MotionCam Outdoor User Manual

Updated September 19, 2022

MotionCam Outdoor is a wireless outdoor motion detector with a camera for alarm verification. Detects movement at a distance of up to 15 meters. Has anti-masking protection, ignores animals when correctly configured and installed.

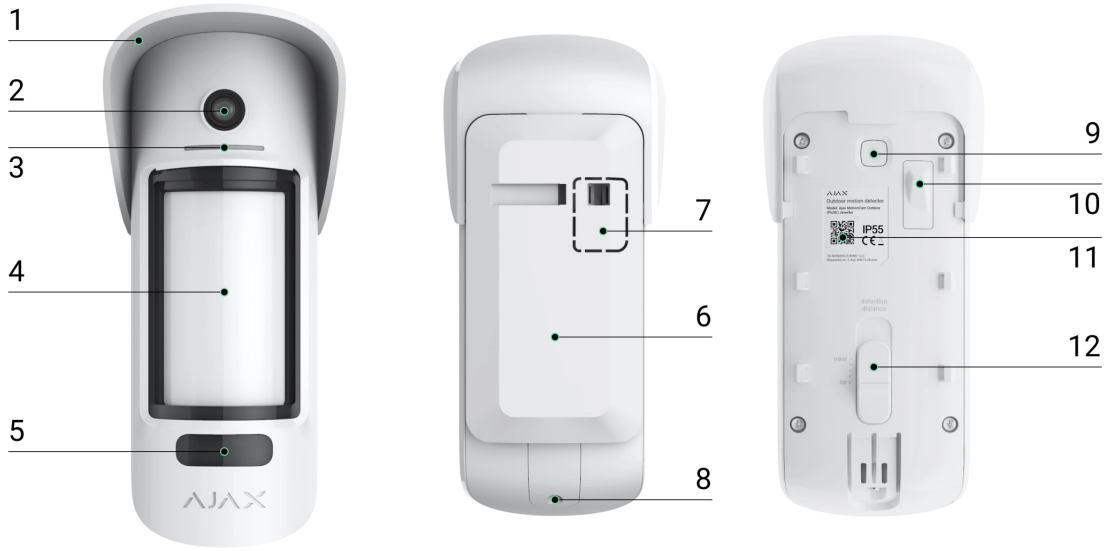
A hub is required for the detector to operate.

List of compatible hubs and range extenders

MotionCam Outdoor works as part of the Ajax security system by connecting to the hub via **Jeweller** and **Wings** encrypted radio protocols. The communication range without obstacles is up to 1,700 meters.

Buy MotionCam Outdoor

Functional elements



1. Hood for protecting camera and anti-masking sensors from rain and snow.
2. Camera.
3. LED indicator.
4. Motion detector lens.
5. IR backlight 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 detectors 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 is made to detach the detector from the surface or remove the mounting panel.
11. Detector’s QR code / identifier. Used to connect MotionCam Outdoor to the Ajax security system.
12. Scrollbar for adjusting the detection range.

Compatible hubs and range extenders

MotionCam Outdoor requires a hub to operate. The list of compatible hubs and range extenders is available in the table 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

MotionCam Outdoor is an outdoor motion detector with a camera. IR sensors of the detector identify intrusions by detecting moving objects with temperatures close to that of the human body. Visual verification helps you instantly assess the situation, relieving users of unnecessary anxiety, and security companies — from false calls of patrols.

Learn more about Ajax motion detectors

In the armed mode, the detector constantly reads signals from infrared (IR) sensors. When motion is detected, MotionCam Outdoor transmits an alarm to the hub and signals it by flashing the LED indicator (if indication is enabled).

An alarm is detected if both IR sensors detect a movement. The detector takes 1 to 5 photos at a time (depending on the settings) and transmits them to the hub. You can enable the Send Photo in Case of Alarm function in the **detector settings**.

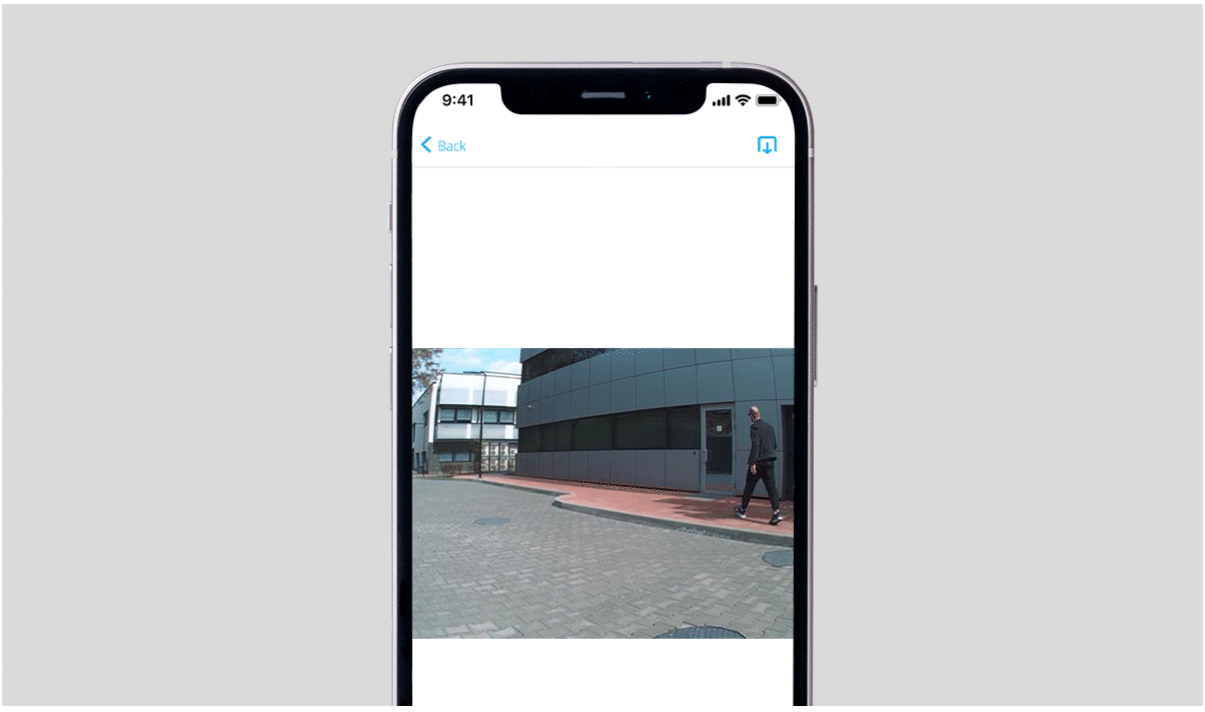
When triggered, the hub activates sirens, starts scenarios, and notifies users and the security company. In case of an alarm, photos are transmitted to the monitoring station of the security company and to all users of the system who have access to the hub's event feed. All alarms, photos, and events of MotionCam Outdoor are recorded in the event feed of the Ajax app.

The detector doesn't go into the armed mode instantly. The time for switching to armed mode depends on two factors: exit delays (specified in the detector settings) and the hub – detector ping interval (Jeweller settings, the default value is 36 seconds). In the first case, the delay is set by the user. In the second case, the delay is caused by the fact that the hub notifies the detector about the transition to the armed mode not instantly, but within one ping interval.

The range of motion detection is set manually — with a scrollbar on the detector body — and is from 3 to 15 meters. This allows you to accurately set the detection area and avoid false triggerings on bushes, trees, or other objects.

Users know exactly where motion is detected. The notifications contain the name of the hub (name of the guarded object), the name of the device, and the virtual room to which the detector is assigned.

Photo verification of alarms



When the detector is triggered, the built-in MotionCam Outdoor camera can take 1 to 5 images with a resolution of 320 × 176 and up to 3 images with a resolution of 640 × 352 pixels. The detector has infrared illumination for shooting in the dark, which is activated only when an alarm is raised.

A version of the detector with Photo on Demand and Photo by Scenario is also available. In addition to the Photo by Alarm feature, the PhOD version can take photos on user demand at any time and automatically take photos in case of Ajax fire detectors alarm.

A series of photos are played back in the app as animation, which allows you to evaluate the incident in dynamics. Photos are available both in Ajax apps and in the monitoring station software of the security company. MotionCam Outdoor uses the **Wings** radio protocol to transmit photos.

Photo delivery time

The photo delivery time to Ajax apps depends on the selected resolution, detector connection method (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 using 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 14 seconds	up to 10 seconds
640 × 352 pixels	up to 20 seconds	up to 20 seconds	up to 17 seconds

** 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.*

Temperature compensation

The detector perceives a person and other objects as heat spots. The device monitors these heat spots and, if they move, signals an alarm. MotionCam

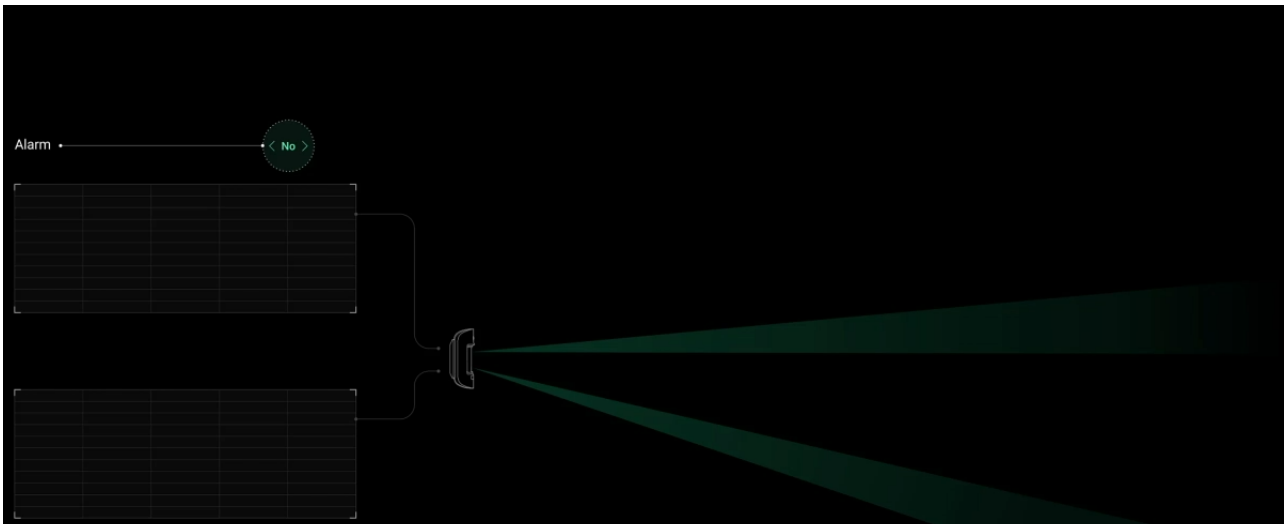
Outdoor reacts to the movement of heat spots with the temperature close to that of the human body.

In the case where the ambient temperature is about the temperature of the human body, the correct operation of the detector is not guaranteed unless temperature compensation is applied. Owing to it, the detector identifies movement over the entire operating temperature range.

Temperature compensation is used in all Ajax motion detectors. This way they effectively detect movement over the entire operating temperature range of the detector.

Learn more

Pet immunity



00:00 00:14

When set up and installed correctly, MotionCam Outdoor ignores animals up to 80 centimeters tall. The detector has two IR sensors and raises an alarm only when movement is detected by both sensors.

If installed correctly, animals will only enter the detection zone of one of the detector's sensors. This way, MotionCam Outdoor eliminates false alarms. And for additional protection against false alarms, the detector uses the LISA software algorithm.

Why motion detectors react to animals and how to avoid it

Anti-masking system

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 detects the following types of masking:

1. Obstacle in front of the detector's lens at a distance of up to 10 centimetres (the limit distance depends on the type of material).
2. Painting over the detector lens.
3. Sticking over the detector lens.

Masking type	Time to alarm, seconds	Time to restore, seconds
Obstacle in front of the detector's lens (at a distance of up to 10 centimetres from the lens)	7	20
Painting over the detector lens	100	20
Sticking over the lens or detector's side	100	20

The system informs the users and the monitoring station of the security company about masking. For additional protection and notification, enable the reaction of sirens to masking (you can do this in the detector **Settings**).

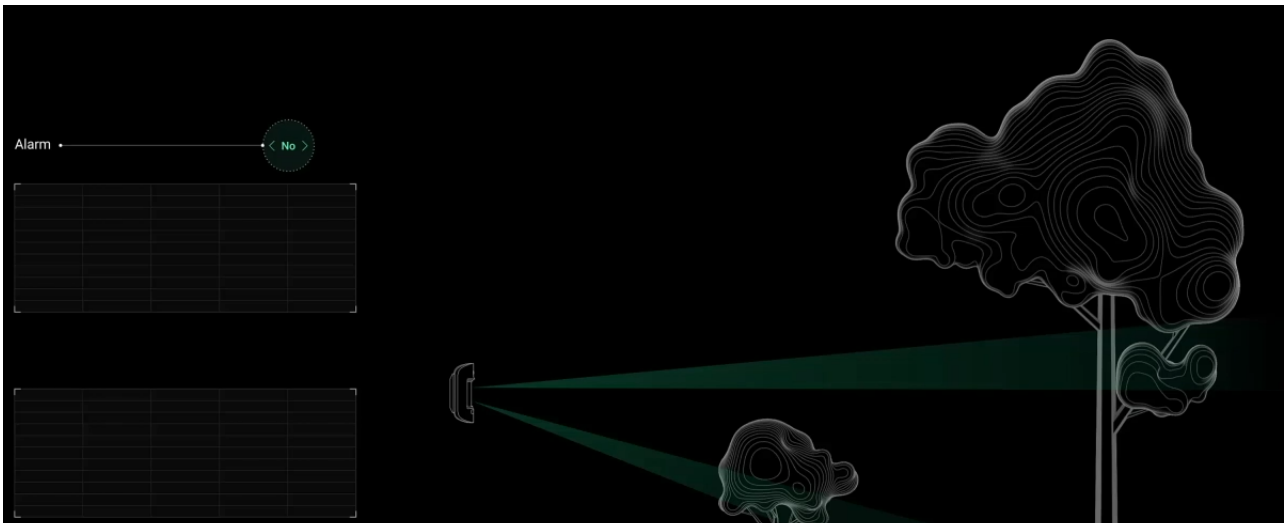
The maximum time of masking detection is 180 seconds (depends on the type of obstacle and the distance to it).

Note that the anti-masking system is always active and works regardless of the detector or system security mode.

For additional protection of the camera or the masking detection system from false alarms on heavy rain or snow, a Hood visor is provided.

Anti-masking and its implementation in Ajax outdoor detectors

Protection against false triggering



MotionCam Outdoor features two independent IR sensors, the signals of which are analyzed by a two-stage LISA algorithm. As soon as both IR sensors detect movement, LISA performs correlation and spectral analysis of the signals, which allows you to instantly distinguish between real threats and interference.

Correlation analysis

Each time a motion is detected, the LISA algorithm analyses and compares the waveforms of two signals in real-time. If the waveforms are similar, the detector triggers an alarm.

Spectral analysis

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

Sending events to the monitoring station

The Ajax security system can transmit alarms to the central monitoring station (CMS) in such protocol formats as **SurGard (Contact ID), SIA (DC-09), ADEMCO 685**, and other proprietary protocols. A complete list of supported protocols is **available here**.

Which CMSs can the Ajax security system be connected to

The device ID and the loop (zone) number can be found in **its states**. Note that photos are sent to the monitoring station of the security company only if the CMS software supports the transmission of photo verifications. The list of CMSs that support Ajax photo verification is **available here**.

Photo verifications are available in the Ajax PRO Desktop CMS without additional setup.

Adding to the system

The detector is incompatible with Hub and Hub Plus hubs, ReX radio signal range extender, third-party security central units, as well as ocBridge Plus and uartBridge integration modules.

Before adding a device

1. Install the **Ajax app**. Create an **account**. Add a hub to the app and create at least one virtual room.
2. Make sure that the hub is on and has access to the internet (via Ethernet cable, Wi-Fi, and/or mobile network). You can do this in the Ajax app or by checking the hub logo on the faceplate. The logo should light up white or green if the hub is connected to the network.
3. Make sure the hub is disarmed and does not start updates by checking its status in the Ajax app.

Only a user or PRO with administrator rights can add a device to the hub.

Types of accounts and their rights

How to add MotionCam Outdoor to the system

1. Open the **Ajax app**. If your account has access to multiple hubs, select the one to which you want to add MotionCam Outdoor.

2. Go to the **Devices** tab and click **Add Device**.

3. Name the detector, scan or type in the QR code (placed on the detector body and the packaging), select a room and a group (if **group mode** is enabled).

4. Click **Add**; the countdown will begin.

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

> To make sure MotionCam Outdoor 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).

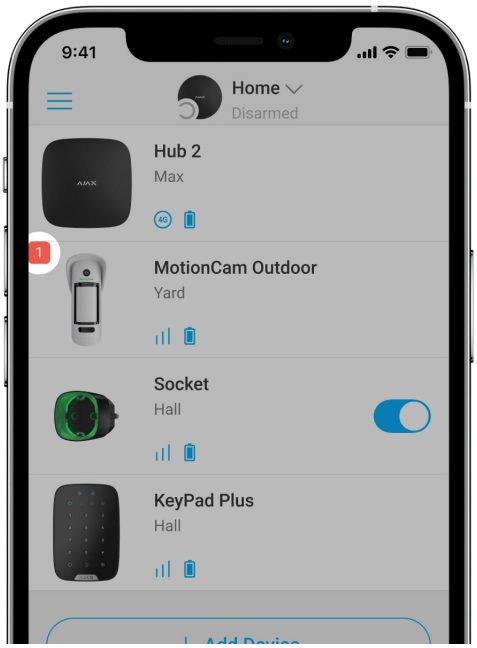
The detector connected to the hub will appear in the list of hub devices in the Ajax app. Updating the statuses of devices in the list depends on the **Jeweller** settings; the default value is 36 seconds.

If the connection fails, try again in 5 seconds. Note that if the maximum number of devices has already been added to the hub (**depending on the hub model**), you will be notified when you try to add a new one.

MotionCam Outdoor only works with one hub. When connected to a new hub, the detector stops sending commands to the old hub. Once added to a new hub, MotionCam Outdoor 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 malfunctions are shown in the detector states. Fields with malfunctions are highlighted in red.



A malfunction is displayed if:

- The detector temperature is out with the 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

The icons represent some of MotionCam Outdoor statuses. You can see them in the **Devices** tab in the Ajax app.

Icon	Value
	Jeweller signal strength — displays the signal strength between the hub and the detector

	MotionCam Outdoor battery level
	Malfunction detected. A list and description are available in the detector states
	The detector operates in **Always Active** mode **Learn more**
 	Entry and/or exit delay is enabled **Learn more**
	MotionCam Outdoor will work when **Night Mode** is enabled **Learn more**
	MotionCam Outdoor has detected motion
	MotionCam Outdoor is temporarily disabled **Learn more**
	MotionCam Outdoor has been disabled due to the exceeding of the number of alarms **Learn more**
	MotionCam Outdoor has temporarily disabled tamper triggering events **Learn more**

States

The states display information about the device and its operating parameters. MotionCam Outdoor 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 from the list.

Parameter	Value
Malfunction	Clicking on ⓘ opens the MotionCam Outdoor 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 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 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**
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
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
Temporary Deactivation	Shows the status of the device temporary 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
Firmware	Detector firmware version
ID	Detector ID. It is also available on the QR code on the detector enclosure and its package box.
Device No.	The number of the device loop (zone).

Settings

Note that the motion detection range is set using a switch on the detector body.

To change the detector settings in the Ajax app:

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

Settings	Value
First field	Detector name. Displayed in the list of hub devices, SMS text, and in 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	Selecting the virtual room to which the MotionCam Outdoor is assigned. The name of the room is displayed in the SMS text and in notifications in the event feed
Sensitivity	Sensitivity level of the motion detector. The choice depends on the type of object, the presence of potential sources of false alarms, and the protected area: • **Low** — there are likely sources of false alarms in the protected area. For example, tall bushes. • **Medium** (default value) — recommended value, suitable for most objects. Do not change it if the detector is working correctly. • **High** — there is no interference in the protected area, the maximum detection range and speed of alarm detection are important. For example, if the detector is installed in a narrow passage.

	The sensitivity level is selected based on the results of the **detection zone test**. If during the test the detector doesn't react to motion in 5 cases out of 5, the sensitivity can be increased
Anti-masking	When this option is enabled, MotionCam Outdoor detects masking **Learn more**
Always Active	If active, the detector is always in the armed mode and detects motion **Learn more**
Alarm LED indication	Allows you to disable the flashing of the detector LED in case of alarm, tamper triggering, or masking detection
Image resolution	Selecting the image resolution (in pixels): • 320 × 176 • 640 × 352 The higher the resolution, the more detailed the image is. However, keep in mind that high resolution will increase the delivery time of photos to the hub **Learn more**
Send photo in case of alarm	Selecting the number of photos in case of alarm: • No photo • 1 photo • Series of 2 • Series of 3 • Series of 4 (only available at 320 × 176 resolution)

	• Series of 5 (only available at 320 × 176 resolution)
Alarms with photo verification	Selecting the number of alarms that are accompanied by photos. You can specify 1 to 10 alarms or set up the transmission of a photo each time the device is triggered. The limit is reset once the security system is disarmed. The setting is available only when the **Always Active** option is disabled. In this mode, the detector will always transmit photos in case of alarm
Delay When Entering, s	Delay time when entering (5 to 120 seconds). Delay when entering (alarm activation delay) is the time the user has to disarm the security system after entering the secured area Learn more
Delay When Leaving, s	Delay time when leaving (5 to 120 seconds). Delay when leaving (arming delay) is the time the user has to leave the secured area after arming Learn more
Delays in Night Mode	If active, the delays when entering and leaving apply to the **Night Mode**. The field is displayed and active if delays are enabled, as well as the **Arm in Night Mode** feature Learn more
Arm in Night Mode	If active, the detector switches to the armed mode when **Night Mode** is enabled Learn more

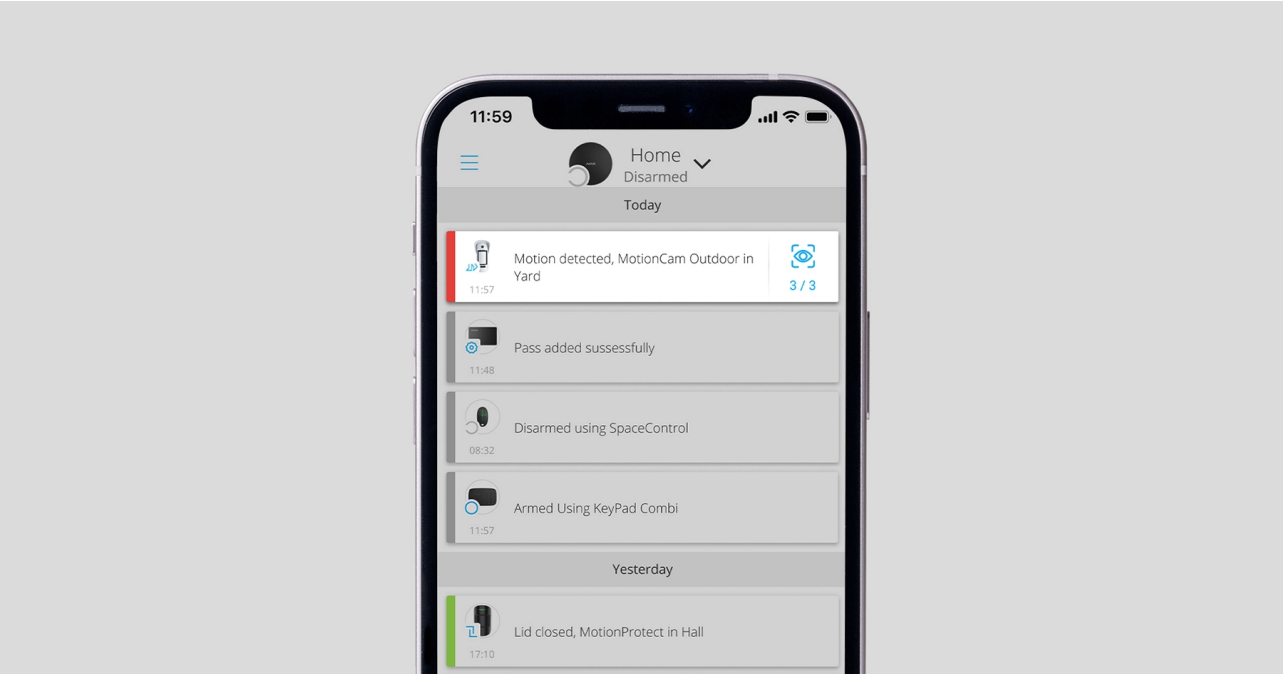
Alert with a siren if motion is detected	If active, **sirens** added to the system are activated when motion is detected by the MotionCam Outdoor detector
Alert with a siren if masking is detected	If active, **sirens** added to the system are activated when the sensors of the MotionCam Outdoor detector are masked. The field is displayed and active if the **Anti-masking** option is enabled
Jeweller Signal Strength Test	Switches the detector to the Jeweller signal strength test mode. The test checks the signal strength between the hub and the detector at Jeweller frequencies to determine the optimum installation place **Learn more**
Detection Zone Test	Switches the detector to the detection zone test mode. The test checks how the detector responds to motion and masking and determines the optimum installation place. **4 test types are supported:** • Upper sensor of the detector • Lower sensor of the detector • Masking sensors • All motion sensors together **Learn more**
Wings Signal Strength Test	Switches the detector to the Wings signal strength test mode. The test checks the signal strength between the hub and the detector at Wings frequencies to determine the optimum installation place

	Learn more
Signal Attenuation Test	Switches the detector to the signal attenuation test mode. The test decreases or increases the radio transmitter power to simulate a change in the environment to check the stability of communication between the detector and the hub **Learn more**
Temporary Deactivation	Allows the user to disconnect the device without removing it from the system. Two options are available: • **Entirely** — the device will not execute commands or participate in automation scenarios. The system will ignore device alarms and other notifications • **Lid only** — the system will ignore notifications about the triggering of the device tamper only **Learn more** The system can also automatically deactivate devices when the set number of alarms is exceeded **Learn more**
User Manual	Opens the MotionCam Outdoor User Manual in the Ajax app
Unpair Device	Unpairs the detector, disconnects it from the hub, and deletes its settings

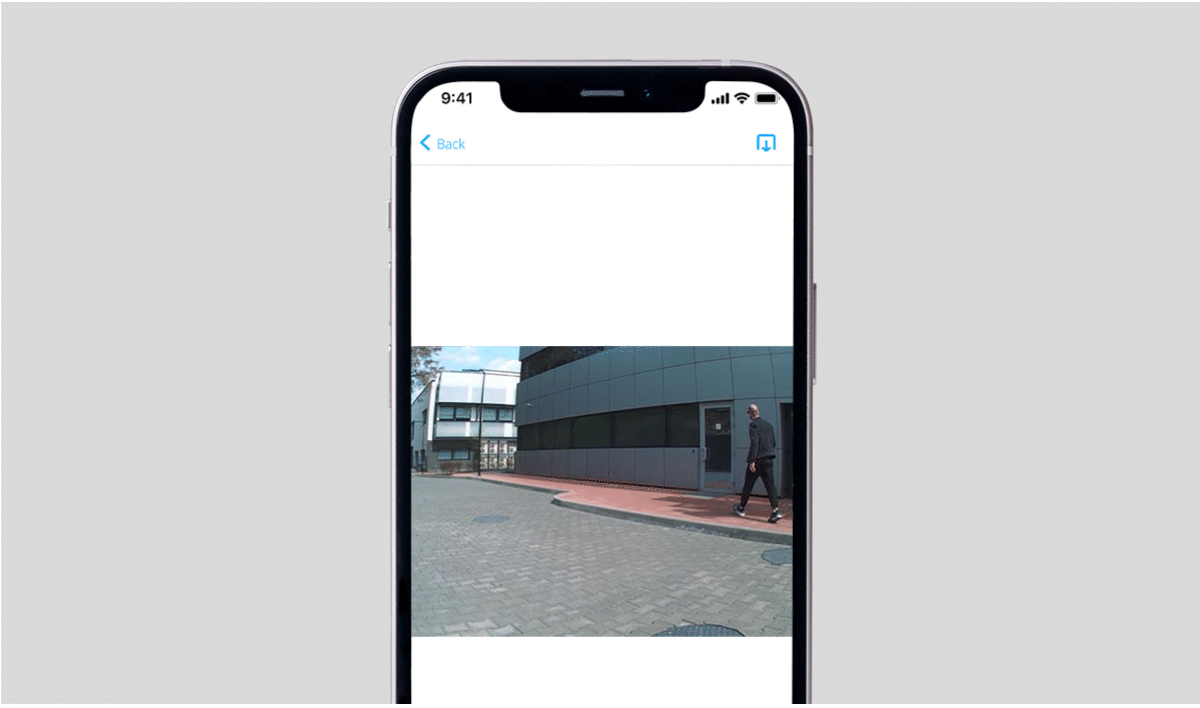
Photo verification of alarms in Ajax apps

If the **Send photo in case of alarm** option is enabled for MotionCam Outdoor, alarms in Ajax apps will be accompanied by a series of photos (the number

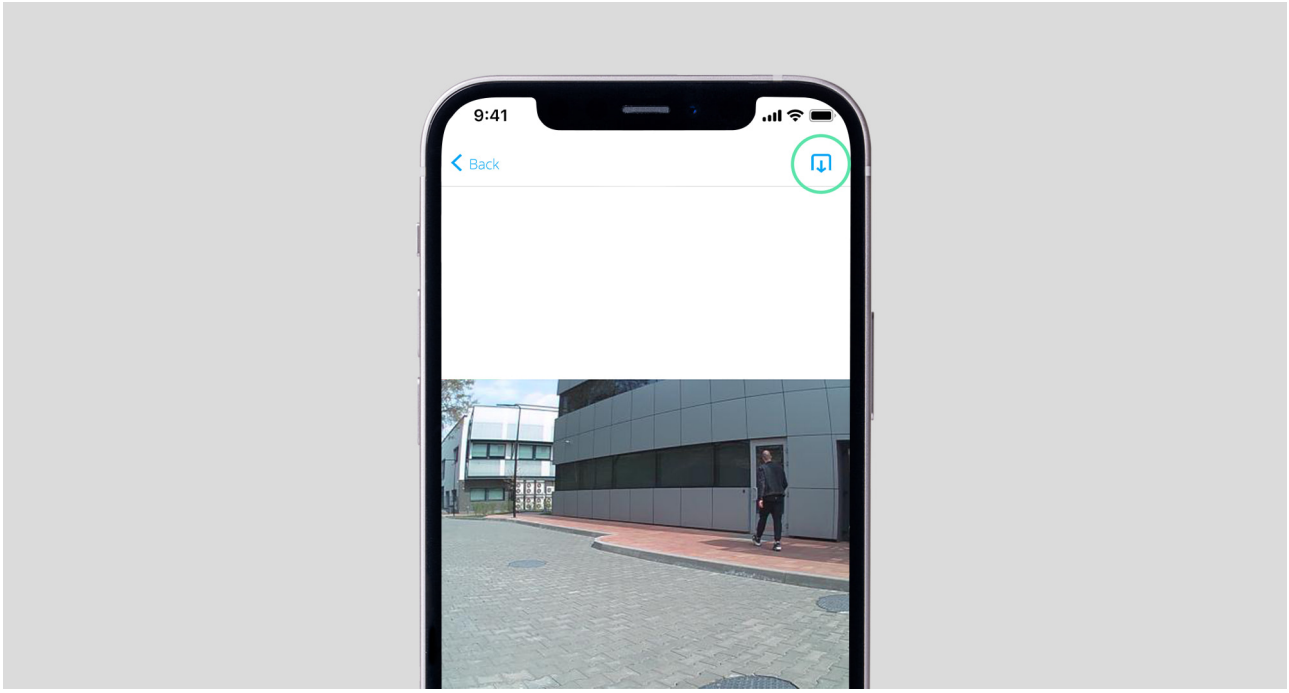
depends on the settings). To view the photos, click on the alarm notification in the events feed.



A series of photos are played back in the application as animation, so the user is able to evaluate the unfolding of the incident over time.



To save a series of photos, click on the button highlighted in the screenshot. You can save each frame individually (in JPEG format) or the entire series (in GIF or MP4 format).



Learn more about photo verification

Indication

The MotionCam Outdoor LED indicator may light up red or green, depending on the status of the detector.

00:00 00:03

Indication when pressing the power button

Indication	Event

Lights up red while the button is pressed	Pressing the power button when the detector is on
Lights up green while the device is being activated	Turning on
First lights up red, then flashes three times and goes off	Turning off

Active detector indication

Indication	Event
Lights up green for 1 second	Alarm, masking, or tamper triggering
Flashes red after the first power on	Hardware error. The detector needs to be repaired, please contact **Support Service**
Flashes red a few minutes after being installed in the mount	Calibration failed — something was obstructing the detector's view during calibration, or it was not installed correctly. Recalibrate the detector. To do this, remove the device from the mount and reinstall it. Recalibration will start automatically. Make sure that nothing obstructs the view of the detector
Lights up green for a few seconds	Connecting the detector to the hub
In case of alarm, masking, or tamper triggering, slowly lights up and goes out in green	Detector batteries need to be replaced.

Functionality testing

The Ajax security system has several tests for choosing the right installation place for the devices. MotionCam Outdoor tests do not start straight away but not later than over a single hub-detector ping period (36 seconds under default settings of the hub). You can change the ping period of devices in the **Jeweller** menu of the hub settings.

There are 4 tests available for MotionCam Outdoor:

- Jeweller Signal Strength Test
- Wings Signal Strength Test

- Detection Zone Test
- Signal Attenuation Test

To run a test, in an Ajax app:

1. Select the hub if you have several of them or if you are using a PRO app.
2. Go to the **Devices** menu.
3. Select MotionCam Outdoor.
4. Go to **Settings**.

Detector placement

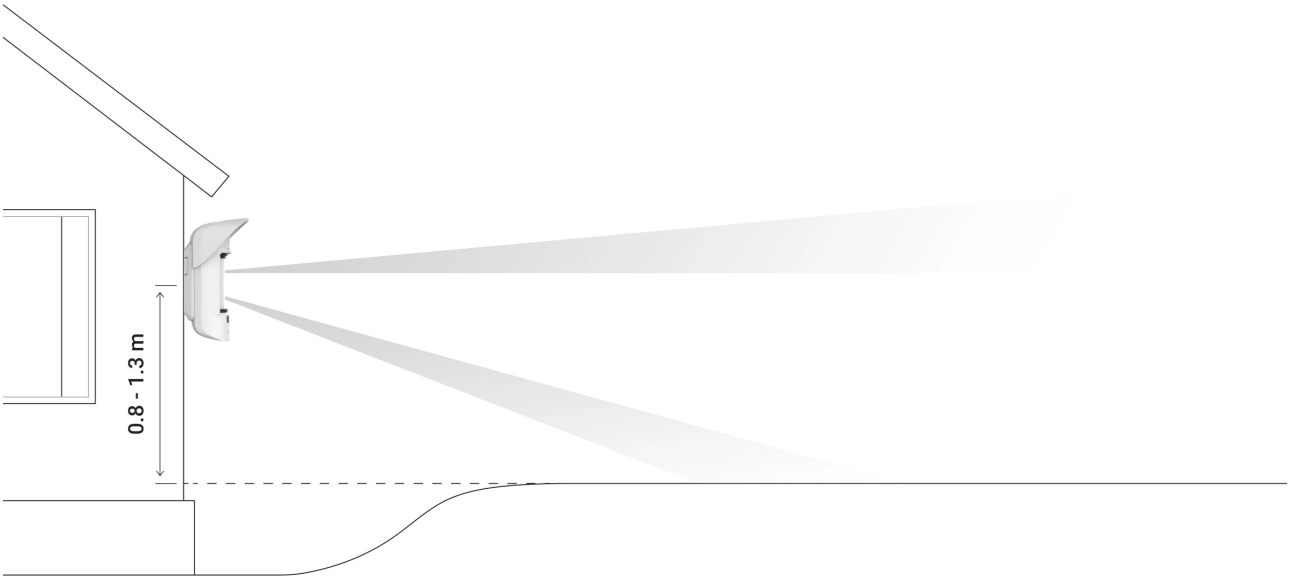
MotionCam Outdoor is suitable for the protection of the area around the secured site. It may guard a courtyard of a private house, a parking, unheated premises, and other sites. The detector can be installed both outdoors and indoors.

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. Placement at a different height can lead to false alarms due to pets or to poor detection of human movement.

The detector should be installed on a flat and stable surface, for example on the wall of a house or on a fence. If the detector is installed on an unstable surface,

this may lead to false alarms.

The axis of the lens must be parallel to the ground level. The intended path of the intruder must be perpendicular to the axis of the detector's lens. If the area is uneven, the installation height is calculated from the area's highest point monitored by the detector.



The detector can be placed 0.5 meters above ground level to protect the facility from crawling burglars. In this case of installation, the pet immunity function is not available. This mounting height of the detector is recommended for installation in industrial facilities and warehouses.

In the case of placing the detector 0.5 meters above ground level, animals mustn't have access to the territory of these facilities as they will provoke false alarms.

The detector should be placed in a corner in case of installation at 0.5 m height. In this case, MotionCam Outdoor will not have blind spots, and it will be more difficult for burglars to bypass it.

If MotionCam Outdoor cannot be installed in a corner, it can be installed on a flat vertical surface such as a wall or fence. In this case, install another detector that will cover the blind spots of the first MotionCam Outdoor detector.

When choosing a location, consider 2 main factors: **signal strength** and **detection zone**.

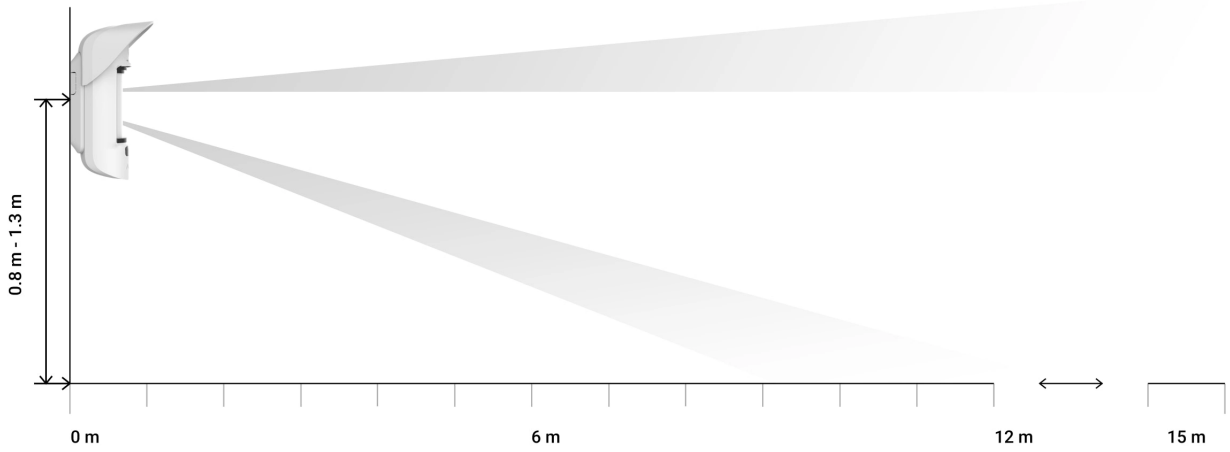
Signal strength

Locate MotionCam Outdoor in a place with stable Jeweller and Wings signal strength (2-3 bars in the Ajax app). When choosing a place for installation, consider the distance between the detector and the hub and the presence of any obstacles between the devices hindering the radio signal passage: walls, intermediate floors, or large-size objects located in the room.

Be sure to check the Jeweller and Wings signal strength at the installation site. If the signal strength is low (a single bar), we cannot guarantee stable operation of the security system. At the very least, relocate the device as repositioning even by 20 cm can significantly improve the signal reception.

If after moving the device still has a low or unstable signal strength, use a **ReX 2 radio signal range extender**. Note that MotionCam Outdoor does not work with the **ReX** radio signal range extenders, so connect it directly to the hub.

Detection zone



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 distance when installed at 0.8–1.3 meters	Motion detection distance when installed at 0.5 meters
First bar (corresponds to the **near** inscription on the detector body)	Up to 4 meters	Up to 1 meters
Second bar	Up to 5 meters	Up to 3 meters
Third bar	Up to 7 meters	Up to 4 meters
Fourth bar	Up to 12 meters	Up to 7 meters
Fifth bar (corresponds to the **far** inscription on the detector body)	Up to 15 meters	Up to 13 meters

The detection distance for 0.8–1.3 installation height was tested at the medium sensitivity level, the ambient temperature of +23°C, and clear weather. Motion type — walking. Other conditions may produce different results.

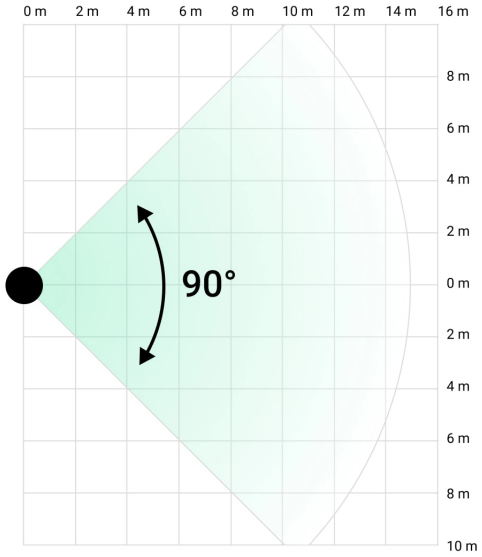
The detection distance for 0.5 installation height was tested at the medium sensitivity level, the ambient temperature of +30°C, and clear weather. Motion type — walking. Other conditions may produce different results.

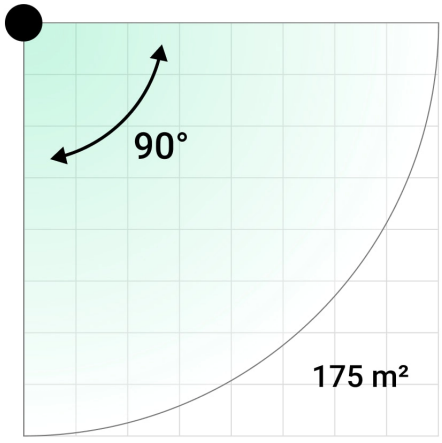
When choosing where to place the detector, be sure to use the **Detection Zone Test** to determine the sector in which the detector recognizes motion as accurately as possible.

Make sure that no obstacles block the view of the detector. Note that MotionCam Outdoor does not detect movement behind the glass. Therefore, do

not install the detector in locations where an open window or door can obstruct its view.

When installing, also consider the width of the detection zone. Incorrect detector placement can lead to false alarms.





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 the situations where 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 scrollbar to the fifth bar, which corresponds to the **far** inscription on the detector body, make sure that a wall or fence limits the view of the

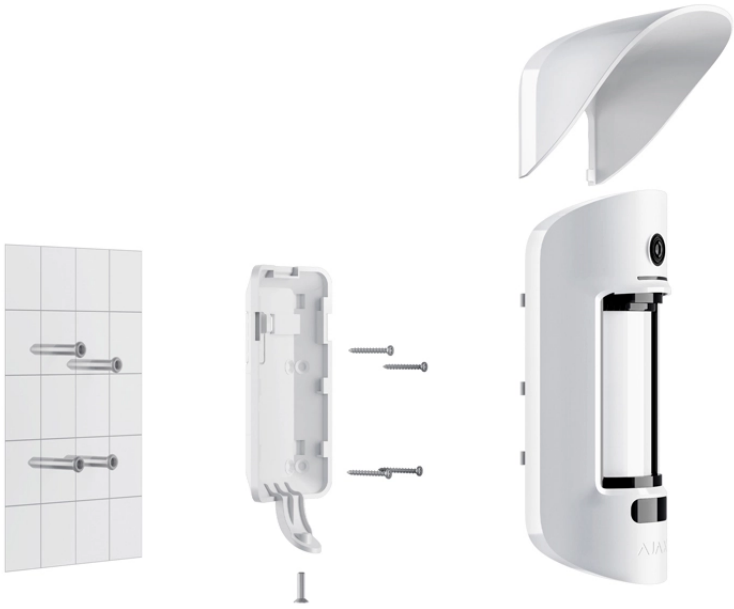
detector. This will reduce the possibility of false alarms due to external factors: passing cars or other sources of false alarms.

Do not install the detector

- Near the metal objects and mirrors. They can shield and attenuate the radio signal.
- Opposite the trees with leaves in the detection zone of both IR sensors of the detector. This can lead to false alarms in warm weather.
- In places where the detection zone of the detector might include bushes 80 centimetres high or above. This can lead to false alarms in warm weather.
- In places with low or unstable signal strength.
- Closer than 1 meter to the hub.

Detector installation

Before installing MotionCam Outdoor, be sure to select the optimal location following the requirements of this manual. Before installation, be sure to set up the desired detection distance of the detector (Detection Distance scrollbar).



To install MotionCam Outdoor:

1. Temporarily attach the SmartBracket panel with the bundled ties (or other temporary fasteners, such as double-sided adhesive tape). Installation height is 0.8 – 1.3 meters from the ground.

> The detector should be installed at the recommended height to ensure the correct operation of the pet immunity function. To install the SmartBracket mount on ties, first make holes in it.

2. Install the detector on the SmartBracket panel.

3. Leave the detector detection zone (horizontal angle of view — 90°) and make sure there is no movement within the detector field of view. This is necessary for correct calibration of the masking sensors. During the calibration, the detector will flash green around once per second. Calibration takes up to 2 minutes.

> The masking sensors calibration starts automatically as soon as the detector body is attached to SmartBracket.

4. Perform **Signal Strength** and **Attenuation** tests. If the signal strength is unstable or one bar is displayed, move the detector or hub.

5. Run **detection zone tests**, first for the lower sensors and then for the upper ones. This will help determine and set the required maximum detection distance of the detector (determined by the lower sensor). Then, run the detection zone test for both sensors simultaneously, as well as the masking sensors test. If there is no response to movement, select the appropriate sensitivity level, detection distance (Detection Distance scrollbar), and check the tilt angle of the detector.

6. Attach the SmartBracket mounting panel to the surface using the bundled screws. When attaching, use at least two fixing points. To make the tamper react to attempts to detach the device, be sure to fix the perforated corner of SmartBracket.

> Ties or double-sided adhesive tape should be used for temporary attachment only. The device attached by adhesive tape may come unstuck from the surface and fall

at any time. In addition, the device may fail if hit. Note that while the device is secured with ties or adhesive tape, the tamper will not trigger if the detector is detached from the surface.

7. Attach MotionCam Outdoor to the mounting plate, wait for the calibration to complete, and tighten the screw at the bottom of the body. The screw is needed for more reliable fastening and protection of the detector from quick dismantling.

8. Once the detector is attached firmly to SmartBracket, the LED will flash to indicate that the tamper has been triggered. If the LED does not light up after the device is attached to SmartBracket, check the tamper status in the Ajax app and then make sure the panel is firmly attached.

The Hood visor is used to protect the camera and to avoid false alarms of the masking detection system in heavy rain or snow.

Maintenance

Check the functioning of the detector on a regular basis. The optimal frequency of checks is once every three months. Clean the detector body from 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 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 battery life at the rate of 1 alarm per day with the standard Jeweller settings (ping period — 36 seconds). If the detector batteries are nearly depleted, the security system will send an appropriate notification, and the LED will light up and go out gradually when the detector detects any movement or if the tamper triggers.

MotionCam Outdoor can work up to 2 months after the low battery signal. However, we recommend that 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 to replace batteries in MotionCam Outdoor detector

Technical Specifications

Classification	Radio-interlinked photoelectric security detector
Installation method	Outdoors and indoors
Type of detector	Wireless
Compatibility	Hub 2, Hub 2 Plus, ReX 2 Doesn't work with ReX range extenders
Sensing element	Two IR sensors
Sensitivity	Adjustable, 3 levels
Motion detection distance	3 to 15 meters when installed at 0.8–1.3 meters (set by user) 1 to 13 meters when installed at 0.5 meters (set by user)
Horizontal viewing angle of the detector	90°
Motion detection speed	From 0.3 to 2.0 m/s
Pet immunity option	Yes. When installed at 0.8–1.3 meters and set up correctly, the detector ignores animals up to 80 centimetres tall Learn more
Camera angle	• Horizontal — 105° • Vertical — 50°
TV distortion (EBU standard)	Barrel — 17%
Sending photo in case of alarm	Photo resolution: • 320 × 176 pixels (default)

	• 640 × 352 pixels Shooting series of up to 5 photos **Learn more**
Infrared backlight for shooting in the dark	Yes
Protection against false triggering	+
Tamper protection	+
Protection against masking	+
Temperature sensor	+
CMS compatibility	Motion alarms are transmitted to CMSs that support SIA (DC-09), ADEMCO 685, SurGuard (Contact ID), and other proprietary protocols. **CMS software with support for photo-verification of alarms**
Radio communication protocols with Ajax detectors and devices	**Jeweller** — for transmitting events and alarms. **Learn more** **Wings** — for transmitting photos. **Learn more**
Radio frequency band	866.0 – 866.5 MHz 868.0 – 868.6 MHz 868.7 – 869.2 MHz 905.0 – 926.5 MHz 915.85 – 926.5 MHz 921.0 – 922.0 MHz Depends on the region of sale.
Maximum radio signal strength	≤ 20 mW
Radio signal modulation	GFSK
TDMA	+
Radio signal range	Up to 1,700 m (without obstacles) **Learn more**

Ping interval	From 12 to 300 seconds
Power supply	4 CR123 batteries
Power supply voltage	6 V
Battery life	Up to 3 years (up to 2.5 years with **Entry Delay** setting enabled) **Calculate the battery life**
Protection class	IP55
Operating temperature range	From –25°C to +60°C
Operating humidity	Up to 95%
Dimensions	206 × 108 × 93 mm
Weight	470 g
Service life	10 years
Warranty	24 months **Learn more**

Compliance with standards

Complete set

1. MotionCam Outdoor
2. SmartBracket mounting plate
3. Hood visor
4. Four CR123 batteries (pre-installed)
5. Installation kit
6. Quick Start Guide

Warranty

The warranty for the Limited Liability Company “Ajax Systems Manufacturing” products is valid for 2 years after purchase and does not apply to the bundled batteries.

If the device does not function correctly, please contact the Support Service first. In half of the cases, technical issues can be solved remotely.

Warranty Obligations

User Agreement

Technical support: **support@ajax.systems**