AJAX SB FireProtect 2 Wireless Fire Detector CO Sensor User Manual

FireProtect 2 (CO) Jeweller User manual
Updated August 4, 2023

Contents

SB FireProtect 2 Wireless Fire Detector CO Sensor

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

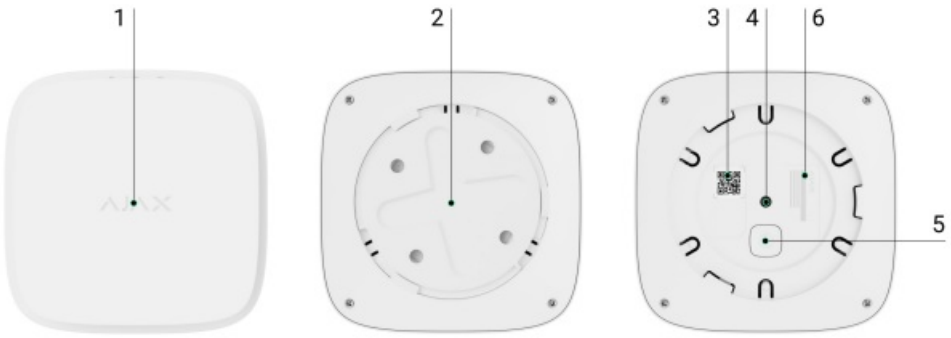
A list of compatible hubs and range extenders is **available here**. FireProtect 2 (CO) detector is compatible only with hubs on **OS Malevich 2.15** and higher.

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)

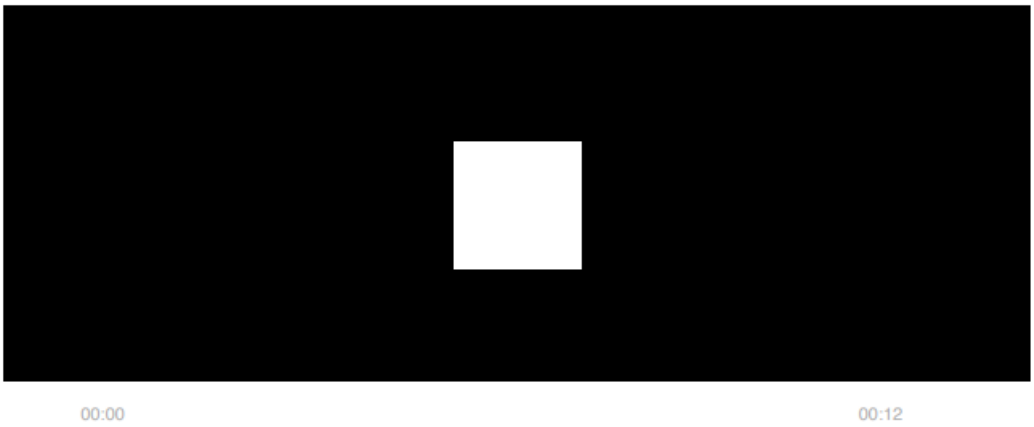
Versions of the detector with other sensor combinations are also available. All Ajax re detectors are **available here**.

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



FireProtect 2 (CO) is a wireless re 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 builtin 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 notication 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 re 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.
- In case of an alarm, it mutes the detector alarm or **Interconnected Alarm** of all re 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.

Use any remote silencing feature only in the line of sight of the CO sensor.

Interconnected Fire Detectors Alarms*

All fire detectors of the FireProtect 2 product line support the Interconnected Alarm feature. This feature activates the built-in sirens of all fire detectors in the system as soon as at least one of the fire detectors detects an alarm. Sirens of FireProtect 2 detectors are activated within 20 seconds after an alarm is detected. **FireProtect** and **FireProtect Plus** are activated over a detector ping interval set in the Jeweller or Jeweller/Fibra settings, but no

later than in 60 seconds.
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. Instead, FireProtect and FireProtect Plus detectors notify all types of alarms with the same sound.

How to set Interconnected Fire Detectors Alarms

How to mute Interconnected Fire Detectors Alarms
*The Interconnected Fire Detectors Alarm function is not certified according to EN 14604 and EN 50291.
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. **Create an account** if you don't have one.
3. Add a **hub compatible with the detector** to your app. Set the required settings and create at least one **virtual room**.
4. Make sure that the hub is on and has Internet access via Ethernet, Wi-Fi, and/or mobile network. You can do this in the Ajax app or by looking at the LED indicator of the hub: it should light up white or green.
5. Make sure that the hub does not start updates and that it is disarmed by checking the status in the Ajax app.

A **PRO or a user with system setup rights** can connect the device to the hub.

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 tothe 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 notication 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**. The Interconnected Fire Detectors Alarms feature is also unavailable for this operation mode.

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. 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

LED indication	Sound indication	Event	Notes
The red LED ashes 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 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. Test/Mute button
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 ashes every 4 seconds.	No.	Muted alarm.	The detector stops alarming as soon as its source is eliminated.
The red LED ashes 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 ash.	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 ashes 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 ashes 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 ashes 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 ashes 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 ashes.	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 ashes 5 times, then ashes 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 ashes 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.

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.

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 eld.

After starting the test, the red LED of the detector ashes 5 times in a row and then ashes 3 more times but slower. The detector's siren beeps in time with an LED indication. When the test is over, users receive a notication about the detector state in Ajax apps.
The detector also noties 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 ashes 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 button or running from the Ajax app.

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.

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 Alarms 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**

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.
Jeweller Signal Strength	Jeweller signal strength between FireProtect 2 and the hub or radio signa l range extender. The recommended value is two or three bars. Jeweller is a protocol for tr ansmitting FireProtect 2 events and alarms.
Connection via Jeweller	Connection status between FireProtect 2 and the hub or radio signal rang e extender via Jeweller: **Online** — the detector is connected to the hub or radio signal range exte nder. Normal state. **O ine** — 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 notificat ion. After the low battery notification, the detector is able to operate for anothe r month under normal conditions. In case of an alarm, the battery charge i s 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 replac eable 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 enclos ure integrity is violated in another way. Check the mounting of the detecto r. Closed — the detector is installed on the SmartBracket mounting panel. T he 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: If a dangerous CO level is detected by the detector, the text eld highlights red. No — the CO level is normal. Alarm — the detector has detected a dangerous CO level. 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 notications are disabled. Entirely — the detector does not execute system commands, does not pa rticipate in automation scenarios, and does not send notications of alarm s, malfunctions, and other events to the CMS and system users. In this case, the detector will continue to operate autonomously and indic ate alarms using the built-in siren. **Learn more**

Firmware	FireProtect 2 rmware 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 pac kaging box.
Device No.	The number of FireProtect 2 loop (zone). Events are sent to the CMS wit h 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 characters 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 notications are disabled. Entirely — the detector does not execute system commands, does not participate in automation scenarios, and does not send notications 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 or **OS Malevich 2.14** 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 notication 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 oor. As an alternative it can be mounted on the ceiling. The detector must be placed at a distance of 30 cm from light xtures, 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, interoor 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 signicantly 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 xtures, 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 ame source. For example, near a replace, 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 xation only. The device xed 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 signicantly 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 xation 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 nished.

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, paran, 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 conned spaces (for example, a garage).
- Incorrectly or poorly installed fuel-burning appliances.
- Blocked or damaged vents or chimneys/ues.
- The tightness of rooms where appliances for burning fuel or replaces are installed.
- Bad ventilation in rooms with portable gas/paran 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 t he 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 rst.

Malfunctions

If FireProtect 2 malfunction is detected (for example, there is no connection with the hub), the malfunction counter is displayed in the device eld 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 notications 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 re 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 re 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 mat erials, 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 sen sor surface.
Exposure to hydrogen sulde or sulfuric acid gas	Sensor components corrosion, resulting in sensor damage.
Presence of dust and oil mis t	Clogging of the sensor's internal structure caused by extremely high dust or oil m ist 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 specications

All technical specications of FireProtect 2 RB (CO)
All technical specications 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 rst. In most cases, technical issues can be resolved remotely.

Warranty obligations
User Agreement

Contact Technical Support:
email
Telegram

Subscribe to the newsletter about safe life. No spam

Email Subscribe

Documents / Resources

	AJAX SB FireProtect 2 Wireless Fire Detector CO Sensor [pdf] User Manual SB FireProtect 2 Wireless Fire Detector CO Sensor, SB, FireProtect 2 Wireless Fire Detector CO Sensor, 2 Wireless Fire Detector CO Sensor, Fire Detector CO Sensor, Detector CO Sensor, CO Sensor, Sensor

References

- How OS Malevich updates | Ajax Systems Blog
- Connecting Ajax to CMS
- End user agreement - Ajax Systems
- Hub Differences | Ajax Security System
- PRO Desktop | Ajax Systems
- Automation devices in the security system | Ajax Systems
- Fire alarm systems from Ajax Systems
- Ajax FireProtect 2 (CO) — Wireless fire CO detector
- FireProtect 2 RB (CO) Jeweller | Technical specifications
- Ajax FireProtect - Wireless fire detector with siren
- Fire detector with siren and CO sensor - FireProtect Plus
- Signal range extenders in the security system | Ajax Systems
- Alarm sirens for Ajax security systems
- FireProtect 2 RB (CO) Jeweller | Technical specifications
- FireProtect 2 RB (CO) Jeweller | Technical specifications
- FireProtect 2 SB (CO) Jeweller | Technical specifications
- Ajax WallSwitch — Wireless power relay with energy monitor
- Automation scenarios | Your Ajax security automation
- Software | Ajax Systems
- Software | Ajax Systems
- Software | Ajax Systems
- Software | Ajax Systems
- Ajax devices standards compliance list

- Warranty - Ajax Systems
- Where to buy — Ajax Systems
- User account types and rights | Ajax Systems Support
- How to enable and configure group mode in the Ajax security system | Ajax Systems Support
- How battery charge is displayed in Ajax apps | Ajax Systems Support
- What is Devices Auto Deactivation and how it works | Ajax Systems Support
- How to create the Ajax account? | Ajax Systems Support
- How to replace batteries in FireProtect 2 RB | Ajax Systems Support
- How to set up the Always active operation mode | Ajax Systems Support
- What is a tamper | Ajax Systems Support
- How long Ajax devices operate on batteries, and what affects this | Ajax Systems Support
- How to deactivate a device without removing it from the system | Ajax Systems Support
- User Manual