

# GsmAlarm-500E (V2.00)



## GSM Alarm and Remote Control System



### FEATURES

- Comfortable mounting on DIN rail.
- 6 inputs.
- Up to 15 protection zones.
- 3 programmable low current outputs + 1 high current relay output.
- 5 users are notified.
- 20 programmable keypad access codes or iButton keys.
- Possibility to transfer data to alarm monitoring station via GPRS channel by SIA DC-09 IP protocol. AES128 encryption.
- Possibility to connect to SmartCloud server. Monitoring and control of the system can be performed from any computer or smart phone using a standard web browser.
- Possibility to send information to alarm monitoring station using the Contact ID protocol through GSM voice call.
- Remote control using mobile phone keypad (through DTMF tones).
- GSM JAMMING detection.
- 24 hours timer.
- Two partial protection modes (STAY and SLEEP).
- Possibility to divide the system into two independent partitions.
- Possibility to connect up to 6 temperature sensors for temperature measurement.
- Possibility to connect up to 4 keypads.
- Info-carrying SMS showing state of each sensor, power supply voltage, GSM signal strength.
- Programming and firmware upgrade via USB connection.
- Remote programming over GPRS.
- Integrated quad-band GSM module.
- Wide operating temperature range: -35 ... +65°C.


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## 1. GENERAL INFORMATION

### 1.1. SAFETY INSTRUCTIONS

Please read and follow these safety guidelines in order to maintain safety of operators and people around.

Retain all safety and operating instructions for future reference during the whole operating lifetime of device.

	<p>Device has two power supplies: <b>main and reserve</b>.  <b>Main:</b> power transformer: I: 230V 50/60 Hz; II: (16–24)V ~ 1,2 A 50/60Hz;  <b>Reserve:</b> 12 V 1,2 Ah battery.  <b>DC power supply which must be approved by LST EN 60950-1 standard and be easily accessible.</b></p>
	<p><b>Any additional devices linked to the system GsmAlarm-500E (computer, sensors, relays etc.) must be approved by LST EN 60950-1 standard.</b></p>
	<p><b>External power supply can be connected to AC mains only inside installation room with automatic 2-pole circuit breaker capable of disconnecting circuit in the event of short circuit or over-current.  Open circuit breaker must have a gap between connections of more than 3mm and the disconnection current 5A.</b></p>
	<p><b>System GsmAlarm-500E is a device mounted in limited access areas. Any system repairs must be done only by qualified, safety aware personnel. There are no parts you can change at place in the device.</b></p>
	<p><b>The system must be used only with approved back-up battery to avoid fire or explosion hazards. Special care must be taken connecting positive and negative battery terminals. Switching the pole terminals places is NOT allowed.</b></p>
	<p><b>Mains power must be disconnected before any installation or tuning work starts. The system installation or maintenance must not be done during stormy conditions.</b></p>
	<p><b>If you use I security class computer for setting the parameters it must be connected to earth.</b></p>
	<p><b>The device is switched off by 2-pole circuit breaker and disconnecting back-up battery connector.</b></p>

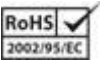
	<p><b>Mains power and back-up battery must be disconnected before any installation or tuning work starts. The system installation or maintenance must not be done during stormy conditions.</b></p>
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Remote control and monitoring device GsmAlarm-500E has built-in radio transmitter operating on GSM900 and GSM1800 networks.

- Do not use the device where it can cause interferences and danger.
- Do not arrange the device close to medical equipment and appliances.
- Do not use the device in explosive environment.
- Device is not resistant to moisture, chemical materials or mechanical damage.
- Don't attempt to personally repair the system.
- System label is on the top side of the device.



This symbol on the product or on its packaging means that your electrical and electronic equipment should be disposed at the end of life separately from your household wastes. There are separate collection systems for recycling in EU. For more information, please contact the local authority or the dealer where you purchased the product.



The device compliance to RoHS Directive.

## 1.2. PACKAGE CONTENT

Main board GsmAlarm-500E.....	Qty 1
GSM antenna .....	Qty 1
Load resistors 1,0kΩ ±5% .....	Qty 12
Colours marking: brown, black, red.	
Load resistors 2,2kΩ ±5% .....	Qty 6
Colours marking: red, red, red.	
Load resistors 4,7kΩ ±5% .....	Qty 7
Colours marking: yellow, purple, red.	
User's manual .....	Qty 1

### 1.3. INTRODUCTION

GsmAlarm-500E can be used for protection of houses, apartments, cottages and other buildings. In the case of trespass of the protected zone GsmAlarm-500E, depending on the programmed system operating algorithm, can switch the siren on, call and send SMS messages to five users and transfer data to the alarm monitoring station through GSM network. Data can be transferred directly to alarm monitoring station by Contact ID protocol (audio channel), or can be converted to a standardized, many security service stations understandable, SIA DC-09 IP format and transmitted via Internet (GPRS channel). It is possible to transfer data in both methods: first try to send data via GPRS channel, if fails, use Contact ID protocol (audio channel).

User answers the call, can listen, what is going on in the unit and control the system using his mobile phone keypad (through DTMF tones).

GsmAlarm-500E has 3 (4, if siren is not used) programmable outputs, intended for remote control of different devices. User can turn on/off heating, ventilation or lighting systems etc, by using his mobile phone just by typing a 2-digit code or sending SMS to the control device.

Device works perfect for remote control of automated gates, fences and electromagnetic door locks. In order to open the gate, user calls GsmAlarm-500E number. Then GsmAlarm-500E checks the caller's number in the list of programmed user numbers and in the case of positive find, switches on the gate control device and cancels the call automatically. 250 users are able to control the gate.

Up to 4 Paradox K636, K10V/H (MG10LEDV/H), K32 (MG32LED), K32LCD (MG32LCD), TM50 keypads can be connected to GsmAlarm-500E. By using the keypad users can arm or disarm the system and configure system parameters. Following keypad LED indicators you can determine protected unit state, system mode etc.

The system is controlled by iButton (also known as DALLAS) keys. Several control functions can be assigned to each key. Example: a user can activate a protection mode and a controllable output by touching the contact with the key. A user name can be assigned to each key (as well as to a keypad code) that will be indicated in SMS messages. Up to 20 iButton keys can be programmed.

If keypad or iButton keys are not used, the system may be armed and disarmed by a simple switch or a short free call. The alarm system is controlled exclusively from the user telephone. If the system receives a call, coming not from the user's phone, the call is immediately interrupted and the user is sent an SMS message, specifying the caller's phone number. The user is also informed by an SMS message about loss and restoration of AC mains power supply.

The system answers only to the numbers programmed. If the system receives a call, coming not from the user's phone, the call is immediately interrupted and the user is sent SMS, specifying the caller's phone number. SMS messages are also sent to users in case of power loss and restoration.

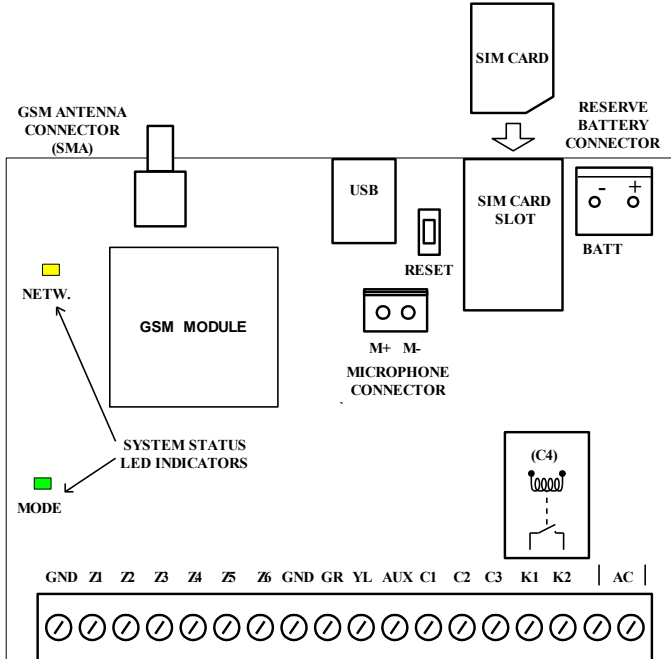
The system has temperature measurement possibility. Up to 6 temperature sensors can be connected to GsmAlarm-500E device. If temperature exceeds or subsides programmed range, system sends SMS to user(s), relevant programmable output can be activated/ deactivated.

24 hours timer enables activation/deactivation of programmable output, arming or disarming, receiving SMS messages with protected object state information on a desired time.

The system has capability to detect intentional jamming of GSM. The siren is activated upon detection of the jamming signal, and the user is informed thereof by an SMS message about it after clearing of GSM jamming signal. The message indicates the jamming onset time.

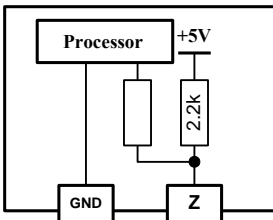
GsmAlarm-500E parameters may be set via a computer using the GSM alarm configuration tool GAprog. The module is accessible via an USB port or over the internet through GPRS channel. If a computer is unavailable, the system is set up by a keypad or SMS messages.

2. CONNECTORS AND LED INDICATORS



Connection terminals and LED indicators

2.1. ZONE INPUT TERMINALS “Z1” to “Z6”



Equivalent diagram of zone input

Inputs Z1-Z6 are used to connect alarm detectors or temperature sensors KTY81-110 (PHILIPS).

The zones are designed to work with End of Line (EOL) resistors of 2,2kΩ (and 4,7kΩ in ATZ mode, see Ch. 4.2.4). The system becomes triggered both when the input circuit is broken as well as when it is short-circuited.

The inputs can operate in a non EOL mode (see Ch. 4.2.4). In this case EOL resistor is not required. The system is triggered after breaking or short-circuiting of the input circuit (depending on the programmed "active" level).

2.2. KEYPAD CONNECTION TERMINALS “GR” and “YL”

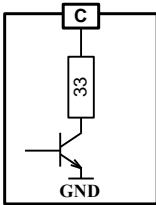
Use GR, YL, GND and AUX terminals to connect PARADOX K636, K10V/H (MG10LEDV/H), K32 (MG32LED) or K32LCD (MG32LCD) keypad. These terminals can also be used for connection of the iButton key reader.



### 2.3. AUXILIARY POWER TERMINAL “AUX”

The auxiliary power supply can be used to power motion detectors and other devices requiring 12 VDC. “AUX” is short-circuit-protected. Max load current is 1.3 A.

### 2.4. PROGRAMMABLE OUTPUT TERMINALS “C1”, “C2” and “C3”



The programmable output is a 150 mA maximum switch to ground. A 33 ohm current limiting resistor is connected in series. A small relay, a buzzer or other DC operated device may be connected between the “AUX” (positive) terminal and the “C” (switched negative) terminal on the main board.

Relays with 12V operating voltage and current not exceeding 150 mA max, are recommended for device control.

Output operating modes are described in Ch. 5.3.2.1

*Equivalent diagram of C output*

### 2.5. BELL/SIREN CONNECTION TERMINALS “K1” and “K2”

These terminals are relay contacts of the programmable output C4. K1 and K2 are used to connect audio siren or extra-commutated device.

Commutated current may reach 5 A max.

### 2.6. “AC” POWER TERMINALS

Use a 16-24 VAC transformer with a minimum 40 VA rating to supply AC power to the GsmAlarm-500E.

### 2.7. “BATT” CONNECTOR

Use this connector to connect the backup battery. Max capacity of the backup battery is 1,2 Ah. Voltage: 12 VDC.

### 2.8. EXTERNAL MICROPHONE CONNECTOR

This connector is used to connect an external microphone. Connect white wire to contact M+, black – to M-. If wire of the microphone is long (over 2 m), it is recommended to use shielded twisted pair cable. Connect shield to GND contact. In order to avoid interference install microphone as far as possible from GSM antenna. The microphone turns on automatically in speech mode.

### 2.9. RESET BUTTON

RESET button is used to restore factory default settings (see. Ch. 6).

### 3. LED INDICATORS

#### 3.1. NETWORK: GSM MODULE STATE AND SIGNAL STRENGTH INDICATOR

Indicator state	Explanation
Out.	GSM module is not in use. No power supply or system failure.
Continuously On.	There is no GSM operator network registration. Possible causes: SIM card PIN code request is not deactivated, antenna not connected or poor network connection quality.
Blinking more frequently than once a second.	GSM module is in use: outgoing call or SMS is being sent.
Blinks 5 times, short break after.	Very good signal.
Blinks 4 times, short break after.	Good signal.
Blinks 3 times, short break after.	Satisfactory connection.
Blinks 2 times, short break after.	Weak connection.
Blinks once, short break after.	Poor connection.

#### 3.2. MODE: ALARM SYSTEM STATUS INDICATOR

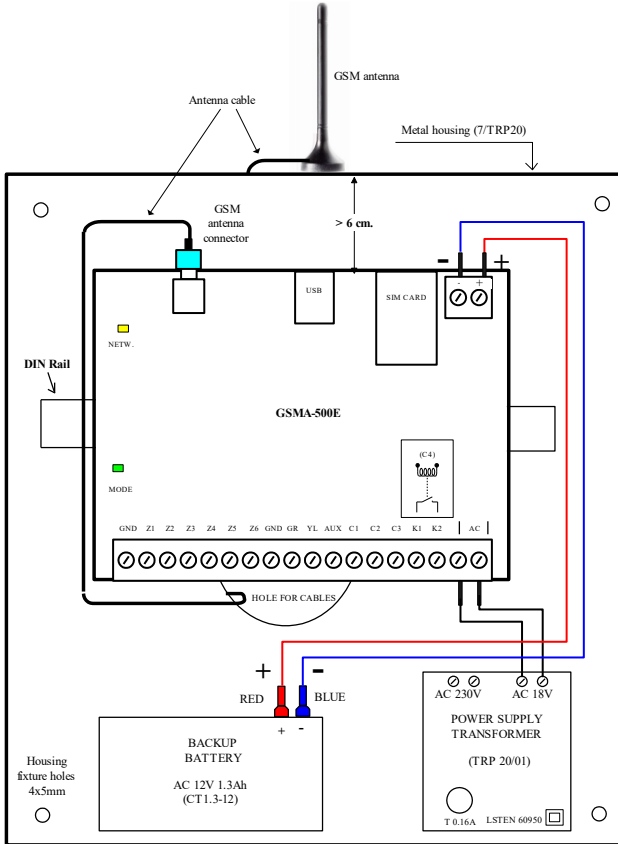
Indicator state	Explanation
Out.	No power supply or system failure.
Continuously On.	System is operative, disarmed, no zone sensors have been triggered.
On with short breaks.	System is operative, disarmed, but one or more zone sensors have been triggered.
Blinking with low frequency (once in 2-3 sec.).	System is armed.
Blinking more frequently than once a second.	System is in alarm state.
Blinking very rapidly for 2-3 sec.	SMS instruction or DTMF command receipt confirmation.

## 4. INSTALLATION

### 4.1. GENERAL INSTALLATION INSTRUCTIONS

According to manufacturer recommendations, hire qualified security system specialist (or company) to perform system installation works. Self-dependent installation of the system can be performed only if person possess basic knowledge in electricity and electronics, otherwise device might be irrecoverably damaged.

System should be assembled in metal housing 7TRP20 as recommended.



*Recommended layout of system elements in 7TRP20 type housing*

Use double isolated cable  $3 \times 0,75 \text{ mm}^2$  for 230V power supply. Circuit breaker or other surge protection device should be installed in the 230V power line.

Antenna is fixed on the top of outer side of metal housing.

It is recommended to use standard motion (e.g., SRP-300) and fire (e.g., EA318-2) sensors in alarm system. Use standard 6-8 wired single core cable designed for installation of alarm systems. Siren DC12V 500mA (e.g., Odyssey 1E) is recommended for sound alarm, use double isolated cable 2x0,75 mm<sup>2</sup> to connect it to the system. Backup battery must be PB-acid (e.g., CT1.2-12).

It is recommended to install remote control relays into sockets (e.g., F95913) which can be easily fixed to metal housing. Operating current of relay coil cannot exceed 150mA max (e.g., F4031-12). Relays are selected depending on desirable commutative voltage and current.

Connection according to the wiring diagram presented in Chapter 4.2.1 is recommended, if the system is controlled by a keypad. Up to 4 Paradox K636, K10V/H (MG10LEDV/H), K32 (MG32LED), K32LCD (MG32LCD) or TM50 keypads can be connected to GsmAlarm-500E. Each of the said keypads has a single keypad zone (the blue wire). Use of keypad zones is recommended for connection of magnetic door sensors. Activation of a keypad zone is described in Chapter 5.7.22 In case of TM or TM50 keypad, it is recommended to switch off the StayD indication (see Ch. 5.7.29). On other types of keypads, StayD indicator is on, when all zones are closed and the protection mode can be activated.

Connection according to the wiring diagram presented in Chapter 4.2.2 is recommended, if the system is controlled by iButton (DALLAS) keys DS1990A or a simple switch. Short beeps are generated by an ancillary buzzer while exiting a room and a continuous sound, after entering the room. Any buzzer with power supply of 12 V DC and maximum operating current of 100 mA may be used (e.g., BPT-23CXW-1). The system status LED indicator works in sync with the "MODE" indicator (see Ch. 3.2). The state of this indicator allows identification of the alarm system status and verification of closure of all protected zones before arming the alarm system. The status indicator should be mounted indoors in a well visible location. The reader DS9092LED of iButton keys is equipped with an embedded LED indicator that can be used as system status indicator.

If the system is controlled by an ON/OFF switch, the system is armed by opening the switch contacts and disarmed by closing the contacts.

Input circuits are connected according to corresponding diagram provided in Chapter 4.2.4 It is recommended to turn off zones that aren't used – to change value of A parameter to "A00" (see Ch. 5.3.1.1).

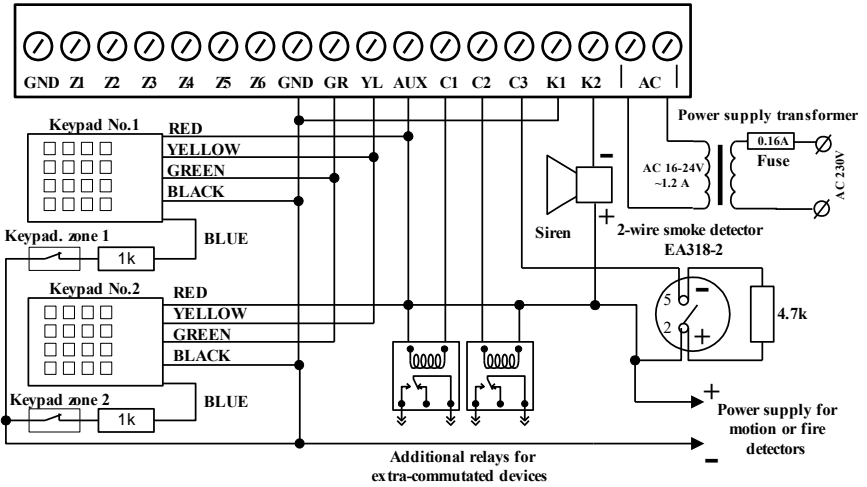
A SIM card needed for GsmAlarm-500E operating, you may acquire it from any GSM service provider. Before inserting SIM card into GsmAlarm-500E SIM card slot set PIN code request off. It can be performed simply inserting SIM card into any standard mobile phone and following certain phone user manual instructions. Verify that the SMS card is operational: try calling and sending an SMS from the phone itself.

After finishing installation, insert SIM card into GsmAlarm-500E SIM card slot, turn system power on, then wait until LED "NETWORK" will start to flash and LED "MODE" will be constantly alight. In case "NETWORK" is constantly alight, check if SIM card's PIN code request is off and GSM antenna is connected. GSM signal quality can be evaluated according to the blinking frequency of "NETWORK" indicator. Connection is very good if it blinks 5 times with short break after. "NETWORK" indicator blinking fewer times, indicates weaker connection. System works in steady state if indicator blinks 3-5 times. Position of GSM antenna might be changed in order to improve signal quality.

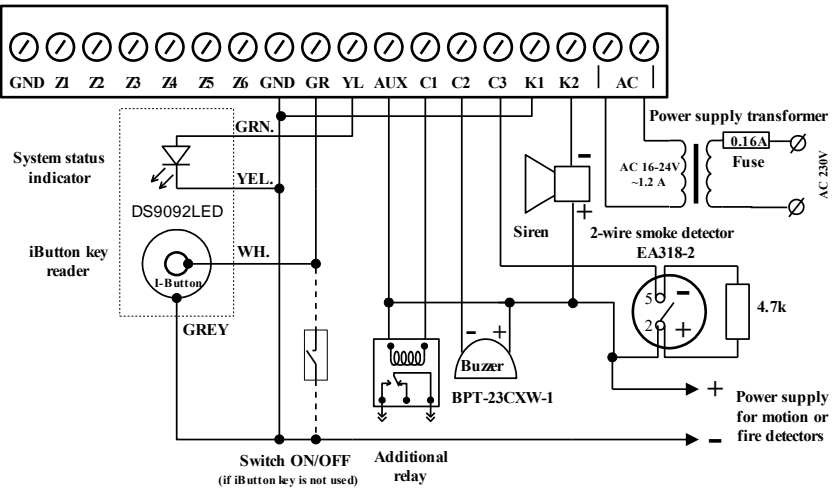
Perform system programming when the system is disarmed. Protected zones must be closed (indicator "MODE" constantly alights). Detailed programming description can be read in Chapter 5.

4.2. WIRING DIAGRAMS

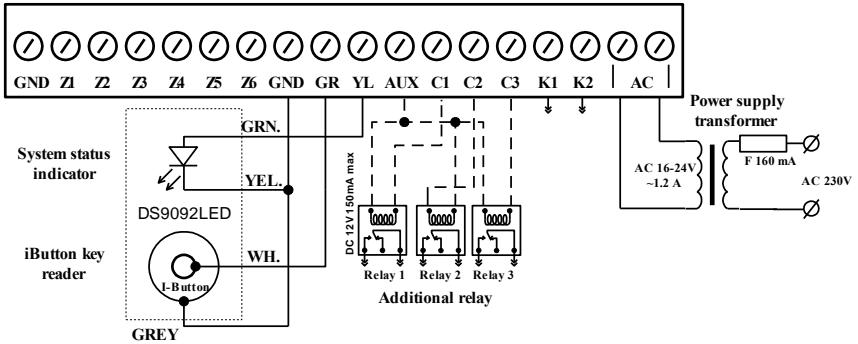
4.2.1. SYSTEM WITH KEYPAD ACCESS CONTROL



4.2.2. SYSTEM WITH iBUTTON ACCESS CONTROL



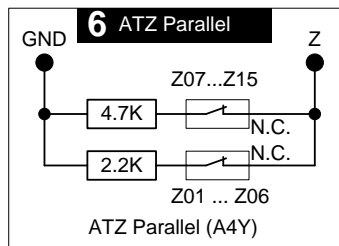
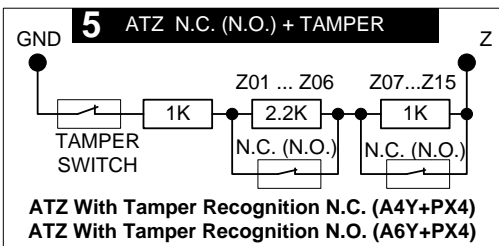
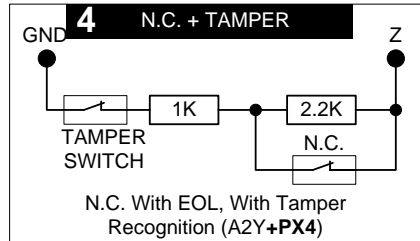
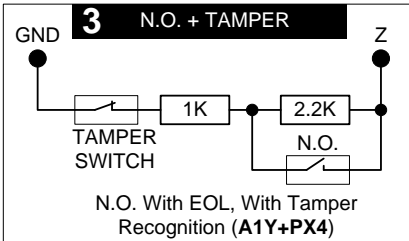
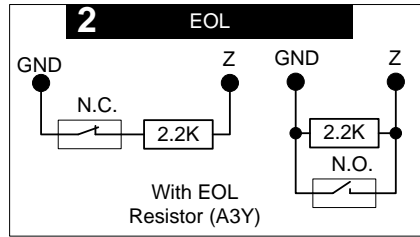
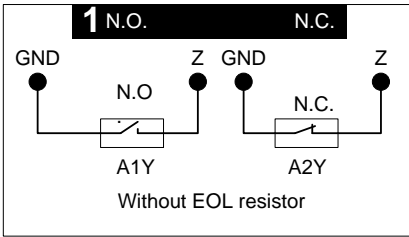
**4.2.3. WIRING DIAGRAM WHEN THE DEVICE OPERATES IN THE GATE CONTROL MODE**



In this case, the power supply transformer and the backup battery are connected according to the wiring diagram of the premise security system (see Ch 4.1). The gate control system (operating output C4) is connected to terminals K1 and K2.

Outputs C1, C2, and C3 can also be used for gate control. In that case, remote control relays are connected to the terminal AUX and the said output terminals. Gate control systems are connected to the commutated contacts of the relays. In this case, individual operated outputs could be assigned to different telephone numbers (see Ch 5.2.1). The system is controlled by a DALLAS key when necessary. Programming of gate control mode of the device is described in Chapter 5.3.2.2

4.2.4. WAYS TO CONNECT ALARM ZONES



NC: normally closed contacts. NO: normally open contacts.  
 A1Y-A6Y: zone operating modes, parameter "A" (see Chapter 5.3.1.1).

GsmAlarm-500E has 6 inputs Z1...Z6, corresponding to the zone numbers Z01...Z06. If 6 zones are sufficient for protection of the object, the wiring diagrams 1, 2, 3 or 4 may be deployed. Load resistors are mounted in the housing of an alarm sensor or a magnetic contact at the furthest point of the connecting cable.

When wiring diagrams 3 or 4 are deployed, the tamper recognition mode should be activated (see Ch. 5.3.1.3). A fault signal is generated and, consequently, an alarm is generated upon cutting or short-circuiting the line. When 24 hours tamper supervision mode is activated (see Ch. 5.3.2.8), the alarm is generated with both armed and disarmed modes.

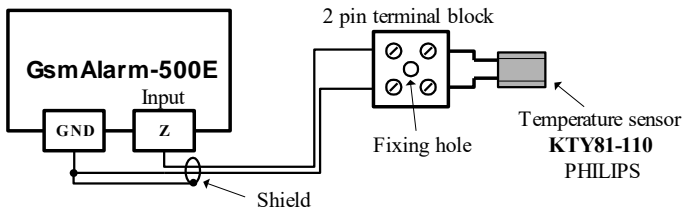
If 6 zones are insufficient, the wiring diagrams 5 and 6 may be deployed. In this case, one input can control two zones.

If a 2-wire fire sensor is connected to the programmable output C3, the zone Z07 should be set as an additional fire zone (A5Y mode, see Ch. 5.3.1.1), and the output C3 should work in the following mode: **M01T05 inverted** (see Ch. 5.3.2 and Ch. 5.7.11). A load resistor of 4,7kΩ also should be used.

A triggered fire sensor is switched off with an SMS message or a DTMF/keypad command for C3 output (see Ch. 14).

### 4.3. CONNECTION OF TEMPERATURE SENSORS

GsmAlarm-500E has temperature measurement possibility. Up to 6 temperature sensors *KTY81-110* (*PHILIPS*) can be connected to the GsmAlarm-500E.



In order to minimize influence of external interferences and measurement error, it is recommended to use shielded twisted pair cable 0.5 mm<sup>2</sup>. Shield is connected to ground wire only in one end, close to GsmAlarm-500E board. Use 2 pins terminal block with a fixing hole for temperature sensor fastening.

Parameter “A” must be changed in order to activate temperature measurement mode. (see Ch. 5.3.1.1). Input parameter T defines zone triggering temperature. The triggering temperature can be programmed in -40 °C ... +99 °C range (T-50 ... T99) by SMS (see. Ch. 5.3.1) or -40 °C ... +120 °C by computer. Using the keypad temperature can be programmed only in 0 ... +99 °C range. The temperature difference, at which triggered zone returns to primary state (hysteresis) complies with the parameter I (see. Ch. 5.3.1).

In temperature measurement mode input operates the same as in protection mode, i.e. all operating modes are valid with two exceptions:

- a) No entry delay in A80 A90, system generates alarm instantly, after temperature reaches programmed value (see Ch. 5.3.1.1);
- b) No prohibition for arming, i.e. user can activate armed mode although temperature measurement zone has been triggered.

Recommended values of parameter M: M40 or M00 (see Ch. 5.3.1.2). In first case, if the system is in armed mode and temperature reaches programmed value, user receives SMS message (siren will not turn on and system will not dial).

If two triggering temperatures are required, an extended zone (Z7...Z15) may be assigned to the main temperature zone (Z1...Z6). The A8Y mode or A9Y mode should be activated for the ancillary temperature zone (see Ch. 5.3.1.1). The extended temperature zone operates according to the temperature measured by the main temperature zone. The number of the main temperature zones should correspond to the number of the extended temperature zones.

In order to receive information about the temperature, send GsmAlarm-500E the following SMS (see chapter 14):

A	A	A	A	A	A	A	A	A	A	9	8	*
---	---	---	---	---	---	---	---	---	---	---	---	---



## 5. PROGRAMMING

### 5.1. GENERAL PROGRAMMING INSTRUCTIONS

It is recommended to perform the system setup and tuning by a computer via USB port, using the GSM alarm configuration tool GAprog. The GsmAlarm-500E main board is connected to the computer with a standard USB A-B cable. The configuration tool is downloadable from the website of the manufacturer: [www.eltech.lt](http://www.eltech.lt).

The GSM alarm configuration tool GAprog allows setting up of the system over the internet (see Ch. 5.9).

If a computer is unavailable, the system is set up by a keypad or SMS messages.

GsmAlarm-500E parameters can be divided into two groups. First group – user phone numbers which are stored in SIM card memory. User phone numbers can be programmed by using standard mobile phone of any type (see Ch. 5.2.1) or remotely, sending SMS message with the phone numbers of users to GsmAlarm-500E (see Ch. 5.2.2).

Second group – parameters, defining system operating algorithms, names of protected zones and programmable outputs. These parameters are stored in the memory block of GsmAlarm-500E device.

The parameters of the system can be programmed by sending SMS message (see Ch 5.3) or by using Paradox keypad (see Ch. 5.7).

It is recommended to change the SMS password at the end of programming (see Ch. 5.6).

### 5.2. USER AND ALARM MONITORING STATION NUMBERS

If GsmAlarm-500E is used for protection, five user numbers can be programmed: *ALNRN1*, *ALNRN2*, *ALNRN3*, *ALNRN4* and *ALNRN5*, and two alarm monitoring station numbers can also be programmed: *CIDNR1*, *CIDNR2*. Users can arm/ disarm the system, calls will be directed and SMS messages will be sent to these users. If only one user exists, he must be programmed under *ALNRN1*. GsmAlarm-500E will send SMS messages to this specific user in case of main power supply loss or if an unknown number calls the system. If armed mode is turned on or off with the single touch of the keypad or by turning the switch ON/OFF (if the keypad is not used) control dials and SMS messages are also directed to the first user. Other four user numbers are not obligatory.

In case GsmAlarm-500E is used only for gate control it is not necessary to program *ALNRN1-ALNRN5*. Up to 250 user numbers, with the possibility to control the outputs *C1*, *C2*, *C3*, *C4* and *BELL* with a short call, can be programmed in this case. Any name can be ascribed to user. Output operating mode has to be *M04* or *M05* (see Chapter 5.3.2.1).



**Important:**

- a) No characters/spaces can be used before the password;
- b) No spaces are allowed before and after the colon;
- c) Spaces must follow the password and each phone number;
- d) It is recommended to enter user numbers with international code (e.g. +123...).

It is not necessarily to send all user numbers. e.g., in order to programme only the first user number, send the following SMS:

A	A	A	A	A	A	A	A	A	A	A	L	R	N	R	1	:	+	3	7	0	6	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Receipt and decrypting of the SMS by GsmAlarm-500E is confirmed by blink of indicator *MODE*. The phone, which has sent the programming SMS, immediately receives a confirming SMS with programmed numbers.

In order to delete unnecessary number, send the following SMS:

A	A	A	A	A	A	A	A	A	A	L	R	N	R	2	:	N
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Number ALRNR2 is deleted; user receives SMS with programmed numbers. In order to replace one number with another, no separate instruction for deletion needs to be sent.

In order to receive SMS with programmed numbers ALRNR1 ... ALRNR5, send GsmAlarm-500E the following SMS:

A	A	A	A	A	A	A	A	A	A	N	R	I	N	F	O
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Extra user numbers (only for gate control) are programmed by sending the following SMS:

A	A	A	A	A	A	A	A	A	A	A	D	D	N	R	:	+	3	7	0	1	2	3	4	5	6	7	8	9	1	A	D	D	N	R	:	+	3	7
0	7	0	1	2	3	4	5	6	7	8	9	2	A	D	D	N	R	:	+	3	7	0	1	2	3	4	5	6	7	8	9	3						

**ADDNR:** – new number programming instruction.  
**+3701234567891** – new user number.

If the numbers programmed successfully, the user, who sent the message, receives SMS with newly programmed number. In this case the confirmation message will be:

USER1:	+3701234567891	USER2:	+3701234567892	USER3:	+3701234567893
--------	----------------	--------	----------------	--------	----------------

**USER1** – name, assigned to the new number.

If a short call controls several outputs, an additional number may be assigned only to a single output. In this case, the programming message is the following:

A	A	A	A	A	A	A	A	A	A	A	D	D	N	R	-	C	1	:	+	3	7	0	1	2	3	4	5	6	7	8	9	1	A	D	D	N	R	-
C	2	:	+	3	7	0	1	2	3	4	5	6	7	8	9	2	A	D	D	N	R	-	C	3	:	+	3	7	0	1	2	3	4	5	6	7	8	
9	3	A	D	D	N	R	-	C	4	:	+	3	7	0	1	2	3	4	5	6	7	8	9	4														

The first number controls only the output C1, the second, C2, the third, C3, the fourth, C4 (K1, K2). To control any output by one-touch command, write: ADDNR-C0:+370123456789.

Up to 8 user numbers might be programmed with one SMS message.

In order to delete the extra user number, send to GsmAlarm-500E the following message:

A	A	A	A	A	A	A	A	D	E	L	N	R	:	+	3	7	0	1	2	3	4	5	6	7	8	9	1	D	E	L	N	R	:
+	3	7	0	1	2	3	4	5	6	7	8	9	2	D	E	L	N	R	:	+	3	7	0	1	2	3	4	5	6	7	8	9	3

Specified numbers will be deleted and user receives the confirming SMS:

DELETED:+3701234567891	DELETED:+3701234567892	DELETED:+3701234567893
------------------------	------------------------	------------------------

Up to 8 user numbers might be deleted with one SMS message.

In order to receive SMS message indicating all programmed numbers, following message must be sent to GsmAlarm-500E:

A	A	A	A	A	A	A	A	N	R	L	I	S	T
---	---	---	---	---	---	---	---	---	---	---	---	---	---

User receives one or more SMS messages with all programmed numbers listed.

*Note! Up to 8 user numbers can be sent in one SMS message. If 250 numbers are programmed GsmAlarm-500E will send 32 SMS messages!*

### 5.3. PROGRAMMING SYSTEM PARAMETERS WITH SMS

All GsmAlarm-500E input and output operating modes, delay times and names can be programmed with the help of SMS. First, it is recommended to receive SMS with programmed parameters and then to send the same SMS with corrected parameters back to GsmAlarm-500E.

#### 5.3.1. PROGRAMMING ZONES

In order to receive SMS with zone Z1 - Z15 parameters, send GsmAlarm-500E the following SMS:

A	A	A	A	A	A	A	A	Z	P	A	R	A	M
---	---	---	---	---	---	---	---	---	---	---	---	---	---

SMS can be sent from any GSM phone, not necessarily the user's. GsmAlarm-500E confirms receiving the message with frequent blinking of MODE indicator and sends four SMS messages including input parameters Z1- Z15. First message contains Z1 – Z4 parameters, second – Z5 – Z8, third – Z9 – Z12 and Z13 - Z15 parameters in fourth SMS message. Received message with input Z1 – Z4 parameters will look as follows:

AAAAAAA Z01:A30M70P10I06T20 Zone1, Z02:A30M70P10I06T00 Zone2, Z03:A30M70P10I06T00 Zone3, Z04:A30M70P10I06T00 Zone4,
---

**AAAAAAA:** - password.

**Z01** - zone input number.

**A30** - parameter defines operating mode of the corresponding input (see Ch. 5.3.1.1).

**M70** - parameter defines system response to the violation of protected zone and which users are informed if certain zone sensors are triggered (see Ch. 5.3.1.2).

**P10** - partial protection mode. Tamper recognition mode (see Ch. 5.3.1.3).

**I02** - the pulse counting mode (hysteresis in temperature measurement mode). When the first number is larger than 1, the zone operates in the pulse counting mode. After the zone triggers N number of times during the preset duration, the system switches over to the alarm state. N: the first digit. The second number establishes the duration of pulse counting. Multiplication of this number by 10 produces the time in seconds. Minimal time: 10 seconds (1), maximal time: 90 seconds (9). The factory preset time: 20 seconds. If N=0 or N=1, the pulse counting mode is switched off.

In temperature measuring mode, parameter **I** complies hysteresis (temperature difference, at which triggered zone returns to primary state).

**T20** - entry delay. If the system is armed and relevant input is triggered, the system switches siren on and sends SMS only after expiration of the given delay time. Possible values: 0...99 seconds.

If zone is in temperature measurement mode (A8Y or A9Y) (see Ch. 5.3.1.1), value of T parameter corresponds to triggering temperature.  
Possible values: -40 °C ... 120 °C.

**Zone1, Zone2, Zone3, Zone4** – zone names, which are seen in the SMS after alarm triggering. User can change the name of zone under his own discretion. Maximum number of name characters: 16.

**5.3.1.1. PARAMETER “A”: INPUT ZONE TRIGGERING CONDITIONS** Addr: [201-216]

Input zone triggering conditions	AXY		Input zone operating mode
	X	Y	
Input disabled.	0	0	Delay zone. <sup>2)</sup>
Without a load resistor when tamper recognition is off. If tamper recognition is on (see Ch. 5.3.1.3), 1kΩ and 2.2kΩ load resistors in series are required. Triggers when contacts close ( <b>NO</b> , see Ch. 4.2.4).	1	1	24H zone. <sup>3)</sup>
Without a load resistor when tamper recognition is off. If tamper recognition is on (see Ch. 5.3.1.3), 1kΩ and 2.2kΩ load resistors in series are required. Triggers when contacts opened ( <b>NC</b> , see Ch. 4.2.4).	2	2	Fire zone. <sup>4)</sup>
EOL mode, load resistor is required (see Ch. 4.2).	3	3	ON/OFF zone. <sup>5)</sup>
ATZ mode. Triggers when contacts opened ( <b>NC</b> ). Parallel connected 2.2kΩ and 4.7kΩ load resistors are required if tamper recognition is off. 1kΩ and 2.2kΩ load resistors in series are required, if tamper recognition is on (see Ch. 5.3.1.3).	4	4	Follow zone. <sup>6)</sup>
2-wire smoke detector connected to the PGM output C3 <sup>1)</sup> .	5	5	Double-acting delay zone. <sup>7)</sup>
ATZ mode with tamper recognition. Triggers when contacts close ( <b>NO</b> ). Tamper recognition must be on, 1kΩ and 2.2kΩ load resistors in series are required (see Ch. 4.2.4).	6	6	Double-acting 24-hour zone. <sup>7)</sup>
-	-	7	Forced zone with delay. The system can be armed when the zone is triggered.
Temperature measurement mode. Alarm is activated if measured temperature overcomes programmed temperature T.	8	8	Forced follow zone. The system can be armed when the zone is triggered.
Temperature measurement mode. Alarm is activated if measured temperature is lower than programmed temperature T.	9	-	-

- 1) Only zone Z7 can operate in this mode. PGM output C3 must operate in mode: **M01T05 inverted**.
- 2) Zone with programmable delay time. Violation of the protected zone activates alarm only in armed mode and after expiration of the delay time T.
- 3) 24-hour zone. Violation of the protected zone activates alarm in armed or disarmed mode. Siren operates continuously, the delay time is ignored.

- 4) Fire Zone working in 24 hours mode, the siren is intermittent.
- 5) ON/OFF zone. This mode is intended to arm or disarm the system by the switch. If the system is divided into two partitions, controlling partition is selected by parameter P (see.Ch. 5.3.1.3).
- 6) Follow zone. Violation of the zone activates alarm immediately if another zone with delay is not violated. If a zone with delay is triggered at first (e.g. a door is opened), "follow" zone gets the delay time of the zone violated before. This mode is recommended for the motion sensor area where the sensor is installed at the entrance door.
- 7) In double-acting mode, the system responds to both – to the zone triggering and to restore. When the zone is triggered, the system works the same as in modes 0 or 1. When the zone is restored (contacts return to initial state), the system does not call and does not turn on the siren. In this case users only receives an SMS message (if SMS message sending is activated; see. Ch. 5.3.1.2).

**5.3.1.2. PARAMETER "M": SYSTEM STATE AFTER INPUT TRIGGERING**

**Addr: [241-256]**

Type of alarm after input triggering	MXY		Users, getting information about zone violation
	X	Y	
All functions, described below, are deactivated.	0	0	All (ALRNR1-ALRNR5).
Only siren is operating.	1	1	Only user ALRNR1.
System is calling.	2	2	Only user ALRNR2.
Siren and calling.	3	3	Only user ALRNR3.
System is sending SMS message.	4	4	Only user ALRNR4.
Siren and SMS.	5	5	Only user ALRNR5.
Calling and SMS.	6	6	Users ALRNR1 and ALRNR2.
Siren, calling and SMS.	7	7	Users ALRNR1, ALRNR2 and ALRNR3.
-	-	8	Users ALRNR1, ALRNR2, ALRNR3 and ALRNR4.
-	-	9	All (ALRNR1-ALRNR5), but not the alarm monitoring station.

**Important:** alarm monitoring station is informed when data transfer to monitoring station is turned on (see Ch. 7.3), number X is higher than 0 and number Y isn't equal to 9.

**5.3.1.3. PARAMETER “P” PARTITION ASSIGNMENT AND PARTIAL ARM METHODS: STAY, SLEEP, TAMPER RECOGNITION** *Addr: [281-296]*

Partition assignment	PXY		Partial arming mode STAY and SLEEP. Tamper recognition.
	X	Y	
-	-	0	All functions listed below are disabled.
Zone assigned to the first partition.	1	1	Zone is active in STAY mode and in full protection mode.
Zone assigned to the second partition.	2	2	Zone is active in SLEEP mode and in full protection mode.
Zone assigned to both partitions.	3	4	Tamper recognition is enabled.

Manufacturer-programmed value: P10.

**Important !** The sum of corresponding digits should be used to activate several Y functions. Example: the number Y must be 7 (1+2+4=7) to activate all functions.

**5.3.2. PROGRAMMING OUTPUTS C1-C4 (K1, K2) AND COMMON SYSTEM PARAMETERS “E”, “F”, “G”, “H”, “J”, “K”, “L”, “P”, “T”**

In order to receive SMS with output and common system parameters, send GsmAlarm-500E the following SMS:

A	A	A	A	A	A	A	A	A	A	C	P	A	R	A	M
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Receiving the message is confirmed by blinking of indicator “MODE”, SMS with current system parameters is being sent:

AAAAAAA C1:M01T00V00 OutC1, C2:M05T05V00 OutC2, C3:M31T05V01 OutC3, C4:M06T02V00 Siren, S01:E20F31G01H00J00K00L32P00T20
---

**C1** - number of the programmable output. *C4* corresponds to siren connection terminals K1, K2.

**M01** - output operating mode (see Ch. 5.3.2.1).

**T00** - output operating time. Outputs *C1-C3*: in seconds, *C4 (K1, K2)*: in minutes.

**V00** - output operating time units (minutes/seconds) and operating mode (see Ch. 5.3.2.2).

**OutC1, OutC2, OutC3** and **Siren** - programmable output names. User can change the name under his own discretion. Maximum number of name characters: 16.

**S01**: - command for common system parameters programming.

**E20** - the way to inform user about arming/disarming. User can be informed by short call or SMS message. (see Ch. 5.3.2.2) .

**F31** - system response to incoming/outgoing calls and number of calls in alarm state. (see Ch. 5.3.2.5).

**G01** - SMS delay time in case of the main power supply failure (see Ch. 5.3.2.6).

**H00** - modes of data transfer to the alarm monitoring station. (see Ch. 7.3).



- J01** - the system response to intentional GSM jamming. Possible values: J00, J01, J02, J03.  
J00: detection of jamming signal deactivated.  
J01: an SMS message is sent to users after resuming of communication. The message indicates the GSM jamming onset time.  
J02: detection of GSM jamming signal activates the siren.  
J03: operates as the functions J01 and J02.
- K00** - the method of system control.  
K00: the system is controlled by a PARADOX keypad.  
K01: the system is controlled by a iButton (DALLAS) keys.  
K02: the system is controlled by an ON/OFF switch.
- L32** - SMS structure and SMS password functionality.
- P00** - splitting of the system into partitioning and 24 hours tamper supervision (see Ch. 5.3.2.8).
- T20** - entry delay time. Possible values: 00 – 99 seconds.  
After correction of the parameters SMS message is sent back to GsmAlarm-500E.

## 5.3.2.1. OUTPUTS C1-C4 (K1, K2): OPERATING MODE

Addr:[321-325]

Output mode	Explanation of operating
M00 M01	Output controlled by DTMF or SMS instructions. If zero operating time is programmed (T00), output is activated/deactivated and remains in the same state after receiving DTMF or SMS instruction. If not zero operating time is programmed, after receiving DTMF or SMS instruction, output is activated, it deactivates automatically after expiration of the programmed time.
M02	System state indicator mode. Output is in operating together with MODE indicator.
M03	Output is activated when the system is armed. It is deactivated when the system is disarmed. If the system is divided into two partitions, the output C1 indicates a state of the first partition, the output C2 indicates a state of the second partition.
M04	Control by short call without number recognition function. Output is activated with a call from any number. If zero operating time is programmed (T00), output state changes after a call and remains unchanged till the next short call. If not zero operating time is programmed, after receiving short call instruction output is activated, it deactivates automatically after expiration of the programmed period.
M05	Control by short call with number recognition function (gate control mode). This mode operates analogue to M04, thus it is activated only if short call number coincides with programmed numbers.
M06	Siren mode.
M07	Siren mode with audible confirmation. After arming, one short audible beep is heard. After disarming, two short audible beeps are heard.
M08	Output is activated in case of wiring trouble of fire sensor.
M09	Output is activated in case of AC mains failure.
M10	Output is activated in case of GSM signal loss.
M30	Additional audible buzzer mode.
M11	Output state depends on the state of zone Z1 *
M12	Output state depends on the state of zone Z2 *
M13	Output state depends on the state of zone Z3 *
M14	Output state depends on the state of zone Z4 *
M15	Output state depends on the state of zone Z5 *
M16	Output state depends on the state of zone Z6 *
M17	Output state depends on the state of zone Z7 *
M18	Output state depends on the state of zone Z8 *
M19	Output state depends on the state of zone Z9 *
M20	Output state depends on the state of zone Z10 *
M21	Output state depends on the state of zone Z11 *
M22	Output state depends on the state of zone Z12 *
M23	Output state depends on the state of zone Z13 *
M24	Output state depends on the state of zone Z14 *
M25	Output state depends on the state of zone Z15 *
M30	Additional audible buzzer mode.
M31	The output is activated by simultaneously pressing and holding ENTER and CLEAR keys for 3 sec. This mode is recommended for switching of power supply voltage of fire sensors. Conditions of mode M01 (M00) also persist.
M32	The output is <b>activated</b> by simultaneously pressing and holding the keypad buttons 1 and 2 for 3 sec or by the command "Logical Key 1". ** The output is <b>deactivated</b> by simultaneously pressing and holding the keypad buttons 2 and 3 for 3 sec or by the command "Logical Key 4". **

M33	The output is <b>activated</b> by simultaneously pressing and holding the keypad buttons 4 and 5 for 3 sec or by the command “Logical Key 2”. ** The output is <b>deactivated</b> by simultaneously pressing and holding the keypad buttons 5 and 6 for 3 sec or by the command “Logical Key 5”. **
M34	The output is <b>activated</b> by simultaneously pressing and holding the keypad buttons 7 and 8 for 3 sec. or by the command “Logical Key 3”. ** The output is <b>deactivated</b> upon simultaneously pressing and holding the keypad buttons 8 and 9 for 3 sec or by the command “Logical Key 6”. **

\* If zero operating time is programmed (T00), output is activated when adequate zone is open and deactivated when adequate zone is closed. If not zero delay time is programmed, output is activated automatically when adequate zone is opened and deactivates automatically after expiration of the programmed time *T*.

\*\* Outputs are controllable when system is armed or disarmed. Command “Logical Key” can be executed only by TM50 keypad.

**5.3.2.2.    OUTPUTS C1-C4 (K1, K2): INVERTED MODE AND OPERATING TIME UNITS**  
**Addr:[321-325]**

Time units	VXY		Inverting
	X	Y	
Seconds	0	0	Output not inverted.
Minutes*.	1	1	Output inverted.

\* In Siren mode the output operating time can be programmed only in minutes.

**5.3.2.3.    CONFIGURATION OF THE GATE CONTROL MODE**

Connect the system after the wiring diagram presented in Chapter 4.2.3. The message AAAAAAAA CPARAM is sent to GsmAlarm-500E to instruct the device to operate in the gate control mode (see Ch 5.3.2.). When output K1 K2 (see Ch. 4.2.3) is used for control of the gate, output parameter M02 in the message received from the device is changed, for example, to M05 and send the message back with the modified values. When another output is used for gate control, the device is programmed in the same fashion. Operation output mode is described in Chapter 5.3.2.1 (M05 or M04). Output response time is determined by the value of parameter T.

Send the following SMS from any mobile phone into GsmAlarm-500E: AAAAAAAA ZPARAM (see Ch. 5.3.1.). Afterwards, send the message AAAAAAAA ZPARAM to the device (see Ch. 5.3.1). Change the values of parameters M and A of all zones to 00 and send the message back with the modified values.

Setup of user telephone numbers is described in Ch 5.2, 5.21 and 14 (ADDNR:, ADDNR-C1:, ADDNR-C2:, ADDNR-C3:, ADDNR-C4:, DELNR:)

Additionally, up to 20 DALLAS keys can be used for gate control. Individual operated outputs can be assigned to different telephone numbers. The most convenient way to set them up is by a computer (see Ch. 5.8).

**Important!** *Two identical telephone numbers cannot be programmed under different names!*

Use command *NRLIST* to review the numbers (see Ch. 14).

**5.3.2.4. PARAMETER “E” : THE WAY USER IS INFORMED ABOUT ARMING/DISARMING**

**Addr:[273]**

Arm notification	EXY		Disarm notification
	X	Y	
All functions below are deactivated.	0	0	All functions below are deactivated.
User is informed by SMS.	1	1	User is informed by SMS.
User is informed with a short call.	2	2	User is informed with a short call.
User is informed with a short call and SMS message.	3	3	User is informed with a short call and SMS message.

Manufacturer-programmed value: E20.

**5.3.2.5. PARAMETER “F” : SYSTEM RESPONSE TO INCOMING CALLS AND NUMBER OF CALLS IN ALARM STATE**

**Addr:[274]**

System response to incoming call*	FXY		Number of the calls in alarm mode
	X	Y	
All functions below are deactivated.	0	0	-
If a call is received from unknown caller, user ALNR1 will receive a SMS with caller’s number.	1	1	After alarm triggering, users are called once.
If calling from user’s number, after 3-4 calls the system will pick up, armed mode will remain on.	2	2	Users are called twice.
Armed mode is activated after user’s short call.	4	3	Users are called 3 times.

Manufacturer-programmed value: F31.

*Note! If several functions have to be operative, sum of the numbers is used. E.g.: for all three X functions to be active, X value must be 7 (1+2+4=7).*

**5.3.2.6. PARAMETER “G”: SMS DELAY TIME IN CASE OF POWER SUPPLY FAILURE**

**Addr:[139]**

In the case of the mains 230V power supply failure, message is sent to user and (or) alarm monitoring station only after programmed period. If G=0 (G00), reports about failure and re-connection of the main power supply voltage wouldn't be generated. Possible delayed time values: G01-G99 (in minutes).

After recovery of the main power supply, report will be send after 1 minute period of time. This time cannot be programmed.

**5.3.2.7. PARAMETER “L”: SMS STRUCTURE AND SMS MANAGEMENT PASSWORD**

Addr:[237]

SMS Structure	LXY		SMS Management Password
	X	Y	
All bellow described functions are deactivated.	0	0	SMS password deactivated. The system can be configured by anybody, who knows the system telephone number.
SMS message contains a number of triggering events after the zone name.	1	1	SMS commands are executed, if SMS sender is one of the five users ALRNR1 – ALRNR5.
SMS message contains the name of the user that armed or disarmed the system.	2	2	SMS commands are executed only if the password at the beginning of SMS matches the stored password.
Warning SMS messages (failure and restoration of power supply, low battery, detection of GSM jamming) are sent to all ALRNR users (not only to ALRNR1).	4	4	SMS messages informing about turning on (turning off) arming mode will be sent to all users (ALARNR1 ... ALARNR5).

Manufacturer-programmed value: L32.

**Important!** To activate several functions the total of numbers should be used. Example: To activate all three functions the digit X should be 7 (1+2+4=7).

**5.3.2.8. PARAMETER P – DIVISION OF THE SYSTEM INTO PARTITIONS.**

**24 HOUR TAMPER SUPERVISION.**

Addr: [236]

24 hours tamper contact monitoring.	PXY		Division into partitions
	X	Y	
24 hours tamper supervision is deactivated.	0	0	Undivided.
24 hours supervision is activated.	4	1	The system is split into two partitions.

Manufacturer-programmed value: P00.

**Important !** The sum of corresponding digits should be used to activate several X functions.

**5.3.3. PROGRAMMING PARTITION NAMES**

If it is necessary to secure two objects and system is divided into two partitions, user can program names of the partitions. It is possible to receive a message with names of the partitions after sending to GsmAlarm-500E following message:

A A A A A A A A R P A R A M

GsmAlarm-500E sends SMS message with available names of the partitions:

AAAAAAA R1: PARTITION1, R2: PARTITION2,

After correction of the names, SMS message is sent back to GsmAlarm-500E. Maximum number of the name’s characters is 16.

### 5.3.4. SETTING SYSTEM CLOCK

System's clock should be set only if timer function is used. Time sets automatically, when GSM module connect to network (if GSM service provider does provide automatic time synchronization service). Checkup of programmed system time can be performed by sending following SMS to GsmAlarm-500E:

A	A	A	A	A	A	A	A	S	C	L	O	C	K
---	---	---	---	---	---	---	---	---	---	---	---	---	---

To synchronize the system clock time with the GSM network time, send the following SMS:

A	A	A	A	A	A	A	A	T	S	I	N	C	H
---	---	---	---	---	---	---	---	---	---	---	---	---	---

The system clock time also can be set manually: in order to set system clock time (E.g. 12:45), the following SMS must be sent to GsmAlarm-500E:

A	A	A	A	A	A	A	A	C	L	O	C	K	:	1	2	-	4	5		1	0	/	0	1	/	1	5
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---	---

<b>AAAAAAAA</b>	-password;
<b>SCLOCK:</b>	-time set instruction;
<b>12-45</b>	-time (12: 45).
<b>10/01/15</b>	-date (year, month, day).

GsmAlarm-500E sends back SMS with programmed system time to the specific user.

### 5.3.5. PROGRAMMING 24 HOUR TIMER

Timer function can activate or deactivate the programmable output, arm or disarm the system, send SMS message, etc. on a desired time.

It is recommended to receive SMS message with programmed timer parameters. To do that, following SMS message must be sent to GsmAlarm-500E:

A	A	A	A	A	A	A	A	S	T	I	M	E	R
---	---	---	---	---	---	---	---	---	---	---	---	---	---

GsmAlarm-500E sends back 2 messages with current timer parameters to user:

AAAAAAAA TMR01:00,00-00 TMR02:00,00-00 TMR03:00,00-00 TMR04:00,00-00 TMR05:00,00-00 TMR06:00,00-00 TMR07:00,00-00 TMR08:00,00-00 TMR09:00,00-00 TMR10:00,00-00
---

<b>AAAAAAAA</b>	-password;
<b>TMR01...TMR10</b>	-number of timer event. 20 independent timer events can be programmed.
<b>:00,</b>	-timer instruction, defining which function should be performed in programmed time. Please read detailed description of timer instructions in Ch. 5.3.5.1.
<b>00-00</b>	- timer activation time.

Renewed SMS message has to be sent to GsmAlarm-500E. User receives SMS message with newly programmed parameters after.

*Examples for programming.*

For the system to activate PGM output C2 on 12:30, deactivate on 13:00 and to send SMS message, informing about the state of outputs on 13:01, following SMS has to be sent to GsmAlarm-500E:

A	A	A	A	A	A	A	T	M	R	0	1	:	2	2	,	1	2	-	3	0	T	M	R	0	2	:	2	0	,	
1	3	-	0	0	T	M	R	0	3	:	7	7	,	1	3	-	0	1												

**5.3.5.1. TIMER INSTRUCTIONS**

**Addr: [401-420]**

Timer instruction	Description of the timer instruction
00	Timer event is not active.
01	Arms the whole system (regular arming).
02	Disarms the whole system.
11	Activates output C1.
10	Deactivates output C1.
22	Activates output C2.
20	Deactivates output C2.
33	Activates output C3.
30	Deactivates output C3.
44	Activates output C4 (K1, K2).
40	Deactivates output C4 (K1, K2).
77	Requests to send SMS message with information about output state.
80	Disarms the first partition.
81	Arms the first partition, STAY mode.
82	Arms the first partition, SLEEP mode.
83	Arms the first partition.
88	Requests to send SMS message with information about GSM signal quality and power supply voltage.
89	Transfers the test signal to security monitoring station via Contact ID protocol (see Ch. 7.3).
90	Disarms the second partition.
91	Arms the second partition, STAY mode.
92	Arms the second partition, SLEEP mode.
93	Arms the second partition.
97	Requests to send SMS with open zones only.
98	Requests to send SMS with temperature values only.
99	Requests to send SMS message with information about state of protected zones.

*Note!* Command 89 is sending message to alarm monitoring station only.

#### 5.4. PROGRAMMING THE DESCRIPTION OF INPUT ZONE STATE

In order to program description of input zone state (e.g. “ALARM” when zone is open or “OK” when zone is closed), following message is sent to GsmAlarm-500E:

A	A	A	A	A	A	A	Z	O	P	T	X	T	:	A	L	A	R	M	,	Z	C	L	T	X	T	:	O	K	,
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**ZOPTXT:** and **ZCLTXT:** - programming commands.

**ALARM, OK** - words informing about state of the zone.

#### 5.5. PROGRAMMING USER NAMES

Each user of a keypad or an iButton key can be assigned a name that is indicated in the SMS message of arming or disarming of the system. Up to 20 user names can be programmed. The following message is sent to GsmAlarm-500E to receive an SMS message with the user names:

A	A	A	A	A	A	A	U	P	A	R	A	M
---	---	---	---	---	---	---	---	---	---	---	---	---

GsmAlarm-500E sends 3 messages with user names to the user :

AAAAAAA U01:User1, U02:User2, U03:User3, U04:User4, U05:User5, U06:User6, U07:User7,
--

A corrected SMS message is sent to GsmAlarm-500E. The user receives a confirmation SMS message with the user names.

The maximal length of a user name: 16 characters.

#### 5.6. PROGRAMMING SMS PASSWORD

In order to change manufacturer-programmed SMS password, send GsmAlarm-500E the following message:

A	A	A	A	A	A	A	P	A	S	S	W	:	A	B	C	D	e	f	g	h
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**AAAAAAA** – old SMS password.

**PASSW** – password changing instruction.

**ABCDefgh** – new SMS password. Password must be 8 characters long!

*Note! No characters/spaces can be used before password, space must follow the password.*

If programming instruction is executed successfully, user gets a confirming SMS message with the new SMS password.



### 5.7. PROGRAMMING THE SYSTEM USING THE KEYPAD

All system parameters, except for user phone numbers and names of zones and outputs, are programmable using keypad. User numbers are programmed only by sending SMS message or by method described in Ch. 5.2.1, names – SMS message or via GApron program.

To program system parameters:

- Press the [ENTER] key.
- Enter your system installer code (default code is 0000 or 000000). The lights **ARM** and **STAY** will flash, programming mode is activated.
- Select the parameter by entering a 3-digit address. The lights **ARM** and **STAY** will lit constantly.
- Enter a new 2-digit parameter.
- Press the [CLEAR] key to exit the programming mode.

*All parameters and addresses of the parameters are provided in the table. Please see Chapters 5.7.1 – 5.7.29 for more detailed information.*

Address	Parameter description	SMS parameters*
000	Installer access code (4 or 6 digits).	-
001-020	User access codes (4 or 6 digits).	-
021	CONTACT ID user identification number.	CIDACC
031-050	User code function.	-
100	Exit delay.	T (S01)
101-115	Zone operating mode: entry delay or triggering temperature.	T (Z01-Z15)
133	Delay time of report SMS about the failure of main power supply.	G (S01)
141-144	Output operating mode: operating time.	T (C01-C04)
151-165	Zone response time	-
171-176	Temperature correction.	-
201-215	Zone Z1-Z15 operating mode: triggering conditions.	A (Z01-Z15)
233	Mode of data transfer to alarm monitoring station.	H (S01)
234	User code length (4 or 6 digits).	-
235	Exit delay audible indication.	-
236	Dividing the system into two partitions. 24 hours tamper supervision.	P (S01)
237	SMS structure and SMS password functionality.	L (S01)
238	GSM JAMMING notification.	J (S01)
239	Backup battery monitoring.	-
240	StayD indication.	-
241-255	Input operating mode: alarm state after input triggering.	M (Z01-Z15)
273	Informing users about arming and disarming.	E (S01)
274	Responding to unrecognized caller ID and number of calls in the case of alarm.	F (S01)
275	Informing users when STAY or SLEEP mode switching ON.	
276	Informing users when STAY or SLEEP mode switching OFF.	
281-295	Zone operating mode: dividing into the partitions and partial protection modes STAY and SLEEP.	P (Z01-Z15)
320	Output operating mode: inverted / not inverted.	V ( C01-C04)
321-324	Output operating mode.	M (C01-C04)
326	Output operating time units: seconds / minutes	V ( C01-C04)
331-345	Pulse counting mode.	I (Z01-Z15)
401-420	Timer events.	STIMER
900	Time and date programming.	SCLOCK

\* parameters if programming by SMS message.

### 5.7.1. PROGRAMMING ACCESS CODES

Access codes are personal identification numbers that allow you to enter certain programming modes, arm or disarm your system as well as activate or deactivate programmable outputs. The system supports 1 installer code and 20 user access codes.

User access code can arm or disarm the system, activate or deactivate programmable outputs. The installer code is used for the system programming only.

Your system can be programmed to use either 4- or 6-digit access codes (see Ch. 5.7.20), where each digit can be any value from 0 to 9. Six digits codes are considered more difficult to “crack” and therefore, more secure.

To program an Access Code:

- Press the **[ENTER]** key.
- Enter your system installer code (default code is 0000 or 000000). The lights **ARM** and **STAY** will flash.
- Select a user by entering a 3-digit user number (e.g. 001 for user 1 or 020 for user 20). The lights **ARM** and **STAY** will lit constantly.
- Enter a new 4- or 6-digit access code.

To delete an Access Code:

- Press the **[ENTER]** key.
- Enter your system installer code (default code is 0000 or 000000).
- Select a user by entering a 3-digit user number (e.g. 001 for user 1 or 020 for user 20).
- Press and hold the **[SLEEP]** key until you hear the confirmation beep.

Table below describes which user will be informed about arming/ disarming the system with a short call or SMS message.

Address (user number)	User or installer access code	Which user will be informed about arming/ disarming the system
000	Installer Access Code	-
001	1 User Access Code	ALRNR1
002	2 User Access Code	ALRNR2
003	3 User Access Code	ALRNR3
004	4 User Access Code	ALRNR4
005	5 User Access Code	ALRNR5
006	6 User Access Code	ALRNR1
007	7 User Access Code	ALRNR2
008	8 User Access Code	ALRNR3
009	9 User Access Code	ALRNR4
010	10 User Access Code	ALRNR5
011	11 User Access Code	ALRNR1
012	12 User Access Code	ALRNR2
013	13 User Access Code	ALRNR3
014	14 User Access Code	ALRNR4
015	15 User Access Code	ALRNR5
016	15 User Access Code	ALRNR1
017	17 User Access Code	ALRNR2
018	18 User Access Code	ALRNR3
019	19 User Access Code	ALRNR4
020	20 User Access Code	ALRNR5

### 5.7.2. USER ACCESS CODE FUNCTIONALITY

After entering corresponding code user can arm or disarm the whole system or separate partitions, activate or deactivate programmed outputs.

Address	Parameter
031	1 user access code functionality
032	2 user access code functionality
033	3 user access code functionality
034	4 user access code functionality
035	5 user access code functionality
036	6 user access code functionality
037	7 user access code functionality
038	8 user access code functionality
039	9 user access code functionality
040	10 user access code functionality

Address	Parameter
041	11 user access code functionality
042	12 user access code functionality
043	13 user access code functionality
044	14 user access code functionality
045	15 user access code functionality
046	16 user access code functionality
047	17 user access code functionality
048	18 user access code functionality
049	19 user access code functionality
050	20 user access code functionality

Parameter value	Access Code Functionality
00	Arm mode uncontrolled
01	Arms or disarms the first partition.
02	Arms or disarms the second partition.
03	Arms or disarms the whole system. When a keypad is used, the partition is selected by the user (see Ch. 8.6).
10	Activates or deactivates the output C1. *
20	Activates or deactivates the output C2. *
30	Activates or deactivates the output C3. *
40	Activates or deactivates the output C4 (K1, K2). *

Manufacturer-programmed value: 01

\* Output is switched on after pressing [ARM] key and entering corresponding code. Output is switched off after pressing [OFF] key and entering corresponding code.

### 5.7.3. EXIT DELAY TIME

The closing code transmission takes place after the exit delay time. Therefore, if the system is armed and disarmed before the expiry of the exit time, no transmission will take place.

Possible values: 00 – 99 seconds.

Address	Parameter
100	Exit delay time

Manufacturer-programmed exit delay time: 20 seconds.

### 5.7.4. PARAMETER “T”: ENTRY DELAY TIME OR TRIGGERING TEMPERATURE

After the exit delay has expired, an open on the zone will cause the entry delay time to start. During the entry time the keypad buzzer will sound steady. If the panel is disarmed before the entry time expires no alarm will be generated. Possible entry delay time values: 0...99 seconds.

If zone operates in temperature measurement mode, value of T parameter corresponds to triggering (alarm activation) temperature. Possible temperature values: 0...99 °C.

Address	Parameter
101	Zone Z1 „T“ parameter
102	Zone Z2 „T“ parameter
103	Zone Z3 „T“ parameter
104	Zone Z4 „T“ parameter
105	Zone Z5 „T“ parameter
106	Zone Z6 „T“ parameter
107	Zone Z7 „T“ parameter
108	Zone Z8 „T“ parameter

Address	Parameter
109	Zone Z9 „T“ parameter
110	Zone Z10 „T“ parameter
111	Zone Z11 „T“ parameter
112	Zone Z12 „T“ parameter
113	Zone Z13 „T“ parameter
114	Zone Z14 „T“ parameter
115	Zone Z15 „T“ parameter

Manufacturer-programmed time for zone Z1: 20 seconds, zones Z2-Z15: 00 seconds.

### 5.7.5. PARAMETER “A”: INPUT TRIGGERING CONDITIONS

Parameter A defines system’s input operating modes and is described in detail in Chapter 5.3.1.1.

Address	Parameter
201	Zone Z1 „A“ parameter
202	Zone Z2 „A“ parameter
203	Zone Z3 „A“ parameter
204	Zone Z4 „A“ parameter
205	Zone Z5 „A“ parameter
206	Zone Z6 „A“ parameter
207	Zone Z7 „A“ parameter
208	Zone Z8 „A“ parameter

Address	Parameter
209	Zone Z9 „A“ parameter
210	Zone Z10 „A“ parameter
211	Zone Z11 „A“ parameter
212	Zone Z12 „A“ parameter
213	Zone Z13 „A“ parameter
214	Zone Z14 „A“ parameter
215	Zone Z15 „A“ parameter

Manufacturer-programmed values for zones Z1-Z6: 30, zone Z7: 52 and zones Z8-Z15: 00.

### 5.7.6. PARAMETER “M”: SYSTEM STATE AFTER ZONE TRIGGERING

Parameter M defines system response to the violation of alarm zone and which users are informed if certain zone sensors are triggered. It is described in detail in Chapter 5.3.1.2.

Address	Parameter
241	Zone Z1 „M“ parameter
242	Zone Z2 „M“ parameter
243	Zone Z3 „M“ parameter
244	Zone Z4 „M“ parameter
245	Zone Z5 „M“ parameter
246	Zone Z6 „M“ parameter
247	Zone Z7 „M“ parameter
248	Zone Z8 „M“ parameter

Address	Parameter
249	Zone Z9 „M“ parameter
250	Zone Z10 „M“ parameter
251	Zone Z11 „M“ parameter
252	Zone Z12 „M“ parameter
253	Zone Z13 „M“ parameter
254	Zone Z14 „M“ parameter
255	Zone Z15 „M“ parameter

Manufacturer-programmed values for all zones: 70.

**5.7.7. PARAMETER “P”: PARTITION ASSIGNMENT AND PARTIAL ARM METHODS. TAMPER RECOGNITION**

This parameter is defining if zone is operating in full or partial protection mode. Also, whether tamper recognition is activated. Possible operating modes are described in detail in Chapter 5.3.1.3.

Address	Parameter
281	Zone Z1 „P” parameter
282	Zone Z2 „P” parameter
283	Zone Z3 „P” parameter
284	Zone Z4 „P” parameter
285	Zone Z5 „P” parameter
286	Zone Z6 „P” parameter
287	Zone Z7 „P” parameter
288	Zone Z8 „P” parameter

Address	Parameter
289	Zone Z9 „P” parameter
290	Zone Z10 „P” parameter
291	Zone Z11 „P” parameter
292	Zone Z12 „P” parameter
293	Zone Z13 „P” parameter
294	Zone Z14 „P” parameter
295	Zone Z15 „P” parameter

Default values for all zones programmed by manufacturer: 10.

**5.7.8. PARAMETER “I”: PULSE COUNTING MODE OR TEMPERATURE HYSTERESIS**

If the first digit of this parameter is larger than 1, the zone operates in the pulse counting mode. After triggering of a zone the number of times  $N_i$  during the preset time  $T_i$ , the system switches over to the alarm state. The first digit: the number of triggering events  $N_i$ . The second digit: the pulse counting time  $T_i$ . Multiplication of the second number by 10 produces the time in seconds. Minimal time: 10 seconds (1), maximal time: 90 seconds (9). If  $N_i=0$  or  $N_i=1$ , the pulse counting mode is switched off.

In temperature measuring mode this parameter comply temperature difference, at which triggered zone returns to primary state.

Address	Parameter
331	„I” parameter of zone Z1
332	„I” parameter of zone Z2
333	„I” parameter of zone Z3
334	„I” parameter of zone Z4
335	„I” parameter of zone Z5
336	„I” parameter of zone Z6
337	„I” parameter of zone Z7
338	„I” parameter of zone Z8

Address	Parameter
339	„I” parameter of zone Z9
340	„I” parameter of zone Z10
341	„I” parameter of zone Z11
342	„I” parameter of zone Z12
343	„I” parameter of zone Z13
344	„I” parameter of zone Z14
345	„I” parameter of zone Z15

The factory default values for all zones: 02.

**5.7.9. ZONE RESPONSE TIME**

This parameter indicates the duration of presence of a constant signal at the input that is required for the system to register an alteration of the zone status. The system becomes increasingly resistant to interference with increase of this time. The set time should be multiplied by 100 to obtain the time in milliseconds. The range of possible values: 01-99 x100 ms (0.1 s – 9.9 s).

Address	Parameter
151	Response time of zone Z1
152	Response time of zone Z2
153	Response time of zone Z3
154	Response time of zone Z4
155	Response time of zone Z5
156	Response time of zone Z6
157	Response time of zone Z7
158	Response time of zone Z8

Address	Parameter
159	Response time of zone Z9
160	Response time of zone Z10
161	Response time of zone Z11
162	Response time of zone Z12
163	Response time of zone Z13
164	Response time of zone Z14
165	Response time of zone Z15

The factory default values for all zones: 05 (500ms).

**5.7.10. OPERATING TIME OF OUTPUTS C1-C4 (K1, K2)**

Output operating time (if output operates in impulse mode). Possible values: 00-99.

Address	Parameter
141	Operation time of output C1.
142	Operation time of output C2.
143	Operation time of output C3.
144	Operation time of output C4 (K1, K2).

In siren mode operation time is in minutes, in all other modes in seconds or in minutes.

Manufacturer-programmed time: C1:00 sec., C2:05 sec., C3:00 sec., C4 (K1, K2): 02 min.

**5.7.11. OPERATING MODE OF OUTPUTS C1-C4 and BELL**

Possible operating modes are described in detail in Chapter 5.3.2.1.

Address	Parameter
321	Operating mode of output C1.
322	Operating mode of output C2.
323	Operating mode of output C3.
324	Operating mode of output C4.

Manufacturer-programmed output modes: C1:01, C2:05, C3:31, C4:06.

**5.7.12. OUTPUTS C1-C4 (K1, K2): INVERTED MODE AND OPERATING TIME UNITS**

The outputs can operate in an inverted mode, i.e., the output circuit is disconnected upon reception of activation command and connected upon reception of deactivation command.

Address	Parameter value	Explanation of operation
320	01	Output C1 inverted.
320	02	Output C2 inverted.
320	04	Output C3 inverted.
320	08	Output C4 (K1, K2) inverted.

Manufacturer-programmed value: 04.

In Siren mode the output operating time can be programmed only in minutes. In other modes the output operating time can be programmed in seconds (if the value is 0) or in minutes.

Address	Parameter value	Explanation of operation
326	01	Time units of output C1: minutes.
326	02	Time units of output C2: minutes.
326	04	Time units of output C3: minutes.
326	08	Time units of output C4 (K1, K2): minutes.

Manufacturer-programmed value: 00.

**Important!** To invert several outputs the total of numbers should be used. Example: To invert all outputs the number to be entered is 15 (1+2+4+8).

**5.7.13. PARAMETER “E”: THE WAY USER IS INFORMED ABOUT ARMING AND DISARMING**

Parameter „E” is described in detail in Chapter 5.3.2.2.

Address	Parameter
273	System parameter „E“.

Manufacturer-programmed value: 20.

**5.7.14. PARAMETER “F”: SYSTEM RESPONSE TO INCOMING CALLS AND NUMBER OF CALLS TO USER**

Parameter „F“ defines system response to incoming calls and number of calls to user in alarm state. It is described in detail in Chapter 5.3.2.5.

Address	Parameter
274	System parameter „F“.

Manufacturer-programmed value: 31.

**5.7.15. PARAMETER “G”: DALAY TIME OF REPORT SMS IN CASE OF POWER SUPPLY FAILURE**

Parameter “G” defines *delay time of report SMS in case of power supply failure (in minutes)*. Possible values: 00-99 minutes. This parameter is described in Chapter 5.3.2.6 in more detail.

Address	Parameter
133	System parameter „G“.

Manufacturer-programmed value: 01.

**5.7.16. PARAMETER “H”: DATA TRANSFER TO THE ALARM MONITORING STATION**

This parameter is used for setting mode of data transfer to the alarm monitoring station. This parameter is described in Chapter 7.3 in more detail.

Address	Parameter
233	System parameter „H“.

Manufacturer-programmed value: 00.

**5.7.17. PARAMETER “J” – SYSTEM RESPONSE TO INTENTIONAL GSM JAMMING**

Parameter „J“ defines the system response to intentional GSM jamming.

Address	Param. value	Explanation of operation
238	00	GSM Jamming detection is off.
238	01	An SMS message is sent to users after resuming of communication.
238	02	Detection of GSM Jamming signal activates the siren.
238	03	Operates as the functions 01 and 02.

Manufacturer-programmed value: 01.

**5.7.18. PARAMETER “L”: SMS STRUCTURE AND SMS PASSWORD FUNCTIONALITY**

This parameter is described in Chapter 5.3.2.7 in more detail.

Address	Parameter
237	System parameter „L“.

Manufacturer-programmed value: 32.

**5.7.19. PARAMETER “P”: DIVIDING INTO PARTITIONS. 24 HOUR TAMPER SUPERVISION.**

The parameter is comprehensively described in Ch. 5.3.2.8

Address	Parameter
236	System parameter „P“.

Manufacturer-programmed value: 00.



### 5.7.20. ACCESS CODE LENGTH (4 OR 6 DIGITS)

Address	Parameter value	Explanation
234	04	Four digit user access code.
234	06	Six digit user access code.

Manufacturer-programmed value: 04.

### 5.7.21. EXIT DELAY AUDIBLE INDICATION

When a close code is entered, delay time count can be indicated by short keypad beeps, repeating each second.

Address	Parameter value	Explanation
235	00	Audible indication OFF.
235	01	Audible indication ON.

Manufacturer-programmed value: 01.

### 5.7.22. ASSIGNING KEYPAD ZONES

Paradox keypads have zone inputs to which devices such as door contacts can be connected. (See Ch. 4.2.1 for wiring information). Once the keypad zones are installed, assign the zone number to keypad zone.

- Press the [ENTER] key.
- Enter your system installer code.
- Press and hold the **⓪** key until 3 short beeps are heard (lights **ARM** and **STAY** are on constantly).

If K636, K10V or K10H keypad is used, keypad zone is assigned after pressing corresponding key (from 1 to 10). Turned on key is showing the zone that is assigned. Zone assigning is confirmed by pressing [ENTER] key. Keypad zone can be deleted by pressing the [CLEAR] key.

If K32 or K32LCD keypad is used, keypad zone is selected by pressing two digits. For example, if you want to assign zone 16 to the keypad zone, press 1 and 6. If you want to assign zone 3, press 0 and 3. Keypad zone is deleted by pressing [CLEAR] and [ENTER] keys.

**Important:** after assigning zone to the keypad, the corresponding input zone won't be operating on the GsmAlarm-500E board.

### 5.7.23. SETTING SYSTEM CLOCK

To set system clock and date:

- Press the [TBL] button. [TBL] will flash.
- Press the [8] button. [TBL] and [ARM] will flash.
- K32LCD keypad screen will show "Time".
- Enter time in following format: HHMM. HH – hours, MM – minutes. For example, if time 12 hours 45 minutes must be programmed, enter 1245. After entering time, four short beeps are heard and date programming mode is turned on automatically (ARM LED turns on constantly, the K32LCD keypad display reads "Date").
- Enter date in following format: YYYYMMDD. YYYY: year, MM: month, DD: day. For example, if you have to program date: year 2014, 01 month, 23 day, enter 20140123. After entering date four short beeps are heard.
- Exit the programming mode by pressing the key [CLEAR].

In case of keypad TM50, time programming is activated by selecting the menu items: Menu -> Settings -> Home page -> Set Time / Date.

### 5.7.24. PROGRAMMING 24 HOUR TIMER

User is able to program up to 20 independent timer events. Each event is definable with event number, instruction and event time. Address, given in the table below, indicates event number. Event instruction indicates function to be performed in programmed time (e.g. SMS message to be sent, related output activated/ deactivated etc.). Event commands are described in Chapter 5.3.5.1.

To program the timer:

- Press the [ENTER] key.
- Enter your system installer code. The lights **ARM** and **STAY** will flash.
- Enter 3-digit address, indicating event number. The lights **ARM** and **STAY** will lit constantly.
- Enter 6-digit event instruction and event time. First two digits – event instruction; where following four – timer activation time. E.g.: for output C2 to be activated at 12:15, begin entering address 401 (event TMR01), then enter 22 12 15 (22 – output C2 activation code, 12 15 – activation time).

Addr.	Event No.
401	TMR01
402	TMR02
403	TMR03
404	TMR04
405	TMR05

Addr.	Event No.
406	TMR06
407	TMR07
408	TMR08
409	TMR09
410	TMR10

Addr.	Event No.
411	TMR11
412	TMR12
413	TMR13
414	TMR14
415	TMR15

Addr.	Event No.
416	TMR16
417	TMR17
418	TMR18
419	TMR19
420	TMR20

### 5.7.25. PROGRAMMING CONTACT ID USER ACCOUNT NUMBER

Four digit user account number is provided by security service that protects object. This parameter is described in Chapter 7 in more detail.

Address	User ID
021	0000 - 9999

Manufacturer-programmed Contact ID user account number: 0000.

The six digit account number mode corresponds only to the first four digits. The last two digits are ignoring. When programming, you can enter two zeros at the end.

**5.7.26. TEMPERATURE CORRECTION**

In most cases, an additional temperature correction is not necessary, but using several thermometers attached by cables of different lengths, indications may be slightly different because of cable resistance. Temperature measured on each zone can be adjusted by changing the address [171] (zone Z1) - [176] (zone Z6) parameter. Zero correction matches number 20. Increasing this number, the temperature value increases, by reducing – the temperature value decreases. Correction step: 0.3 °C.

**5.7.27. THE WAY USER IS INFORMED ABOUT STAY OR SLEEP MODE ACTIVATION**

Address	Parameter value	Purpose
275	00	After turning on STAY or SLEEP mode, user is informed by short call or (and) SMS message.
275	01	After turning on STAY or SLEEP mode, user is not informed.

Manufacturer-programmed value: 00.

**5.7.28. THE WAY USER IS INFORMED ABOUT STAY OR SLEEP MODE DEACTIVATION**

Address	Parameter value	Purpose
276	00	After turning off STAY or SLEEP mode, user is informed by short call or (and) SMS message.
276	01	After turning off STAY or SLEEP mode, user is not informed.

Manufacturer-programmed value: 00.

**5.7.29. KEYPAD INDICATOR StayD**

Address	Parameter value	Explanation of operation
240	00	StayD indication is on.
240	01	StayD indication is off.

Factory programmed value: 00.

In case of keypad TM50, we recommend to deactivate StayD indication.

**5.8. PROGRAMMING iBUTTON KEYS**

It is recommended to execute programming and setup of iButton keys via a computer using the GSM alarm configuration tool GApog. The computer allows programming, deletion, and assigning of iButton keys to a specific user or programmable output, and setting up of key control functions. The GSM alarm configuration tool is downloadable from the website of the manufacturer: [www.eltech.lt](http://www.eltech.lt).

Without a computer, only programming of new keys is possible. Deletion and setup of programmed keys is impossible. The key programming mode is activated by the DTMF/SMS command 71# (see Ch. 14). The key programming mode is indicated by a rapid blinking of the MODE indicator. In the programming mode, a key is attached to the reader for 2-3 seconds. Completion of the key code capture is confirmed by a very rapid blinking of the MODE indicator. After programming of all keys, the key programming mode should be deactivated. It may be done by the DTMF/SMS command 70# or by switching off and on the system power supply.



the computer of the user. The user sends an SMS message to the GSM module, containing the command CONNECT and the IP address of the user computer:

A	A	A	A	A	A	A	A	C	O	N	N	E	C	T	2	1	3	.	1	3	0	.	3	2	.	5	5
C	O	N	N	E	C	T	2	1	3	.	1	3	0	.	3	2	.	5	5								

(if SMS password is deactivated).

The *CONNECT* command activates the GPRS interface of the GSM module and the “client” mode. The GSM module sends an SMS message to the user, containing the computer IP address and the connection port number. The user should mark the option “*Wait for connection by GSM module*” in the window “*Connect over GPRS*”, enter the port number, click the button “*Wait*”, and wait for the GSM module to connect to the computer. The GSM module retries connecting to the specified IP address every 30 seconds.

The computer IP address that was included in the SMS message from the user is automatically saved in the GsmAlarm-500E memory. Later, the command CONNECT is sufficient to make the GSM module to connect to the same IP address:

A	A	A	A	A	A	A	A	C	O	N	N	E	C	T
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

(if SMS password is deactivated).

**Important!** *GPRS parameters of the GSM module should be correctly set up for GPRS interface to operate.* The GPRS parameters are configured via USB interface using GAprag software. *The setup procedure is described in the manual of GAprag software.*

## 6. RESETTING SYSTEM SETTINGS TO FACTORY DEFAULTS

In order to reset all system parameters to factory default settings, press and hold the RESET button for five seconds. The “MODE” LED will start flashing. Within 2 seconds of this flashing, press the reset switch again. The panel will reset to default and restart.

Only the parameters stored in the internal memory module system can be restored using this method. User numbers stored in SIM card will not be erased.

### 6.1. MANUFACTURER PROGRAMMED PARAMETERS

Input parameters											
Zone	N a m e	[Addr.]	Pr. A	[Addr.]	Pr. M	[Addr.]	Pr. P	[Addr.]	Pr. I	[Addr.]	Pr. T
Z1	Zone1	[201]	A30	[241]	M70	[281]	P10	[331]	I02	[101]	T20
Z2	Zone2	[202]	A30	[242]	M70	[282]	P10	[332]	I02	[102]	T00
Z3	Zone3	[203]	A30	[243]	M70	[283]	P10	[333]	I02	[103]	T00
Z4	Zone4	[204]	A30	[244]	M70	[284]	P10	[334]	I02	[104]	T00
Z5	Zone5	[205]	A30	[245]	M70	[285]	P10	[335]	I02	[105]	T00
Z6	Zone6	[206]	A30	[246]	M70	[286]	P10	[336]	I02	[106]	T00
Z7	Zone7	[207]	A52	[247]	M70	[287]	P10	[337]	I02	[107]	T00
Z8	Zone8	[208]	A00	[248]	M70	[288]	P10	[338]	I02	[108]	T00
Z9	Zone9	[209]	A00	[249]	M70	[289]	P10	[339]	I02	[109]	T00
Z10	Zone10	[210]	A00	[250]	M70	[290]	P10	[340]	I02	[110]	T00
Z11	Zone11	[211]	A00	[251]	M70	[291]	P10	[341]	I02	[111]	T00
Z12	Zone12	[212]	A00	[252]	M70	[292]	P10	[342]	I02	[112]	T00
Z13	Zone13	[213]	A00	[253]	M70	[293]	P10	[343]	I02	[113]	T00
Z14	Zone14	[214]	A00	[254]	M70	[294]	P10	[344]	I02	[114]	T00
Z15	Zone15	[215]	A00	[255]	M70	[295]	P10	[345]	I02	[115]	T00
Output parameters											
PGM Output	N a m e	[Addr.]	Param. M	[Addr.]	Operating time T	Param. V	[Addr.]	Invert.	Param. V	[Addr.]	Sec/Min
C1	OutC1	[321]	M01	[141]	T00 (sec.)	[320]	No	[326]	Sec		
C2	OutC2	[322]	M05	[142]	T05 (sec.)	[320]	No	[326]	Sec		
C3	OutC3	[323]	M31	[143]	T05 (sec.)	[320]	Yes	[326]	Sec		
C4 (K1, K2)	Siren	[324]	M06	[144]	T02 (min.)	[320]	No	[326]	Min		
Common system parameters											
SMS Password	E	F	G	H	J	K	L	P	T		
AAAAAAA	E20	F31	G01	H00	J01	K00	L32	P00	T20		

Administrator access code: 0000 (000000)

First user access code: 1234 (123456)

[Addr.] - parameter address when programming with the keypad.

## 7. DATA TRANSFER TO ALARM MONITORING STATION

User can choose object protection way:

- individual protection, when SMS messages and calls are addressed to user only;
- combined protection, when information about state of the object is received both by security service and user;
- protection by security service only.

Messages to alarm monitoring station are transmitted through GPRS channel, SIA DC-09 IP protocol, or audio channel, Contact ID protocol. Both transmission methods also can be used. In this case, the data are sent first through the GPRS channel, and if fails, are attempted to make a call and transmit data by the audio channel.

GsmAlarm-500E transfers data about violation and restoring of alarm zone, arming and disarming, power supply fault, malfunction of the backup battery, malfunction of the fire zone. Test messages can be sent on certain time.

To activate the data transfer to alarm monitoring station through GPRS channel, firstly need to program alarm monitoring station IP address, port, user account number (see Ch. 7.1) and turn on the GPRS channel (see Ch. 7.3). Once the GPRS channel is turned on, GSM module immediately sends a Null Message, which is invisible for alarm monitoring station personnel; it is used exceptionally for link test. If no response, the message is repeated every 60 seconds, in this case the LED of security system keypad will indicate a connection problem fault. Once the system will get a response from the monitoring station, the LED indicator will go off. The test message delivery period can be changed using GaProg program, available values are from 1...255 minutes. Default factory setting - 2 minutes.

In order to activate function of data transfer to the alarm monitoring station through voice channel it is necessary to program one or two numbers of alarm monitoring station (see Ch. 7.2), to program four digit user account number (see Ch. 7.2.1) and choose appropriate protection mode (see Ch. 7.3).

### 7.1. GPRS CHANNEL SETTINGS

GPRS settings can be programmed through the USB interface using the program GAprog or SMS messages. If programming via USB interface - security service server IP, port and user account number must be set into window "GPRS" under "Monitoring Station Server Socket (SIA DC-09 protocol)". Also data transmission must be activated in the window "Common settings" under "Data Transfer to Alarm Monitoring Station". A connection status to monitoring station server is visible in window "GPRS", at the bottom.

When programming remotely, we firstly recommend to receive SMS with current settings. Send the following SMS message to GsmAlarm-500E:

A	A	A	A	A	A	A	A	A	M	S	T
---	---	---	---	---	---	---	---	---	---	---	---

AAAAAAAA – SMS password;

The user receives an SMS message with settings:

MSTID:0000           - user identification number (only for GPRS channel)  
MSTIP:0.0.0.0       - monitoring station server IP address;  
MSTPR:0             - monitoring station server port.

After adjusting the settings, the message is sent back to the device.

Additional SIA DC-09 protocol settings "Line number" and "Receiver number" in most cases are not necessary. If necessary, these settings can be changed with GAprog application.

If data encryption is used, the encryption key can be entered using GAplog program. GsmAlarm-500E supports AES128 encryption algorithm.

GPRS access point settings can be received at GSM service operator. In most cases, all access point settings can be left blank.

## 7.2 AUDIO CHANNEL SETTINGS

Alarm monitoring station telephone number (numbers) is (are) provided by security service that protects particular object. Telephone numbers are programmed in the same way as user numbers (see Ch. 5.2.1 and 5.2.2). In most case one number CIDNR1 is sufficient. It is recommended to program with international code (+370...).

### 7.2.1. PROGRAMMING CONTACT ID USER ACCOUNT NUMBER

Four digit user account number is provided by security service that protects object. Programming can be performed with keypad (see Ch. 5.7.25) or with SMS message.

In order to program the account number, following SMS is sent:

A	A	A	A	A	A	A	A	C	I	D	A	C	C	:	1	2	3	4
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**AAAAAAA** - SMS password;

**CIDACC:** - programming command;

**1234** - four digit user account number.

**Important:**

- a) no characters or spaces can be used before the password;
- b) no spaces are allowed before and after the colon;

*If number programming command was performed successfully, the user receives SMS with programmed identification number.*

In order to get programmed account number following SMS message is sent:

A	A	A	A	A	A	A	A	C	I	D	A	C	C
---	---	---	---	---	---	---	---	---	---	---	---	---	---

## 7.3. MODES OF DATA TRANSFER TO THE MONITORING STATION Addr:[233]

Modes of data transfer to the alarm monitoring station are determined by general system parameter H. H parameter can be programmed with SMS message (see Ch. 5.3.2) or with keypad (see Ch. 5.7.16). Possible values are presented in the table.

Information is received by users ALRNR1 - ALRNR5.	<b>HXY</b>		Information is received by alarm monitoring station.
	X	Y	
Users doesn't get information about protected object.	0	0	Data transfer to alarm monitoring station is off.
Users are informed about all events with SMS messages.	1	1	Partial data transfer via audio channel is on. Data about violation of protected zone, power supply fault, malfunction of the backup battery, malfunction of the fire zone, is transferred. Periodical test signal can be sent.*



-	-	2	Full data transfer via audio channel is on. All above-mentioned data is transferred plus information about arming and disarming.
	-	4	Data transfer via GPRS channel is on.

If need to transmit data through GPRS and audio channel, the number Y must be 5 (partial transfer via audio channel) or 6 (full transfer via audio channel).

\* In order that GsmAlarm-500E would send test message to the alarm monitoring station once per day, it is necessary to set system clock (see Ch. 5.3.4) and program 24 hours timer (see Ch. 5.3.5).

If data transfer mode is on (Y value is above zero), all calls are addressed to alarm monitoring station only, i.e. GsmAlarm-500E users ALRNR1-ALRNR5 don't get calls (without reference to programmed M parameter value, see Ch. 5.3.1.2). In this case short call function is on only (GsmAlarm-500E responds to user call with short call and can inform user about arming and disarming with short call).

If H value is H01 or H02, object is protected by security service only, i.e. users ALRNR1-ALRNR5 will not get information about trespass, disconnection of the main power supply, arming and disarming. User can receive information about the object only after sending appropriate SMS message or after calling to GsmAlarm-500E number and entering appropriate DTMF code.

If H value is H11 or H12, GsmAlarm-500E is operating in "combined protection" mode and firstly calls and transfers information to the alarm monitoring station, and afterwards is proceeding in standard algorithm and informs users about event with SMS message.

If after eight attempts system isn't able to transfer information to the alarm monitoring station, following SMS message is sent to the user:

Unable to connect to the alarm monitoring station.

#### **7.4. CONTACT ID PROTOCOL CODES**

GsmAlarm-500E for data transfer is using following standard CONTACT ID protocol event codes. It is impossible to change codes or program new codes.

CID code	Transferred information
100	Panic alarm: silent alarm.
110	Activation or restoring fire alarm sensor.
120	Panic alarm.
130	Activation or restoring protected zone.
133	Activation or restoring 24 hours zone.
301	Disconnection or reconnection of the main power supply.
302	Malfunction or elimination of the problem of the backup battery.
373	Malfunction or elimination of the problem of the fire zone circuit.
401	Arming or disarming with a keypad.
403	Arming or disarming with a command of 24 hours timer.
407	Remote arming or disarming (with user's mobile phone) of the protection mode
456	Partial arming (when the „force“ zone is opened).
602	Test message.

## 8. SYSTEM CONTROL USING THE KEYPAD

The keypad allows you to easily access your security system's functions and provide you with an easy-to-understand display of your security system's alarm and operational status. Keypad includes colored lights which convey the current status of your system. The state of each light represents a specific condition in your system.

### 8.1 KEYPAD KEYS AND LED FUNCTIONALITY

#### 8.1.1. [ ] KEY – EXTENDED INDICATION MODE

Key [ ] can be used for indication of Z11 - Z15 zones, if K636, K10V or K10H keypad is used. In the main indication mode keypad keys [1] – [10] are alight if zone, corresponding alight number, is open. For example, if Z1 zone is open, key [1] is alight. If Z10 zone is open, key [10] is alight. If key [ ] is alight constantly it shows that there are open zones in the group Z11 - Z15. After pressing [ ], extended indication mode is turned on ([ ] is flashing). In this case Z11 zone is corresponded by key [1], Z12 – key [2], Z15 – key [5]. Extended indication mode is switched off after pressing [ ] once again or after pressing [CLEAR].

#### 8.1.2. [TBL] KEY – TROUBLE DISPLAY

If key [TBL] illuminates, it indicates system failure. Press [TBL] to check the failure type. [TBL] starts to flash and luminous keys [0]...[9] indicate failure type. Extended failure information is made available upon pressing of a luminous button.

Alight key	Failure
[2]	Power supply failure [1]: unconnected backup battery or low backup battery voltage. [2]: 230V power supply voltage is absent.
[4]	Communication malfunction. [2]: malfunction of communication with the monitoring station. [9]: GSM communication malfunction.
[5]	Zone fault (open tamper contact or short-circuit). [1] ... [15]: faulty zone number.
[7]	Fire protection zone fault. [1]...[15]: faulty zone number.
[8]	System clock time lost. *

To deactivate trouble display mode, press [TBL] key one more time or press [CLEAR] key.

\* System's clock should be set only system timer function is used. System clock deregulates in case main power supply and backup battery are disconnected. System clock setting with SMS message directions described in Chapter 5.3.4. System clock setting with keypad described in Chapter 5.7.23.

**8.1.3. [MEM] KEY – ALARM MEMORY DISPLAY**

If an alarm has occurred on a zone, the respective zone LED will flash, the [MEM] key will light up, and the zones will be stored in memory. Memory indication mode is activated by pressing [MEM] key ([MEM] starts to flash). Alight keys indicate which zone had been triggered.

Memory is erased automatically when armed mode is activated or by pressing [CLEAR] key when memory indication mode is active.

If K32LCD KEYPAD is used, after pressing [MEM] and further [BYP], it can be seen what, were the last alarm events. It is shown in the LCD display when and what zone was activated. 128 last events are stored in the memory of system.

**8.1.4. [BYP] KEY – BYPASS PROGRAMMING**

A bypassed zone will not cause an alarm. If a zone is bypassed the panel may be armed (**Ready** light will be on) even if the zone is open. Use zone bypassing when access is needed to part of the protected area. Also, damaged wiring or contacts on a zone may be temporarily bypassed until repairs can be made so that the panel can be armed. To bypass zones, press [BYP] key and enter 4 or 6 digits user access code. [BYP] key starts to flash. Zone can be bypassed by pressing key, indicating certain zone number. Constantly alight key indicates of certain zone as bypassed. To activate zone, press key, indicating certain zone number one more time. Press [CLEAR] key to turn off BYPASS programming mode. System memorizes bypassed zones. Constantly alight key [BYP] indicates, there are some bypassed zones in system memory. BYPASS memory is erased automatically after disarming the system. If bypassed zone is operating in 24-hour mode, BYPASS mode is not turned off automatically. In this case BYPASS mode can be switched off only by keypad or in a remote way, while calling and entering corresponding code or by sending SMS message.

**8.1.5. [CLEAR] KEY**

Use the [CLEAR] key to clear mistakes when entering user code (etc.) or to return to main keypad mode.

**8.1.6. [ENTER] KEY**

Use the [ENTER] key to activate system parameter programming mode.

**8.1.7. “~” AC MAINS INDICATOR**

This indicator is not alight when there is no 230 VAC power supply voltage and system is powered by backup battery only.

**8.1.8. “StayD” (STATUS) INDICATOR**

Indicator is on when all zones are closed and system is ready to be armed.

**8.1.9. “OFF” INDICATOR**

Indicator is on if the system is disarmed.

### 8.1.10. “ARM”, “SLEEP” and “STAY” INDICATORS

Indicator **ARM** is alight constantly, if the system is in full arm mode, indicators **SLEEP** or **STAY** are alight constantly, if the system is in partial arm mode. In case of alarm, these indicators flash fast.

## 8.2. REGULAR ARMING

This method will arm all the zones in the selected partition. Check to see if the **TBL** or **BYP** light is on before arming the system. Regular arming is possible only if all alarm zones are closed (not triggered). Constantly alight keypad keys indicate open zones (key [1] – zone Z1, key [10] – zone Z10).

Regular arming:

- Close all protected doors and windows and stop movement in areas covered by motion detectors. Check to see that the **StayD (Ready)** light is on (all zones are closed). The system cannot be armed till the **StayD** light is off.
- Press the [ARM] key.
- Enter a 4-digit or 6-digit user access code.

As each digit is entered the keypad buzzer will beep. If the security code was entered incorrectly, the sounder will beep steadily for 2 seconds. If the code was entered correctly but the “Ready” light was not on, the keypad will beep steadily for 2 seconds. When the correct code is entered, the ARM light will flash and the keypad buzzer will beep quickly. Exit the premises through the designated exit-entry door. Exit delay time is indicated by short keypad beeps, repeating each second. At the end of the allowed exit time the keypad buzzer will beep quickly and the **ARM** light stays on constantly. User receives confirmation short call or SMS message (depends on system configuration, see Ch. 5.3.2.2).

If system is divided into two partitions, only one partition or both partitions at once can be armed when using particular access code. Functionality of the access codes is described in Chapter 5.7.2.

Regular arming can also be activated using 24-hour timer or **One-Touch arming**. One touch arming allows you to arm the system without using access codes. Press and hold the [ARM] key for 3 seconds to arm the system.

## 8.3. STAY & SLEEP ARMING

Stay arming method allows you to roam freely within the premises while the perimeter is fully armed. Stay zones are zones that are bypassed when Stay arming. For example, if you plan on staying in for the night, doors and windows can be armed without arming other zones like motion detectors.

Stay arming:

- Close all zones in the desired partition (except Stay zones).
- Press the [STAY] key.
- Enter a 4-digit or 6-digit user access code.

Similar to Stay arming, Sleep arming allows users to remain in a protected area, but provides a higher level of protection. For example, in a two-story house, the perimeter is protected with Stay arming. With Sleep arming, the perimeter as well as the main floor are protected (motion detectors, etc.), allowing you to roam the second floor and sleeping quarters. Sleep zone are zones that are bypassed when Sleep arming. For example, when you go to sleep at night, the entire premises except your bedroom is fully armed.

Sleep arming:

- Close all zones in the desired partition (except Sleep zones).
- Press the [SLEEP] key.
- Enter a 4-digit or 6-digit user access code.

Stay and Sleep arming can also be activated using 24-hour timer or **One-Touch arming**. Press and hold the [STAY] key or the [SLEEP] for 3 seconds to arm the system.

#### 8.4. DISARMING & DEACTIVATING AN ALARM

To disarm an armed system or an alarm, press [**OFF**] and enter your access code. When an entry point is opened, the keypad will beep until you disarm the system. Your alarm system will not generate the alarm until entry delay time elapses.

#### 8.5. PANIC ALARMS

In case of an emergency, the system can provide three panic alarms that can immediately generate an alarm after simultaneously pressing and holding two specific keys for three seconds. Based on your needs, these panic alarms can generate audible alarms (sirens or bells) or silent alarms and can communicate specific messages to your monitoring station.

Pressed keys	Panic alarm type
[1] + [3]	Silent alarm. Message to alarm monitoring station is sent. SMS is sent to the users.
[4] + [6]	Panic alarm. Siren is on, message to alarm monitoring station is sent. SMS is not sent.
[7] + [9]	Fire alarm. Siren is operating with interruptions, message to alarm monitoring station is sent. SMS is sent to the users.

#### 8.6. CONTROL OF SEPARATE PARTITIONS

If the system is divided into two partitions, partition control depends on user code assignment (see Ch. 5.6.2). If the user code is assigned to a single partition, the partition is activated or deactivated by entering the code. If the user code is assigned to both partitions, the partition number must be entered within 5 seconds (by pressing [1] or [2]). If no partition number is entered within 5 seconds, both partitions are activated or deactivated together.

#### 8.7. PROGRAMMABLE OUTPUT CONTROL

The programmable output (PGM) on the GsmAlarm-500E can be made to activate by a command from the keypad. This output can be used for operating other devices such as; garage door opener, special lighting or door strikes.

In order to activate programmable output, press the [**ARM**] key and enter an output control code. If you want to deactivate the output, press the [**OFF**] key and enter an output control code. Programming of output control codes is described in chapters 5.6.1. and 5.6.2.

Outputs can also be controlled by simultaneously pressing two respective buttons (see Ch. 5.3.2.1).

### 9. SYSTEM CONTROL USING iBUTTON ACCESS KEYS

Touch shortly an iButton key to the contacts of the reader to activate or deactivate the protection mode and/or activate programmable output. The key is read in 1-2 seconds. Completion of the key code capture is confirmed by a rapid blinking of the light indicator. A key can be programmed for control of a single partition (if the system is divided into 2 partitions) or for control of the entire system. Maximal number of keys: 20.

## 10. REMOTE ARMING & DISARMING

The system can be armed or disarmed remotely through a call or SMS message. In order to arm or disarm the system through a call:

- Call GsmAlarm-500E number.
- Wait until system answers.
- Enter 2-digit code using your phone keypad.
- Press the [\*] key to activate the code.

You can use the following codes to arm or disarm your system:

**01\*** - arms the whole system.

**00\*** - disarms the whole system

**83\*** - arms the first partition.

**82\*** - arms the first partition, STAY mode.

**81\*** - arms the first partition, SLEEP mode.

**80\*** - disarms the first partition.

**93\*** - arms the second partition

**92\*** - arms the second partition, STAY mode.

**91\*** - arms the second partition, SLEEP mode.

**90\*** - disarms the second partition.

When the code is entered, call is automatically ended. Depending on system settings user receives confirmation call or (and) SMS message. For example:

SYSTEM ARMED. STAY MODE. (USER1)
----------------------------------

If system is divided into two partitions, names of protected objects (partitions) can be seen in the SMS message:

OBJECT 1: SYSTEM ARMED. SLEEP MODE. (USER1)
OBJECT 2: SYSTEM DISARMED. (USER2)

System can be configured to arm and disarm by short, free call (see Chapter 5.3.2.5). In order to arm the system, user calls GsmAlarm-500E number and, hearing the first signal, cancels the call. In this case there is no exit delay, the alarm system is activated immediately. After the armed mode is on, user receives a short confirmation call or SMS. Don't cancel the confirmation call because it is cancelled automatically.

You can disarm the system by calling GsmAlarm-500E number and waiting for the system cancels the call (3-4 call signals).

The alarm system also can be armed or disarmed by SMS message. In the beginning of the message 8-digit password is entered and further command is written. For example:

A	A	A	A	A	A	A	A	0	1	*
---	---	---	---	---	---	---	---	---	---	---

 or (if 

0	1	*
---	---	---

 SMS password is deactivated).

In the absence of confirmation, check if all zones are closed and SIM account is not depleted.

**Important!** System control by short calls is only possible when parameter **F** (see Ch. 5.3.2.5) is properly configured. The first digit of parameter **F** must be 4 or 5.

## 11. SYSTEM OPERATION IN ALARM STATE

In the case of trespass of the protected area GsmAlarm-500E, depending on the programmed system operation algorithm, switches the siren on, calls and sends SMS messages to five users (ALRNR1-ALRNR5). If system programmed to call and to send SMS messages, at the end of the call cycle (no user picks up the prone) SMS message, with name of triggered zone, will be sent to all users. If whichever user picks up and enters 2-digit code using his phone keypad (codes are described in Chapter 12), SMS messages will not be sent to other users. Example of the message, user receives, given below:

```
Entry Door: ALARM(1)
Motion:OK(5)
```

SMS message shows that entry door sensor is in alarm state (opened) and was triggered 1 time (number in the brackets). Motion detector is not in alarm state but was triggered 5 times. Trigger counters are set to zero values each time when the system is armed or disarmed.

While answering user hears what is happening in the premises and also can control system by entering 2-digit codes using his phone keypad. For example, after entering code 99\*, the system cancels the call and user receives message informing about state of the all zones.

```
SYSTEM ARMED. STAY MODE.
Entry Door:ALARM(1)
Motion:OK(5)
Windows:ALARM(1)
Fire: OK(0)
...
```

In the case of temperature zone activation, user receives SMS message informing about temperature:

```
Temperature: T=19C
```

## 12. POWER SUPPLY MONITORING

The system GsmAlarm-500E will report every time mains 230V power supply fails or recovers.

In case of main power supply failure after the programmed delay time user *ALRNR1* receives following SMS message:

```
AC Mains fault, Battery voltage: 12.5V, Signal strength: 100%
```

In case of recovery of power supply after one minute user *ALRNR1* receives following SMS message:

```
AC Mains OK, Battery voltage: 13.7V, Signal strength: 100%
```

If data transfer to monitoring station option is on, messages at first are sent to alarm monitoring station and then to user ALRNR1.

The system also will report about the fault of backup battery or the backup battery is running out of power.

```
Battery is running out of power! System will shut down in 1 minute.
```

### 13. GSM JAMMING DETECTION

The system has capability to detect intentional jamming of GSM. If the detection function is on (see Ch. 5.3.2 or 5.7.17), the siren is activated upon detection of the jamming signal, and the user is informed thereof by an SMS message about it after clearing of GSM jamming signal. Siren operates with interruptions. The message indicates the jamming onset time:

GSM Jamming detected! Time: 08:55
-----------------------------------



## 14. SYSTEM CONTROL BY DTMF AND SMS COMMANDS

In the speech mode user can control the system, after having entered relevant code from his phone keypad. 2-digit command is entered by pressing the key [\*]. If the instruction is completed, user hears three tone confirmation signals.

Speech mode can be activated in two ways: user answers when GsmAlarm-500E calls, or user calls and waits for GsmAlarm-500E to answer (3-4 call signals).

The control commands also may be transferred by SMS. Insert password in the beginning, then type the command. E.g.: in order to switch on output *C1*, to switch off output *C2*, to switch on *BELL* and to receive a SMS with information on the status of the PGM outputs, send the following SMS :

A	A	A	A	A	A	A	A	1	1	*
---	---	---	---	---	---	---	---	---	---	---

 or

1	1	*	2	0	*	7	7	*
---	---	---	---	---	---	---	---	---

 (if SMS password is deactivated).

DTMF or SMS code	Code Function
00*	Disarms the whole system.
01*	Arms the whole system.
11*	Activates output <i>C1</i> .
10*	Deactivates output <i>C1</i> .
22*	Activates output <i>C2</i> .
20*	Deactivates output <i>C2</i> .
33*	Activates output <i>C3</i> .
30*	Deactivates output <i>C3</i> .
44*	Activates output <i>C4</i> ( <i>K1</i> , <i>K2</i> ).
40*	Deactivates output <i>C4</i> ( <i>K1</i> , <i>K2</i> ).
77*	Requests to send SMS about state of the system outputs.
80*	Disarms the first partition.
81*	Arms the first partition, STAY mode.
82*	Arms the first partition, SLEEP mode.
83*	Arms the first partition.
88*	Requests to send SMS with information about GSM signal strength and power supply voltage.
90*	Disarms the second partition.
91*	Arms the second partition, STAY mode.
92*	Arms the second partition, SLEEP mode.
93*	Arms the second partition.
97*	Requests to send SMS with open zones only.
98*	Requests to send SMS with temperature values only.
99*	Requests to send SMS about state of the system and protected zones
01# - 15#	Temporary disconnects of the zone (turning on BYPASS mode).
00#	Turns off BYPASS mode of the all zones.
71#	Activates iButton key programming mode.
70#	Deactivates iButton key programming mode.
75#	SMS password reset to the factory default.
79#	Request to send an SMS message that includes the password.

SMS and DTMF instructions

It is possible temporarily to turn off chosen zone by commands *01# - 16#* (for example, in the case of sensor fault, if system is constantly sending wrong alarm messages). In order to turn off zone Z1, code *01#* is entered. In order to turn off zone Z12, code *12#* is entered. Command *00#* turns off BYPASS mode for the all zones.

Further listed commands are used for system programming by SMS message.

SMS instruction	Function
<i>ZPARAM</i>	Request to send SMS message with input Z1-Z5 parameters.
<i>CPARAM</i>	Request to send SMS message with output C1, C2 and BELL parameters.
<i>RPARAM</i>	Request to send SMS message with names of the protected objects (partition names).
<i>NRINFO</i>	Request to send SMS message with user numbers ALNR1 – ALNR5.
<i>PASSW:</i>	SMS password change instruction.
<i>ALNR1:</i> <i>ALNR2:</i> <i>ALNR3:</i> <i>ALNR4:</i> <i>ALNR5:</i>	User numbers programming instructions.
<i>ADDNR:</i>	Additional user numbers programming instruction (for gate or fence control).
<i>ADDNR-C0:</i>	Additional user number programming instruction. This number can control all outputs by short tone command (only for gate or fence control).
<i>ADDNR-C1:</i>	Additional user number programming instruction. Only the output C1 is controlled by this number (for gate or fence control).
<i>ADDNR-C2:</i>	Additional user number programming instruction. Only the output C2 is controlled by this number (for gate or fence control).
<i>ADDNR-C3:</i>	Additional user number programming instruction. Only the output C2 is controlled by this number (for gate or fence control).
<i>ADDNR-C4:</i>	Additional user number programming instruction. Only the output C4 is controlled by this number (for gate or fence control).
<i>DELNR:</i>	Additional user numbers erasing instructions.
<i>NRLIST</i>	Request to send SMS message (messages) with all numbers stored in SIM card.
<i>SCLOCK</i>	System clock control and time setting instruction.
<i>TSINCH</i>	Automatic time synchronization instruction.
<i>STIMER</i>	Request to send SMS message with system timer parameters.
<i>CIDACC</i>	CONTACT ID user account number programming instruction (audio channel).
<i>ZOPTXT:</i>	Programming of the word informing that zone is in alarm state (open). Default: ALARM (see Ch. 5.4).
<i>ZCLTXT:</i>	Programming of the word informing that zone isn't in alarm state (closed). Default: OK (see Ch. 5.4).
<i>GETIPA</i>	Activation of GPRS connection (server mode), request to send SMS with GSM module IP address and connection port number.
<i>CONNECT</i>	Activation of GPRS connection (client mode), request to send SMS with computer IP address and connection port number.
<i>APN:</i>	GPRS access point name programming.
<i>APLOG:</i>	Programming of GPRS access point login name.
<i>APPASS:</i>	Programming of GPRS access point login password.
<i>PORT:</i>	GPRS access port number programming

<i>VERSION</i>	Requests to send SMS with software version.
<i>MST</i>	Receive SMS with monitoring station server GPRS settings.
<i>MSTID:</i>	User ID programming for monitoring station server (GPRS channel).
<i>MSTIP:</i>	IP address programming for monitoring station server.
<i>MSTPR:</i>	Port programming for monitoring station server.
<i>SCON</i>	Switch on SmartCloud mode.
<i>SCOFF</i>	Switch off SmartCloud mode.
<i>SCPASS</i>	Receive SMS with the device ID and SmartCloud server login password.
<i>SCPASS:</i>	Change SmartCloud server login password.

SMS instructions, for system programming and diagnostics

## 15. SmartCloud SERVER

With SmartCloud server, security system can be monitored and controlled from a computer or mobile phone via Internet connection using a standard web browser. When SmartCloud mode is on, GsmAlarm-500E automatically connects to the SmartCloud server and periodically sends data of system status, events, zones and PGM output state. A user logged into the SmartCloud server with Internet browser can monitor the status of the system, a list of events or temperature graphs. It is also possible to arm or disarm security system and manage system PGM outputs.

### 15.1. SETTINGS AND ACTIVATION

If you want to activate SmartCloud function:

- Connect to GsmAlarm device via USB interface, use program GAprog. Open the window "System Settings-> GPRS". Under the "Connection Settings" select "SmartCloud mode". The "SmartCloud server" field shows connection to the server settings. The server address must be **sc.eltech.lt**, port: the **47003**. It is recommended to change the password. Device identification number (ID) is not changeable. If you want to disable PGM outputs managing or system arming/disarming from SmartCloud, uncheck the appropriate boxes. If it is necessary, enter the required settings in the "Access point" field. You can get access point settings from your GSM operator. In most cases, these boxes can be left blank. Save data into the device.
- Create an account on web page **smartcloud.eltech.lt**. Once you have an account, register one or more GsmAlarm devices. Create your own device name. Device identification number and login password are visible in the program GAprog field "SmartCloud server". Enter the device ID and device password in the registration form boxes. Enter the security system phone number into the "SIM card number". Save the data.

After these steps, follow registered device status at your account. In 1-2 minutes the security system device will connect to the SmartCloud server. If you do not see any changes in your account, open GAprog window "GPRS". At the bottom of the window you can see GPRS interface status. If you will see "GPRS not activated" message for a long time, check the access point settings, contact your GSM service provider to check GPRS service is activated or not. If you will see the message "GPRS activated", pay attention to the notification "SmartCloud".

Possible errors:

- **server not accessible**: wrong server IP address or port number.
- **server not responding**: check the registered device data (ID and password) coincide with the program GAprog visible data.
- **data send error**: module cannot send data. Check the SIM card account balance.

SmartCloud function can also be activated remotely, via SMS. You can also get device Password and device ID by sending a SMS:

A A A A A A A A S C P A S S

Change the password via SMS:

A A A A A A A A S C P A S S : n e w p a s s w o r d

Maximum characters number of a name: 16.

Switch on SmartCloud mode remotely via SMS:

A A A A A A A A S C O N

Switch off SmartCloud mode remotely via SMS:

A A A A A A A A S C O F F

## 16. WARRANTY

MANUFACTURER AND DISTRIBUTOR is not responsible for possible theft from GsmAlarm-500E protected premises. GSM service operators are not associated to company “UAB Elektronines technologijos”, therefore, company takes no responsibility for GSM network services, coverage and functioning.

GsmAlarm-500E system provided with 36 months warranty. Warranty period starts with purchase date. If there are no purchasing documents, period counted starting from system manufacturing date (dated on security system identification label). Warranty is not valid if system: is reconstructed; wrongly assembled; used not on purpose; mechanical, chemical, electric damage and in other cases that are not related with GsmAlarm-500E manufacturing defects are seen.

If security system is not operating properly or breaks down, for guarantee or post-guarantee service, please contact company that performed assembling and installation of the system. Practice shows that main system operating failure reason is incorrectly performed system assembling.



Company “Elektronines technologijos“ declares, that product “GsmAlarm-500E” satisfies all essential requirements of standard EN 60950-1:2003 following European Union directive 2006/95EC.

The declaration of conformity may be consulted at [www.eltech.lt](http://www.eltech.lt)

Ademco Contact ID is a registered trademark of Pittway Corporation.

PARADOX is a registered trademark of Paradox Security Systems Ltd.

iButton is a registered trademark of Maxim Integrated Products, Inc.

Dallas is a registered trademark of Maxim Integrated Products, Inc.

## 17. TECHNICAL CHARACTERISTICS

<b>GSM MODULE</b>	
Operating frequency	<b>GSM-900 / 1800 MHz</b>
<b>MAIN POWER SUPPLY (connected to terminal "AC")</b>	
Power supply voltage	<b>AC 16-24V</b>
Frequency AC	<b>50/60Hz</b>
Maximum current	<b>~1.3A max</b>
<b>BACKUP BATTERY</b>	
Backup battery operating voltage	<b>DC 12V</b>
Backup battery type	<b>PB - acid</b>
Backup battery capacity	<b>1.2 Ah max</b>
<b>OUTPUT "AUX" (FOR EXTERNAL DEVICES)</b>	
Output voltage	<b>DC 12V</b>
Maximum current	<b>--- 1.3 A max</b>
Short circuit protection triggering current	<b>--- 2 A max</b>
<b>PROGRAMMABLE OUTPUT C4 (K1, K2)</b>	
Output type	<b>Relay contacts</b>
Maximum current	<b>5 A max</b>
Active state	<b>Closed contacts</b>
Non-active state	<b>Open contacts</b>
<b>PROGRAMMABLE OUTPUTS C1, C2, C3</b>	
Output type	<b>Open collector</b>
Maximum current	<b>150 mA max</b>
Output active	<b>Connected to GND</b>
Output non-active	<b>Open contact</b>
<b>INPUTS Z1 – Z6</b>	
Load resistor (in EOL or ATZ mode)	<b>1,0 k<math>\Omega</math>, <math>\pm</math>5 % 2,2k<math>\Omega</math>, <math>\pm</math>10 % 4,7k<math>\Omega</math>, <math>\pm</math>10 %</b>
Temperature measurement range (in temperature measurement mode)	<b>-40°C ... +110°C, <math>\pm</math>1°C</b>
<b>POWER CONSUMPTION (without external sensors and keypad)</b>	
Non-activated state	<b>75 mA max</b>
Call, sending SMS or speech mode	<b>350 mA max</b>
<b>OPERATING TEMPERATURE</b>	
	<b>-35°C...+65°C</b>
<b>DIMENSIONS</b>	
	<b>105 x 95 x 58 mm</b>

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