Relay Jeweller user manual

Updated March 20, 2025

Relay Jeweller is a dry contact relay to control a power supply remotely. The relay's dry contacts are electrically isolated to the power supply circuit of the device. Relay can be used in both low-voltage and domestic power grids. The device features two types of protection: voltage and temperature.

Only a qualified electrician or installer should install Relay Jeweller.

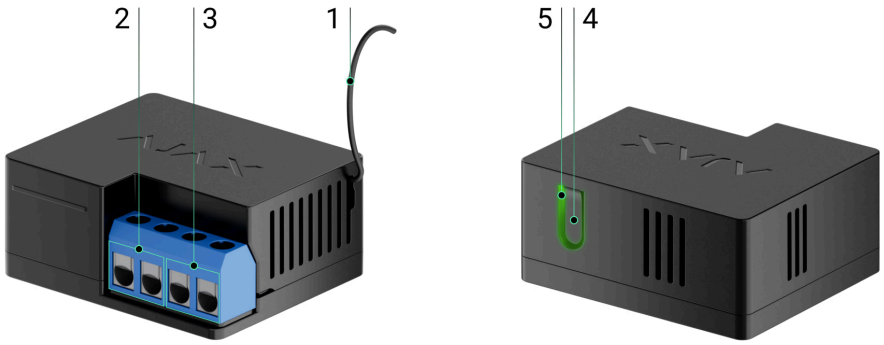
The relay can control the power supply of electrical appliances connected to the circuit via the **Ajax apps**, **automation scenarios**, via relay function button, or by pressing **Button**.

Relay Jeweller is connected to the Ajax system via the Jeweller radio protocol. The communication range is up to 1,000 meters in an open space. The device

works only with Ajax **radio signal range extenders** and **hubs**.

Buy Relay Jeweller

Functional elements



1. Antenna.
2. Power supply terminal block.
3. Terminal block to connect appliances.
4. Function button.
5. LED indicator.

- **PS IN terminals** — “+” and “-” connection terminals of a 7–24 V⎓ power supply.

- **Relay terminals** — output potential-free terminals of Relay Jeweller contacts to connect appliances.

Compatible hubs and range extenders

Relay Jeweller requires a hub to operate.

Check device compatibility

Connection to other **hubs**, **radio signal range extenders**, **ocBridge Plus**, and **uartBridge** are not provided.

Operating principle

Relay Jeweller is a dry contact relay to control a power supply remotely. The relay is installed in the electrical circuit gap to control the power supply of devices connected to this circuit. Relay Jeweller is controlled via the device function button (by pressing and holding it for 2 seconds), the Ajax app, **Button**, and **automation scenarios**.

Relay Jeweller is powered by a 7–24 V⎓ power supply. Recommended power supply voltages: 12 V⎓ and 24 V⎓.

Relay Jeweller features potential-free (dry) contacts. Dry contacts are electrically isolated to the relay's power supply. Thus, this device can be used in low-voltage and household networks, for example, to simulate a button, a toggle switch, or to control water shut-off valves, electromagnetic locks, irrigation systems, gates, barriers, and other systems.

Relay Jeweller commutes one single pole of the electrical circuit. The relay can operate in bistable or pulse mode. In pulse mode, you can set its duration: from 0.5 to 255 seconds. The operating mode is selected by users or PRO with admin rights in the Ajax apps.

A user or a PRO with admin rights can select the normal state of the relay contacts:

- **Normally closed** — the relay stops supplying power when activated and resumes when deactivated.
- **Normally open** — the relay supplies power when activated and stops when deactivated.

Relay Jeweller measures supply voltage. This data, along with other operating parameters of the relay, is available in the device **States**. Relay Jeweller states update frequency depends on the **Jeweller** or **Jeweller/Fibra** settings. The default value is 36 seconds.

Relay Jeweller maximum resistive load is 5 A at 36 V⎓ and 13 A at 230 V~.

Relay Jeweller also allows integrating electric lock or third-party blocking element to Ajax system. Blocking element is needed to set up system according to the inevitability principle (German: Zwangsläufigkeit).

Learn more

Automation scenarios

0:00 / 0:07

Ajax’s scenarios offer a new level of security. With them, the security system not only notifies about threats, but also actively resists them.

Scenario types with Relay Jeweller and examples of usage:

- **By alarm.** Lighting is switched on when an opening detector activates the alarm.
- **By security mode change.** The electric lock is automatically blocked when the object is armed.
- **By schedule.** The irrigation system in the yard is switched on according to the schedule at the specified time. Lighting and TV are switched on when the owners are away, so the house doesn’t seem empty.
- **By pressing Button.** Switching on night lighting by pressing the smart button.
- **By temperature.** The heating is turned on when the temperature in the room is lower than 20 °C.
- **By humidity**. The humidifier is switched on when the humidity level drops below 40%.
- **By CO_2 concentration**. Supply ventilation is turned on when the carbon dioxide concentration level exceeds 1000 ppm.

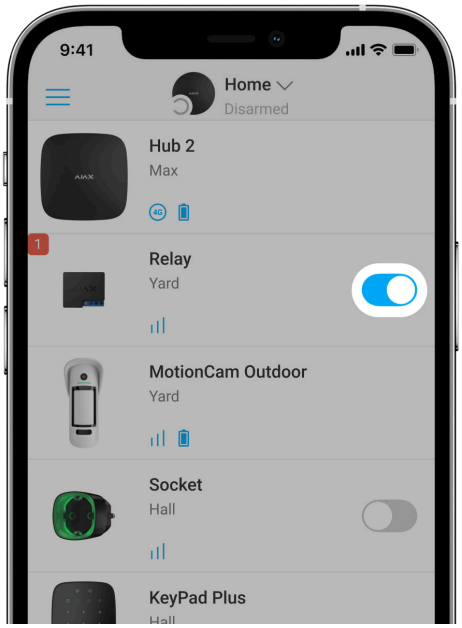
Scenarios by the Button pressing are created in the Button settings, scenarios by the humidity and CO_2 concentration levels are created in the LifeQuality settings.

If the device is offline, it will not execute the scenario as it misses the scenario trigger (e.g., during a power outage or when the connection between the hub and device is lost).

Use case: The automated action is scheduled for 10 a.m., so it must start at 10 a.m. The electrical power goes out at 9:55 a.m. and is restored ten minutes later. The automation scenario won't start at 10 a.m. and will not start immediately after the power is back on. This scheduled action is missed.

More about scenarios

Control via the app



In **Ajax apps**, you can switch on and off electrical appliances connected to an electrical circuit controlled by Relay Jeweller.

Click the toggle in the Relay Jeweller field in the **Devices** menu: the state of the relay contacts will change to the opposite, and the connected electrical

device will switch off or on. This way, a security system user can remotely control the power supply, for example, for lighting or an electric lock.

When Relay Jeweller is in pulse mode, the toggle will change from on/off to pulse.

Protection types

Relay has two types of protection that operate independently: voltage and temperature.

Voltage protection: is activated if the relay supply voltage exceeds the range of 6.5–36.5 V⎓. Protects Relay Jeweller from voltage surges.

Temperature protection: is activated if the relay heats up to temperatures above 65°C. Protects relay from overheating.

When voltage or temperature protection is activated, the power supply through Relay Jeweller is stopped. Power supply resumes automatically when voltage or temperature parameter returns to normal.

Jeweller communication protocol

Relay Jeweller uses the Jeweller radio protocol to transmit alarms and events. This wireless protocol provides fast and reliable two-way communication between the hub and connected devices.

Jeweller supports block encryption with a floating key and authentication of devices at each communication session to prevent sabotage and device spoofing. The protocol involves regular polling of devices by the hub at intervals of 12 to 300 seconds (set in the Ajax app) to monitor communication with all devices and display their statuses in the Ajax apps.

Learn more about Jeweller

More about Ajax encryption algorithms

Sending events to the monitoring station

The Ajax security system can transmit alarms and events to the **PRO Desktop** monitoring app as well as the central monitoring station (CMS) via SurGard (Contact ID), SIA DC-09 (ADM-CID), ADEMCO 685, and other proprietary protocols.

Which CMSs Ajax hubs can be connected to

With PRO Desktop, the CMS operator receives all Relay Jeweller events. In other cases, a monitoring station receives only notification about connection loss between Relay Jeweller and the hub (or range extender).

The addressability of Ajax devices allows sending not only events but also the type of the device, its assigned name, and room to PRO Desktop/CMS (the list of transmitted parameters may vary depending on the type of the CMS and the protocol selected for communication with the CMS).

The device ID and zone number can be found in the Relay Jeweller States in the Ajax app.

Selecting the installation spot

A 39 × 33 × 18 mm device is connected to the circuit gap. Relay Jeweller dimensions allow installing the device into the deep junction box, inside the electrical appliance enclosure, or in the distribution board. A flexible external antenna ensures stable communication. To install Relay Jeweller on a DIN rail, we recommend using a **DIN Holder**.

Relay Jeweller should be installed in a place with a stable Jeweller signal strength of 2–3 bars. To roughly calculate the signal strength at the place of installation, use a **radio communication range calculator**. Use a **radio signal range extender** if the signal strength is less than 2 bars at the intended installation location.

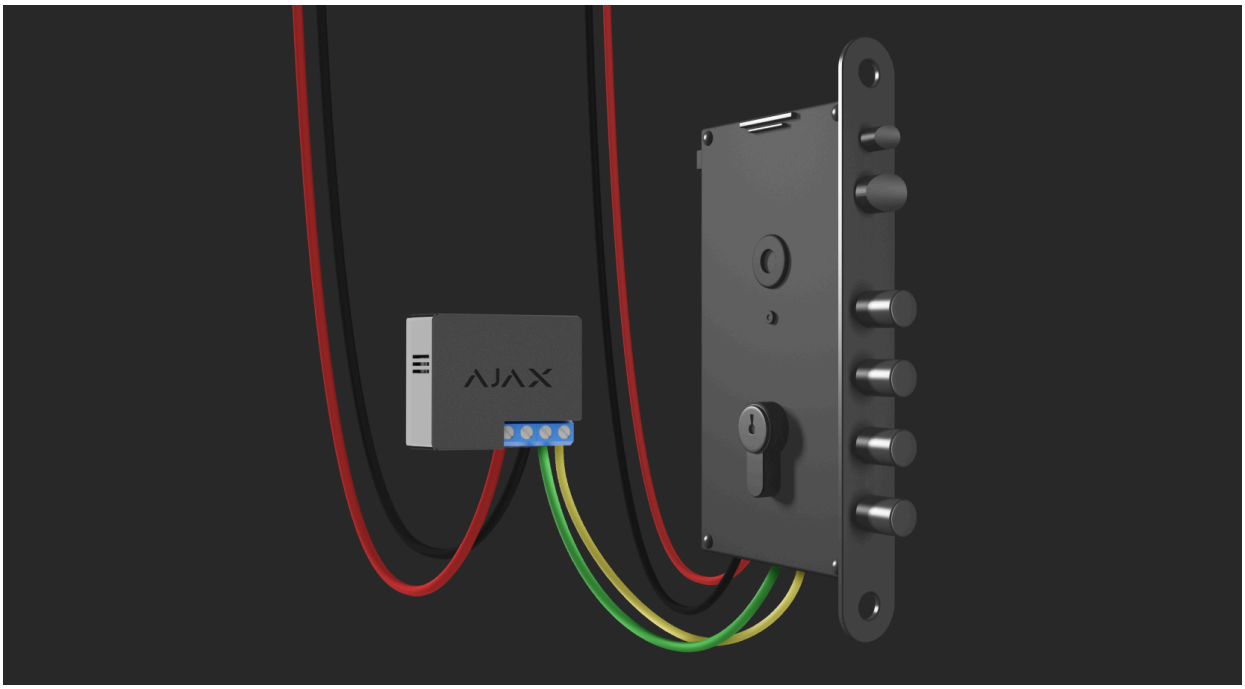
If you install Relay Jeweller outdoors, place the device in a sealed box. This will protect against the condensation, which can damage Relay Jeweller.

Do not place Relay Jeweller:

1. In rooms where the humidity and temperature indicators do not correspond to the operating parameters. This may damage the device or cause it to malfunction.
2. Near sources of radio interference: for example, at a distance of less than 1 meter from a router. This can lead to a loss of connection between Relay Jeweller and the hub (or range extender).

3. In places with low or unstable signal strength. This can lead to a loss of connection between the relay and the hub (or range extender).

Installing



Only a qualified electrician or installer should install Relay Jeweller.

Before installing the relay, ensure that you have selected the optimal location and that it complies with the requirements of this manual. 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 recommended to use cables with a cross-section of 0.75–1.5 mm² (22–14 AWG). Relay should not be connected to circuits with more than 5 A load at 36 V⎓ and 13 A at 230 V~.

To install Relay Jeweller:

1. If you install Relay Jeweller on a DIN rail, fix **DIN Holder** on it first.

2. De-energize the power cable to which Relay Jeweller will be connected.
3. Connect the “**+**” and “**–**” to the power supply terminal block of Relay Jeweller.
4. Connect the Relay Jeweller terminals for appliance connection to the circuit. We recommend using cables with a cross-section of 0.75–1.5 mm² (22–14 AWG).
5. When installing the device in a distribution box, lead the antenna out. The bigger the distance between the antenna and metal structures, the lower the risk of interfering with the radio signal.
6. Place the relay in DIN Holder. If the relay is not mounted on the DIN rail, we recommend securing the device with double-sided tape if it’s possible.
7. Secure the cables if necessary.

Do not shorten or cut the antenna. Its length is optimal for operation in the Jeweller radio frequency range.

After installing and connecting the relay, be sure to run the Jeweller Signal Strength Test and also test the overall operation of the relay: how it responds to commands and whether it controls the power of the devices.

Connecting

Use the latest Ajax apps and OS Malevich versions to access all available features and ensure proper system operation.

Before connecting the device

1. Install the **Ajax app**. Log in to your account or **create a new account** if you don’t have one.

2. Add a compatible hub to the app, configure the necessary settings, and create at least one **virtual room**.
3. Ensure that the hub is on and has Internet access via Ethernet, Wi-Fi, and/or cellular network. You can do this in the Ajax app or by checking the hub LED indicator. It should light up white or green.
4. Ensure the hub is not armed and does not start updates by checking its status in the Ajax app.

> Only a user or a PRO with admin rights can connect the relay to the hub.

To pair Relay Jeweller with the hub

1. Connect Relay Jeweller to a 7–24 V⎓ supply circuit if you haven't done this before.
2. Sign in to the Ajax app.
3. Select a hub if you have several of them or if you are using the PRO app.
4. Go to the **Devices** menu and click **Add Device**.
5. Name the device, select the room, scan the QR code (can be found on the relay body and packaging), or type the device ID.

6. Click **Add**. The countdown will begin.
7. Press the Relay Jeweller function button.

For the relay to connect, it must be within the range of the hub's radio coverage. If the connection fails, try again in 5 seconds.

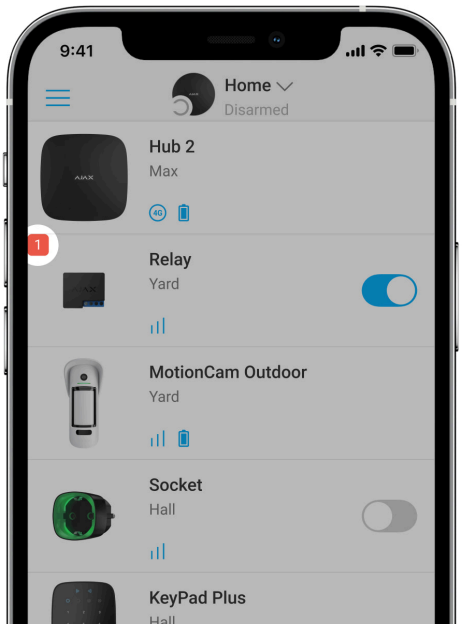
If the maximum number of devices is already added to the hub, you will get a notification about exceeding the device limit in the Ajax app when you try to add the relay. The maximum number of devices connected to the hub depends on the model.

Hub models and their differences

Relay Jeweller works with one single hub; when connected to a new hub, it does not send notifications to the previous one. Once added to a new hub, Relay Jeweller is not removed from the list of devices of the old hub. This has to be done in the Ajax app.

After pairing with the hub and removing from the hub the relay contacts are open.

Malfunction counter



In case of Relay Jeweller fault (e.g., no Jeweller signal between the hub and the relay), the Ajax app displays a malfunction counter in the upper-left corner of the

device icon.

Malfunctions are displayed in the relay **States**. Fields with malfunctions will be highlighted in red.

Malfunction is displayed if:

- Temperature protection was activated.
- Voltage protection was activated.
- There is no connection between Relay Jeweller and the hub (or radio signal range extender).

Icons

The icons display some Relay Jeweller states. You can check them in the Ajax app in the **Devices** tab.

Icon	Meaning
	Jeweller signal strength between Relay and the hub or a radio signal range extender. The recommended value is 2–3 bars. Learn more
	The device is connected via a **radio signal range extender**. The field is not displayed if Relay Jeweller works directly with the hub.
	Voltage protection was activated. Learn more
	Temperature protection was activated. Learn more

Offline	The device has lost connection with the hub or the hub has lost connection with the Ajax Cloud server.
Not transferred	The device has not been transferred to the new hub. Learn more

States

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

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

Parameter	Meaning
Data import	Displays the error when transferring data to the new hub: • **Failed** — the device has not been transferred to the new hub. Learn more
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 for transmitting events and alarms. Learn more about Jeweller
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 via the radio signal range extender.
Relay state	The relay state: • **On** — relay contacts are closed. The connected electrical appliance is energized. • **Off** — relay contacts are open. No current is being supplied to the connected appliance. The field is displayed if Relay Jeweller operates in the bistable mode and the **Relay** option is selected for **Output mode**.
Blocking element state	Status of the blocking element: • **Power on** — the blocking element is powered. • **Power off** — the blocking element is not powered. • **Inactive** — the blocking element output is deactivated. This status is displayed if the **Blocking element** is selected for relay **Output mode**.
Electric lock state	Status of the electric lock:

	• **Power on** — the electric lock is powered. • **Power off** — the electric lock is not powered. • **Inactive** — a user switched off the electric lock. An inactive electric lock is not displayed in the integration module list and Automation menu. This status is displayed if an **Electric lock** is selected for logical outputs or relays.
Voltage	The current voltage value at the Relay Jeweller 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.
Deactivation	Displays the state of the device permanent 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
One-time deactivation	Shows the status of the device deactivation for one arming cycle function: • **No** — the device operates in normal mode and transmits all events. • **Entirely** — the device does not notify about alarms or malfunctions, and cannot execute

	scenarios and system commands for one arming cycle.
Firmware	Device firmware version.
Device ID	Device identifier. Also available via the QR code applied to the device body and packaging.
Device №	The number of the Relay Jeweller loop (zone).

Settings

To change the Relay Jeweller settings in the Ajax app:

1. Go to the **Devices** tab .
2. Select **Relay Jeweller** 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.

Use the latest Ajax apps and OS Malevich versions to access all available features and ensure proper system operation.

Settings	Meaning

Name	Device name. It is displayed in notifications in the event feed, the list of hub devices, and SMS texts. Click on the pencil icon . The name can contain up to 12 Cyrillic characters or 24 Latin characters.
Room	Selecting the virtual room for Relay Jeweller. The room name is displayed in SMS and notifications in the event feed.
Output mode	Allows the user to select device mode for the connected device: • **Relay** — allows switching connected devices on and off remotely. • **Blocking element** — allows integrating the third-party blocking element for automatic blocking/unblocking when switching arming mode. Automatic blocking/unblocking will work only if **VdS** is selected for the **Arming/disarming process** in the hub's settings. This feature is part of the unavoidability principle (German: Zwangsläufigkeit) flow. Learn more • **Electric lock** — allows locking/unlocking the door remotely. It can be controlled via keypad or via the Ajax app when the system is disarmed.

Notifications	If the **Relay** option is selected for **Output mode** it is possible to set the relay notifications: • **When switched on/off** — the user receives notifications from the device switching its state. The setting is available when the relay is connected to all hubs (except for the Hub (2G)/(4G) Jeweller models) with firmware version OS Malevich 2.15 or later. • **When scenario executed** — the user receives notifications about the execution of scenarios involving this device. The setting is available when the relay is connected to all hubs (except for the Hub model) with firmware version OS Malevich 2.15 or later. • **When connection lost/restored** — the user receives a notification if the device goes offline, and when the connection with the hub is restored. If the **Blocking element** or **Electric lock** is selected for **Output mode** it is possible to choose between the following options: • **When power is on/off manually** — notifies the user of manual changes in the device's state. • **When power is on/off automatically** — notifies the user of automatic changes in the device's state. • **When connection lost/restored** — the user receives a notification if the device goes offline, and when the connection with the hub is restored.
Relay Mode	Selecting the Relay Jeweller operating mode: • **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 Time	The pulse duration selection: 0.5 to 255 seconds. The configuring is available when Relay Jeweller operates in the pulse mode.
Contact State	Selecting the normal state of the relay contacts: • **Normally closed** (NC) — the relay contacts are closed in the normal state. The connected electric appliance is supplied with current. • **Normally open** (NO) — the relay contacts are open in the normal state. The connected electric appliance is not supplied with current.
React to Night mode	If this option is enabled, the device will react to the **Night mode** activation/deactivation in the same way as to arming/disarming. This option is displayed only when **Output mode** is set to **Blocking element**.
Control of blocking element state	Allows to control blocking element state manually. This option is displayed only when **Output mode** is set to **Blocking element**.
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 the 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 Jeweller User Manual in the Ajax app.
Deactivation	Allows 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 Jeweller will keep the previous state: active or inactive.** **Learn more**
One-Time Deactivation	Allows the user to disable the device for one arming cycle without removing it from the system. Three options are available: • **No** — the device operates in normal mode and transmits all events.

	• **Entirely** — the device does not notify about alarms or malfunctions and cannot execute scenarios and system commands for one arming cycle.
Unpair Device	Remove Relay Jeweller from a hub and delete its settings.

Indication

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Relay Jeweller LED indicator flashes periodically if the device is not connected to the hub. When you press the Relay function button, the LED indicator lights up green.

Functionality testing

Relay Jeweller functionality tests do not begin immediately but not later than over a single hub—device polling interval (36 seconds with default **Jeweller** or **Jeweller/Fibra** settings). You can change the device polling period in the **Jeweller** or **Jeweller/Fibra** menu in the hub settings.

To run a test in the Ajax app:

1. Select the hub if you have several of them or if you are using the PRO app.
2. Go to the **Devices** tab.
3. Select **Relay Jeweller**.

4. Go to **Settings** ⚙.

5. Select and run the **Jeweller Signal Strength Test**.

Maintenance

The device requires no technical maintenance.

Technical specifications

> ⚠ If you use inductive or capacitive load, the maximum switching current decreases to 3 A at 24 V⎓ and 8 A at 230 V~.

All technical specifications of Relay Jeweller

Compliance with standards

Complete set

1. Relay Jeweller.
2. Double-sided tape.
3. Quick start guide.

Warranty

Warranty for the Limited Liability Company “Ajax Systems Manufacturing” 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**