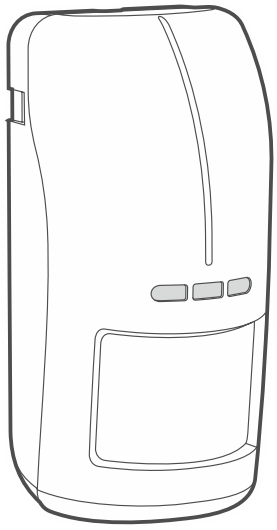
Outdoor Motion Detector

AOD-210

EN

Firmware version 1.06



CE

aod-210_BW_en 08/26

SATEL sp. z o.o. • ul. Budowlanych 66 • 80-298 Gdańsk • POLAND
tel. +48 58 320 94 00
www.satel.pl

IMPORTANT

The device should be installed by qualified personnel.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

Description of symbols on the device:

The device meets the requirements of the applicable EU directives.

The device must not be disposed of with other municipal waste. It should be disposed of in accordance with the existing rules for environment protection (the device was placed on the market after 13 August 2005).

The device meets the technical regulations of the Eurasian Customs Union.

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
Please visit us at:
https://support.satel.pl

Hereby, SATEL sp. z o.o. declares that the radio equipment type AOD-210 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.satel.pl/ce

Signs in this manual

Caution – information on the safety of users, devices, etc.

Note – suggestion or additional information.

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The AOD-210 detector (Outdoor Motion Detector) uses infrared and microwaves to detect motion. It ignores pets up to 20 kilos moving at ground level. It is designed for outdoor installation. The manual applies to the detector installed in the BE WAVE system.

1. Features

- Motion detection with passive infrared sensor (PIR) and microwave sensor (MW).
- Maximum coverage area: 16 m x 16 m 90° (Fig. 10).
- Digital motion detection algorithm.
- Digital temperature compensation.
- Immunity to false alarms caused by objects moving but not changing their position (e.g. branches of trees).
- Creep zone protection.
- Operation in the 868 MHz frequency band.
- AES encrypted two-way radio communication.
- Transmission channel diversity – 4 channels for automatic selection of the one that will enable transmission without interference with other signals.
- Remote settings programming.
- Remote firmware update.
- Built-in dusk sensor:
  - measuring range: 2 lx...250 lx).
  - immunity to short and accidental changes of light intensity.
- Built-in temperature sensor (measuring range: -40 °C...+55°C).
- LED indicators.
- Supervision of motion detection system.
- Powered by CR123A 3 V battery.
- Battery status control.
- Tamper protection against enclosure opening and removal from mounting surface.
- Weatherproof enclosure.

2. Description

Alarms

The detector reports alarm after:

- detecting motion in the protected area,
- detecting a fault in the motion detection system,
- opening the tamper switch (tamper alarm).

For the detector to report alarm, both sensors (infrared and microwave) must detect motion within less than 4 seconds apart. The detector can report alarm only when it is armed because the microwave sensor is inactive when the detector is disarmed.

Electronics module

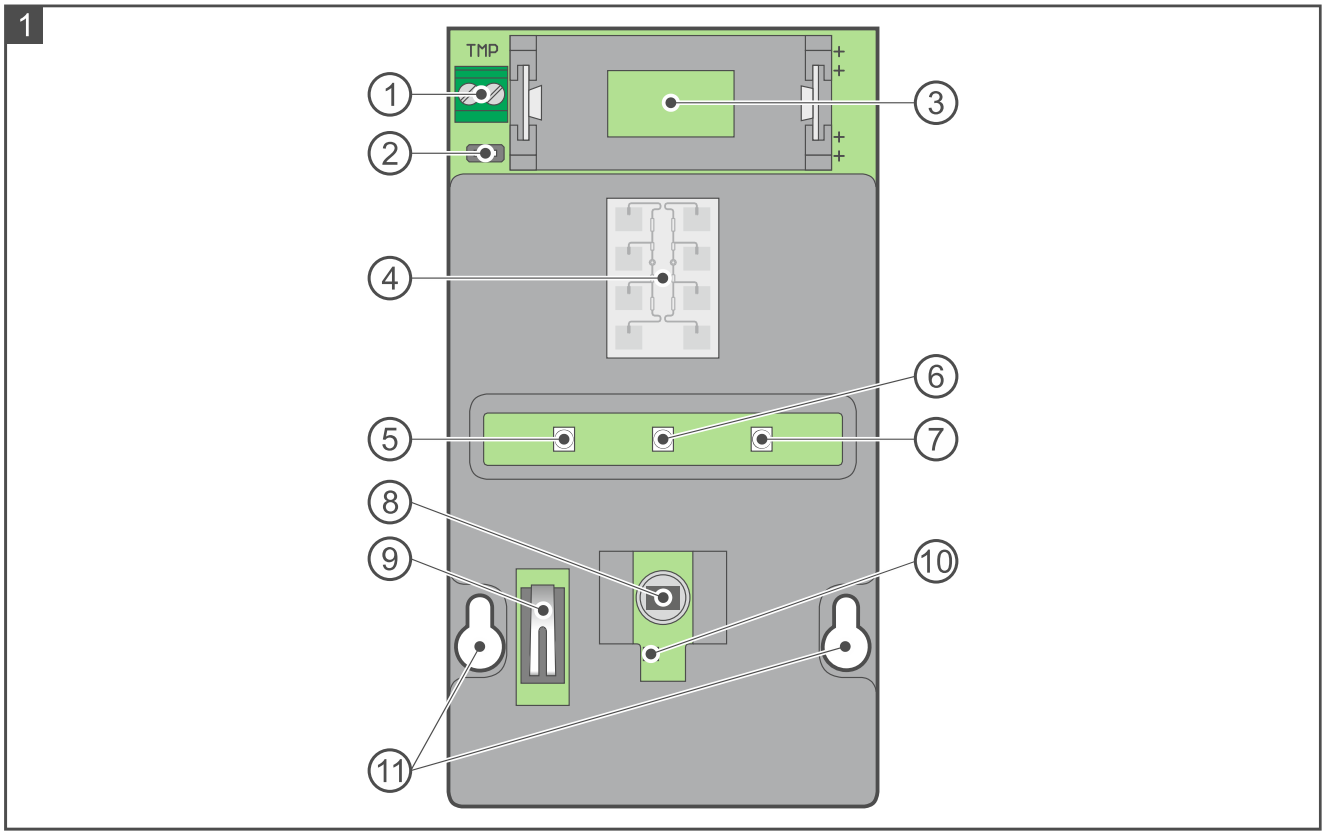


Figure 1 shows the detector electronics module.

① TMP terminals – tamper input (NC).

② pins to enable/disable the tamper input. If no additional tamper switch is connected to the TMP terminals, jumper should be placed across the pins.

③ battery holder (CR123A 3 V).

④ microwave sensor. The sensor is activated after motion is detected by the infrared sensor if the detector is armed or the diagnostic mode is enabled.

⑤ green LED indicator.

⑥ red LED indicator.

⑦ yellow LED indicator.

⑧ PIR sensor (dual element pyrosensor).

⑨ tamper switch activated by cover removal.

⑩ dusk sensor.

⑪ fixing screw holes.

The tamper switch activated by removing the detector from the surface is on the other side of the electronics module.

LED indicators

The indicators are flashing for about 40 seconds after inserting the battery (detector warm-up). After that, they are only enabled while the diagnostics mode is started in the system. They indicate:

- periodical communication – short flash of red indicator.
- motion detected by the microwave sensor – green indicator ON for 4 seconds.
- motion detected by the PIR sensor – yellow indicator ON for 4 seconds.
- alarm – red indicator ON for 2 seconds.

3. Installation

There is a danger of battery explosion when using a different battery than recommended by the manufacturer, or handling the battery improperly.

Do not crush the battery, cut it or expose it to high temperatures (throw it into the fire, put it in the oven, etc.).

Do not expose the battery to very low pressure due to the risk of battery explosion or leakage of flammable liquid or gas.

Be particularly careful during installation and replacement of the battery. The manufacturer is not liable for the consequences of incorrect installation of the battery.

If the detector is mounted higher than 2 meters above the ground, it may cause harm if it falls off.

3.1 Tips for installation

- When selecting a place of installation, consider the radio communication range.
- Thick walls, metal partitions, etc. reduce the range of the radio signal.
- Do not aim the detector directly at sunlight or at surfaces reflecting sunlight.
- Do not point the detector towards heat sources, air conditioners or fans.
- Objects that can be moved by the wind (e.g. branches, bushes, clotheslines, etc.) should be at least 3 m from the detector.
- No object should obstruct the detector's field of view.
- Install the detector at the recommended height: 2.4 m.

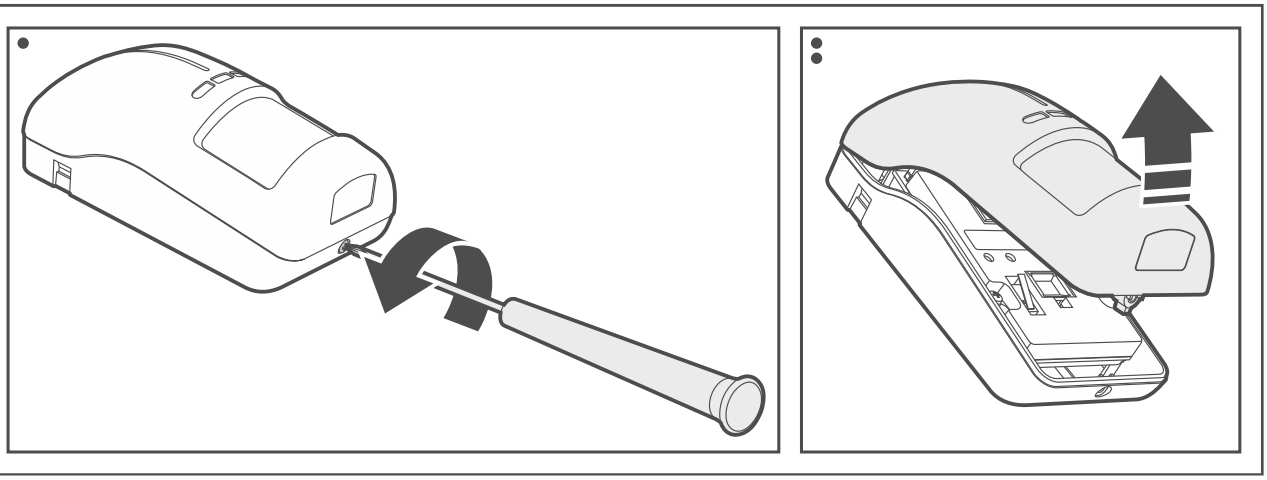
The detector ignores the movements of pets at ground level when it is mounted at 2.4 m height with no vertical tilt and the lens on the cover bottom is covered. The sticker for covering the lens is provided with the detector.

When mounting the detector on the angle or ball bracket, installing additional tamper switch is recommended.

3.2 Mounting

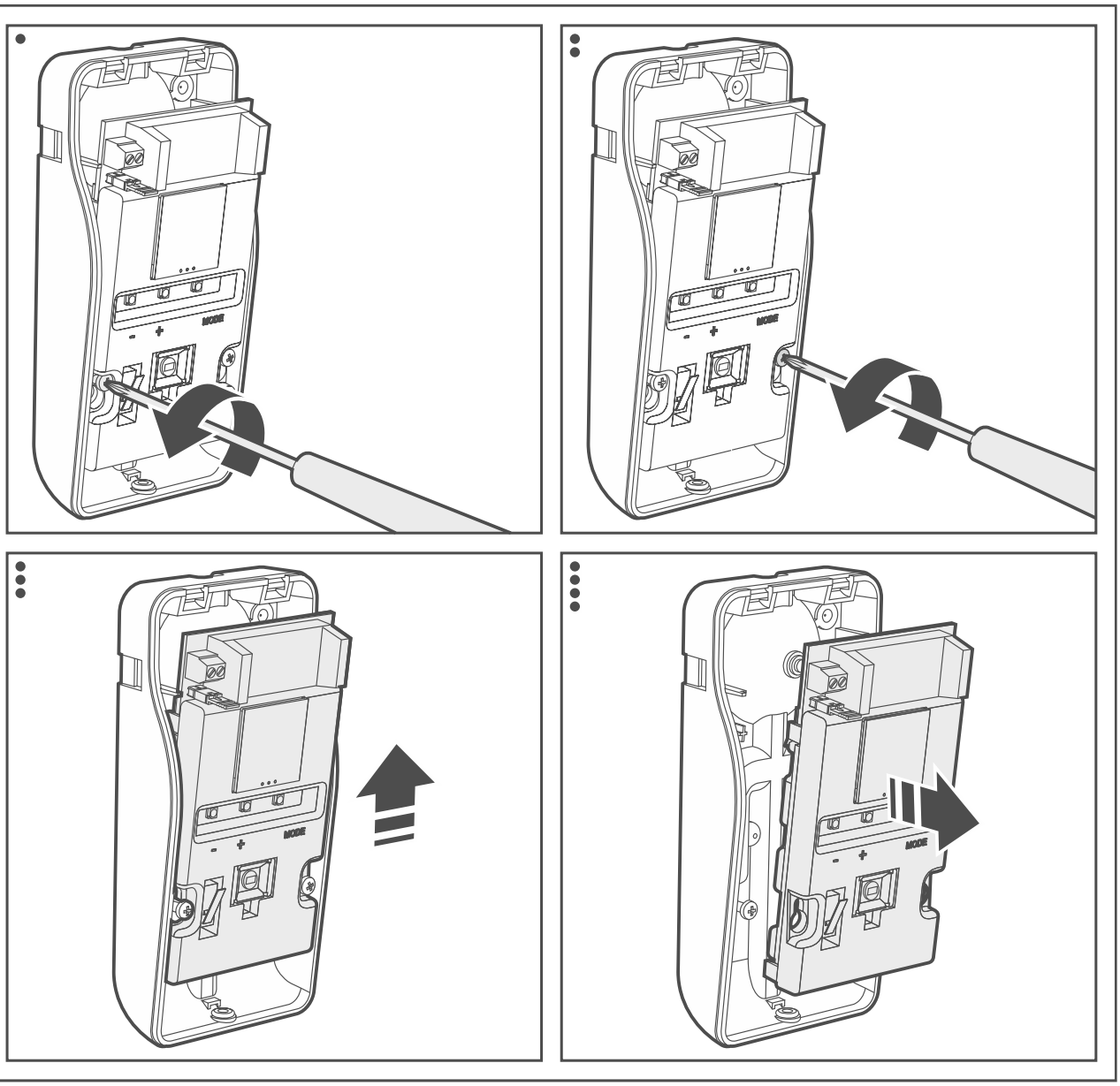
1. Open the detector enclosure (Fig. 2).

2



2. Remove the electronics module (Fig. 3).

3



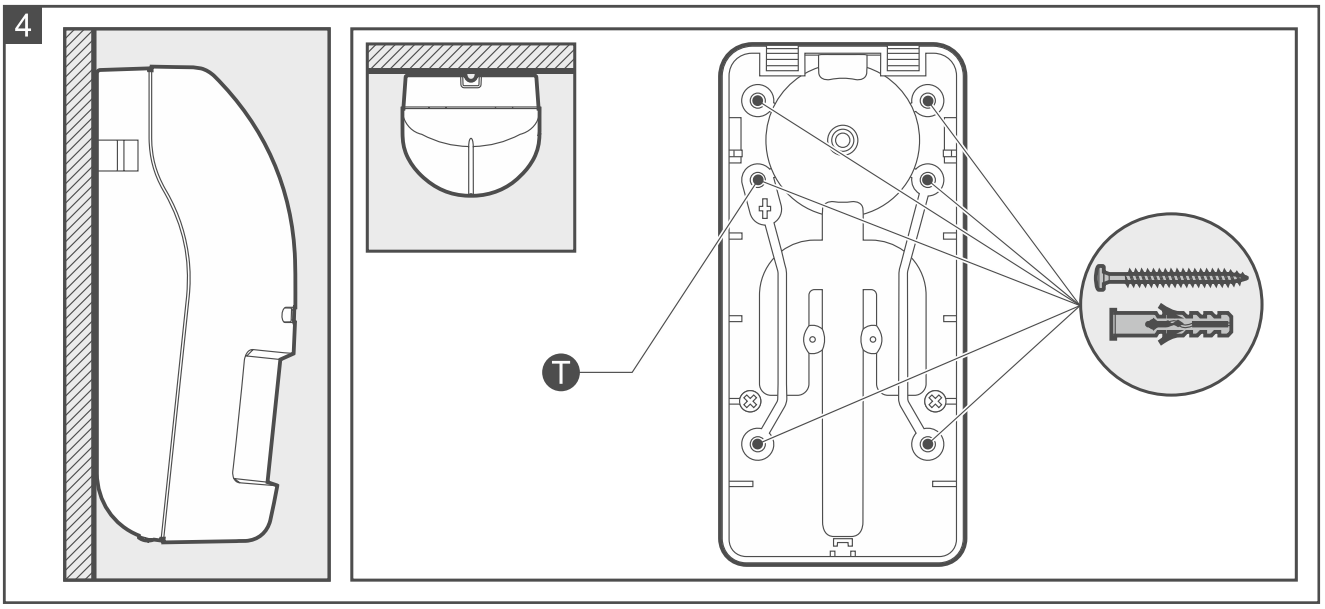
3. Secure the enclosure base with screws to the wall (Fig. 4), to the angle bracket (see “Angle bracket mounting”) or to the ball bracket (see “Ball bracket mounting”). Use wall plugs specifically intended for the mounting surface (different for concrete or brick wall, different for plaster wall, etc.).

In order for the detector to detect removal from the surface / bracket, fasten the screw in the place marked with the T symbol in the figure 4.

The detector must detect removal from the surface / bracket if it is to meet the requirements of Standard EN 50131 for Grade 2.

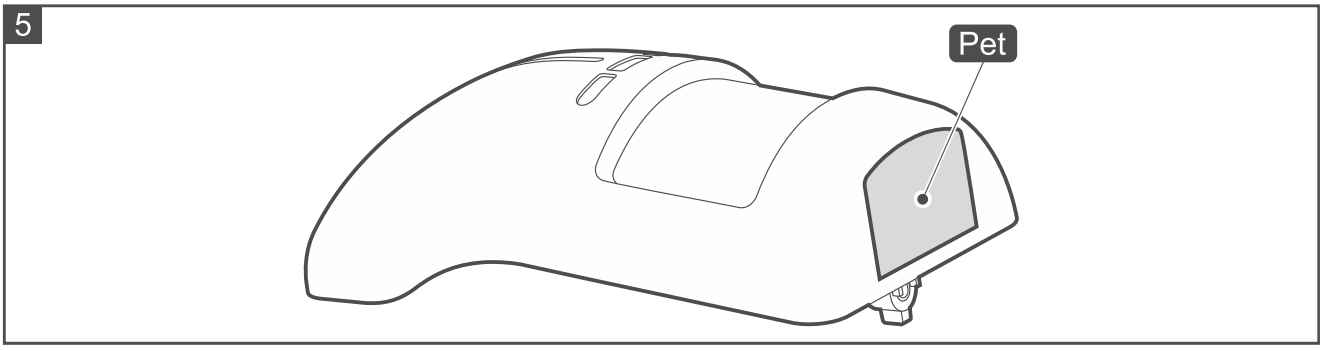
The brackets are sold separately. The BRACKET C bracket set includes the angle bracket and the ball bracket.

4



4. Place the electronics module in the enclosure base and secure it with screws.
5. If you mounted the detector on a bracket or used an additional tamper switch (requirement of Standard EN 50131 for Grade 2):
   – screw the tamper switch wires to the TMP terminals (black wire to one terminal, blue wire to the other),
   – remove the jumper from the pins below the terminals.
6. Add the detector to the system (see the manual for the BE WAVE system controller or the BE WAVE Hybrid system control panel). When a request to turn on the device will be displayed, install the battery in the detector.
7. Secure the battery with the clip provided in the box.
8. If the detector is to ignore the movement of pets at ground level, stick the sticker to the enclosure cover in the place marked with the Pet symbol in figure 5. The sticker is provided with the detector.

5



9. Close the enclosure and lock it with a screw.

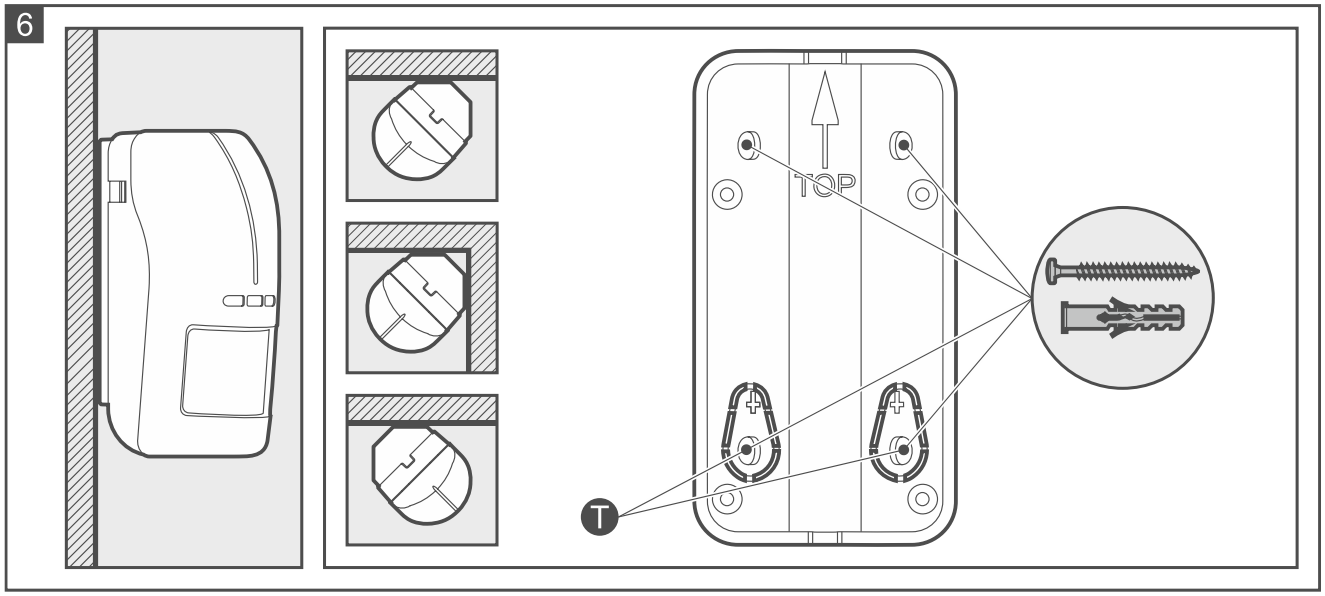
Angle bracket mounting

If the detector is not to detect removal of the bracket from the surface, you do not have to attach the additional tamper switch (skip the steps regarding its installation).

The detector must detect removal of the bracket from the surface if it is to meet the requirements of Standard EN 50131 for Grade 2.

1. Make the openings for screws in the angle bracket (Fig. 6).

In order for the detector to detect removal from the surface, fasten the screws in places marked with the T symbol in the figure 6.



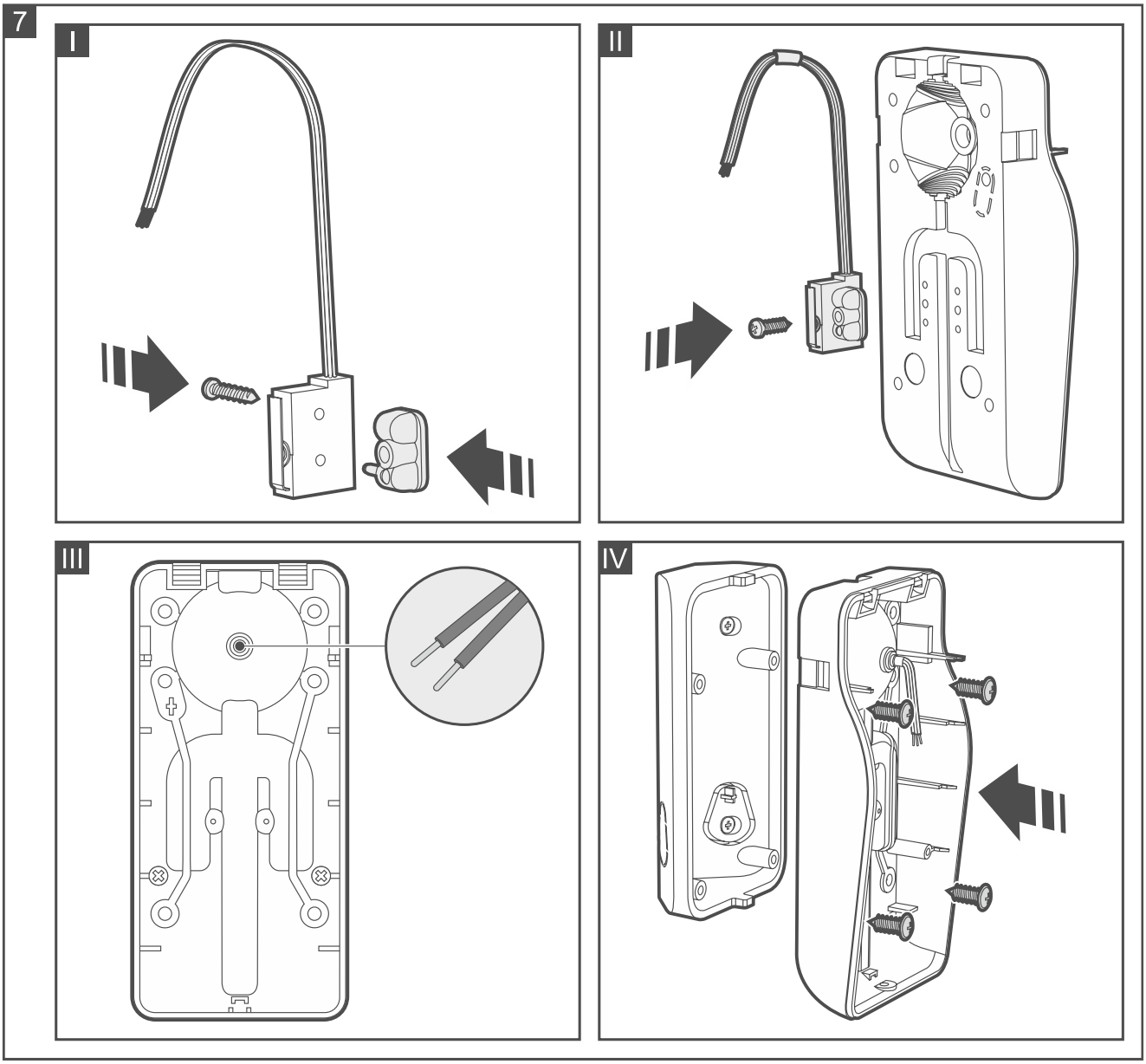
2. Place the angle bracket against the wall and mark the location of the mounting holes.
3. Drill the holes in the surface for wall plugs (anchors). Use wall plugs specifically intended for the mounting surface (different for concrete or brick wall, different for plaster wall, etc.).
4. Secure the angle bracket to the surface with screws.
5. Attach the additional tamper switch:
   – screw the bracket to the tamper switch (Fig. 7-I),
   – screw the bracket with the tamper switch to the enclosure base (Fig. 7-II).

The figure 7 shows how to attach the tamper switch in one of the two available positions. When selecting the position, consider the way of angle bracket mounting. If the tamper switch is to be attached in the other position, screw the bracket to the tamper switch on the other side.

6. Make an opening for the tamper switch wires in the enclosure base (Fig. 7-III).
7. Run the tamper switch wires through the opening.

It is recommended that the tamper switch wires be placed in a heat shrink tubing. It reduces the risk of getting water into the enclosure.

8. Secure the enclosure base to the bracket with screws (Fig. 7-IV).

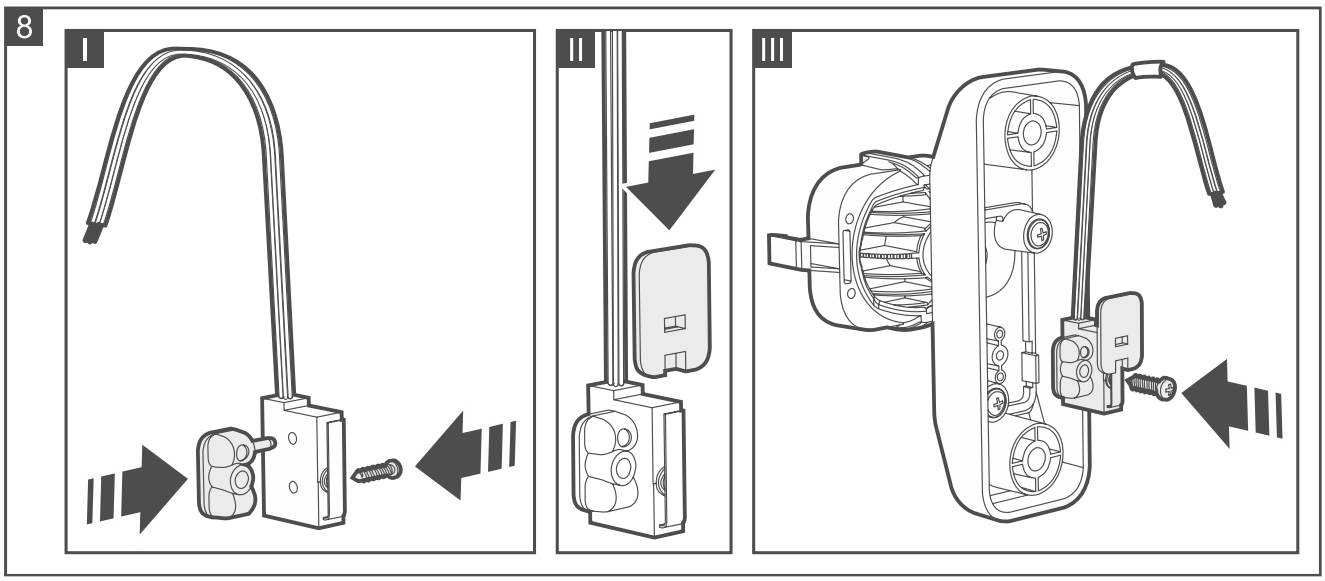


Ball bracket mounting

If the detector is not to detect removal of the bracket from the surface, you do not have to attach the additional tamper switch (skip the steps regarding its installation).

The detector must detect removal of the bracket from the surface if it is to meet the requirements of Standard EN 50131 for Grade 2.

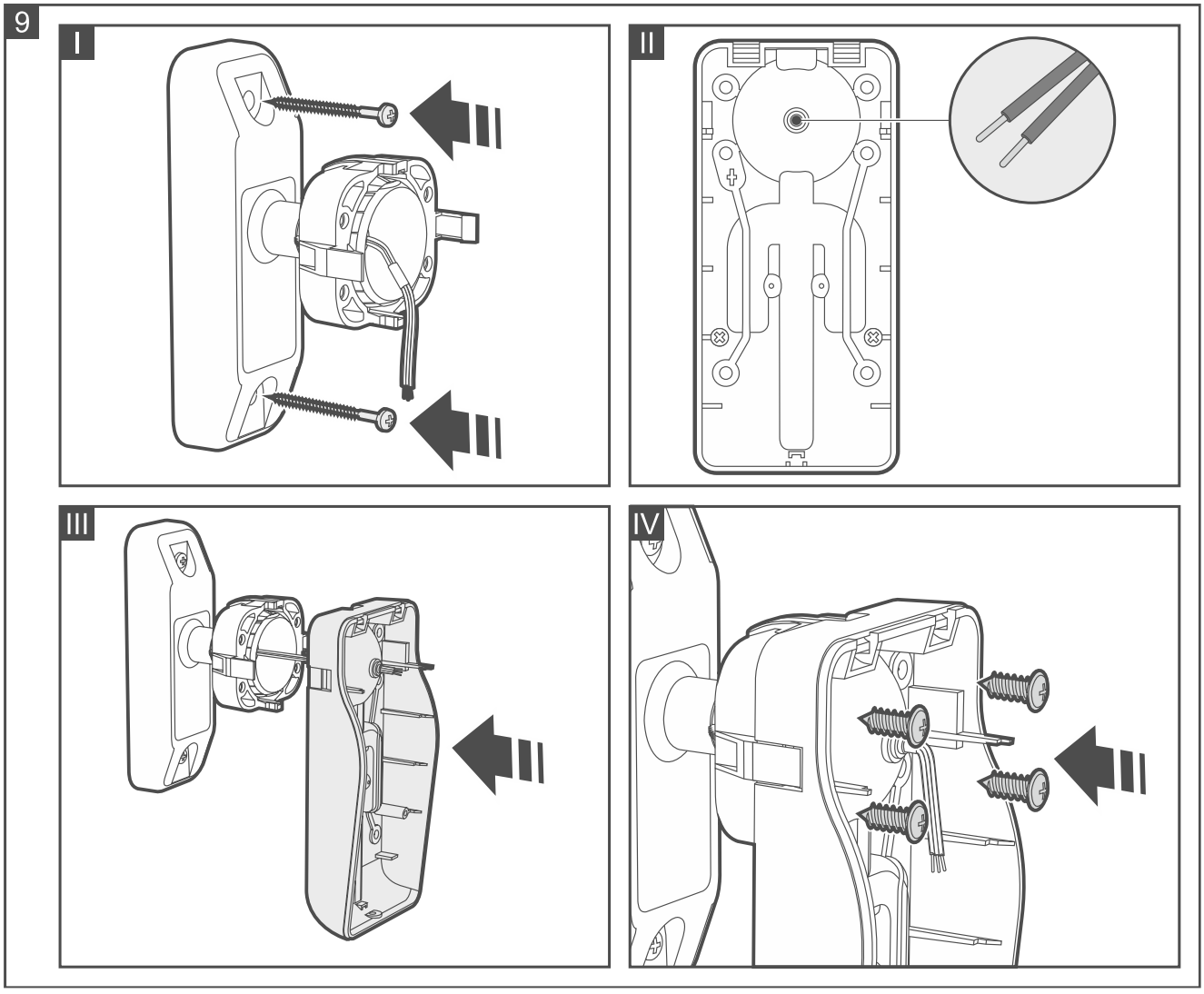
1. Attach the additional tamper switch:
   – screw the bracket to the tamper switch (Fig. 8-I),
   – attach the unit making the surface bigger on the tamper switch (Fig. 8-II),
   – screw the bracket with the tamper switch to the ball bracket base (Fig. 8-III).
2. Run the tamper switch wires through the opening in the handle of the bracket.
3. Place the ball bracket against the wall and mark the location of the mounting holes.
4. Drill the holes in the surface for wall plugs (anchors). Use wall plugs specifically intended for the mounting surface (different for concrete or brick wall, different for plaster wall, etc.).



5. Secure the ball bracket to the surface with screws (Fig. 9-I).
6. Make an opening for the tamper switch wires in the enclosure base (Fig. 9-II).
7. Run the tamper switch wires through the opening (Fig. 9-III).

It is recommended that the tamper switch wires be placed in a heat shrink tubing. It reduces the risk of getting water into the enclosure.

8. Secure the enclosure base to the bracket with screws (Fig. 9-IV).



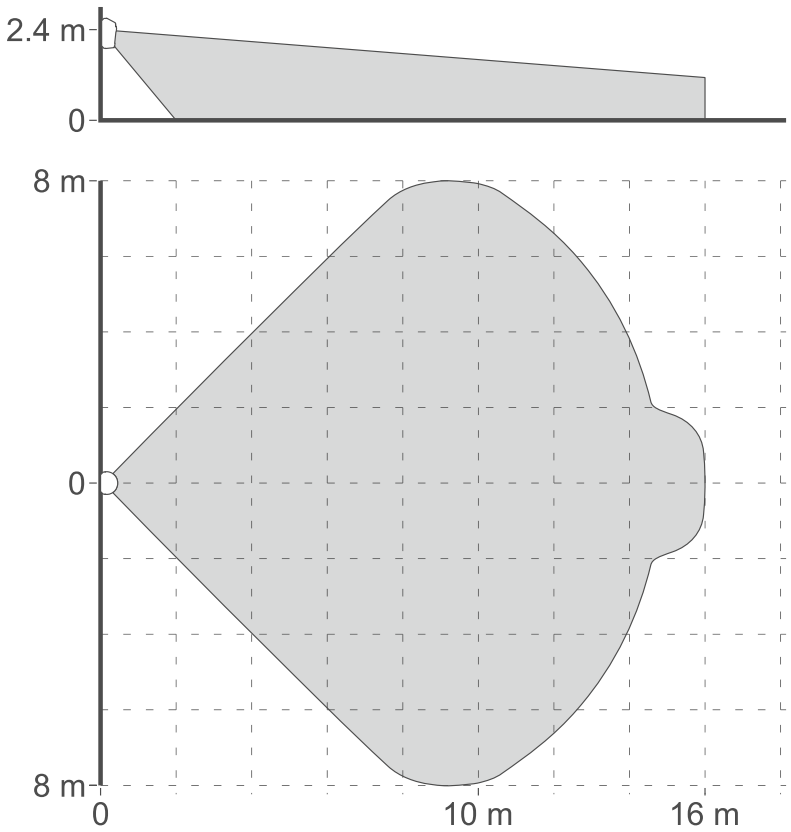
4. Test

1. Enable the diagnostics mode in the system (see the manual for the BE WAVE system controller or the BE WAVE Hybrid system control panel). When the diagnostic mode is enabled, the microwave sensor is active and the dusk sensor reacts quicker to changes in the light intensity.

After the diagnostic test is enabled, automatic calibration of the microwave sensor is carried out. For 10 seconds after the diagnostic mode is enabled, there should be no moving object in the detection area of the microwave sensor, as this will prevent proper calibration of the sensor.

2. Check if moving within the detector coverage area will make the LED indicators turn ON. Figure 10 shows the maximum coverage area of the detector mounted at a height of 2.4 m.
3. Cover the detector with a cardboard box, thick and dark fabric, etc. The detector should detect dusk after 3 seconds.
4. Disable the diagnostics mode.

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5. Battery replacement

The used batteries must not be discarded, but should be disposed of in accordance with the existing rules for environment protection.

The Be Wave app will indicate that the battery in the detector is low. The low battery should be replaced as soon as possible.

1. In the Be Wave app / BE WAVE Soft program, tap / click the room in which the detector is installed.
2. Tap / click the detector name.

3. Start the *Battery replacement* function.
4. Open the detector enclosure.
5. Remove the low battery.
6. Wait 1 minute.
7. Install the new battery.
8. Close the enclosure.
9. Start the *Unbypass device* function in the Be Wave app / BE WAVE Soft program.

6. Specifications

Operating frequency band ..... 868.0 MHz ÷ 868.6 MHz
Radio communication range (in open area) ..... up to 1500 m
Battery ..... CR123A 3 V
Battery life ..... up to 2 years
Standby current consumption ..... 75 µA
Low battery voltage threshold ..... 2.75 V
Light intensity measurement range ..... 2 lx...250 lx
Temperature measurement range ..... -40°C...+55°C
Temperature measurement accuracy ..... ±1°C
Microwave frequency ..... 24.125 GHz
Detectable speed ..... 0.3...3 m/s
Warm-up period ..... 40 s
Recommended installation height ..... 2.4 m
Maximum coverage area ..... 16 m x 16 m, 90°
Complied with standards ..... EN 50131-1, EN 50130-4, EN 50130-5
Security grade according to EN 50131-2-4 ..... Grade 2
Environmental class according to EN 50130-5 ..... IIIa
Operating temperature range ..... -40°C...+55°C
Maximum humidity ..... 93±3%
IP code IP54
Dimensions ..... 65 x 138 x 58 mm
Weight ..... 182 g