

## 1. FEATURES

Wireless sensor Ajax CombiProtect is designated for human motion detection and glassbreak detection. It functions as a part of Ajax security system.

## 2. SPECIFICATIONS

SPECIFICATION	MEANING
Sensor type	wireless
Uses	indoors
Movement detection distance	up to 12 m (39.4 ft)
Movement and glassbreak sensitivity	3 levels adjustable (low, medium, high)
Movement detection angle	88.5° horizontal / 80° vertical
Installation height suggested	2.4 m (7.9 ft)
Pet ignoring option	Weight up to 20 kg (44 lb), size up to 50 cm (19.7 in)
Glassbreak detection distance	up to 9 m (29.5 ft)
Detecting element	pyrosensor (movement), electret microphone (glassbreak)
Tamper protection	available
Radio signal power	20 mW
Radio-frequency range	868 MHz (Europe); 915 MHz (USA)
Maximum distance between sensor and central unit	2000 m (6562 ft) (open area)
Power supply	CR123A battery
Power supply voltage	3V
Battery life	Up to 7 years
Operation temperatures range	from 0°C (+32°F) to +50°C (+122°F)
Operation humidity	up to 80%
Dimensions	110x65x50 mm (4.33x2.55x1.96 in)

## 3. COMPONENTS

CombiProtect sensor, battery CR123A, installation set, manual

## 4. GETTING STARTED

4.1 Before installing the sensor, it is required to register it with the Ajax security system. In order to register the sensor, it is necessary to switch the Ajax security system's receiver to «Add Device» mode (the receiver's manual explains how to accomplish it) and to put the switch «2» (PICTURE 4) on the sensor to the «ON» position. The sensor's light must blink at the moment of switching on. The registration request is transmitted at the moment the sensor is switched on only! In case the registration was not successful, switch off the sensor, wait for 5 seconds and switch it on again. If the sensor's light blinks constantly (each second during one minute), it means that the sensor is not registered. The light blinks in the same way if the sensor is deleted from the registration list. Non-registered sensor blinks also throughout 3 seconds during each activation.

4.2 Having registered the sensor successfully, select an appropriate location to install it.

### ▲ ATTENTION!

Make sure that in the installation location sensor has a stable radio contact with the receiver! A maximum distance of 2000 m (6562 ft) between the sensor and the receiver is mentioned as a comparison with other devices. This distance was found as a result of open area tests. Connection quality and distance between the sensor and the receiver can vary depending on installation location, walls, compartments, bridgings, as well as the thickness and constructional material. Signal coming through the obstacles, loses power. For example, distance range between the sensor and receiver, divided with two reinforced concrete bearing walls, constitutes approximately 30 m (98.4 ft). Please note that moving the sensor even 10 cm (4 in), it is possible to improve the signal reception considerably.

Before installation make sure to check the signal level test in the place where you intend to install the sensor! It is possible to launch a signal strength test on the receiver's side. Test launching is described in the receiver's manual.

### ▲ ATTENTION!

Signal level test and detection zone test for sensors take some time to start. A certain period of time is necessary for the receiver to send a test request to the sensor, and for the sensor to send a test response.

RECEIVER	SENSOR'S LIGHT EMITTING DIODE	DESCRIPTION
3 indication bars	lights almost permanently, with short breaks each 1.5 seconds	excellent signal
2 indication bars	blinks 5 times per second	medium signal
1 indication bar	blinks twice per second	low signal
0 bars	short flashes each 1.5 seconds	no signal

The signal should be not lower that medium so that the sensor works in a stable way!

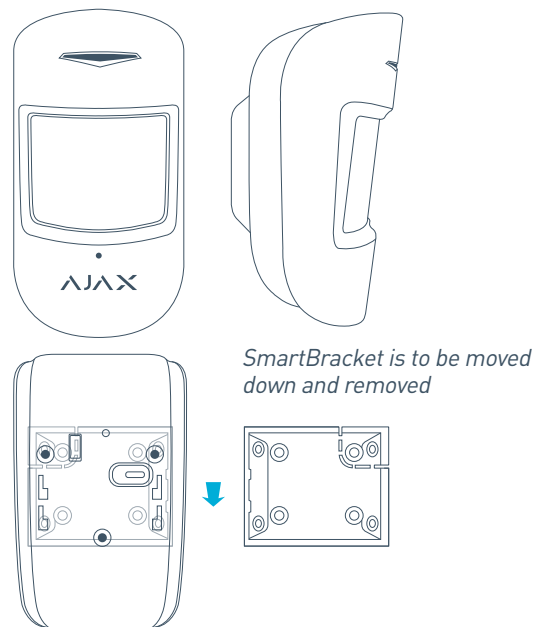
## 5. INSTALLATION

5.1 The sensor must be installed in such a way that the intruder's assumed entrance was perpendicular to the sensor's lens axis. Glass-break detection area is also to be considered. The sensor's microphone is not to be turned from the window further that to 90°. Make sure to check if the sensor is functioning at the point where it is going to be installed!

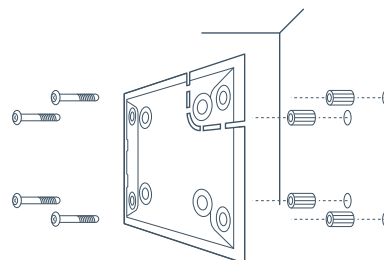
5.2 In order to install the sensor, move the plastic fastening clip SmartBracket (PICTURE 1) alongside the frame and remove it.

5.3 Install the fastening clip SmartBracket on the wall with a help of the expansion bolts and self-tapping screws included in the set (PICTURE 2). The height suggested for the sensor installation is 2.4 m (7.9 ft).

5.4 Put the sensor on the SmartBracket. Once the sensor is fixed on the SmartBracket, its light must blink. It means that the tamper on the sensor is shut. In case the sensor does not blink, the tamper status must be checked at the receiver configuration software!



PICTURE 1.  
CombiProtect sensor and its SmartBracket



PICTURE 2.  
SmartBracket wall installation scheme

### ▲ ATTENTION!

Be careful while SmartBracket installing. Overexertion while installing can cause deformation and, as a result, impossibility to install the sensor or to its unreliable fastening. Fix the SmartBracket with the set's assembling units only! Other fixing system use, for example, self-tapping screws of big diameter, can damage fastening clip. Together with self-tapping screws, there is a double stick tape in the set. It can be used for temporary sensor fixing only. It is recommended not to use the tape for the permanent fixing, as the tape dries up over time and the sensor may fall down which can interfere with its functions or even cause a breakdown.

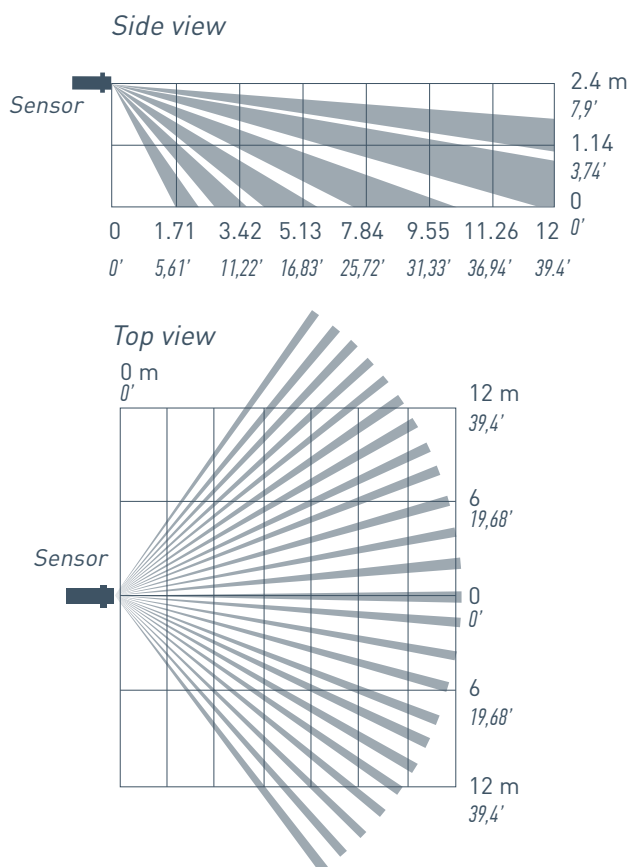
5.5 The sensor is installed!

5.6 Make sure that furniture, curtains, house plants, vases, decoration or glass constructions do not cover the sensor's field of view and do not cover its microphone.

**▲ ATTENTION!**

**DO NOT** Install the sensor:

- Near the window with sunlight touching the sensor's lens window;
- Opposite to the objects with fast changing temperature (electric and gas heaters, etc.);
- Opposite to the moving objects with the temperature close to the body temperature (curtains floating above the heater);
- Opposite to the reflecting surfaces (mirror);
- Near the points of fast air circulation (ventilation units, open windows and doors);
- Near the metal objects causing radio attenuation or shading from it;
- Outside the building;
- Near the doorbells of more than 5 cm (2 in) in diameter;
- In the rooms with temperature and humidity exceeding the appropriate levels.



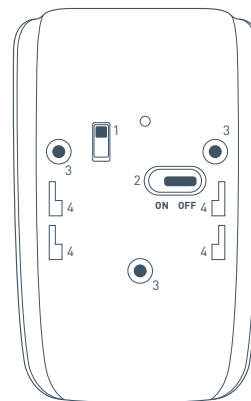
PICTURE 3.  
Sensor's detection zone

5.7 Test the detection zone for movement sensor (PICTURE 3) in order to check its efficiency. In detection zone test mode, the sensor's light is on permanently, switching off when the movement is detected – it is very easy to observe.

5.8. With a help of receiver's configuration software, select the necessary level of the movement sensor's sensitivity. High level – the sensor does not react to the objects smaller that a hamster. Medium level – the sensor does not react to such objects as cats or small dogs. Low level – the sensor does not react to such objects as medium dogs.

5.9 Test a glassbreak detection area. With a help of receiver's configuration software, select a necessary sensitivity level for glass breaking. It is necessary that the sensor will not react to the background noise in the room. To perform a check, the device imitating the high-frequency glass breaking sound is necessary. In case there is no such device, a light metal object can be used, such as a spoon. With configuration application, choose detection zone test to put the sensor to the detection zone test mode (the receiver's manual explains how to accomplish it). In the detection zone test mode, the sensor's light is on permanently, switching off when the alarming sound is registered – it is very easy to observe. In order to check the sensor, fist a solid surface (preferably a glass one, without breaking it). The sensor must react to a low-frequen-

cy sound by switching off the light for 0.2 seconds. When it happens, during 1.5 seconds throw a metal object (such as a spoon) to the solid surface or tap the glass with a spoon. The sensor will switch off the light. It means that in security mode the sensor will react to the glass breaking. Reduce the sensor's sensitivity and repeat the check until the sensor stops reacting to alarming sounds. Then, get back to the previous sensitivity level when the sensor was reacting normally. Thus, the sensor's false triggering probability is reduced and the reliable protection is guaranteed. For the maximum protection from the false triggering, switch on all devices which normally function in the room – generator units, air-conditioning, etc. In a case these devices turning on from time to time provoking the sensor's triggering, the location for its installation should be chosen more carefully.



- 1 – tamper button
- 2 – cut-off switch
- 3 – self-tapping screws
- 4 – fixing holes on SmartBracket

PICTURE 4.  
Sensor's backboard

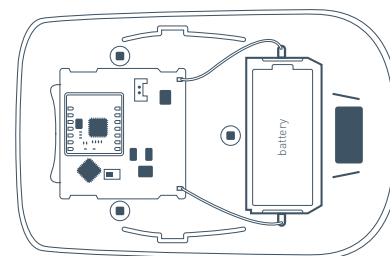
5.10 In "security" mode, the sensor sends the alarm signal each 5 seconds switching on the light simultaneously in case the movement or break is registered. In passive mode, the sensor detects movement no more than once in 3 minutes without switching on the light emitting diode.

**6. MAINTENANCE**

6.1 Maintenance is done once every 6 months. The sensor's board must be cleared of dust, spider web, and other impurities.

6.2 Never rub the sensor with substances containing alcohol, acetone, petrol and other solvents. Do not rub the sensor with brushes as the fluff can scrape the lens which will reduce the sensor's sensitivity.

6.3 Replace the batteries up to date. If the battery level is low, the sensor sends an appropriate signal to the alarm system receiver unit. When the battery has run down, with each movement detection or tamper triggering, the sensor together with a usual indication turns on its light and turns it off placidly. In order to replace the battery, undo three self-tapping screws "3" (PICTURE 4) and remove the sensor's back cover. Replace the «battery» (PICTURE 5) with a new one, type CR123A observing the polarity.



PICTURE 5.  
The sensor with the back cover removed

**▲ ATTENTION!**

The sensor's autonomous work duration depends on the sensor's triggering frequency and the battery quality. On average, one battery is sufficient for 7 years of functioning.

**7. WARRANTY**

7.1 The sensor's warranty period is 24 months. The warranty does not cover the battery!

**8. VIDEO GUIDE**

8.1 A detailed video guide for Ajax CombiProtect sensor assembling and assessing is available online on our website.