CombiProtect Fibra

Wired IR motion and glass break detector with a microphone

Single device. Dual protection

We have combined the functions of our two detectors and created a universal security solution for different types of objects — CombiProtect Fibra. The device features software algorithms to prevent false alarms and has two primary functions — motion detection and glass break detection. Both sensors can be remotely configured in the app, as well as the required sensitivity level. It is also possible to test the device via the app. The intuitive interface and hassle-free installation create a satisfying PRO and end-user experience.

Key features

Up to 12 m motion detection distance	Horizontal motion detection angle	Pet immunity	180° glass break detection angle
Up to 9 m glass break detection distance	Vertical motion detection angle	Software algorithm to prevent false alarms SmartDetect	DualTone Digital algorithm for glass break verification
3 sensitivity levels for motion and glass break sensors	Remote control and configuration	Fibra wired communication Power adjustment Encryption TDMA Two-way communication	2 colors of matte enclosure
Temperature compensation for effective detection in heat and cold	Tamper alarm	Up to 46 mW low power consumption	Up to 2,000 m communication range with an Ajax hub[1] or a module that extends the Fibra line
Push notifications Critical	Hassle-free installation QR code	EN 50131 (Grade 2)	

Office: Glass break detected, CombiProtect Fibra in Hall. Critical **Office:** Motion detected, CombiProtect Fibra in Hall.	↓ SmartBracket ↓ App	PD 6662:2017 SSF

Superior, **Fibra**, and **Baseline** product lines are mutually compatible. This opens up numerous possibilities for building systems of any configuration.

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

Wherever there is a risk of intrusion

Office	Store	Warehouse	Museum	School	Medical center

Discover future-proof hardware

- Fresnel lens
- PIR sensor
- Electret microphone
- Tamper
- SmartBracket mounting panel with removable terminal board
- Holding screw

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, pet, 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.

SmartDetect

Thermal interferences filter

We processed thousands of thermal patterns caused by humans, pets, and the environment to develop the SmartDetect software algorithm. In armed mode, the detector constantly analyzes 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**	
False alarm	Real alarm	False alarm	Real alarm	False alarm	Real alarm

Temperature compensation

Temperature compensation is a software mechanism that keeps 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 a 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, minimizing false alarms caused by pets weighing up to 20 kg and below 50 cm in height.

Enhanced glass break detection

CombiProtect Fibra uses a sensitive electret microphone and the DualTone digital algorithm to detect the sound of glass breaking. To register a glass break and report an alarm, the device must detect a dull (low-frequency) sound of an impact and a ringing (high-frequency) sound of glass breaking in 1.5 seconds. Such a two-stage glass break detection algorithm decreases the risk of false alarms. Three sensitivity levels can be configured in the Ajax app, making the detector suitable for any object.

CombiProtect Fibra doesn't respond to the breaking of glass covered with shockproof, sunscreen, decorative, or any other film. To detect such glass breaking, we recommend using DoorProtect Plus Fibra, DoorProtect S Plus Jeweller, DoorProtect Plus Jeweller, or DoorProtect G3 Fibra detectors with shock and tilt sensors.

Unique wired technology

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

- Up to 2,000 m of wired communication with a hub or a module that extends the Fibra line[1]
- One line for different types of devices
- Photo delivery via Fibra line without interference
- Protection against sabotage and spoofing

Energy efficiency as a priority

Fibra communication requires minimum power consumption, with the detector consuming only up to 46 mW at its peak. Fibra operates on the TDMA principle. Each device has a short time frame for exchanging data with a hub, and its communication module remains inactive the rest of the time. This significantly reduces power consumption and helps avoid interferences even when multiple devices communicate simultaneously.

- Power consumption of up to 46 mW
- TDMA and power-saving modes

System supervision

All Ajax devices perform automatic self-diagnosis and report their states to the hub. Essential parameters, such as a tamper state, 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 in apps

- Instant maintenance notifications

Sabotage resistance

Tamper alarm The enclosure has a tamper button that notifies the security company and users once the device is detached from the surface or dismantled from the mount.	**Data encryption** All data the system stores and transmits is protected by block encryption featuring a dynamic key. Encryption makes it extremely difficult to reprogram the device and replace or steal the data.	**Data-rich notifications** An Ajax system instantly notifies about alarms and events with informative push notifications: security companies and users know exactly which device triggered, when and where it happened.
Device authentication against spoofing 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** The device regularly exchanges data with the hub. The system controls each device state and reports if there is a malfunction or connection loss. At minimal polling interval settings (3 data packages every 12 seconds), it takes only 36 seconds to detect communication loss and notify the security company and users about the incident.	**Protection against short circuits** Fibra protocol, combined with a special digital algorithm, provides reliable protection against unnoticed short-circuiting of the device. If someone tries to short-circuit it, the device will notify of a malfunction. The hub informs both the Central Monitoring Station (CMS) and users about the incident.

Next-level protection of Fibra line

Introducing **LineProtect Fibra**, the module designed to protect an Ajax hub and connected wired devices from sabotage when intruders cause overvoltage and short circuits, apply 110/230 V~, or use stun guns.

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 be reconfigured remotely at any moment. No programming required — everything is available out of the box.

Fibra power supply calculator

The online tool provides security engineers with detailed data on devices' power consumption, enabling easy pre-installation assessment of the wired system project. It helps design the project in real time, highlights problem spots, and offers solutions. Upon completion, results can be downloaded as a PDF file.

Installation

With the SmartBracket mounting 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 nice and easy. For cable management, there are bracings inside SmartBracket to secure the wires with ties.

- No need to disassemble the device's enclosure
- Removable terminal board
- All the necessary fasteners included in the installation kit
- Holding screw to secure the device on a mounting panel

Setup

The device is paired with the hub automatically via Fibra line scanning. This tool is available in 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 via triggering or LED indication
- Optimal default settings to cover major requests

Configuration

Intuitive Ajax apps provide remote setup and testing with all device information from anywhere the internet is available, on a smartphone or PC. An installer can remotely change the settings and provide services promptly without visiting the object.

- Configuration and testing remotely or on site
- iOS, Android, macOS, and Windows apps
- Accounts for companies and installers

Monitoring

An Ajax system transmits alarms to the **PRO Desktop** monitoring app or any third-party CMS. The security company receives an alarm notification in less than a second. Notifications include all the necessary information: name of the device, time of the event, and the exact room where the device is located. The security company also receives photo or video verification, capturing the reason for the alarm.

- Full addressability of connected devices
- Informative push notifications
- Alarm and event monitoring through Ajax PRO Desktop or third-party CMS

[1] With U/UTP cat.5, 4 × 2 × 0.51 cable. Other cable types may have different values. Please use the **Fibra power supply calculator** to check the wired system project before installation.