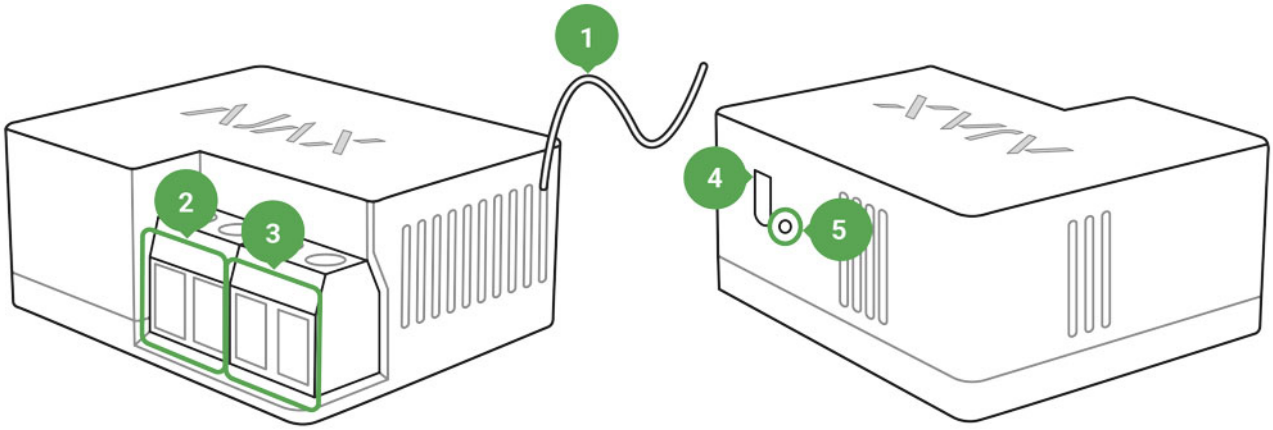
Relay is compatible only with Ajax hubs and does not support connecting via uartBridge or ocBridge Plus.

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.

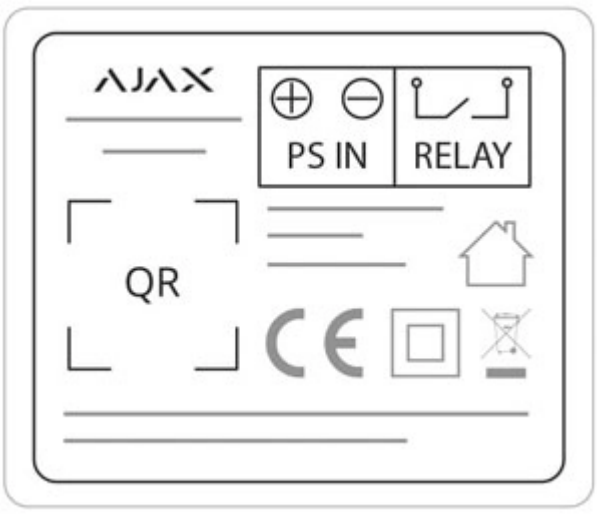
How to create and configure a scenario in the Ajax security system

Buy Relay

Functional Elements



1. Antenna.
2. Power supply terminal block.
3. Contacts terminal block.
4. Function button.
5. Light indicator.



- **PS IN terminals** — “**+**” and “**—**” contact terminals, 7-24 V⎓ input power supply.
- **Relay terminals** — output potential-free terminals.

Operating Principle

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

Relay is powered by a 7–24 V⎓ source. The recommended voltage values are 12 V⎓, and 24 V⎓. Use the **Ajax Security System app** to connect and set up Relay.

Relay has voltage and temperature protection: the contact will open when the voltage is beyond 6.5 – 36.5 V⎓, as well as when the temperature threshold reaches +85°C inside the device body.

Use the **Ajax app** to connect and set up Relay.

Relay features dry (potential-free) contacts. The contacts are not connected to the device galvanically so that Relay can imitate a button, switch, etc. in electrical circuits of various voltages (sirens, electrical valves, electromagnetic locks).

The miniature body makes it possible to install Relay inside a junction box, switchboard, or a switch.

Relay closes and opens the contacts by user command from the app or automatically by scenario.

Relay operation modes:

- **Bistable** — Relay opens or closes contact and remains in this state.
- **Pulse** — Relay opens or closes contacts for a pre-set time (from 0.5 to 255 seconds) then switches back to the initial state.

In pulse mode, Relay closes/opens contacts for a period of 0.5 to 255 seconds, after which the device automatically performs the reverse action.

Connecting to the hub

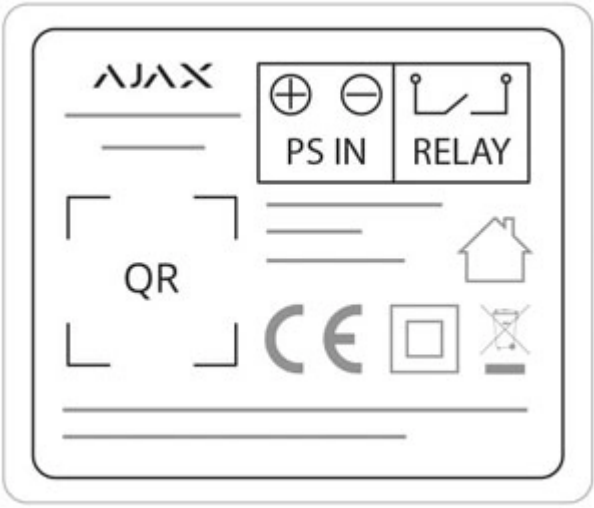
Before connecting the device:

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.
4. Connect Relay to 12 or 24 V⎓ power supply.

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

To pair Relay with a 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.

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. Relay 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, Relay contacts are open! When deleting Relay from the system, contacts open!

States

The states include information about the device and its operating parameters. Relay states are available in the Ajax app. To access them:

1. Go to the **Devices** tab.
2. Select **Relay** in the list.

Parameter	Value
Jeweller signal strength	The signal strength of connection via Jeweller between the hub/range extender and the device. Recommended values: 2–3 bars. Jeweller is the protocol transmitting events and alarms.
Connection via Jeweller	The state of connection via Jeweller between the hub/range extender and the device: • **Online** — the relay is connected with the hub or the range extender. • **Offline** — no connection with the hub or the range extender.
ReX	Displays the status of the device connection to the **radio signal range extender**: • **Online** — the device is connected. • **Offline** — no connection with the device.

	The field is displayed if the device is operated through the radio signal range extender.
Active	The relay state: • **Yes** — relay contacts are closed. The connected electrical appliance is energized. • **No** — relay contacts are open. No current is being supplied to the connected appliance. The field is displayed if Relay operates in the bistable mode.
Voltage	The current voltage value at the Relay input. The frequency of value updates depends on the Jeweller settings. The default value is 36 seconds. The voltage values are displayed in increments of 0.1 V.
Temporary deactivation	Shows the state of the device temporary deactivation function: • **No** — the device operates normally, responds to commands, runs scenarios, and transmits all events. • **Entirely** — the device is excluded from the system operation. The device doesn't respond to commands, doesn't run scenarios, and doesn't transmit events. Learn more
Firmware	Device firmware version.
Device ID	Device identifier. Also available via the QR code applied to the device body and packaging.

Settings

To change the Relay settings in the Ajax app:

1. Go to the **Devices** tab.

2. Select **Relay** in the list.

3. Go to **Settings** by clicking on the gear icon .

4. Set the necessary parameters.

5. Click **Back** to save the new settings.

Settings	Value
Name	Device name. It is displayed in the list of hub devices, texts of SMS and notifications in the event feed. Click on the pencil icon to change the device name. The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.
Room	Selection of the virtual room with the assigned Relay. The room name is displayed in SMS and notifications in the event feed.
Relay mode	The Relay operating mode selection: • **Pulse** — Relay generates a pulse of a specified duration when activated. • **Bistable** — Relay changes the state of the contacts to the opposite (e.g., closed to open) when activated.
Pulse duration	The pulse duration selection: 0.5 to 255 seconds. The configuring is available when Relay operates in the pulse mode.
Contact state	Selection of the normal state of the relay contacts: • **Normally closed (NC)** — the relay contacts are closed in the normal state. The electric appliance connected is supplied with current.

	• **Normally open (NO)** — the relay contacts are open in the normal state. The electric appliance connected is not supplied with current.
Scenarios	Opens the menu for creating and configuring automation scenarios. Scenarios offer a brand-new level of property protection. With them, the security system not only notifies about a threat but also actively resists it. Use scenarios to automate security. For example, switch on lighting at the facility when an opening detector raises an alarm. **Learn more**
Jeweller Signal Strength Test	Switches the relay to the Jeweller Signal Strength Test mode. The test allows checking the Jeweller signal strength and the stability of the connection between a hub or a range extender and a relay to choose the best place for installing the device. **Learn more**
User guide	Opens the Relay User Manual in the Ajax app.
Temporary deactivation	Allows temporarily disable the device without removing it from the system. Two options are available: • **No** — the device operates normally, responds to commands, runs scenarios, and transmits all events. • **Entirely** — the device is excluded from the system operation. The relay doesn't respond to commands, doesn't run scenarios, and doesn't transmit events. **After deactivation, Relay will keep the previous state: active or inactive.** **Learn more**

Unpair device	Disconnect Relay from a hub and delete its settings

Indication

The Relay 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 Relay. When installing and operating the device, follow the general electrical safety rules for using electrical appliances and the requirements of electrical safety regulations. It is strictly forbidden to disassemble the device.

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 Relay.

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

Installation process:

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

When installing Relay 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.

> ⚠ When installing outdoors, place the Relay in a sealed box. This will protect against the condensation, which can damage the device.

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

It is strictly forbidden to disassemble the device. Do not use the device with damaged power cables.

Do not install the relay:

1. In metal wiring boxes and electrical panels.
2. In places with temperature and humidity exceeding the permissible limits.
3. 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 switchings

Supply voltage range	7 – 24 V⎓ (DC only)
Voltage protection	Yes, min — 6.5 V⎓, max — 36.5 V⎓
Maximum load current*	5 A at 24 V⎓, 13 A at 230 V~
Operating modes	Pulse and bistable
Pulse duration	0.5 to 255 seconds
Maximum current protection	No
Parameter control	Yes (voltage)
Device energy consumption	Up to 1 W
Radio communication protocol	Jeweller **Learn more**
Radio frequency band	866.0 – 866.5 MHz 868.0 – 868.6 MHz 868.7 – 869.2 MHz 905.0 – 926.5 MHz 915.85 – 926.5 MHz 921.0 – 922.0 MHz Depends on the region of sale.
Compatibility	Operates only with all Ajax **hubs**, and **radio signal range extenders**
Effective radiated power	3.99 mW (6.01 dBm), limit — 25 mW
Modulation of the radio signal	GFSK
Maximum distance between the device and the Hub	Up to 1,000 m (any obstacles absent) **Learn more**
Polling interval	12 – 300 s (36 s by default)
Protection class	IP20
Operating temperature range	From –20°C to +64°C
Max. temperature protection	Yes, over +65°C at the place of installation or over +85°C inside the Relay
Operating humidity	Up to 85% with no condensation
Dimensions	39 × 33 × 18 mm
Weight	25 g

Service life	10 years

If using inductive or capacitive load, the maximum commutated current decreases to 3 A at 24 V⎓ and to 8 A at 230 V~!

Compliance with standards

Complete Set

1. Relay.
2. Connecting wires — 2 pcs.
3. Quick Start Guide.

Warranty

Warranty for the AJAX SYSTEMS MANUFACTURING Limited Liability Company products is valid for 2 years after the purchase.

If the device does not function correctly, please contact the Ajax Technical Support first. In most cases, technical issues can be resolved remotely.

Warranty obligations

User Agreement

Contact Technical Support:

- **e-mail**
- **Telegram**

Phone number: 0 (800) 331 911

Subscribe to the newsletter about safe life. No spam

Email

Subscribe