



MotionCam Jeweller

Wireless IR motion detector supporting the photo by alarm feature

Lightning-fast alarms. Verified.

MotionCam Jeweller 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. The security company can see visual evidence on Ajax apps, verify the threat, and respond accordingly. Photo verification relieves users of anxiety and prevents unnecessary patrol calls. The HDR feature captures detailed images in any lighting by combining two shots with different shutter speeds.

Key features

Up to 12 m (39.37 ft) motion detection distance	Vertical viewing angle	Photo verification of the detector alarms	9 seconds to deliver the first photo ¹
Horizontal viewing angle	Software algorithm to prevent false alarms SmartDetect	Adaptability to any conditions with adjustable sensitivity levels	HDR technology for clear photos in any conditions ²
Two colors	Remote control and configuration	Pet immunity	Battery lifespan of up to 4 years pre-installed batteries
Photo privacy protection	Up to 1,700 m (5,500 ft) distance of communication with an Ajax hub or range extender ³	Temperature compensation for effective detection in heat and cold	Compliance EN 50131 (Grade 2) PD 6662:2017 UL
Informative push notifications Critical Warehouse: Motion detected, MotionCam in Storage area Office: Lid is closed, MotionCam in Hall	Jeweller and Wings radio communication Power adjustment Frequency hopping Encryption TDMA Two-way communication Power adjustment	IR backlight for low-light conditions	Hassle-free installation QR code  SmartBracket  App

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

Wherever there is a risk of intrusion

Office	Store	Educational institution	Warehouse or manufacturing	Museum	Cafe	Apartment
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More than a photo. Faster than a video.

MotionCam Jeweller captures a scene before burglars realize they're detected. An animated series of photos follows the instant alarm for an accurate situation assessment. The HDR feature improves the visibility of both bright and dark scenes. The device captures detailed images regardless of the lighting level. To do this, MotionCam Jeweller takes two shots with different shutter speeds, and a special algorithm combines them to select the best combination of light and shadow.

Motion detected → Alarm raised → Evidence captured

Privacy first

Strict privacy	Detailed event log	Encryption and GDPR
MotionCam takes photos only in the event of an alarm. The detector's software architecture does not support on-demand photos. Only users with access to the event feed in Ajax apps can see the photo.	The event log records 500 recent events that happened in the system. Each log entry specifies the device, time, and event description.	Photos are encrypted at every stage of transmission. Only system users can access the virtual Ajax Cloud storage and view photos. While stored, no images are processed or analyzed. The Ajax Cloud service is hosted on geographically distributed servers that meet the General Data Protection Regulation (GDPR) requirements.

The motion detector that also supports **Photo on Demand**, **Photo by Scenario**, and **Photo by Schedule** features is available.

Discover future-proof hardware

- IR backlight for low-light conditions
- Pre-installed batteries
- Fresnel lens
- Camera
- PIR sensor
- Tamper
- Jeweller and Wings antennas
- SmartBracket mounting panel

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**. This approach 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 analyzes the thermal diagram from the PIR sensor, including the IR radiation intensity, thermal spot size, motion 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		Motion 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 maintains the contrast of the thermal diagram 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. High sensitivity raises the alarm in case of any motion in the detection zone.

Professional installation

With the correct installation at the height of 2.4 m (7.87 ft) 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 animals weighing up to 20 kg (44 lb) and below 50 cm (1.64 ft) in height.

Stable operation with pre-installed batteries

MotionCam Jeweller comes equipped with pre-installed batteries, boasting a lifespan of up to 4 years. Ajax apps proactively notify the monitoring company and users of a low battery level a few months in advance. The batteries can be replaced. The installer can swap them out after four years. MotionCam Jeweller functions independently of the facility's power grid.

- Up to 4 years of operation with pre-installed batteries
- Low battery warning
- Replaceable CR123A batteries

Unique wireless technologies

MotionCam uses Jeweller and Wings proprietary radio protocols for reliable communication

- Up to 1,700 m (5,500 ft) distance of radio communication³ with a hub or range extender
- Encrypted two-way communication
- Notifications about jamming and connection loss
- 9 seconds¹ to deliver the first photo

Scaled and comprehensive

ReX 2 boosts the radio range of all Ajax devices via Jeweller and assures stable communication even through steel and concrete via Ethernet using the wire as the additional communication channel. Up to 5 range extenders can operate within one Ajax system to expand the network twice as big, covering underground parking, basement, or metal hangar.

- Up to 5 range extenders within one system
- Ethernet as an alternative communication channel

- Big estate and large facilities
- Business center with underground parking
- Warehouse or industrial complex
- Sectional metal hangar

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 resistance

Tamper alarm The enclosure has a tamper button, which notifies the security company and users once the device is dismantled from the mount.	Data encryption 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 device, replace or steal the data.	Data-rich notifications 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.
Device authentication against spoofing	Regular polling	Communication failure detection

<p>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.</p>	<p>The device regularly exchanges data with the hub. The system controls each device state and reports if there is a malfunction or connection loss.</p>	<p>The device regularly exchanges data with the hub. With maximum ping interval settings available (3 data packages once in 12 seconds), it takes only 36 seconds to identify communication loss and notify the security company and users about the incident.</p>
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Effortless installation and setup

MotionCam is ready to operate straight out of the box. Using the SmartBracket panel, an installer can effortlessly mount the device on the wall, eliminating the need to disassemble the enclosure. Ajax apps help quickly make the device a part of the ecosystem: simply pair the device with the hub by scanning the QR code. It can always be reconfigured remotely without the need for on-site visits.

Connection	Installation	Setup	Monitoring
Pairing with the hub via QR code	SmartBracket panel – no need to disassemble the enclosure	Configuring and testing in mobile and desktop apps	PRO Desktop app for macOS and Windows

¹ With default settings (photo resolution is 320 × 240 px).

² The HDR image feature is available for devices with the 15.59.35.14 firmware version or later. Contact your Ajax Systems manager, supplier, or authorized partner to check the availability in your region.

³ In an open space.