FireProtect Plus User manual

Updated September 19, 2024



FireProtect Plus is a wireless indoor fire detector with an in-built buzzer and a battery, ensuring up to 4 years of autonomous operation. FireProtect Plus can detect smoke and rapid temperature increase. FireProtect Plus additionally can alert of dangerous CO level. The detector also can work independently of the hub.

Connecting to the Ajax security system via a secured **Jeweller** radio protocol, FireProtect Plus communicates with the **hub** at a distance of up to 1,300 m in line of sight.

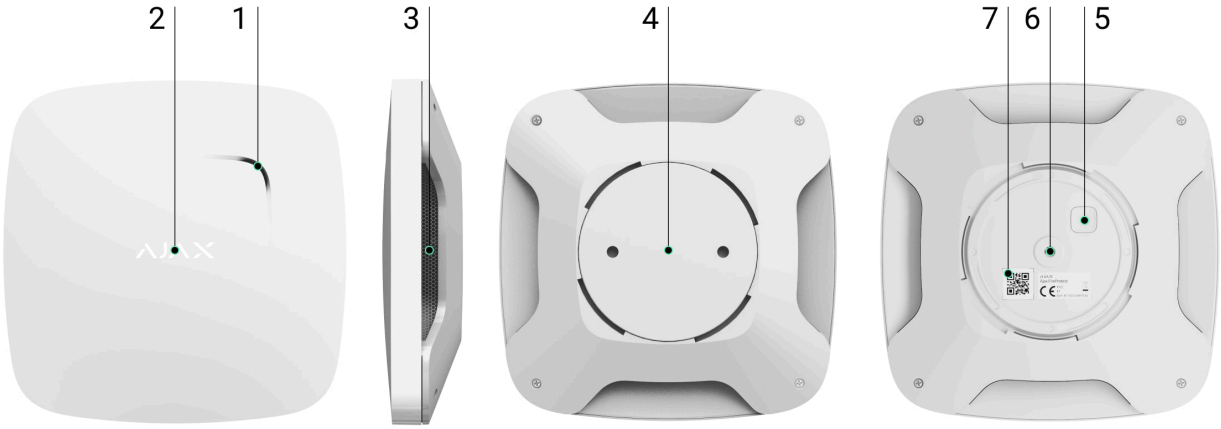
The detector can be a part of third-party security systems, connecting to them via the **uartBridge** or **ocBridge Plus** integration module.

The detector is set up via the **Ajax apps** for iOS, Android, macOS, and Windows. The system notifies the user of all events through push notifications, SMS, and calls (if activated).

FireProtect model without built-in carbon monoxide (CO) sensor also available for purchase.

Buy fire detector with carbon monoxide sensor FireProtect Plus

Functional Elements



1. Siren hole

2. Light indicator (acts as the sensor and Test button)

3. Smoke chamber hole with the temperature detector behind the net

4. SmartBracket attachment panel

5. Power button

6. Tamper button

7. QR code

Operating Principle



chamber, the photodetector detects it by the infrared beam distortion.

When smoke penetrates the detector chamber, it distorts infrared light between the emitter and photoelectric receiver. This distortion triggers a smoke alarm. When the temperature exceeds 60°C or rises by 30°C during 30 minutes (not necessary to reach 60°C), the detector registers temperature increase, which triggers a fire alarm.

> ⚠ The life span of the FireProtect Plus detector lasts up to 7 years. In the event of a detector failure, you will receive a corresponding notification — it will need to be replaced or submitted for comprehensive diagnostics.

In case of alarm, the detector activates the built-in buzzer (the siren sound can be heard from afar) and blinks with the light indicator. When connected to a security system, both the user and the security company are notified of the alarm.

FireProtect Plus also responds to dangerous levels of carbon monoxide (CO). The detector generates an alarm if CO concentration reaches:

- 0.003% (30 ppm) within 120 minutes or more;
- 0.005% (50 ppm) within 60 – 89 minutes;
- 0.01% (100 ppm) within 10 – 39 minutes;
- 0.03% (300 ppm) within 3 minutes.

Loss of consciousness is possible at a CO concentration of 0.1% lasting over 2 hours!

The detector stops notifying about the dangerous level of carbon monoxide when the concentration drops to 40 ppm (0.004%) within one minute.

The siren of the device can be turned off using three ways:



1. By pressing the Ajax logo on the device lid (there is a touch button under the logo).
2. Through the Ajax app. In case of fire alarm, you will see a pop-up message in Ajax app suggesting to turn off the built-in sirens.
3. Using the **KeyPad** / **KeyPad Plus** (if **Interconnected Fire Detectors Alarm** feature is enabled). To turn off the built-in sirens in case of fire alarm, press the “*” button on the KeyPad / KeyPad Plus.

Please note that for this to work you need to priorly select **Mute Interconnected Fire Alarm** command for this button in the KeyPad/KeyPad Plus settings.

If smoke and/or temperature levels do not restore to normal values, in 10 minutes, the FireProtect Plus turns on the siren again.

Connecting the Detector to the Ajax Security System

Connecting to the hub

Before starting connection:

1. Following the hub user guide, install the **Ajax app**. Create the account, add the hub, and create at least one room.
2. Switch on the hub and check the internet connection (via Ethernet cable and/or GSM network).
3. Make sure that the hub is disarmed and does not update by checking its status in the Ajax app.

> Only users with administrator rights can add the device to the hub

Pairing the detector with hub:

1. Select **Add Device** in the Ajax app.
2. Name the device, scan or type the **QR Code** (located on the detector body and packaging), and select the location room.



3. Tap **Add** — the countdown will start.

4. Switch on the device.



To make sure that the detector is on, press the on/off button — the logo will light up red for a second.

For detection and pairing to occur, the detector should be located within the coverage area of the wireless network of the hub (at a single protected object). The connection request is transmitted for a short time: at the moment of switching on the device.

If pairing with the hub fails, the detector operates autonomously; switch off the detector for 5 seconds and retry.

The detector connected to the hub is displayed in the list of devices in the app. The update of the detector status in the list depends on the device inquiry time set in the hub settings (the default value is 36 seconds).

Connecting to Third Party Security Systems

To connect the detector to a third party security central unit using the **uartBridge** or **ocBridge Plus** integration module, follow the recommendations in the manual of the respective device.

The smoke detector always operates in the active mode. When connecting FireProtect Plus to third party security systems, it is appropriate to place it in a

permanently active protection zone.

States

1. Devices –
2. FireProtect Plus

Parameter	State
Temperature	Air temperature in the premise where FireProtect Plus is installed. Measured in Celsius or Fahrenheit degrees depending on the app settings. In the normal state, the temperature value is displayed in black. When the temperature rises, the field is highlighted with red. You can configure a scenario by temperature to control automation devices. **Learn more**
Jeweller Signal Strength	Signal strength between the hub and the detector
Connection	Connection status between the hub and the device
Battery Charge	Battery level of the device. Two states available: • OK • Battery discharged **How battery charge is displayed in Ajax apps**

Lid	The tamper state of the device — reacts to the detachment
ReX	Displays the status of using a **radio signal range extender**
Smoke	Shows if smoke is detected
Temperature Threshold Exceeded	The state of temperature threshold exceeded alarm
Rapid Temperature Rise	The state of rapid temperature increase alarm
High CO Level	The state of dangerous CO level alarm
Backup Battery Charge	Backup battery level of the device
Smoke sensor	The state of the smoke detector
Smoke Sensor Dust Level	The dust level in the smoke chamber
Permanent Deactivation	Shows the status of the device: active, completely disabled by the user, or only notifications about triggering of the device tamper button are disabled
Firmware	Detector firmware version
Device ID	Device identifier

Settings

1. Devices
2. FireProtect Plus
3. Settings

Setting	Value
First field	Device name, can be edited
Room	Selecting the virtual room to which the device is assigned

Dangerous CO Level Alarm	If active, the detector alerts of exceeding the limits of carbon monoxide concentration
High Temperature Alarm	If active, the detector reacts when the temperature is 60°C and higher
Rapid Temperature Rise Alarm	If active, the detector reacts to rapid temperature increase (30°C for 30 minutes or less)
Alert with a siren if smoke is detected	If active, **sirens added to the system** are activated in case of smoke alarm
Alert with a siren if temperature threshold exceeded	If active, **sirens added to the system** are activated in case if temperature threshold exceeded
Alert with a siren if rapid temperature rise detected	If active, **sirens added to the system** are activated in case if rapid temperature rise detected
Alert with a siren if CO detected	If active, **sirens added to the system** are activated in case if CO concentration is dangerous
Jeweller Signal Strength Test	Switches the device to the signal strength test mode
Smoke Sensor Self Test	Starts FireProtect Plus selftest
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 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 about permanent deactivation of devices**

	A disabled device does not trigger an interconnected alarm of fire detectors. But if smoke is detected, the built-in siren will sound
User Guide	Opens the detector User Guide
Unpair Device	Deletes device and its settings

Interconnected Fire Detectors Alarms Setup

The function activates built-in sirens of all fire detectors if at least one of them is triggered. Sirens are activated within the hub–detector ping interval according to the Jeweller settings.

To enable Interconnected Alarms:

1. Open the **Devices** tab in the **Ajax app**
2. Select a hub
3. Go to its **Settings** by pressing
4. Select the **Service** item
5. Go to the **Fire detectors settings** menu and activate the **Interconnected Fire Detectors Alarms option**

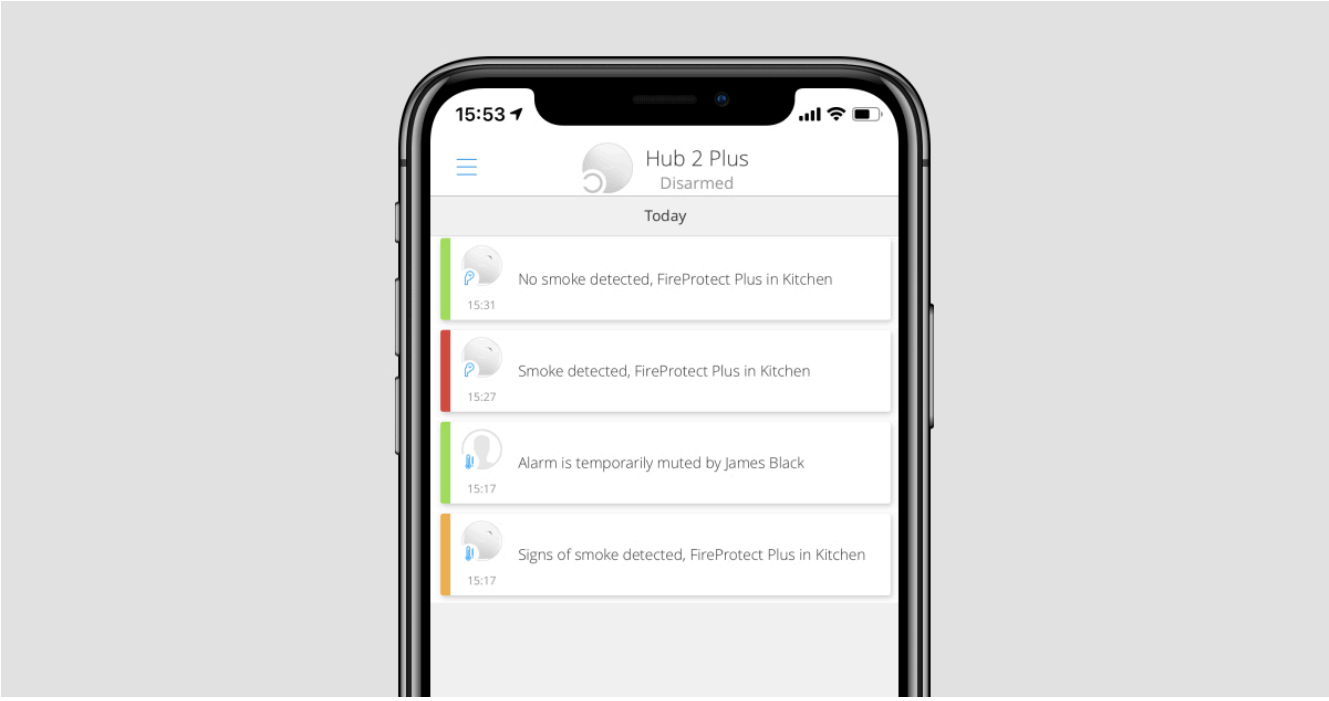
Interconnected alarms are supported by FireProtect Plus detectors with firmware versions 3.42 and later. Please note that when you turn on the interconnected alarms, you cannot set the hub–detector ping interval (Jeweller settings) of more than 48 seconds.

6. If necessary, set the **Delay of Interconnected Alarms** from 0 to 5 minutes (in 1-minute increments). The option allows you to postpone the interconnected alarm for a specified period of time.

When this option is inactive, the interconnected alarm is sent to all fire detectors within a minute.

The function works as follows:

1. One of the FireProtect Plus detectors detects an alarm.
2. **Delay of Interconnected Alarms** starts.
3. The built-in siren of the fire detector informs the alarm. Users receive notifications in the Ajax app (if **appropriate notifications** are enabled). At the object, **Ajax sirens** are activated (if the **corresponding settings** are enabled).



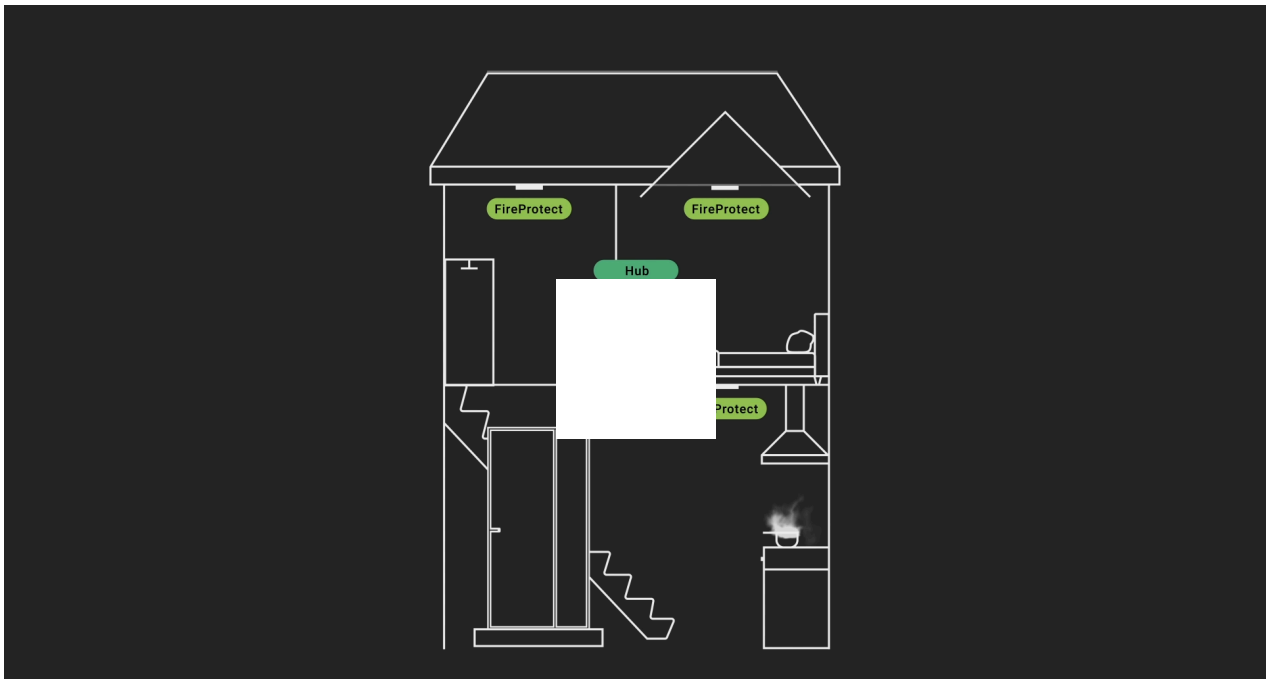
4. An alarm confirmation event is sent to the monitoring station and security system users, and the system starts the interconnected alarm for fire detectors if:

- The **interconnected alarm delay** time has passed, and the triggered detector is still registering an alarm.



00:00 00:14

- During the **delay of the interconnected alarms**, the triggered detector reports a different type of alarm (for example, the detector report the exceeding of the temperature threshold after a smoke alarm).



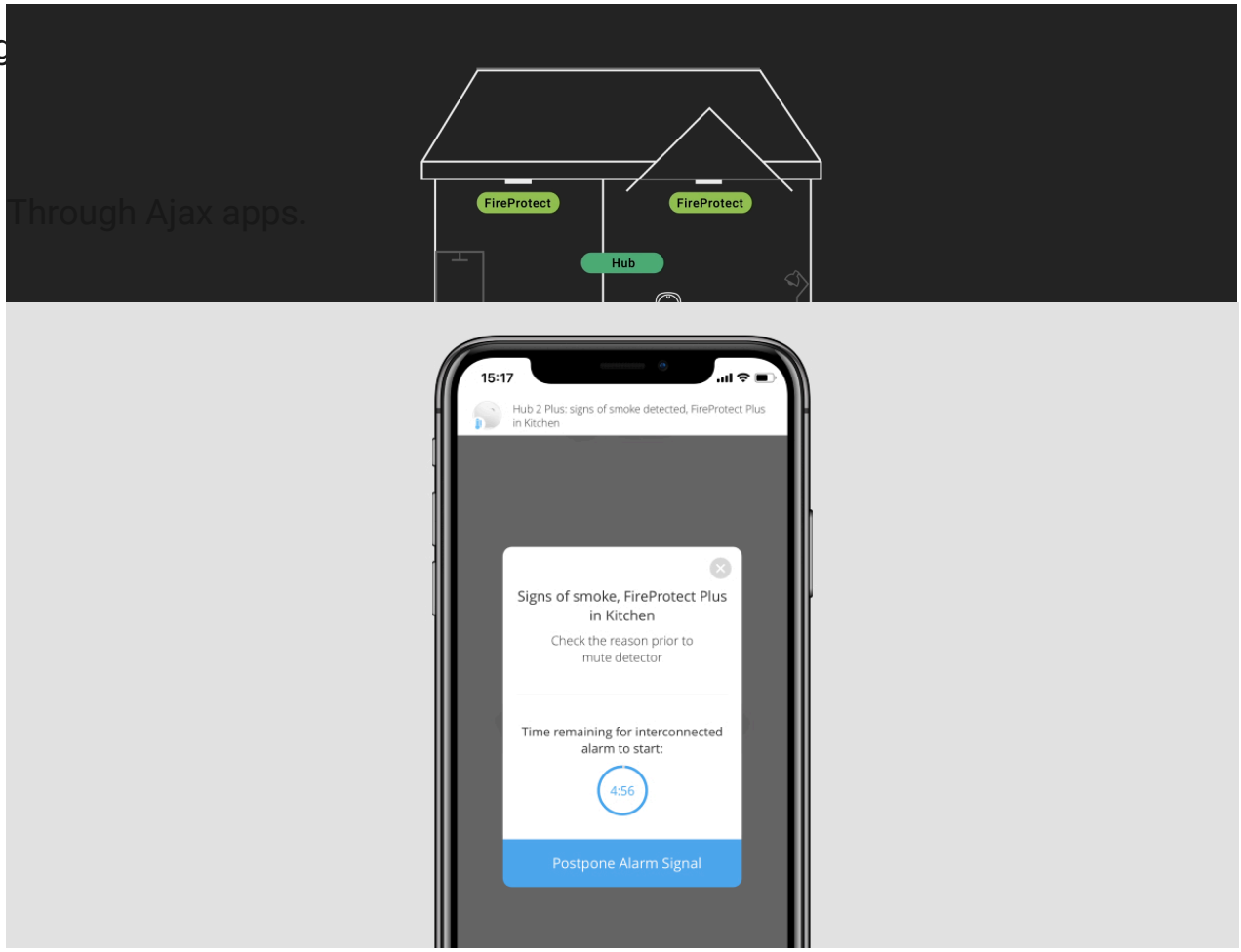
00:00 00:13

- During the **interconnected alarm delay**, another fire detector in the system raised an alarm.

00:00 00:10

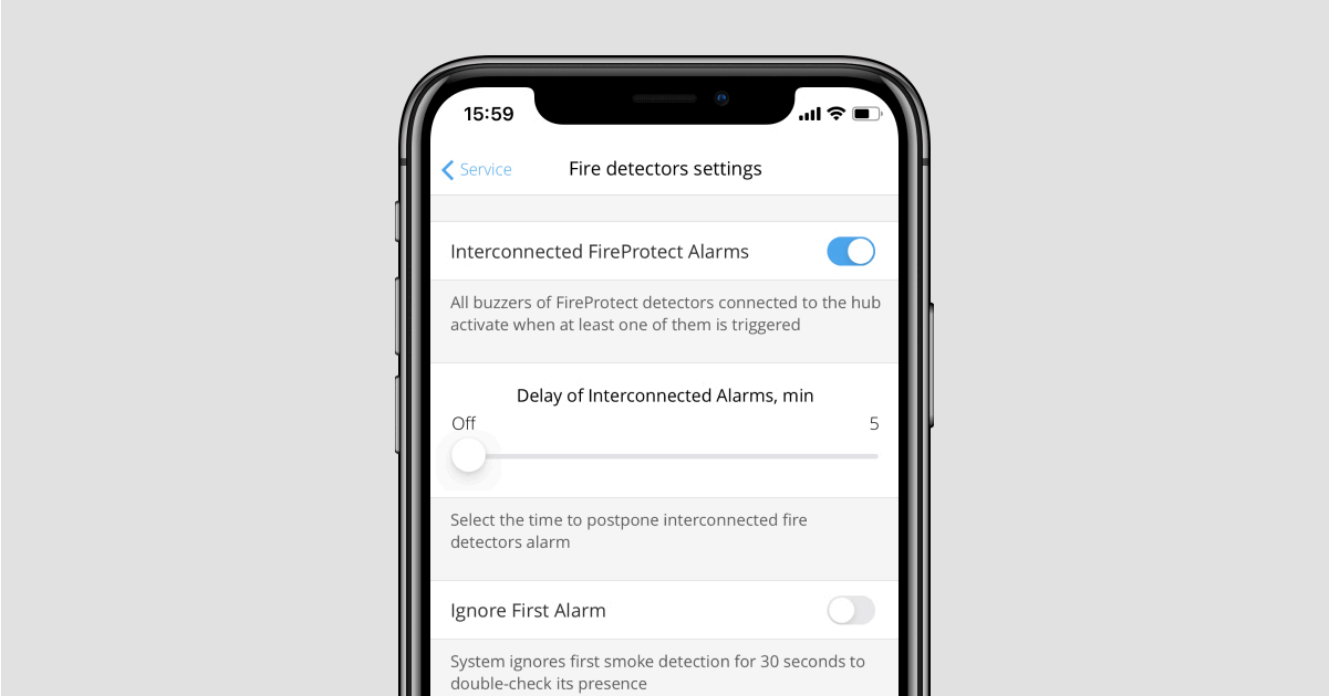
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can

- Through Ajax apps.



- By pressing the KeyPad/KeyPad Plus function button (in the interconnected fire alarm muting mode).
- By pressing the Button in the interconnected fire alarm muting mode.
- By eliminating the cause of the alarm (fire detectors at the facility no longer detect an alarm).
- By pressing the touch button of the triggered fire detector.

If a triggered detector does not return to a normal state within 10 minutes after the user postponed the interconnected alarm, another fire detector reports an alarm, or a triggered detector reports an alarm of another type (for example, temperature and smoke), the system will send an alarm confirmation and activate interconnected alarm for fire detectors.



5. If necessary, activate the **Smoke double-check** option. This setting is recommended for premises with potential sources of false alarms. For example, if the device is installed in a place where dust or steam can get into the detector.

The option functions as follows:

1. The detector reports a smoke alarm and activates the built-in siren.
2. The built-in 30-second timer of the detector starts.
3. If after 30 seconds the detector still detects a threat, an alarm is sent to the hub.
4. Hub sends alarms to all users and to the Central Monitoring Station (CMS) of the security company.

Setting the Residential fire alarm system

Residential fire alarm system is an Ajax system feature that defines user and device rights to mute the interconnected alarms of fire detectors.

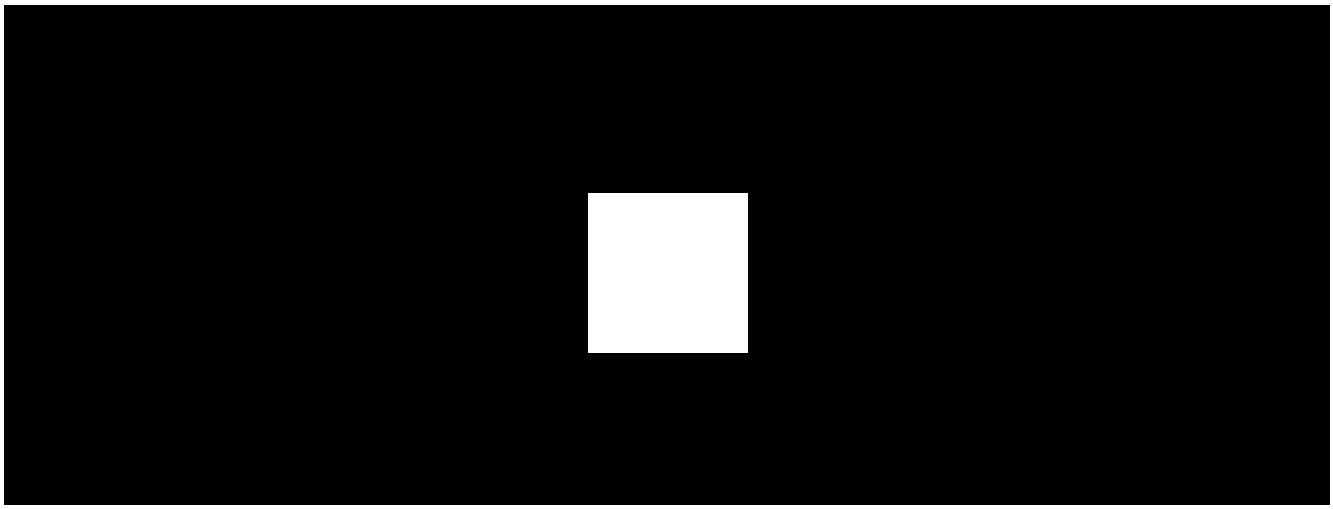
If the feature is enabled, users can silence fire alarms of triggered detectors only in the groups to which they have access. And Button, KeyPad, KeyPad Plus — the alarms only of those fire detectors that are in the same group.

The feature is useful for objects consisting of several rooms and protected by a single hub. For example, for multi-apartment complexes where each flat is a group with at least one fire detector installed. In this case, users can respond to the alarms of their groups without silencing the alarms of other groups.

The feature is available for Hub Plus, Hub 2, Hub Hybrid and Hub 2 Plus on OS Malevich 2.12 and later versions.

Learn more

Indication



00:00 00:04

Event	Indication
Detector switching on	The logo lights up green for 1 second
Detector switching off	The logo blinks red three times and the device switches off
Registration failed	The logo blinks green for a minute, then the device switches to the autonomous mode
Smoke or temperature increase detected	The siren switches on, the logo lights red during the fire/smoke alarm

Battery low	• One short sound signal per 90 sec — main batteries low (CR2) • Two short sound signals per 90 sec — backup battery low (CR2032) • Three short sound signals per 90 sec — both batteries low
Smoke or CO detector malfunctions (contamination, need for recalibration)	One long sound signal per 90 sec

Performance testing

The Ajax security 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

Smoke Sensor Self Test

Attenuation Test

According to the requirements of EN50131 standard, the level of the radio signal sent by wireless devices is decreased during the test mode.

Detector Testing

Before installing the detector, check the smoke sensor. To test it, switch on the detector and press the sensor button (the logo centre) for a few seconds — the detector will test the smoke chamber with electronic simulation of smoke generation and then will switch on the siren for 6 seconds.

You will receive the notification in the Ajax app regarding the test result and detector status.

Installation



Selecting the Location

The location of the detector depends on its remoteness from the hub, and obstacles hindering the radio signal transmission: walls, floors, large objects inside the room.

The device developed only for indoor use.

If the signal level is low (one bar), we cannot guarantee the stable operation of the detector. Take all possible measures to improve the quality of the signal. At least, move the detector: even a 20 cm shift can significantly improve the quality of signal reception.

Check the Jeweller signal level at the installation location

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

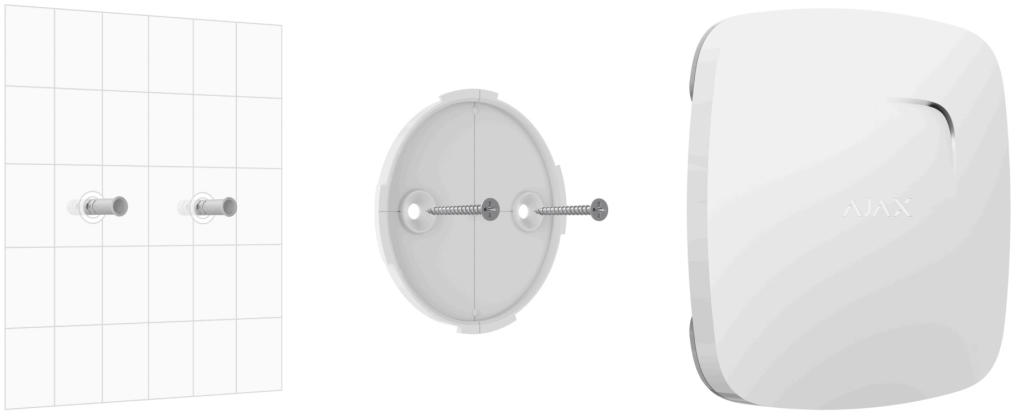
Install the detector at the ceiling in the highest point where hot air and smoke are concentrated in case of fire.

If there are any beams at the ceiling, protruding by 30 or more centimetres from the ceiling level, install the detector between every two beams.

Where and how to install FireProtect Plus

Installation procedure

Before installing the detector, make sure that you have selected the optimal location that follows the guidelines of this manual!



1. Fix the SmartBracket panel on the ceiling using bundled screws. If you use any other attachment tools, make sure that they do not damage or deform the attachment panel.

> Use double-side adhesive tape only for temporary attachment of the detector. The tape runs dry with time, which can cause falling, false triggering, and detector malfunction.

2. Put the detector on the attachment panel by turning it clockwise on SmartBracket. When the detector is fixed in SmartBracket, it blinks with LED, signalling that the tamper is closed.

If the LED doesn't blink after fixing in SmartBracket, check the status of the tamper in the **Ajax app** and then the fixing tightness of the panel.

If someone detaches the detector from the surface or takes it off the attachment panel, the security system notifies you.

Do not install the detector:

1. outside the premises (outdoors);
2. nearby any metal objects or mirrors causing attenuation or screening of the signal;
3. at any places with fast air circulation (air fans, open windows or doors);
4. closer than a meter to the cooking surface;
5. inside premises with the temperature and humidity beyond the range of permissible limits;
6. closer than 1 m to the hub.

Autonomous Use of the Detector

The detector can be used autonomously, without connecting to a security system.

1. Switch on the detector by pressing the on/off button for 3 seconds (the logo will light up green for 1 second) and conduct the smoke test.
2. Select the optimal location of the detector following the recommendations in the second part of the section **Selecting the location** of this manual.
3. Install the detector as described in the section **Installation procedure**.

In case of autonomous use, the detector notifies of the detected fire/smoke with the siren sound and light of the logo. To switch off the siren, press the logo (there is a sensor button) or eliminate the cause of the actuated alarm.

Maintenance and Battery Replacement

Check the operational capability of the detector regularly. Clean the detector body from dust, spider web, and other contaminants as they appear. Use soft dry napkin suitable for tech equipment.

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

To a certain level, the detector ignores the dust in the smoke chamber. When the chamber becomes too dusty, the detector notifies the user of the need to clean it via the app (and beeps every minute and a half). Such maintenance is compulsory for the detector to operate correctly.

How to clean up the smoke chamber

Pre-installed batteries ensure up to 4 years of autonomous operation. If the batteries are discharged, the security system sends the respective notifications and the detector signal with a sound every 90 seconds:

- if the main batteries are low — a single short signal;
- if the backup battery is low — two short signals;
- if both batteries are low — three short signals.



Keep new and used batteries away from children. Do not ingest battery, Chemical Burn Hazard.

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

Battery Replacement

Tech Specs

Smoke-sensitive element	Photoelectric sensor

Temperature sensitive element	Thermocouple
Sound notification volume	85 dB at a distance of 3 m
Alarm threshold at the temperature	+59°C ±2°C
Tamper protection	Yes
Radio communication protocol	Jeweller **Learn more**
Radio frequency band	866.0 – 866.5 MHz 868.0 – 868.6 MHz 868.7 – 869.2 MHz 905.0 – 926.5 MHz 915.85 – 926.5 MHz 921.0 – 922.0 MHz Depends on the region of sale.
Compatibility	Operates independently or with all Ajax **hubs**, **radio signal range extenders**, **ocBridge Plus**, **uartBridge**
Maximum RF output power	Up to 20 mW
Radio signal modulation	GFSK
Radio signal range	Up to 1,300 m (any obstacles absent) **Learn more**
Power supply	2 × CR2 (main batteries), 3 V CR2032 (backup battery), 3 V
Battery life	Up to 4 years
Installation method	Indoors
Operating temperature range	From 0°C to +65°C

Operating humidity	Up to 80%
Overall dimensions	132 × 132 × 31 mm
Weight	220 g
Service life	10 years

Compliance with standards

Complete Set

1. FireProtect Plus.
2. SmartBracket mounting panel.
3. Batteries CR2 (pre-installed) — 2 pcs.
4. Battery CR2032 (pre-installed) — 1 pcs.
5. Installation kit.
6. 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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