MotionProtect Outdoor User Manual

MotionProtect Outdoor is a wireless outdoor motion detector with protection against masking and false triggering. It is connected to the Ajax security system via **Jeweller**protected protocol, with a transmission distance of up to 1,700 m in the absence of obstacles. The detector can operate on preinstalled batteries or from an external power source for up to 5 years. The device detects motion at a distance of up to 15 m and ignores pets.
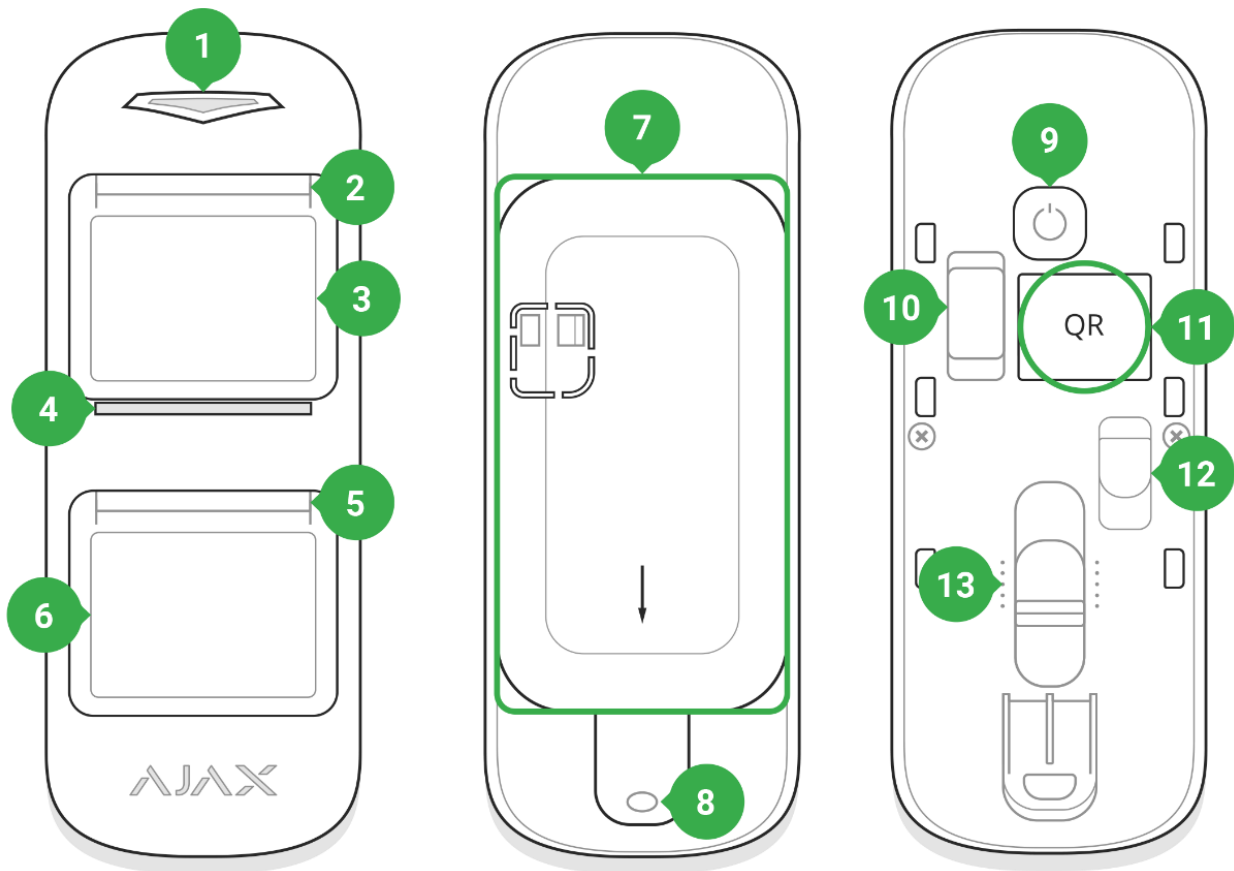
The detector only operates with hub. Connection to ocBridge and uartBridge integration modules is not provided.

The detector is set up via a mobile application for iOS and Android based smartphones. The user is notified of all MotionProtect Outdoor events through push notifications, SMS messages and calls (if activated).

The Ajax security system can be used for independent monitoring of the site and can be connected to the Central Monitoring Station of the security company.

☞ **Buy outdoor motion detector MotionProtect Outdoor**
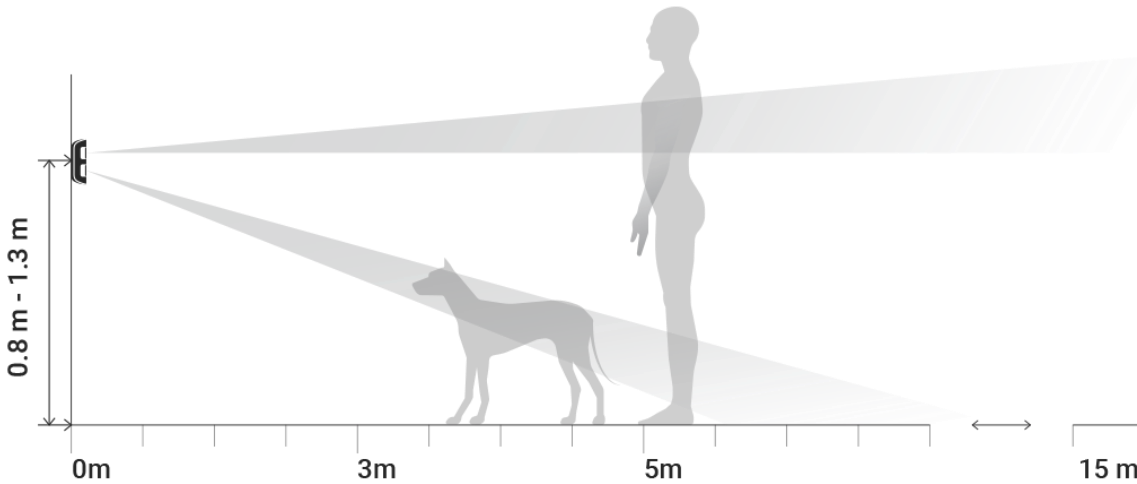
Functional elements

1. Main light indicator
2. Upper light indicator and masking sensor
3. Upper motion sensor lens
4. Varnish masking sensor
5. Lower light indicator and masking sensor
6. Lower motion sensor lens
7. SmartBracket attachment panel (the perforated part is necessary for tamper activation when attempting to pull the detector away from the surface)
8. The hole for attaching SmartBracket panel with a screw
9. "On" button
10. Tamper button
11. QR Code
12. Connector for external power supply cable outlet
13. Scrollbar for adjusting detection range

How it works

When the system is armed, the detector continuously receives signals from two PIR sensors. When movement is detected, the detector instantly transmits the alarm to the hub and signals with a flashing green LED.

⚠ **The MotionProtect Outdoor transmits the alarm to the hub only when two PIR sensors are triggered with a delay of not more than 1.5 seconds after ensuring that their signals are identical.**

⚠ **Motion alarm is transmitted every 5 seconds**

Anti-masking system

Masking is an attempt to block the view of the detector lens with any object.

The MotionProtect Outdoor detects the following types of masking:

- An obstacle in front of both lenses (there is an object with dimensions comparable to the height of the detector body at a distance of up to 20 cm in front of the detector)
- An obstacle in front of any of the lenses (an object is placed at a distance of up to 10 cm in front of one of the lenses)
- Painting or pasting any of the lenses with an opaque material
- Pasting the front of the detector with an opaque material
- Applying an aerosol lacquer / paint or brushing the front of the MotionProtect Outdoor

If one or more types of masking are detected, the detector generates a masking alarm and lights up a green LED on the detector for 1 second.

The detector detects masking in both active and passive mode.

Response time to masking

Masking type	Active mode (detector is armed)		Passive mode (detector is disarmed)	
	Time to alarm, s	Time to restore, s	Time to alarm, s	Time to restore, s
An obstacle in front of both lenses	1	5,4	300	18

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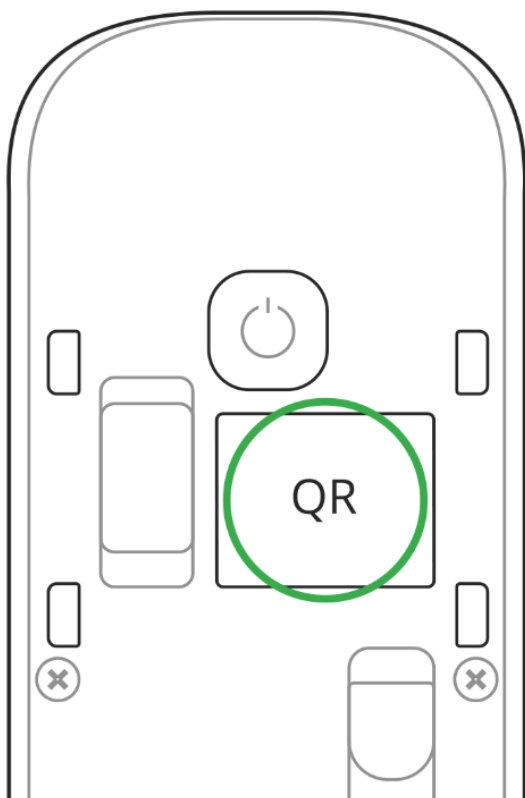|				
An obstacle in front of any of the lenses	150	13	150	5,4
Pasting or painting any of the lenses	150	13	150	5.4
Pasting the front of the detector	150	9	300	18
Applying aerosol lacquer / paint or brushing the front of the detector	150	9	150	9

Connecting the MotionProtect Outdoor to the hub

Before starting connection:

- Following the hub instruction recommendations, install the Ajax application on your smartphone. Create an account, add the hub to the application, and create at least one room.
- Go to the Ajax application.
- Switch on the hub and check the internet connection (via Ethernet cable and/or GSM network).
- Ensure that the hub is disarmed and does not start updates by checking its status in the mobile application.
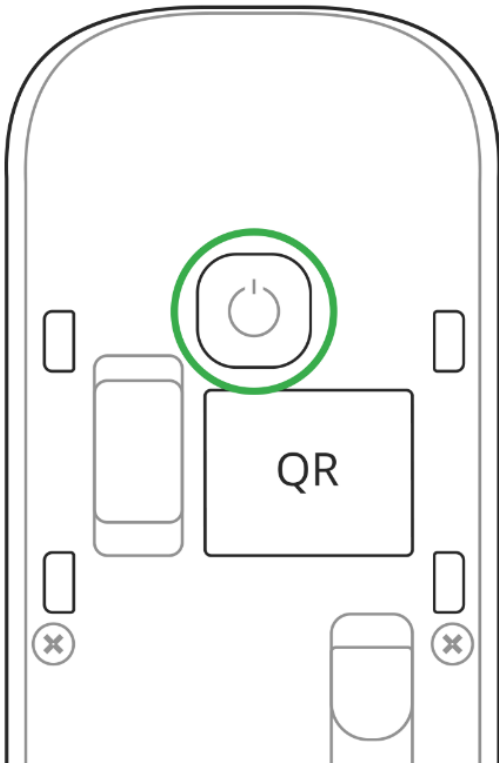
⚠️ **Only users with administrative privileges can add the device to the hub!**

How to connect the device to the hub:

1. Select the **Add Device** option in the Ajax application.
2. Name the device, scan/write manually the QR Code (located on the body and packaging), and select the location room.

3. Select **Add** — the countdown will begin.
4. Switch on the device by pressing the on/off button for 3 seconds.

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

MotionProtect Outdoor turns off automatically after 6 seconds, if it failed to connect to the hub. To retry the connection, you do not need to turn off the device. If the detector has already been assigned to another hub, turn off MotionProtect Outdoor, and then follow the standard addition procedure.

If the connection to the hub failed, repeat the connection attempt after 30 seconds.

The device connected to the hub will appear in the list of devices of the hub in the application. Update of the MotionProtect Outdoor statuses in the list depends on the device inquiry time set in the hub settings, with the default value - 36 seconds.

To avoid masking alarms, switch off anti-masking in the device settings prior to installation!
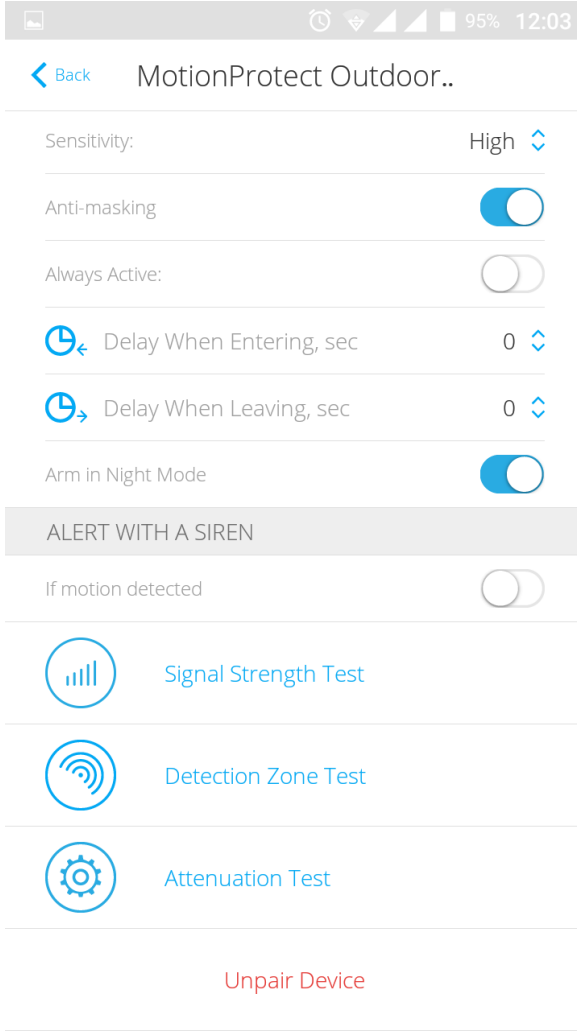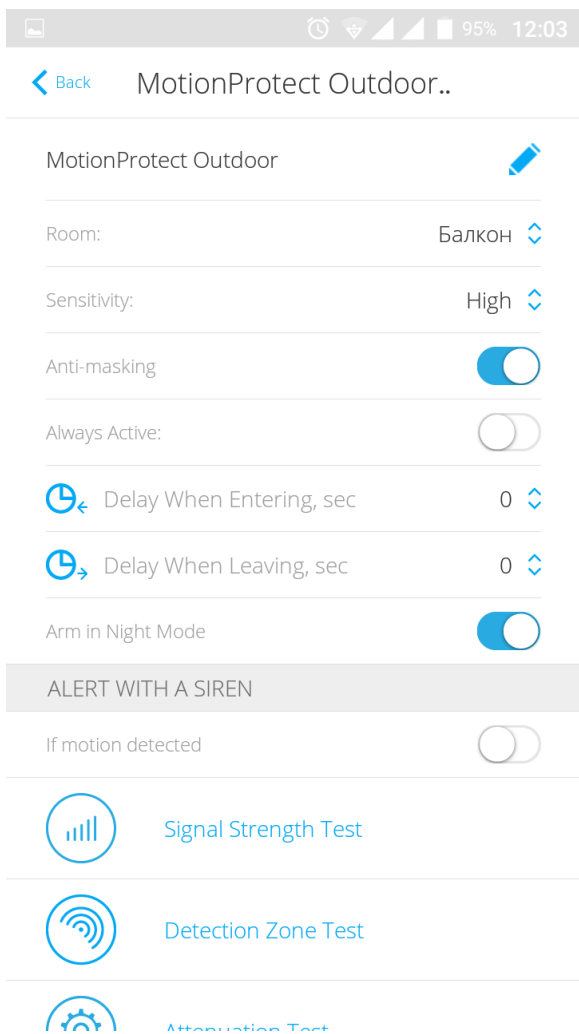
States

Devices → MotionProtect Outdoor

Parameter	Value
Temperature	Temperature of the Detector. Measured on the processor and changes gradually
Signal Strength	Signal strength between the hub and the detector
Battery Charge	Battery level of the detector, displayed in increments of 25%
Lid	The tamper mode of the detector, which reacts to the detachment of or damage to the body

Delay when entering, sec	Delay time when entering
Delay when leaving, sec	Delay time when exiting
Connection	Connection status between the hub and the detector
Sensitivity	Sensitivity level of the motion detector: low, normal, high
Anti-masking	If active, sensor will detect masking
Always Active	If active, the motion detector always detects movement
Firmware	Detector firmware version
Device ID	Device identifier

Setting Up the Detector

Devices → MotionProtect Outdoor → Settings (⚙□)

Setting	Value
First field	Detector name, can be edited
Room	Selecting the virtual room to which the device is assigned
Sensitivity	Choosing the sensitivity level of the motion sensor: • High • Normal • Low
Anti-masking	If active, sensor will always detect masking
Always active	When turned on, the detector always registers motion
Delay when entering, sec	Selecting delay time when entering
Delay when leaving, sec	Selecting delay time on exit
Delays in night mode	If active, the detector will experience a delay in the night mode

Arm in night mode	If active, the detector will switch to armed mode when using night mode
Alert with a siren if motion detected	If active, HomeSiren and StreetSiren are activated when the motion detected
Signal Strength Test	Switches the detector to the signal strength test mode
Detection Zone Test	Switches the detector to the detection area test: • General motion detector test • Upper motion detector test • Lower motion detector test • Masking sensor test
Attenuation test	Switches the detector to the signal fade test mode (available in detectors with firmware version 3.50 and later)
User Guide	Opens the detector User Guide
Unpair Device	Disconnects the detector from the hub and deletes its settings

Indication

MotionProtect Outdoor light indicator may light up red or green depending on the device status.

Indication When Pressing the "On" button

Event	Indication
Pressing the power button (detector is switched on)	Lights up red while the button is held down
Switching on	Lights up green while the device is switching on
Switching off	Initially lights up red, then blinks three times

Turned-on detector indication

Event	Indication	Note
Detector connection to the hub	Lights up green for a few seconds	
Hardware error	Blinks red continuously	The detector requires repair, please contact Support Service

Motion- and masking-triggered alarm or tamper triggering	Lights up red for about one second	
Battery needs replacing	During the alarm, it slowly lights up green and slowly goes out	Replacement of the detector battery is described in the Battery Replacement paragraph

Functionality Testing

The Ajax security system allows conducting tests for checking the functionality of connected devices.

The tests do not start straight away but within a period of 36 seconds when using the standard settings. The test time start depends on the settings of the detector scanning period (the paragraph on "Jeweller" settings in hub settings).

- Signal Strength Test
- Detection Zone Test
- Attenuation test

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

Choosing an installation place

Before installing the device, conduct a signal strength test.

The MotionProtect Outdoor must be located at a height of 0.8 – 1.3 m. The detector body is located in a way that the upper lens axis is parallel to ground level and the supposed path of intruder entry passes perpendicular to the lens axis.

The MotionProtect Outdoor sends an alarm to the hub only if identical motion signals are detected with two PIR sensors. In this case, the difference in motion capture time shall not exceed 1.5 seconds in this case.

It is recommended to check the functioning of the detector at the proposed installation site! When choosing a location for MotionProtect Outdoor, consider the limited range of the radio signal.
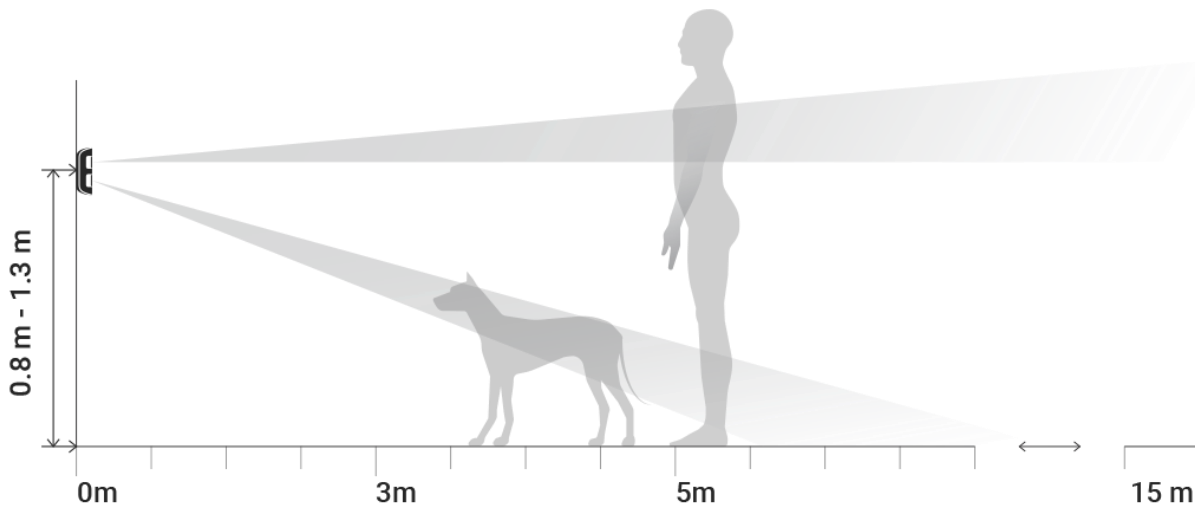
If the signal level is one division, we cannot guarantee stable operation of the security system. Take possible measures to improve the quality of the signal! As a minimum, move the device - even 20 cm shift can significantly improve the quality of reception.

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

Take care when installing the attachment panel. Excessive force during its fixation can lead to deformation, and, consequently, to the inability to install the detector or to its unreliable fixation. Secure the attachment panel only with the bundled mounting tools! Using other fasteners, e.g. large diameter self-tappers, may damage the attachment panel. It is not recommended to use
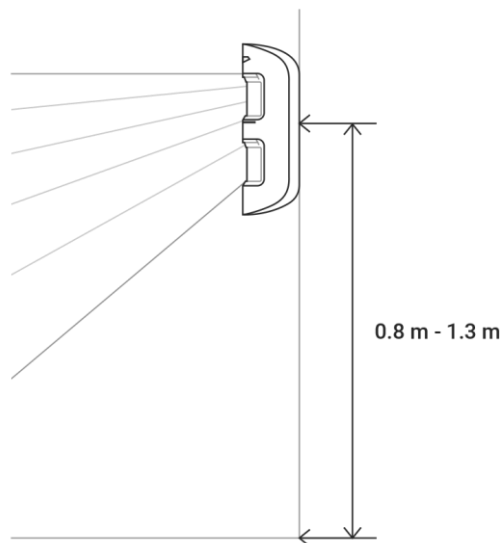
double-sided adhesive tape during installation as it dries out over time and the detector may fall down leading to its malfunctioning.
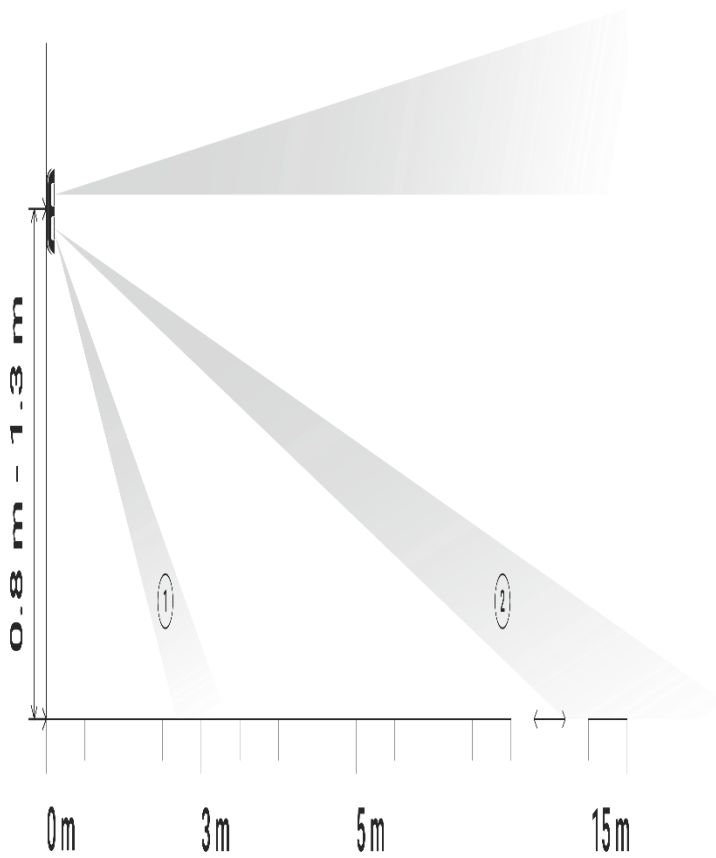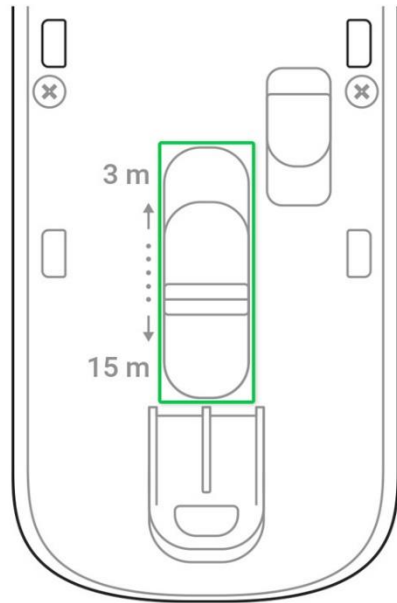

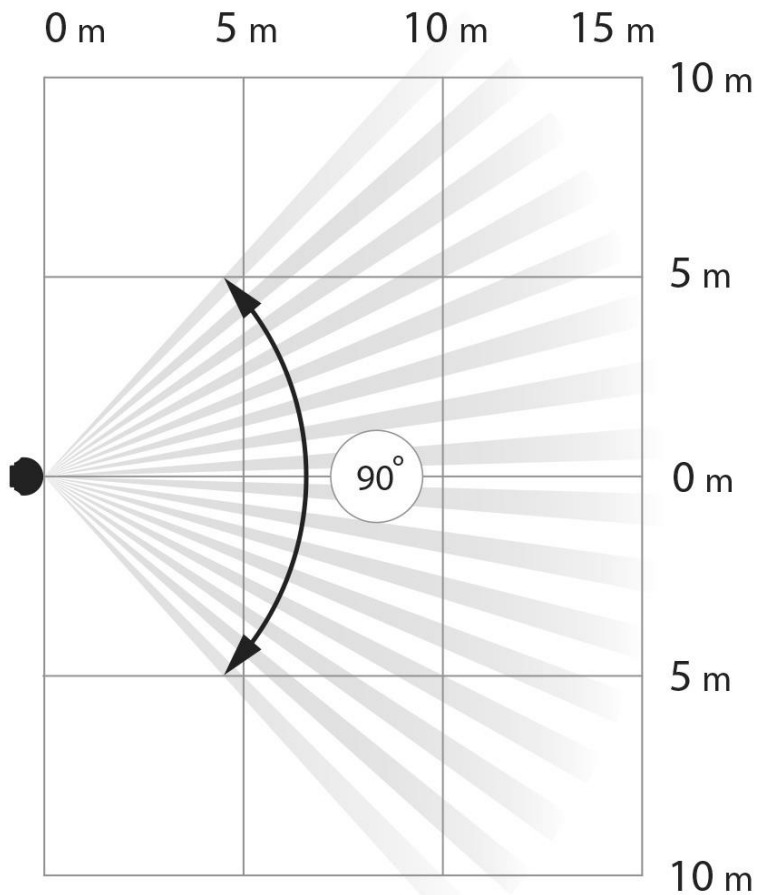## Detector installation procedure

1. Temporarily fix the SmartBracket attachment panel on the surface to determine the optimal place for installing the detector. The detector must be installed at a height of 0.8 – 1.3 meters.

2. Select the required detection distance (3 to 15 m) for the detector with the detection distance adjustment scroll bar.
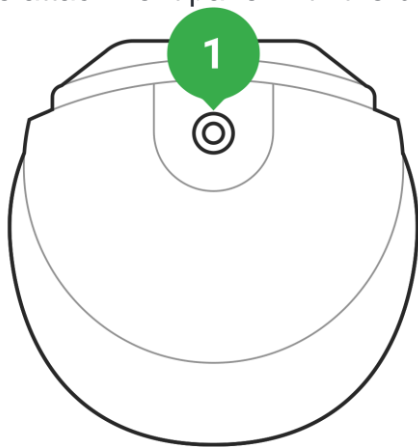
3 m

15 m

0.8 m – 1.3 m

0m   3m   5m   15m

3. Put the MotionProtect Outdoor on the SmartBracket attachment panel. Leave the detector detection area (horizontal detection angle — 90°) and ensure that there is no motion within the detection coverage area to provide for calibration of masking sensors.

	0 m	5 m	10 m	15 m

Attention! The masking sensors will begin to calibrate automatically when the SmartBracket attachment panel is placed onto the MotionProtect Outdoor body. Calibration lasts up to 30 seconds and is followed by flashing of the upper and lower LED indicators of the detector.
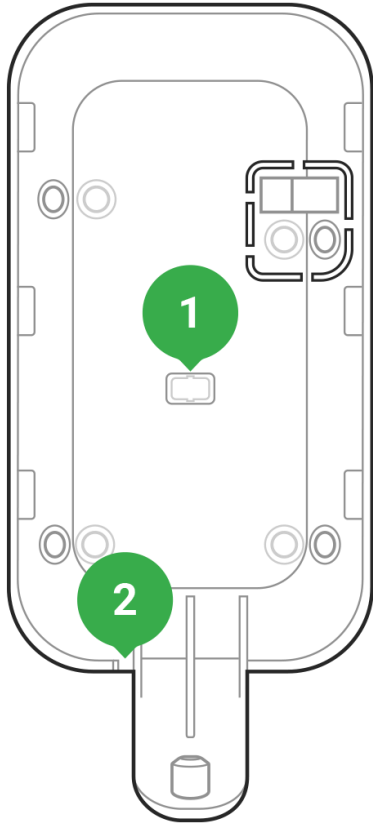
4. Perform detection area and masking tests in the Ajax Security System application. In the case of a bad motion response, select the appropriate sensitivity level, detection range, and check the slope angle of the detector.

5. Fasten the SmartBracket attachment panel to the surface with wood screws, place the detector on the attachment panel and wait until calibration is complete. Fix the detector on the attachment panel with the bundled screw.

External power supply connection

The MotionProtect Outdoor can use external power supply 5-28 V DC, 200 mA. Once an external power supply is connected, you do not need to remove the pre-installed batteries. The pre-installed batteries will provide the device with standby power supply.

To connect the external power supply, unscrew the wood screws and open the detector body. Break off the corresponding blind plug of the SmartBracket attachment panel:
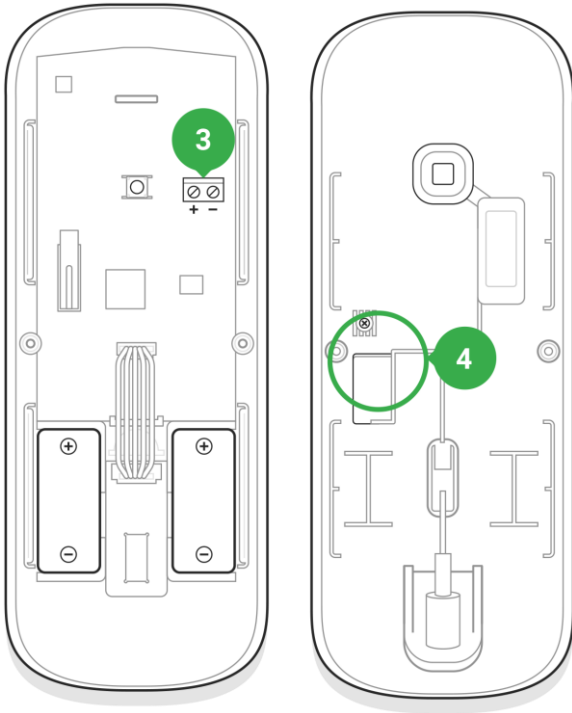

1. For power supply cable outlet behind the SmartBracket attachment panel

2. For power supply cable outlet below the SmartBracket attachment panel

Run the external power supply dead cable through the attachment panel and blind plug on the back of the detector body.

Connect the cable to the terminal strips observing polarity. Fix the wires with a clamp.

Turn on the power — in the menu of the MotionProtect Outdoor detector, the value of the

"External Power Supply" field will change to "Connected". Fasten the rear of the body with wood screws, install the detector and wait until calibration is complete.

3. Terminal strips on the detector board

4. Clamp on the back of the body

Maintenance

Clean the detector body from dust, cobwebs, and other contaminants as they emerge. Use a soft dry cloth that is suitable for equipment care.

Do not use substances that contain alcohol, acetone, gasoline or other active solvents to clean the detector. Carefully wipe the lens — scratches on the plastic can reduce the detector sensitivity.

The battery installed in the detector provides up to 5 years of autonomous operation (at a hub polling rate of 3 minutes). When the detector battery is discharged, the security system will send the appropriate notification, and the LED will smoothly light up and go out when the detector detects a movement or tamper is triggered.

The detector has a built-in battery charge control system. As soon as the bundled batteries need to be replaced, you will receive an appropriate notification.

👉 **Battery replacement**

Tech Specs

Sensing element	PIR sensor, 2 pcs
Detection angle, horizontal	90°
Motion detection distance	Adjustable, 3–15 m when the detector is installed at 1 m height

Protection against masking	Yes
Pet ignoring function	Yes, height up to 80 cm when the detector is installed at 1 m height
Protection against false triggering	Yes, algorithmic analysis
Frequency band	868.0 – 868.6 MHz or 868.7 – 869.2 MHz, depending on the sales region
Maximum radio signal power	Up to 20 mW
Radio signal modulation	GFSK
Radio signal range	Up to 1,700 m (where there are no obstacles)
Power supply	2 x CR123A, 3 V
Battery life	Up to 5 years
External power	5 – 28 V DC, 200 mA
Usage	Indoors and outdoors
Body protection level	IP54
Tamper protection	Yes
Operating temperature range	From -25°C to +60°C
Operating humidity	Up to 95%
Overall dimensions	184 x 70 x 65 mm
Weight	322 g

Complete Set

1. MotionProtect Outdoor
2. CR123A battery — 2 pcs. (pre-installed)
3. Installation kit
4. Quick Start Guide

Warranty

Warranty for the "AJAX SYSTEMS MANUFACTURING" LIMITED LIABILITY COMPANY products is valid for 2 years after the purchase and does not apply to the pre-installed battery. If the device does not work correctly, you should first contact the support service—in half of the cases, technical issues can be solved remotely!