# Satel®

# AVD-100

WIRELESS VIBRATION DETECTOR
AND MAGNETIC CONTACT

The AVD-100 detector senses vibrations associated with attempts to force a door or window (vibration detector), as well as detects opening of a door or window (magnetic contact). The detector is designed for use as part of the ABAX two-way wireless system. This manual applies to the detector with firmware version 5.01, which is supported by:

- ACU-120 / ACU-270 controller,
- ACU-100 / ACU-250 controller with firmware version 4.03 2014-05-15 (or newer),
- ARU-100 repeater with firmware version 2.00 2014-05-15 (or newer),
- INTEGRA 128-WRL control panel with firmware version 1.12 2013-12-20 (or newer).

## 1. Features

- Piezoelectric sensor.
- Advanced processing of signal from piezoelectric sensor.
- Two reed switches allowing to select the magnet installation manner.
- Remote configuration.
- LED indicator enabled in test mode.
- Tamper protection against cover removal and tearing enclosure from the wall.

## 2. Specifications

| | |
|---|---|
| Operating frequency band | 868.0 MHz ÷ 868.6 MHz |
| Radio communication range (in open area) | up to 500 m |
| Battery | CR123A 3 V |
| Battery life expectancy | approx. 3 years |
| Standby current consumption | 50 µA |
| Maximum current consumption | 16 mA |

Typical detection range of vibration detector, depending on mounting surface:

| | |
|---|---|
| concrete | 1.5 m |
| brick | 2.5 m |
| wood | 3.5 m |
| steel | 3 m |
| PVC | 2.25 m |
| Environmental class according to EN50130-5 | II |
| Operating temperature range | -10 °C...+55 °C |
| Maximum humidity | 93±3% |
| Detector enclosure dimensions | 26 x 112 x 29 mm |
| Surface mounted magnet enclosure dimensions | 26 x 13 x 19 mm |
| Surface mounted magnet spacer dimensions | 26 x 13 x 3.5 mm |
| Flush mounted magnet enclosure dimensions | 28 x 10 x 10 mm |
| Weight | 78 g |

# 3. Description

The detector takes up two positions in the ABAX system (first: magnetic contact; second: vibration detector). For some alarm systems, you can select when adding the detector, whether it will occupy one or two positions on the list of devices. If the detector occupies one position, only vibration detector is supported.

## Electronics board

Figure 1 shows the inside of the detector.

①  CR123A lithium battery.

②  tamper switch.

The LED and reed switches are placed on the other side of the electronics board.

## Alarms

The detector reports alarm in the following cases:

- opening enabled reed switch contacts after removal of magnet,
- registering of strong vibrations,
- registering of a predefined number of weak vibrations,
- opening the tamper switch (tamper alarm).

## Operating modes

The detector operating mode is defined remotely.

**Active** – information about each alarm is sent immediately.

**Passive** – information about tamper alarm is sent immediately, while information about other alarms is sent only during the polling time. This operating mode prolongs the battery life.

## Test mode

If you want to test the detector, you can remotely enter the test mode. When in the test mode, the detector LED is working.

## LED

The LED is working for 2 minutes after battery is inserted, as well as in the test mode. The LED indicates:

- polling – 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.

*Note: For additional information about the detector and its configuration please refer to the manual for ABAX wireless system controller.*

# 4. Installation

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

**Be particularly careful during installation and replacement of the battery. The manufacturer is not liable for the consequences of incorrect installation of the battery.**
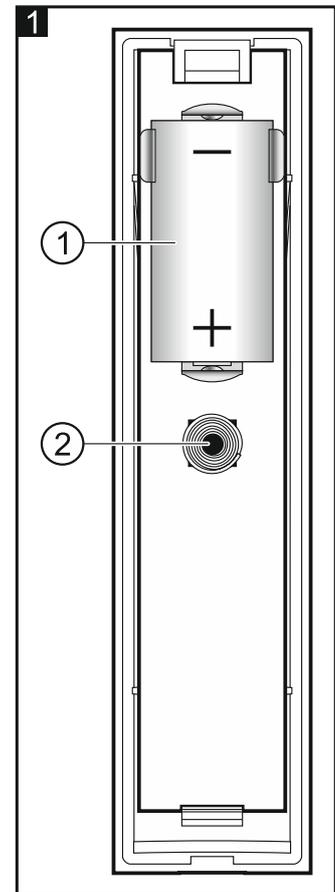
> **The used batteries must not be discarded, but should be disposed of in accordance with the existing rules for environment protection.**

The device is designed for indoor installation. The detector should be mounted on a fixed surface (e.g. window or door frame), and the magnet on a movable surface (e.g. window or door). 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.

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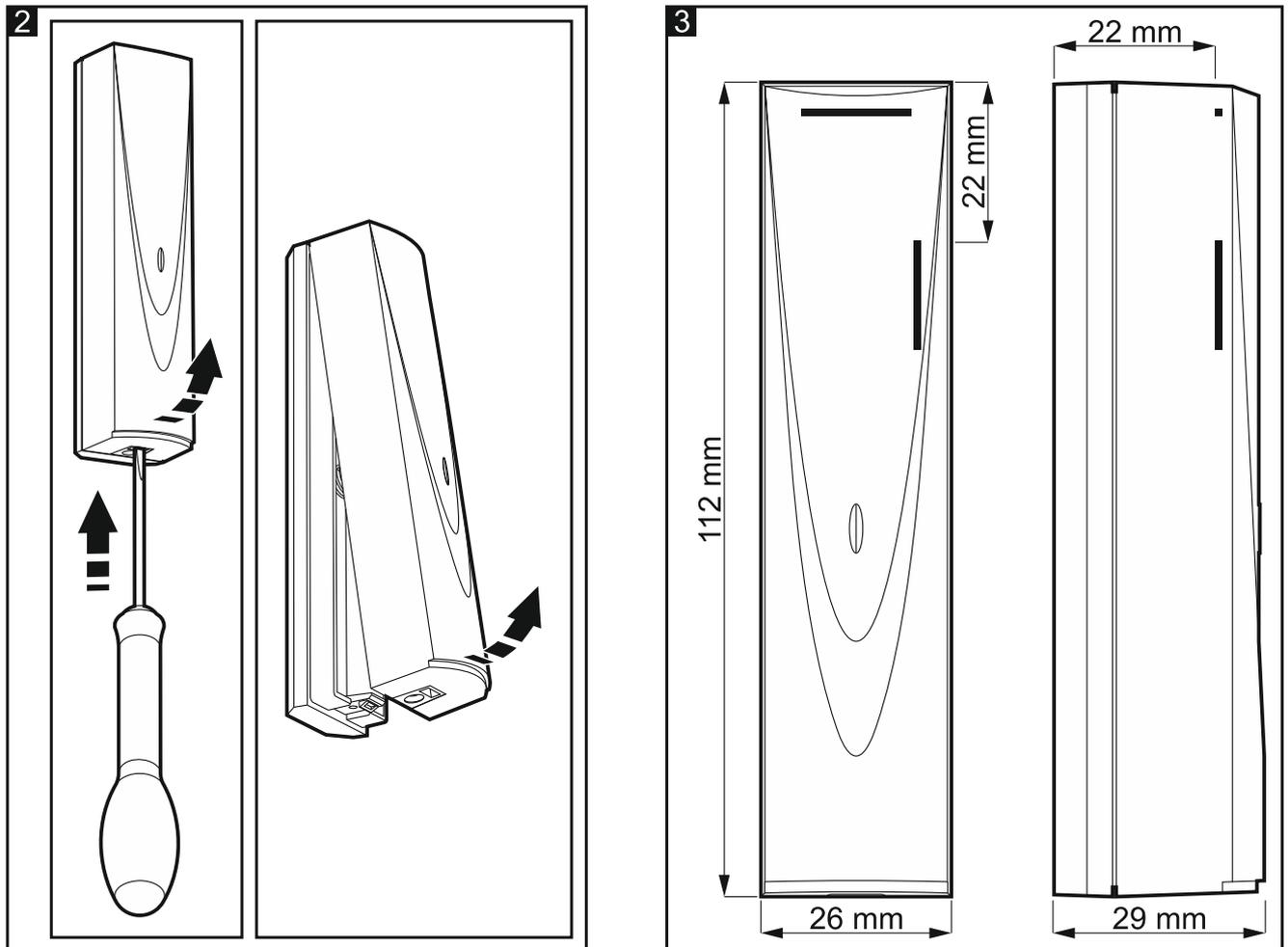


2. Install the battery and add the device to the wireless system (see the ABAX controller manual or the INTEGRA 128-WRL / VERSA / VERSA Plus / VERSA IP control panel installer manual). The sticker with serial number which shall be entered when registering the detector in the system can be found on the electronics board.
3. Close the detector enclosure.
4. Fasten the detector temporarily at the place of its future installation.
5. Check the level of signal received from the detector by the 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 to obtain a considerable improvement in the signal quality.
6. Open the detector enclosure (Fig. 2).
7. Use screws to fix the enclosure base to the mounting surface (Fig. 4). Wall plugs (screw anchors) and screws are included in the detector delivery set.
8. Close the detector enclosure.
9. Secure the magnet, taking into account the maximum permissible distance from the reed switch (Fig. 5). The distance shown applies to the magnet located at the reed switch height. Location of the reed switches in the enclosure is shown in Fig. 3.

10. Configure the detector:

    – magnetic contact: define which of the two reed switches is to be enabled,

    – vibration detector: define the sensitivity (the higher the sensitivity, the weaker single vibration will trigger the alarm) and the number of pulses (the pre-programmed number of weak vibrations registered within 30 seconds will trigger the alarm) – these parameters are analyzed independently, i.e. the alarm will be triggered by a single strong vibration or several weak vibrations.

    For detailed information regarding configuration of the detector, please refer to the manual for ABAX wireless system controller.
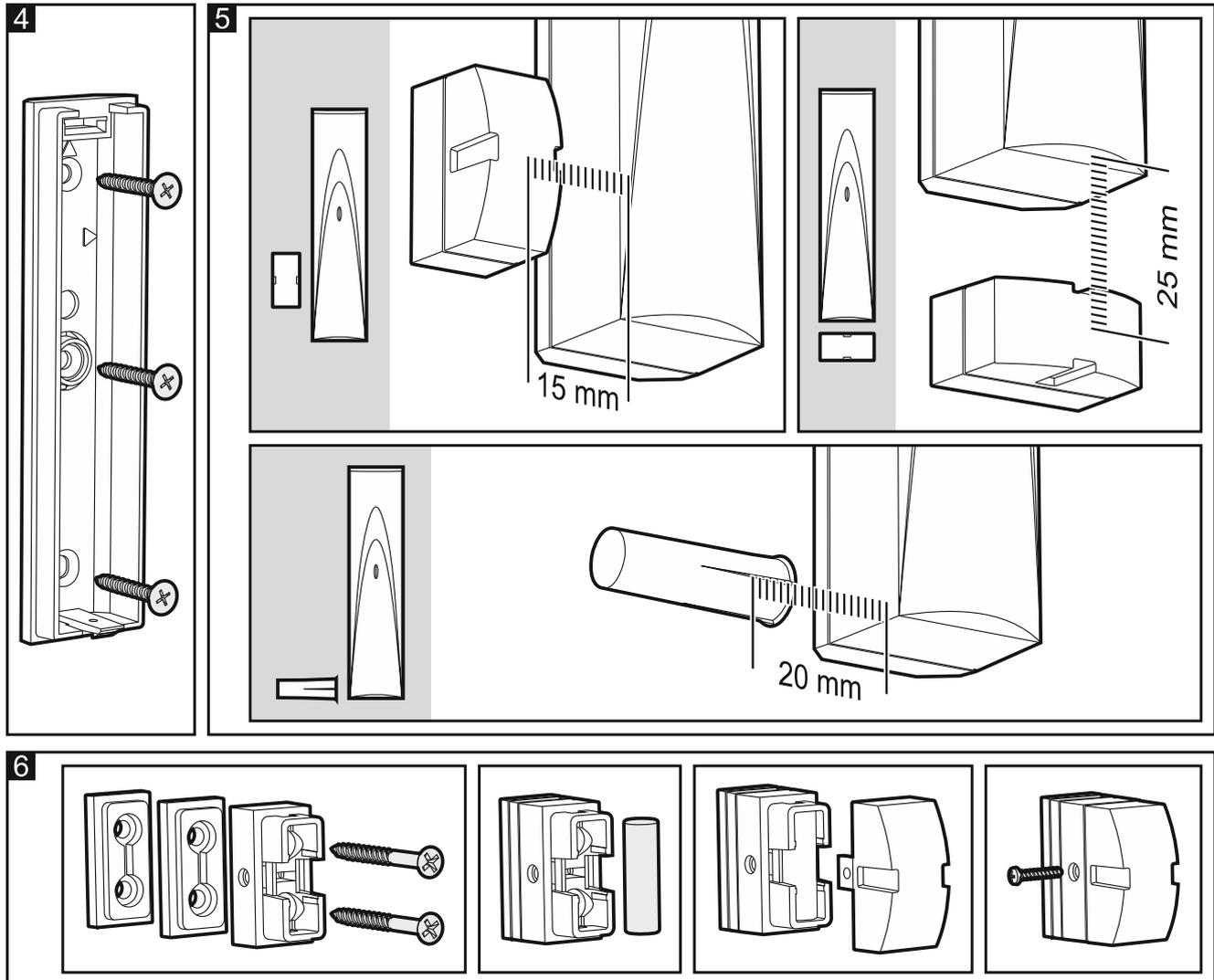






11. Start the test mode.

12. Depending on the configuration of detector, check that the LED goes on:

    – after moving the magnet away (opening the window / door),

    – after a heavy impact on the surface protected by vibration detector.