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***PC GSM 612  
HOME ALARM***

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**PPE**® **GUIDANCE  
FOR INSTALLERS**

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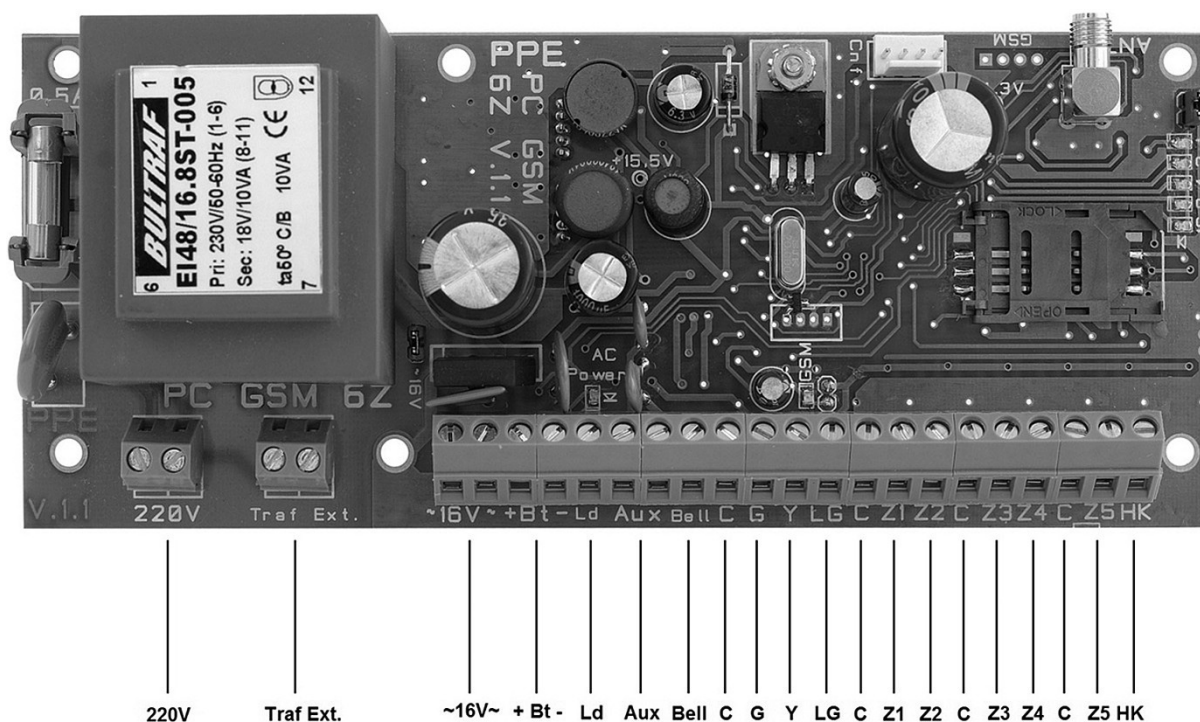
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# Technical parameters

1. Balanced zones: 6 pcs.
2. Possibility to configure zones:
  - type: turned off, delayed, instant, nonstop, internal, hidden switch;
  - active state and balance: open or closed contact, balanced or unbalanced, single or paired;
  - name of each of the zones, which can be used in SMS; each description can contain up to 32 characters;
  - duration of the activation signal for each of the zones;
  - permission to arming with active instant or delay zone;
3. Other parameters which can be configured:
  - entry delay for each of the zones;
  - exit delay;
  - duration of the sound signal (siren);
  - delay of the announcement at loss of AC power (power failure) and its restoration;
  - mode of turning on/off at arming:
    - hidden switch;
    - GSM phone.
  - access code to configuring;
  - GSM numbers for announcement - up to 6;
  - for each GSM number to be programmed:
    - mode of announcement: SMS and/or call;
    - permission to call at turning on/off at arming;
    - permission to turning on/off at arming by telephone;
    - permission to send SMS in the failure/restore of the AC power.
  - GSM number to check the validity and limits of a prepaid SIM card;
4. Powerful output 12V/1A for siren.
5. Low power output 12V/10 mA for remote LED indication.
6. Two low power outputs 12V/10 mA with open collector and 1k resistor to + 12V, active at low logic level, for:
  - Y - presence of an alarm;
  - G - armed mode.
7. Power supply: ~ 220V (or 16V/30W external transformer).
8. Reserved battery power 12V/up to 7Ah.
9. Automatic battery charge with periodic cycle of discharge.
10. Current for charging the battery - 0,3A.
11. Built-in GSM module.
12. Remote LED indication on the status of the GSM module.
13. Remote LED indication on the current status.
14. Built-in LED indicators about the level of the radio signal of the GSM module (32 degrees).
15. Possibility to test the zones.
16. Current consumption from the battery while armed at voltage 12.5V, with wired zones and indication, with no power to external sensors - no more than 100 mA.
17. Possibility to turn off the built-in LED indication in order to reduce the consumption.

**Warning:** The events of the twin zones are transmitted to the centre by numbers, to which was added 10, for example the twin-zone №3 will be displayed as a zone №13.

## Description of the terminals (luster terminals)



**220V** - AC power ~220V from the mains

**Traf Ext.** - AC power ~ 220V for external transformer, passed through the fuse on the board; if using an external transformer, remove the jumper "~ 16V".

**Caution:** The cables with voltage of ~ 220V power outlet to be only connected in the terminal "220V".

**~ 16V ~** - AC power supply ~ 16V/30W from an external transformer

**+ Bt -** - plus and minus of the battery

**Ld** - LED "Status" for indicating of operating mode, connects between **Ld** and **Aux** (+ 12V), with a plus to the **Aux**

**Aux** - + 12V power supply for external sensors, two luster terminals

**Bell** - siren connects between plus of the battery **Bt +** and **Bell**

**C** - Common, ground, chassis, minus of the power supply

**G** - Green for the bus

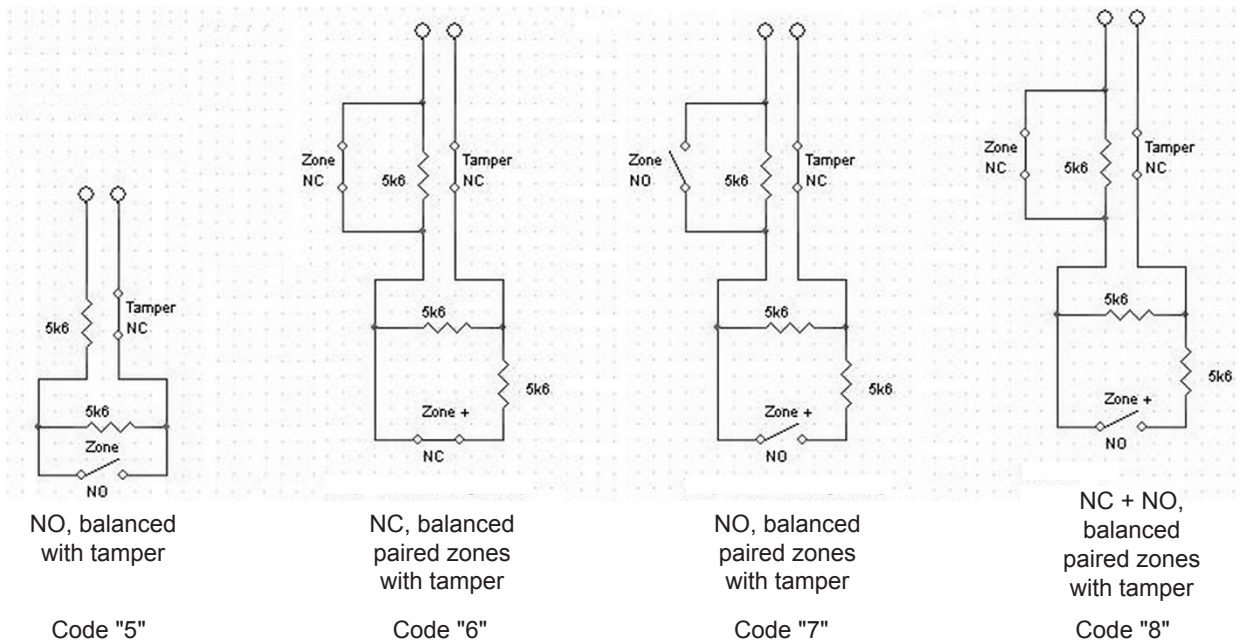
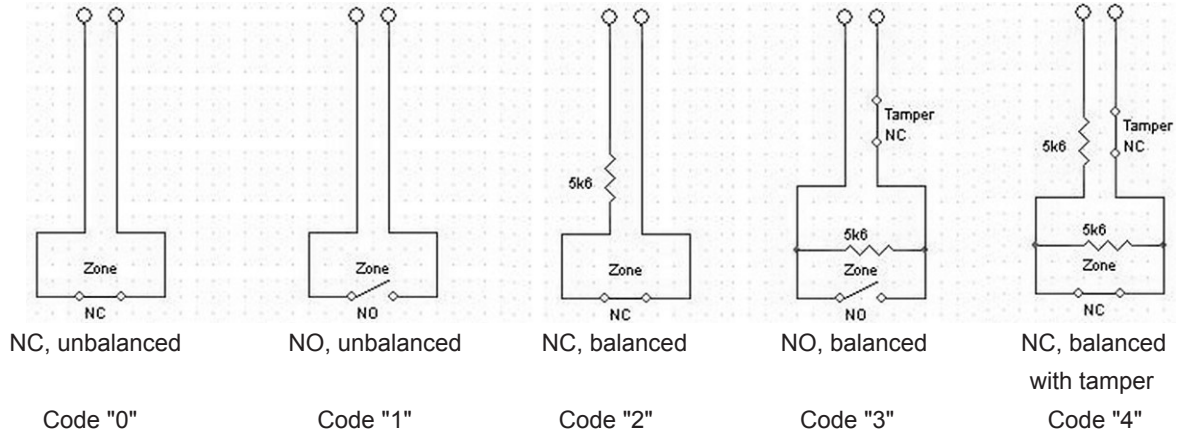
**Y** - Yellow for the bus

**LG** - Led GSM, LED for status indication of the GSM module, connects between **LG** and **Aux** (+ 12V), with plus to **Aux**; this LED is duplicated on the board;

**C** - Common, ground, chassis, minus of the power supply

- Z1** - Zone 1, - balanced, connects between **Z1** and ground
- Z2** - Zone 2, - balanced, connects between **Z2** and ground
- C** - Common, ground, chassis, minus of the power supply
- Z3** - Zone 3, - balanced, connects between **Z3** and ground
- Z4** - Zone 4, - balanced, connects between **Z4** and ground
- C** - Common, ground, chassis, minus of the power supply
- Z5** - Zone 5, - balanced, connects between **Z5** and ground
- HK** - Zone 6, - balanced, connects between **HK** and ground

Connecting of the zones is done in the following ways:



## Test of the zones

1. Entry into test mode: before supplying power to the panel remove the wires to terminals "Y" and "G" and connect jumper between them.
2. Upon successful entry into test mode the remote LED for the mode of the Control Panel "Status" does not light for about 5 seconds after the power. The 5 LEDs for indicating the level of GSM radio signal show running lights for about 5 seconds, then proceeds to test mode.
3. In the presence of any active zone the remote LED "Status" lights and the corresponding of the 5 LEDs for the level of GSM radio signal lights as follows:  
Zone 1 - lights the LED "1" and the remote LED "Status".  
Zone 2 - lights the LED "2" and the remote LED "Status"  
Zone 3 - lights the LED "4" and the remote LED "Status"  
Zone 4 - lights the LED "8" and the remote LED "Status"  
Zone 5 - lights the LED "16" and the remote LED "Status"
4. With activated "Tamper" (interruption) or fault (short circuit) for a zone, the corresponding LED flashes.
5. In the presence of "Tamper" the indication for active zone goes off.
6. In the absence of an active zone the running lights continues.
7. Signal "Gong" is generated for the zones for which it is configured.
8. This mode is released after turning off the power and removing the jumper between terminals "Y" and "G".

## Configuration parameters

1. Times for entering in any delay zone and exit time.
2. Duration of the turning on of the high current output (siren).
3. Delay of transmission of signals for stopping and restoring the battery Charge.
4. GSM numbers - up to 6 pcs.
5. For each GSM number: options for sending SMS alarms, for sending SMS for faults, for permits for turning on and off module in armed mode and for format of the returned response (SMS or call).
6. Names of each of the zones, which can be used in SMS. Each description can contain up to 32 characters.
7. Type of each zone: turned off, delayed, instant, 24-hr., interior, hidden switch.  
When the zone is turned off, its condition has no effect on the station.

The delayed zone is activated at its actuation, but if the station is in armed mode, this causes an alarm after the time of entry, programmed for it.

The instant zone causes an alarm immediately after its activation, if the station is in armed mode.

24-hour zone causes an alarm immediately after its activation, regardless of the mode of the station (armed or disarmed).

The interior zone is bypassed (omitted) when after engaging the station in armed mode, during the exit time is not activated delayed zone.

Hidden switch: this zone can turn on and off the alarm in armed mode.

8. Method of balancing and active state of each of the zones (in a separate scheme).

9. Activation time of each of the zones (with step 10 ms).

10. Permission for arming at active instant or delay zone (bypass upon activation).

11. Method of switching on and off in armed mode: from a hidden switch or GSM.

12. Access Code for programming mode.

13. The duration of the signal "**Gong**" / "**Chime**" is with step of 10 ms.

14. ID parameters of the module: ID number and serial number.

15. Permission for operation mode of GPRS.

16. Parameters of the GPRS session: APN address, PDP address.

17. TCP / IP address and port of two communication servers (primary and backup).

18. Timeouts to resume of the GPRS session and for passing to another server.

19. Code for data encryption.

20. Specific parameters for UDP communication to SurGard System III: ID number of SurGard System III and interval of inquiry (Heartbeat).



# Configuration tables

## Parameters for the zones

Parameter	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Entry delay [sec]	15	0	0	0	0	0
Zone type	1	2	2	2	2	5
Active state and balance	1	1	1	1	1	1
Bypass upon activation	-	-	-	-	-	-
Activation time [x10ms]	30	30	30	30	30	30
Gong in the siren	yes	-	-	-	-	-
Exit delay [sec]	40					
Duration of the gong [x10ms]	10					
Activity of the siren [sec]	60					
Delay in the indication of a power failure [min]	30					
Delay in the indication for restoration of the power [min]	5					

Zone type: 0 = Off, 1 = Delay, 2 = Instantaneous, 3 = 24 hours,  
4 = Interior, 5 = Arming (hidden switch).

### Active state and balance (measured voltages):

0. NC, unbalanced <0,5V 1. NO, unbalanced > 4,5V  
 2. NC, balanced 2,9V 3. NO, balanced 2,9V  
 4. NC, balanced, with tamper 2,9V 5. NO, balanced, with tamper 4,3V  
 6. NC, paired zones, with tamper 1,8V 7. NO, paired zones, with tamper 4,3V  
 8. NC+ NO, paired zones, with tamper 2,9V

NC = normally closed contact; NO = normally open contact.

The tamper is always NC.

Balancing: with a resistor 5k6 of the line (see diagram "Variants of connecting zones).

Description of the zones (numbers and Latin characters) - maximum of 32 characters:

Zone 1: .....

Zone 1 Alarm

Zone 2: .....

Zone 2 Alarm

Zone 3: .....

Zone 3 Alarm

Zone 4: .....  
 Zone 4 Alarm

Zone 5: .....  
 Zone 5 Alarm

Zone 6: .....  
 Zone 6 Alarm

At paired zones the last letter of the sent SMS for the added zone is '+'.

**Parameters for the codes**

	Switch	Keypad	RFID	GSM
Method of inclusion/exclusion under arming	Yes	No	No	Yes
Configuration code	homeal			

**GSM parameters**

Notification	GSM 1	GSM 2	GSM 3	GSM 4	GSM 5	GSM 6
SMS on alarm	Yes	-	-	-	-	-
Dial at alarm	No	-	-	-	-	-
Dial at inclusion/exclusion under arming	Yes	-	-	-	-	-
Permission for inclusion/exclusion under arming	Yes	-	-	-	-	-
SMS on failure	Yes	-	-	-	-	-
After switching on power	Yes	No	No	No	No	No

GSM number 1: .....

GSM number 2: .....

GSM number 3: .....

GSM number 4: .....

GSM number 5: .....

GSM number 6: .....

GSM number to check the remaining limit: .....

Mtel: \*101#, Telenor: \_\_\_\_\_, Vivacom: \*102#

## GPRS parameters

GPRS working mode:	GPRS, TCP/IP, UDP, Encryption, SMS
GPRS ID Code TCP/IP:	03 77 77
GPRS ID Code UDP:	00 77 77
GPRS Server 1:	213.222.33.1
GPRS Server 2:	213.222.33.1
GPRS Port 1:	26086
GPRS Port 2:	26086
Server Timeout [x10 sec]:	35
Module Timeout [x10 sec]:	15
Encryption Code:	FF FF .... FF
Периодичен Тест [h]:	6
UDP Acknowledge Interval [sec]:	60
Username:	
Password:	
APN:	
PDP:	0.0.0.0
Config Code:	homeal
Serial Number:	

### Measured voltage at the terminals of the different kinds of zones

Code	Zone	Restore	Alarm	Alarm+	Both	Tamper	Trouble
0	NC, unbalanced	<0,5V	>5V	-	-	-	-
1	NO, unbalanced	>5V	<0,5V	-	-	-	-
2	NC, balanced	2,9V	>4,5V	-	-	-	<0,5V
3	NO, balanced	2,9V	<0,5V	-	-	>5V	-
4	NC bal. with tamper	2,9V	4,3V	-	-	>5V	<0,5V
5	NO bal. with tamper	4,3V	2,9V	-	-	>5V	<0,5V
6	NC, paired zones tamper	1,8V	3,7V	2,9V	4,3V	>5V	<0,5V
7	NO, paired zones tamper	4,3V	2,9V	3,7V	1,8V	>5V	<0,5V
8	NC+NO paired zones with tamper	2,9V	4,3V	1,8V	3,7V	>5V	<0,5V

## Inclusion/exclusion under arming

1. Inclusion/exclusion by a hidden switch
  - If there is the corresponding option **Hidden switch** enabled for this in **Alarm Codes Mode**;
  - will be sent a call to the authorized GSM numbers (after the exit time expires) if there is an option enabled for this in **Armed Report**;

- if during the exit time the central is excluded by the hidden switch, a call is not sent.
2. Inclusion/exclusion by a GSM call:
    - if there is enabled for this option **GSM** in **Alarm Codes Mode** and if the calling GSM has an enabled option in **Armed Enable** of **GSM Report Options**: interrupts the call and answers: with two rings to the inquirer at inclusion and one ring to the others enabled numbers in **Armed Report** of **GSM Report Options**; the order of the rings depends on the order of registration of GSM numbers in the memory module;
    - there is no exit time;
  3. The remote indication LED turns on where the system is activated (armed).
  4. At arming by a hidden switch, if there are active instant or delayed zones, the remote indication LED starts flashing (5 times in second) and the siren squawks two times for each active zone. The alarm station is not included in security.
  5. 5. If when the exit time expires there is at least one zone, which is not active during the exit time and for which **is not** allowed "bypass at activation", the remote indication LED turns off, the system generates six squawks and the panel **is not** included in security.
  6. The zones status is monitored only at the time of inclusion of the hidden switch. If the zone is activated or restored before expiring of the exit time, there is no reaction. After expiring of the exit time, the system makes another check of the zone status and decides whether to arm or disarm.
  7. After expiring of the time for generating alarm (turning off the siren), the remote indication LED starts flashing shortly 2 or 3 times in a second. This flashing is terminated after the new arming

The "bypass at activation" is good to be allowed for doors and windows, in order not to be forgotten open on exit.

If there is a faulty sensor zone, the panel despite its damage includes arming and then signalled for the damage.

## Armed mode

1. Upon activation of a zone, depending on its type, programmed into Zones Type (turned off, delayed, instant, 24-hr., internal) activates an alarm at the central. The mode of reaction depending on the type of the zone is described in Section "Configuration parameters".
2. Depending on the programmed options a call is sent to the relevant authorized GSM numbers in **Armed Report**.
3. The siren activates for the time, programmed in **Bell Time [sec]**.

4. When the central is in alarm mode, the remote indication LED flashes twice per second.
5. The signals „Tamper” and „Trouble” for each of the zones (for which are possible depending on the connection method), regardless of the type of zone, are processed as for 24-hour zone (immediately generates an alarm).

## Announcement

1. 1. The module can operate in the following modes of announcement:
  - SMS
  - GPRS to the monitoring centre
2. At the initial turning on the module can send a call to the first recorded number depending on the option **GSM Mode Options: Report On/Off to #1** (if possible for the SIM card):
3. The text of the sent SMS, which is not configurable by the client may be:
  - AC Power TROUBLE ALARM*
  - AC Power RESTORED*
  - Low Battery TROUBLE ALARM*
  - Low Battery RESTORED*
  - Low Capacitance Battery TROUBLE*
 Or after the text for the relevant zone:
  - *TAMPER*                    interrupted zone or activated "Tamper"
  - *TROUBLE*                 fault zone (zero resistance)
  - *DOUBLE*                    at paired zone
4. Continuous monitoring of the battery voltage: if for 30 minutes in all checking the voltage is <10.5V, a message is sent for diluted battery "*LOW BATTERY TROUBLE ALARM*" and respectively if for 30 minutes in all checking the voltage is > 12.5V, a message is sent for the battery recovery „*Low Battery RESTORED*".
5. Minutely check the battery capacity by briefly load: if for 30 minutes in all checking the voltage is <10.5V in the laden condition, a message is sent for low battery capacity „*Low Capacitance Battery TROUBLE*".
6. In case of loss of AC power, upon expiry of the programmed time is generated the signal „*AC Power TROUBLE ALARM*" and „*AC Power RESTORED*" - after the restoration of the power supply.
7. The signals on the state of the battery and the power supply are not sent with the a call but only with SMS, if permitted for GSM numbers.
8. The text of SMS-s finally contains the validity of the SIM card and the remaining amount (for prepaid cards only), the quality of the GSM signal (the signal level RSSI 0-31 and the ratio of error rate BER 0-7)q as well as the battery voltage, for example:
 

**do 31.10.2010, 002.76lv, csq=02/07, batt.=13.8V**

The validity of the SIM card and the remaining amount are valid only for pre-paid cards (Prima, B-Connect and others, which have number for automatic check).

9. Upon receiving a call from any unprogrammed in the memory GSM number interrupts it.

10. Ring and SMS are sent only upon activation of zones. At recovery is not sent anything.

11. 11. If after arming the module in security mode there is remained active sensor (damaged or activated), an alarm is activated depending on the programmed parameters. If the zone of the damaged sensor is 24-hour, the alarm is activated immediately after power-up.

12. Possibility of "Gong" by the siren of each of the zones with adjustable duration.

13. Ability to check the status of the module via SMS: will be sent SMS containing "**code=homeal,rds=0887123456.**", as "homeal" is the password for programming.

The module sends an SMS to the specified number:

System ARMED, zones: A N N A N N, AC Power On

System disarmed, zones: N A N N N N, AC Power Off

wherein "A" means „Active” - „Active zone", the zone is activated and „N" means „Not Active” - the zone is not activated

14. LED Indication: 5 green LEDs "1", "2", "4", "8" and "16" about the level of GSM radio signal:

- 5 digit binary LED indication on the board about the level of GSM radio signal (CSQ): add together glowing LEDs only, respectively with coefficients 1, 2, 4, 8 and 16;

- on these LEDs can be determined problems with the turning ON the GSM module:

- LED „2" is flashing - the microcontroller communicates with the GSM module;

- LED „4" is flashing - the microcontroller checks the PIN code on the SIM card; if the SIM card is not recognized, start flashing all 5 LEDs; if the SIM card is not unlocked, for about 15 seconds flash simultaneously LEDs "1", "2" and "4", then the module restarts;

- LED „8" is flashing - the microcontroller verifies for unerased SMS in the SIM card;

- LED „16" is flashing - the GSM module registers in the GSM network.

# LED Indication

## Remote LED for the control panel regime "Status" or red LED of the reader

Goes ON for about 5 seconds after the power supply: waits command for configuring by a computer. Skips if the panel switches to test mode of the zones.

OFF: The panel is disarmed.

Lit constantly: the panel is arming.

Flashes five times per second:

- after power supply of the panel it is not detected voltage from the transformer (flashes for 30 seconds or until the voltage appears);

- if at arming by a hidden switch, in duration of the exit time: there is an active instant or delayed zone.

Flashes two or three times quickly during a half-second, followed by a half-second pause: there was an alarm, not in armed mode. This indication disappears after new arming.

Flashes two or three times quickly during a half-second, followed by a half-second glowing: there was an alarm, the panel is in armed mode. This indication disappears after new arming.

Flashes two or three times quickly during a half-second: there was an alarm, the panel is in alarm, the siren is turned ON.

Flashes once per second: passes entry time or exit time.

- Level: 5 pcs. green LEDs „1”, „2”, „4”, „8” and „16” („1” is from the side of the bridge, „16” is from the side of the SIM card); on circuit boards intended for GPRS communications „1” is blue:

- 5 digit binary LED indication on the board about the level of GSM radio signal (CSQ): add together glowing LEDs only, respectively with coefficients 1, 2, 4, 8 and 16; by these LEDs can be determined also the current status of the GSM module:

- LED „1” is flashing - the microcontroller communicates with the GSM module;

- LED „2” is flashing - the microcontroller checks the PIN code on the SIM card; if the SIM card is not recognized, all 5 LEDs start flashing; if the SIM card is not unlocked, for about 15 seconds flash simultaneously LEDs "1" and "2", then the module restarts;

- LED „4” is flashing - the microcontroller verifies for unerased SMS in the SIM card;

- LED „8” is flashing - the GSM module registers in the GSM network;

- LED „16” is flashing - the GSM module performed GPRS session and receives TCP / IP address.

In a GPRS communication mode: LED "1" lights in case of communication via GPRS to the monitoring center and goes off briefly during data transmission.

In order to reduce the current consumption, the 5 LEDs for level of GSM radio signal can be turned off by removing the jumper to them.

Note: On the circuit boards designed to work over GPRS with monitoring center, the LED "1" instead of green is blue. In GPRS mode it has the following additional indications:

- Does not glow: no GPRS connection to the server;
- Flashes: There is a link to the server, but there is a discrepancy in the identification codes: serial number, ID code of the module, encryption;
- Glows constantly: GPRS connection to the server is undamaged;
- Shortly OFF: the module transmits data to the server.

### **Remote LED for the GSM module mode**

- Does not glow: the module is not turned ON
- Flashing: 64ms ON / 800 ms OFF: has not detected a network
- Flashing: 64ms ON / 3000 ms OFF: has detected a network
- Flashing: 64ms ON / 300 ms OFF: GPRS communication

### **Green LED on the PCB**

The green LED lights in the presence of AC power.

## **Configuring**

There are two ways to configure the control panel - via PC and via SMS.

### **Configuring via PC**

Configuration is done via a PC serial COM port, through Hiperterminal or other communications software with a special signal cable. If the computer does not have COM port, you can use the USB port and adapter USB/RS232. The procedure is as follows:

1. To include the system to a personal computer it is necessary to connect the signal cable between the respective serial "Com" port of the computer and communication connector "UART" on the PCB. On the computer is started terminal software with speed 38400 bps, no flow control. The echo is better to be OFF.

2. The signal cable converts the RS-232 or USB interface of the PC to UART. The wires are as follows:

- power supply + 12V, coming from the module; for the USB cable it is not necessary
- Tx of the module (UART);
- Rx of the module (UART);
- a signal ground - from the antenna connector.



3. The programming can be carried out as using specialized software for the purpose, also with a standard terminal (e.g. Hiperterminal).

4. At powering the module after the initial message:

"GSM Home Alarm Panel Version V.12.01.05 is Ready..."

the 5 LED level of GSM radio signal go OFF, the remote LED for status "**Status**" lights and the display shows:

"Please, enter config keys..."

5. Within 5 sec. after displaying the message (while the remote LED "**Status**") glows, should be entered **&\$**.

6. The display shows all data stored in the memory in the following format:

**== Programm Mode:**

<b>Alarm Parameters:</b>	<b>"ap"</b>
<b>Codes Parameters:</b>	<b>"cp"</b>
<b>GSM Parameters:</b>	<b>"gp"</b>
<b>Send Whole Memory to RAM:</b>	<b>"sm"</b>
<b>Receive Whole RAM:</b>	<b>"rr"</b>
<b>Receive Whole Flash:</b>	<b>"rf"</b>
<b>Write and Exit:</b>	<b>"go"</b>

**Enter Parameters Type ...**

>

after which it is expected the introduction of a command ">".

7. In between quotation marks are the commands that can be executed by the correspondingly menu; they are written in small letters. Of each byte in command mode the module returns an echo.

8. **Alarm Parameters**, **Codes Parameters** and **GSM Parameters** are the three menus for programming.

9. After the command **Send Whole Memory to RAM: "sm"** the module responds with "=" and expects from the PC 560 bytes of data to be recorded in the RAM module.

10. All commands store data into the RAM memory of the module. In order to record them in non-volatile memory, then it is necessary a command "**go**".

11. After the commands **Receive Whole RAM: "rr"** and **Receive Whole Flash: "rf"** the module sends two bytes for the data size (first junior, then senior) and then the data itself. The data are respectively the contents of RAM and non-volatile memory Data Flash of the module.

12. At wrong command entry it is displayed **Syntax Error !!!**.

13. After exiting the programming mode it is displayed **Work mode entered!** and switches to work mode.

14. At failure to implement a key for about 120 seconds it is displayed **Time-out ...** and the programming mode is terminated.

15. After entering from the main menu **ap** the module sends:

**== Alarm Parameters:**

**Entry Delay [sec] [dec]: "ed"= 15 00 0 0 0 0**

**Exit Delay [sec] [dec]: "xd"= 40**

**Zones Type [hex]: "zt"= 01 02 02 02 03 05**

**00=Off, 01=Delay, 02=Moment, 03=24 hour, 04=Interior, 5=HK, Chime+16, Forced+32**

**Bell Time [sec] [dec]: "bt"= 60**

**Zones Delay[x10ms][dec]: "zd"= 30 30 30 30 30 30**

**Zones Activity [hex]: "za"= 01 01 01 01 01 01**

**0=NC, 1=NO, 2=NCB, 3=NOB, 4=NCBT, 5=NOBT, 6=NCDT, 7=NODT, 8=NC+NO DT**

**Chime Delay [x10ms]: "cd"= 10**

**AC Trouble Delay [min]: "at"= 30**

**AC Restore Delay [min]: "ar"= 5**

**Zone 1 Description: "z1"= Zone 1 Alarm**

**Zone 2 Description: "z2"= Zone 2 Alarm**

**Zone 3 Description: "z3"= Zone 3 Alarm**

**Zone 4 Description: "z4"= Zone 4 Alarm**

**Zone 5 Description: "z5"= Zone 5 Alarm**

**Zone 6 Description: "z6"= Zone 6 Alarm**

**Factory Default: "fd"**

**Read RAM Data: "rd"**

**To Main Menu: "mm"**

**>**

16. The duration of the signal "**Gong**"/"**Chime**" is in 10 ms. steps.

17. **Forced** allow arming of the panel if the zone is active.

18. At failure to press any key for about 120 seconds appears:

**Timeout...**

and the programming mode is terminated.

19. After entering from the main menu of **cp** the module sends:

**== Codes Parameters:**

**Serial Number [hex]: "sn"= 12 34 56**

**ID Number [hex]: "id"= 03 07 07**

**Config Code [ASCII]: "cc"= homeal**

**Encryption Code: "ec"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF**

**Alarm Codes Mode [dec]: "am"= 9**

**01=Hidden Key, 02=User Code, 04=RFID, 08=GSM, Summary**

**User & RFID Codes 1 "c1"= 01 2A 3B 4C 01 78 32 9F FF FF FF FF FF FF FF FF FF FF**

**FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF**

User & RFID Codes 2 "c2"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF  
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

User & RFID Codes 3 "c3"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF  
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

User & RFID Codes 4 "c4"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF  
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

Factory Default: "fd"  
Read RAM Data: "rd"  
To Main Menu: "mm"  
>

20. The codes **Serial Number** and **ID Number** are digital, in hexadecimal format.

21. The two low power output "Y" and "G" are active only if in **Alarm Codes Mode** is not active mode RFID.

22. The code **Confid Code** can contain any ASCII characters, not just numbers.

23. After entering from the main menu of **gp** the module sends:

**== GSM Parameters:**

APN Address: "aa"= internet.vivatel.bg

PDP Address: "pa"= 0.0.0.0

Server TCP/IP-1: "s1"= 192.168.1.51

Server Port-1: "p1"= 8062

Server TCP/IP-2: "s2"= 255.255.255.255

Server Port-2: "p2"= 8061

Module Timeout [x10sec]: "mt"= 60

Server Timeout [x10sec]: "st"= 51

GPRS Code: "gc"= 00 97 97

Test Interval [h]: "ti"= 12

Ack Interval [s]: "ai"= 60

GPRS UserName: "un"=

GPRS PassWord: "pw"=

GSM Number 1: "n1"= 08 77 31 39 99 FF FF FF FF FF FF FF FF FF FF

GSM Number 2: "n2"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

GSM Number 3: "n3"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

GSM Number 4: "n4"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

GSM Number 5: "n5"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

GSM Number 6: "n6"= FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

Limit Request Number: "ln"= \*102#

**GSM Report Options:** "gr"= 0 0 0 0 0

01=SMS Alarm, 02=Call, 04=Armed Report, 08=Armed Enable, 16=SMS Trbl. Summary

**GSM Mode Options:** "gm"= 1

+1=with GPRS,+2=MFCS,+4=UDP(SIII),+8=UDP(Software),+10Hex=report on/off,  
+40Hex=Encryption,+80Hex=+SMS, Summary

**Factory Default:** "fd"

**Read RAM Data:** "rd"

**To Main Menu:** "mm"

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24. **GSM Report Options** - these are options about how to announce by GSM for the occurred events:

**SMS Alarm** - allows to send SMS at alarm from zones; in restoring SMS is not sent;

**SMS Trbl.** - allows to send SMS at failure and recovery (AC power and battery voltage);

**Call** - call allowed at alarm from zones; in restoring a call is not sent;

**Armed Enable** - allows the inclusion and exclusion the station from the relevant GSM number, and after arming answers to the originating the inclusion number with two rings, and after exclusion - with one ring;

**Armed Report** - allows the call to the relevant GSM number at arming and disarming

25. The procedure to call is very cumbersome, it takes more than 30 seconds. Better is the announcement by GSM for arisen events to be done via SMS.

26. **GSM Mode Options** - these are the options for the operating mode of GSM: if GPRS mode is active, SMS and a call about events are not sent.

27. **Report On / Off to # 1** indicates that after power on to be sent a call to the first entered number.

28. **GSM Report Options** and **Alarm Codes Mode** are programmed as hexadecimal, and are displayed as decimal numbers.

29. For **Limit Request Number** is assigned the number of the relevant operator, on which you can automatically check the time of validity of the SIM card and the remaining monetary limit. This option can only be used for prepaid cards. For example for Mtel enter **\*101#** and for Vivacom - **\*02#**. Globul currently has no automatic number.

30. At programming a GSM number, after its end add **F** in the empty positions to the end.

31. If the GSM number will not be used, to be programmed **FF** for all 16 bytes, or write 0 in GSM Mode Options for the relevant number.

32. The GSM numbers may be entered in the following formats:

**08 77 123 456**, **359 8 77 123 456** or **00 359 8 77 123 456**.

33. After entering the **Factory Default: "fd"** in the RAM module are recorded the programmed settings for the relevant menu.

34. After the command for reading **Read RAM Data: "rd"**, the screen displays all data, stored in the RAM memory.

35. When, after the selection of the relevant command appears **[hex]**: the data is entered in hexadecimal (0-9, a-f). The entered values must be double-digit. A single digit is entered with Zero (for example 05 instead of 5).

36. Where the corresponding option refers to the zones or to the GSM numbers, enter consecutively values. For example, after **"Entry Delay [sec]"** and **"Zones Type"** are entered consistently the values for all five zones. After **"GSM Report Options"** are entered consistently the values for the six GSM numbers.

37. For the parameters where it is indicated **"Summary"**, the values of individual options are added together and the resulting number is programmed in hexadecimal code. There was thus obtained bitwise programming options.

38. **Restore factory settings** - on power up connect with jumper the two middle terminals of the connector for programming "Prg". At command execution the remote LED for indication of the mode of operation and the 5 LED for the level of GSM radio signal light up for about 10 seconds.

39. Commands for record - enter the two characters for the command, then the device responds with "=". Enter the details, the device responds with "OK". For example:

**Serial Number** - serial number of the module (6 digits):

**"sn=77 77 77"** - the answer is „OK“;

40. Command for reading - **"rd"**. After its submission, the display shows **RAM Data:**

and then all data stored into the RAM memory.

41. All data are entered into hexadecimal format. The only exception is "APN GPRS", where the text is entered from the keyboard in ASCII. Then they are displayed in decimal format, for greater perspicuity.

42. The length of each record is strictly defined, all values should be entered. The only exception is "APN GPRS", where the command terminates with "Enter".

43. At writing the SMS numbers, the remaining characters to the end after the number must be 'F'. For example 08 88 12 34 56 FF FF FF FF FF FF FF FF FF FF.

44. At failure to press any key for about 2 minutes the programming terminates and on the display appears **"Timeout"**.

45. The commands are given in quotes. The letters are in lower case. The spaces are not entered, they are left for perspicuity.

46. Do not allow editing with "Delete", "Backspace", arrows or other keys.

47. At wrong command entry is displayed **"Syntax Error !!!"** And the entire line is cancelled.

48. All data entered (including a factory reset) are written initially in the RAM. After finishing the data input is sent the command **"go"**, whereby the data from the RAM is stored in non-volatile memory and displayed for verification. Response - **"Exit"**. After a successful record in the memory is displayed **"Data Flash OK"**, and if it is necessary erasing the memory, is displayed **"Erase Data Flash"** and **"Reset ... Exit"**.

49. The serial number is a unique production number of the unit and is programmed only once by PC. If you try to change it, is displayed: **Invalid Serial Number!**

To restore the factory settings it is needed at power up to place a jumper between the two middle terminals of the connector "Prg": the 5 LEDs for the level of the GSM signal and the remote LED "**Status**" go ON for about 10 seconds. The jumper is necessary only at power up; after that it is removed.

### Configuring by SMS

To restore the factory settings it is needed at power up to place a jumper between the two middle terminals of the connector "Prg": the 5 LEDs for the level of the GSM signal and the remote LED "**Status**" go ON for about 10 seconds. The jumper is necessary only at power up; after that it is removed.

1. When configuring by SMS use the same two-letter commands written in lower case. The distinction between the commands and also between data in one command becomes with comma, no spaces. The manner of arrangement of individual commands does not matter, important is just to begin with "**code =**" and the correct configuration code, and ends with "**go**". If at the end there is a number to which the module to send an SMS with the content of the configuration parameters, the SMS must to end with a period "." for the end of the number.

2. As the maximum size of the SMS, sent from the module to the user is 160 characters, it may be required the following areas of the data:

- rds: Status of the panel:

System ARMED , zones: ANNANN, AC Power On

System disarmed, zones: NANNNN, AC Power Off

- rd0: Alarm parameters: Entry Delay "ed"[d], Exit Delay "xd"[d], Zones Type "zt"[d], Bell Time "bt"[d], Zones Delay "zd"[d], Zones Activity "za", Chime Delay "cd", AC Trouble Delay "at", AC Restore Delay "ar", Alarm Codes Mode "am"[d], GSM Report Options "gr"[d].

ed=20,30,00,00,00,00 xd=90 zt=17,01,02,03,04,05 bt=60

zd=20,20,20,20,20,20 za=00,01,02,03,04,05 cd=20 at=30 ar=05 am=09

gr=00,01,00,01,00,00

all parameters are in decimal form

-rd1: Zones Description: by 24 characters

1:Zone 1 vhodna vrata      2:Zone 2 Koridor      3:Zone3 Hol      4:Z4 Spalnya

5:Z5 Goren Etaj      6:Zone6 Predverie

-rd2: GSM numbers and number for the limit of prepaid card and GSM Mode Options "gm" [h]

n1=0888123456 n2=0887654321 n3=0889112233 n4=FFFFFFFF  
n5=FFFFFFFF n6=FFFFFFFF ln=\*102# gm=00

- rd3: GPRS parameters:

Server IP-1 "s1", Server Port-1 "p1", Server IP-2 "s2", Server Port-2 "p2", Encryption Code "ec", Module Timeout "mt"[h], Server Timeout "st"[h], Test Interval "ti"[h], Acknowledge Interval "ai"[h], PDP Address "pa"

sn=FFFFFF id=037777 gc=007777 s1=D5DE2101 p1=65E6 s2=D5DE2101  
p2=65E6 ec=0102030405060708090A0B0C0D0E0F mt=1E st=3C ti=0C ai=3C  
pdp=000000

- rd4: GPRS parameters: APN Address "aa", GPRS User Name "un", GPRS PassWord "pw"

aa=globul@@@@@ un=username@@@@@ pw=password@@@@@  
as the symbols @ is displaying of zeros.

- rd5: RFID Codes – 1-16

c1=012A3B4C,0178329F,023ACD8E,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,F  
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFF  
FFFF,FFFFFFFF

- rd6: RFID Codes – 17-32

c2=012A3B4C,0178329F,023ACD8E,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,F  
FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFFFF,FFFFFF  
FFFF,FFFFFFFF

3. If must be entered a hexadecimal number, compulsory is to be entered two characters, even if the first is zero. If the hexadecimal number contains a letter, it must be small Latin (a, b, c, d, e, f). When entering of TCP/IP address all the numbers must be three-digit even if start with zero. When entering a port, the number must be a five-digit, even if it starts with zero.

4. When changing the programming code, the new 6 digit code must be entered twice successively delimited by commas:

'cc = 123456,123456, .....

5. The serial number is not configured via SMS.

6. Sample texts for configuration via SMS:

**code=homeal,za=00,b0,0c,bc,00,00,zd=1a,20,1c,3c,10,10,n1=0877313999,s1=211,012,013,014,go**

**code=homeal,s2=211,012,003,014,p1=03567,p2=00123,id=987654,go**

**code=homeal,aa=internet.vivatel.bg,cc=112233,112233,n2=0877313999,n3=0876543210,go**

**code=112233,ec=10,11,12,13,14,15,16,17,18,29,2a,2b,2c,2d,2e,2f,mt=1c,st=2b,am=0a,xd=3c,go**

**code=homeal,ar=1a,at=2e,pa=192,168,000,001,z3=Zone3-vrata PIR moment,go**

**code=homeal,rd0=0877313999.**

**code=homeal,rd2=0877313999.**

**code=homeal,bt=3c,ed=1a,20,1c,3c,00,00,ln=\*102#,go,rd0=0877313999.**

**code= homeal,rds=0877313999.**

**In the description of the zones must not contain commas (,).**

**At read command of configuring parameters, finally after the GSM number must be a period (.).**

The length of the SMS does not have to be more than 100 characters. Keep in mind that when sending an SMS on the Internet the operators add advertising, texts that increase the length of the message. So when configuring via the internet it is better to send less commands.

## **Instructions for commissioning**

1. Fill in the table of parameters of the protected object. Most of the values are entered by default, but must be defined:

- depending on the designation of the zones for each of them is filled the fields for a type of zone: delayed, instant, 24-hr., interior or for arming; by default is zone 1 is delayed, zones 2-4 are instant, zone 5 is 24-hr., zone 6 is for arming;

- depending on the method of wiring of the zones for each of them are filled the fields for the active state and for balance of the sensors (see the figure "Variants of connecting zones"): normally open or closed contact, balanced or unbalanced, with tamper or without tamper, paired or single; by default, all zones are with normally open contact;

- GSM numbers for communication;

- other parameters is also good to be further determined according to the needs.

2. The panel is configured via PC or via SMS:

3. Mount the circuit board in the box and with disconnected power connect the zones, the siren and the remote LED indicators.

4. Insert the SIM card, on which must first be removed the PIN code and erased all SMS-es.

5. Where necessary to test the zones, before turning ON the power to the panel must be installed a jumper between terminals "Y" and "G". See "Test of the zones."

6. Connect the power supply ~ 220V. Should light the LED "Power". The LEDs "2", "4", "8" and "16" light up briefly and go out, and then for about 5 seconds, lights the LED "Status".

7. Connect the battery.

8. Wait for connecting the panel to the GSM network of the operator. See "LED indication". After a successful connection, the LED "GSM" should light up briefly every 3 seconds. LED "Status" should not blink.



9. If it is set as a parameter, the panel will call the first GSM recorded number for a test. Reject the call, and save it in your mobile phone.

10. Arm and disarm by configured method. The LED "Status" should be lit at arming and go off on disarming.

11. If at the time of arming with a secret switch there is an active zone, disarming is not allowed, the LED starts blinking rapidly and the siren gives two squawks.