

GlassProtect S Jeweller User manual

Updated June 26, 2024



GlassProtect S Jeweller is a wireless indoor glass break detector that recognizes the sound of shattering glass at a distance of up to 9 meters.

GlassProtect S operates within the Ajax system, connected to a hub via the protected Jeweller protocol. The communication range in an open space is up to 1,000 meters. GlassProtect S operates from a pre-installed battery for up to 7 years and has a socket for connecting a third-party wired detector. The device is designed for indoor use only.



This product line is developed for projects. Only accredited Ajax Systems partners can sell, install and administer **Superior** products.

Superior, **Fibra**, and **Baseline** product lines are mutually compatible. This opens up numerous possibilities for building systems of any configuration.

Functional elements



1. LED indicator.
2. Microphone hole.
3. SmartBracket mounting panel with holding screw.
4. A perforated part is required for actuating the tamper in case of any attempt to dismantle the detector.
5. Connector for a third-party wired detector with the NC (normally closed) type of contact.
6. Device power button.
7. Tamper button. Triggered when there is an attempt to tear the detector off the surface or remove it from the mounting panel.
8. QR code with the device ID. It is used to pair the device with an Ajax hub.
9. Holding screw to secure the detector on SmartBracket.

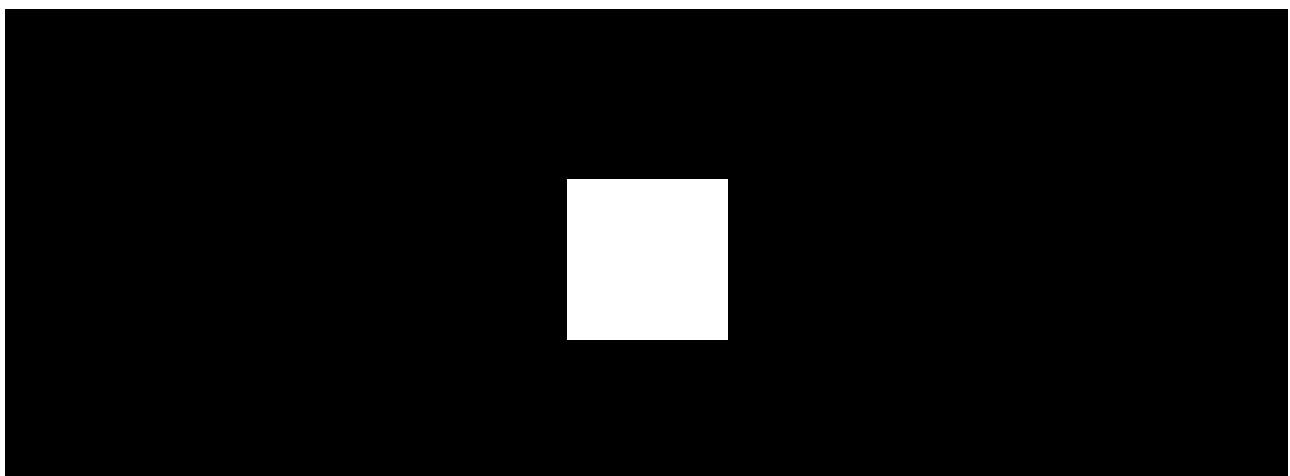
Compatible hubs and range extenders

An Ajax hub with the firmware OS Malevich 2.16 and higher is required for the detector to operate.

Hubs	Radio signal range extenders
• <u>Hub Plus Jeweller</u> • <u>Hub 2 (2G) Jeweller</u>	• <u>ReX Jeweller</u> • <u>ReX 2 Jeweller</u>

- [Hub 2 \(4G\) Jeweller](#)
- [Hub 2 Plus Jeweller](#)
- [Hub Hybrid \(2G\)](#)
- [Hub Hybrid \(4G\)](#)

Operating principle



00:00

00:12

GlassProtect S Jeweller is a wireless glass break detector. It responds to glass breaking using a built-in electret microphone. The detector's microphone with the DualTone digital algorithm only responds to sound vibrations characteristic of the sound of glass breaking, cutting off false alarms.



The GlassProtect S detector does not react to breaking film-covered glass: shockproof, sunscreen, decorative, or any other type of film. We recommend using the [DoorProtect S Plus Jeweller](#) wireless opening detector equipped with shock and tilt sensors to detect the breaking of such types of glass.

In the armed mode, the detector instantly transmits an alarm signal to the hub when it detects a break. The hub activates connected sirens, runs scenarios, and notifies users and the security company.

Users will know where a glass break has been detected. The notifications contain the following:

- The hub name (name of the protected object).
- The incident time.
- The name of the device.
- The alarm type.
- The virtual room to which the device is assigned.

Protection from false alarms

The detector uses DualTone — a two-stage algorithm to exclude false alarms. For the detector to register a break, it must record a dull (low-frequency) sound of an impact and a ringing (high-frequency) sound of falling fragments within 1.5 seconds. This algorithm ensures that the detector does not respond to the barking of dogs or cars passing the protected facility.

Sending events to the monitoring station

The Ajax system can transmit alarms to the PRO Desktop monitoring app as well as the central monitoring station (CMS) in the formats of **SurGard (Contact ID)**, **SIA (DC-09)**, **ADEMCO 685**, and other protocols.

GlassProtect S can transmit the following events:

- Glass break sensor alarm.
- An alarm of a connected third-party detector.
- Tamper alarm/recovery.
- Hub connection loss/restoration.
- Permanent activation/deactivation of the detector.
- The unsuccessful attempt to arm the security system (with the system integrity check enabled).

When an alarm is received, the operator of the security company monitoring station knows what happened and where to send the fast response team. The addressability of Ajax devices allows sending events to the PRO Desktop or the CMS, the type of the device, its name, security group, and virtual room. The list of transmitted parameters may differ depending on the type of CMS and the selected communication protocol.

Adding to the system



GlassProtect S is incompatible with [Hub](#), third-party security control panels, and ocBridge Plus and uartBridge integration modules.

To connect **GlassProtect S** to the hub, the detector must be located at the same secured facility as the system (within the range of the hub radio network). For the detector to work via [ReX](#) or [ReX 2](#) radio signal range extenders, you must first add the detector to the hub, then connect it to **ReX** or **ReX 2** in the settings of the range extender.



The hub and the device operating at different radio frequencies are incompatible. The radio-frequency range of the device may vary by region. We recommend purchasing and using Ajax devices in the same region. You can check the range of operating radio frequencies with the [technical support service](#).

Before adding a device

1. Install an [Ajax PRO app](#).
2. Log in to a [PRO account](#) or create a new one.
3. Select a space or create a new one.

[What is a space](#)

[How to create a space](#)



The **space** functionality is available for apps of such versions or later:

- Ajax Security System 3.0 for iOS;
- Ajax Security System 3.0 for Android;
- Ajax PRO: Tool for Engineers 2.0 for iOS;
- Ajax PRO: Tool for Engineers 2.0 for Android;
- Ajax PRO Desktop 4.0 for macOS;
- Ajax PRO Desktop 4.0 for Windows.

4. Add at least one virtual room.

5. Add a compatible hub to the space. Ensure the hub is switched on and has internet access via Ethernet, Wi-Fi, and/or mobile network.

6. Ensure the space is disarmed, and the hub is not starting an update by checking statuses in the Ajax app.



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Connecting to the hub

1. Open the Ajax PRO app. Select the hub where you want to add the detector.
2. Go to the **Devices**  tab and click **Add Device**.
3. Name the detector, scan, or type in the QR code (placed on the detector and the package box), and select a room and a group (if Group mode is enabled).



4. Press **Add**.

5. Switch on the detector.



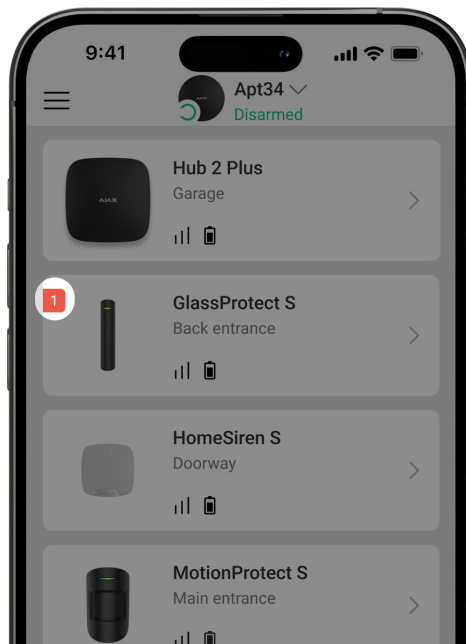
GlassProtect S works with one hub. When connected to a new hub, the detector stops sending events to the old one. When added to a new hub, the detector is not removed from the device list of the old hub. This must be done through the Ajax app.

For successful detection and pairing, ensure the detector is located within the coverage area of the hub's wireless network (at a single protected site). The connection request is transmitted for a short time: at the moment of switching on the device.

If the detector fails to pair (LED blinks once per second), switch it off for 5 seconds and retry. The detector connected to the hub appears in the list of devices in the app.

Updating the statuses of devices in the list depends on the Jeweller settings. The default value is 36 seconds.

Malfunctions

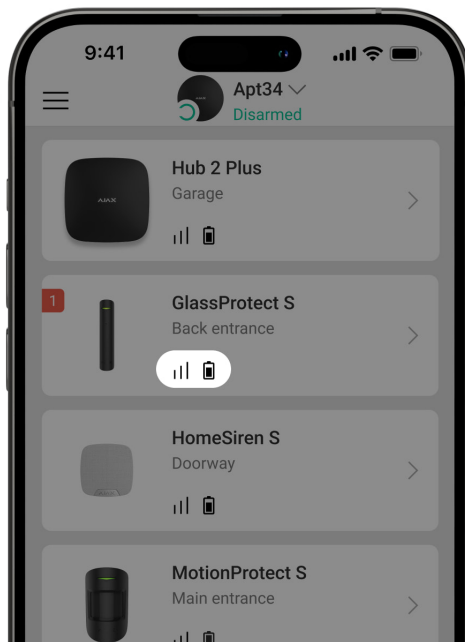


The Ajax app displays a malfunction counter on the device icon when a malfunction is detected. All malfunctions are shown in the detector states. Fields with malfunctions will be highlighted in red.

A malfunction is displayed if:

- The detector temperature is outside acceptable limits.
- The detector enclosure is open (tamper is triggered).
- No connection with the hub or radio signal range extender via Jeweller.
- The detector battery is low.

Icons



The icons display some **GlassProtect S** states. To access them:

1. Sign in to the [Ajax app](#).
2. Select the hub.
3. Go to the **Devices**  tab.

Icon	Meaning
	Jeweller signal strength. Displays the signal strength between the detector and hub or range extender. The recommended value is 2 or 3 bars. Learn more
	The detector battery charge level. Learn more
	The detector has a malfunction. The list of malfunctions is available in the detector states. Learn more
	The detector operates via a radio signal range extender .
	The detector operates in the Always active mode.

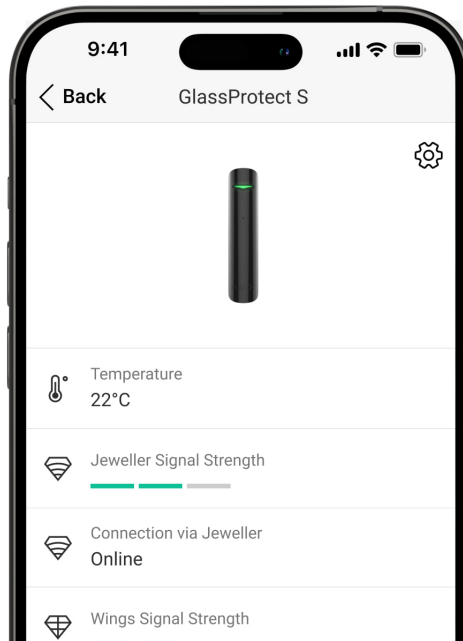
	Learn more
	Entry delay is enabled. Delays only affect the third-party detector. Learn more
	Exit delay is enabled. Delays only affect the third-party detector. Learn more
	GlassProtect S will arm in Night Mode. Learn more
	The external contact of the GlassProtect S detector (a third-party wired detector) is on.
	GlassProtect S is permanently deactivated. Learn more
	GlassProtect S has been deactivated due to exceeding the preset number of alarms. Learn more
	GlassProtect S has tamper triggering events permanently deactivated. Learn more
	GlassProtect S is deactivated until the first disarm. Learn more
	GlassProtect S has tamper alarms temporarily deactivated. Learn more



The device was not transferred to the new hub.

[Learn more](#)

States



The States screen contains information about the device and its current parameters. Find GlassProtect S states in the Ajax app:

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

Parameter	Meaning
Malfunction	Clicking on  opens the list of the detector's malfunctions. The field is displayed only if a malfunction is detected.
Temperature	Detector temperature. 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 1 °C. You can configure a scenario by temperature to control automation devices. <u>Learn more</u>
Jeweller Signal Strength	Signal strength between the hub/range extender and the detector. 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 the detector: • Online — the detector is connected with the hub/range extender. • Offline — the detector has lost connection with the hub/range extender.
ReX	Displays the status of using a <u>radio signal range extender</u>
Battery Charge	Battery level of the device. Displayed as a percentage. <u>How battery charge is displayed in Ajax apps</u>
Lid	Tamper is triggered if someone tries to detach the device from the surface or damage the enclosure. There are two states: • Open — the detector was removed from the SmartBracket, or its integrity was compromised. Check the device. • Closed — the detector is installed on the SmartBracket mounting panel. The integrity of the device enclosure and the mounting panel is not compromised. Normal state.

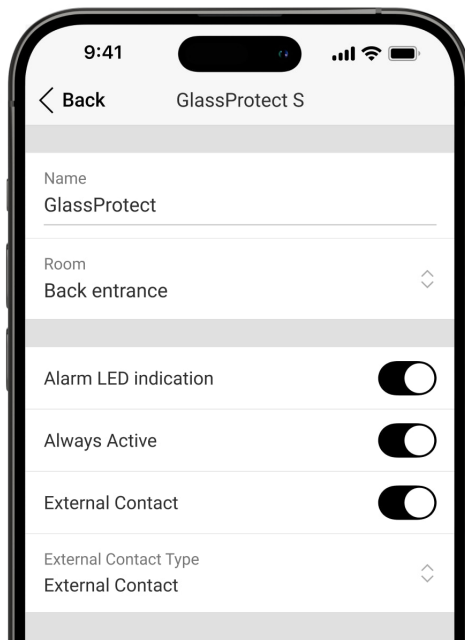
	Learn more
Sensitivity	Sensitivity level of the detector's microphone.
External contact	Status of the external detector connection to GlassProtect S: • Disabled — the external contact is disabled (the option is disabled in the app). • Open — the external contact is connected and in the open state. • Closed — the external contact is connected and in the closed state.
Always Active	If the option is active, the detector is always in armed mode and notifies about alarms. Learn more
Permanent Deactivation	Shows the status of the device permanent deactivation setting: • No — the device operates in the normal mode. • Lid only — the hub administrator has disabled notifications about triggering of the device tamper. • Entirely — the detector is entirely excluded from the operation of the system. The device does not execute system commands and does not report alarms or other events. • By number of alarms — the device is automatically disabled when the preset number of alarms is exceeded (specified in the Devices Auto Deactivation settings). Learn more
One-Time Deactivation	Shows the status of the device one-time deactivation setting:

	• No — the device operates in the normal mode. • Lid only — notifications on the tamper triggering are disabled until the first disarm. • Entirely — the detector is entirely excluded from the operation of the system until the first disarm. The device does not execute system commands and does not report alarms or other events. Learn more
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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, sec	Selecting delay time when entering: 5 to 120 seconds. Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the premises. Delays only affect the third-party detector. Learn more
Delay When Leaving, sec	Selecting delay time when leaving: 5 to 120 seconds. Delay when leaving is the time the user has to leave the premises after arming.

	Delays only affect the third-party detector. Learn more
Arm in Night Mode	If this option is enabled, the detector will go into the armed mode when the system is set to the Night Mode. Learn more
Night Mode Delay When Entering, sec	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. Functions for the connected wired detector only. Learn more
Night Mode Delay When Leaving, sec	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. Functions for the connected wired detector only. Learn more
Firmware	Detector firmware version.
Device ID	Detector ID. Also, available on the QR code on the detector enclosure and its package box.
Device No.	Number of the device loop (zone).

Settings



To change **GlassProtect S Jeweller** settings in the Ajax app:

1. Go to the **Devices**  tab.
2. Select **GlassProtect S** 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	Name of the detector. Displayed in the list of hub devices, text of SMS and notifications in the events feed. To change the name of the module, click on the text field. The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.
Room	Selecting the virtual room to which GlassProtect S is assigned. The room name is displayed in the text of SMS and notifications in the events feed.

Alarm LED indication	Allows you to disable the flashing of the LED indicator during an alarm. Available for devices with firmware version 5.55.0.0 or higher. <u>How to find the firmware version or the ID of the detector or device</u>
Sensitivity	Selecting the sensitivity level of the microphone: • Low. • Normal. • High. The sensitivity level is selected based on the results of the <u>detection zone test</u>.
External contact	If active, GlassProtect S registers external detector alarms.
Always Active	If the option is active, the detector is always in armed mode and notifies about alarms. <u>Learn more</u>
Alert with a siren if an external contact is open	If active, <u>sirens added to the system</u> are activated in case of an external detector alarm.
Alert with a siren if glass break detected	If active, <u>sirens added to the system</u> are activated when the glass break is detected.
Chime Settings	Opens the settings of Chime. <u>How to setup Chimes</u>
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, sec	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. Delays only affect the third-party detector. Learn more
Delay When Leaving, sec	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. Delays only affect the third-party detector. Learn more
Arm in Night Mode	If active, the detector will switch to the armed mode when using Night mode. Learn more
Night Mode Delay When Entering, sec	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. Delays only affect the third-party detector. Learn more
Night Mode Delay When Leaving, sec	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. Delays only affect the third-party detector.

	Learn more
Jeweller Signal Strength Test	Switches the detector to the signal strength test mode. Learn more
Detection Zone Test	Switches the detector to the detection area test. Learn more
Signal Attenuation Test	Switches the detector to the signal fade test mode. Learn more
User Guide	Opens GlassProtect S user manual in the Ajax app.
Permanent Deactivation	Allows the user to disconnect the device without removing it from the system. Three options are available: • No — the device operates normally and transmits all alarms and events. • Entirely — the device will not execute system commands or participate in automation scenarios, and the system will ignore device alarms and other notifications. • Lid only — the system will ignore only notifications about the triggering of the device tamper button. Learn more The system can also automatically deactivate devices when the preset number of alarms is exceeded. Learn more
One-Time Deactivation	Allows the user to disable events of the device until the first disarm.

	Three options are available: • No – the device operates in normal mode and transmits all events. • Entirely – the device is entirely excluded from the operation of the system until the first disarm. The device does not execute system commands and does not report alarms or other events. • Lid Only – notifications on the tamper triggering are disabled until the first disarm. Learn more
Unpair Device	Disconnects the detector from the hub and deletes its settings.

How to set Chime



Chime works only with third-party detectors. Before configuring the chime, make sure that a wired opening detector is connected to GlassProtect S and that the **External contact** option is enabled in the GlassProtect S settings in the Ajax app.

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](#)

[How to set up a siren for Chime](#)

Indication

Event	Indication	Note
Turning on the detector	Lights up green for one second.	
Pairing the detector with a hub	Lights up continuously for a few seconds.	
Alarm/tamper activation	Lights up green for one second.	An alarm is sent every 5 seconds.
Battery needs replacing	During the alarm, it slowly lights up green and slowly goes out.	Replacement of the detector battery is described in this article .

Functionality testing

The Ajax system offers several tests to help select the device installation place. Tests do not start immediately. However, the waiting time does not exceed the duration of one “hub—device” polling interval. The polling interval can be checked and configured at hub settings (**Hub** → **Settings**  → **Jeweller** or **Jeweller/Fibra**).

To run a test in the Ajax app:

1. Select the required hub.
2. Go to the **Devices**  tab.
3. Select **GlassProtect S** from the list.
4. Go to **Settings** .
5. Select a test:
 1. [Jeweller Signal Strength Test](#).
 2. [Signal Attenuation Test](#).
 3. [Detection Zone Test](#).
6. Run the test.

Testing the detector

Hit the glass with your fist without breaking it. If the detector catches a low-frequency sound, the LED lights up. Simulate a high-frequency glass shattering sound for 1.5 seconds after the first hit with a special tool or hitting a glass with a metal object. After recognizing the sound, the detector switches off the LED indicator for a second.



GlassProtect S does not react to clapping. To be triggered when the system is armed, the detector needs to recognize sounds in the following order: low-frequency sound (hit) first, then high-frequency sound (glass shattering, shards). Otherwise, the alarm will not go off.

Switch on/off all the appliances that usually operate in the room: generators, air conditioners, etc. If this triggers the detector, try to change the sensitivity or relocate GlassProtect S.

Use the sensitivity level at which the detector correctly passes both test stages and does not respond to any devices operating in the room.

Detector placement





The device is designed for indoor use only.

When choosing where to place **GlassProtect S Jeweller**, consider the parameters that affect its operation:

- Glass break detection zone.
- Jeweller signal strength.
- Distance between the detector and the hub and radio signal range extender.
- Presence of obstacles for radio signal passage: walls, inter-floor ceilings, or large objects in the room.

Consider the recommendations for placement when developing a project for the facility's security system. The security system must be designed and installed by specialists. A list of recommended partners is [available here](#).



In some cases, household activity can cause false alarms. In such cases, reduce the sensor sensitivity level or use it only when arming.

Signal strength

The Jeweller signal strength is determined by the number of undelivered or corrupted data packages over a certain period. The icon  on the **Devices**  tab indicates the signal strength:

- **Three bars** — excellent signal strength.
- **Two bars** — good signal strength.
- **One bar** — low signal strength, stable operation is not guaranteed.
- **Crossed out icon** — no signal.



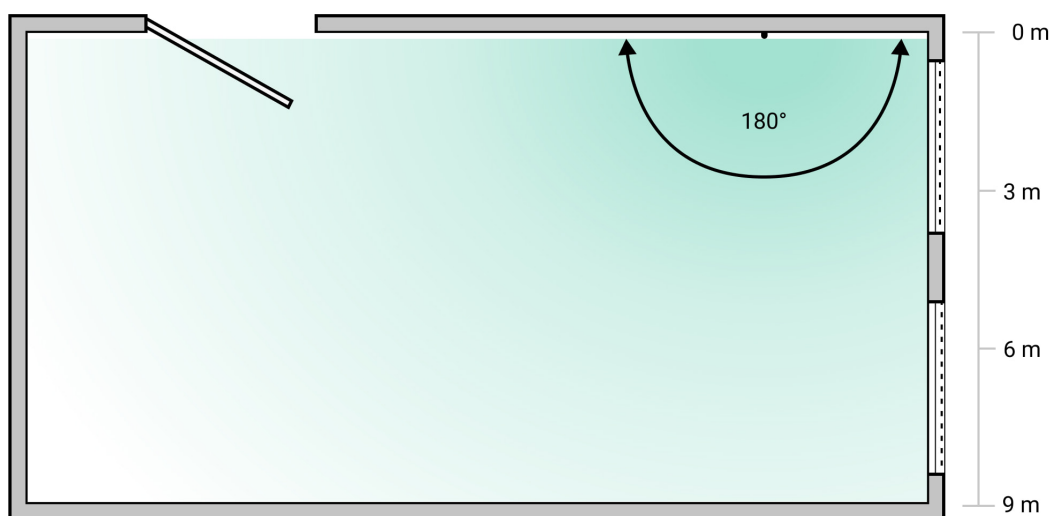
Check the Jeweller signal strength before final installation. With a signal strength of one or zero bars, we do not guarantee the stable operation of the device. Consider relocating the device, as repositioning even by 20 cm can significantly improve the signal strength.

Detection zone

When choosing a place to install the detector, run a [Detection zone test](#) to check the operation of the device and determine the sector in which the detector registers glass breaking.

The detector's location determines the area to be monitored and the security system's effectiveness. When deciding where to install the detector, consider the directivity of the microphone and the presence of obstacles interfering with the microphone operation.

The microphone of the detector identifies glass breaks at a distance of up to 9 meters. To detect a break, the detector should be positioned at an angle of up to 90 degrees to the window or windows.



Detection angle of the break detector

How not to install the detector

1. Outdoors. This can lead to false alarms and detector failure.
2. Close to sirens and speakers. This can lead to false alarms of the break detector.

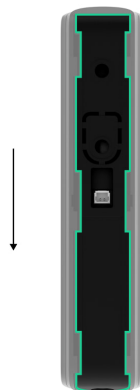
3. In places with fast air circulation — for example, near fans, open windows, or doors. This can lead to false alarms of the break detector.
4. In places where objects or structures can interfere with the passage of sound to the detector. For example, in places where the curtains will be between the window and the GlassProtect S. This may prevent the detector from registering glass breakage.
5. Nearby any metal objects or mirrors causing attenuation and screening of the signal.
6. Inside premises with temperature and humidity outside the permissible limits. This could damage the detector.
7. Closer than 1 meter from the hub or radio signal range extender. This can lead to a loss of communication with the detector.
8. In a place with a low signal level. This may result in the loss of the connection with the hub.

Installation



Before installing the detector, ensure that you have selected the optimal location that follows the guidelines of this manual.

1. Begin by loosening the holding screw. Remove the SmartBracket mounting panel from the detector by sliding it down.



2. Fix the SmartBracket panel using double-sided tape or other temporary fasteners.



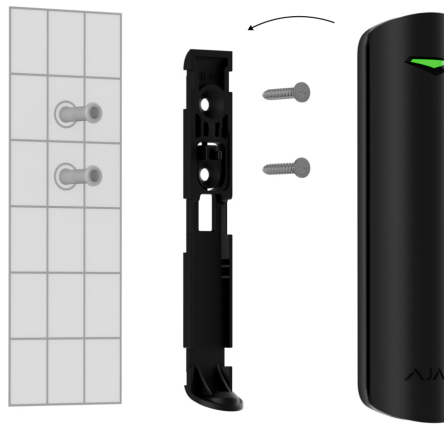
Use double-sided tape only for temporary installation. The device attached to the tape may come unstuck from the surface anytime. As long as the device is taped, the tamper will not be triggered when detached from the surface.

3. Place the detector on SmartBracket. The device's LED indicator will flash. It is a signal indicating that the tamper on the detector is closed.



If the LED indicator doesn't light up while placing the detector on SmartBracket, check the tamper status in the Ajax app, the integrity of the fastening, and the tightness of the detector fixation on the panel.

4. Run the Jeweller signal strength test. The recommended signal strength is two or three bars. If the signal strength is low (a single bar), we do not guarantee stable operation of the device. Consider relocating the device, even as repositioning by 20 cm can significantly improve the signal strength. If there is still a poor or unstable signal after the relocation, use ReX 2 radio signal range extender.
5. Run the Detection zone test. The maximum range of break detection is 9 meters. If the detector did not respond to break during the test in 5 out of 5 cases, it should be installed in a different location.
6. Run Signal Attenuation Test. During the test, the signal strength is artificially reduced and increased to simulate different conditions at the installation location. If the installation spot is chosen correctly, the detector will have a stable signal strength of 2–3 bars.
7. Remove the detector from SmartBracket.
8. Drill the special recesses on the SmartBracket to secure the panel using the bundled screws. Attach the SmartBracket mounting panel with the bundled screws using all fixation points (one is in the perforated part of the mounting panel above the tamper). When using other fasteners, ensure they do not damage or deform the mounting panel.
9. Place the detector on the SmartBracket mounting panel.



10. Tighten the holding screw on the bottom of the detector's enclosure for more reliable fastening and protection from quick dismantling.

Connecting a third-party wired detector

A wired detector with an NC (normally closed) contact type can be connected to GlassProtect S using the in-built terminal clamp.



We recommend installing the wired detector at a distance no longer than 1 meter to GlassProtect S. Using a longer wire increases the risk of damage and diminishes the communication quality between the detectors.

To put out the wire from the detector body, break out the plug:



If the connected wired detector is triggered, you receive the notification.

Maintenance

Check the functioning of the detector regularly. The optimal frequency of checks is once every three months. Clean the device enclosure of dust, cobwebs, and other contaminants as they emerge. Use a soft dry wipes suitable for equipment care.



Do not use any substances containing alcohol, acetone, petrol, and other active solvents to clean the detector.

The pre-installed battery ensures up to 7 years of autonomous operation (with the 5 minutes ping interval by the hub). If the detector battery is low, the system notifies the user, and the LED indicator smoothly lights up and goes off if a glass break is detected or the tamper is triggered.

Battery Replacement

Technical specifications

All technical specifications of GlassProtect S Jeweller

Compliance with standards

Setup in compliance with EN requirements

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!

[Warranty obligations](#)

[User Agreement](#)

Contact Technical Support:

- [e-mail](#)
- [Telegram](#)

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