Transmitter User manual

Updated October 4, 2024



Transmitter is a module for connecting third-party detectors to Ajax security system. It transmits alarms and notifies when the tamper of the third-party detector triggers. The module is equipped with its own accelerometer, which protects it from dismounting. It runs on batteries and can supply power to the connected detector.

Transmitter operates within the Ajax security system, by connecting via the protected **Jeweller** protocol to the **hub**. It is not intended to use the device in third-party systems.

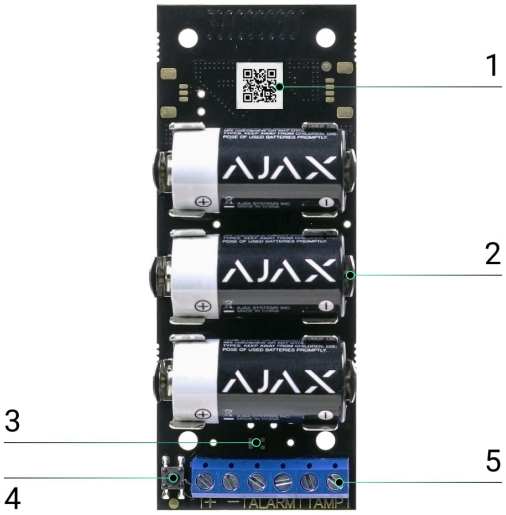
Not compatible with the uartBridge or ocBridge Plus

The communication range can be up to 1,600 meters provided that there are no obstacles and the case is removed.

Transmitter is set up via a **mobile application** for iOS and Android based smartphones.

Buy integration module Transmitter

Functional Elements



1. QR code with the device registration key.

2. Batteries contacts.

3. LED indicator.

4. ON/OFF button.

5. Terminals for detector power supply, alarm, and tamper signals.

Operation procedure

Transmitter is designed to connect third-party wired sensors and devices to the Ajax security system. The integration module receives information about alarms and tamper activation through the wires connected to the clamps.

Transmitter can be used to connect panic and auxiliary request buttons, indoor and outdoor motion detectors, as well as opening, vibration, breaking, fire, gas, leakage, and others wired detectors.

Also, you can set up KeyArm Zone that allows switching system arming modes with a third-party device connected to Transmitter. KeyArm allows you to arm/disarm the system, individual groups, or manage **Night Mode**.

The KeyArm feature is supported by all hubs (except Hub model) with OS Malevich 2.17 and higher.

How to set up KeyArm Zone for Ajax systems

The type of alarm is indicated in the settings of Transmitter. The text of notifications about alarms and events of the connected device, as well as event codes transmitted to the central monitoring panel of the security company (CMS) depend on the selected type.

Event types of wired devices

Type	Icon	Meaning
Intrusion		Alarm when motion, or opening, or other detectors trigger.

Fire		Alarm when fire detectors trigger.
Auxiliary alarm		Alarm when pressing auxiliary request button.
Panic button		Alarm when pressing the panic button.
Gas alarm		Alarm when gas concentration is exceeded.
Malfunction		Notification of the connected device malfunction. Transmitter should be connected to Hub Plus, Hub 2 (2G), Hub 2 (4G), Hub 2 Plus, Hub Hybrid (2G) or Hub Hybrid (4G) with the OS Malevich 2.13.0

		firmware version and higher.
Leakage		Alarm when water leakage detectors trigger.
Glass break		Alarm when the glass break sensor is triggered. *This event type operates only in **Pulse** operating mode.*
High temperature		Alarm when the upper temperature limit is exceeded.
Low temperature		Alarm when the lower temperature limit is exceeded.
Masking		Alarm when the device masking is detected.

Duress code (opening)		Alarm when the duress code is entered. *This event type operates only in **Pulse** operating mode.*
Vibration (seismic sensor)		Alarm when the seismic sensor is triggered. *This event type operates only in **Pulse** operating mode.*
Custom		The type of event that is configured by the user. It is not sent to the security company monitoring station. Transmitter should be connected to Hub Plus, Hub 2 (2G), Hub 2 (4G), Hub 2 Plus, Hub Hybrid (2G) or Hub Hybrid (4G) with the OS Malevich 2.13.0 firmware version and higher.

Transmitter has 2 pairs of wired zones: alarm and tamper.

A separate pair of terminals ensures power supply to the external detector from the module batteries with 3.3 V.

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.

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

How to connect Transmitter to the hub:

1. Select the **Add Device** option in the Ajax application.
2. Name the device, scan or enter manually the **QR code** (located on the body and packaging), and select the location room.
3. Select **Add** — the countdown will begin.
4. Switch on the device (by pressing on/off button for 3 seconds).



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 Ajax hub failed, Transmitter will switch off after 6 seconds. You may repeat the connection attempt then.

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

Icons

The icons display some of the **Transmitter Jeweller** states. To access them:

1. Sign in to the **Ajax app**.
2. Select the space.
3. Go to the **Devices** tab.

Icon	Meaning
	Jeweller signal strength — displays the signal strength between the hub and the integration module. The recommended value is 2–3 bars. **Learn more**
	Charge level of the integration module battery. **Learn more**
	The integration module operates through a **radio signal range extender**.
	Transmitter Jeweller is permanently deactivated.

	Learn more
	Transmitter Jeweller is disabled until the system is first disarmed. Learn more
	The device was not transferred to the new hub. Learn more
	The sensor operates in the **Switch arming modes** mode.
Icons of modes and event types when the sensor operates in the **Detect alarms** mode	
	**Chime** function is enabled. Learn more
	**Delay When Entering and/or Leaving** is enabled. Learn more
	The device operates in the **Always active** mode. Learn more
	The device will operate when **Night Mode** is enabled. Learn more
	Type of event **Intrusion** is selected.
	Intrusion alarm.
	The detector has tamper triggering events permanently deactivated. Learn more
	Transmitter Jeweller has tamper triggering events deactivated for a time the armed mode is active.

	Learn more
	Type of event **Fire** is selected.
	The device has detected a fire alarm.
	Type of event **Auxiliary alarm** is selected.
	Alarm when the auxiliary button is pressed.
	Type of event **Panic button** is selected.
	Alarm when the panic button is pressed.
	Type of event **Gas alarm** is selected.
	Alarm when the gas concentration is exceeded.
	Type of event **Malfunction** is selected.
	Device malfunction is detected.
	Type of event **Leakage** is selected.
	Alarm caused by the flooding.
	Type of event **Custom** is selected.
	The device has been triggered.
	Type of event **Glass break** is selected.
	Glass break alarm.
	Type of event **High temperature** is selected.
	Alarm when the upper temperature limit is exceeded.
	Type of event **Low temperature** is selected.
	Alarm when the lower temperature limit is exceeded.
	Type of event **Masking** is selected.
	Masking alarm.
	Type of event **Duress code** (**opening**) is selected.
	Alarm caused by the system disarming using the duress code device.
	Type of event **Vibration** (**seismic sensor**) is selected.
	Vibration (seismic) alarm.

States

The states screen contains information about the device and its current parameters. The statuses of Transmitter and the device connected to it can be found in the Ajax app:

1. Go to the **Devices** tab.
2. Select Transmitter from the list.

Parameter	Meaning
Temperature	Temperature of the device. Measured on the processor and changes gradually. Acceptable error between the value in the app and the room temperature — 2°C. The value is updated as soon as the detector identifies a temperature change of at least 2°C. You can configure a scenario by temperature to control automation devices. Learn more
Jeweller Signal Strength	Signal strength between the hub/range extender and Transmitter. We recommend installing the detector in places where the signal strength is 2–3 bars.
Connection via Jeweller	Connection status between the hub/range extender and device: • **Online** — device is connected with the hub/range extender. • **Offline** — device has lost connection with the hub/range extender.

ReX range extender name	Indicates if Transmitter is connected via a **radio signal range extender**.
Battery Charge	Battery level of the device. Displayed as a percentage. **How battery charge is displayed in Ajax apps**
Lid	Device tamper zone status.
External sensor state (displayed when the detector is in bistable mode only)	Displays the status of the connected detector alarm zone. Two statuses are available: • **OK** — the state of the connected detector contacts is normal. • **Alert** — the connected detector contacts are in alarm mode (closed if the type of contacts is normally open (NO); open if the type of contacts is normally closed (NC).
Alert if Moved	It turns on the built-in accelerometer, detecting device movement.
Always Active	When this option is enabled, the integration module is constantly armed and notifies about the connected detector alarms. **Learn more**
Chime activation	When the function is enabled, the sirens connected to the system notify about the triggering of the opening detectors integrated with the help of Transmitter, while the system is disarmed. **What is Chime and how it works**
Permanent Deactivation	Shows the status of the device permanent deactivation function: • **No** — the device operates normally and transmits all events.

	• **Lid only** — the hub administrator has disabled notifications about triggering on the device body. • **Entirely** — the device is completely excluded from the system operation by the hub administrator. The device does not follow system commands and does not report alarms or other events. • **By number of alarms** — the device is automatically disabled by the system when the number of alarms is exceeded (specified in the settings for Devices Auto Deactivation). The feature is configured in the Ajax PRO app. • **By timer** — the device is automatically disabled by the system when the recovery timer expires (specified in the settings for Devices Auto Deactivation). The feature is configured in the Ajax PRO app.
Alarm Reaction	
Operating Mode	Shows how the detector reacts to alarms: • **Instant Alarm** — the armed detector immediately reacts to a threat and raises the alarm. • **Entry/Exit** — when a delay is set, the armed device starts the countdown and doesn't raise the alarm even if triggered until the countdown ends. • **Follower** — the detector inherits the delays from Entry/Exit detectors. However, when the Follower is triggered individually, it immediately raises the alarm.
Delay When Entering, s	Entry delay (alarm activation delay) is the time you have to disarm the security system after entering the room. What is delay when entering

Delay When Leaving, s	Delay time when exiting. Delay when exiting (alarm activation delay) is the time you have to exit the room after arming the security system. **What is delay when leaving**
Night mode Delay When Entering, s	The time of Delay When Entering in the Night mode. Delay when entering (alarm activation delay) is the time you have to disarm the security system after entering the premises. **What is delay when entering**
Night mode Delay When Leaving, s	The time of Delay When Leaving in the Night mode. Delay when leaving (alarm activation delay) is the time you have to exit the premises after the security system is armed. **What is delay when leaving**
Firmware	Detector firmware version.
Device ID	Device identifier.
Device No.	Number of the device loop (zone).

Settings

To change the Transmitter settings in the Ajax app:

1. Go to the **Devices** tab.
2. Select **Transmitter** from the list.
3. Go to **Settings** by clicking on the ⚙.
4. Set the required parameters.
5. Click **Back** to save the new settings.

Setting	Meaning
Name	Detector name that can be changed. The name is displayed in the text of SMS and notifications in the event feed. The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.
Room	Selecting the virtual room to which Transmitter is assigned. The name of the room is displayed in the text of SMS and notifications in the event feed.
Power Supply for Connected Detectors	3.3 V power-on for a third-party wired detector: • **Always enabled** — use if problems are observed in the “Disabled if hub is not armed” power mode of the detector. If the security system is armed in pulse mode, signals on the ALARM terminal are processed no more than once every three minutes and always processed in the bistable mode. • **Disabled if disarmed** — the module powers off the external detector if disarmed and does not process signals from the ALARM terminal. Once the detector is armed, the power supply resumes, but the detector alarms are ignored for the first 8 seconds. • **Always Disabled** — Transmitter does not use energy to power a third-party detector. Signals from the ALARM terminal are processed in both pulse and bistable modes. If the Always Active mode is enabled, the third-party detector power supply is on in the Always Active or Disabled if not Armed modes only, regardless of the security system status.
External Detector Contact Status	Selection of the external detector normal status: • Normally open (NO).

	• Normally closed (NC).
External Detector Type	Selection of the external detector type: • Bistable. • Pulse.
Sensor Mode	Selecting the sensor mode of the connected device: • Notify of Alarms. • Switch Arming Modes.
Type of event	Selecting an event type for the connected detector or device. Refer to the **Event types of wired devices** section for more information. The texts of notifications in the event feed and SMS, as well as the code transmitted to the security company monitoring station, depend on the selected type of event. *This setting is available if **Notify of Alarms** option is selected for the **Sensor Mode** setting.*
Arm Switch Settings	Configuring the arm switch if the **Switch Arming Modes** option is selected for the **Sensor Mode** setting: • selecting arming **Preset Action**. • selecting **Security Objects** to be controlled by KeyArm. • configuring the **Lock arm switch if lid is open** feature. • configuring the **Notify of attempts to use arm switch when it's locked** feature (available for hubs with OS Malevich 2.19 or higher when the **Lock arm switch if lid is open** feature is enabled).

	Enable the **Notify of attempts to use arm switch when it's locked** feature to receive notifications for every attempt to switch arming mode with a locked arm switch. When locked, it cannot switch modes. Learn more
Tamper status	Selection of the normal tamper mod for an external detector: • Normally open (NO). • Normally closed (NC).
Alert If Moved	Enabling the built-in accelerometer to receive an alarm in case of device movement.
Always Active	When this option is enabled, the integration module is constantly armed and notifies about the connected detector alarms. *This setting is available if **Notify of Alarms** option is selected for the **Sensor Mode** setting.* Learn more
Alert with a siren if alarm detected	If enabled, the sirens **added to the system** are activated if an alarm is detected.
Alert with a siren if accelerometer triggered	If enabled, the sirens **added to the system** are triggered if device movement is detected.
Chime Settings	Opens the settings of Chime. How to set Chime What is Chime
Alarm Reaction	
Operating Mode	Specify how this device will react to alarms: • **Instant Alarm** — the armed detector immediately reacts to a threat and raises the

	alarm. • **Entry/Exit** — when a delay is set, the armed device starts the countdown and doesn't raise the alarm even if triggered until the countdown ends. • **Follower** — the detector inherits the delays from Entry/Exit detectors. However, when the Follower is triggered individually, it immediately raises the alarm.
Delay When Entering, s	Selecting delay time when entering. Delay when entering (alarm activation delay) is the time you have to disarm the security system after entering the room. What is delay when entering
Delay When Leaving, s	Selecting the delay time when exiting. Delay when exiting (alarm activation delay) is the time you have to exit the room after arming the security system. What is delay when leaving
Arm in Night Mode	If enabled, the detector connected to the integration module will switch to the armed mode when using the Night mode.
Night mode Delay When Entering, s	The time of Delay When Entering in the Night mode. Delay when entering (alarm activation delay) is the time you have to disarm the security system after entering the premises. What is delay when entering
Night mode Delay When Leaving, s	The time of Delay When Leaving in the Night mode. Delay when leaving (alarm activation delay) is the time you have to exit the premises after the security system is armed. What is delay when leaving

Jeweller Signal Strength Test	Switches Transmitter to the Jeweller signal strength test mode. **Learn more**
Signal Attenuation Test	Switches Transmitter to the signal fade test mode (available in device with **firmware version 3.50 and later**). **Learn more**
User Guide	Opens the Transmitter User Manual in the Ajax app.
Permanent Deactivation	Three options are available: • **No** — the device operates normally and transmits all events. • **Entirely** — the device will not execute system commands or run automation scenarios. The system will ignore device alarms and notifications. • **Lid only** — messages about triggering the tamper button of the device are ignored. **Learn more about device permanent deactivation** The system can also automatically deactivate devices when the set number of alarms is exceeded or when the recovery timer expires. **Learn more about auto deactivation of devices**
One-Time Deactivation	Allows the user to disable events of the device until the first event of disarming the system. Three options are available: • **No** — the device operates in the normal mode and transmits all events.

	• **Entirely** — the device is completely excluded from the system operation until the first event of disarming the system. The device does not execute system commands and does not report alarms or other events. • **Lid only** — notifications on the device tamper triggering are disabled while the armed mode is active. Learn more
Unpair Device	Disconnects the device from the hub and deletes its settings.

How to set Chime

Chime is a sound signal that indicates the triggering of the opening detectors when the system is disarmed. The feature is used, for example, in stores, to notify employees that someone has entered the building.

Notifications are configured in two stages: setting up opening detectors and setting up sirens.

Learn more about Chime

Transmitter settings

Before setting up the Chime feature, make sure that a wired opening detector is connected to Transmitter and the following options have been configured in the detector settings in the Ajax app:

- Detector power supply
- External Detector Contact Status
- External Detector Type

- Type of event
- Tamper status

1. Go to the **Devices** menu.
2. Select Transmitter.
3. Go to its settings by clicking the gear icon in the upper right corner.
4. Go to the **Chime Settings** menu.
5. Select siren notification for the event **If external contact is open**.
6. Select the chime sound: 1 to 4 beeps. Once selected, the Ajax app will play the sound.
7. Click **Back** to save the settings.
8. Set up the required siren.

How to set up a siren for Chime

Indication

Event	Indication
The Module is switched on and registered	The LED lights up when the ON button is briefly pressed.
Registration failed	The LED blinks for 4 seconds with an interval of 1 second, then blinks 3 times rapidly (and automatically switches OFF).
The Module is deleted from the list of hub devices	The LED blinks for 1 minute with an interval of 1 second, then blinks 3 times rapidly (and automatically switches OFF).
The Module has received alarm/tamper signal	The LED lights up for 1 second.

Batteries are discharged	Smoothly lights up and goes out when the detector or tamper is activated.

Performance testing

The Ajax 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

Attenuation Test

Connection of the Module to the wired detector

Transmitter location determines its remoteness from the hub and presence of any obstacles between the devices hindering the radio signal transmission: walls, inserted floors, large-size objects located within the room.

Check the signal strength level at the installation location

If the signal level is one division, we cannot guarantee stable operation of the security system. Take possible measures to improve the quality of the signal. At least, move the device with an integration module — even a 20 cm shift can significantly improve the signal strength.

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

Transmitter should be installed inside the wired detector case. The module requires a space with the following minimum dimensions: 110 × 41 × 24 mm. If the installation of Transmitter within the detector case is impossible, then any available radiotransparent case could be used.

1. Connect Transmitter to the detector through the NC/NO contacts (choose the relevant setting in the app) and COM.

> The maximum cable length for connecting the sensor is 130 m (24 AWG twisted pair). The value may vary when using different type of cable.

The function of the terminals of Transmitter



1. **“+ —”** — power terminals of the connected wired device, the output voltage is 3.3 V⎓.
2. **ALARM** — alarm terminals of the device.
3. **TAMP** — terminals of the device tamper.

> Do not connect a third-party power supply unit to the power terminals. This may damage the device

2. Secure Transmitter in the casing. Plastic bars are included in the installation kit. It is recommended to install Transmitter on them.

Do not install Transmitter:

- Near metal objects and mirrors (they can shield the radio signal and lead to its attenuation).
- Closer than 1 meter to a hub.

Maintenance and Battery Replacement

The device does not require maintenance when mounted in the housing of a wired sensor.

How long Ajax devices operate on batteries, and what affects this

Battery Replacement

Technical specifications

All technical specifications of Transmitter Jeweller

Compliance with standards

Complete Set

1. Transmitter.
2. Battery CR123A — 3 pcs.
3. Installation kit.
4. Quick start guide.

Warranty

Warranty for the Limited Liability Company “Ajax Systems Manufacturing” products is valid for 2 years after the purchase and does not apply to the pre-installed battery.

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**

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