FireProtect 2 (CO) Jeweller User manual

Updated October 11, 2024



FireProtect 2 (CO) Jeweller is a wireless fire detector with a built-in siren. Designed for indoor installation. Detects dangerous CO (carbon monoxide) level. The detector can also work without a hub.

It is available in two modifications: with sealed batteries (has **SB** in the name) that run 10 years, and with replaceable ones (has **RB** in the name) that run up to 7 years.

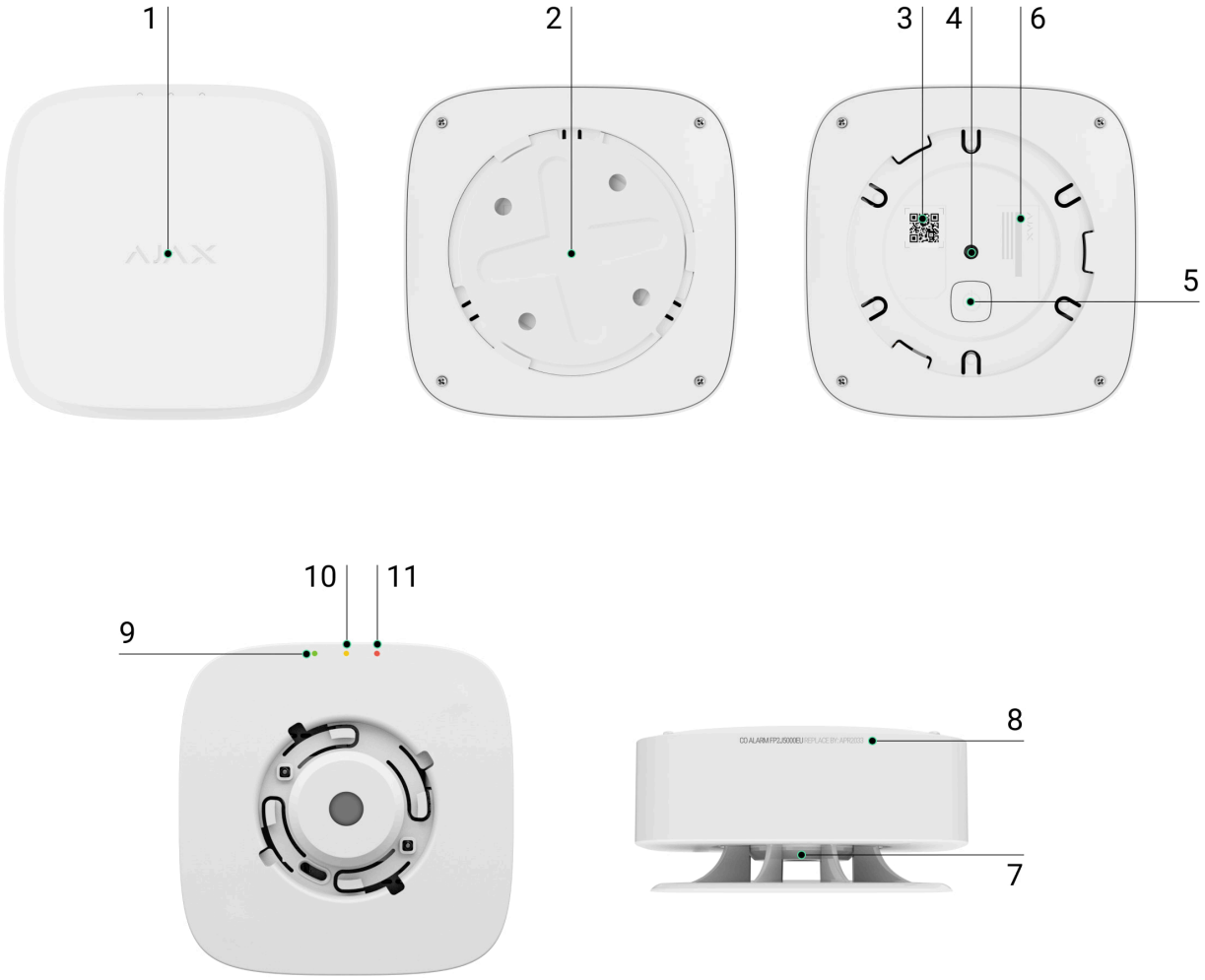
> A list of compatible hubs and range extenders is available here. FireProtect 2 (CO) detector is compatible only with hubs on OS Malevich 2.15 and higher.

The detector operates as part of the Ajax system, communicating with the hub via the **Jeweller** secure radio protocol. The hub communication range is up to 1,700 meters without obstacles.

Buy FireProtect 2 (CO)

Versions of the detector with other sensor combinations are also available. All Ajax fire detectors are available here.

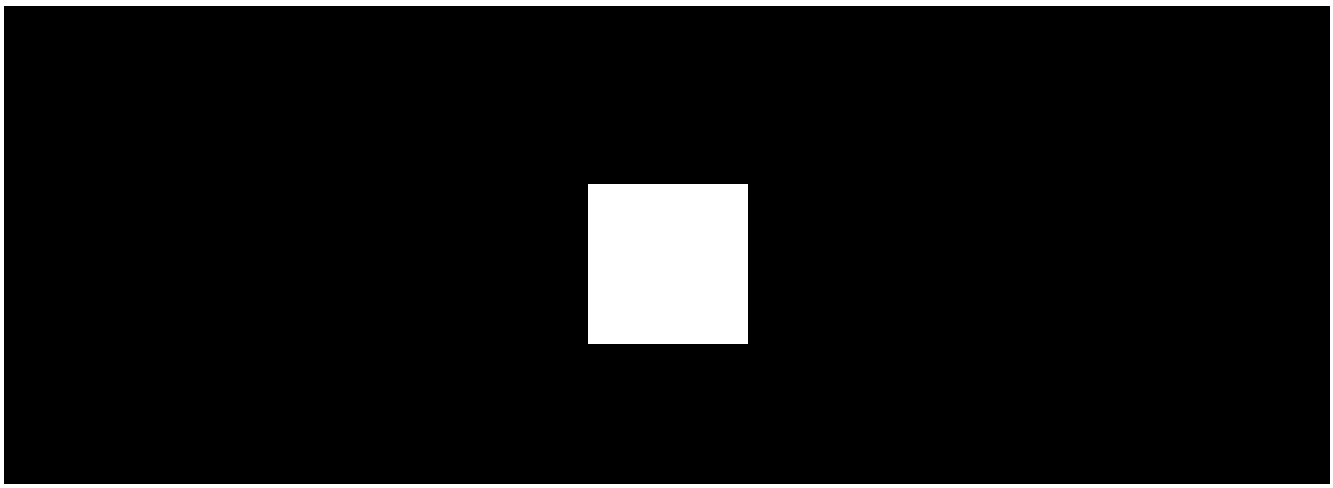
Functional elements



1. The front panel of the detector with a **Test/Mute button**. To activate the button, press the center of the panel.
2. SmartBracket mounting panel. To remove the panel, turn it counterclockwise.
3. Device QR code and ID (serial number). It is used to add the detector to the Ajax system.

4. **Tamper button**. Triggers when an attempt is made to detach the detector from the surface or remove it from the mounting panel.
5. Power button.
6. Detector certification information.
7. Siren.
8. Information about the detector's end of life date.
9. Green LED indicator.
10. Yellow LED indicator.
11. Red LED indicator.

Operating principle



00:00 00:12

FireProtect 2 (CO) is a wireless fire detector designed for indoor installation. Available in two versions:

- With sealed batteries. Such a detector has **SB** in its name. Built-in battery life is 10 years. After the batteries are discharged, the detector should be replaced with a new one.
- With replaceable batteries. Such a detector has **RB** in its name. Pre-installed battery life is 7 years. When the batteries are discharged, they can be replaced with new ones.

The **Battery Life Optimization** feature must be enabled to ensure such a lifetime for built-in and pre-installed batteries.

Learn more

How to replace FireProtect 2 RB (CO) batteries

The detector is equipped with a siren (piezoelectric buzzer) for audible notification of alarms and events with a volume of up to 85 dB (at a distance of 3 m from the detector). The detector is always active and reacts to a fire 24/7, regardless of the system's security mode.

FireProtect 2 is protected by **tamper**. The tamper controls the removal of the detector from the SmartBracket mounting panel: the detector reacts with LED indication and sends notifications to users in Ajax apps and the CMS.

Ajax automation devices respond to FireProtect 2 alarms and perform user-defined actions using **automation scenarios**. For example, the **WallSwitch** relay can turn off the ventilation system and turn on emergency lighting when an alarm occurs.

CO (carbon monoxide) sensor

FireProtect 2 has a chemical sensor which detects dangerous levels of carbon monoxide. The operation principle of the sensor is based on a chemical reaction. There is an electrolyte bath inside the sensor. When a specific level of carbon monoxide is reached, a chemical reaction is triggered. The detector reads this event and transforms it into an alarm.

The detector raises an alarm if the CO level reaches:

- 50 ppm (0.005%) and above — in no more than 90 minutes.
- 100 ppm (0.01%) and above — in no more than 40 minutes.
- 300 ppm (0.03%) and above — in no more than 3 minutes.

A CO concentration of 400 ppm (0.04%) for three hours is life-threatening. The detector stops warning of a dangerous carbon monoxide level as soon as the concentration drops to 40 ppm (0.004%).

Test/Mute button

To activate the **Test/Mute** button, press lightly on the centre of the front panel with your hand. Use a suitable item (mop handle) if you can't reach up the detector with your hand. **Test/Mute** is a mechanical button placed under the front panel of the detector.

The button performs several functions:

- In normal mode, it starts the **detector self-test**.
- When operating in a network of fire detectors that propagate an **interconnected fire alarm without a hub**, it starts a network coverage area testing.
- In case of an alarm, it mutes the detector alarm or **Interconnected Alarm** of all fire detectors in the system for 10 minutes.
- In case of a fault, low battery level, or end of life, it mutes the sound and LED indication for 12 hours.



To run the self-test, wait at least 3 minutes after turning on the detector. Use any remote silencing feature only in the line of sight of the CO sensor.

Interconnected Fire Detectors Alarm*

All FireProtect 2 RB/SB detectors in the system can synchronously notify about the fire alarm. There are two ways: **primary** and **fallback** (both work in parallel).

In case of danger, the initiating detector sends a fire alarm to the hub. The hub initiates the **primary** interconnect: all fire detectors will activate the built-in sirens in 20 seconds. Meanwhile, the initiating detector activates the **fallback** interconnection, directly sending the alarm to other fire detectors. Even if the

connection with the hub is lost, raising the interconnected fire alarm takes a minute.

> The fallback interconnection functionality is available for FireProtect 2 RB/SB detectors with firmware version 5.59.2.XX and later and for hubs with OS Malevich 2.19 and later.
>
> Devices that support the fallback interconnected alarm are marked on the package with a “Fallback interconnect supported” label.

The **FireProtect 2** detectors have different sound and LED indications of alarm types to make it easier for users to distinguish between them. In case of interconnected alarm, all FireProtect 2 detectors indicate exactly the alarm type detected by the initiating detector.

How to set Interconnected Fire Detectors Alarms

How to mute Interconnected Fire Detectors Alarms

*** To comply with AS3786:2014, EN 14604, and EN 50291 standards, enable the fallback interconnection in the hub settings.**

Sending events to the CMS

The Ajax system can transmit events and alarms to the **PRO Desktop** monitoring app as well as the Central Monitoring Station (CMS) via **SurGard (Contact ID), SIA DC-09 (ADM-CID), ADEMCO 685**, and other protocols. The list of supported protocols is **available here**.

Which CMSs Ajax connects to

Addressability of Ajax devices allows you to send not only events but also the type of the device, the name, virtual room, and security group 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 ID and detector loop (zone) number are available in the detector States.

Adding to the system

Before adding a device

1. Install the **Ajax app**.
2. Log in to your **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.

> Only a PRO or a space admin with the rights to configure the system can add a device to the hub.

Types of accounts and their rights

To connect to the hub, the detector should be within the coverage area of the hub radio network. To operate via a **radio signal range extender**, first connect the detector to the hub and then to the range extender. You can do this in the range extender settings in Ajax apps.

How to connect FireProtect 2 to a hub

1. Open the **Ajax app**.
2. Select the hub if you have several of them or if you are using the **Ajax PRO app**.
3. Go to the **Devices** tab. Press **Add Device**.
4. Enter the name of the device.
5. Scan the QR code or enter the ID manually. QR code is located on the rear part of the enclosure (under the mounting panel) and on the device packaging. The device ID can be found below the QR code.
6. Select the **virtual room** and security group (if the **group mode** is enabled).
7. Click **Add**; the countdown will begin.

> If the maximum number of devices is added to the hub, when you add the device, you will get a notification of exceeding the device limit. The number of devices that you can connect to the hub depends on the central unit model.

8. Turn on the detector by holding the power button for 3 seconds. The hub connection request is sent only if the detector is enabled. If the detector fails to connect to the hub, try again in 5 seconds.

> The detector cannot connect to the hub if they operate on different radio frequencies. The radio frequency range of the devices may vary by region. Please contact technical support for information on the operating frequency range of your devices.

Once connected, FireProtect 2 will appear in the hub device list in the Ajax app. Device status update depends on the ping interval set in the **Jeweller** or **Jeweller/Fibra** settings. The default value is 36 seconds.

FireProtect 2 only works with one hub. When connected to a new hub, the detector stops transmitting data to the old hub. Once added to a new hub, FireProtect 2 is not removed from the list of devices of the old hub. This must be done manually in the Ajax apps.

Autonomous operation mode

FireProtect 2 detectors can be used autonomously without connecting to an Ajax hub. In this case, the detector notifies of dangerous CO level with only a built-in siren and LED **indication**. Users don't receive notifications on any **Ajax apps**, including **Ajax Translator**, or **PRO Desktop**.

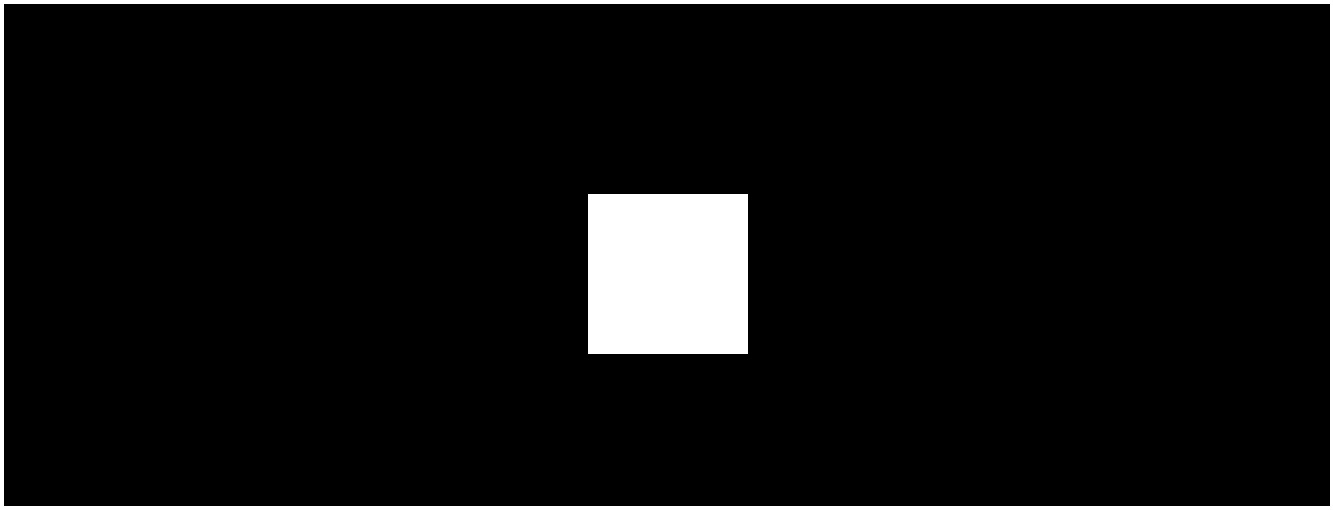
To use the detector autonomously, follow these steps:

1. Select the optimal location of the detector using the recommendations in the **Selection of installation** place section.
2. Mount the detector on the SmartBracket panel as described in the **Installation** section.
3. Press the **power button** to switch on the detector.
4. Wait at least 3 minutes and start a **self-test** with the **Test/Mute button**. Press the centre of the front panel and hold it for 1.5 seconds.

During a self-test FireProtect 2 notifies about each step with a built-in siren and LED indication. Once a self-test is completed, the LED **indication** turns off, and the detector works autonomously.

In case of an alarm, press the **Test/Mute button** or eliminate the cause of the alarm to mute the siren.

Indication



00:00 00:06

LEDs and the built-in siren of the detector can report alarms as well as certain states of the detector.

LED indication	Sound indication	Event	Notes
The red LED flashes 3 times every 3 seconds.	The siren beeps in time with the LED indication. Signals are repeated every 3 seconds.	Alarm by dangerous CO (carbon monoxide) level.	The detector stops alarming as soon as the CO level drops below 50 ppm. You can also mute the alarm by pressing the **Test/Mute button** or in the Ajax app. The alarm cannot be muted if the CO level exceeds 300 ppm.

			The LED and sound indications resume if the source of the alarm is still present after the muting timer (10 minutes) has expired.
No.	Short, low tone beep.	Prohibition on alarm muting.	The sound is played after pressing the **Test/Mute button**. The alarm cannot be muted if the CO level exceeds 300 ppm.
The red LED flashes every 4 seconds.	No.	Muted alarm.	The detector stops alarming as soon as its source is eliminated.
The red LED flashes 2 times in a row.	No.	Restore after alarm.	If the source of the alarm is removed, the detector is restored automatically.
The yellow LED lights up for 1 second.	No.	Tamper alarm. The detector is removed from the SmartBracket mounting panel.	
The green LED lights up for 1 second.	No.	The detector is installed on the SmartBracket mounting panel.	Turns on when the tamper is triggered.
Green, yellow, and red LEDs flash.	No.	Turning the detector on.	To turn on the detector, hold the power button for 1 second.
Green, yellow, and red LEDs light up at the same time, then go off in reverse order.	No.	Turning the detector off.	To turn off the detector, hold the power button for 2 seconds.
The green LED is permanently on.	No.	Connection to the hub in progress.	The indication turns off after the detector is

			connected to the hub.
The green LED flashes 6 times in a row.	No.	The detector has been removed from the hub.	The indication turns on when the detector receives information that it has been removed from the hub.
The green LED flashes once per minute.	No.	Detector power is OK.	The indication is present when the detector is on and the tamper status is OK (the detector is installed on the SmartBracket mounting panel). There is no indication when the detector switches to the **Jeweller Signal Strength Test** mode.
The yellow LED flashes 2 times in a row every minute.	The siren beeps in time with the LED indication every minute.	Malfunction detected.	All malfunctions are displayed in the detector **States** in Ajax apps. Fields with malfunctions are highlighted in red. If the detector needs to be repaired, contact our **Technical Support**.
The yellow LED flashes once per minute.	The siren beeps in time with the LED indication once per minute.	Low battery level.	You can replace batteries in a detector with replaceable batteries only (has **RB** in its name). A detector with sealed batteries (with **SB** in the name) should be replaced with a new one after the batteries are discharged.

			How to replace batteries in FireProtect 2 RB (CO)
The yellow LED constantly flashes.	No.	The battery is completely discharged.	You can replace batteries in a detector with replaceable batteries only (has **RB** in its name). A detector with sealed batteries (has **SB** in its name) should be replaced with a new one after the batteries are discharged. **How to replace batteries in FireProtect 2 RB (CO)**
The red LED flashes 5 times, then flashes 3 more times but slower.	The siren beeps 5 times, then makes 3 longer beeps.	Performing a self-test.	The test can be started by pressing the **Test/Mute button** or in the detector settings in the Ajax app.
The yellow LED flashes 3 times in a row every minute.	The siren beeps 3 times every minute.	The device service life has expired.	The device has been operated for more than 10 years. The sensitivity of its sensors may have decreased. We recommend replacing this detector with a new one.
Green, yellow, and red LEDs flash at the same time.	No.	The detector decides in which role it will switch to the pairing mode: master or slave.	The indication turns on when the power button is pressed 3 times on the detector that is

			switched on and not added to any hub. The indication lasts up to 10 seconds. The detector switches to the pairing mode to set up a network of detectors that can propagate an interconnected fire alarm without the hub. **Learn more**
Green, yellow, and red LEDs light up and go off in turn. Then, light up and go out in reverse order.	No.	The detector becomes a master after switching to the pairing mode.	The indication turns on when the detector chooses its role after switching to the pairing mode without the hub. It turns off when the network of detectors is formed. **Learn more**
The green LED flashes every 2 seconds.	No.	The detector becomes a slave after switching to the pairing mode.	The indication turns on when the detector chooses its role after switching to the pairing mode without the hub. It turns off when the network of detectors is formed. **Learn more**
All LEDs flash 3 times.	No.	Removing the device from the network of fire detectors and resetting its settings.	The indication turns on after pressing the power and Test/Mute buttons on the switched-on detector. It is possible to reset the detector added to the hub in such a way

			only if there is no connection between the hub and the detector. **Learn more**
The yellow LED flashes 3 times.	No.	Failure when adding the detector in the pairing mode without the hub.	The indication turns on after the detector switches to the pairing mode if: • The detector is added to the hub. • There are already 50 fire detectors in the network. • The slave detector is within the coverage area of two master detectors in the pairing mode. • There is another fault when adding. **Learn more**

Detector testing

Functionality testing

The test allows you to check the status of the detector’s sensors. You can run it in two ways: by pressing the **Test/Mute button** of the detector and in Ajax apps.

To run the self-test, wait at least 3 minutes after turning on the detector.

If the detector is in an alarm state, the self-test is not available.

To run the test using the Test/Mute button, press the center of the front panel and hold it for 1.5 seconds.

To run the test in the Ajax app:

1. Open the Ajax app.
2. Select the hub if you have several of them or if you are using the **Ajax PRO app**.
3. Go to the **Devices** menu.
4. Select **FireProtect 2 (CO)**.
5. Go to the settings by clicking on the gear icon.
6. Click on the **Device Self-test** field.

After starting the test, the red LED of the detector flashes 5 times in a row and then flashes 3 more times but slower. The detector's siren beeps in time with an LED indication. When the test is over, users receive a notification about the detector state in Ajax apps.

The detector also notifies about the test result with sound and LED indications. If the test is failed and a malfunction is detected, the detector starts **to indicate a malfunction** 3 seconds after the test is begun: the yellow LED flashes twice, and the siren beeps in time with the LED indication.

The self-test does not start immediately, but no later than 30 seconds after pressing the **Test/Mute** button or running from the Ajax app.

To stop a self-test, press the **Test/Mute** button again.

If no sound and LED indications occurred during the self-test, the detector may not be used. Contact our Technical Support.

Testing at the place of installation

Ajax system provides several tests to select the correct installation place of devices. **Jeweller Signal Strength Test** is available for FireProtect 2. The test determines the strength and stability of the signal at the intended location of the device.

To run the test in the Ajax app:

1. Select the hub if you have several of them or if you are using the **Ajax PRO app**.
2. Go to the **Devices** menu.
3. Select **FireProtect 2 (CO)**.
4. Go to the settings by clicking on the gear icon.
5. Select **Jeweller Signal Strength Test**.
6. Perform the test following the tips in the app.

The test does not start immediately, but the waiting time does not exceed the duration of one detector ping interval. The default value is 36 seconds. You can change the detector ping interval in the **Jeweller** (or **Jeweller/Fibra**) menu in the hub settings.

Coverage area testing

The test allows you to check if all fire detectors will still respond to an alarm in case the connection with the hub is lost. It involves detectors that support the fallback interconnected alarm function.

What is interconnected fire detectors alarms

To run the test in the Ajax app:

1. Select the space if you have several of them or if you are using a **PRO app**.
2. Go to the **Devices** tab.
3. Select hub.
4. Go to the **Settings** by clicking on the gear icon.
5. Select **Service**.
6. Select **Fire detectors settings**.
7. Select **Interconnected fire detectors alarm**.
8. Enable the **Fallback interconnection if hub connection lost** feature.
9. Tap **Coverage area testing** and perform the test following the tips in the app.

Coverage area testing is available only when the **Fallback interconnection if hub connection lost** feature is enabled.

Icons

The icons show some of the detector states. You can view them in Ajax apps in the **Devices** tab.

Icon	Meaning
	Jeweller signal strength between the detector and the hub or the radio signal range extender. The recommended value is two or three bars. Learn more
	Battery charge level of the device. Learn more

	The **Interconnected Fire Detectors Alarm** feature is activated. Learn more
	The detector operates in the **Always Active** mode. The icon is displayed permanently. FireProtect 2 is always active and responds to a fire 24/7, regardless of the system's security mode. Learn more
	The detector operates through the **radio signal range extender**.
	The detector is permanently deactivated. Learn more
	The detector has detected the dangerous CO (carbon monoxide) level.
	The detector was removed from the SmartBracket mounting panel, or the enclosure integrity was violated in another way. Check the mounting of the detector.
	The detector's siren plays an alarm sound.
	The detector service life has expired. The device has been operated for more than 10 years. The sensitivity of its sensors may have decreased. We recommend replacing this detector with a new one.
	Malfunction detected. The list of malfunctions is available in the detector **States**.
	The detector has tamper triggering events deactivated. Learn more
	The device was not transferred to the new hub. Learn more

States

The states include information about the device and its operating parameters. You can see FireProtect 2 (CO) states in Ajax apps. To access them:

1. Open the Ajax app.
2. Select a hub if you have several of them or if you are using the Ajax PRO app.
3. Go to the **Devices** tab.
4. Select the device from the list.

Parameter	Meaning
Temperature	Air temperature in the room where FireProtect 2 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 create a scenario by temperature to control automation devices. Learn more
Jeweller Signal Strength	Jeweller signal strength between FireProtect 2 and the hub or radio signal range extender. The recommended value is two or three bars. Jeweller is a protocol for transmitting FireProtect 2 events and alarms.
Connection via Jeweller	Connection status between FireProtect 2 and the hub or radio signal range extender via Jeweller:

	• **Online** — the detector is connected to the hub or radio signal range extender. Normal state. • **Offline** — no connection between the detector and the hub or radio signal range extender. Check the detector connection.
Battery Charge	The battery charge level of the device: • **OK** — detector batteries have sufficient charge. Normal state. • **Battery low** — detector batteries are discharged. When the batteries are discharged, users and the CMS receive a notification. After the low battery notification, the detector is able to operate for another month under normal conditions. In case of an alarm, the battery charge is enough to ensure 4 minutes of the sound and LED indication operation. **How the battery charge is displayed** **Battery life calculator** You can replace batteries in a detector with replaceable batteries only (has **RB** in its name). A detector with sealed batteries (with **SB** in the name) should be replaced with a new one after the batteries are discharged. **How to replace batteries in FireProtect 2 RB (CO)**
Lid	The status of the detector's tamper that responds to detachment of the device from the surface or opening of the enclosure: • **Open** — the detector is removed from the SmartBracket mounting panel, or the enclosure integrity is violated in another way. Check the mounting of the detector.

	• **Closed** — the detector is installed on the SmartBracket mounting panel. The integrity of the device enclosure and the mounting panel is not violated. Normal state. Learn more
High CO Level	CO (carbon monoxide) level in the room where FireProtect 2 is installed: • **No** — the CO level is normal. • **Alarm** — the detector has detected a dangerous CO level. If a dangerous CO level is detected by the detector, the text field highlights red. Learn more
Permanent Deactivation	Shows the status of the device permanent deactivation function: • **No** — the device operates in normal mode. • **Lid only** — detector's tamper triggering notifications are disabled. • **Entirely** — the detector does not execute system commands, does not participate in automation scenarios, and does not send notifications of alarms, malfunctions, and other events to the CMS and system users. In this case, the detector will continue to operate autonomously and indicate alarms using the built-in siren. Learn more
Firmware	FireProtect 2 firmware version.
Device ID	ID (serial number) of FireProtect 2. Also available on the detector's enclosure (under the mounting panel) below the QR code and on the packaging box.

Device No.	The number of FireProtect 2 loop (zone). Events are sent to the CMS with this number.

Settings

To change FireProtect 2 (CO) settings in the Ajax app:

1. Open the Ajax app.
2. Select the hub if you have several of them or if you are using the **Ajax PRO app**.
3. Go to the **Devices** tab.
4. Select the device from the list.
5. Go to **Settings** by clicking on the gear icon.
6. Set the required settings.
7. 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. To change the name, click on the text field. The name can contain up to 12 Cyrillic characte or up to 24 Latin characters.
Room	Selecting the virtual room to which FireProtect 2 is assigned. The room name is displayed in the SMS text and notifications in the events feed. To change the room, click on the field.

Alert with a siren	
If CO detected	When this option is enabled, the **Ajax sirens** connected to the system are activated when the detector registers a dangerous CO level.
Jeweller Signal Strength Test	Switches the detector to the Jeweller signal strength test mode. The test helps determine the optimal place for installing FireProtect 2. The test shows the signal strength between the detector and the hub or range extender via the Jeweller wireless data transfer protocol. The recommended value is two or three bars. **Learn more**
Device Self-test	Runs a detector self-test. **Learn more**
User Guide	Opens FireProtect 2 User Manual in the Ajax app
Permanent Deactivation	Allows to deactivate the device without removing it from the system. Three options are available: • **No** — the device operates in normal mode. • **Lid only** — detector's tamper triggering notifications are disabled. • **Entirely** — the detector does not execute system commands, does not participate in automation scenarios, and does not send notifications of alarms, malfunctions, and other events to the CMS and system users. In this case, the detector will continue to operate autonomously and indicate alarms using the built-in siren. **Learn more**
Unpair Device	Unpairs FireProtect 2 from the hub and deletes its settings.

Battery life optimization setting

The **Battery Life Optimization** feature is provided to save the detectors' battery charge. It is available only for hubs on **OS Malevich 2.14** or higher with FireProtect 2 detectors connected. This feature is enabled by default.

When the **Battery Life Optimization** feature is enabled, the hub increases the ping interval for FireProtect 2 detectors.

> This feature doesn't affect alarm notification delivery time.

To disable the **Battery Life Optimization** feature:

1. Open the Ajax app.
2. Select the hub with FireProtect 2 detectors connected.
3. Go to:

   Hub → Settings → Service → Fire Detectors Settings.
4. Disable the **Battery Life Optimization toggle.**
5. Click **Back** to save the settings.

> If the **Battery Life Optimization** feature is disabled:
>
> - **FireProtect 2 SB (CO)** built-in battery life is 5 years (instead of 10).
> - **FireProtect 2 RB (CO)** pre-installed battery life is 3.5 years (instead of 7).

Selection of installation place

The detector is designed for indoor installation only.

The coverage area of one FireProtect 2 (CO) is 50 to 60 m², depending on the type of premises. The detector should be installed in every room. The detector is suitable for installation in premises where the generation of gases/vapors/smoke is part of the operating process. For example, in a garage, kitchen, or boiler room.

The detector mounts on the wall at a height of 1.5 m from the floor. As an alternative it can be mounted on the ceiling. The detector must be placed at a distance of 30 cm from light fixtures, chandeliers, or any other decorative objects that may interfere with alarm detection.

In halls or narrow corridors, detectors should be installed at a distance of no more than 7.5 m from each other.

When installing on the wall, ensure the LEDs are visible to the user. It means FireProtect 2 must be installed upside down.

When choosing the location of the detector, consider the parameters that affect its operation:

- Jeweller signal strength.
- Distance between the detector and the hub.
- Presence of barriers for radio signal passage between devices: walls, interfloor ceilings, large objects located in the premises.

Consider the placement recommendations when designing your Ajax system for the object. The security system must be designed and installed by specialists. The list of recommended partners is **available here**.

Signal strength

The Jeweller signal strength is determined by the ratio of the number of undelivered/corrupted data packets that are exchanged between the hub and the detector to expected ones within a certain period of time. Signal strength is indicated by the icon on the **Devices** tab:

- **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; stable operation is not guaranteed.

Check the Jeweller signal strength at the installation site. If the signal strength is as low as one or zero bars, we cannot guarantee stable operation of the device. In this case, move the device. Repositioning even by 20 cm can significantly improve the signal reception.

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

Do not install the detector

1. Outdoors. This can lead to the detector failure.
2. In places with low or unstable Jeweller signal strength. This can result in the connection loss.
3. Inside premises with temperature and humidity outside the permissible limits. This could damage the detector.
4. In places with fast air circulation. For example, near fans, vents, open windows, or doors. This can lead to false alarms..
5. In the corners of the room. This can lead to false alarms.
6. Near lighting fixtures, decorations, and other interior items that may interfere with the circulation of air in the room. This could lead to false alarms.
7. Closer than 1–1.5 meters to an open flame source. For example, near a fireplace, grill, or kitchen stove. This can lead to false alarms.

8. In high or inconvenient places. Access to the Test/Mute button is required to mute the alarm and test the detector if it's used without connection to a hub.

Installation

Make sure that you have selected the optimal installation place and it complies with the requirements of this manual.

Only a competent specialist should install this device.

To install the detector:

1. Remove the SmartBracket mounting panel from the detector. To remove the panel, turn it counterclockwise.
2. Fix the SmartBracket mounting panel to a surface using double-sided adhesive tape or other temporary fasteners. The mounting panel has an UP sign, which indicates the correct position.

   Use double-sided adhesive tape for temporary fixation only. The device fixed by the adhesive tape can peel off the surface at any time, which can lead to damage if the device is dropped.

3. Run the **Jeweller Signal Strength Test**. The recommended value is two or three bars.

   Consider to relocate the device as repositioning even by 20 cm can significantly improve the signal strength. If there is still low or unstable signal after the relocation, use a **radio signal range extender**.

4. Remove the detector from the mounting panel.

5. Attach the SmartBracket panel with the bundled screws using all fixation points. When using other fasteners, make sure they do not damage or deform the mounting panel.
6. Place the detector on the SmartBracket mounting panel.
7. Adjust the position of the detector if necessary.

> It is necessary to perform a self-test after the installation is finished.

Actions to take in case of CO alarm

1. Immediately open all the doors and windows to ventilate the premises if it is safe.

> **NEVER IGNORE THE ALARM!** When you open the doors and windows for ventilation, the CO level can drop to acceptable, and the alarm may have stopped by the time help arrives. The solution to the problem may be temporary. You have to determine the CO source and make a repair.

2. Stop using and turn off all fuel devices where it is possible.
3. Evacuate from the premises leaving the doors and windows open.

> **WARNING:** If you hear the CO alarm, it has detected dangerous levels of carbon monoxide. Always evacuate from the premises, even if you are unsure about the cause of a CO alarm.

4. If you have a headache and nausea, get medical help immediately. These could be the result of carbon monoxide poisoning, so tell your doctor about it.
5. Call your gas or other fuel supplier's hotline. Keep the number in a noticeable place.

6. Avoid re-entering the premises until the alarm stops.

> If the alarm was silenced by the **Test/Mute button** (for CO level under 300 ppm), check the CO level at the Ajax app. If it is safe to enter the premises, press the Test/Mute button again to check the CO level.

> Any remote silencing feature (e.g., via Ajax app) shall only be used in the line of sight of the CO siren.

7. Do not use the fuel or gas appliances again until registered installers or experts have checked them.

Carbon monoxide impact

Carbon monoxide poisoning occurs regularly: many people are killed each year, and many more suffer ill health. CO is an invisible, odorless, tasteless, and extremely toxic gas. CO is produced by burning such fuels as petrol, diesel, coal, oil, natural/bottled gas, paraffin, wood, charcoal, etc. The heart and brain are rapidly damaged by oxygen starvation because red blood cells in the lungs absorb CO faster than oxygen.

The most common reasons for high levels of CO in premises:

- Engines of cars, generators, etc., are left running in confined spaces (for example, a garage).
- Incorrectly or poorly installed fuel-burning appliances.
- Blocked or damaged vents or chimneys/flues.
- The tightness of rooms where appliances for burning fuel or fireplaces are installed.
- Bad ventilation in rooms with portable gas/paraffin heaters.

IMPORTANT: A CO alarm should not be used as a substitute for proper installation, use, and maintenance of fuel-burning appliances, including appropriate ventilation and exhaust systems.

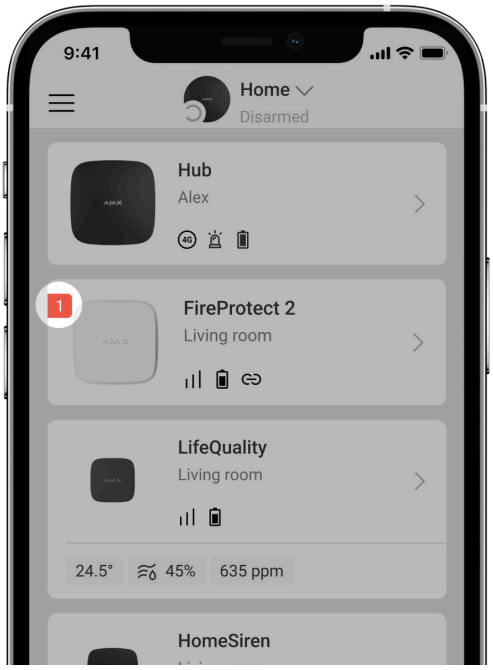
The CO exposure period is also important. A low level for a long period (e.g., 150 ppm for 90 minutes) can cause the same symptoms as a high level of CO for a short period (e.g., 300 ppm CO for 30 minutes). The table below shows how different concentrations of CO affect people.

FireProtect 2 may not prevent the chronic effects of carbon monoxide exposure and will not fully protect people from the high-risk group.

CO concentration in the air, ppm	Approximate inhalation time and consequences
35	The maximum allowable concentration for continuous exposure in any 8-hour period (according to Occupational Safety and Health Association; OSHA).
150	Slight headache after 1.5 hours.
200	Slight headache, fatigue, dizziness, and nausea after 2–3 hours.
400	Frontal headaches within 1–2 hours, life-threatening after 3 hours.
800	Dizziness, nausea, and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2–3 hours.
1,600	Headache, dizziness, and nausea within 20 minutes. Death within 1 hour.
3,200	Headache, dizziness, and nausea within 5–10 minutes. Death within 25-30 minutes.
6,400	Headache, dizziness, and nausea within 1–2 minutes. Death within 10–15 minutes.
12,800	Death within 1–3 minutes.

Even if people realize they are not well, they become so disoriented by the carbon monoxide that they cannot call for help or get out of the room to save their lives. Numerous cases of carbon monoxide poisoning show that children and household pets are affected first.

Malfunctions



If FireProtect 2 malfunction is detected (for example, there is no connection with the hub), the malfunction counter is displayed in the device field in the Ajax apps.

All malfunctions are displayed in the detector **States**. Fields with malfunctions are highlighted in red.

The device can report malfunctions to the CMS, as well as to users through push notifications and SMS.

FireProtect 2 (CO) malfunctions:

- No connection with the hub or radio signal range extender.
- The detector’s enclosure is open.
- Low battery charge level.
- The device service life has expired.

- Hardware malfunction (failure of the sensor of the detector).

Maintenance

The detector has a **self-test** system and does not require the user or installer intervention. We recommend running a self-test periodically to familiarize people with the alarm sound and LED indication.

> FireProtect 2 devices connected to the Ajax hubs generally do not require routine testing. All connected devices are constantly monitored for possible Faults, Low battery, and EOL signals.
>
> However, we encourage all users to test FireProtect 2 devices periodically (monthly)* to allow residents of the building to become familiar with the fire alarm signals of the system.
>
> **Please be aware that your local regulation might require more frequent testing (e.g., weekly).*

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, gasoline, and other active solvents.

The service life of the detector is 10 years. After this period, the sensitivity of the sensors decreases. We recommend replacing the detector with a new one to ensure uninterrupted fire protection at the premises.

The version of the detector with replaceable batteries (has **RB** in the name) operates from pre-installed batteries for up to 7 years. When the batteries are discharged, replace them with new ones.

How to replace batteries in FireProtect 2 RB (CO)

A detector with sealed batteries (has **SB** in the name) should be replaced with a new one after the batteries are discharged.

Buy FireProtect 2 SB (CO)

Ensure the batteries are installed with the correct polarity. The polarity is marked inside the enclosure. Please run a self-test with Ajax apps or by pressing the Test/Mute button after the batteries are replaced to check the correct operation of the detector.

Cautions

Avoid the situations listed in the tables below. They may affect the reliability of the CO sensor in the short or long term.

Situations that must be avoided

Situation	Possible consequences
Contamination by alkaline metals	Significant changes to the sensor characteristics when the sensor is contaminated by alkaline metals, especially salt water spray.
Exposure to high concentrations of common (non-acidic) gases	Exposure to high concentrations of common gases such as ammonia may cause irreversible changes. Avoid long-term exposure to or use of packing materials that may generate common gases.
Impact of volatile organic compounds (VOCs)	Prolonged off-gassing from such VOCs may cause irreversible changes to: • styrene (commonly used in blister packs and packing trays); • α-pinene (found in some kinds of printing inks). Avoid packing the FireProtect 2 in a tightly closed container where VOC gases may be present. Excessive exposure to alcohol or acetone vapors the sensor may cause its temporary disability.
Contact with water	Soaking or splashing the sensor with water may change its characteristics.

Situations to avoid whenever possible

Situation	Possible consequences
Exposure to silicone vapors	Sensor failure because of the exposure to silicone adhesives, hair grooming materials, or silicone rubber/putty.
Dew condensation	The clog of gas diffusion route or deterioration of the sensing membrane. Avoid severe dew condensation that occurs for an extended period inside or on the sensor surface.
Exposure to hydrogen sulfide or sulfuric acid gas	Sensor components corrosion, resulting in sensor damage.
Presence of dust and oil mist	Clogging of the sensor's internal structure caused by extremely high dust or oil mist concentrations.

Additional cautions for installation



The sensor requires oxygen to function properly and have the characteristics described in this manual. The sensor will not operate properly in a zero-oxygen environment.

Technical specifications

All technical specifications of FireProtect 2 RB (CO)

All technical specifications of FireProtect 2 SB (CO)

Compliance with standards

Complete set

For FireProtect 2 RB (CO)

1. FireProtect 2 RB (CO) Jeweller
2. SmartBracket mounting panel
3. Installation kit
4. 2 × CR123A battery (pre-installed)
5. Quick start guide

For FireProtect 2 SB (CO)

1. FireProtect 2 SB (CO) Jeweller
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 the Ajax Technical Support first. In most cases, technical issues can be resolved remotely.

Warranty obligations

User Agreement

Contact Technical Support:

- **email**
- **Telegram**

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