MotionCam Outdoor (PhOD) Jeweller User manual

Updated June 23, 2023



MotionCam Outdoor (PhOD) Jeweller is a wireless outdoor motion detector supporting photo verification of alarms, **Photo on Demand** and **Photo by Scenario** features.

It has an adjustable range of motion detection up to 15 meters. The device detects attempts to block the view thanks to the anti-masking system. The detector does not react to animals up to 80 cm tall when installed and configured correctly.

A hub is required for the detector to operate.

List of compatible hubs and range extenders

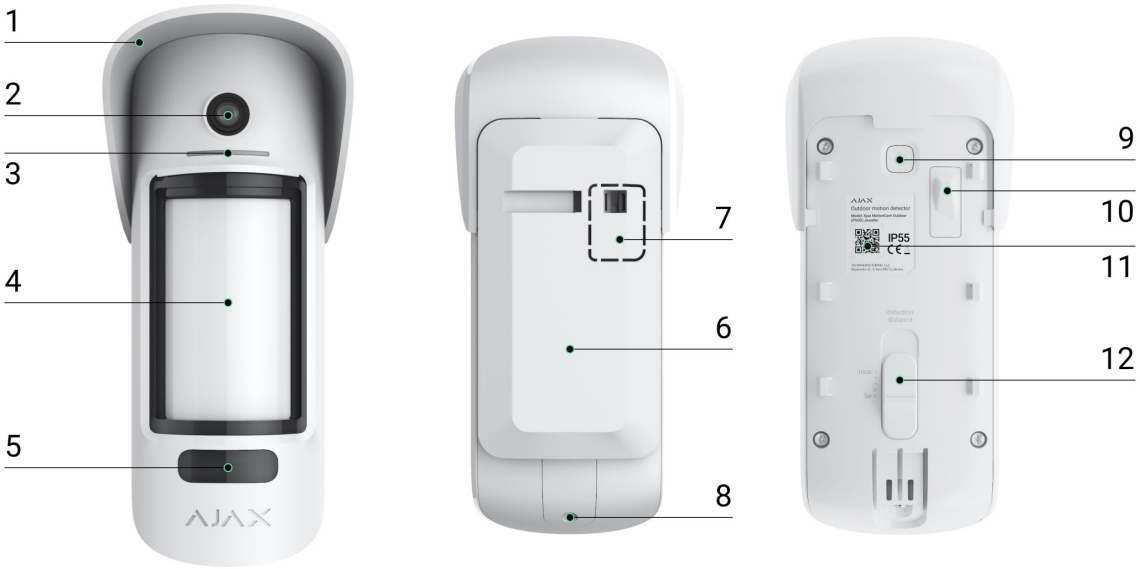
MotionCam Outdoor (PhOD) Jeweller works as part of the Ajax system,

communicating with the hub over two secure radio protocols; the detector uses Jeweller to transmit alarms and events and Wings to transmit photos. The hub communication range is up to 1,700 meters in an open space.

Buy MotionCam Outdoor (PhOD) Jeweller

A version of the detector without support for Photo on Demand and Photo by Scenarios features is also **available for purchase**.

Functional elements



1. Hood for protecting the camera and anti-masking sensors from rain and snow.

2. Camera.

3. LED indicator.

4. Motion detector lens.

5. IR backlight. It is used for night photos and low light conditions.

6. SmartBracket mounting panel. To remove the panel, slide it down.

7. Perforated part of the mounting panel. Necessary for tamper triggering in case of any attempt to detach the detector from the surface. Do not break it off.

8. The hole for attaching the SmartBracket mounting panel with a screw.

9. Power button.
10. **Tamper button**. Triggers when an attempt to detach the detector from the surface or remove the mounting panel.
11. Detector’s QR code / identifier. Used to connect MotionCam Outdoor (PhOD) Jeweller to the Ajax system.
12. Detection distance scrollbar.

Compatible hubs and range extenders

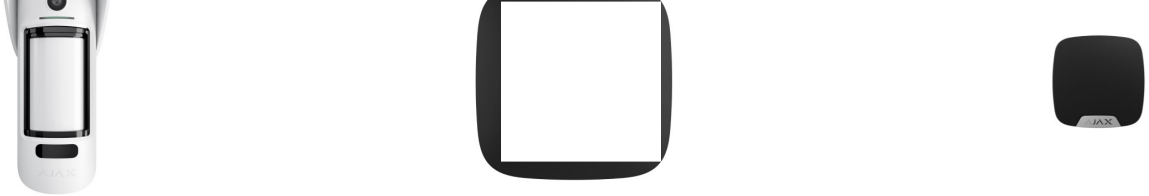
MotionCam Outdoor (PhOD) Jeweller requires a hub to operate. The list of compatible hubs and range extenders is available below:

Hubs	Radio signal range extenders
• Hub 2 (2G) • Hub 2 (4G) • Hub 2 Plus • Hub Hybrid (2G) • Hub Hybrid (4G)	• ReX 2

Connection to other **hubs**, **radio signal range extenders**, **ocBridge Plus**, and **uartBridge** is not provided.

Operating principle





00:00 00:12

MotionCam Outdoor (PhOD) Jeweller is a wireless motion detector supporting photo verification. It detects motion with two built-in infrared (IR) sensors by capturing moving objects with temperatures close to the human body. After a motion is detected, the built-in camera takes a series of photos, allowing you to dynamically assess what is happening at the site, saving users from unnecessary anxiety and security companies from false calls of patrol.

As soon as an armed detector detects motion, it instantly sends an alarm to the hub, activating the connected sirens, triggering **scenarios**, and notifying users and the security company. All MotionCam Outdoor (PhOD) Jeweller alarms and events are recorded in the notification feed of the Ajax app.

Users know exactly where motion is detected. The notifications contain the hub's name (name of the secured facility), name of the device, and **virtual room** to which the detector is assigned.



How Ajax notifies users about alarms

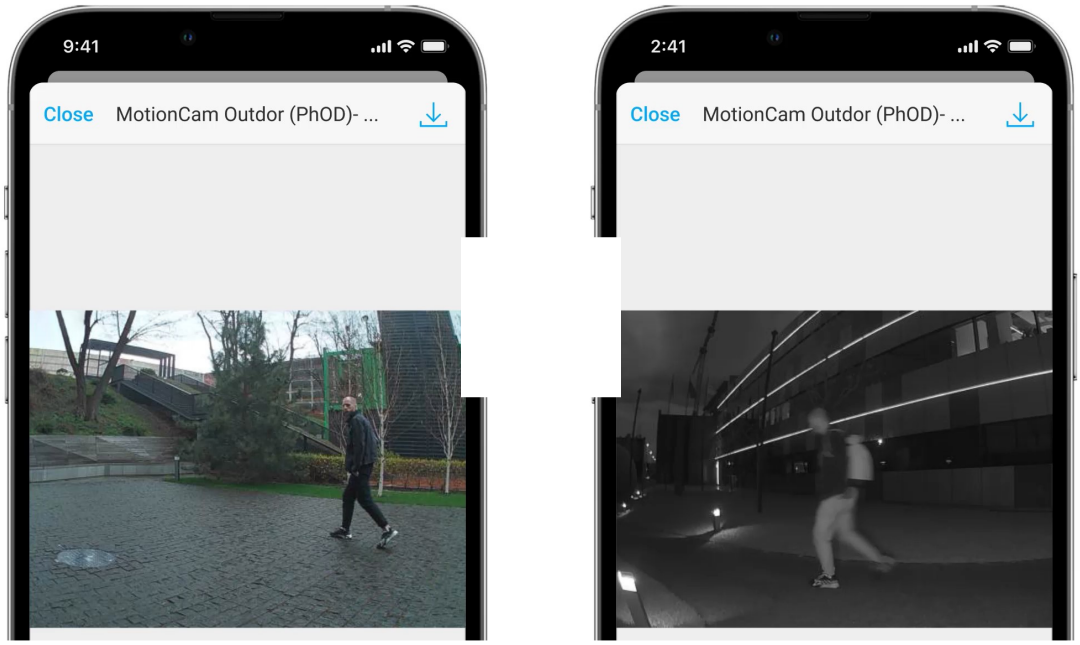
Learn more about Ajax motion detectors

Photo verification

Photo verification allows assessing what is happening in the secured facility. The built-in camera can take from 1 to 5 images with a resolution of 320 × 176 and up to 3 images with 640 × 352 pixels. The number of photos and their resolution are set in the **detector settings.**

MotionCam Outdoor (PhOD) Jeweller can transmit visual confirmations of alarms and show the reason of the alarms from other Ajax devices. Photo verification allows you to take an on-demand photo at any time to check the situation at the facility, find out the cause of the alarm, or see what the children are doing.

The detector has an infrared backlight for shooting in the dark, which activates insufficient light. MotionCam Outdoor (PhOD) Jeweller takes black and white photos when shooting in these conditions.



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There are three types of photo verification: photo by alarm, photo by scenario, and photo on demand.

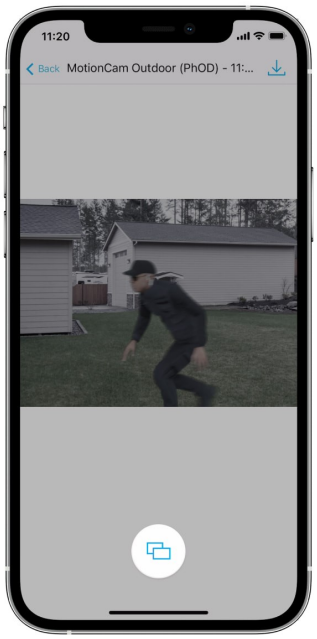
Photo by Alarm

If the **Photo by Alarm** option is configured in the MotionCam Outdoor (PhOD) Jeweller settings, the detector alarms in the Ajax apps are accompanied by photos or an animated series, depending on the selected viewing mode. The detector takes a photo only when armed.

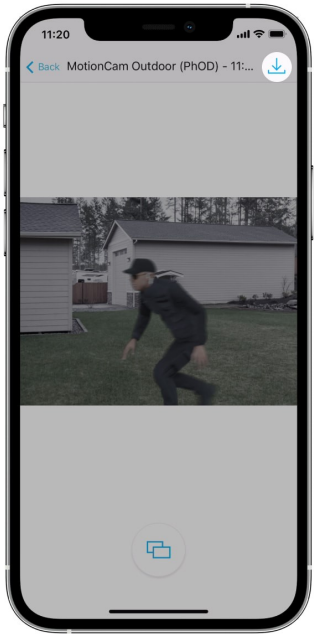
> The detector does not switch to the armed mode instantly. The switching time depends on two factors: the exit delay (specified in the detector settings) and the hub–detector ping interval (hub settings, **Jeweller** section).
>
> In the first case, the delay is set by an administrator or a PRO user with system configuration rights. In the second case, the delay occurs because the hub takes one ping interval to notify the detector about the security mode changing.

Click on the MotionCam Outdoor (PhOD) Jeweller alarm notification in the event feed to view the photos. Photos are available to all users with access to the event feed.

A series of photos are played back in the application as animation. It helps to evaluate the unfolding of the incident over time. You can also view all the photos individually by clicking on the icon at the bottom of the screen.



You can save photo verification as video or images by clicking the download icon.



Features of alarm photo verification

Photo on Demand

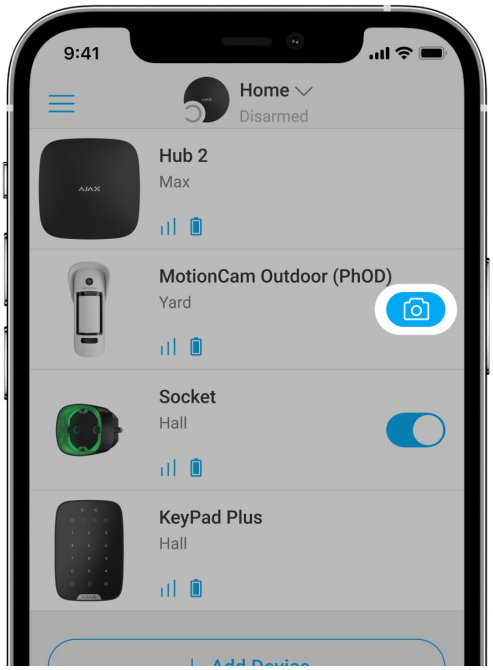


Photo on Demand feature allows users to take pictures with the built-in cameras of detectors with photo verification. With this feature, you can check the situation at the facility: find out what the children are doing, check if your pet is OK, or simply monitor the situation at home. Depending on the settings, photos can be taken at

any time or when MotionCam Outdoor (PhOD) Jeweller is armed.

By default, the Photo on Demand feature is disabled for all users. Users with the right to manage privacy settings (hub settings, **Privacy** section) determine who can take and view photos on demand and which detectors with photo verification can take pictures. PRO users cannot manage privacy settings, but they can take photos on demand if granted permission.

Privacy settings do not apply to photos taken by detectors triggered in case of an alarm. All system users who have access to the hub event feed can view the photos taken in case of an alarm.

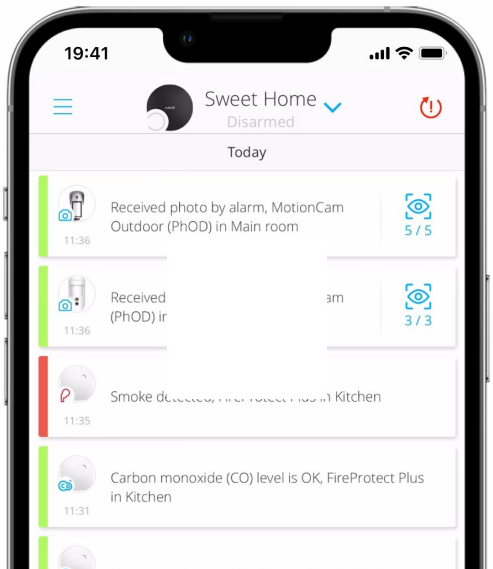
Photos on demand are not sent to the security company monitoring station.

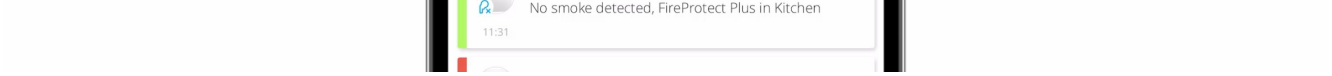
PRO Desktop users can take and view photos on demand only from a personal account if a hub administrator has granted them the appropriate access rights. Taking and viewing photos on demand is not available for a security company profile in the PRO Desktop app.

More about the Photo on Demand feature

How to set Photo on Demand

Photo by Scenario





00:00 00:05

Photo by Scenario feature allows creating a scenario for motion detectors with photo verification, according to which they will take pictures in case of alarm from other Ajax devices.

By default, the Photo by Scenario feature is disabled for all detectors. A user with access to privacy settings can enable this feature. Users of PRO apps cannot manage the privacy settings but can grant this right to any system user.

In the system settings, you can also set precisely when a detector with photo verification can take pictures according to a scenario: at any time or when MotionCam Outdoor (PhOD) Jeweller is armed.

Photos by scenario are available to all system users with access to the event feed. The event of taking a snap after the alarm from other devices is sent to the security company monitoring station via SIA (DC-09) and other proprietary protocols. The event code is 730.

The photos taken by scenario are available to the CMS engineers if the CMS software supports photo verification. Photos by scenario are also available in the **PRO Desktop** app.

Photos by scenario will not be sent to the CMS if only a **direct connection** with the monitoring station is used.

More about the Photo by Scenario feature

How to set Photo by Scenario

Photo delivery time

The photo delivery time to Ajax apps depends on the selected resolution, detector connection method (the detector connects to the hub directly or via the range

extender), Wings signal strength, and the Internet connection speed. The alarm messages are delivered immediately.

Photo resolution	Delivery time*		
	When connected directly to the hub**	When connected to the hub via ReX 2 (ReX 2 transmits photos via Wings)***	When connected to the hub using ReX 2 (ReX 2 transmits photos via Ethernet)****
320 × 176 pixels (default)	up to 9 seconds	up to 37 seconds	up to 24 seconds
640 × 352 pixels	up to 20 seconds	up to 50 seconds	up to 32 seconds

** The detector needs up to 3 seconds to start the Photo on Demand shooting.*
*** The delivery time of one photo when the signal strength between the hub and the detector is 2–3 bars, and the hub is connected via Ethernet, Wi-Fi or 4G.*
**** Values were calculated with a signal strength of 3 bars between ReX 2 and the detector or between the hub and ReX 2. The hub works via Ethernet, Wi-Fi or 4G.*
***** Values were calculated with a signal strength of 3 bars between ReX 2 and the detector. The hub is connected via Ethernet, Wi-Fi or 4G.*

Jeweller and Wings data transfer protocols

Jeweller and Wings are two-way wireless data transfer protocols that provide fast and reliable communication between hub and devices. The detector uses Jeweller to transmit alarms and events. Wings are used to transmit photos.

Both protocols support encryption and authentication to prevent forgery. Connection with devices is monitored via a hub–detector polls system. Their statuses are displayed in real-time in the Ajax apps. The polling frequency is set by a user or a PRO with system configuration rights.

Learn more

Protection against false alarms

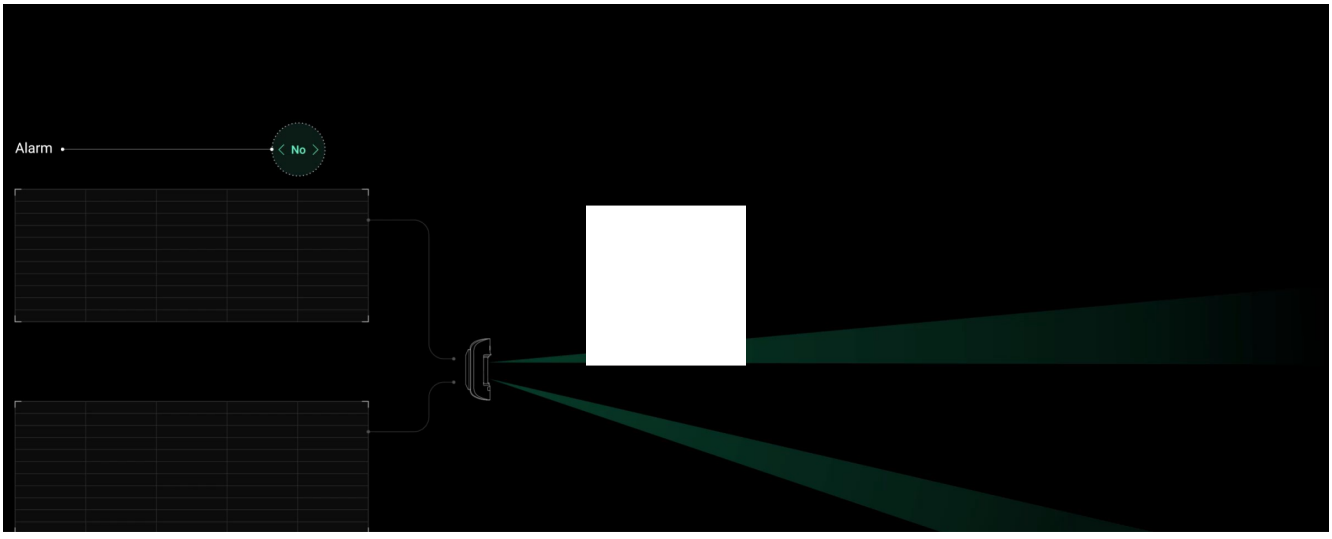
MotionCam Outdoor (PhOD) Jeweller uses the SmartDetect algorithm like other Ajax indoor detectors.

With the SmartDetect algorithm, the detector instantly analyses the thermal diagram read by the sensor:

- The intensity of infrared radiation.
- Size of the heat spot.
- Speed of movement.
- Time spent in the detection area.
- Other parameters.

Usually, at this point, the detector is ready to make a decision: ignore or raise the alarm. But if the situation is quite not clear, the detector activates the two-step LISA algorithm. As soon as both infrared (IR) sensors detect movement, LISA performs correlation and spectral analysis of the signals to instantly distinguish between real threats and interferences.

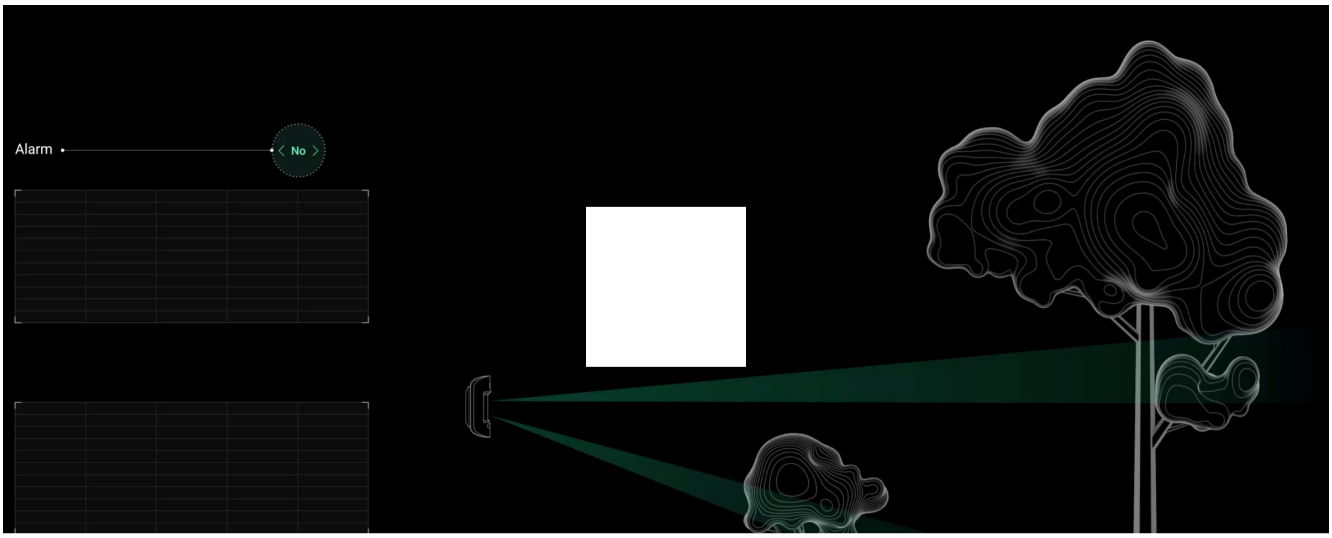
Correlation analysis



When motion is detected, the LISA algorithm analyses and compares the waveforms of two signals from the infrared sensors in real time. If waveforms are

similar, the detector raises the alarm.

Spectral analysis



When both IR sensors detect motion, but correlation analysis does not reveal sufficient similarity of waveforms, LISA compares the frequency components of the signals.

Pet immunity



When properly installed and configured, MotionCam Outdoor (PhOD) Jeweller does

not react to animals up to 80 cm tall. The weight of the animal makes no difference.

To effectively ignore all outdoor-typical interference, these detectors are equipped with two infrared sensors that read signals from two areas of space. They will raise the alarm if both sensors detect motion simultaneously.

If the detector is installed correctly at the height of **0.8–1.3 meters from the ground level**, animals can enter the detection zone of only one of the detector's sensors. This is why MotionCam Outdoor (PhOD) Jeweller rejects such triggers as false and does not raise the alarm.

> **Why motion detectors react to animals and how to avoid this**
>
> **How to install MotionCam Outdoor (PhOD) Jeweller**

Temperature compensation

Temperature compensation is a software mechanism that allows you to maintain the thermal diagram contrast even if the ambient temperature is close to the human body temperature.

With each ambient temperature measurement, the detector introduces a correction according to the table of coefficients stored in its memory — increases or decreases the sensitivity of the IR sensors. This allows the detector to effectively identify motion over the entire operating temperature range from –25°C to +50°C.

> **Learn more**

Protection against masking

Masking is an attempt to block the view of the detector by painting over it, covering it, placing an obstacle in front of the detector's lens, or otherwise.

MotionCam Outdoor (PhOD) Jeweller detects the following types of masking:

- Obstacle in front of the detector lens at a distance of up to 10 cm (the maximum distance depends on the type of material).
- Painting over the detector lens.
- Sticking over the detector lens.

Masking type	Time to alarm, seconds	Time to restore, seconds
The obstacle in front of the detector's lens (up to 10 cm from the lens)	7	20
Painting over the detector lens with varnish or paint	100	20
Sticking over the lens or the front side of the detector	100	20

** The maximum time for masking detection is 180 seconds (depends on the type of obstacle and the distance to it).*

The system informs the users and the security company about masking. For additional protection and informing, siren response to masking in the **detector settings** can be enabled.

The masking-detection function is always active and works regardless of the detector or system security mode.

A Hood visor is provided and included in the detector kit for additional protection of the camera and the masking-detection system from false alarms in case of heavy rain or snow.

More about the masking-detection system

Sending events to the CMS

The Ajax system can transmit alarms and events to the PRO Desktop monitoring app as well as the central monitoring station (CMS) via **SurGard (Contact ID)**, **SIA (DC-09)**, **ADEMCO 685** and other proprietary protocols. A list of all supported protocols is **available by the link**.

More about PRO Desktop monitoring software

List of CMSs with support for Ajax systems

MotionCam Outdoor (PhOD) Jeweller transmits the following events to the monitoring station:

1. Motion alarm.
2. Masking alarm.
3. MotionCam Outdoor (PhOD) Jeweller visual alarm verifications.
4. Photo by Scenario.
5. Tamper alarm/recovery.
6. Hub connection loss/restoration.
7. Permanently enabling/disabling of the detector.
8. Unsuccessful attempt to arm the security system (with the **system integrity check** enabled).

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



The ID and loop number are available in the **device states**.

Sending photo confirmations to the CMS

Photos from the motion detector are transmitted to the security company station if the CMS software supports the reception of photo verifications. A list of such CMSs is **available by the link**. At the same time, **Ajax PRO Desktop** supports receiving photo verifications without additional setup.

> Photo on demand is not sent to the security company's CMS.
>
> **PRO Desktop** users can only take and view photos on demand from a personal account if the hub administrator has granted them such right. Taking and viewing photos on demand is not available for the security company profile in the PRO Desktop.

Adding a device

Before adding a device

1. Install the **Ajax app**.
2. Create an **account** if you don't have one. Add a compatible hub to the app, make the necessary settings, and create at least one **virtual room**.
3. Ensure that the hub is on and has Internet access via Ethernet and/or mobile network. You can do this in the Ajax app or by looking at the LED indicator on the hub. It should light up white or green.
4. Ensure the hub is disarmed and does not start updates by checking its status in the Ajax app.

How to connect MotionCam Outdoor (PhOD) Jeweller

1. Open the **Ajax app**. If you have access to more than one hub or using the PRO app, select the hub to which you want to connect the MotionCam Outdoor (PhOD) Jeweller.
2. Open the **Devices** tab and click **Add Device**.

2. Go to the **Devices** menu. Click **Add Device**.

3. Specify the name of the detector. Select a virtual room and a group if **group mode** is enabled. Scan the QR code or enter the detector's ID manually. ID is placed on the detector's body and packaging.



4. Press **Add**.

5. Switch on the device by holding the power button for 3 seconds.

> To make sure MotionCam Outdoor (PhOD) Jeweller is connected to the hub, the detector must be located at the same secured facility as the system (within the range of the hub's radio network). To operate via **ReX 2**, you must first connect the detector and the range extender to the hub and then connect the detector to ReX 2. This can be done in the range extender settings.
>
> **How to connect a device to ReX 2**

The connected detector will appear in the list of hub devices in the Ajax app. Updating the statuses of devices in the list depends on the **Jeweller** settings; the default value is 36 seconds.

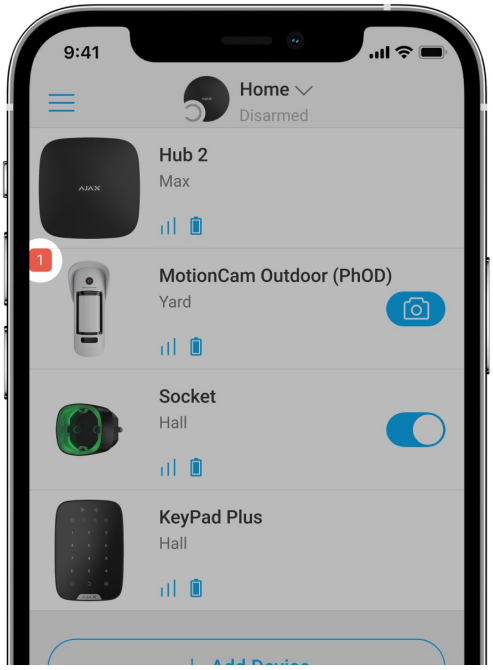
If the connection fails, turn off the detector and try again. If the maximum number of devices has already been added to the hub (**depending on the hub model**), you will receive a notification in the app during the adding.

MotionCam Outdoor (PhOD) Jeweller only works with one hub. When connected to

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

Malfunctions

When a device detects a malfunction (e.g., there is no connection with the hub via the Jeweller protocol), the Ajax app displays a malfunction counter in the device field. All faults are shown in the detector states. Fields with faults are highlighted in red.



A malfunction is displayed if:

- The detector temperature is out of acceptable limits: below –25°C and above +60°C.
- The detector enclosure is open (tamper is triggered).
- No connection with the hub or radio signal range extender via Jeweller.
- No connection with the hub or radio signal range extender via Wings.
- The detector battery is low.

Icons

Icons

The icons represent some of the MotionCam Outdoor (PhOD) Jeweller states. They can be viewed in the Ajax apps on the **Devices** tab. To access them:

1. Sign in to the Ajax app.
2. Select the hub if you have several of them or using a PRO app.
3. Go to the **Devices** tab.

Icon	Meaning
	Jeweller signal strength. Displays the signal strength between the hub and the detector. The recommended value is 2–3 bars. Learn more
	Battery charge level of the detector. Learn more
	The detector has a malfunction. The list of malfunctions is available in the detector states. Learn more
	Displayed when the detector is operating via a radio signal range extender.
	The detector operates in the **Always Active** mode. Learn more
 	Entry and/or exit delay is enabled. Learn more
	MotionCam Outdoor (PhOD) Jeweller will be armed when **Night mode** is activated. Learn more

	MotionCam Outdoor (PhOD) has detected motion. The icon is displayed when the detector is armed.
	MotionCam Outdoor (PhOD) Jeweller is disabled. Learn more
	MotionCam Outdoor (PhOD) Jeweller has been deactivated due to exceeding the preset number of alarms. Learn more
	MotionCam Outdoor (PhOD) Jeweller has tamper triggering events deactivated. Learn more

States

The states display information about the device and its operating parameters. MotionCam Outdoor (PhOD) Jeweller states are available in the Ajax apps. To view them:

1. Sign in to the Ajax app.
2. Select the hub if you have several of them or using a PRO app.
3. Go to the **Devices** menu.
4. Select **MotionCam Outdoor (PhOD) Jeweller** from the list.

Parameter	Value
Malfunction	Clicking on ⓘ opens the MotionCam Outdoor (PhOD) Jeweller malfunctions list. The field is displayed if a malfunction is detected.

Temperature	Detector temperature. It is measured on the processor of the detector and changes gradually. The acceptable error between the value in the app and the ambient temperature is 2°C. The value is updated as soon as the detector identifies a temperature change of at least 1°C.
Jeweller Signal Strength	Signal strength between the detector and the hub or the range extender via the Jeweller channel. The recommended value is 2–3 bars. Jeweller is a protocol for transmitting MotionCam Outdoor (PhOD) Jeweller events and alarms.
Connection via Jeweller	Connection status on the Jeweller channel between the detector and the hub or the range extender: • **Online** — the detector is connected to the hub or the range extender. • **Offline** — the detector is not connected to the hub or the range extender. Check the detector connection.
Wings Signal Strength	Signal strength between the detector and the hub or the range extender via the Wings channel. The recommended value is 2–3 bars. Wings is a protocol for transmitting MotionCam Outdoor (PhOD) Jeweller photos.
Connection via Wings	Connection status on the Wings channel between the detector and the hub or the range extender: • **Online** — the detector is connected to the hub or the range extender. • **Offline** — the detector is not connected to the hub or the range extender. Check the detector connection.

Battery charge	The battery charge level of the device: • **OK** • **Battery low** The Ajax apps and the security company will receive appropriate notifications when the batteries are low. After sending a low battery notification, the detector can work for up to 2 months. **How the battery charge is displayed** **Battery life calculator**
Lid	The status of the detector's tamper that responds to detachment of the device from the surface or opening of the body: • **Open** — the detector was removed from the SmartBracket panel, or the integrity of its body was compromised. Check the mounting of the detector. • **Closed** — the detector is installed on the SmartBracket mounting panel. The body's integrity and the mounting panel wasn't compromised—normal state. **Learn more**
Sensitivity	The sensitivity level of the motion detector: • **Low** • **Normal** • **High** The sensitivity is selected based on the results of the **detection zone test**.

Anti-masking	Detector masking state: • **Alarm** — masking detected. Check the state of the detector. • **On** — anti-masking is enabled. Masking is not detected. • **Disabled** — anti-masking is disabled. Masking will not be detected. **Learn more**
Always Active	When this option is enabled, the detector is always armed. This means that the detector will constantly respond to motion and raise alarms regardless of the system arming mode. **Learn more**
Permanent Deactivation	Shows the status of the device deactivation function: • **No** — the device works in the normal mode. • **Lid only** — detector's tamper triggering notifications are disabled. • **Entirely** — the detector is entirely excluded from the operation of the system. The device does not execute system commands and report alarms or other events. • **By the number of alarms** — the device is excluded from operation when the number of alarms is exceeded (specified in the **Auto Deactivation** settings). **Learn more**
	Displayed if **Photo on Demand** is enabled in the hub settings in the **Privacy** section.

Photo on Demand	Learn more
Alarm Reaction	
Operating Mode	Shows how the detector reacts to alarms: • **Instant Alarm** — the armed detector immediately reacts to a threat and raises the alarm. • **Entry/Exit** — when a delay is set, the armed device starts the countdown and doesn't raise the alarm even if triggered until the countdown ends. • **Follower** — the detector inherits the delays from Entry/Exit detectors. However, when the Follower is triggered individually, it immediately raises the alarm.
Delay When Entering, sec	Delay time when entering: from 5 to 120 seconds. Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the secured area. Learn more
Delay When Leaving, sec	Delay time when leaving: from 5 to 120 seconds. Delay when leaving (arming delay) is the time the user has to leave the secured area after the security system arms. Learn more
Night Mode Delay When Entering, sec	Delay time when entering in the **Night mode**: from 5 to 120 seconds. Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the premises. Learn more

Night Mode Delay When Leaving, sec	Delay time when leaving in the **Night mode**: from 5 to 120 seconds. Delay when leaving (arming delay) is the time the user has to leave the premises after the security system arms. Learn more
Firmware	Detector firmware version. Learn more
ID	Detector ID. It is also available on the QR code on the detector enclosure and its package box.
Device №	The number of the device loop (zone).

Settings

The motion detection range is set using the switch on the detector's body (under the SmartBracket).

To change the detector settings in the Ajax app:

1. Select the hub if you have several of them or using a PRO app.
2. Go to the **Devices** tab.
3. Select **MotionCam Outdoor (PhOD) Jeweller** from the list.
4. Go to **Settings** by clicking on the gear icon.
5. Set the required parameters.
6. Click **Back** to save the new settings.

Settings	Value
Name	Detector name. It is displayed in the list of hub devices, SMS text, and notifications in the event feed. To change the detector name, click on the pencil icon . The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.
Room	Select the virtual room to which the MotionCam Outdoor (PhOD) Jeweller is assigned. The room name is displayed in the text of SMS and notifications in the events feed of the Ajax apps.
Alarm LED indication	When the option is disabled, the LED indicator of the detector doesn't notify about alarms and tamper triggerings.
Sensitivity	The motion detector sensitivity level. The choice depends on the type of the object, the presence of probable sources of false alarms, and the specifics of the protected area: • **Low** — there are likely sources of false alarms in the protected area. For example, tall bushes. • **Normal** (default value) — recommended value, suitable for most objects. Do not change it if the detector works correctly. • **High** — there is no interference in the protected area; the maximum range of detection and the alarm detection speed are important. For example, if the detector is installed in a narrow passage. Before selecting the sensitivity level, conduct the **detection zone test**. If during the test, the detector doesn't react to movement in 5 cases out of 5, the sensitivity should be increased.

Anti-masking	MotionCam Outdoor (PhOD) Jeweller detects masking when this option is enabled. The device detects the following types of masking: • Obstacle in front of the detector lens at a distance of up to 10 cm (the maximum distance depends on the type of material). • Painting over the detector lens. • Sticking over the detector lens. Learn more
Image resolution	The resolution of the photos taken by the camera of the detector: • 320 × 176 pixels (default) • 640 × 352 pixels The higher the resolution, the more detailed the image is. It takes longer to transfer higher-resolution photos. The selected resolution is set for **Photo on Alarm**, **Photo by Scenario**, and **Photo on Demand**.
Photo by Alarm	The number of photos taken by the camera of the detector: • No photo • 1 photo • Series of 2 • Series of 3 (by default) • Series of 4 (available if 320 × 176 pixels resolution is selected)

	• Series of 5 (available if 320 × 176 pixels resolution is selected) The selected number of shots is set for **Photo on Alarm** and **Photo by Scenario**.
Alarms with photo verification	The number of alarms accompanied by photos. You can specify 1 to 10 alarms or set up the transmission of a photo each time the detector is alarmed. An alarm counter with photo verification is reset when the security system is disarmed and re-armed. The setting is available if the **Always active** option is disabled. When this option is enabled, the detector sends photos on every alarm.
Photo on Demand	The number of photos the detector's camera takes when capturing photos on demand: • 1 photo • Series of 2 • Series of 3 (by default) • Series of 4 (available if 320 × 176 pixels resolution is selected) • Series of 5 (available if 320 × 176 pixels resolution is selected) The setting is available if the **Photo on Demand** function is enabled. **Learn more**
Always Active	When this option is enabled, the detector is always armed. This means that the detector will constantly respond to motion and raise alarms regardless of the system arming mode.

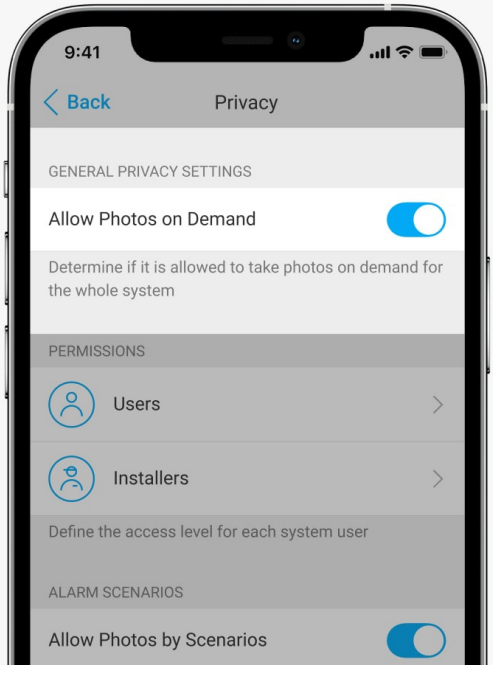
	Learn more
Alert with a siren if motion is detected	If active, **sirens added to the system** are activated when MotionCam Outdoor (PhOD) Jeweller detects motion.
Alert with a siren if masking is detected	If active, **sirens added to the system** are activated when MotionCam Outdoor (PhOD) Jeweller detects masking. The field is displayed and active if the **Anti-masking** option is enabled.
Scenarios	Opens the menu for creating and setting scenarios for the MotionCam Outdoor (PhOD) Jeweller detector. The menu allows creating a scenario when the detector takes pictures when other Ajax devices are triggered. Learn more
Alarm Reaction	
Operating Mode	Specify how this device will react to alarms: • **Instant Alarm** — the armed detector immediately reacts to a threat and raises the alarm. • **Entry/Exit** — when a delay is set, the armed device starts the countdown and doesn't raise the alarm even if triggered until the countdown ends. • **Follower** — the detector inherits the delays from Entry/Exit detectors. However, when the Follower is triggered individually, it immediately raises the alarm.
	Delay time when entering: from 5 to 120 seconds. Delay when entering (alarm activation delay) is the time the user has to disarm the security

Delay When Entering, sec	system after entering the secured area. **Learn more**
Delay When Leaving, sec	Delay time when leaving: from 5 to 120 seconds. Delay when leaving (arming delay) is the time the user has to leave the secured area after the security system arms. **Learn more**
Arm in Night Mode	If active, the detector switches to the armed mode when **Night Mode** is enabled. **Learn more**
Night Mode Delay When Entering, sec	Delay time when entering in **Night mode**: 5 to 120 seconds. Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the premises. **Learn more**
Night Mode Delay When Leaving, sec	Delay time when leaving in **Night mode**: 5 to 120 seconds. Delay when leaving (arming delay) is the time the user has to leave the premises after arming. **Learn more**
Jeweller Signal Strength Test	Switches the detector to the Jeweller signal strength test mode. The test allows you to check the signal strength between the detector and the hub or the range extender over the Jeweller wireless data transfer protocol to determine the optimal installation location for the device. The recommended value is 2–3 bars.

	Learn more
Wings Signal Strength Test	Switches the detector to the Wings signal strength test mode. The test allows you to check the signal strength between the detector and the hub or the range extender over the Wings wireless data transfer protocol to determine the optimal installation location for the device. The recommended value is 2–3 bars. **Learn more**
Detection zone test	Switches the detector to the detection zone test mode. The test enables users to check how the detector responds to movement and to determine the optimal installation location. If, during the test, the detector does not respond to motion in 5 cases out of 5, increase the sensitivity or change the detector's location. **Learn more**
Signal Attenuation Test	Switches the detector to the signal attenuation test mode. During the test, the transmitter power is decreased or increased to simulate a change in the environment to test the communication stability between the detector and the hub. **Learn more**
User Manual	Opens the MotionCam Outdoor (PhOD) User Manual in the Ajax app.
	Allows the user to disable the device without removing it from the system. Three options are available:

Permanent Deactivation	Three options are available: • **No** — the device operates normally and transmits all events. • **Entirely** — the device does not execute system commands and does not participate in automation scenarios, and the system ignores alarms and other device notifications. • **Lid only** — the system ignores the detector tamper triggering notifications. **More about permanent deactivation** The system can also automatically deactivate devices when the preset number of alarms is exceeded. **More about auto deactivation**
Unpair Device	It unpairs the detector: disconnects it from the hub, and deletes its settings.

Setting the Photo on Demand feature



A user with the right to manage privacy settings can enable and configure the Photos on Demand feature. To do this, in the Ajax app:

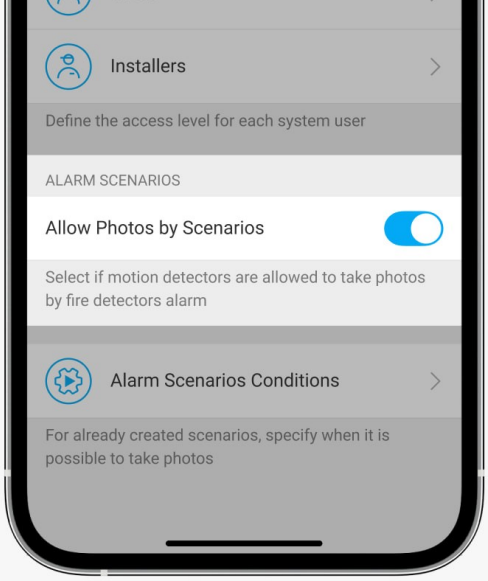
1. Select the facility if you have several of them.
2. Go to the **Devices** tab and select a hub.
3. Click the gear icon to go to the hub **Settings**.
4. Select the **Privacy** menu and enable the Allow **Photos on Demand** option.
5. Select the user category:
    - Users.
    - Installers (PRO app users).
6. Select a specific user or a PRO. A list of cameras, DVRs, and detectors with photo verification added to the hub will open.
7. Select the detector to which you want to provide access.
8. Enable the **Take & View Photo** option.
9. Specify when the user can take on-demand photos: always or when the detector is armed.
10. Click **Back** to save the settings.
11. Repeat steps 6–10 for other detectors you want to provide access. The blue icon marks detectors to which the user already has access.

After saving the privacy settings, all users with access to the event feed will receive a notification about who has received access rights and which user has granted these rights.

Learn more

Setting the Photo by Scenario feature





A user with access to privacy settings can enable the Photo by Scenario feature. To do this, in the Ajax app:

1. Select the facility if you have several of them.
2. Go to the **Devices** tab and select a hub.
3. Click on the gear icon to go to the hub **Settings**.
4. Select the **Privacy** menu and enable the Allow **Photos by Scenario** option.
5. Click **Back** to save the settings.

Learn more

How to create a scenario for taking photos in case of alarms from other devices

Any user or PRO with system configuration rights can create and configure a scenario. To do this:

1. In the Ajax app, select the facility if you have several of them or if you are using a PRO app.
2. Go to the **Devices** tab and select a detector with photo verification.
3. Click on the gear icon to go to the detector settings.

4. Select the **Scenarios** item from the list.
5. Define Ajax devices and the types of alarms for which the detectors will take photos.
6. Click **Next**.
7. Specify:

    - Name of the scenario.
    - The number of devices that trigger a scenario (available if there are two or more Ajax devices in the system):

      Any — the scenario will be triggered when at least one device is alarmed.
      All selected — the scenario will be triggered when all selected devices are alarmed.

    - Triggering time for all devices (available if, in the **Devices triggering the scenario** block, the **All selected** option is specified).
    - When the detector can take photos: at any time or when it is armed. The option is only available to users with the right to control privacy settings. By default, the detector takes photos by scenario only in armed mode.

8. Click **Save**. The scenario will appear in the list of device scenarios.



The scenario will not be executed if the Allow **Photos by Scenario** option is disabled in the privacy settings (hub settings, **Privacy** menu).

To delete or edit a scenario, click on it in the list. You can also disable the scenario with a toggle next to the scenario name: its settings will be saved but not executed after the alarm from other devices.



Disabled (PhOD) detectors cannot take photos by scenario, and disabled devices do not trigger the scenario for taking photos.

More about permanent deactivation

Indication

The MotionCam Outdoor (PhOD) Jeweller LED indicator may light up red or green depending on the detector’s status. The indication can be disabled in the **detector settings**.



00:00 00:03

Indication upon pressing the power button

Indication	Event
Lights up red while the power button is pressed.	Pressing the button when the detector is on.
Lights up green.	Turning the detector on.
First light up red, then flashes three times and goes off.	Turning the detector off.

Enabled detector indication

Indication	Event	Note

Indication	Event	Note
Lights up green for 1 second.	Motion alarm / tamper triggering.	The detector records movement once every 5 seconds.
Lights up green for 0.5 seconds.	Shooting photos on demand.	The indicator lights up when taking a photo on demand, even if the LED indication is turned off in the detector settings.
Lights up green for a few seconds.	Connecting the detector to the hub.	
Lights up red and blinks after the first activation.	Hardware error.	The detector needs to be repaired; please contact **Support Service**.
Lights up red and flashes a few minutes after installing the mount.	The calibration was not successful; something was blocking the view of the detector, or it was installed incorrectly.	Recalibrate. To do this, remove the device from the SmartBracket mount and reinstall it. Recalibration will start automatically. Make sure that, this time, nothing obstructs the view of the detector.
In case of an alarm, it slowly lights up green and goes out.	Detector batteries need to be replaced. The detector continues operating, detecting motion, and transmitting alarms to the hub.	The procedure for replacing the batteries is described in the article **How to replace the batteries in the MotionCam Outdoor (PhOD) Jeweller detector**.
Lights up green and flashes 3 times per second.	The batteries are completely discharged. The detector no longer detects motion and does not transmit alarms to the hub.	The procedure for replacing the batteries is described in the article **How to replace the batteries in the MotionCam Outdoor (PhOD) Jeweller detector**.

Functionality testing

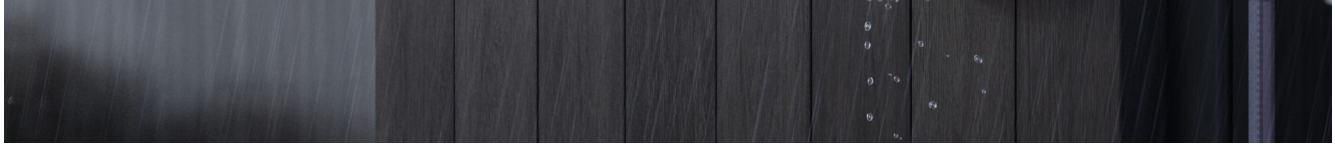
The Ajax system provides several types of tests to make sure that the installation place is chosen correctly. MotionCam Outdoor (PhOD) Jeweller tests do not start immediately, but not later than over a single hub–detector ping interval (36 seconds by default). You can change the ping interval of devices in the **Jeweller** menu of the hub settings.

To run a test in the Ajax app:

1. Select the hub if you have several or use a PRO app.
2. Go to the **Devices** menu.
3. Select **MotionCam Outdoor (PhOD) Jeweller** from the list.
4. Go to **Settings**.
5. Choose a test:
    - Jeweller Signal Strength Test
    - Wings Signal Strength Test
    - Detection Zone Test
    - Attenuation Test
6. Run the test.

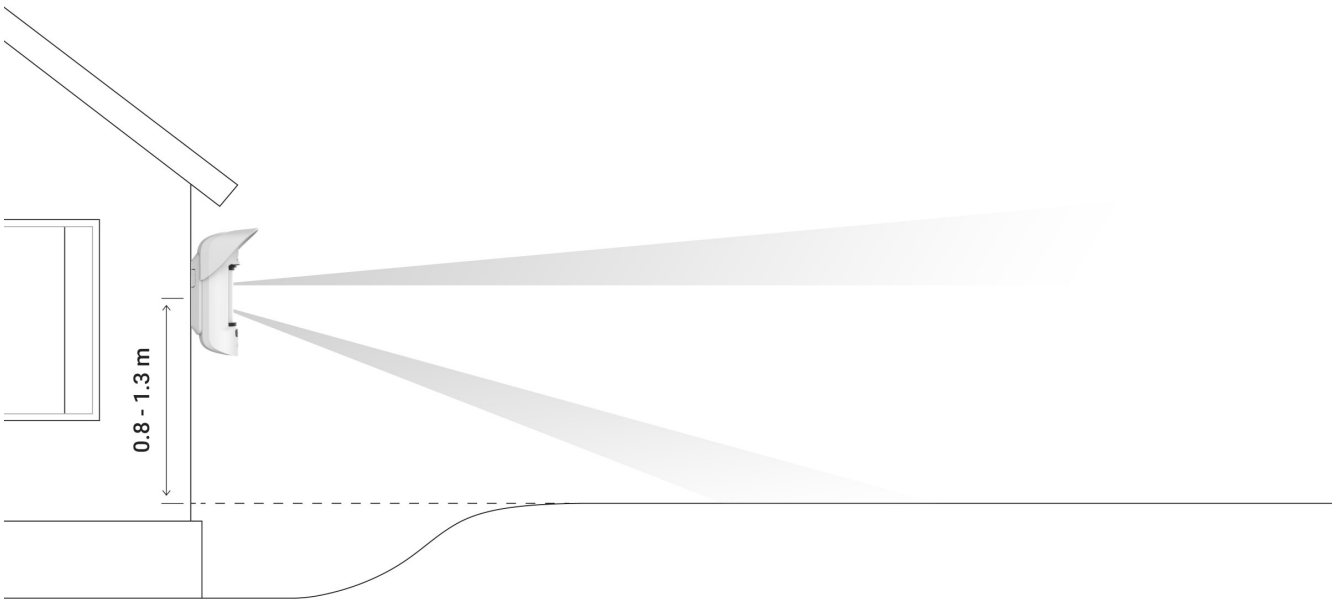
Selection of the installation location





MotionCam Outdoor (PhOD) Jeweller is suitable for protecting the territory of the protected object: private houses, parking lots, unheated premises, and other objects. The detector is suitable for installation both outdoors and indoors.

The detector is placed 0.8–1.3 meters above ground level. This height is a prerequisite for the effective work of the **Pet immunity** function. Installation at a different height can lead to incorrect detector operation; it will react to animals (false alarms) or will not detect human movement.



The detector should be installed on a flat, stable surface — for example, on the wall of a house or a solid fence. If the detector is installed on a shaky (unstable) surface, this will result in false alarms.

The detector’s body is placed so that the lens axis is parallel to the ground, and the intruder’s expected entry path runs perpendicular to the lens axis. If the area is not flat, the installation height is calculated from the area’s highest point monitored by the detector.

We recommend placing the detector in a corner so that it has no “blind” zones and is more complicated for an intruder to bypass — for example, in the corner of a fence. Furniture, plants, and ornamental and glass structures should not obstruct the view of the detector or its camera.

If the detector cannot be installed in a corner, it can be mounted on a flat vertical surface: a wall or a fence. In this case, install another detector that will overlap the blind spots of the first MotionCam Outdoor (PhOD) Jeweller.

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

- Motion detector detection area.
- The viewing angle of the detector's camera and the presence of obstacles in front of it.
- Jeweller and Wings 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 room.

Consider the recommendations for placement when developing the facility's security system project. The security system must be designed and installed by specialists. The list of authorized Ajax partners is **available here**.

Signal strength

Jeweller and Wings signal strength is determined by the number of undelivered or corrupted data packages exchanged between the detector and the hub or the range extender within a certain time.

The icon in the **Devices** menu indicates the signal strength. The signal strength is also displayed in the detector states.

The value of the signal strength:

- **Three bars** — excellent signal strength.
- **Two bars** — good signal strength.
- **One bar** — low signal strength, stable operation is not guaranteed.

- **Crossed out icon** — no signal.

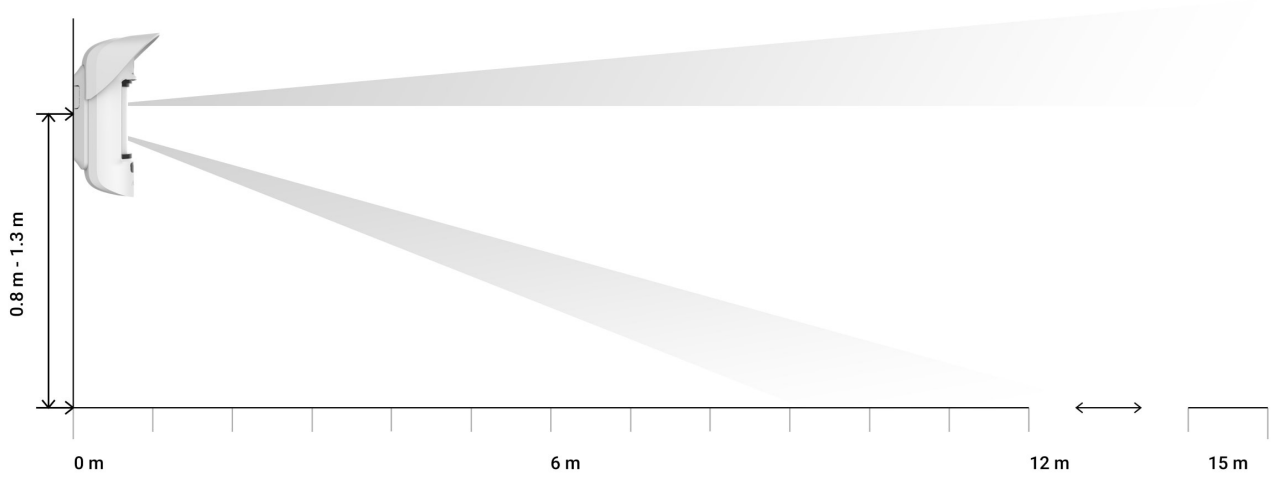
Check the Jeweller and Wings signal strength at the installation site. The detector should have a signal strength of 2 or 3 bars on both communication channels.

If the signal strength is as low as one or zero bars, we cannot guarantee the stable operation of the security system. Relocating the device as repositioning by even 20 cm can significantly improve the signal reception.

If the detector still has a low or unstable signal after moving, use **ReX 2**. MotionCam Outdoor (PhOD) Jeweller is not compatible with other range extenders.

Detection zone

When choosing where to place the detector, be sure to use the **Detection Zone Test** to determine the sector in which the detector recognizes motion as accurately as possible.



The detection distance is adjusted using the **Detection Distance** scrollbar on the rear panel of the detector. When choosing the installation location, consider the maximum detection range of the detector. It depends on the sensitivity, the position of the Detection Distance scrollbar, the type and speed of the person's movement (running, walking), and the ambient temperature.

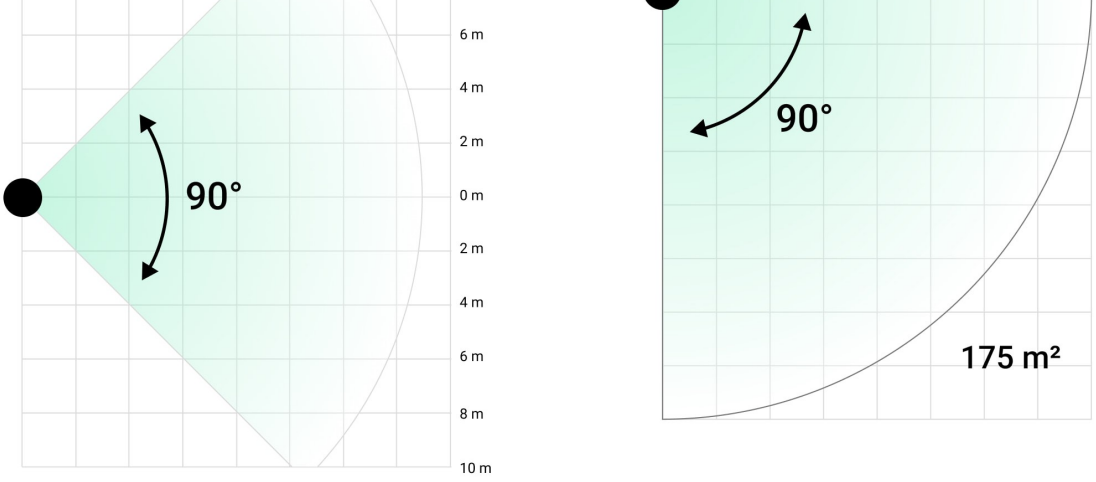


Scrollbar position	Motion detection range when installed at the height of 0.8–1.3 meters
First bar (corresponds to the **near** inscription on the detector body)	Up to 4 meters
Second bar	Up to 5 meters
Third bar	Up to 7 meters
Fourth bar	Up to 12 meters
Fifth bar (corresponds to the **far** inscription on the detector body)	Up to 15 meters

When installed at the height of 0.8–1.3 meters, the detection range was tested at a medium level of sensitivity with the ambient temperature of +23°C and clear weather. Motion type — walking. Other conditions may produce different results.

When selecting an installation location, also consider the horizontal viewing angle of the detector and the width and size of the detection area. Incorrect detector placement can lead to false alarms.





Also, refer to this table when choosing where to place the detector.

Detection distance	Detection zone width
1 meter	2 meters
3 meters	6 meters
4 meters	8 meters
6 meters	12 meters
7 meters	14 meters
9 meters	18 meters
12 meters	24 meters
13 meters	26 meters
15 meters	30 meters

Avoid situations when the detector identifies movement at a greater distance than required. To do this, adjust and set the desired detection distance. This will reduce the likelihood of false alarms in response to external factors.

If you set the slider to the fifth bar (corresponding to the inscription **far** on the detector's body), ensure that the detector's visibility is limited. The best place to install the detector may be within an enclosed place. E.g., when the detection zone of the detector is limited by a fence or a wall of a building. This will also reduce the likelihood of false alarms on external factors: passing cars or other likely sources of false alarms.

Do not install the detector

1. Near the metal objects and mirrors. They can shield and attenuate the radio signal.
2. Opposite trees with leaves in the detection zone of both IR sensors of the detector. This can lead to false alarms in warm weather.
3. In places where the detection zone of the detector might include bushes 80 cm high or above. This can lead to false alarms in warm weather.
4. In places where objects and structures may obstruct the detector's view — for example, behind a flower or a column. This way, the detector's view will be limited, and it will be more difficult to detect motion.
5. In places where glass structures may obstruct the detector's view. The detector doesn't register any movement behind the glass.
6. In places with low or unstable signal strength.
7. Closer than 1 meter to the hub.

Detector installation



Before installing the detector, make sure that you have selected the optimal location and that it complies with the requirements of this manual. Set the desired detection range (**Detection Distance** slider).

To install MotionCam Outdoor (PhOD) Jeweller:

1. Attach the SmartBracket panel with the bundled ties or other temporary fasteners. **Installation height is 0.8–1.3 meters from ground level**.

   To install the SmartBracket mount on ties, first, make holes in it.

2. Install the detector on the SmartBracket panel. Automatic calibration of the masking sensors will start.
3. Leave the detection zone, and make sure there is no movement within the detector's field of view. This is necessary for the correct calibration of the masking sensors. The detector's light will turn green and blink once per second during calibration. Calibration takes up to 2 minutes.
4. Run the **Jeweller** and **Wings** signal strength tests. The recommended value is two or three bars. If the signal strength is as low as one or zero bars, we cannot guarantee the stable operation of the security system. Relocating the device as repositioning by even 20 cm can significantly improve the signal reception. If the detector still has a low or unstable signal after moving, use **ReX 2**.
5. Run a **detection zone** test. To test the motion detector, walk within sight of the detector, watch the response of the LED indicator, and determine the detection area. Test the lower sensor first and then the upper one. This will help define and set the required maximum detection distance of the detector (determined by the lower sensor). Then, run the detection zone test for both sensors and the masking sensors test. If there is no response to movement, select another sensitivity level and detection distance (Detection Distance scrollbar), and check the tilt angle of the detector.
6. Take some test photos to ensure that the camera is capturing the desired area and that no obstacles are blocking its view.
7. Fasten the SmartBracket panel with the bundled screws using all fixation

points. (One of them is in the perforated part of the mounting panel above the tamper.) When using other fasteners, ensure they do not damage or deform the mounting panel.

You can mount the MotionCam Outdoor (PhOD) Jeweller detector on a vertical surface or in the corner with the mounting panel. SmartBracket has special holes that need to be drilled to fix the panel with the bundled screws.

8. Place the MotionCam Outdoor (PhOD) Jeweller on the mounting panel wait for the calibration to complete.
9. Tighten the screw on the bottom of the detector's body. The screw is needed for more reliable fastening and protection of the detector from quick dismantling.
10. Check the tamper status in the Ajax app.

Maintenance

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

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

The pre-installed batteries provide up to 3 years of the detector's battery life at the rate of 1 alarm per day with the standard Jeweller settings (ping period – 36 seconds). The security system will send an appropriate notification if the detector batteries are nearly depleted. The LED will light up and go out gradually when the detector identifies any movement or if the tamper triggers.

MotionCam Outdoor (PhOD) Jeweller can work up to 2 months after the low battery signal. We recommend you replace the batteries immediately upon notification. It is advisable to use lithium batteries. They have a large capacity and are less affected by temperatures.

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

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

How to replace batteries in MotionCam Outdoor (PhOD) Jeweller detector

Technical specifications

All technical specifications of MotionCam Outdoor (PhOD) Jeweller

Compliance with standards

Complete set

1. MotionCam Outdoor (PhOD) Jeweller.
2. SmartBracket mounting plate.
3. Hood visor.
4. Four CR123 batteries (pre-installed).
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.

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:

- e-mail
- Telegram

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