

# GSM-panel with integrated modem

## TECHNICAL FEATURES

### **Panel**

Number of zones	7, with expander 15, balanced
Relay output terminals	4pcs. max.7A/220V non-induced
Power supply voltage	12V, 400mA
ON/OFF control	relay contact

### **Communication**

Number of dialling cycles	3
Communicated SMS-s	system status, zones status, relays status
Call duration	40 sec./ ph.

The panel is designed to work with all GSM providers.

This panel is provided with an integrated modem, so it needs nothing else but a valid SIM-card in order to function.

When activated through the KL ("KEY" input - non-balanced), the panel monitors all zones, and in case of intrusion, dials the telephone numbers recorded in sequence on positions 2 to 9 on the SIM-card, three times or only once (see below! ).

When deactivated through the KL ("KEY" input - balanced) , the panel monitors only zone 7 (TAMPER), and in case of intrusion, dials the telephone numbers recorded in sequence on positions 2 to 9 on the SIM-card.

## CONNECTION

### **NOTE! Switch manually the GSM-module and disable the PIN-code.**

The panel on/off control is connected at the KL terminals, which may be a relay contact or an "open collector" - an RC output, a keypad, a card reader, a power switch, even the contact of some of the panel relays, where a combination of devices is possible, so that the panel could be controlled from several locations. It is important to know, that when the KL input is balanced to "ground" with the respective resistor, the panel is switched off, while when it is non-balanced, regardless of whether it is "open" or "short-circuit", the panel is switched on.

The sensors are connected to the Z1 - Z7 input terminals (to Z8 - Z15 respectively). Only zone 7 is fixed as a TAMPER and is 24h. active. It can be so programmed that some zones can be "switched ON" while others – "switched OFF". The difference between these is that the 'ON' zones are monitored by the system and in case of intrusion in these the alarm is triggered, while the 'OFF' zones are only monitored and their status is reported at the command 'REPORT' by the operator requiring the report, but they do not cause an alarm event. It is up to the installer and the client to connect an output from a power supply unit indicating the presence of network voltage of 220V, or a unit indicating the status of the battery, or a sensor for the status of an external device, etc.

If 7 zones are not enough, there is an option to connect a zone expander for additional 8 zones (the coupling of the zone expander is plugged into the socket of the panel), so their total number is increased to 15. The zones numbered 8 to 15 are factory programmed as "OFF". To indicate on the panel that there is an 8 zone expander connected, at least one zone with a number greater than 7 is to be set as 'ON'. Then it starts to also monitor and read zones 8 to 15, where these particular zones, programmed as 'ON', with a switched on panel, shall trigger an alarm, while those programmed as 'OFF' shall only be monitored and reported.

The relay output terminals can directly control units consuming 220V with power of up to 1,000W **non-induced load!** (about 500W induced) or units consuming lower voltage of up to 7A. **RELAY 4** is programmed to switch on at an alarm signal. It can switch on/off as the other relays - by a command, but when triggered by an alarm event, it can be switched off only after switching off the panel from the KL input, or automatically - after dialling all the numbers recorded on the SIM-card, and if the zone which has triggered the alarm signal has been restored.

It is necessary to provide a battery of 12 V/ >7 Ah for the cases of power failure. If the panel remains for a long time without a 220V supply and the battery is exhausted, the GSM-modem will turn

off. When power supply is restored, you need to manually switch on the modem by pressing the START button. The battery shall be charged in a few hours.

The battery is to be changed in about 5-7 years.

## PROGRAMMING

### TELEPHONE NUMBERS PROGRAMMING

The entry under number 1 on the SIM-card is provided for the number of the installer. By dialling from this number the 'switched on' and the 'switched off' zones of the panel can be respectively set. If this number is not recorded on positions either 2 to 6, it cannot control the output terminals of the system.

Entries 2 - 9 on the SIM-card are provided for sending a warning if an alarm event occurs; those recorded on positions 2 to 6 can also control the relay outputs of the system and to require 'REPORT', while those on positions 7,8 and 9 are only for warning in case of an alarm, and only in this case, when the panel dials them at an alarm event, they have the right to control the panel (if they know how).

Insert the SIM-card into an ordinary GSM device (with a keypad and display).

**Disable the "PIN code" function!** (usually it is found in the MENU -> SETTINGS -> SECURITY -> PIN-code = off).

Erase the first 9 entries on the SIM-card. **Attention!** These entries may not be the first 9 in the sequence in which the device displays them (in alphabetical order)! To see the contact entered under a particular number, select 'READ', and you will see something of the kind:

.... (NAME) ...

088..... (number)

ENTRY NUMBER 001 -> this is the serial number on the SIM-card.

You can make your entries by using the keypad of the GSM device as usually, in your preferred order. When making an entry, the GSM-device shall find the first empty position available and shall save the entry there. You can edit the entries at any time.

**Attention! When accessing the entry by the GSM "list" option, the serial number of the entry on the SIM-card is also displayed. This number is the important one, and not the sequence in which the device lists them using the arrows, which is the alphabetical order.**

When you do not wish to fill in positions 2 to 6, but you need to enter a number with rights starting from 7 and up, first enter something on the empty positions until position 7, then enter the numbers on positions 7,8 and/or 9, then erase that "something" already entered on the non filled-in positions 2-6.

Check if everything is correct by the 'read' button on the GSM-device.

### SWITCHING ON

Place the programmed SIM-card into the card holder of the modem. **To open it, slightly push in the direction shown by the arrow, and after the lid moves a little, open it as a door.** Place the SIM-card; make sure that its golden plated contacts match the contacts of the card holder, and that its bevelled edge fits well into the designated slot of the card holder.

Supply power. Press the START button of the modem to switch it on.

The panel red LED indicator starts flashing slowly. This is the "NO CONNECTED" mode, at the GSM RS duplex connection initial setting, which may last for up to 1 minute. At a successful connection, the red LED goes off, and the green LED starts flashing slowly. This is the "CONNECTED" working mode. In this mode, the panel will work continuously and will maintain the connection with the GSM. If the red LED flashes from time to time, this is a sign that there is a problem with the SIM-card, or that you have not disabled the PIN code, or that the card does not make a good contact in the card holder.

After initially entering into the „CONNECTED“ mode, wait for about 1 min. before running tests, to pass all the settings from the panel to the GSM-modem.

If for some reason the connection with the GSM fails, after several attempts the panel goes back to the initial "NO CONNECTED" mode, searching for settings. If the reason is in the cables or the couplings, after fixing them, the panel should itself restore its connection with the GSM without any external interference.

When ALARM is activated, the procedure of dialling the recorded on the SIM-card telephone numbers is initiated, in an ascending order from 2 to 9 and then again from 2 to 9, three times. The

empty or invalid telephone numbers are skipped. The dialled telephone number rings for about 40 sec. If the dialled contact picks up and goes to a mode of a direct panel control, after the call is terminated the panel shall finalize the on-going cycle of warning, then shall stop the warning, and shall enter into its normal working mode. Otherwise, the dialling continues until the full procedure is finished, regardless of the status of the zones or of the KL. The green LED indicator flashes quickly all the time. After the procedure has been finalized, the dialler goes to the "CONNECTED" mode.

When **sending an SMS** the green LED indicator starts flashing quickly, then yet quicker, and finally the red LED may also flash, which is normal. If sending was successful, the panel goes back to the "CONNECTED" mode.

### ON/OFF ZONES PROGRAMMING

At any time, when the panel is in the "CONNECTED" mode (see above), you can perform programming of the 'ON' and 'OFF' zones from the telephone of the installer whose number is entered on position 1 on the SIM-card. This is done as follows (the panel is connected, switched on, and in the "CONNECTED" mode):

- On the telephone of the installer, dial the panel number;
- Wait for the panel to pick up and to hear the confirmation signals from it;
- Press \* - you should hear a confirmation signal;
- To switch on zone 6 for example, dial the combination #6\*8 - you will hear an 'ON' confirmation signal;
- To switch off the same zone, dial #6\*0 - you will hear an 'OFF' confirmation signal; (generally, on the panel you switch ON by the 8, and switch OFF by the 0 – as if 8 and 0 are the status of the C-K switch located on the panel of your GSM)
- After you finish programming all zones, as you would like them to be, hang up. The panel shall send you an SMS containing all the settings you have done.

*Note: If you wait for more than 10sec. between two key pressing, the panel shall hang up itself.*

### RELAY OUTPUT TERMINALS CONTROL

At any time, when the panel is in the "CONNECTED" mode (see above), or when the panel has dialled you in the ALARM mode, you can control the relay output terminals or require a 'REPORT' about the status of the system, from a telephone whose number is entered on a position 2 to 6 on the SIM-card. This is done as follows (the panel is connected, switched on, and in the "CONNECTED" mode):

- from your telephone dial the panel number;
- Wait for the panel to pick up and to hear the confirmation signals from it;
- To switch on RELAY 2 for example, dial the combination 28 - you will hear an 'ON' confirmation signal;
- To switch this relay off, dial 20 - you will hear an 'OFF' confirmation signal;

**Please wait for the signals to finish before you enter a new command.**

(generally, on the panel you switch ON by the 8, and switch OFF by the 0 – as if 8 and 0 are the status of the C-K switch located on the keypad of your GSM)

*Note: If you wait for more than 10sec. between two key pressing, the panel shall hang up itself.*

### REQUIRING A SYSTEM STATUS 'REPORT' SMS

At any time, when the panel is in the "CONNECTED" mode (see above), or when the panel has dialled you in the ALARM mode, you can control the relay output terminals or require a 'REPORT' about the status of the system, from a telephone whose number is entered on a position 2 to 6 on the SIM-card. This is done as follows (the panel is connected, switched on, and in the "CONNECTED" mode):

- from your telephone dial the panel number;
- Wait for the panel to pick up and to hear the confirmation signals from it;
- To receive the current status of the system, press #1;

you will receive the current status of the system, of the zones and of the relays.

- To receive the system status saved in the memory, press #2;

In both cases you will receive the current status of the relays and other the current status of the system zones or the status of the zones saved in the MEM from the time of the last switching on at occurring of an alarm event, and later - until the system has switched off, or until the present time.

## STEP-BY-STEP SUMMARY

The here provided description is valid for the switching on of any GSM, tested or not with this panel. Please read everything carefully, and then follow the instructions step by step.

1. Insert the SIM-card in the GSM device, switch it on and disable the PIN-code.
2. Set the numbers you want in the GSM device.
3. Wire the panel zones, or at least zone 7 and zone KL.
4. Insert the SIM-card into the GSM-modem.
5. Connect the 12V power supply of the panel (then 220V).
6. Press the 'START' button on the GSM-device and wait for the panel to enter the 'CONNECTED' mode.
7. From the telephone with installation rights, connect with the GSM and program the 'ON and 'OFF' zones.
8. You will receive an SMS containing the performed settings.
9. You can control the outputs by calling from a telephone authorized for 2 to 6, or by requiring a REPORT SMS from such a telephone.
10. Switch on the panel and dial through the numbers by activating the alarm in an 'ON' zone.
11. If so far everything is all right, the panel stays in the "CONNECTED" mode and the green LED flashes slowly.

*Please, send all your questions, feedback, recommendations, etc. to e-mail: eta-sys@goonet.org, so we could be of mutual assistance!*