HARDWIRED ZONE / OUTPUT EXPANDER WITH POWER SUPPLY
ACX-201

The ACX-201 expander of hardwired zones and outputs with power supply is designed to work together with the ACU-100 wireless system controller. It is supported by the ACU-100 controller with firmware version 1.06 or later. 4 zones and 4 outputs enable hardwired equipment (detectors, sirens, etc.) to be connected to the wireless system. The expander zones can be configured similarly to the hardwired ones. The expander outputs are relay type outputs. The ACX-201 expander occupies 4 positions on the list of devices which can be operated by the controller. It has a built-in switching mode power supply with 1.2 A output current capacity and a battery charging and control system with disconnection of discharged battery.
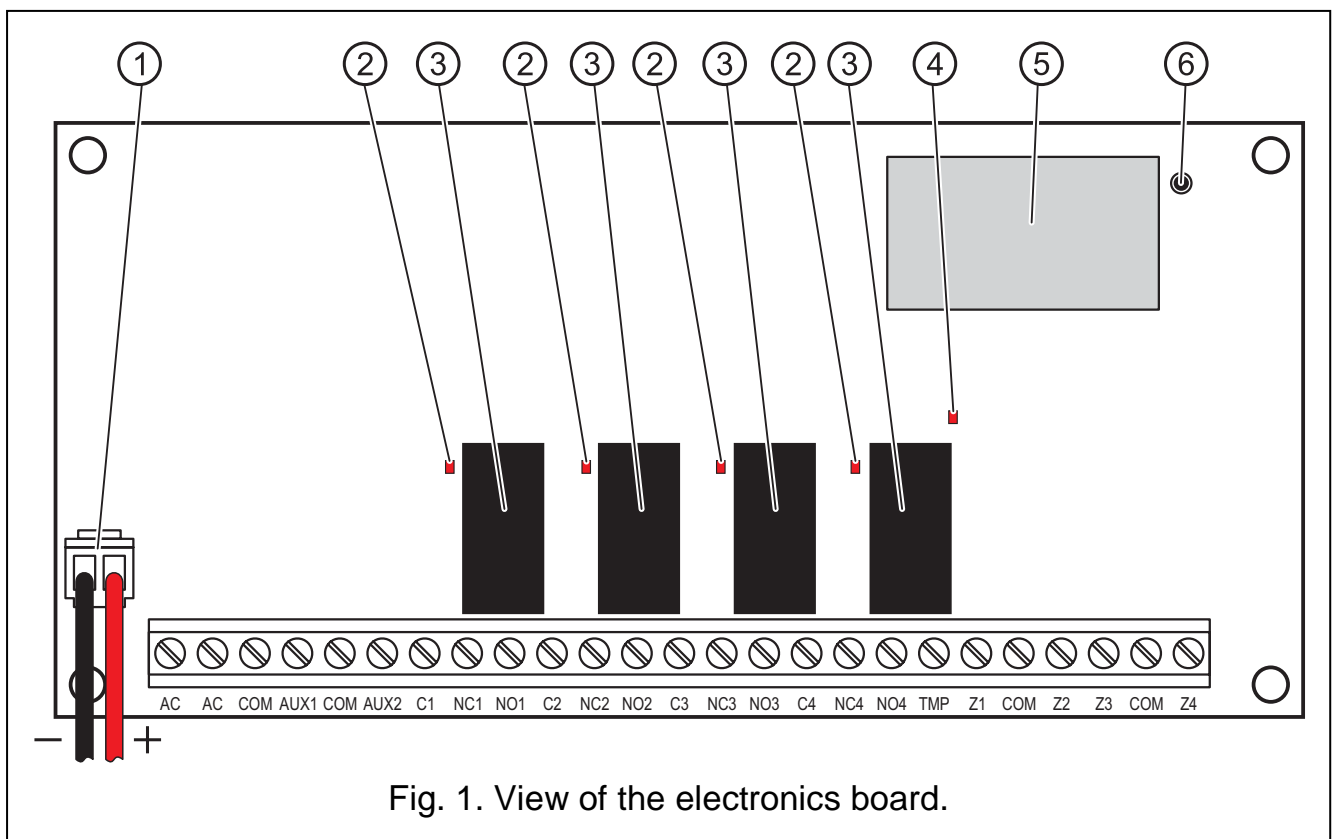
1. Description of electronics board

Fig. 1. View of the electronics board.

Explanations for Fig.1:

1 – **battery connecting leads** (red +, black -).
2 – **LED indicators**. Indicate output status. ON when the output is active.
3 – **relays**.
4 – **LED indicator**. Blinking during communication with the ACU-100 controller.
5 – **screen**.
6 – **external antenna socket**.

Description of terminals:

AC   - 18 V AC input. Connect alternating voltage from transformer secondary winding to the AC terminals. The minimum input voltage at the maximum transformer load by the module may not drop below **16 V AC**.

COM   - common ground.

AUX1…AUX2 - supply output. When connecting power consumers (detectors, modules with no power supply, etc.) be careful so as not to cause overloading. It is advisable that the power supply **load balance** be prepared. The total of input currents of power consumers and battery charging current may not exceed the power supply output current.

C1…C4   - common terminal of the relay output (C1 − output 1, C2 − output 2, etc.).

NC1…NC4   - terminal normally closed to the common terminal of the relay output (NC1 − output 1, NC2 − output 2, etc.). The terminal opens when active.

NO1…NO4   - terminal normally isolated from the common terminal of the relay output (NO1 − output 1, NO2 − output 2, etc.). When active, the terminal is closed to the common terminal.

TMP   - tamper circuit input of the module (NC). Leads of the expander housing tamper contact can be connected to TMP and COM terminals. If the TMP input is unused, it should be closed to the common ground.

Z1…Z4   - zone.

2. Installation

The ACX-201 expander of hardwired zones and outputs should be installed indoors, in spaces with normal air humidity.

⚠️ **Before connecting the transformer to a power circuit from which it will be supplied, deenergize the circuit.**

Never connect two devices with a power supply to one transformer.

As the expander has no switch for disconnecting the AC supply, it is important to let know the owner / user of the equipment how it should be disconnected from the mains (e.g. by indicating the fuse which protects the expander supply circuit).

Before permanent mounting of the expander, check the level of signal received from the expander by the ACU-100 controller and, if necessary, change the place of installation so as to select the optimum location in terms of communication.

1. Select the place where the ACX-201 expander is to be installed. When selecting the mounting place, take into consideration the electrical system of the facility. For the supply source, select the circuit which is always energized. The circuit should

be protected with a suitable fuse. It is recommended that the expander be mounted as high as practicable. This will enable a better radio communication range to be achieved, while avoiding the risk of the expander being accidentally covered by personnel moving around the premises. Using the ARF-100 tester, make sure that the level of radio signal will be suitable at the place where the ACX-201 expander is to be installed. Select another place of installation, if necessary.

2. Install plugs for fastening the expander electronics board in the housing.

3. Pull all the necessary installation cables (for 230 V AC supply, connections between hardwired devices and the expander, etc.) through the opening in the rear panel of the housing.

4. Attach the housing to the wall.

5. Secure the expander board in the housing.

6. Attach the antenna to the housing and connect it to the onboard socket.

7. Connect all the required leads to the expander terminals.

8. Connect the mains supply cables to the 230 V AC transformer terminals. Connect the ground cable to the terminal designated by the earth symbol ⏚, situated on the rear panel of the metal housing.

9. Turn on 230 V AC supply. Measure the voltage across the battery leads (the correct value is between 13.6 and 13.8 V DC) and check that all the consumers are appropriately supplied.

10. Turn off 230 V AC supply.

11. Connect the battery. The expander will not start upon connecting the battery alone.

Note: When the battery voltage drops below 11 V, the expander will send information on the battery failure to the ACU-100 controller, and when the voltage goes down to about 9.5 V the battery will be disconnected.

12. Turn on 230 V AC supply and add the ACX-201 expander to the wireless system (see the ACU-100 controller user manual). A label with 7-digit serial number that should be entered during registration of the expander in the system is provided on the electronics board.

Note: Should a situation occur that the expander supply must be disconnected completely, disconnect the mains first and the battery second. To reconnect the power supply, do it in the reverse order (i.e. the battery first, and then the 230 V alternating voltage).

13. Close the housing.

14. Configure the expander zones to suit your requirements. For information about the ACX-201 expander configuration, see the ACU-100 controller user manual.

3. Technical data

Working frequency band.. 868.0 MHz ÷ 868.6 MHz
Range ....up to 400 m (in open area)
Rated supply voltage .... 18 V AC ±10%

Rated power supply output voltage ....13.6...13.8 V DC
Average current consumption (depending on relay status).................. 40 mA ÷ 120 mA
Output current ....1.2 A
Battery charging current ....350 mA
Current-carrying capacity, AUX1 output ....0,5 A
Current-carrying capacity, AUX2 output ....0,5 A
Current-carrying capacity, relay outputs... 1 A/24 V
Environment class II
Working temperature range..-10 °C...+55 °C
Dimensions, electronics board .... 147 x 70 mm
Dimensions, housing ....250 x 250 x 80 mm
Weight .... 130 g

DECLARATION OF CONFORMITY	CE1471
Product: ACX-201 – Expander of ABAX system hardwired zones/outputs with power supply	**Manufacturer:** SATEL spółka z o.o. ul. Schuberta 79 80-172 Gdańsk, POLSKA tel. (+48) 0-58 320-94-00 fax. (+48) 0-58 320-94-01
Product description: Hardwired zone/output expander with power supply, designed to work together with the ABAX wireless system controller within the 868.0MHz – 868.6MHz frequency band, supplied from 18V DC power source. The device is intended to be used in intruder alarm systems.	
The product is in conformity with the following EU Directives: R&TTE 1999/5/EC	
The product meets the requirements of harmonized standards: ETSI EN 300 220-1: v.2.1.1; ETSI EN 300 220-2: v.2.1.1 ETSI EN 301 489-1: v.1.6.1; EN 301 489-3: v.1.4.1 EN60950-1:2004	
Notified entity participating in the conformity assessment : Identification No.: 1471	
Gdańsk, Poland 2007-11-26	*Head of Test Laboratory:* Michał Konarski
The latest EC declaration of conformity and product approval certificates are available for downloading on website **www.satel.pl**	

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