MotionCam Fibra

Wired IR motion detector supporting photo by alarm feature

New standard on intrusion detection

MotionCam has a built-in camera that takes photos once the detector is triggered. It needs just 9 seconds to show the actual situation on the scene. With visual evidence available in Ajax apps, the security company can quickly check whether the threat is real to respond accordingly. Photo verification relieves users of unnecessary anxiety and security companies of false patrol calls.

Photo verification of the detector alarms	IR backlight under low-light conditions	Horizontal viewing angle	Software algorithm to prevent false alarms
9 seconds to deliver the first photo[1]	Vertical viewing angle	Up to 12 m Motion detection distance[2]	Temperature compensation Effective detection in the heat and cold
Pet immunity Grade 2 (EN 50131) PD 6662:2017 INCERT	Adaptability to any conditions with adjustable sensitivity levels	Up to 2,000 m of communication range with an Ajax hub[3] or a module that extends the Fibra line	Fibra wired communication Two-way communication TDMA Encryption Protection against spoofing Short-circuit detection
In-line connection with different types of devices	Informative in-app notifications ⚠ CRITICAL Warehouse: Motion detected, MotionCam in Storage area Office: Lid is closed, MotionCam in Hall	Low power consumption Up to 0.12 W	Remote control and configuration Two colours of matte enclosure

Superior, **Fibra**, and **Baseline** product lines are mutually compatible. This opens up numerous

possibilities for building systems of any configuration.

MotionCam Fibra is a device of the wired Fibra product line. Only accredited Ajax Systems partners can sell, install, and administer Fibra products.

Wherever there is a risk of intrusion

Metal warehouse	Industrial premises	Restaurant	Museum	Gym	Store	Educational institution	Hangar	Home

More than a photo. Faster than a video.

MotionCam will show the actual situation from the scene even before intruders understand they're busted. An animated series of photos follows the instant alarm for an accurate situation appraisal.		
Motion detected	**Alarm raised**	**Evidence captured**

Privacy first

MotionCam is designed to control security, not privacy. Photos are protected from prying eyes at the detector, system, and software levels.

Strict privacy	Encryption and GDPR	Detailed event log
MotionCam takes photos only in case of an alarm. The detector software architecture does not support on-demand photos. Only users with access to the event feed in Ajax apps can see the photo.	Photos are encrypted at every stage of transmission. Only system users can access the virtual Ajax Cloud storage and view photos. While stored, no photos are processed or analysed. The Ajax Cloud service is hosted on geographically distributed servers that meet the General Data Protection Regulation (GDPR) requirements.	The event log records 500 recent events within the system. The data is explicit with the device, time, and event description. It helps reconstruct the actual event and find the causes to obtain comprehensive information for the police or an insurance company.

Discover future-proof hardware

- Fresnel lens

- PIR sensor
- Camera
- IR backlight in low light conditions
- Backup battery
- SmartBracket mounting panel with removable terminal board
- Two tampers
- Holding screw to secure the detector on SmartBracket

Also, the Ajax product portfolio includes the MotionCam (PhOD) Fibra detectors with **Photo on Demand**, **Photo by Scenario, and Photo by Schedule** functions.

No intruder goes unnoticed

PIR sensor

All Ajax motion detectors use PIR sensors by **Excelitas Technologies** — a field-leading American manufacturer specializing in designing and producing optronic components since 1931. Ajax Systems constantly proves the sensor's superior quality at the production stage: **we test 100% of manufactured devices**. Wrapped into Ajax technologies, it brings the utmost accuracy of intrusion detection.

Special lens

The pattern of the Fresnel lens sections is designed to differentiate between the IR diagrams of a human, animal, and thermal noise. Large lens sections capture radiation at an adult's head and torso level. Smaller sections make the diagram more detailed. The lens provides the detector with accurate information about the thermal object in the detection zone and the nature of its movement.

Thermal interferences filter

We processed thousands of thermal patterns caused by humans, animals, and the environment to develop the SmartDetect software algorithm. In armed mode, the detector constantly analyses the thermal diagram from the PIR sensor, including the IR radiation intensity, thermal spot size, movement speed, time spent in the detection zone, and other parameters. The algorithm identifies false alarm markers instantly and with high accuracy. As a result — the detector accurately responds to human motion without false alarms.

Thermal spot size	Movement speed	IR radiation intensity

Temperature compensation

Temperature compensation is a software mechanism keeping the thermal diagram contrast even if the ambient temperature is close to the temperature of the human body. With each ambient temperature measurement, the detector corrects the PIR sensor data according to the coefficient table stored in its memory. The detector is effective over the entire operating temperature range.

Sensitivity level

The detector can adapt to the conditions of a particular facility, considering possible thermal interference or pets. The sensitivity setting changes the set of markers by which false alarms are filtered. Low sensitivity makes the detector less likely to respond to an active pet. A high sensitivity will raise the alarm in case of any motion in the detection zone.

Professional installation

With the correct installation at the height of 2.4 m and lens direction perpendicular to an alleged intrusion path, the detector provides an accurate thermal diagram and pet immunity. It instantly responds to a real threat, minimising false alarms caused by animals weighing up to 20 kg and below 50 cm in height.

Unique wired technologies

The Ajax system uses secure two-way communication based on **Fibra proprietary protocol**. It features **encryption** and **device authentication** to prevent sabotage, spoofing, or data theft. Fibra lines are **multifunctional** and support connecting different types of devices to one line: sirens, keypads, and detectors with photo verification.

Up to 2,000 m of communication range with an Ajax hub[3] or a module that extends the Fibra line	One line for different types of devices	Photo delivery by Fibra line without interference	Protection against sabotage and spoofing

Energy efficiency as a priority

Fibra communication requires minimum power consumption. Also, MotionCam is hardwired with a backup battery to power the sensor, LED indicator, and camera during alarms. The battery has an optimized charging algorithm which uses the minimum energy required to fully recharge without affecting other connected devices.

- Built-in backup battery
- Optimized charging algorithm
- Power consumption of up to 0.12 mW

System supervision

All Ajax devices perform automatic self-diagnosis and report their states to the hub. Essential parameters, including tamper, communication, power supply, and sensor statuses, are continuously monitored. The Ajax Cloud server controls communication between the hub and Ajax apps, ensuring instant notifications for ARCs, security companies, and users. In case of any malfunction or communication failure, an engineer is informed immediately to provide necessary services.

- Automatic device self-diagnosis with status report
- Regular polling to display the current device state on apps
- Instant maintenance notifications

Sabotage-resistant

Tamper alarm	Protection against short circuit
The enclosure is hardwired with two tamper buttons, which notifies the security company and users once the detector is dismantled from the mounting panel.	The system instantly detects a short circuit on the line and notifies the security company and the users. And when the problem is fixed, there is no need to replace the fuses: the system will restore operation automatically.
Data encryption	**Device authentication against spoofing**
All data the system stores and transmits is protected by a block cipher with a dynamic key. Encryption makes it extremely difficult to reprogram the detector, replace or steal the data.	The hub checks the device's unique parameters for authentication during each communication session. If any parameter fails the check, the hub ignores device commands.
Regular polling	**Data-rich notifications**
The device regularly exchanges data with the hub. The system controls each device state and reports if there is a malfunction or connection loss.	The Ajax system instantly notifies about alarms and events with informative notifications: security companies and users know exactly which device triggered, when and where it happened.
Data backup in case of connection loss When the Fibra line breaks during the sabotage	

| attempts, the detector continues to operate from a built-in battery. Alarms with photo verifications will be stored in the detector's buffer memory. Once the connection with the hub gets restored, all data is sent to Ajax apps and CMS. | |

PRO is king

The myth about wired systems being difficult to install is busted. Ajax minimized an expensive, long, and dusty experience for PROs by developing an ultimate set of tools to make the process easy and flexible, from project design to client support and system maintenance. There is no need to disassemble the device for installation. Intuitive Ajax apps help quickly make the device a part of the system, and each device can always be reconfigured remotely without site visits. No need for programmers — everything is available out-of-box.

Fibra power supply calculator

The online tool provides security specialists with comprehensive information about the devices' power consumption. It's easy to check before installation whether the wired system project will work in practice. The calculator allows real-time project-making, highlighting the problem areas and offering solutions. Once the calculations are finished, the results can be downloaded as a PDF file.

Installation

With the SmartBracket panel, an installer can effortlessly mount the device on the wall. The installation kit includes all the necessary fasteners. There is no need to disassemble the device: the board with terminals is placed outside the enclosure under SmartBracket to eliminate hardware damage during installation. The board is removable, which makes the whole process more comfortable. For cable management, there are bracings inside SmartBracket to secure the wires with ties. The detector can be installed sideways: the enclosure has two tampers on the left and right sides.

- No need to disassemble the detector's enclosure
- Can be installed sideways

- Removable terminal board
- All the necessary fasteners included in the installation kit
- Holding screw to secure the detector on a mounting panel

Setup

The device is paired with the hub automatically via Fibra line scanning. This tool is available in the desktop or mobile PRO apps. An installer only needs to name the device and assign it to the room and security group. The device can also be added by scanning the QR code or entering its ID manually.

- Pairing with a hub via automatic line scanning or QR code
- Device identification by triggering or LED indication
- Optimal default settings to cover major requests

Configuration

Intuitive Ajax apps provide remote set-up and all detector information from anywhere the Internet is available, on a smartphone or PC. An installer can remotely change the settings and provide services in-time. No need to visit the object.

- Apps for iOS, Android, macOS, and Windows
- Remote configuration without site visits
- Accounts for companies and installers

Monitoring

MotionCam Fibra has two-way communication and ultimate informativeness. The security company will receive an alarm notification in less than a second. Notifications include all the necessary information: name of the device, time of the event, and even the exact room where the device is located. CMS also receives photo verification, capturing the reason for the alarm.

- Full addressability of connected devices
- Instant notifications in Ajax apps
- Alarms and events monitoring in PRO Desktop for security companies
- Out-of-the-box photo verification support

[1] With default settings (photo resolution is 320×240 px).
[2] According to INCERT certification, detection range is up to 10 m (very high sensitivity).
[3] With U/UTP cat.5, 4 × 2 × 0.51 cable. Other cable types may have different values. Please use **Fibra power supply calculator** to check the wired system project before installation.