abax2

AXD-200

Wireless multipurpose detector

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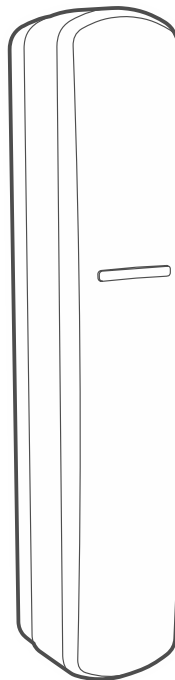
IMPORTANT

The device should be installed by qualified personnel.

Prior to installation, please read carefully this manual.

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

The rating plate of the device is located on the enclosure base.

CE The device meets the requirements of the applicable EU directives.

⌂ The device is designed for indoor installation.

🗑 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).

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

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Please visit us at:
https://support.satel.eu

Hereby, SATEL sp. z o.o. declares that the radio equipment type AXD-200 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.eu/ce

In the EU, this radio equipment is only permitted to operate in the 868 MHz frequency band.

The following symbols may be used in this manual:

𝑖 - note,

⚠ - caution.

CONTENTS

The AXD-200 detector is designed for operation within the ABAX 2 / ABAX two-way wireless system. It is a device that can be used as magnetic contact, shock, reorientation, temperature or flood detector. In the ABAX 2 system, it can also be used as a hardwired zone expander. You can select the type of device before or while adding it to the system (see "Selecting device type"). Table 1 shows how the device is identified in the wireless system, depending on the selected type.

Device name in the system		Device type
ABAX 2	ABAX	
AMD-200	AMD-100	Magnetic contact
AMD-201	AMD-101	Dual channel magnetic contact
AMD-202	AMD-102	Magnetic contact with input for roller shutter detector
AVD-200	AVD-100	Shock detector and magnetic contact
ARD-200	ARD-100	Reorientation detector
ATD-200	ATD-100	Temperature detector
AFD-200	AFD-100	Water flood detector
ATX-220		Hardwired zone expander: 2 x NC
ATX-230		Hardwired zone expander: NC and roller shutter

Table 1.

The device with factory default settings is identified in the ABAX 2 system as the AMD-200 detector, and in the ABAX system as AMD-100.

This manual applies to the device with firmware version 1.02, which is supported by:

- ABAX 2:
  – ACU-220 / ACU-280 controller (firmware version 6.04 or newer),
  – ARU-200 repeater.
- ABAX:
  – ACU-120 / ACU-270 controller (firmware version 5.04 or newer),
  – ARU-100 repeater (firmware version 2.02 or newer),
  – INTEGRA 128-WRL control panel (firmware version 1.20 or newer and firmware version of processor used to operate ABAX system 3.10 or newer).

i | *The temperature detector (ATD-200) is not supported by the controller connected to the VERSA / VERSA Plus / VERSA IP control panel.*

The ATX-220 and ATX-230 hardwired zone expanders are not supported in the ABAX system.

The ATX-220 and ATX-230 hardwired zone expanders are supported by the INTEGRA control panels with firmware version published after 2 January 2022 (1.20 or newer).

1 Features

- The type of device selected before or while adding the device to the system.
- Encrypted two-way radio communication in the 866 MHz / 868 MHz / 915 MHz frequency band (AES standard for the ABAX 2 system).
- Transmission channel diversity – 4 channels for automatic selection of the one that will enable transmission without interference with other signals in the 866 MHz / 868 MHz / 915 MHz frequency band (ABAX 2 system only).
- Remote update of device firmware (ABAX 2 system only).
- Remote device configuration.
- Built-in temperature sensor (temperature measurement range from -10°C to +55°C).
- "ECO" option for longer battery life (ABAX 2 system only).
- Battery status control.
- LED indicator.
- Tamper protection against enclosure opening and removal from mounting surface.
- 2 magnets included (for surface and flush mounting).

AMD-200

Magnetic contact

- Detects open door, window, etc.
- Input for connecting an NC type wired detector.
- Occupies 1 position on the device list.
- In the ABAX system, the detector is identified as AMD-100.

AMD-201

Dual channel magnetic contact

- Detects open door, window, etc.
- Input for connecting an NC type wired detector.
- Additional digital channel for a wired detector.
- Occupies 2 positions on the device list (optionally 1 – only the additional NC input is supported).
- In the ABAX system, the detector is identified as AMD-101.

AMD-202

Magnetic contact with input for roller shutter detector

- Detects open door, window, etc.
- Input for connecting a wired roller shutter detector.
- Input for connecting an NC type wired detector.
- Occupies 2 positions on the device list (optionally 1 – only the additional inputs [roller shutter and NC] are supported).
- In the ABAX system, the detector is identified as AMD-102.

AVD-200

Shock detector and magnetic contact

- Detects shocks and vibrations accompanying attempts to force open a door or window.
- Detects open door, window, etc.
- Occupies 2 positions on the device list (optionally 1 – only the shock detector is supported).
- In the ABAX system, the detector is identified as AVD-100.

ARD-200

Reorientation detector

- Detects changes in the position of protected object.
- Occupies 1 position on the device list.
- In the ABAX system, the detector is identified as ARD-100.

ATD-200

Temperature detector

- Detects exceeding of the predefined temperature threshold.
- Two programmable temperature thresholds.
- Occupies 2 positions on the device list (optionally 1 – you can program just one temperature threshold).
- In the ABAX system, the detector is identified as ATD-100.

AFD-200

Water flood detector

- Detects flooding in spaces provided with water installation.
- Occupies 1 position on the device list.
- In the ABAX system, the detector is identified as AFD-100.

i | *The water flood detector requires you to purchase the FPX-1 probe, offered by SATEL.*

ATX-220

Hardwired zone expander: 2 x NC

- Two inputs for connecting NC type wired detectors.
- Two digital channels for wired detectors.
- Occupies 2 positions on the device list (optionally 1 – only one input is supported).

ATX-230

Hardwired zone expander: NC and roller shutter

- Input for connecting an NC type wired detector.
- Input for connecting a wired roller shutter detector.
- Two digital channels for wired detectors.
- Occupies 2 positions on the device list (optionally 1 – only the roller shutter input is supported).

2 Description

Radio communication

The detector connects to the controller / control panel at regular time intervals to provide information about its state (periodical communication). Additional communication may take place as a result of alarm (see "Operating modes").

Alarms

Described below are circumstances in which the detector reports alarm, depending on the detector type. Irrespective of the detector type, tamper alarm is reported on opening the tamper contact.

AMD-200 / AMD-201

The detector will report alarm:

- after moving the magnet away from the detector (opening the window or door),
- after opening the NC type input.

AMD-202

The detector will report alarm:

- after moving the magnet away from the detector (opening the window or door),
- after opening the NC type input,
- after registering the specified number of pulses within a defined time period by the roller shutter input,
- after opening the roller shutter input (tamper alarm).

AVD-200

The detector will report alarm:

- after detecting a shock caused by impact,
- after moving the magnet away from the detector (opening the window or door).

ARD-200

The detector reports alarm when it senses a change in its position. The detector remembers position at the moment of being switched into active mode or starting the test mode. Fig. 1 shows the changes in orientation that can be sensed by the detector.
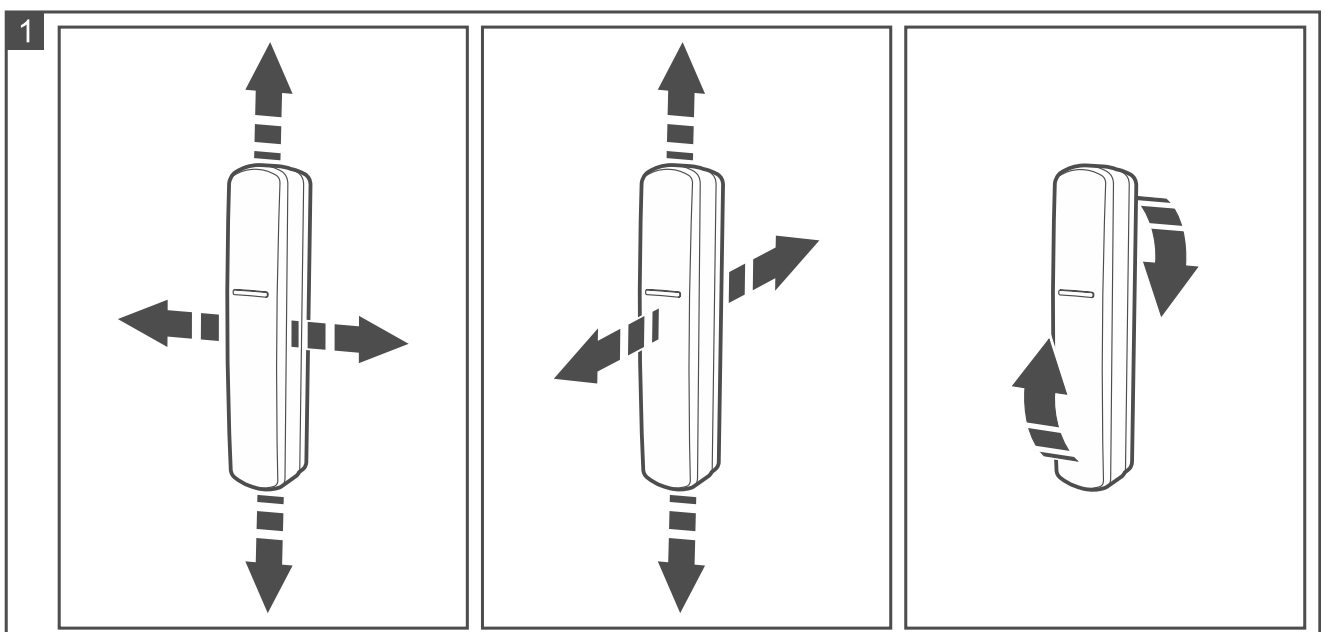
ATD-200

The detector reports alarm when it registers a temperature higher / lower than the predefined threshold. The detector allows you to program two critical temperature thresholds: low (L) and high (H). The detector will alert of the threshold being exceeded if the temperature:

- drops below the value preprogrammed for the **low (L)** threshold,
- rises above the value preprogrammed for the **high (H)** threshold.

Information about the current temperature is sent when the detector connects to the controller / control panel.

AFD-200

The detector reports alarm approximately 5 seconds after the water level reaches the height at which the probe is installed. The detector reports end of flooding a few seconds after the water level drops below the height at which the probe is installed.

ATX-220

The expander reports alarm after opening the NC type input.

ATX-230

The expander reports alarm:

- after opening the NC type input,
- after registering a specific number of pulses within a defined time period by the roller shutter input,
- after opening the roller shutter input (tamper alarm).

Operating modes

Active – information about each alarm is sent immediately.

Passive – only information about tamper alarm is sent immediately. This operating mode prolongs the battery life.

The operating mode is turned on remotely. If the device is used in the INTEGRA / VERSA alarm system, the operating mode may depend on the partition state (partition disarmed – passive mode; partition armed – active mode). For more information, refer to the ABAX 2 / ABAX controller manual / the INTEGRA 128-WRL control panel manual.

Energy saving mode (ECO)

If you want to prolong the battery life, you can enable in the device the "ECO" option. When the "ECO" option is enabled, the periodical communication takes place every 3 minutes. Thus the battery life can be increased as much as fourfold. The option is only available in the ABAX 2 system. The device with "ECO" option enabled meets requirements of the EN50131-2-6 standard for Grade 2.

Test mode

The test mode makes the device testing easier, because the LED indicator is enabled. How to start and end the test mode is described in the ABAX 2 / ABAX controller manual / the INTEGRA 128-WRL control panel manual.

LED

The LED is flashing rapidly for about 10 seconds after the battery is inserted to indicate that the process of selecting the device type can be initiated (see "Selecting device type").

The LED also works in the test mode, in which it indicates:

- periodical communication – short flash (80 milliseconds),
- alarm – ON for 2 seconds.

Battery status control

When the battery voltage is below 2.75 V, information about low battery is sent during each transmission.

Electronics board

⚠ **Do not remove the electronics board from the enclosure to avoid damage to the components on the board.**
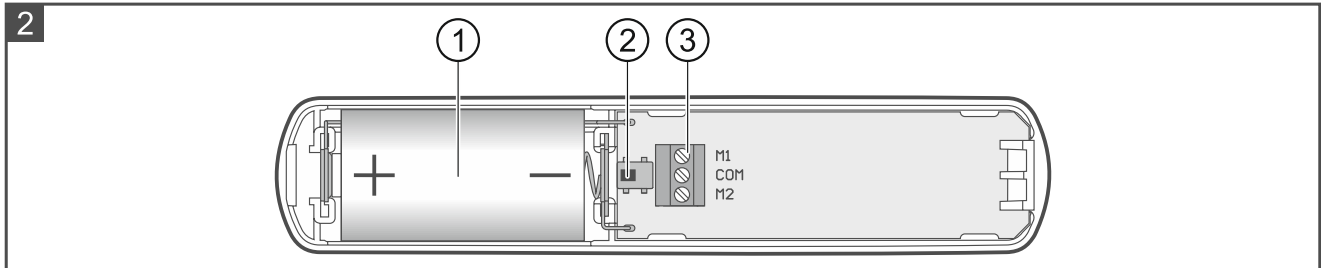

Fig. 2 shows the detector inside after opening the enclosure.

① CR123A lithium battery.

② tamper contact.

③ terminal block:

COM - common ground.

M1 - input supported in the case of the AMD-200, AMD-201, AMD-202, AFD-200 detectors and the ATX-220, ATX-230 zone expanders. It allows connection of an NC type detector (AMD-200 / AMD-201 / AMD-202 / ATX-220 / ATX-230) or the flood probe (AFD-200).

M2 - input supported in the case of the AMD-202 detector and the ATX-220, ATX-230 zone expanders. It allows connection of:
– AMD-202 detector / ATX-230 expander – roller shutter detector,
– ATX-220 expander – NC type detector.

To make the connection, use wires with a cross-section of 0.5-0.75 mm^2. If no detector or flood probe is connected to the input, the terminal must be connected to common ground.

ⓘ *The length of wires must not exceed 3 m.*

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.

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

The device is designed for indoor installation. Installing the device in close vicinity of electrical systems is not recommended, since it can adversely affect the range of radio signal.

Mount the device on fixed surface. In the case of magnetic contacts (AMD-200 / AMD-201 / AMD-202 / AVD-200), mount the detector on the window / door frame (fixed surface), and the magnet on the window / door (moving surface). Mounting the magnetic contact on ferromagnetic surfaces and/or near to strong magnetic and electrical fields is not advisable, because it can result in malfunctioning of the device.

i | *If the detector is to be installed on the window frame, select the upper part of the frame for this purpose. This will reduce the probability of the detector being flooded accidentally, when the window is partially or full open.*

The following tools will be useful to mount the detector:

- blade screwdriver 1.8 mm,
- Phillips screwdriver,
- precision pliers,
- drill with a set of drill bits.

1. Open the device enclosure (Fig. 3). The enclosure opening tool, shown in the illustration, is included in the device delivery set.
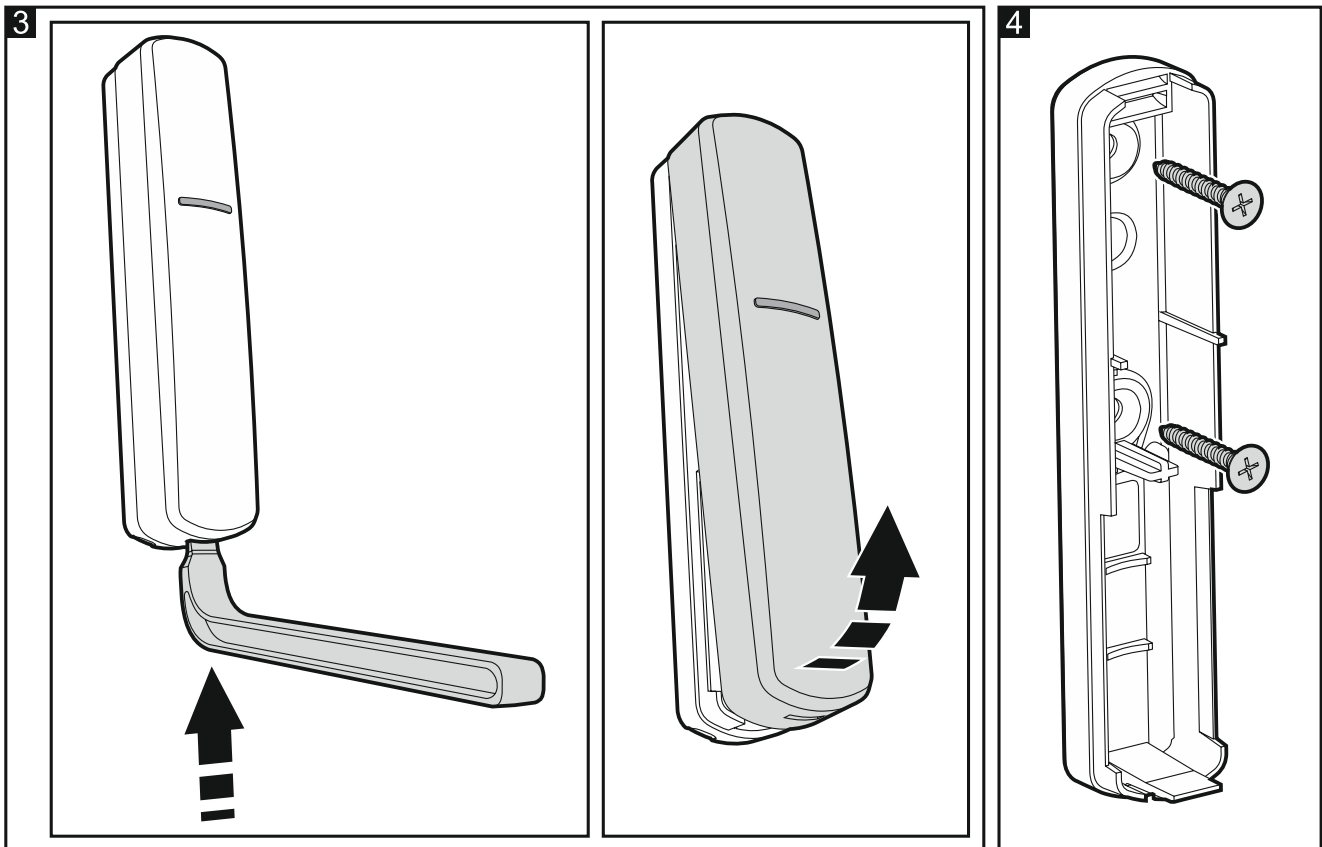
2. Install the battery. After installing the battery, you can select the device type (see "Selecting device type"). You can select the device type later while adding the device to the wireless system in the DLOADX / ABAX 2 Soft program.

3. Add the device to the wireless system (see the ABAX 2 / ABAX controller manual or the INTEGRA 128-WRL control panel installer manual). The sticker with serial number which shall be entered when registering the device in the system can be found on the electronics board.

i | *In the INTEGRA / VERSA alarm system the device is identified the same as in the ABAX system (cf. table 1), with the exception of the ATX-220 and ATX-230 expanders.*

In the VERSA alarm system, you can add and configure the ATX-220 and ATX-230 expanders only in the DLOADX program.

Simultaneous operation of the device by the ABAX 2 and ABAX controller / INTEGRA 128-WRL alarm control panel is not possible.

4. Close the device enclosure.
5. Put the device at the place of its future installation.
6. Check the level of signal received from the device by the ABAX 2 / ABAX controller or the INTEGRA 128-WRL control panel. If the signal level is lower than 40%, select another place for installation. Sometimes, it is sufficient to shift the device ten or twenty centimeters. You can also try to turn the enclosure to check what effect the change of antenna position will have on the signal strength.

i | *The ARF-200 tester makes it possible to check the radio signal strength at the place of future installation without having to put the device there.*

For the shock detector (AVD-200), check also the detector range in the selected location of installation.

7. Open the device enclosure (Fig. 3).
8. If detectors or flood probe are to be connected to the input terminals, make a hole in the enclosure base, run wires through the hole and secure them to the terminals.
9. Use wall plugs (anchors) and screws to secure the enclosure base to the mounting surface (Fig. 4). The wall plugs delivered with the device are intended for concrete, brick, etc. For other types of surface (drywall, styrofoam), use the appropriately selected wall plugs.
10. Close the device enclosure.
11. In the case of the magnetic contact (AMD-200 / AMD-201 / AMD-202 / AVD-200), secure the magnet (Fig. 5). taking into account the maximum permissible distance from the magnetic sensor (Fig. 6). The distance shown applies to the magnet located at the sensor height. Location of the sensor in the enclosure is shown in Fig. 7.

i | *To make the hole for flush magnet, use the ø9 mm drill bit.*
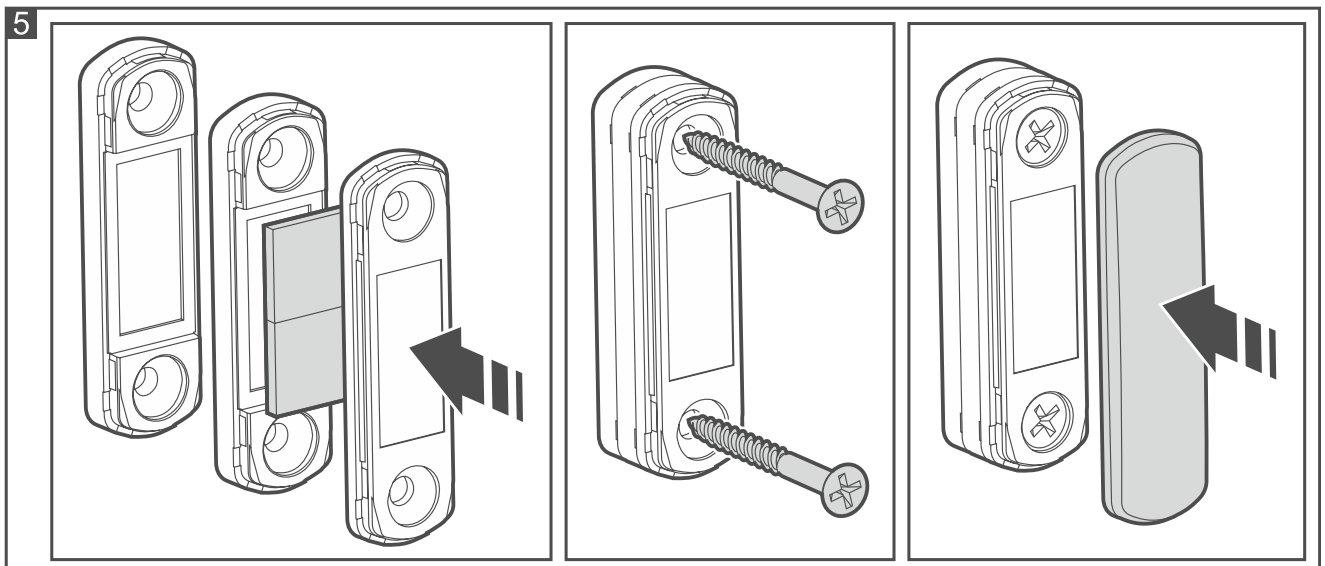
12. Configure the device settings (see the ABAX 2 / ABAX controller manual / the INTEGRA 128-WRL control panel manual).

13. Start the test mode (see the ABAX 2 / ABAX controller manual / the INTEGRA 128-WRL control panel manual).
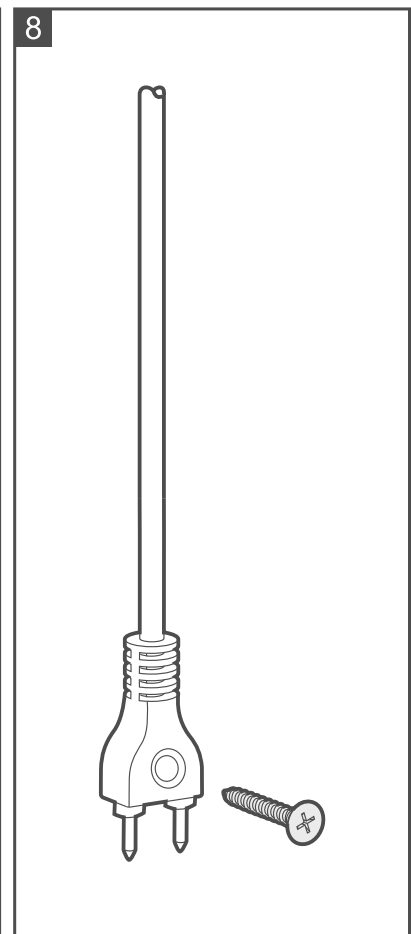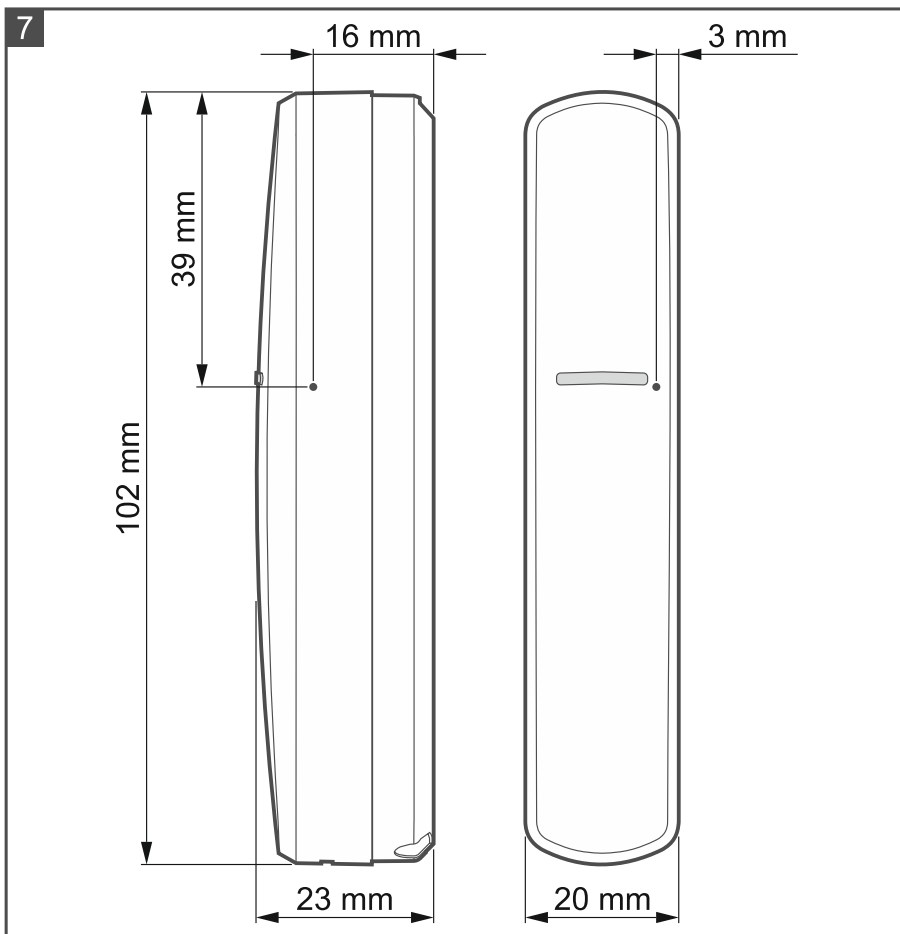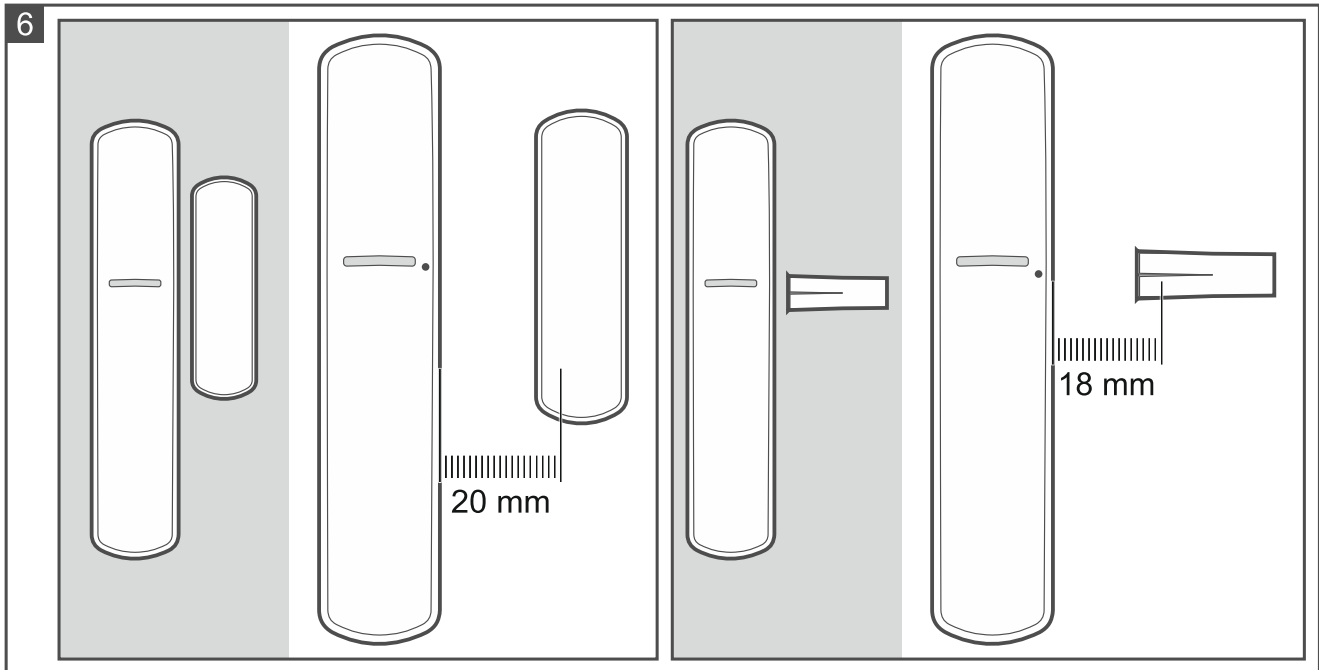
14. Depending on the device type and configuration, make sure that the LED comes on:
- **AMD-200**:
  - after moving the magnet away (opening the window or door),

  – after violating the detector connected to the M1 input.

• **AMD-201**:
  – after moving the magnet away (opening the window or door),
  – after violating the detector connected to the M1 input.

• **AMD-202**:
  – after moving the magnet away (opening the window or door),
  – after violating the detector connected to the M1 input,
  – after raising / lowering the roller shutters supervised by the roller shutter detector.

• **AVD-200**:
  – after moving the magnet away (opening the window or door),
  – after impact against the surface protected by the detector.

i *The shock detector range depends on the type of surface on which the detector is installed. The specified detection range (up to 3 m) should be considered an approximate value. The actual range should be determined experimentally after securing the detector to the surface.*

• **ARD-200** – after changing the detector position.

• **AFD-200** – after submerging the flood probe in water.

• **ATX-220**:
  – after violating the detector connected to the M1 / M2 input.

• **ATX-230**:
  – after violating the detector connected to the M1 input,
  – after raising / lowering the roller shutters supervised by the roller shutter detector.

15. For the water flood detector, when the test is done, secure the FPX-1 probe as shown in Fig. 8.

3.1 Selecting device type

If you want to select the device type before adding it to the system, follow the steps described below. You can also select the device type while adding it to the system in the DLOADX / ABAX 2 Soft program (see: ABAX 2 controller manual).

1. Install the battery in the device. The device LED will start flashing rapidly.

2. Within 10 seconds of inserting the battery, knock 3 times on the device enclosure. The LED will flash to indicate the selected device type – see Table 2.

Number of LED flashes	Device type
1	Magnetic contact (AMD-200)
2	Dual channel magnetic contact (AMD-201)
3	Magnetic contact with input for roller shutter detector (AMD-202)
4	Shock detector and magnetic contact (AVD-200)
5	Reorientation detector (ARD-200)
6	Temperature detector (ATD-200)
7	Water flood detector (AFD-200)
8	Hardwired zone expander: 2 x NC (ATX-220)
9	Hardwired zone expander: NC and roller shutter (ATX-230)

Table 2.

i *If you do not want to change the device type, wait for about 10 seconds. If there are no impacts within 10 seconds, the device type selecting procedure will be terminated. The LED will indicate once more what type is saved in the device memory.*

3. Knock once on the device enclosure to select next type as shown in Table 2. The next type after the hardwired zone expander (9 flashes) is the magnetic contact (1 flash).
4. Wait until the LED flashes once and then indicates the type that has been selected. You can only select next type when the LED stops flashing.
5. Repeat the steps 3 and 4 until you select the appropriate type of device.
6. Wait about 10 seconds. After that time the LED will inform you what type has been saved to the device memory.

i *Do not close the device enclosure before saving the type to the device memory. Otherwise, it can be interpreted by the device as another knock on the enclosure, which will change the type selected.*

4 Specifications

Operating frequency band...............866 MHz / 868.0 MHz ÷ 868.6 MHz / 915 MHz – 928 MHz

Radio communication range (in open area)

    ABAX 2

        ACU-220 .... up to 2000 m

        ACU-280 .... up to 1200 m

    ABAX.. up to 500 m

Battery..CR123A 3 V

Battery life expectancy .... up to 2 years

NC type input sensitivity... 240 ms

Temperature measurement range ....-10°C...+55°C

Temperature measurement accuracy ....±1°C

Standby current consumption .... 20 µA

Maximum current consumption ....7 mA

Complied with standards....... EN 50130-4, EN 50130-5, EN 50131-1, EN 50131-2-6, EN 50131-5-3

Security grade according to EN50131-2-6 .... Grade 2
Environmental class according to EN50130-5 II
Operating temperature range.. -10°C...+55°C
Maximum humidity .... 93±3%
Enclosure dimensions...20 x 102 x 23 mm
Surface mounted magnet enclosure dimensions .... 15 x 52 x 6 mm
Surface mounted magnet spacer dimensions.. 15 x 52 x 6 mm
Flush mounted magnet enclosure dimensions.. ø10 x 28 mm
Weight.. 59 g

Magnetic contact

Gap (max.):

        surface magnet .... 20 mm

        flush magnet .... 18 mm

Shock detector

Detection range (depending on the surface type) .... up to 3 m

i | *The specified detection range should be considered approximate. The actual range should be determined experimentally after securing the detector to the surface.*