

# CombiProtect Fibra user manual

Updated January 5, 2024



**CombiProtect Fibra** is a wired motion and glass break detector. Detects movement at a distance of up to 12 metres and glass break at a distance of up to 9 metres. Does not react to pets up to 50 centimetres tall and weighing up to 20 kilograms. For indoor installation.

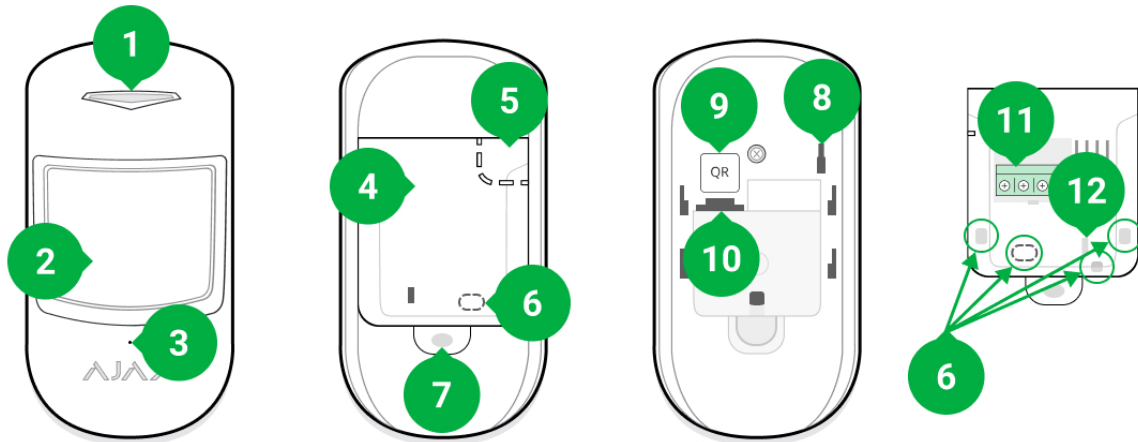


The detector is compatible with [Hub Hybrid \(2G\)](#) and [Hub Hybrid \(4G\)](#). Connection to other [other hubs](#), [radio signal range extenders](#), [ocBridge Plus](#), and [uartBridge](#) is not provided. Integration with other security systems is not provided either.

CombiProtect Fibra works as part of the Ajax system, exchanging data with the hub using the secure Fibra protocol. The communication range is up to 2,000 m when connected via twisted pair U/UTP cat.5.

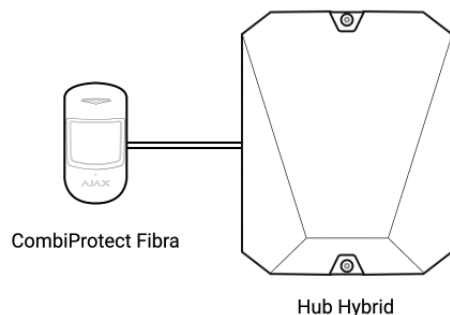
CombiProtect Fibra is a member of the product line of wired Fibra devices. The installation, sale, and administration of these devices are performed only by accredited Ajax partners.

## Functional elements



1. LED indicator.
2. Motion detector lens.
3. Glass break detector microphone hole.
4. SmartBracket mounting panel. To remove the panel, slide it down.
5. Perforated part of the mounting panel. Necessary to trigger a tamper in case of any attempt to detach the detector from the surface. Do not break it off.
6. Places for drilling holes for the cables.
7. The hole for attaching the SmartBracket mounting panel with a screw.
8. Tamper button. Triggers when an attempt is made to detach the detector from the surface or remove the mount.
9. QR code and ID (serial number) of the detector. Used to connect device to the Ajax system.
10. Terminal strip connection socket.
11. Terminal strip for connecting the detector.
12. The hole to fix the wires with wire ties.

## Operating principle



CombiProtect Fibra is a wired combined motion and glass break detector. In the armed mode, the detector instantly transmits an alarm signal to the hub when it detects motion or glass break. The hub, in turn, activates the sirens connected to the system, runs scenarios, and notifies users and the security company.

### How Ajax notifies users of alarms

All CombiProtect Fibra alarms and events are recorded in the notification feed of the Ajax app. Users know where motion or glass break is detected. The notifications contain the name of the hub (name of the protected facility), the name of the device, the type of alarm, and the virtual room to which the detector is assigned.



The detector doesn't switch to the armed mode instantly. The time it takes to switch to the armed mode depends on two factors: delay when leaving (specified in detector settings) and the "hub – detector" polling interval (in Fibra settings; the default value is 36 seconds). In the first case, the delay is set by a user or a PRO with administrator rights. In the second case, the hub notifies the detector about the transition to the armed mode not instantly, but the waiting time does not exceed the duration of one polling period.

### **Motion detector**

Using an IR (infrared) sensor, CombiProtect Fibra identifies intrusions by detecting moving objects with temperatures close to that of the human body.

The digital SmartDetect algorithm eliminates false alarms, relieving users of unnecessary anxiety, and security companies from false calls of patrol.

In the armed mode, the detector constantly reads the infrared sensor signals. When motion is detected, CombiProtect Fibra transmits an alarm to the hub and signals it by flashing the LED indicator (if indication is enabled).

### [More about Ajax motion detectors](#)

#### **Glass break detector**

Glass break detection is provided through an electret microphone. The detector uses DualTone – a two-stage algorithm to exclude false alarms. To register a break, the detector must record a dull (low-frequency) sound of a shock and then a ringing (high-frequency) sound of falling fragments in 1.5 seconds. Owing to this algorithm, the detector does not respond to the barking of dogs or cars passing by the protected object.



CombiProtect Fibra will not react to a break if a film is glued to the glass: anti-shock, sun-protective, decorative, or other. To fix the break of such glass, we recommend using detectors with a shock sensor: [DoorProtect Plus](#) or [DoorProtect Plus Fibra](#)

### [More about Ajax glass break detectors](#)

#### **Fibra data transfer protocol**

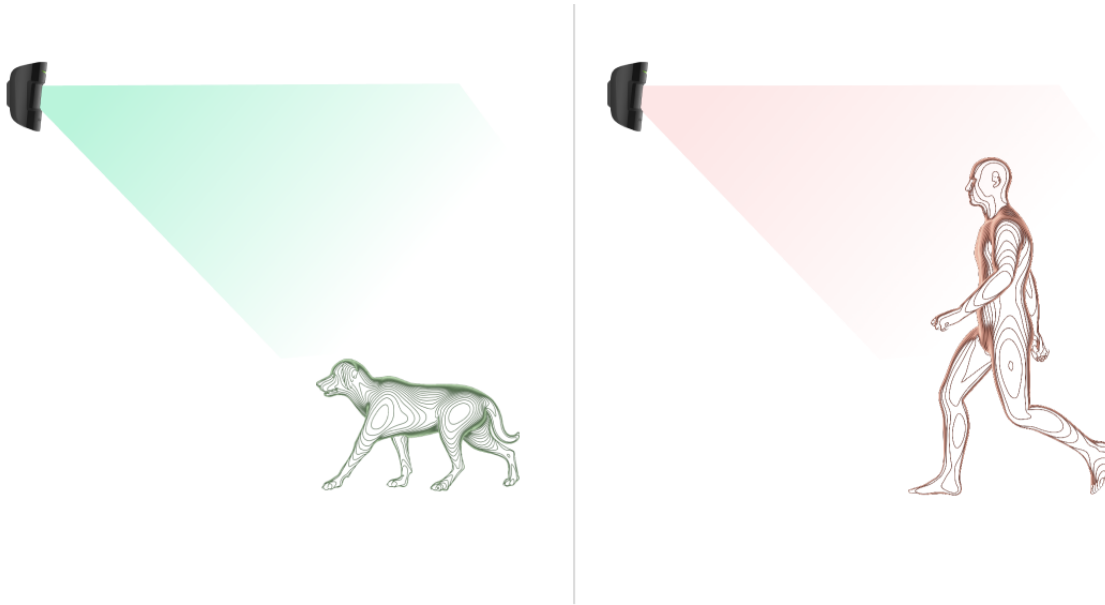
The detector uses Fibra technology to transmit alarms and events. This is a data transfer protocol that provides fast and reliable two-way communication between the hub and the connected devices. Using the bus connection method, Fibra delivers alarms and events instantly, even if 100 devices are connected to the system.

Fibra supports block encryption with a floating key and verifies each communication session with devices to prevent sabotage and spoofing. To monitor connection with the system devices and display their statuses in Ajax apps, the protocol involves regular device polling by the hub with a specified interval.

### [Learn more](#)

# Pet immunity

When properly installed and configured, CombiProtect Fibra does not respond to pets up to 50 centimetres tall and weighing up to 20 kilograms.



The detector is installed at a height of 2.4 metres without any obstruction to its view. For example, in a corner where the view will not be blocked by a closet or other furniture on which a pet can climb.

It is also important to set the required sensitivity in the detector settings:

- **High** – the detector does not respond to cats (up to 25 cm tall).
- **Normal** – the detector does not respond to small dogs (up to 35 cm tall).
- **Low** – the detector does not respond to pets up to 50 cm tall.

If the detector is installed below the recommended height, then the pets will move in the high sensitivity zone. If a sheepdog walks on its hind legs or a small spaniel gets loose on a chair, the detector can raise a false alarm. The detector will also raise an alarm if the pet can jump to the level of the detector or move near it.

Why detectors respond to pets and how to avoid this

How to install CombiProtect Fibra correctly

# Temperature compensation

The detector perceives people and other objects as heat spots. The device monitors these heat spots and, if they move, detects an alarm. Under ideal conditions, the human body temperature (36.6°C on average) differs from the ambient temperature. Due to their contrast, the motion detector accurately captures the movement of a person in space.

In situations where the ambient temperature is very close to the body temperature, the detector may not operate properly; it may give false alarms or fail to respond to motion. To offset this factor, we use temperature compensation.

Temperature compensation is used in all Ajax motion detectors, so CombiProtect Fibra detects motion over the entire operating temperature range.

## [More on temperature compensation](#)

## 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) using **SurGard (Contact ID)**, **SIA DC-09 (ADM-CID)**, **ADEMCO 685**, and other proprietary protocols. The full list of supported protocols [is available here](#).

## [Which CMSs can the Ajax system be connected to](#)

**CombiProtect Fibra can transmit the following events through the hub to the CMS:**

1. Motion alarm.
2. Glass break alarm.
3. Tamper alarm/recovery.
4. Hub connection loss/recovery.
5. Permanent deactivation/activation of the detector.

6. Unsuccessful attempt to arm the security system (with the [system integrity check](#) enabled).

When an alarm is received, the monitoring station operator of the security company knows what happened and where the rapid response unit (RRU) has to be sent. Addressability of Ajax devices allows sending not only events but also the type of the device, the name, group, and virtual room assigned to it to the PRO Desktop and to the CMS. The list of transmitted parameters may differ depending on the type of the CMS and the selected communication protocol.



The device ID, loop (zone) number, and Fibra line number can be found in [device states](#) in the Ajax app. The device number corresponds to the loop (zone) number.

## Selecting the installation site

CombiProtect Fibra is mounted on a vertical surface or in a corner with the bundled screws. Drill holes in the SmartBracket mount for installation. The detector is intended for indoor installation only.

**When selecting a location for CombiProtect Fibra, consider the parameters that affect the correct operation of the detector:**

- Fibra signal strength.
- Cable length for connecting the detector to the hub.
- Motion detector detection area.
- Glass break detector detection area.



Consider the placement recommendations when designing the security system project for a facility. The security system should be designed and installed by professionals. The list of authorised Ajax partners is [available here](#).

## Do not install the CombiProtect Fibra

1. Outdoors. This can lead to false alarms and detector failure.

2. In places where objects and structures may obstruct the detector's view. For example, behind a flower or a column.
3. In places where glass structures may obstruct the detector's view; it doesn't detect movement behind glass.
4. Facing the window to avoid direct sun rays hitting the detector lens. This can lead to false alarms of the motion detector.
5. Opposite any objects with rapidly changing temperature – for example, electric and gas heaters. This can lead to false alarms of the motion detector.
6. Opposite any moving objects with a temperature close to that of the human body – for example, opposite the swinging curtains above a radiator. This can lead to false alarms of the motion detector.
7. In places with fast air circulation – for example, near fans, open windows, or doors. This can lead to false alarms of the motion and glass break detectors.
8. Close to sirens and speakers. This can lead to false alarms of the glass break detector.
9. In locations where objects and structures can interfere with the passage of sound to the detector. For example, in a place where curtains are located between the detector and the window. This may prevent the detector from detecting glass break.
10. Inside premises with temperature and humidity outside the permissible limits. This could damage the detector.
11. In places with low or unstable Fibra signal strength. This may cause malfunctioning of the detector.

## Fibra Signal Strength

The Fibra signal strength is determined by the ratio of the number of undelivered or corrupted data packages to those expected over a certain period of time. The icon  in the **Devices**  tab in Ajax apps 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** – signal is missing. Stable operation is not guaranteed.

### The following factors affect the signal strength:

- The number of devices connected to one Fibra line.
- Cable length and type.
- The correctness of the wire connections to the terminals.



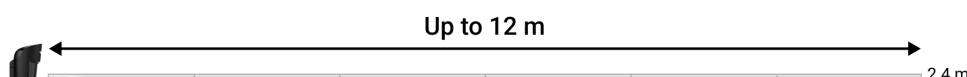
Check the Fibra signal strength before final installation of the detector. If the signal strength is as low as one or zero bars, we cannot guarantee stable operation of the device.

## Motion detector detection area

When selecting detector placement, run a detection zone test for the motion detector. This test allows checking the operation of the device and determine the sector in which the detector detects motion.

The location of the detector determines the area to be monitored and the effectiveness of the security system. When selecting the installation location, consider the direction of the detector lens, its viewing angles, and the presence of obstacles to the view of the lens.

The detector can recognize motion at a distance of up to 12 metres. The direction of the detector lens should be perpendicular to the intended path of entry into the premises.



Vertical viewing angle of the detector

## Horizontal viewing angle of the detector

### Detection zone

When selecting detector placement, run a detection zone test for the glass break detector. This test allows checking the operation of the device and determine the sector in which the detector detects glass break.

The location of the detector determines the area to be monitored and the effectiveness of the security system. When selecting detector placement, consider the directivity of the detector and the presence of obstacles interfering with the microphone operation.

The microphone of the detector identifies glass break at a distance of up to 9 metres. To detect glass break, the detector is installed at an angle of up to 90° to the window or windows.

## Detection angle of the glass break detector

### Design

To correctly install and configure security system devices, it is important to properly design the security system. The design must consider the number and types of devices at the object, their exact location and installation height, the length of wired Fibra lines, the type of cable used, and other parameters. Tips for designing Fibra wired systems are available in this article.

### Topologies

Ajax's systems support two topologies: **Beam (Radial wiring)** and **Ring**.



Connecting devices using a **Ring** topology will be implemented in the next OS Malevich updates. Hardware update of Hub Hybrid will not be required.

**Beam connection (Radial wiring)** occupies one bus output of the hub. Only the segment that remains physically connected to the hub will function in the event of a line break. All devices connected after the breakpoint will lose connection with the hub.



**Ring connection** occupies two bus outputs of the hub. If the ring breaks in one place, no device will be disabled. The ring reconfigures into two lines, which continue to operate normally. Users and the security company will receive notification of the break.

Beam (Radial wiring)	Ring
Occupies one bus output of the hub. Up to 8 beams on the same hub. Up to 2,000 m of wired communication for the same line. A terminating resistor is installed at the end of the line.	Occupies two bus outputs of the hub. Up to 4 rings on the same hub. Up to 500 m of wired communication for the same ring. No terminating resistor is installed at the end of the line.

Both topologies can be used on the same hub. For example, two Ring connections and four Beam (Radial) connections on the same control panel can be used.

Different types of devices can be connected to the same Fibra line. For example, an installer can connect opening detectors, motion detectors with photo verification support, sirens, and keypads to the same line.

**The devices are connected to the Fibra line one by one, as shown on the figure. Line branching is not supported.**

For the **Beam (Radial)** topology, be sure to install a 120 Ohm terminating resistor at the end of the line (included in the hub complete set). The terminating resistor

is connected to the signal terminals of the last detector on the line.



## Cable length and type

The maximum communication range for wired connection using the **Beam (Radial)** topology is 2,000 metres, and that using the **Ring** topology is 500 metres.



Recommended cable types:

- U/UTP cat.5 4 × 2 × 0.51. The conductor material is copper.
- Signal cable 4 × 0.22. The conductor material is copper.

If using a different type of cable, the communication range for wired connection may vary. No other types of cables have been tested.

## Verification using a calculator

To make sure that the project is calculated correctly and the system will work in practice, we have developed a [communication range calculator of Fibra lines](#). The calculator helps to check the quality of communication and cable length for wired Fibra devices with the selected configuration at the system design stage.

## Additional information

The maximum current that Hub Hybrid can supply in total for all Fibra lines is 600 mA. The total current consumption of the devices in the system depends on the type of cable, its length, the type of connected device, the quality of the connection of conductors, and other factors. Therefore, after

selecting devices, we recommend verifying the project using the [Fibra calculator](#).

Up to 100 devices can be connected to Hub Hybrid (with default settings).

## Preparing for installation

### Cable arrangement

When preparing to route cables, check the electrical and fire safety regulations in your region.

It is safest to route cables inside walls, floors, and ceilings; this way, they will be invisible and unavailable for intruders. It also ensures greater durability; the cable will be affected by fewer of the external factors that can impact the natural wear of the conductor and its insulating layer.

As a rule, security system cables are routed during the construction or repair stage and after wiring at the object.

If impossible to install cables inside the walls, route them so that the cable is sufficiently protected and hidden from prying eyes. For example, in a cable conduit or a protective corrugated pipe. It is recommended to hide them. For example, behind the furniture.

We recommend using protective pipes, cable conduits, or corrugated pipes to protect cables, regardless of whether they are routed inside the wall or not. The cables should be arranged carefully; no sagging, tangling, or twisting is allowed.

Consider the locations of possible signal interference. If the cable is routed near motors, generators, transformers, power lines, control relays, and other sources of electromagnetic interference, use twisted-pair cable in these areas.

### Cable routing

When routing cables for a security system, consider not only the general requirements and rules for electrical installation work but also the specific installation features of each device: installation height, mounting method, how the cable is inserted into the enclosure, and other parameters. Before installation, we recommend reading the [selecting the installation site](#) section of this manual.

Try to avoid any deviations from the security system project design. Violation of the basic installation rules and the recommendations of this manual may lead to incorrect operation of the devices.

Check the cables for bends and physical damage before routing. Replace the damaged cables.

Cables of the security system devices must be routed at a distance of at least 50 cm from the power cables when laying parallel, and, if they intersect, at a 90° angle.

Observe the permissible bend radius of the cable. It is specified by the manufacturer in the cable specifications. Otherwise, an installer can damage or break the cable.

The devices are connected to the Fibra line one by one. Line branching is not supported.

## Preparing cables for connection

Remove the insulating layer of the cable and strip the cable with a special insulation stripper only. It strips the cable properly without damaging the conductor. The ends of the wires that will be inserted into the detector's terminals should be tinned or crimped with end sleeves. This ensures reliable connection and protects the conductor from oxidation. Recommended cable lug sizes: 0.75 to 1 mm<sup>2</sup>.

## Installation and connection



Before installing CombiProtect Fibra, make sure that the optimal detector location has been selected and that it meets the requirements of this manual. To reduce the risk of sabotage, the cables must be hidden from view and located in a place that is difficult for

When connecting to the device terminals, do not twist the wires together; solder them. The ends of the wires that will be inserted into the terminals should be tinned or crimped with special end sleeves. This will ensure a reliable connection. **Follow safety procedures and regulations for electrical installation work.**

## Connection of CombiProtect Fibra to the hub

1. Turn off the hub. Disconnect the external power and the hub backup battery.

1 – external power supply.

2 – backup battery.

2. Plug the detector connection cable into the hub enclosure. Connect the wires to the required hub line.

**+24V** – 24 V= power terminal.

**A, B** – signal terminals.

**GND** – ground.

3. Remove the SmartBracket mounting panel from the detector and carefully break out the perforated part to output the cable from the rear side. If it is necessary to output cable from the bottom or the side, make holes in the places indicated in the figure using a drill.

1 – for cable output from the rear of the detector.

2 – for cable output from the side of the detector.

3 – for cable output from the bottom of the detector.

4. If the detector is not the last device in the connection line, prepare a second cable in advance. The ends of the wires of the first and second cables that will be inserted into the terminals of the device should be tinned and soldered together.
5. Run the cable from the hub into the detector enclosure through the hole that was made.
6. Connect the wires to the terminals according to the figure below. Be sure to follow the polarity and connection order of the wires. Securely fasten the cable to the terminals. Secure the cable with ties.

**+24V** – 24 V= power terminal.

**A, B** – signal terminals.

**GND** – ground.

7. If the detector is the last device in the line, in the case of **Beam (Radial) connection**, install a terminating resistor by connecting it to the signal terminals of the device. When **Ring connection** is used, a terminating resistor is not needed.



We recommend using **Ring connection** (hub – devices – hub). This improves the system protection against sabotage.

8. Temporarily secure the SmartBracket panel to a vertical surface or corner using double-sided adhesive tape or other temporary fasteners at the chosen installation location. This is necessary to run the detector tests. The installation height is 2.4 metres.
9. Turn on the hub to supply power to the connected detector. When power is supplied, a LED will notify that the detector is on.
10. Place the detector on the SmartBracket mounting panel.



11. Connect the backup battery and external power supply to the hub. Turn on the hub.
12. [Add CombiProtect Fibra to the system.](#)
13. Perform the [Fibra signal strength test](#). The recommended signal strength is two or three bars. If the signal strength is one or zero bars, check the connection correctness and the cable integrity.
14. Perform the [detection zone test](#). The maximum range for motion detection is 12 metres, and for break detection is 9 metres. If the detector does not respond to motion and/or break during the test in 5 out of 5 cases, it should be installed in a different location.

### [How to test operability correctly](#)

15. If the detector passes the tests, fix the SmartBracket mounting panel with bundled screws using at least two fixing points (one of them is in the perforated part of the mount above the tamper). When using other mounts, make sure they do not damage or deform the mounting panel.



Double-sided adhesive tape can be used for temporary fastening as the device can come unglued from the surface at any time. As long as the device is taped, the tamper will not be triggered when the detector is detached from the surface.

16. Put the detector on the SmartBracket mounting panel and secure it with a bundled screw.

## Adding to the system



The detector is compatible only with [Hub Hybrid \(2G\)](#) and [Hub Hybrid \(4G\)](#). Fibra devices can only be added and configured through the PRO app by a user with administrator rights.


[Types of accounts and their rights](#)

## Before adding CombiProtect Fibra


1. Install the [PRO app](#). Create an [account](#) if you don't already have one.
2. Add a hub compatible with the detector to the app, make the necessary settings, and create at least one [virtual room](#).
3. Make sure that the hub is on and has Internet access via Ethernet and/or mobile network. You can check the connection in the Ajax app or by looking at the LED on the hub board. It should light up white or green.
4. Make sure the hub is disarmed and does not start updates by checking its status in the Ajax app.
5. Make sure the detector is physically connected to the hub.


## How to add CombiProtect Fibra

### To add a detector manually

1. Open the [PRO app](#). Select the hub you want to add CombiProtect Fibra to.
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 enclosure and the packaging), select a room and a group (if the [group mode](#) is enabled).
4. Press **Add**.

### To have a detector added automatically

1. Open the [PRO app](#). Select the hub you want to add CombiProtect Fibra to.
2. Go to the **Devices**  tab and click **Add device**.
3. Select **Add all bus devices**. The hub will scan all Fibra lines.

After scanning, all wired devices connected to the hub will be displayed in the **Devices**  tab. The order of the devices will depend on which line of the hub they are connected to.

By default, the device name includes the detector name and its identifier. To pair the detector with the hub, edit the detector's name, and assign it a room and a group (if the [group mode](#) is enabled in the hub settings).

To check which detector you actually deal with, use any of the following methods: LED indication and detector triggering.

### **Method 1: by LED indication.**

In the list of available devices to add, click on any item. The LED of this detector will start flashing after you press it. This way, you'll know exactly which detector you're adding, how to name it, and which room and group it should be connected to.

#### **To add a detector:**

1. Click on the device in the list.
2. Create a name.
3. Specify a room and a security group (if enabled).
4. Press **Save**. If the detector is connected to the hub successfully, it will disappear from the list of available detectors.

### **Method 2: by detector alarm.**

Enable the **Add Detectors by Alarm** option above the list of detectors.

Trigger an alarm by walking past the motion detector. When triggered, the detector will move to the top of the list in the **Triggered devices** category. The detector will stay in this category for 5 seconds, after which it will move back to the Fibra line category.

#### **To add a detector:**

1. Click on the device in the list.
2. Create a name.
3. Specify a room and a security group (if enabled).
4. Press **Save**. If the detector is connected to the hub successfully, it will disappear from the list of available detectors.



Device status updating depends on the Fibra settings; the default value is 36 seconds.

If adding of the detector is failed, check the wire connection to the hub and try again. If the hub already has the maximum number of devices added (for Hub Hybrid, the default value is 100), you will get an error notification when you add one.



CombiProtect Fibra only works with one hub. When connected to a new hub, the detector stops sending commands to the old one. Once added to a new hub, CombiProtect Fibra is not removed from the list of devices of the old hub. This must be done through the Ajax app.

## Functionality testing

The Ajax system offers several types of tests to help selecting the right installation place for the devices. Tests do not start immediately, however, the waiting time does not exceed the duration of one “hub – device” polling interval.

For CombiProtect Fibra, **Fibra signal strength test** and **detection zone test** are available. The signal strength test allows determining the strength and stability of the signal at the installation site of the device, and the detection zone test allows checking how the detector responds to alarms.

### To run a test in the Ajax app

1. Select a hub if you have several of them or if you are using the PRO app.
2. Go to the **Devices**  menu.
3. Select **CombiProtect Fibra**.
4. Go to the CombiProtect Fibra **Settings** by clicking on the gear icon .
5. Select a test:
  1. Fibra Signal Strength Test.
  2. Detection Zone Test.
6. Run the test following the prompts of the app.


**To check the motion detector**, run the Detection Zone Test and walk around the room in its visibility zone, watching the LED reaction.






### To test the glass break detector:




1. Run the Detection Zone Test.
2. Hit the glass (without breaking it) or another surface with a fist. If the detector microphone catches a low-frequency sound, the LED will flash.
3. Within 1.5 seconds after the first impact, simulate the high-frequency sound of glass breaking by tapping a metal object against a glass or by dropping keys onto floor tiles. As soon as the detector reads the sound, it will turn off the LED for a second. This means that the alarm on break is registered.

You can also play this [audio file](#) to test the glass break detector.

## Icons


The icons display some of CombiProtect Fibra states. Icons can be checked in the Ajax app in the **Devices**  tab.


Icon	Meaning
	Fibra Signal Strength – displays the signal strength between the hub and the detector. Recommended value: 2–3 bars.  <a href="#">Learn more</a>
	The detector operates in the <b>Always Active</b> mode.  <a href="#">Learn more</a>
 	Delay When Entering and/or Leaving enabled.  <a href="#">Learn more</a>
	CombiProtect Fibra will operate when <b>Night mode</b> is enabled.

	<a href="#"><u>Learn more</u></a>
	CombiProtect Fibra has detected motion. The detector detects motion in the armed mode only.
	CombiProtect Fibra has detected glass break. The detector detects glass break in the armed mode only.
	CombiProtect Fibra has been disabled by a user or a PRO with administrator rights. <a href="#"><u>Learn more</u></a>
	CombiProtect Fibra has been disabled due to exceeding the number of alarms. <a href="#"><u>Learn more</u></a>
	CombiProtect Fibra tamper-triggering events are disabled. <a href="#"><u>Learn more</u></a>

## States

The states include information about the device and its operating parameters. CombiProtect Fibra states can be found in the Ajax app:

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

Parameter	Meaning
Malfunction	Clicking on  opens the list of CombiProtect Fibra malfunctions.  The field is displayed if a malfunction is detected.
Temperature	Detector temperature. Measured on the processor and changes gradually.

	<p>Acceptable error between the value in the app and the room temperature: <math>- 2^{\circ}\text{C}</math>.</p> <p>The value is updated as soon as the detector detects a temperature change of at least <math>2^{\circ}\text{C}</math>.</p> <p>You can configure a scenario by temperature to control automation devices</p> <p><a href="#"><u>Learn more</u></a></p>
Fibra Signal Strength	<p>Signal strength between the hub and CombiProtect Fibra. Recommended value: 2–3 bars.</p> <p>Fibra is a protocol for transmitting CombiProtect Fibra events and alarms.</p> <p><a href="#"><u>Learn more</u></a></p>
Connection via Fibra	<p>The status of connection between the hub and the detector:</p> <ul style="list-style-type: none"> <li>• <b>Online</b> – the detector is connected to the hub.</li> <li>• <b>Offline</b> – the detector has lost connection with the hub. Check detector connection to Fibra line.</li> </ul>
Bus Voltage	<p>Displays the voltage value at the detector.</p>
Lid	<p>The status of the detector tamper that responds to detachment or opening of the device enclosure:</p> <ul style="list-style-type: none"> <li>• <b>Open</b> – the detector is removed from the mount. Check the mounting of the detector.</li> <li>• <b>Closed</b> – the detector is installed on the mount. Normal state.</li> </ul> <p><a href="#"><u>Learn more</u></a></p>
Motion Detector Sensitivity	<p>Sensitivity level of the motion detector:</p>

	<ul style="list-style-type: none"> <li>• <b>Low</b> – the detector does not respond to pets up to 50 cm tall.</li> <li>• <b>Normal</b> (by default) – the detector does not respond to small dogs (up to 35 cm tall).</li> <li>• <b>High</b> – the detector does not respond to cats (up to 25 cm tall).</li> </ul>
Motion Detector Always Active	<p>When this option is enabled, the detector is always in the armed mode and detects motion.</p> <p><a href="#"><u>Learn more</u></a></p>
Glass Break Detector Sensitivity	<p>Sensitivity level of the microphone installed inside the detector:</p> <ul style="list-style-type: none"> <li>• <b>Low.</b></li> <li>• <b>Normal</b> (by default).</li> <li>• <b>High.</b></li> </ul> <p>The sensitivity level is selected based on the results of the <a href="#"><u>Detection Zone Test</u></a>. If during the test the detector doesn't respond to break in 5 cases out of 5, the sensitivity should be increased.</p>
Glass Break Detector Always Active	<p>When this option is enabled, the detector is always in the armed mode and detects a break.</p> <p><a href="#"><u>Learn more</u></a></p>
Permanent Deactivation	<p>Shows the status of the device permanent deactivation function:</p> <ul style="list-style-type: none"> <li>• <b>No</b> – the device operates in normal mode and transmits all events.</li> <li>• <b>Lid only</b> – the hub administrator has disabled notifications about tamper triggering.</li> <li>• <b>Entirely</b> – the hub administrator has entirely excluded the detector from the system. The</li> </ul>



device does not follow system commands and does not report alarms or other events.

- **By number of alarms** – the device is automatically excluded from the system when the number of alarms is exceeded (the number is specified in the [Devices Auto Deactivation](#) settings).

[Learn more](#)

## 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

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 secured area.

[Learn more](#)

Delay When Leaving, sec

Delay time when leaving: 5 to 120 seconds.

Delay when leaving (arming delay) is the time the user has to leave the secured area after arming.

[Learn more](#)



Night Mode Delay When Entering, sec

Delay time when entering in **Night mode**: 5 to 120 seconds.

	<p>Delay when entering (alarm activation delay) is the time the user has to disable <b>Night Mode</b> after entering the premises.</p> <p><a href="#">Learn more</a></p>
Night Mode Delay When Leaving, sec	<p>Delay time when leaving in <b>Night Mode</b>: 5 to 120 seconds.</p> <p>Delay when leaving (arming delay) is the time the user has to leave the premises after enabling <b>Night Mode</b>.</p> <p><a href="#">Learn more</a></p>
Firmware	Detector firmware version.
Device ID	Detector ID. Also available on the QR code on the detector enclosure and the packaging.
Device No.	Number of the detector loop (zone).
Bus No.	The number of the hub bus the detector is connected to.

## Settings

To change the detector settings in the Ajax app:

1. Go to the **Devices**  tab.
2. Select CombiProtect Fibra from the list.
3. Go to **Settings** by clicking on the gear icon .
4. Set the required settings.
5. Click **Back** to save the new settings.

Settings	Meaning
Name	Detector name. Displayed in the list of hub devices, text of SMS and notifications in the events feed.

	<p>To change the detector name, click on the text field.</p> <p>The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.</p>
Room	<p>Selecting the virtual room to which CombiProtect Fibra is assigned.</p> <p>The room name is displayed in the text of SMS and notifications in the events feed.</p>
Alarm LED indication	<p>When off, the detector's LED will not alert about motion, glass break, and tampering alarms.</p>
Motion Detector	<p>When this option is enabled, CombiProtect Fibra detects motion when armed.</p>
Motion Detector Sensitivity	<p>Sensitivity level of the motion detector.</p> <p>The selection depends on the type of the object, the presence of probable sources of false alarms, and the specifics of the protected area:</p> <ul style="list-style-type: none"> <li>• <b>Low</b> – the detector does not respond to pets up to 50 cm tall.</li> <li>• <b>Normal</b> (by default) – the detector does not respond to small dogs (up to 35 cm tall).</li> <li>• <b>High</b> – the detector does not respond to cats (up to 25 cm tall).</li> </ul> <p><b><u><a href="#">Why motion detectors respond to pets and how to avoid this</a></u></b></p>
Motion Detector Always Active	<p>When this option is enabled, the detector is always in the armed mode and detects motion.</p> <p><b><u><a href="#">Learn more</a></u></b></p>
Glass Break Detector	<p>When this option is enabled, CombiProtect Fibra detects a break when armed.</p>
Glass Break Detector Sensitivity	<p>Sensitivity level of the microphone installed inside the detector:</p> <ul style="list-style-type: none"> <li>• <b>Low.</b></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Normal.</b></li> <li>• <b>High.</b></li> </ul> <p>The sensitivity level is selected based on the results of the <a href="#">detection zone test</a>. If during the test the detector doesn't respond to break in 5 cases out of 5, the sensitivity should be increased.</p>
Glass Break Detector Always Active	<p>When this option is enabled, the detector is always in the armed mode and detects a break.</p> <p><a href="#">Learn more</a></p>
Alert with a siren if motion detected	<p>When this option is enabled, <a href="#">sirens</a> connected to the system are activated when motion is detected by the CombiProtect Fibra detector.</p>
Alert with a siren if glass break detected	<p>When this option is enabled, <a href="#">sirens</a> connected to the system are activated when a glass break is detected by the CombiProtect Fibra detector.</p>
<b>Alarm Reaction</b>	
Operating Mode	<p>Specify how this device will react to alarms:</p> <ul style="list-style-type: none"> <li>• <b>Instant Alarm</b> – the armed detector immediately reacts to a threat and raises the alarm.</li> <li>• <b>Entry/Exit</b> – when a delay is set, the armed device starts the countdown and doesn't raise the alarm even if triggered until the countdown ends.</li> <li>• <b>Follower</b> – the detector inherits the delays from Entry/Exit detectors. However, when the Follower is triggered individually, it immediately raises the alarm.</li> </ul>
Delay When Entering, sec	<p>Selecting delay time when entering: 5 to 120 seconds.</p> <p>Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the premises.</p>

	<p><a href="#"><u>Learn more</u></a></p>
Delay When Leaving, sec	<p>Selecting delay time when leaving: 5 to 120 seconds.</p> <p>Delay when leaving (arming delay) is the time the user has to leave the premises after arming.</p> <p><a href="#"><u>Learn more</u></a></p>
Arm in Night Mode	<p>When this option is enabled, the detector will enter the armed mode when the system is set to <b>Night Mode</b>.</p> <p><a href="#"><u>Learn more</u></a></p>
Night Mode Delay When Entering, sec	<p>Delay time when entering in <b>Night Mode</b>: 5 to 120 seconds.</p> <p>Delay when entering (alarm activation delay) is the time the user has to disable Night Mode after entering the premises.</p> <p><a href="#"><u>Learn more</u></a></p>
Night Mode Delay When Leaving, sec	<p>Delay time when leaving in <b>Night Mode</b>: 5 to 120 seconds.</p> <p>Delay when leaving (arming delay) is the time the user has to leave the premises after enabling Night Mode.</p> <p><a href="#"><u>Learn more</u></a></p>
Fibra Signal Strength Test	<p>Switches the detector to the Fibra signal strength testing mode.</p> <p>The test allows checking the signal strength between the hub and the detector over the Fibra wired data transfer protocol to determine the optimal installation location.</p> <p><a href="#"><u>Learn more</u></a></p>
Detection Zone Test	<p>Switches the detector to the detection zone testing mode.</p>

	<p>The test allows the user to check the detector's response to the motion and glass break and determine the optimal installation location.</p> <p><a href="#">Learn more</a></p>
User Guide	<p>Opens CombiProtect Fibra User Manual in the Ajax app.</p>
Permanent Deactivation	<p>Allows the user to disconnect the device without removing it from the system.</p> <p>Three options are available:</p> <ul style="list-style-type: none"> <li>• <b>No</b> – the device operates normally and transmits all events.</li> <li>• <b>Entirely</b> – the device will not execute commands or participate in automation scenarios. The system will ignore device alarms and other notifications.</li> <li>• <b>Lid only</b> – the system will ignore notifications about the triggering of the device tamper only.</li> </ul> <p><a href="#">Learn more</a></p> <p>The system can also automatically deactivate devices when the set number of alarms is exceeded.</p> <p><a href="#">Learn more</a></p>
Unpair Device	<p>Unpairs the detector, disconnects it from the hub, and deletes its settings.</p>

## LED indication

LED indication	Event	Note
When power is connected, it lights up green once.	The detector is on.	

Lights up green for about 1 second.	Motion alarm / tamper triggering.	The detector records motion once every 5 seconds.
Smoothly lights up and goes out after an alarm or tamper triggering.	Low Fibra line voltage.	Voltage of 7 V <sub>DC</sub> or less is considered low.

## Malfunctions

If a hub identifies a detector malfunction (for example, there is no connection with the hub via Fibra protocol), the Ajax app will display a malfunction counter in the upper left corner of the device icon.

All malfunctions can be seen in the detector states. Fields with malfunctions will be highlighted in red.

### Malfunction is displayed if:

- The detector temperature is outside acceptable limits.
- The detector enclosure is open (tamper is triggered).
- There is no signal via Fibra protocol.

## Maintenance

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

Do not use substances that contain alcohol, acetone, petrol, and other active solvents to clean the detector. Wipe the lens gently as scratches may impair the detector sensitivity.

## Technical specifications

[All technical specifications](#)

## Compliance with standards

## Setup in compliance with EN 50131 requirements

### Complete set

1. CombiProtect Fibra.
2. SmartBracket mounting panel.
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.

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

#### Warranty obligations

#### User Agreement

#### Contact Technical Support:

- e-mail
- Telegram

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