

The CA-64 EPS expander is dedicated to interfacing with INTEGRA series or CA-64 alarm control panels. It allows extension of the alarm system by eight zones having identical features as the zones of the control panel main board. Additionally, the expander supports vibration and roller shutter motion detectors. The module has a built-in switching-mode power supply of 1.2 A capacity. It also has battery charging circuit and testing circuit with disconnection of discharged battery. This manual applies to the expander with electronics version 2.0 and firmware version 2.0 (or newer).

### 1. Description of electronics board

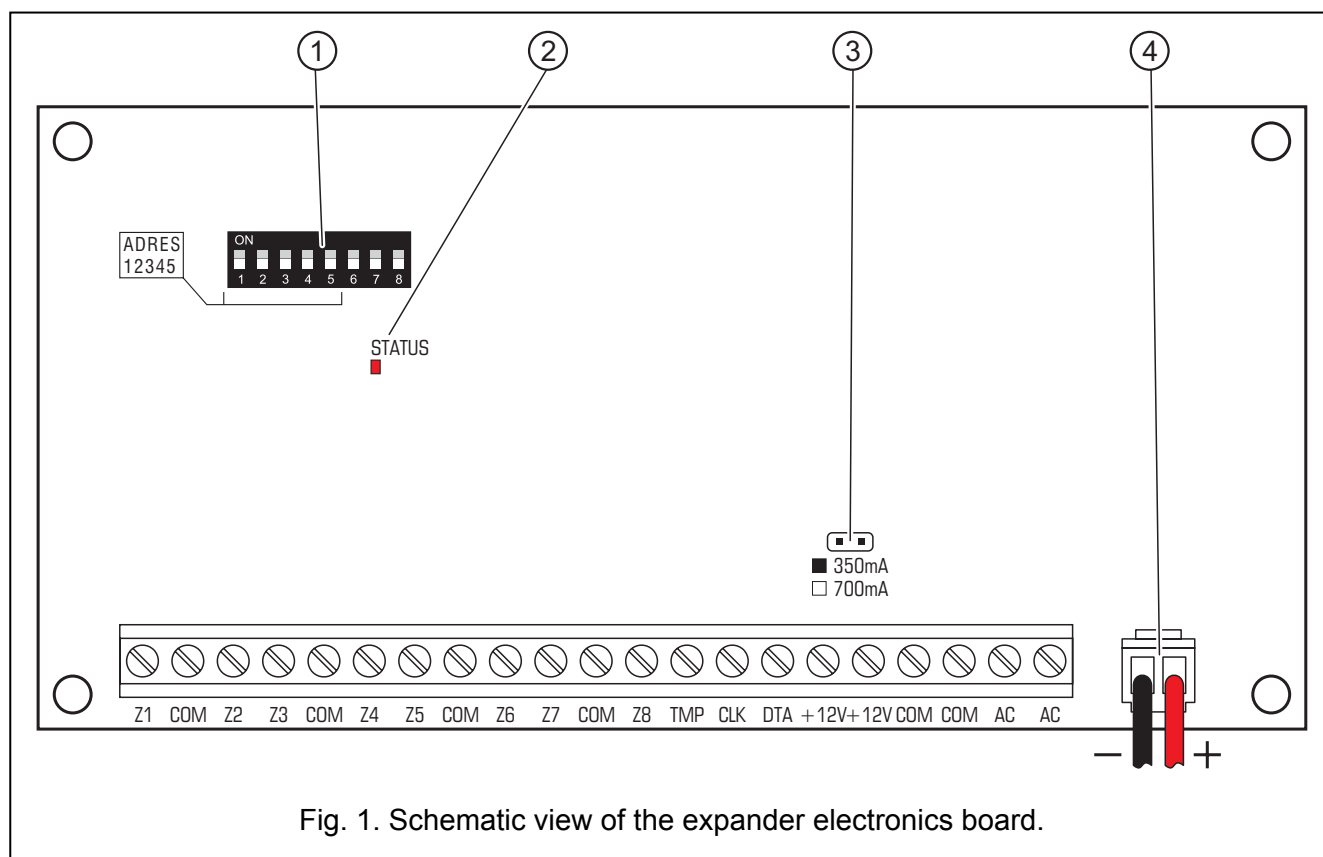


Fig. 1. Schematic view of the expander electronics board.

#### Legend:

- 1 – **package of DIP switches** designed for setting individual address of the module and for selecting the type of supported detectors (see: DIP SWITCHES).
- 2 – **LED STATUS** to indicate the process of communication between control panel and expander:
  - blinking – data exchange with the panel;
  - ON – no data exchange with the panel (the module and the control panel connecting wire is damaged, identification of module is not carried out or the STARTER program is started in the control panel);
- 3 – **pins** to set up the battery charging current:
  - pins shorted – 350 mA
  - pins open – 700 mA
- 4 – **leads to connect the battery** (red +, black -).

#### Description of the terminals:

**Z1...Z8** – zones

- COM** - common ground
- TMP** - module tamper detection circuit (NC) – if not used, it should be shorted to ground.
- CLK, DTA** - expander bus
- +12V** - power supply output. To the expander power supply unit may be connected other electric energy consumers (e.g. detectors, modules with no power supply). However, be careful not to cause an overload. It is advisable to prepare the power supply **load balance**. The total of current inputs for all consumers and battery charging current is not to exceed the capacity of power supply unit.
- AC** - power supply input 17...24 V AC (from mains transformer secondary winding). The minimum input voltage at the **maximum load** of the transformer by the module must not drop below **16 V AC**.

### 1.1 DIP switches

By using the DIP-switches you can set an individual address of a device and select the type of detectors to be served.

To set the address, use the 1 to 5 switches. This address must differ from those of the other modules connected to the control panel expander bus. In order to determine the expander address, add up the numbers set on particular DIP switches, according to Table 1.

Switch number	1	2	3	4	5
<b>Numerical equivalent</b> (for switch in ON position)	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>16</b>

Table 1.

Five switches allow addresses to be assigned to 32 expanders (numbers from 0 to 31). Addresses of the expanders connected to one bus can not be repeated, while the addressing sequence is optional. It is recommended that you assign consecutive addresses, starting from zero, to expanders and other modules connected to one bus. This will permit problems to be avoided during extension of the alarm system.

To determine the type of detectors to be supported, and the method of expander identification in the system, use the switch 8. If the switch is set to OFF position, the expander zones can be programmed as NO, NC, EOL, 2EOL/NO or 2EOL/NC. If the switch 8 is set to ON position, the expander zones can be programmed as NO, NC, EOL, 2EOL/NO, 2EOL/NC, vibration or roller.



**The switch 8 must be set to OFF position for the CA-64 control panel and for the INTEGRA series with firmware up to and including version 1.04. Only with this setting the control panel will be able to identify the expander.**

**The switch 8 can be set to ON position for the INTEGRA series control panels with firmware in version 1.05 or later. The expander will be identified as CA-64 EPSi.**

**The switches 6 and 7 must be set to OFF position.**

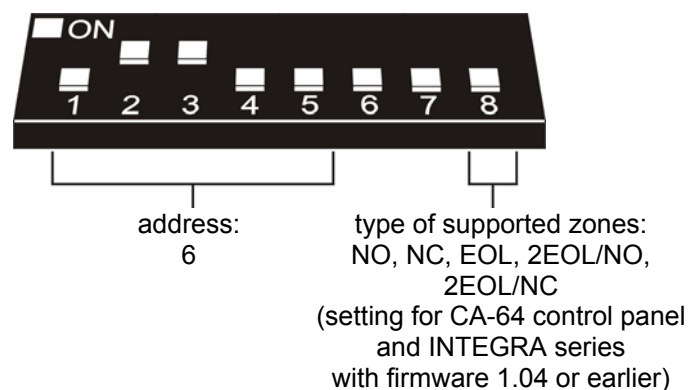
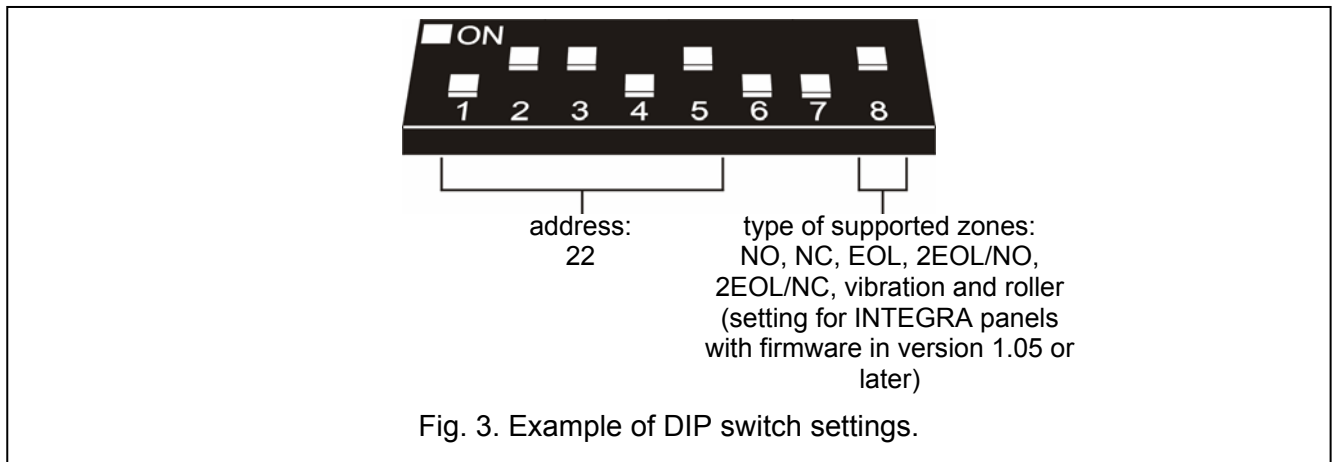


Fig. 2. Example of DIP switch settings.



## 2. Mounting and installation




**Prior to starting the module hookup, switch off power supply of the security system.**

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

**Before hooking up the transformer to the circuit from which it will be supplied, remember to deenergize the circuit.**

**Because the expander module has no power switch, it is important that the device owner or user be advised on how the device is to be disconnected from the mains (e.g. by showing the cut-out in the expander supply circuit).**

The transformer should be permanently connected to the 230 V AC mains voltage. Therefore, before you are about to make the cabling, familiarize yourself with the facility electrical installation. Select the circuit which is always energized as your supply circuit. The circuit should be protected by an appropriate safety device.

1. Fasten the expander board in its housing.
2. Using cables, connect the terminals CLK, DTA and COM to the expander bus on the control panel main board.
3. Using the DIP switches, set up the appropriate expander address and the type of the supported detectors.
4. Connect the detector leads (for connection description refer to the alarm control panel installer manual).
5. Connect the leads of the housing tamper contact to the TMP and COM terminals. Where two expanders are installed in the housing, the TMP input of one of them is to be shorted to the COM terminal, and the contact leads are to be connected to the TMP input of the other expander.
6. Connect the 230 V AC cables to the **AC 230 V** terminals of transformer. In case of mounting in metal housing, connect the wire of the electric shock protection circuit to the terminal block provided next to the transformer and marked with the ground symbol .
7. Connect the terminals of transformer secondary winding to the AC terminals on the expander electronics board.
8. Using the jumper, set up the battery charging current (350 mA or 700 mA).
9. Switch on the 230 V AC supply in the circuit to which the transformer is connected. 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 the battery alone is connected.

**Note:** If the battery voltage drops below 11 V, the module will signal battery failure. After the voltage drops to approx. 9.5 V, the battery will be disconnected.

### 3. Starting the expander

1. Turn on power supply of the security system. The LED indicating communication with the alarm control panel will come on with steady light.
2. Call the "Expander identification" function in the LCD keypad (→Service mode →Structure →Hardware →Identification). When the identification is completed, the LED which indicates communication with the alarm control panel will start blinking.

**Note:** In the process of identification, the control panel writes to the module memory a special (16-bit) number intended to detect the module presence in the system. Replacement of the expander with another (even one having the same address set up on the switches) without a new identification will trigger alarm (module tamper – verification error).

3. Using the LCD keypad or computer (DLOAD64 or DLOADX program, depending on the control panel type), perform programming of the module zones.
4. Save the module settings in the control panel memory.

### 4. Numeration of zones

After completion of the identification procedure, consecutive numbers in the system will be assigned to the expander zones. The numeration depends on the control panel size and is also affected by the address set in the expander and the number of bus to which the expander is connected. The expanders connected to the first expander bus have priority over those connected to the second expander bus. It should be borne in mind, when new expanders are being installed in the system. If the address of a new zone expander is lower or the expander is connected to the bus 1, and a zones expander was connected to the bus 2, the numeration of zones in the system will be changed (the new expander will receive the numbers of zones assigned before to the previously installed expander, and a greater number of expanders installed may cause considerable changes in the system). If such a situation occurs, you can restore the previous status by means of the DLOADX program (INTEGRA series) or the DLOAD64 program (CA-64 control panel). Open the „Hardware” tab in the „Structure” window, and click on the expander in which you want to change the zones numeration, and then click on the „Advanced settings” button in the right-hand lower corner of the window. A window will be displayed where you can move the expander position throughout the list, thus changing the numeration of zones. The changes in the zones numeration introduced in this way will be valid until the identification procedure in the system is repeated.

### 5. Technical data

Number of zones .....	8
Supply voltage .....	17V...24 V AC
Power supply output voltage .....	13.6 V...13,8 V DC
Average current consumption.....	39 mA ±10%
Current capacity .....	1.2 A
Battery charging current (switch-over).....	350 mA or 700 mA
PCB dimensions .....	140x68 mm
Weight .....	47 g

The latest EC declaration of conformity and product approval certificates are available  
for downloading on website [www.satel.pl](http://www.satel.pl)



SATEL sp. z o.o.  
ul. Schuberta 79  
80-172 Gdańsk  
POLAND  
tel. + 48 58 320 94 00  
info@satel.pl  
www.satel.pl