abax2

Wireless carbon monoxide detector

ACMD-200 EN

Firmware version 1.02
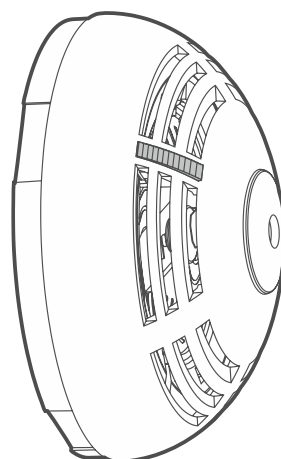
CE

IMPORTANT

Prior to installation, please read carefully this manual in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

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

Description of symbols on the device:

$C\!E$ 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).

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

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

Hereby, SATEL sp. z o.o. declares that the radio equipment type ACMD-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.pl/ce

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

Signs in this manual

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

ⓘ Note – suggestion or additional information.

CONTENTS

The ACMD-200 detector detects hazardous levels of carbon monoxide. It is designed to work as a stand-alone device or within the ABAX 2 two-way wireless system. The detector is supported by:

- ACU-220 / ACU-280 controller (firmware version 6.08 or newer),
- ARU-200 repeater.

1. Features

- Electrochemical carbon monoxide sensor.
- Digital temperature compensation.
- Test feature.
- LED indicator.
- Built-in sounder.
- Supervision of carbon monoxide sensor.
- Battery status control.
- Operation within the ABAX 2 wireless system:
  - encrypted two-way radio communication in the 868 MHz / 915 MHz frequency band (AES standard),
  - transmission channel diversity – 4 channels for automatic selection of the one that will enable transmission without interference with other signals in the 868 MHz / 915 MHz frequency band,
  - "ECO" option for longer battery life,
  - support for built-in temperature sensor (temperature measurement range from 0°C to +55°C).
  - tamper protection against enclosure opening.

2. Description

Alarm

Carbon monoxide detection
The detector reports alarm if it detects a hazardous concentration of carbon monoxide:

- 50-75 ppm for 75 minutes,
- 75-120 ppm for 25 minutes,
- higher than 120 ppm for 1 minute.

Alarm signaling
The alarm is signaled by a steady light of the LED indicator and a beep sound emitted continuously for 5 minutes. The alarm signaling will stop when the alarm is cleared.

Clearing the alarm
The alarm will be cleared when the test / reset button is pressed (Fig. 1).

Clearing the alarm in the alarm system in which the detector operates may result in clearing the alarm in the detector (see the ABAX 2 controller manual).

Signaling of hazardous concentration of carbon monoxide
If the detector continues to detect hazardous concentration of carbon monoxide after the signaling has stopped (after 5 minutes or after alarm clearing), this will be indicated by two

short flashes of the LED indicator and two short beeps every 2 seconds. The signaling will stop when the concentration of carbon monoxide drops below a hazardous level.

⚠️ **The detector reaction is delayed, hence the end of signaling can take place even a few minutes after the concentration of carbon monoxide has dropped below a hazardous level.**
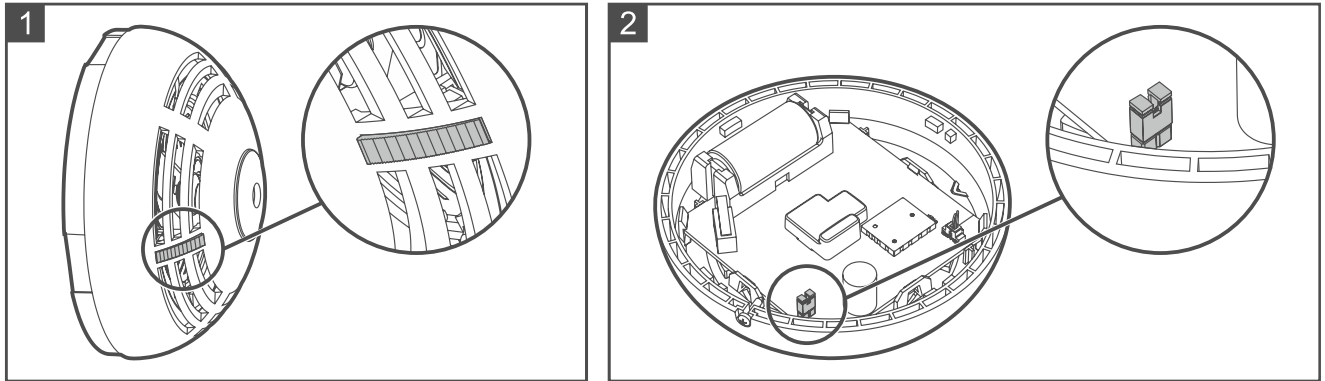
Operating modes

You can set the operating mode using the jumper located on the electronics board (Fig. 2):

- jumper off – stand-alone mode,
- jumper on – working in the ABAX 2 system. The detector is operating similarly as in the stand-alone mode, but it additionally:
  - communicates with the ABAX 2 controller,
  - supervises the tamper switch state.

ℹ️ *Set the operating mode when no battery is installed in the detector.*

Detector test

If you want to test operation of the detector, press the test / reset button (Fig. 1). You will hear a short beep. Wait a few seconds until an alarm is triggered.

LED indicator

The red LED indicator indicates:

- low battery – 3 short flashes every 30 seconds,
- carbon monoxide sensor trouble – 4 short flashes every 30 seconds,
- alarm – ON (for a maximum of 5 minutes),
- hazardous concentration of carbon monoxide (after the alarm signaling has stopped) – 2 short flashes every 2 seconds.

In the ABAX 2 system, after the test mode is started, the LED indicator also indicates periodical communication – short flash (80 milliseconds).

Sounder

Sounder indicates:

- low battery – 3 short beeps every 30 seconds,
- carbon monoxide sensor trouble – 4 short beeps every 30 seconds,
- alarm – continuous beep (for a maximum of 5 minutes),
- hazardous concentration of carbon monoxide (after the alarm signaling has stopped) – 2 short beeps every 2 seconds.

Supervision of carbon monoxide sensor

In the event of sensor failure (e.g. end of life), the trouble is indicated by the LED indicator and the sounder.

i | *The carbon monoxide sensor life is up to 10 years.*

Battery status control

When the battery voltage is lower than 2.75 V, the low battery is indicated by the LED indicator and sounder. If the detector is working in the ABAX 2 system, information about low battery is sent during each transmission to the controller.

Working in the ABAX 2 system

The ACMD-200 detector occupies one position on the list of wireless devices.

Radio communication

The detector connects to the controller at regular time intervals to provide information about its state (periodical communication). Additional communication takes place in the case of alarm (carbon monoxide is detected) or tamper (tamper switch has been opened) and after restore of alarm (carbon monoxide is no longer detected) or tamper (tamper switch has been closed).

Test mode

Diagnostics of the detector is easier in the test mode in which the detector LED indicator indicates periodical communication. For how to start and end the test mode, refer to the ABAX 2 controller manual.

Energy saving mode (ECO)

If you want to prolong the battery life, you can enable in the detector the "ECO" option. When the "ECO" option is enabled, the periodical communication takes place every 3 minutes. This can increase the battery life by as much as four times.

3.   Selecting a mounting location

- The detector is designed for indoor operation.
- Suggested locations for mounting the detector:
  – bedroom,
  – room with a fireplace / combustion equipment, where there is a risk that carbon monoxide is produced.
- Install the detector at a height of about 1.5-2 meters from the ground.
- Do not install the detector in places where lacquers, glues, paint removers or aerosols are used. It may have a negative impact on the carbon monoxide sensor operation.
- If the detector is to work in the ABAX 2 system, installing the device in close vicinity of electrical systems is not recommended, since it can adversely affect the range of radio signal.

4.   Installation

⚠ | **The detector enclosure cannot be closed without the battery inserted.**

Do not install the battery if the sounder is disconnected.

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.

1. Turn the cover counter-clockwise (Fig. 5) and remove it (Fig. 6).
2. If the detector is to work as a stand-alone device, remove the jumper (Fig. 2) and skip the steps 4-8.

i *After the battery is installed, removing / placing the jumper will have no effect on the detector operation.*

3. Install the battery (Fig. 8).
4. Add the detector to the wireless system (see the ABAX 2 controller manual). The sticker with the serial number required to register the detector in the system can be found on the electronics module.
5. Replace the cover.
6. Put the detector at the place of its future installation.
7. Check the level of signal received from the detector by the ABAX 2 controller. 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 allows you to test the level of radio signal at the location of future installation without having to place the detector on-site.*

8. Remove the detector cover.
9. If the detector is to be mounted on the wall or ceiling using a double-sided mounting tape:
   – stick the tape to the enclosure base and keep pressing for several seconds (Fig. 3).
   – stick the enclosure base to the surface and keep pressing for several seconds.

i *The surfaces to be joined using a double-sided tape must be clean and dry. They must be free from dust and grease.*
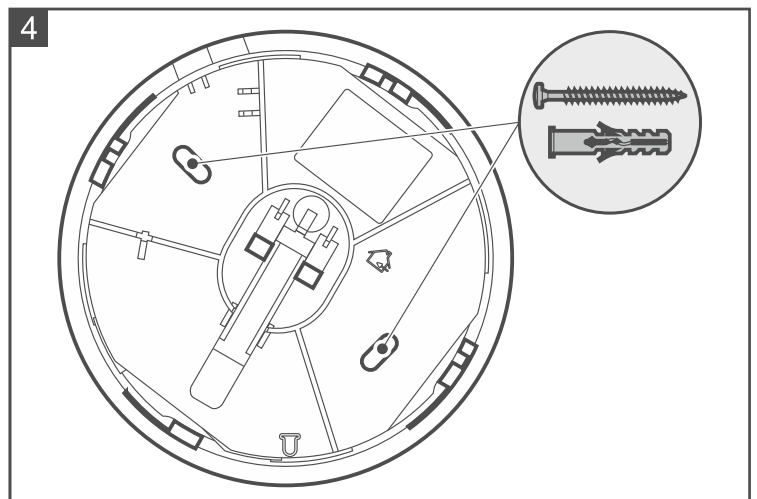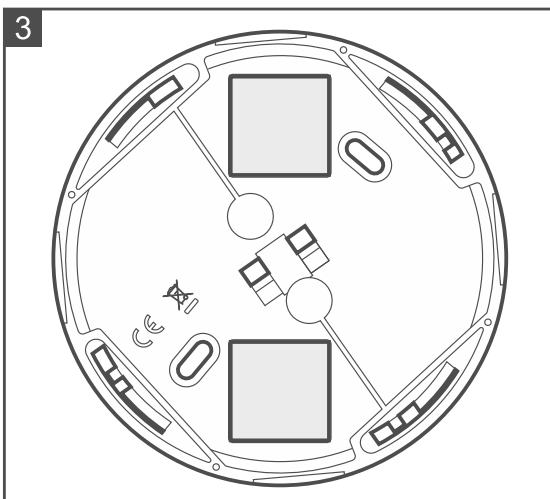
10. If the detector is to be mounted on the wall or ceiling with screws:
    – place the enclosure base against the surface and mark the location of the mounting holes (Fig. 4).
    – drill the holes in the ceiling for wall plugs (anchors). The wall plugs provided with the detector are intended for concrete or brick. For other types of surface (drywall, styrofoam), use other appropriately selected wall plugs.
    – secure the enclosure base to the surface with screws.
11. Replace the detector cover and lock it with a screw. The screw is provided in a bag together with the wall plugs and screws for mounting.
12. Press the test / reset button (Fig. 1). An alarm should be triggered.
13. Press again the test / reset button to clear the alarm.

i *The detector is tested during production process with special gas mixtures. It is forbidden to test the detector by any improvised methods.*

5. Battery replacement

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

Replace the battery when the detector indicates low battery (3 short flashes of the LED indicator and 3 short beeps every 30 seconds).

1. Start the service mode in the control panel (if the detector is working in the ABAX 2 system and the controller is connected to a SATEL alarm control panel).
2. Remove the screw fastening the detector cover (Fig. 3).
3. Turn the cover counter-clockwise (Fig. 5) and remove it (Fig. 6).
4. Remove the discharged battery (Fig. 7).
5. Install a new CR123A 3 V lithium battery (Fig. 8).
6. Replace the cover (Fig. 9) and turn it clockwise (Fig. 10).
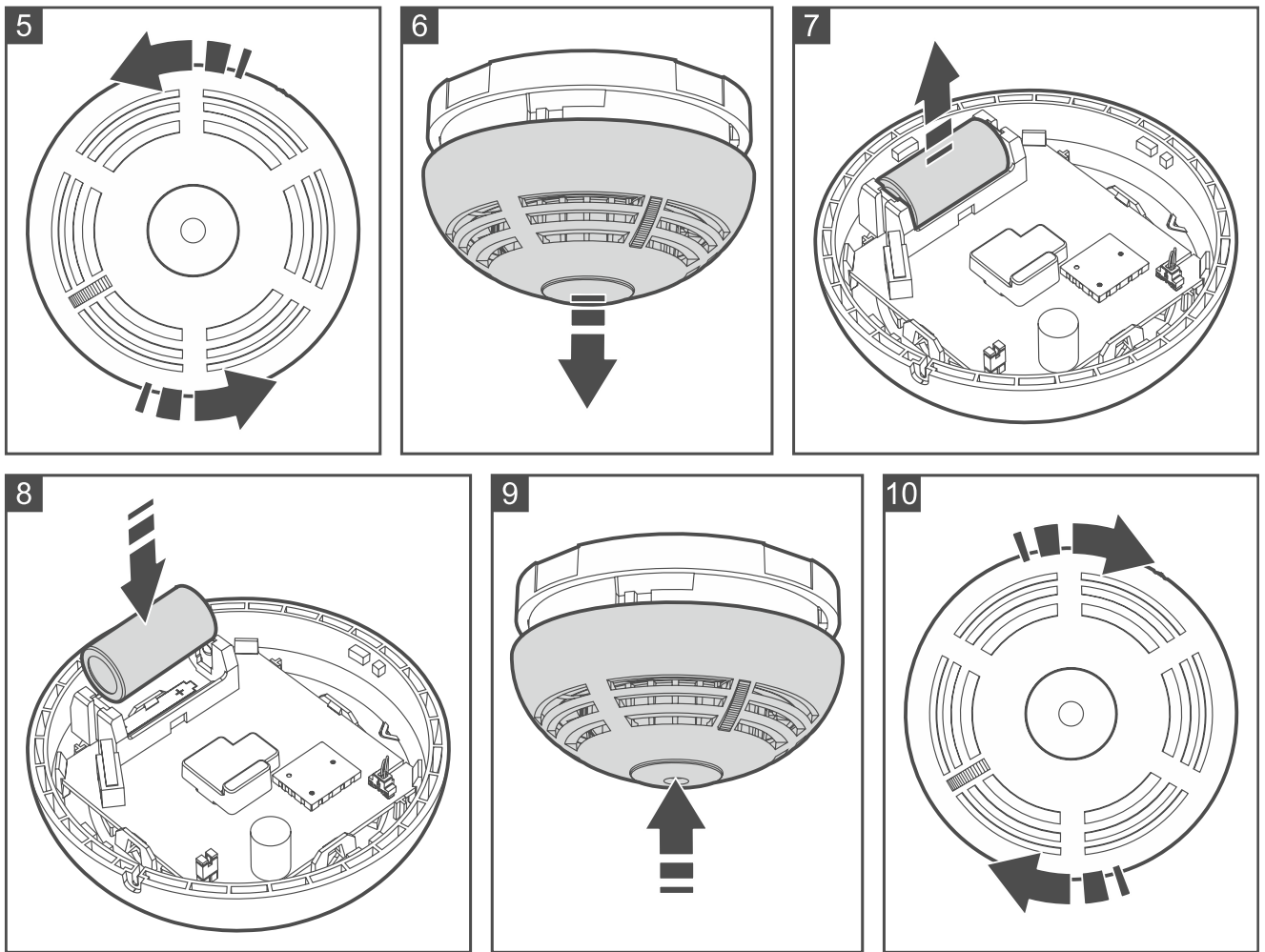
7. Lock the cover with a screw.
8. Press the test / reset button (Fig. 1). An alarm should be triggered.
9. Press again the test / reset button to clear the alarm.

6. Specifications

Operating frequency band .... 868.0 MHz ÷ 868.6 MHz / 915 MHz – 928 MHz
Radio communication range (in open area)
    ACU-220 .... up to 2000 m
    ACU-280 .... up to 1200 m
Battery .... CR123A 3 V
Battery life expectancy
    ABAX 2 .... up to 2 years
    stand-alone mode .... up to 5 years
Standby current consumption
    ABAX 2 .... 62 µA
    stand-alone mode .... 14 µA
Maximum current consumption .... 120 mA
Low battery voltage threshold .... 2.75 V
Temperature measurement range .... 0°C...+55°C
Temperature measurement accuracy .... ±1°C

Operating temperature range .... 0°C...55°C

Maximum humidity .... 93±3%

Dimensions .... ø108 x 54 mm

Weight .... 153 g