OUTPUT EXPANDER WITH POWER SUPPLY
# CA-64 OPS-OC
CA-64 OPS-R
CA-64 OPS-ROC

CE

The CA-64 OPS output expander with power supply is designed for operation in intruder alarm systems. It is capable of interfacing with the SATEL made CA-64, INTEGRA and VERSA control panels. The device enables expansion of the system by 8 programmable outputs. It has a built-in 2.2 A switching mode power supply with battery backup. It comes in three versions:

− CA-64 OPS-OC – 8 OC type outputs;
− CA-64 OPS-R – 8 relay outputs;
− CA-64 OPS-ROC – 4 OC type outputs and 4 relay outputs.

1. Description of electronics board
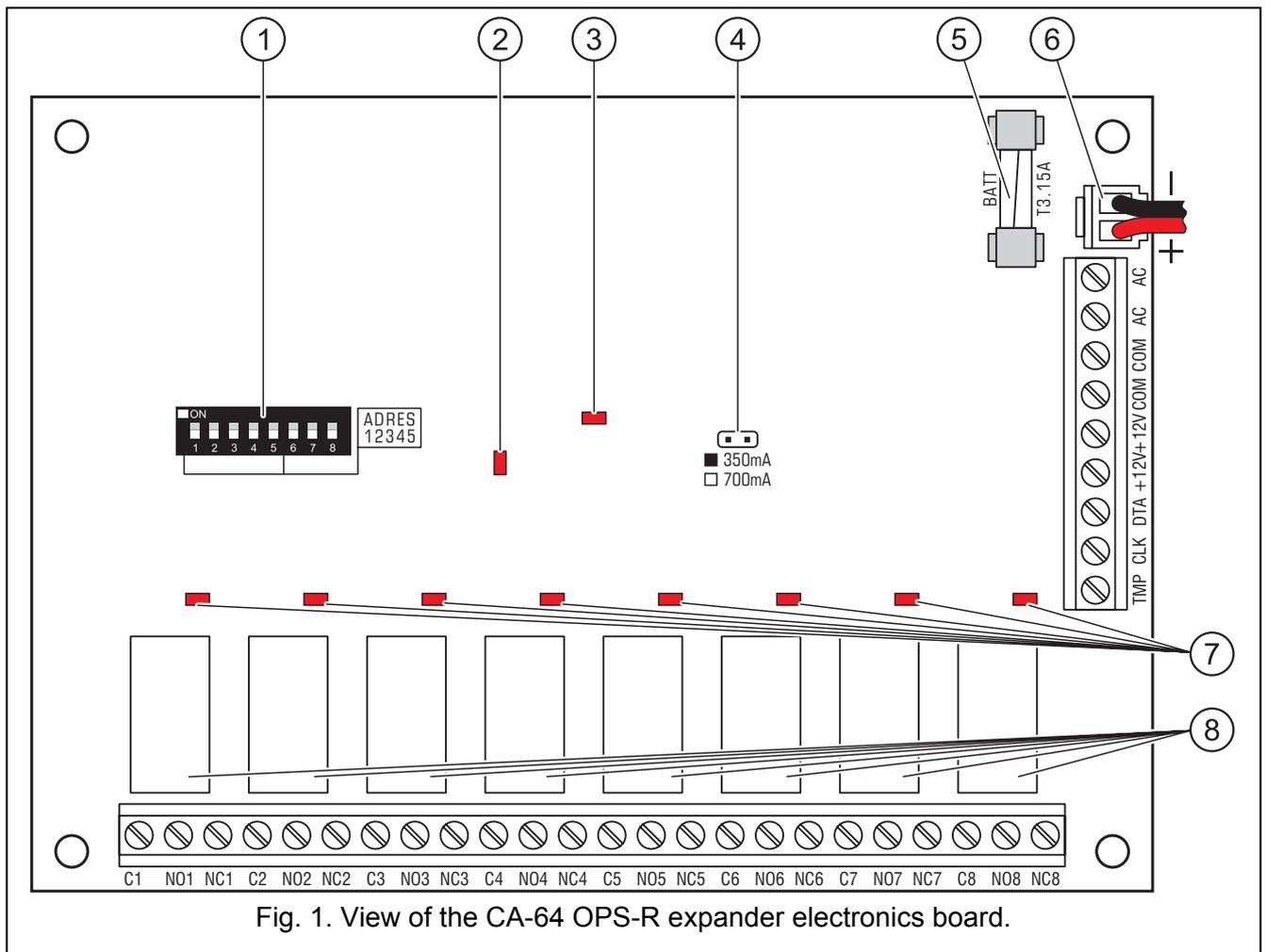
Fig. 1. View of the CA-64 OPS-R expander electronics board.

Explanations for Fig. 1:

1 - a set of DIP-switches for setting individual address of the module (see section DIP-SWITCHES).

2 - LED indicating communication with the control panel:

− LED is blinking – data exchange with the control panel;
− LED is lit – no communication with the control panel.

3 - LED indicator of battery charging.

4 - pins for setting battery charging current:
  - pins shorted (jumper on) – 350 mA;
  - pins open (no jumper) – 700 mA.

5 - fuse element of battery charging system (3.15 A).

6 - battery connecting leads (red +, black -).

7 - LED indicating status of the outputs:
  - OC type output: LED is ON – output shorted to ground;
  - OC type output: LED is OFF – output disconnected from ground;
  - relay output: LED is ON – terminal NO is shorted to common terminal C, and terminal NC is disconnected from common terminal C;
  - relay output: LED is OFF – terminal NO is disconnected from common terminal C, and terminal NC is shorted to common terminal C.

8 - relays – all relays are only installed in the CA-64 OPS-R version. In the CA-64 OPS-ROC version, the relays are installed for outputs from 5 to 8. In the CA-64 OPS-OC version, the relays are not installed.

The RESET pins are used during the manufacturing process, hence they must not be shorted.

Description of the terminals:

C1...C8 - common relay terminal or OC type output;

NO1...NO8 - terminal normally disconnected from the common relay terminal. When in active state or in case of reversed polarization, it is shorted to the common terminal.

NC1...NC8 - terminal normally shorted to the common relay terminal. When in active state or in case of reversed polarization, it is disconnected from the common terminal.

TMP - tamper input (if no tamper contact is connected to this terminal, it should be shorted to common ground).

CLK - clock.

DTA - data.

+12V - power supply output (+12V DC).

COM - common ground.

AC - 18 V AC supply input (from secondary winding of the transformer).

1.1 DIP-switches

The DIP-switches from 1 to 5 are to be used for address setting. The address must be different from that of the other modules connected to the communication bus of alarm control panel. In order to determine the expander address, add up the values set on individual switches as shown in Table 1.

DIP-switch number	1	2	3	4	5
Numerical value (for switch in ON position)	**1**	**2**	**4**	**8**	**16**

Tabela 1.

DIP-switches 6, 7 and 8 are not used.
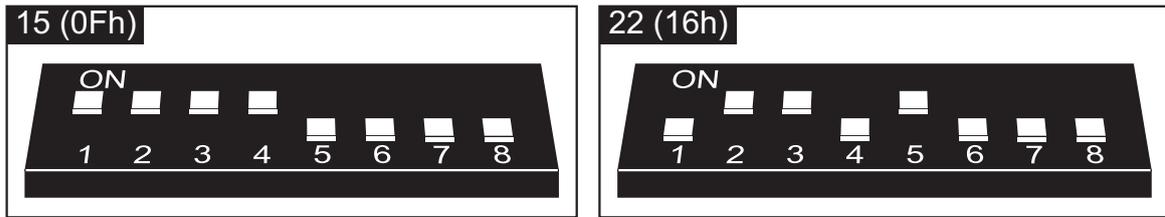
Fig. 2. Examples of address setting (address 15 (0Fh) is required for interfacing with VERSA series control panels).

2. Installation and start-up

⚠️ **All connections should only be made when power supply of the alarm system is disconnected.**

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

Prior to connecting transformer to the circuit from which it will be supplied, the circuit must be deenergized.

The expander must be supplied with 18 V (±10%) alternating voltage from the transformer. The transformer should be permanently connected to the 230 V AC mains. Before you proceed to making cable connections, familiarize yourself with the electrical system in the facility. To supply the device, you should choose a circuit which is always alive and properly protected. Instruct the user of the device on how the transformer should be disconnected from the mains (e.g. by showing him/her the fuse protecting the supply circuit).

For a backup power supply, use a 12 V sealed lead-acid battery.

Note: If the battery voltage drops below 11 V for more than 12 minutes (3 battery tests), the expander will signal a battery trouble alarm. After the voltage goes down to abt. 9,5 V, the battery will be disconnected.

1. Install the expander electronics board in the enclosure.
2. Using the DIP-switches, set the expander address.
3. Using cables, connect the CLK, DTA and COM terminals to the corresponding terminals of the control panel communication bus.
4. Connect the cables of enclosure tamper contact to the TMP and COM terminals (or short the TMP terminal to the COM terminal).
5. Connect the cables of the devices whose operation is to be controlled by the control panel, to the selected output terminals.
6. Connect the 230 V AC cables to the terminals of transformer primary winding.
7. Connect the terminals of transformer secondary winding to the AC terminals of the expander.
8. Using the jumper, set up the battery charging current (350 mA or 700 mA).
9. Switch on the 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 devices connected to the module are properly supplied.
10. Switch off supply 230 V AC.
11. Connect the battery. The module will not start after connecting the battery alone.
12. Turn on power supply of the alarm system.
13. Start the identification function in the control panel. When the identification is completed, the outputs will be assigned respective numbers in the alarm system (output numeration rules are described in the alarm control panel manual).

3. Specifications

Supply voltage .... 18 V AC ±10%, 50-60 Hz
Number of programmable outputs 8
Power supply output voltage ....13.6 V...13.8 V DC
Battery trouble reporting voltage .... 11 V ±10%
Battery cut-off voltage..9.5 V ±10%
Power supply output current..2.2 A
Battery charging current (switch-over)..350 mA / 700 mA
Maximum current consumption .... 138 mA
OC-type programmable output maximum load.. 50 mA
Maximum relay switching voltage .... 24 V
Maximum relay switching current .... 2 A
Electronics board dimensions... 142 x 102 mm
Environmental class according to EN50130-5...II
Working temperature range...-10 °C…+55 °C
Weight   CA-64 OPS-OC.. 155 g
                CA-64 OPS-R.. 197 g
                CA-64 OPS-ROC .... 181 g

Latest EC declaration of conformity and product approval certificates are available for downloading on website **www.satel.eu**	CE