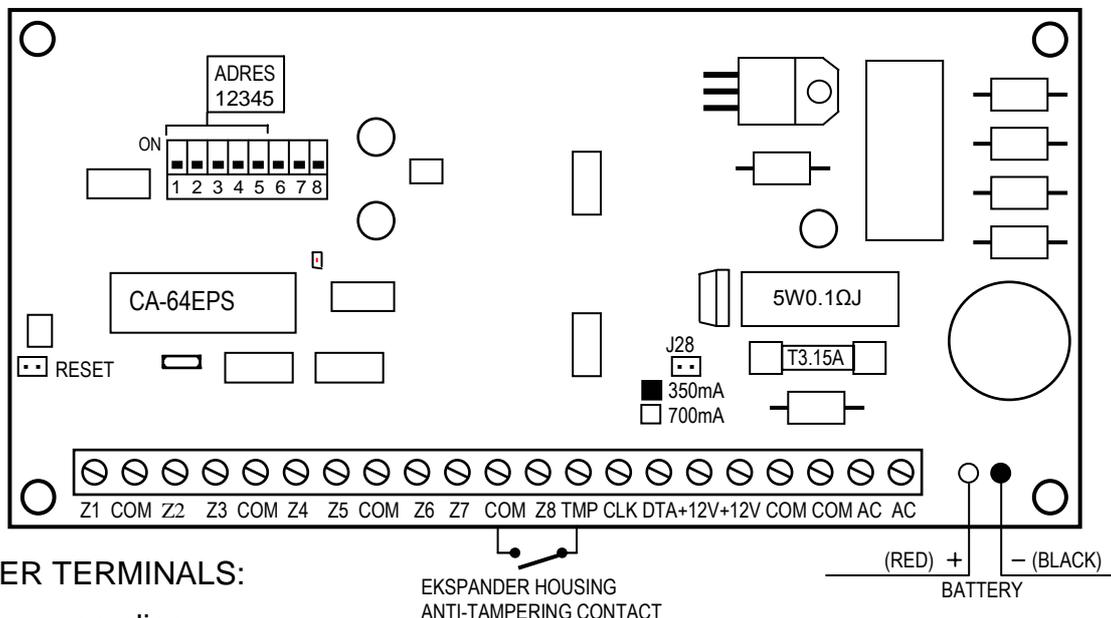


The CA-64 EPS expander is a device designed to work together with the INTEGRA and CA-64 alarm control panels. It allows extension of the alarm system by eight zones having identical features as the zones of the control panel main board. NO and NC type detectors may be connected to the expander. The zones can be configured to work with a single parameter (EOL - the circuit closed with a 2.2kΩ resistor) and with a double parameter (2EOL - the circuit closed with two 1.1kΩ resistors). Each of the zones can be individually programmed and assigned one of a few dozen types of response to violation. The module has a built-in impulse power supply of 2.2A capacity. It also has battery charging circuit and testing circuit with disconnection of discharged battery.

## MODULE DESCRIPTION



### EXPANDER TERMINALS:

- Z1 do Z8** - zone line
- COM** - ground
- TMP** - expander anti-tampering circuit input (NC)
- CLK, DTA** - expander bus
- +12V** - power supply input
- AC** - module power supply 17...24V AC (from mains transformer secondary winding)

The minimum input voltage at the **maximum load** of the transformer by the module must not drop below **16V** (AC).

The **set of switches** situated on the board is intended to set up the individual address of the expander.

On the board there are installed two **LED controls**:

1. The LED situated next to the address switches signals communication process between the control panel and the expander. During normal operation, the LED blinks with a changing frequency.
2. The LED situated next to the pins designated as J28 is on when the battery status is being tested by the module and when discharged battery is being charged. During testing, the power supply voltage is reduced by the processor, and the consumers are supplied from the battery. The testing takes place every 4 min. and lasts less than 20 s.

The **J28 pins** serve to set up the battery charging current:

- 350mA - pins shorted,
- 700mA - pins open.

**Two leads** (red and black) serve to connect the battery.

The **RESET pins** are used in production process and should not be shorted.

The **TMP input** is intended for connecting the expander housing anti-tampering contact, and, if unused, it should be **shorted to ground**.

Also other electric energy consumers (e.g. detectors, modules with no power supply) may be connected to the expander power supply unit. 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.

## INSTALLATION

The zones expander with power supply may be installed in a control panel housing (with at least 30VA transformer and place for 7Ah battery). Begin installation of the housing with placement of distance pins inside.

## EXPANDER CONNECTION AND POWER SUPPLY ACTIVATION

The expander power supply unit should work being permanently connected to 230V AC mains supply. Therefore, before you commence on the cabling work, make yourself familiar with the electrical system of the site. Choose a circuit that is always live to power the module. The circuit should be protected with a suitable fuse.

**CAUTION!** Before connecting the power supply unit to the circuit, from which it is to be supplied, switch off voltage in that circuit.

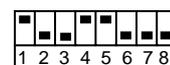
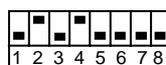
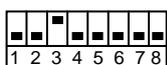
Prior to the commencement of connecting the module to the existing alarm system, turn off power supply of the whole system.

1. Secure the expander board on the distance pins installed in the housing.
2. Connect the module to the first / second expander bus (the first bus: CK1, DT1, COM; the second bus: CK2, DT2, COM - as designated on the control panel main board). Up to 32 modules of various types can be connected to one bus.
3. Using the switches, set up the expander address.

The address is to be set up by means of the switches 1 to 5. Status of the other switches (6, 7, 8) is irrelevant. To determine the expander address, summarize the values corresponding to the switches set in position **ON**, according to the table:

Switch number	1	2	3	4	5
<b>Numerical equivalent</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>16</b>

Examples of addressing:



Five switches allow addresses to be assigned to 32 expanders (numbers from 0 to 31).

Addresses of expanders connected to one bus may not be repeated, while the sequence of addressing is optional.

4. Connect the leads of detectors and housing anti-tampering contact to the inputs. Details of the cable connections are presented in the control panel manual.

5. Connect the consumer power supply leads to terminals +12V and COM on expander board.
6. Connect the 230VAC power leads to the connection block situated in the housing under the transformer cover, and the earth lead to the terminal designated with the symbol of grounding .
7. Connect the alternating voltage transformer lead-outs to the terminals designated with the "AC" symbol on the expander board. **Do not connect two expanders with power supply to one transformer.**
8. Using the J28 jumper, set up the battery charging current (350mA or 700mA).
9. Switch on the expander 230VAC power supply. Measure the voltage on battery cables, making sure it has the correct value of approx. 13.7V, and check that all consumers are properly powered.
10. Switch off the module power supply and connect the battery. The module will not become active on connecting the battery alone. The processor enables the module power supply to be switched over to battery operation after about 12 seconds of steady-state voltage at the AC terminals (as from 230V AC mains switching-on).

**NOTE:** *If the battery voltage drops below 11V, the module will signal battery malfunction to the control panel, and when the voltage drops to abt. 9.5V, the battery will be disconnected.*

On completion of all the connections and making sure they are correct, you can proceed to activate the expander zones.

**CAUTION!** As the expander module has no switch to make possible disconnection of the mains supply, it is important that you inform the owner or user of the equipment, how to disconnect it from the mains (e.g. by showing him the fuse which protects the expander supply circuit).

## MODULE ACTIVATION

**NOTE:** *In systems having expansion modules with their own power supply, it is recommended to start the panel first, and then the other components of the system.*

1. Switch on power supply of the alarm system and the expander (the LED on the expander board - next to the switches - will flash with steady light).
2. Call the function "Expander identification" (→Service mode; →Structure; →Hardware) from the keypad. The LED control situated on the expander board - just beside the addressing switches - should start blinking. After completion of the identification, all the **new** zones are programmed to the factory defaults, the detector type being set to zero (no detector)
3. Using the DLOADX or DLOAD64 program, set the zone parameters.
4. End the service mode operation, saving data in the FLASH memory.

**NOTE:** *In the process of identification, the control panel is saving in the expanders memory a special (16-bit) number, which serves to check the expander 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 an alarm (module tamper - verification error).*

## NUMERATION OF ZONES

The identification function automatically sets up numeration of zones in the system. Assigned numbers depend on a size of the control panel, which is connected with the module. For example in case of the INTEGRA 64 and CA-64 the numbers 1-16 belong to the main board zones. Further numbers are assigned to the first bus expander zones (from the lowest to the highest zones expander address), and then to the second bus zones expander. The zones numbers 49-64 may be assigned to LCD keypads. This should be borne in mind when installing new expanders in the system. If the new expander address is lower than the address of an expander previously installed in the system, or where an expander is added to the first bus, and there was already another connected to the second bus, the identification function - according to the principle described above - will shift the numeration of zones between the expanders (i.e. the new expander will take over the zone numbers of the previously installed expander, which, in turn, will be given the numbers of new zones added to the system). If this is the case, the previously assigned expander zones can be restored by means of the DLOADX or DLOAD64 program. To do so, call the function „*Advanced settings*” (→Structure; →Hardware; →Expander settings).

## TECHNICAL DATA

Number of zones.....	8
Expander supply voltage.....	17V...24V AC
Internal power supply output voltage, rated .....	13.6V...13,8V DC
Current efficiency .....	2.2A
Battery charging current (switch-over) .....	350mA or 700mA
Dimensions .....	68x140 mm

Latest EC declaration of conformity and product approval certificates can be downloaded from our Web site [www.satel.pl](http://www.satel.pl)



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