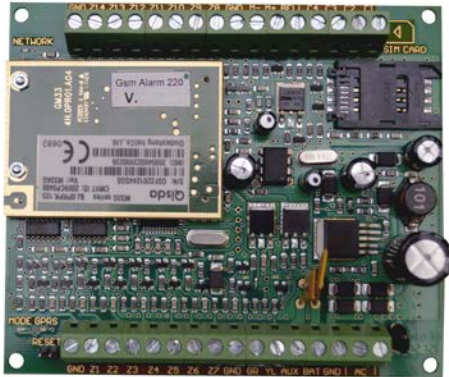


GsmAlarm-220 (V4.03)



GSM Alarm and Remote control System



FEATURES

- 14 inputs.
- Up to 32 protected zones.
- 5 programmable outputs.
- 5 users are notified.
- Twenty programmable user access codes.
- 250 users able to control the gate or electromagnetic lock by short free call.
- Possibility to send information to monitoring station using the CONTACT ID protocol (through GSM voice call).
- Remote control using a mobile phone keypad (through DTMF tones) and SMS.
- 24 hour timer function.
- Two partial protection modes (STAY and SLEEP).
- Possibility to divide the system into two independent partitions.
- Temperature measurement option.
- Info-carrying SMS on the state of each sensor, power supply voltage, GSM signal strength.
- Possibility to connect up to four PARADOX keypads.
- Remote programming.
- Integrated GSM module.
- Option to connect an external microphone.

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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 the device.

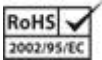
	<p>The device has two sources of power supply: primary and backup. Primary: power transformer: I: 230V AC ~120mA 50/60Hz; II: (16–24)V AC 1.2A 50/60Hz; Backup: 12V DC 1.2Ah battery. DC power supply must comply with LST EN 60950-1 standard and be readily accessible.</p>
	<p>Any additional devices linked to the system GsmAlarm-220 (computer, sensors, relays etc.) must be approved by LST EN 60950-1 standard.</p>
	<p>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. The insulating gap of the circuit breaker should be at least 3mm and the disconnection current, at least 5A.</p>
	<p>System GsmAlarm-220 is a device mounted in limited access areas. Any system repairs must be done only by qualified, safety aware personnel. There are no parts in the device that could be changed on the site.</p>
	<p>Only a manufacturer-approved backup battery may be used with the system to avoid fire or explosion hazards. Special care must be taken connecting positive and negative battery terminals. DO NOT switch the battery pole terminals.</p>
	<p>Mains power must be disconnected before any installation or adjustment. System installation or maintenance may not proceed during stormy conditions.</p>
	<p>The device is switched off by a 2-pole circuit breaker and a disconnecting back-up battery connector.</p>
	<p>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.</p>

Remote control and monitoring device GsmAlarm-220 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 bottom 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

GsmAlarm-220 main board	Qty 1
GSM antenna with magnetic fix and 2 m lead cable	Qty 1
Microphone with 1,5 m lead cable	Qty 1
Load resistors 1,0k Ω \pm 5%	Qty 28
Load resistors 2,2k Ω \pm 5%	Qty 15
Load resistors 4,7k Ω \pm 5%	Qty 14
Clamping cable for accumulator connection	Qty 1
PCB fastening clips	Qty 4
User's manual	Qty 1

1.3. INTRODUCTION

Fourteen zone control and monitoring device GsmAlarm-220 can be used for protection of houses, apartments, garages, and cottages.

Up to 28 sensors (magnetic contacts, motion, glass brake, fire, etc.) can be connected to GsmAlarm-220.

In the case of trespass of the protected zone GsmAlarm-220, depending on the programmed system operating algorithm, can switch the siren on, call and send SMS messages to five users and transfer information to the security service station by Contact ID protocol through GSM network.

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

GsmAlarm-220 has 4 (5, 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-220 number. Then GsmAlarm-220 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), TM40 or TM50 keypads can be connected to GsmAlarm-220. 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. Keypads have an additional input zone. The number of protected zones can be increased to 32 by using this zone and 4 keypads (28 zones in ATZ mode + 4 keypads zones).

Alarm system can be armed or disarmed simply by turning the switch ON/OFF or by short free call if the keypad is not used.

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.

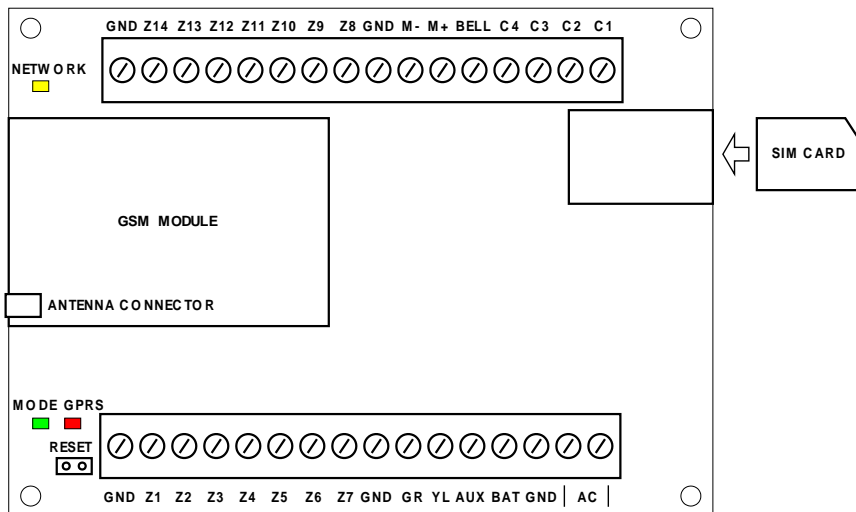
System has temperature measurement possibility. Up to 14 temperature sensors *KTY81-110 (PHILIPS)* can be connected to GsmAlarm-220 device. If temperature exceeds or subsides programmed range, system sends SMS to user(s), relevant programmable output can be activated/deactivated.

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

You can check alarm operating by short call to GsmAlarm-220 number. If GsmAlarm-220 is operative, the calling user gets a short confirmation call.

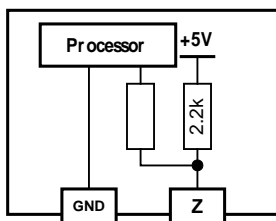
All GsmAlarm-220 parameters are programmed using Paradox keypad or remotely, by sending SMS with relevant contents and password.

2. CONNECTOR AND LED FUNCTIONALITY



GsmAlarm-220 connection terminals and LED indicators

2.1. ZONE INPUT TERMINALS Z1 to Z14



Equivalent diagram of zone input

Inputs Z1-Z14 are used to connect alarm detectors or temperature sensors KTY81-110 (PHILIPS).

If the inputs work in EOL or ATZ mode (see. Ch. 5.3.1.1), a 2,2kΩ and a 4,7kΩ load resistors should be used.

The zones are designed to work with End of Line (EOL) resistors of 2,2 kΩ. The zone 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. 5.3.1.2). In this case EOL resistor is not required. The zone 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.

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 A.

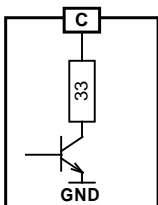
2.4. “BAT” TERMINAL

Use terminals “BAT” and “GND” to connect the backup battery. “+” terminal of backup battery is connected to contact BAT. Max capacity of the battery is 1,2 Ah. Voltage: 12 VDC.

2.5. “AC” POWER TERMINALS

Use a 16-24 VAC transformer with a minimum 40 VA rating to supply AC power to the GsmAlarm-220.

2.6. PROGRAMMABLE OUTPUT TERMINALS “C1”, “C2”, “C3” and “C4”



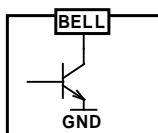
The programmable output is a 150 mA maximum switch to ground. A 33 ohm current limiting resistor is connected in series. A small relay, a buzzer or other DC operated device may be connected between the 12 VDC “AUX” (positive) terminal and the “C” (switched negative) terminal on the main board.

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

2.7. BELL/SIREN TERMINAL “BELL”



The BELL terminal is used to connect audio siren or extra-commutated device.

Commutated current may reach 0.6 A max.

Equivalent diagram of BELL OUTPUT

2.8. EXTERNAL MICROPHONE CONNECTION TERMINALS “M-“ and “M+”

Terminals M- and M+ are used to connect external microphone. Connect white wire to contact M+, black – to M-. In order to avoid interference install microphone as far as possible from GSM antenna. If wire of the MIC is long (over 2 m), it is recommended to use shielded twisted pair cable. Connect shield to GND contact. An incoming call automatically activates the microphone (see Ch 5.3.2.3).

2.9. RESET CONTACTS

RESET contacts are used to restore factory default settings (see. Ch. 6).

3. LED INDICATORS

3.1. NETWORK: INDICATOR OF SIGNAL STRENGTH AND GSM MODULE OPERATION MODE

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: SYSTEM OPERATION MODE 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 operating in armed mode.
Blinking more frequently than once a second.	System is in alarm state, siren is active, call or SMS is sent. If SMS is sent, indicator blinks a little bit slower (about twice a second).
Blinking very rapidly for 2-3 sec.	SMS instruction or DTMF command receipt confirmation.

3.3. GPRS

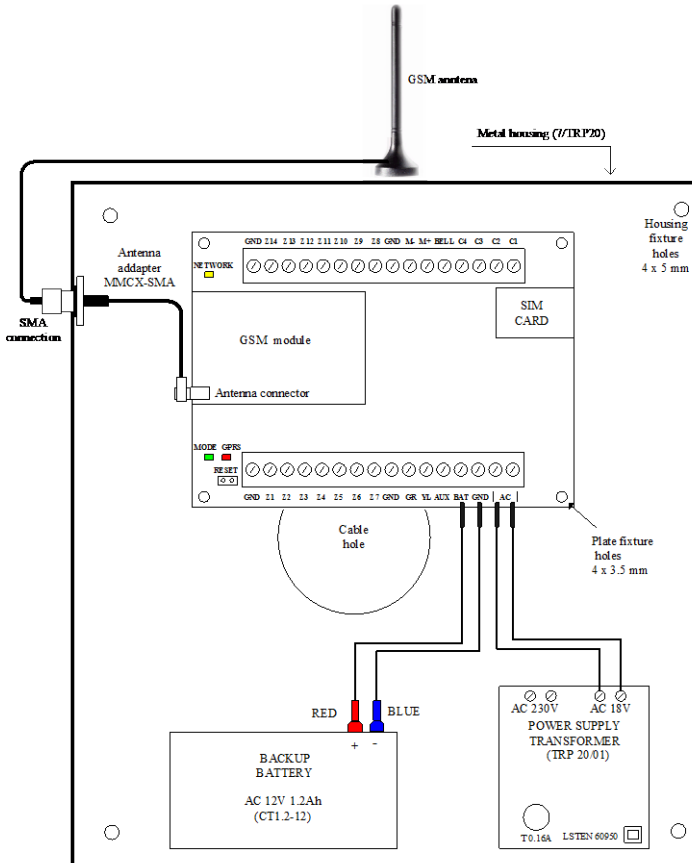
Indicator state	Explanation
Continuously On.	GsmAlarm-220 tries to connect with security service station.
Blinking.	GsmAlarm-220 is transferring information to the security service station by CONTACT ID protocol.

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 3x0,75 mm² 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., EA318-4) sensors in alarm system. Use standard 6-8 wired single core cable designed for installation of security systems. Siren DC12V 500mA (e.g., Odyssey 1E) is recommended for sound alarm, use double isolated cable 2x0,75 mm² 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.

Use diagram presented in chapter 4.2 to connect system circuit. It is recommended to install operating mode indicator LED only in case keypad is not used. LED state indicates system operating mode status, if all protected zones are closed before switching on armed mode. LED must be installed withindoors in a prominent place.

If keypad is not used system can be armed or disarmed with short call from user mobile phone (parameter F should be F51 or F41, see Ch. 5.3.2.3). Please note, if trying to call the system in alarm state, disarming is not possible, therefore it is recommended to use switch designed for arming and disarming. The switch can be connected to any zone instead of sensor contacts. Zone must operate in ON/OFF mode (A33, see Ch. 5.3.1.1). System is disarmed if there is open circuit in switch contacts. System can be armed closing circuit in switch contacts.

Up to four PARADOX K636, K10V/H (MG10LEDV/H), K32 (MG32LED), K32LCD (MG32LCD), TM40 or TM50 keypads can be connected to GsmAlarm-220. The keypad has an additional keypad zone that facilitates connection of a magnetic door sensor. Activation of a keypad zone is described in Ch. 5.6.18. In case of TM or TM50 keypad, it is recommended to switch off the StayD indication (see Ch. 5.3.2.6). On other types of keypads, StayD indicator is on, when all zones are closed and the protection mode can be activated.

Input circuits are connected according to corresponding scheme provided in chapter 4.2.3. 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).

SIM card needed for GsmAlarm-220 operating, you may acquire it from any GSM service provider.

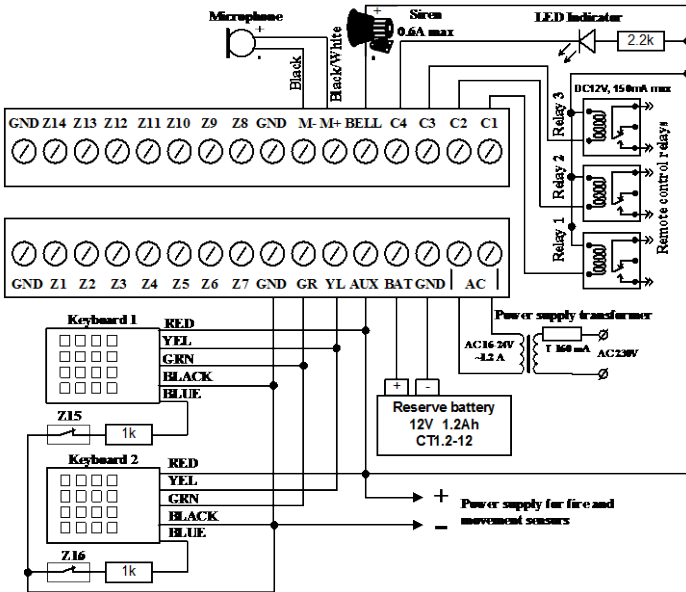
Before inserting SIM card into GsmAlarm-220 SIM card holder set PIN code request off. It can be performed simply inserting SIM card into any standard mobile phone and following certain phone user manual instructions. Verify that the SMS card is operational: try calling and sending an SMS from the phone itself.

After finishing installation, place SIM card into GsmAlarm-220 SIM card holder, turn system power on, then wait till 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 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 armed mode is disabled. Protected zones must be closed (indicator MODE constantly alight).

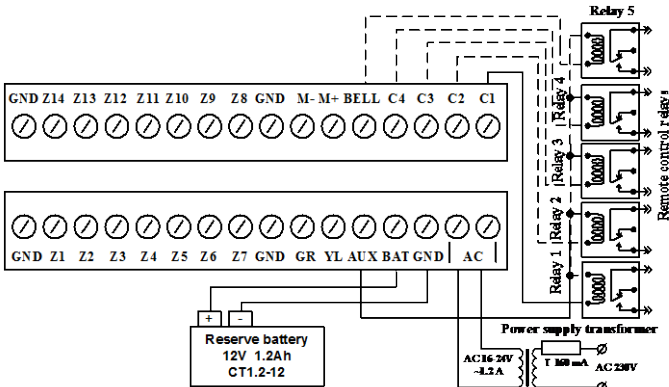
Detailed programming process description can be read in chapter 5.

4.2. WIRING DIAGRAMS

4.2.1. SYSTEM WITH KEYPAD ACCESS CONTROL

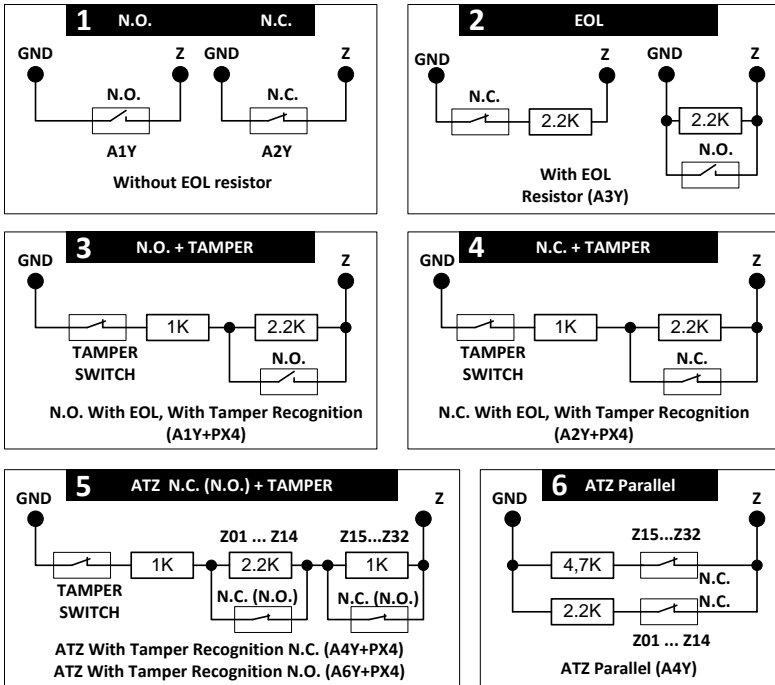


4.2.2. WIRING DIAGRAM WHEN THE DEVICE OPERATES IN GATE CONTROL MODE.



The gate control system is operated by output C1. A remote control relay is connected to terminals AUX and C1. The gate control system is connected to the terminals of the relay. Outputs C1, C2, C3 and BELL 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. Programming of the device is described in Chapter 5.3.2.1.1.

4.2.3. WAYS TO CONNECT ALARM ZONES



Ways to connect Alarm Zones

N.C.: normally closed contacts. N.O.: normally open contacts.

A1Y-A6Y: zone operating modes, the first digit of parameter “A” (see Chapter 5.3.1.1).

PX4: tamper recognition, the second digit of parameter P (see Ch. 5.3.1.3).

GsmAlarm-220 has 14 inputs Z1...Z14, corresponding to the zone numbers Z01...Z14. If 14 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 farthest 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 hour tamper supervision is activated (see Ch. 5.3.2.6), the alarm is generated with both armed and unarmed protection modes.

If 14 zones are insufficient, the wiring diagrams 5 and 6 may be deployed. In this case, one input can control two zones.

Two parallel connected resistors of 2.2kΩ and 4,7kΩ are used in ATZ mode (wiring diagram 6). The 2,2kΩ load resistors of are associated with the zones Z01...Z14. The 4,7kΩ load resistors of are associated with the extended zones Z15...Z32. Alarm sensors with normally closed (NC) and normally open (NO) contacts may be used in this mode.

When the wiring scheme 5 is used, a fault signal for both zones is generated and an alarm is triggered simultaneously upon short-circuiting or cutting the circuit.

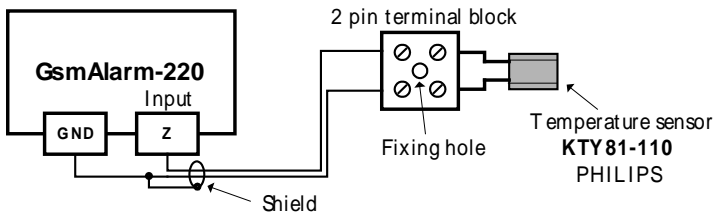
If 24 hour tamper supervision is activated (see Ch. 5.3.2.6), an alarm is triggered independently of the protection mode status. 2.2kΩ resistors are associated with the zones Z01...Z14. 1kΩ resistors are associated with the extension zones Z15...Z32. Sensors with both normally closed (NC) contacts and with normally open (NO) contacts may be used in this mode.

The main and the extended zones are associated automatically in the order of increasing zone number. Both the main zone and the extended zone must work in mode A4Y or A6Y (see Ch 5.3.1.3).

The main zone and the extended zone are associated automatically in zone number ascending order. Example: If ATZ mode has the main zones Z01, Z02, Z04 and the extended zones Z15, Z16, Z17, the zone Z01 will be associated with zone Z15, zone Z02, with zone Z16, and zone Z04, with zone Z17.

4.3. CONNECTION OF TEMPERATURE SENSORS

GsmAlarm-220 has temperature measurement possibility. Up to 14 temperature sensors *KTY81-110* (*PHILIPS*) can be connected to the device.



In order to minimize influence of external interferences and measurement error, it is recommended to use shielded twisted pair cable 0.5 mm².

Shield is connected to ground wire only in one end, close to GsmAlarm-220 board. Use pin terminal block with a fixing hole for temperature sensor fastening.

Parameter A must be changed in order to activate temperature measurement mode. (see chapter 5.3.1.1). Input parameter T defines alarm temperature. Via a keypad, the alarm temperature can be programmed in the range of 0...+99 °C (T00 - T99) (see Ch. 5.6.4.). Via SMS, the alarm temperature can be programmed in the range of -40 +90 °C (see Ch. 5.3.1). A global temperature offset can be specified (see Ch. 5.6.22).

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

- a) No delay in A40 A50, system operates instantly, after temperature reaches programmed value;
- b) No prohibition for armed mode activation, i.e. user can activate armed mode although temperature measurement zone has been triggered.

Recommended values of parameter M: M40 or M00. 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 (Z1...Z14) may be assigned to the main temperature zone (Z15...Z32). The A8Y mode or A9Y mode should be activated for the

INSTALLATION

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.

The following message is sent to GsmAlarm-220 to obtain the temperature information:

AAAAAAAAA 98* (see Ch. 12).

5. PROGRAMMING

5.1. GENERAL PROGRAMMING INSTRUCTIONS

GsmAlarm-220 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 chapter 5.2.1) or remotely, sending SMS message with the phone numbers of users to GsmAlarm-220 (see chapter 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-220 device.

The parameters of the system can be programmed by sending SMS message (see chapter 5.3) or by using Paradox keypad (see chapter 5.6).

It is recommended to change the SMS password at the end of programming (see Ch. 5.5).

5.2. USER AND ALARM MONITORING STATION NUMBERS

If GsmAlarm-220 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-220 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-220 is used only for gate control it is not necessary to programme *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).

5.2.1. PROGRAMMING WITH STANDARD MOBILE PHONE

Insert SIM card into a standard mobile phone. Enter user name into SIM card number book using capital letters e.g. *ALNRN1* and corresponding phone number. We recommend enter the number with international code. (E.g. +370...)

If GsmAlarm-220 is used for gate control, number of extra user numbers can be as large as fits into the SIM card (up to 250). Any name can be ascribed to user.

When programming alarm monitoring station number you must use capital letters and enter name: *CIDNR1* (*CIDNR2*) and number (numbers) of alarm monitoring station.

Important:

It's important to note that while programming SIM card memory should be active (not phone memory!). Otherwise the user number will be recorded in the mobile phone memory used for programming and the SIM card will remain empty.

After having programmed all user numbers, it is recommended to check whether SMS service centre number is programmed. Simplest way to check: send any SMS from the phone used for programming. If it is sent successfully we can be sure that SMS centre number has been programmed

correctly. Otherwise, program SMS center number following the mobile phone's user manual. SMS centre number can be learnt from GSM service provider.

After completion of programming and checking whether SIM card PIN code request is switched off, take the SIM card off from the mobile phone and insert it into GsmAlarm-220 SIM card slot.

5.2.2. PROGRAMMING WITH SMS

In order to program the main user numbers, send the following SMS from any mobile phone into GsmAlarm-220:

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

AAAAAAA: eight digit alphanumeric SMS password, which is obligatory in the beginning of each SMS. Manufacturer-programmed password is AAAAAAAA. User can change the password on his own desire (see Ch.5.5).

The user receives SMS message with programmed numbers from GsmAlarm-220:

AAAAAAA	ALNR1:N	ALNR2:N	ALNR3:N	ALNR4:N	ALNR5:N	CIDNR1:N	CIDNR2:N
---------	---------	---------	---------	---------	---------	----------	----------

ALNR1 ... ALNR5: user numbers.

CIDNR1, CIDNR2: alarm monitoring station numbers.

N means, that the number is unprogrammed. Enter the appropriate number instead of letter N and send SMS back to GsmAlarm-220. E.g.:

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

Receipt and decrypting of the SMS by GsmAlarm-220 is confirmed by blink of indicator *MODE*. The phone, which has sent the programming SMS, immediately receives a confirming SMS with programmed numbers.

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

5.3. PROGRAMMING SYSTEM PARAMETERS WITH SMS

All GsmAlarm-220 input and output operating modes, delay times and names can be programmed with the help of SMS. First of all, it is recommended to receive SMS with programmed parameters and then to send the same SMS with corrected parameters back to GsmAlarm-220.

5.3.1. PROGRAMMING ZONES

In order to receive SMS with input Z1 – Z32 parameters, send GsmAlarm-220 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-220 confirms receiving the message with frequent blinking of MODE indicator and sends seven SMS messages including input parameters Z1- Z32. The first message contains the parameters of Z1 - Z5, the second contains the parameters of Z6 - Z10, the third contains the parameters of Z11 - Z16, the fourth contains the parameters of Z16 - Z20, the fifth contains the parameters of Z21 - Z25, the sixth contains the parameters of Z26-Z30, and the seventh contains the parameters of Z31 and Z32. Received message with input Z1 – Z5 parameters will look as follows:

AAAAAAA Z01:A30M70P10T20 Zone1, Z02:A30M70P10T00 Zone2, Z03:A30M70P10T00 Zone3, Z04:A30M70P10T00 Zone4, Z05:A30M70P10T00 Zone5,

AAAAAAA: - password.

Z - 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 chapter 5.3.1.2).

P10 - partial protection mode (see chapter 5.3.1.3).

T20 - entry delay, if system is in armed mode. After 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 chapter 5.3.1.1), value of T parameter corresponds to triggering temperature.
Possible values: -40 °C...+99 °C.

Zone1, Zone2, Zone3, Zone4, Zone5 - input 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: 11.

After adjusting settings, message is sent back to GsmAlarm-220.

5.3.1.1. PARAMETER A: INPUT ZONE TRIGGERING CONDITIONS Addr: [201-232]

Input zone triggering conditions	AXY		Input zone operating mode
	X	Y	
Input disabled.	0	0	<i>Delay zone.</i> After relevant zone is being triggered, the system generates alarm in armed or disarmed mode, siren operates constantly and delay time is ignored.
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 (NO , see Ch. 4.2.3).	1	1	<i>24H zone.</i> After relevant zone is being triggered, the system generates alarm in armed or disarmed mode, siren operates constantly and delay time is ignored.
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 (NC , see Ch. 4.2.3).	2	2	<i>Fire zone.</i> The system generates alarm in armed or disarmed mode. Siren is operating with interruptions.
EOL mode. 2.2kΩ load resistor is required (see Ch. 4.2.3).	3	3	<i>ON/OFF zone.</i> Mode designated to arm or disarm the alarm system if keypad is not used.
ATZ mode. Triggers when contacts opened (NC). Two 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. ¹⁾
-	-	5	<i>Dual activation delay zone.</i> ²⁾
ATZ mode with tamper recognition. Triggers when contacts close (NO). Tamper recognition must be on, 1kΩ and 2.2kΩ load resistors in series are required (see Ch. 4.2.3).	-	6	<i>Dual activation 24-hour zone.</i> ²⁾
-	-	7	<i>Force arm, Delay zone.</i>
Temperature measurement mode. Alarm is activated if measured temperature overcomes programmed temperature T.	8	8	<i>Force arm, Follow zone.</i> Force arming allows to arm the system without waiting for all zones to close.
Temperature measurement mode. Alarm is activated if measured temperature is lower than programmed temperature T.	9	9	-

1) Follow zone. After violation of this zone alarm goes on immediately, if other zone with delay isn't violated. If firstly zone with delay is violated (for example, doors are opened), "follow" zone receives delay time of earlier violated zone. It is recommended to apply this mode to motion sensor zone, if sensor is installed before the entry doors to the room.

2) System is responding both to zone activation and recovering in dual activation mode. After activation of the zone, system is responding in the same way as in mode "0" and "1". After zone

recovery (when contacts comes back to the initial state), system doesn't call and doesn't turn on the siren. Users receive only SMS message (if SMS message sending is activated; see chapter 5.3.1.2).

5.3.1.2. PARAMETER M: SYSTEM STATE AFTER INPUT TRIGGERING

Addr: [241-272]

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

Important: security monitoring station is informed when mode of data transfer to 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 : DIVIDING SYSTEM INTO TWO PARTITIONS.AND PARTIAL ARMING MODES STAY AND SLEEP. TAMPER RECOGNITION. Addr: [281-312]

Zone assignment	PXY		Partial arming mode STAY and SLEEP. Tamper monitoring.
	X	Y	
-	0	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, BELL AND COMMON SYSTEM PARAMETERS E, F, G, H, P, T

In order to receive SMS with output and common parameters, send GsmAlarm-220 the following SMS:

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:M01T00 OutC1, C2:M01T05 OutC2, C3:M05T05 OutC3, C4:M02T05 OutC4, C5:M06T02 Siren, S01:E20F51G01H00L12P00T20
--

C1 - number of programmable output. *C5* corresponds to siren output *BELL*.

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

T00 - output operating time. Outputs *C1-C4*: in seconds, *C5 (BELL)*: in minutes.

OutC1, OutC2, OutC3, OutC4 and **Siren** - programmable output names. User can change the name under his own discretion. Maximum number of name characters: 11.

S01: - command for common system parameters programming.

E20 - method 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. 5.3.2.3.)

G01 - report SMS delay time in case of the main power supply failure (see Ch. 5.3.2.4).

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

L12 – SMS structure and SMS password functionality (see Ch. 5.3.2.5).

P00 - splitting of the system into partitioning and 24 hour tamper supervision (see Ch. 5.3.2.6).

T20 - entry delay time. Possible values: 00 – 99 seconds.

After correction of the parameters SMS message is sent back to GsmAlarm-220.

5.3.2.1. OUTPUT C1-C4 and BELL OPERATING MODE

Addr:[321-325]

Output mode	Explanation of operating
M00	Not in use.
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	LED mode. Output is in operating together with MODE indicator.
M03	Output is activated, when system is armed. Open contact, when system is disarmed.
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.
M11...M42	Output is activated if the respectively zone is triggered. M11 output state depends on the state of zone Z1. * M42 output state depends on the state of zone Z32. *
M51	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.
M52	The output is activated by simultaneously pressing and holding the keypad buttons 1 and 2 for 3 sec or by the command "Logical Key 1". ** The output is deactivated by simultaneously pressing and holding the keypad buttons 2 and 3 for 3 sec or by the command "Logical Key 4". **
M53	The output is activated by simultaneously pressing and holding the keypad buttons 4 and 5 for 3 sec or by the command "Logical Key 2". ** The output is deactivated by simultaneously pressing and holding the keypad buttons 5 and 6 for 3 sec or by the command "Logical Key 5". **
M54	The output is activated by simultaneously pressing and holding the keypad buttons 7 and 8 for 3 sec. or by the command "Logical Key 3". ** The output is deactivated 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 triggered (open) and deactivated when adequate zone is not triggered (close). If not zero delay time is programmed, output is activated automatically when adequate zone is triggered and deactivates automatically after expiration of the programmed time T.

Outputs are controllable when system is armed or disarmed.

Important! An output can be inverted only via the keypad (see Ch. 5.6.9).

5.3.2.1.1. CONFIGURATION OF THE GATE CONTROL MODE

Connect the system after the wiring diagram presented in Chapter 4.2.2. The message AAAAAAAA CPARAM is sent to GsmAlarm-220 to instruct the device to operate in the gate control mode (see Ch 5.3.2.). When output C1 (see Ch. 4.2.2) is used for control of the gate, output parameter M01 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.

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 5.2.2 (ADDNR:).

Important! *Two identical telephone numbers cannot be programmed under different names!*
Use command *NRLIST* to review the numbers (see Ch. 12).

5.3.2.2. PARAMETER E : THE WAY USER IS INFORMED USER 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.

5.3.2.3. PARAMETER F : SYSTEM RESPONSE TO INCOMING CALLS AND NUMBER OF CALLS IN ALARM MODE

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 ALRNR1 will receive a SMS with caller's number.	1	1	After alarm triggering, users will be 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).*

5.3.2.4. SMS DELAY TIME IN CASE OF POWER SUPPLY FAILURE **Addr:[133]**

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.

5.3.2.5. 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.
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).	2	2	SMS commands are executed only if the password at the beginning of SMS matches the stored password.

Manufacturer-programmed value: L12.

Important! To activate several functions the total of numbers should be used. Example: To activate all three functions the digit X should be 3 (1+2=3).

5.3.2.6. PARAMETER P – DIVISION OF THE SYSTEM INTO PARTITIONS. 24 HOUR TAMPER SUPERVISION. **Addr: [236]**

24 hour tamper contact monitoring.	PXY		Division into partitions
	X	Y	
24 hour tamper supervision is off.	0	0	Undivided.
24 hour tamper supervision is on.	4	1	The system is split into two partitions.

Manufacturer-programmed value: P00.

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-220 following message:

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

GsmAlarm-220 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-220. Maximum number of the name's characters is 11.

5.3.4. SETTING SYSTEM CLOCK

System's clock should be set only if timer function is used. Setting system clock can be set by sending SMS message:

A A A A A A A A T S I N C R

Command TSINCH synchronizes system date and time with GSM network time.

In order to set system clock time (eg. 12:45, 2011, January 3), the following SMS must be sent to GsmAlarm-220:

A A A A A A A A S C L O C K : 1 2 - 4 5 1 1 / 0 1 / 0 3
--

AAAAAAA -password;
SCLOCK: -time set instruction;
12-45 -time (12:45).
11/01/03 -date .

Check up of programmed system time can be performed by sending the following SMS to GsmAlarm-220:

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

GsmAlarm-220 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-220:

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

GsmAlarm-220 sends back message with current timer parameters to user:

AAAAAAA 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
--

AAAAAAA - password;
TMR01...TMR10 -number of timer event. 10 independent timer events can be programmed.
:00, -timer instruction, defining which function should be performed in programmed time. Please read detailed description of timer instructions in chapter 5.3.5.1.
00-00 - timer activation time.

Renewed SMS message has to be sent to GsmAlarm-220. User receives SMS message with newly programmed parameters after.

Examples for programming.

For the system to activate input C2 12: 30 p.m., deactivate 13: 00 p.m. and 13: 01 p.m. and to send SMS message, informing about the state of outputs, following SMS has to be sent to GsmAlarm-220:

A	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: [401-410]

Timer instruction	Description of the timer event
00	Timer OFF.
01	System arming.
02	System disarming.
11	Output C1: ON.
10	Output C1: OFF.
22	Output C2: ON.
20	Output C2: OFF.
33	Output C3: ON.
30	Output C3: OFF.
44	Output C4: ON.
40	Output C4: OFF.
55	Output BELL: ON.
50	Output BELL: OFF.
77	Request to send SMS message with information about output state.
80	First partition disarming.
81	First partition STAY mode activation (or the whole system, if there is no partition of the system).
82	First partition SLEEP mode activation (or the whole system, if there is no partition of the system).
83	First partition arming (or the whole system, if there is no partition of the system).
88	Request to send SMS message with information about GSM signal quality and power supply voltage.
89	Transfer of test signal to security monitoring station through Contact ID protocol (see Ch. 7.3).
90	Second partition disarming.
91	Second partition STAY mode activation.
92	Second partition SLEEP mode activation.
93	Second partition arming.
98	Requests to send SMS with temperature values only.
99	Request to send SMS message with information about state of protected zones.

Note! SMS messages are sent only to user ALRNRI. Command 89 is sending message to security services station only.

5.4. PROGRAMMING 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-220:

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 SMS PASSWORD

In order to change manufacturer-programmed SMS password, send GsmAlarm-220 the following message:

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

AAAAAAAA – old SMS password.
PASSW – password changing instruction.
ABCDefgh – new SMS password. Password must be 3 – 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.

5.6. PROGRAMMING THE SYSTEM USING PARADOX 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 only.

To program system parameters:

- Press the [ENTER] key.
- Enter your system installer code (default code is 0000). The Lights *ARM* and *STAY* will flash constantly (a note „Section“ will appear in K32LCD keypad display), programming mode is activated.
- Select the parameter by entering a 3-digit address. The Lights *ARM* and *STAY* will lit constantly (a note „Code“ or “Data” will appear in K32LCD keypad display).
- Enter a new 2-digit (4 or 6) parameter.

When an operation is successfully entered on the keypad, the keypad produces an intermittent beep tone (“BEEP-BEEP-BEEP-BEEP”). When an operation is incorrectly entered on the keypad, the keypad will emit a continuous beep tone (“BEEP”). Press the [CLEAR] key to exit the programming mode.

All parameters and addresses of the parameters are provided in the table. Please see chapters 5.6.1 – 5.6.21 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 number.	CIDACC
031-050	User code function.	-
100	Exit delay.	T (S01)
101-132	Input operating mode: entry delay or triggering temperature.	T (Z01-Z32)
133	Delay time of report SMS about the failure of main power supply.	G (S01)
134	Operating mode of outputs C01-C05: inverted/ not inverted.	-
140	Temperature correction.	-
141-145	Output operating mode: operating time.	T (C01-C05)
201-216	Input operating mode: triggering conditions.	A (Z01-Z32)
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	System splitting into two partitions. 24 hour tamper supervision.	P (S01)
237	SMS messages and setting of SMS password.	L (S01)
240	StayD indication.	-
241-272	Input operating mode: alarm state after input triggering.	M (Z01-Z32)
273	Informing users about arming and disarming.	E (S01)
274	Responding to unrecognized call and number of calls in the case of alarm.	F (S01)
281-296	Input operating mode: dividing into the partitions and partial protection modes <i>STAY</i> and <i>SLEEP</i> .	P (Z01-Z32)
321-325	Output operating mode.	M (C01-C05)
401-410	Timer events.	STIMER

Parameters of the system

* Parameters if programming by SMS message

5.6.1. 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. 5.16.15), where each digit can be any value from 0 to 9. Six digit 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). The Lights *ARM* and *STAY* will flash (a note „Section“ will appear in K32LCD keypad display).
- 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 (a note „Code“ will appear in K32LCD keypad display).
- 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).
- 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

Manufacturer-programmed installer access code: 0000 (000000, if six digit code length is used).

Manufacturer-programmed 1 user access code: 1234 (123456, if six digit code length is used).

5.6.2. USER ACCESS CODE FUNCTIONS

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

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

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

Parameter value	Code Function
00	Arms or disarms the whole system.
01	Arms or disarms the first partition.
02	Arms or disarms the second partition.
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. *
50	Activates or deactivates the output BELL (C5). *

Manufacturer-programmed value: 00

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

5.6.3. 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.

5.6.4. 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
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
116	Zone Z16 „T“ parameter

Address	Parameter
117	Zone Z17 „T“ parameter
118	Zone Z18 „T“ parameter
119	Zone Z19 „T“ parameter
120	Zone Z20 „T“ parameter
121	Zone Z21 „T“ parameter
122	Zone Z22 „T“ parameter
123	Zone Z23 „T“ parameter
124	Zone Z24 „T“ parameter
125	Zone Z25 „T“ parameter
126	Zone Z26 „T“ parameter
127	Zone Z27 „T“ parameter
128	Zone Z28 „T“ parameter
129	Zone Z29 „T“ parameter
130	Zone Z30 „T“ parameter
131	Zone Z31 „T“ parameter
132	Zone Z32 „T“ parameter

Manufacturer-programmed time for zone Z1: 20 seconds, zones Z2-Z32: 00 seconds.

5.6.5. 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
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
216	Zone Z16 „A“ parameter

Address	Parameter
217	Zone Z17 „A“ parameter
218	Zone Z18 „A“ parameter
219	Zone Z19 „A“ parameter
220	Zone Z20 „A“ parameter
221	Zone Z21 „A“ parameter
222	Zone Z22 „A“ parameter
223	Zone Z23 „A“ parameter
224	Zone Z24 „A“ parameter
225	Zone Z25 „A“ parameter
226	Zone Z26 „A“ parameter
227	Zone Z27 „A“ parameter
228	Zone Z28 „A“ parameter
229	Zone Z29 „A“ parameter
230	Zone Z30 „A“ parameter
231	Zone Z31 „A“ parameter
232	Zone Z32 „A“ parameter

Manufacturer-programmed values for zones Z1-Z14: 30, and zones Z15, Z16: 00.

5.6.6. 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
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
256	Zone Z16 „M“ parameter

Address	Parameter
257	Zone Z17 „M“ parameter
258	Zone Z18 „M“ parameter
259	Zone Z19 „M“ parameter
260	Zone Z20 „M“ parameter
261	Zone Z21 „M“ parameter
262	Zone Z22 „M“ parameter
263	Zone Z23 „M“ parameter
264	Zone Z24 „M“ parameter
265	Zone Z25 „M“ parameter
266	Zone Z26 „M“ parameter
267	Zone Z27 „M“ parameter
268	Zone Z28 „M“ parameter
269	Zone Z29 „M“ parameter
270	Zone Z30 „M“ parameter
271	Zone Z31 „M“ parameter
272	Zone Z32 „M“ parameter

Manufacturer-programmed values for all zones: 70.

5.6.7. ASSIGNMENT OF A ZONE TO A PARTITION, PARTIAL PROTECTION MODES, TAMPER CONTACT MONITORING. (PARAMETER P)

This parameter is defining if zone is operating in full or partial protection mode. Also, whether contact 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
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
296	Zone Z16 „P“ parameter

Address	Parameter
297	Zone Z17 „P“ parameter
298	Zone Z18 „P“ parameter
299	Zone Z19 „P“ parameter
300	Zone Z20 „P“ parameter
301	Zone Z21 „P“ parameter
302	Zone Z22 „P“ parameter
303	Zone Z23 „P“ parameter
304	Zone Z24 „P“ parameter
305	Zone Z25 „P“ parameter
306	Zone Z26 „P“ parameter
307	Zone Z27 „P“ parameter
308	Zone Z28 „P“ parameter
309	Zone Z29 „P“ parameter
310	Zone Z30 „P“ parameter
311	Zone Z31 „P“ parameter
312	Zone Z32 „P“ parameter

Default values for all zones programmed by manufacturer: 10.

5.6.8. OPERATION TIME OF OUTPUTS C1-C4 and BELL

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

Address	Parameter
141	Operation time of output C1 in seconds.
142	Operation time of output C2 in seconds.
143	Operation time of output C3 in seconds.
144	Operation time of output C4 in seconds.
145	Operation time of siren BELL (C5) in seconds or minutes.

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

Manufacturer-programmed time: C1:00 sec., C2:05 sec., C3:05 sec., C4:05 sec., BELL: 02 min.

5.6.9. 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.
325	Operating mode of output BELL (C5).

Manufacturer-programmed output modes: C1-01, C2-01, C3-05, C4-02, C5-06.

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 operating
134	00	Outputs C1, C2, C3, C4 and C5 not inverted.
134	01	Output C1 inverted.
134	02	Output C2 inverted.
134	04	Output C3 inverted.
134	08	Output C4 inverted.
134	16	Output C5 (BELL) inverted.

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 31 (1+2+4+8+16).

5.6.10. PARAMETER E: THE WAY USER IS INFORMED ABOUT ARMING/DISARMING

Parameter „E“ defines the way user is informed about arming/disarming. It is described in detail in chapter 5.3.2.2.

Address	Parameter
273	System parameter „E“.

Manufacturer-programmed value: 20.

5.6.11. 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 case of alarm. It is described in detail in chapter 5.3.2.3.

Address	Parameter
274	System parameter „F“.

Manufacturer-programmed value: 31.

5.6.12. PARAMETER G: SMS DELAY TIME 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 5.3.2.4. in more detail.

Address	Parameter
133	System parameter „G“.

Manufacturer-programmed value: 01.

5.6.13. 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.

5.6.14. PARAMETER L: SMS STRUCTURE AND SMS PASSWORD FUNCTIONALITY

This parameter is described in chapter 5.3.2.5 in more detail.

Address	Parameter
237	System parameter „L“.

Manufacturer-programmed value: 12.

5.6.15. PARAMETER P: - DIVIDING OF A SYSTEM INTO PARTITIONS. 24 HOUR TAMPER SUPERVISION.

The parameter is comprehensively described in Ch. 5.3.2.6.

Address	Parameter
236	System parameter „P“.

Manufacturer-programmed value: 00.

5.6.16. 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.

5.6.17. 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.

5.6.18. 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. For rational use of inputs Z1...Z14, it is recommend to assign the keypad zone to additional zone (Z15..Z32). An additional zone must operate in one of these modes: NO (A1Y), NC (A2Y) or EOL (A3Y). In EOL mode a load resistor must be used. If a keypad zone is assigned to one of zones Z01...Z14, this input status will be ignored; system reacts only to keypad zone changes.

To assign the keypad zone:

- Press the [ENTER] key.
- Enter your system installer code.
- Press and hold the  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 8, press 0 and 8.

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-220 board.

5.6.19. 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 keypads TM40 and TM50, time programming is activated by selecting the menu items: Menu -> Setting -> Home page -> Set Time / Date.

5.6.20. PROGRAMMING 24 HOUR TIMER

User is able to program up to 10 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 5.3.4.1.

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 p.m., begin entering address *401* (event TMR01), then enter *22 12 15* (22 – output C2 activation code, 12 15 – activation time).

Address	Timer event number
401	TMR01
402	TMR02
403	TMR03
404	TMR04
405	TMR05
406	TMR06
407	TMR07
408	TMR08
409	TMR09
410	TMR10

5.6.21. PROGRAMMING CONTACT ID USER IDENTIFICATION 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	Parameter value
021	0000 - 9999

Manufacturer-programmed Contact ID user identification number: 0000.

In six-digit mode the identification number matches four first digits. The two last digits haven't any influence. Two zeros can be entered during the programming.

5.6.22. TEMPERATURE CORRECTION

The measured temperature may be corrected by changing the address [140] parameter. This parameter is described in chapter 5.6.2. in more detail. Measurement error may be caused by long connection cable of the temperature sensor.

The number 20 corresponds to the null correction. The temperature value increases and decreases together with this number. The step of correction: 0.3 °C. The correction applies to all inputs collectively. Measured temperatures of individual inputs may not be corrected.

5.6.23. 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 keypads TM40 or TM50, we recommend to deactivate StayD indication.

6. RESETTING SYSTEM SETTINGS TO FACTORY DEFAULTS

In order to reset all system parameters to factory default settings, disconnect system power supply and backup battery, short contacts RESET and connect system power supply. When **MODE** and **GPRS** indicators are off (wait 2-3 seconds to pass), jumper may be removed. System parameters are set to values denoted in chapter 6.1.

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

6.1. MANUFACTURER PROGRAMMED PARAMETERS

Input parameters									
Input	Name	[Addr.] Param.A		[Addr.] Param.M		[Addr.] Param.P		[Addr.] Param.T	
Z1	<i>Zone1</i>	[201]	A30	[241]	M70	[281]	P10	[101]	T20
Z2	<i>Zone2</i>	[202]	A30	[242]	M70	[282]	P10	[102]	T00
Z3	<i>Zone3</i>	[203]	A30	[243]	M70	[283]	P10	[103]	T00
Z4	<i>Zone4</i>	[204]	A30	[244]	M70	[284]	P10	[104]	T00
Z5	<i>Zone5</i>	[205]	A30	[245]	M70	[285]	P10	[105]	T00
Z6	<i>Zone6</i>	[206]	A30	[246]	M70	[286]	P10	[106]	T00
Z7	<i>Zone7</i>	[207]	A30	[247]	M70	[287]	P10	[107]	T00
Z8	<i>Zone8</i>	[208]	A30	[248]	M70	[288]	P10	[108]	T00
Z9	<i>Zone9</i>	[209]	A30	[249]	M70	[289]	P10	[109]	T00
Z10	<i>Zone10</i>	[210]	A30	[250]	M70	[290]	P10	[110]	T00
Z11	<i>Zone11</i>	[211]	A30	[251]	M70	[291]	P10	[111]	T00
Z12	<i>Zone12</i>	[212]	A30	[252]	M70	[292]	P10	[112]	T00
Z13	<i>Zone13</i>	[213]	A30	[253]	M70	[293]	P10	[113]	T00
Z14	<i>Zone14</i>	[214]	A30	[254]	M70	[294]	P10	[114]	T00
Z15	<i>Zone15</i>	[215]	A00	[255]	M70	[295]	P10	[115]	T00
Z16	<i>Zone16</i>	[216]	A00	[256]	M70	[296]	P10	[116]	T00
Z17	<i>Zone17</i>	[217]	A00	[257]	M70	[297]	P10	[117]	T00
Z18	<i>Zone18</i>	[218]	A00	[258]	M70	[298]	P10	[118]	T00
Z19	<i>Zone19</i>	[219]	A00	[259]	M70	[299]	P10	[119]	T00
Z20	<i>Zone20</i>	[220]	A00	[260]	M70	[300]	P10	[120]	T00
Z21	<i>Zone21</i>	[221]	A00	[261]	M70	[301]	P10	[121]	T00
Z22	<i>Zone22</i>	[222]	A00	[262]	M70	[302]	P10	[122]	T00
Z23	<i>Zone23</i>	[223]	A00	[263]	M70	[303]	P10	[123]	T00
Z24	<i>Zone24</i>	[224]	A00	[264]	M70	[304]	P10	[124]	T00
Z25	<i>Zone25</i>	[225]	A00	[265]	M70	[305]	P10	[125]	T00
Z26	<i>Zone26</i>	[226]	A00	[266]	M70	[306]	P10	[126]	T00
Z27	<i>Zone27</i>	[227]	A00	[267]	M70	[307]	P10	[127]	T00
Z28	<i>Zone28</i>	[228]	A00	[268]	M70	[308]	P10	[128]	T00
Z29	<i>Zone29</i>	[229]	A00	[269]	M70	[309]	P10	[129]	T00
Z30	<i>Zone30</i>	[230]	A00	[270]	M70	[310]	P10	[130]	T00
Z31	<i>Zone31</i>	[231]	A00	[271]	M70	[311]	P10	[131]	T00
Z32	<i>Zone32</i>	[232]	A00	[272]	M70	[312]	P10	[132]	T00

PROGRAMMING

Output parameters				
Output	Name	[Addr.] Param. <i>M</i>	[Addr.] Operating time T	
C1	<i>OutC1</i>	[321] M01	[141]	T00 (sec.)
C2	<i>OutC2</i>	[322] M01	[142]	T05 (sec.)
C3	<i>OutC3</i>	[323] M05	[143]	T05 (sec.)
C4	<i>OutC4</i>	[324] M02	[144]	T05 (sec.)
C5 (BELL)	<i>Siren</i>	[325] M06	[145]	T02 (min.)

Common system parameters							
SMS Password	<i>E</i> [273]	<i>F</i> [274]	<i>G</i> [133]	<i>H</i> [233]	<i>L</i> [237]	<i>P</i> [236]	Param. T [100]
AAAAAAA	<i>E20</i>	<i>F31</i>	<i>G01</i>	<i>H00</i>	<i>L12</i>	<i>P00</i>	<i>T20</i> (sec.)

[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.

Data is transferred to the alarm monitoring station by Standard CONTACT ID protocol, through GSM voice call; while standard CONTACT ID protocol is understandable to all modern alarm monitoring stations. GsmAlarm-220 transfers to alarm monitoring station data about violation and restoring of alarm zone, arming and disarming, main power supply fault, malfunction of the backup battery, malfunction of the fire zone. Test message can be sent on certain time.

In order to activate function of data transfer to the alarm monitoring service it is necessary to program one or two numbers of alarm monitoring station (see Ch. 7.1), to program four digit user account number (see Ch. 7.2.) and choose appropriate protection mode (see Ch. 7.3).

7.1. PROGRAMMING TELEPHONE NUMBERS OF THE ALARM MONITORING STATION

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. 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. 5.6.21.) 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
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

- AAAAAAAA** - 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 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 ALARM 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. 5.3.13). Possible values are presented in the table.

Information that is received by users ALRNR1 - ALRNR5.	HXY		Information that 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	Data about violation of protected zone, main power supply fault, malfunction of the backup battery, about malfunction of the fire zone, is transferred. Periodical test signal can be sent.*
-	2	2	All above mention data is transferred plus information about arming and disarming.

* In order that GsmAlarm-220 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-hour timer (see Ch. 5.3.5).

If data transfer mode is on (Y value is above zero), all calls are addressed to security service station only, i.e. GsmAlarm-220 users ALRNR1-ALRNR5 don't get calls (without reference to programmed M parameter value, see Ch. 5.3.1.12). In this case short call function is on only (GsmAlarm-220 responds to user call with short call and can inform user about activation and deactivation of protection mode 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, activation and deactivation of the protection mode. User can receive information about the object only after sending appropriate SMS message or after calling to GsmAlarm-220 number and entering appropriate DTMF code.

If H value is H11 or H12, GsmAlarm-220 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-220 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-hour 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	Activation or deactivation of the protection mode with a keypad.
403	Activation or deactivation of the protection mode with a command of 24-hour timer.
407	Remote arming/disarming (with user's mobile phone).
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 coloured 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 - Z16 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 – Z32. 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].

If K636, K10V or K10H keypad is used, indication of zones Z21 – Z32 is impossible.

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 security service station . [9]: GSM communication malfunction.
[5]	Zone fault (open tamper contact or short-circuit). [1]...[32]: faulty zone number.
[7]	Fire protection zone fault. [1]...[32]: faulty zone number.
[8]	System clock is unsynchronized. *

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 batteries are disconnected. System clock setting with SMS message directions described in chapter 5.3.4. System clock setting with keypad described in chapter 5.6.18.

8.1.3. [MEM] KEY – ALARM MEMORY DISPLAY

After system triggering, system memorizes triggered zone (zones) number. If triggered zone's memory is not empty, [MEM] key is constantly alight. 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. Sixteen 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 digit 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 light 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 unless the **StayD** light is on.
- Press the [**ARM**] key.
- Enter a 4-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 turned on when using particular access code. Functionality of the access codes is described in chapter 5.6.2.

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 [**SLEEP**] key.
- Enter a 4-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 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.
[4] + [6]	Panic alarm. Siren is on, message to alarm monitoring station is sent.
[7] + [9]	Fire alarm. Siren is operating with interruptions, message to alarm monitoring station is sent.

Panic alarm messages are sent to alarm monitoring station only (if data transfer to monitoring station option is activated). System doesn't call and doesn't send SMS messages to 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 OUTPUTS CONTROL

The programmable output (PGM terminal) on the GsmAlarm-220 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. 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-220 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 first 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.

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

OBJECT 1: ARMED. SLEEP MODE.
OBJECT 2: DISARMED.

System can be configured to arm and disarm by short, free call (see chapter 5.3.2.3). In order to arm the system, user calls GsmAlarm-220 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-220 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

0 1 *

(if 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. 5.3.2.3) is properly configured. The first digit of parameter **F** must be 4 or 5.

10. SYSTEM OPERATION IN ALARM STATE

In the case of trespass of the protected area GsmAlarm-220, 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 phone) 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

11. POWER SUPPLY MONITORING

The system GsmAlarm-220 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:

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:

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 run out of power! System will shutd after 1 min
--

SYSTEM CONTROL

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 ALRNR1 – ALRNR5.
<i>PASSW:</i>	SMS password change instruction.
<i>ALRNR1:</i> <i>ALRNR2:</i> <i>ALRNR3:</i> <i>ALRNR4:</i> <i>ALRNR5:</i>	System users number programming instructions.
<i>ADDNR:</i>	Gate control mode users number programming instructions.
<i>DELNR:</i>	Gate control mode users number 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>STIMER</i>	Request to send SMS message with system timer parameters.
<i>CIDACC</i>	CONTACT ID user account number programming instruction.
<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).

SMS instructions, for system programming and diagnostics

13. WARRANTY

MANUFACTURER AND DISTRIBUTOR is not responsible for possible theft from GsmAlarm-220 protected premises. GSM service operators are not associated to company “UAB Elektroninės technologijos”, therefore, company takes no responsibility for GSM network services, coverage and functioning.

GsmAlarm-220 system provided with 24 month 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-220 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 “Elektroninės technologijos“ declares, that product “GsmAlarm-220” 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

Ademco Contact ID is a registered trademark of Pittway Corporation.
PARADOX is a registered trademark of Paradox Security Systems Ltd.

14. TECHNICAL CHARACTERISTICS

GSM MODULE	
Operating frequency	EGSM-900 MHz DCS-1800 MHz
MAIN POWER SUPPLY (connected to terminal “AC “)	
Power supply voltage	AC 16-24V
Frequency AC	50/60Hz
Maximum current	~1.2A max
BACKUP BATTERY (connected to terminals “BAT “ and “GND“)	
Backup battery operating voltage	DC 12V
Backup battery type	PB - acid
Backup battery capacity	1.2 Ah max
OUTPUT “AUX “ (EXTERNAL DEVICES)	
Output voltage	DC 12V
Maximum current	--- 1 A max
Short circuit protection triggering current	--- 2 A max
SIREN OUTPUT “BELL” (C5)	
Maximum current	0.6 A max
Output active (siren is on)	Connected to GND
Output non-active (siren is off)	Open contact
PROGRAMMABLE OUTPUTS C1, C2, C3, C4	
Maximum current	150 mA max
Output active	Connected to GND
Output non-active	Open contact
INPUTS Z1 - Z14	
Load resistance (EOL mode only)	2,2 kΩ, ±5 %
Load resistance (ATZ mode only)	1,0 kΩ, ±5 % 2,2 kΩ, ±5 % 4,7 kΩ, ±5 %
Temperature measurement range (temperature measurement mode only)	-40°C ... +90°C, ±1°C
POWER CONSUMPTION (without external sensors and keypad)	
Non-activated state	80 mA max
Call, sending SMS or speech mode	350 mA max
OPERATING TEMPERATURE	
	-20°C...+55°C
DIMENSIONS	
	113 x 97 x 25 mm

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