Monitoring System
“GSM Guard PRO”

Content

Application

GSM Guard Control System is inexpensive system for protection of apartments, offices, garages, country houses, warehouses.

The main system application is guaranteed and early notification of hazard situation occurred at the object. At unauthorized penetration in the guarded object GSM Guard will actuate powerful siren and will start automatic redial in the list of numbers stored on SIM card.

When dialing the system notifies the owner with a voice message which has been preliminary recorded in the device memory.

Built-in high-sensitivity microphone allows to listen a protected premise at any time.

Built- in battery allows to operate for some days in the event of system external supply failure. Function of an internal heating allows to operate at negative temperatures (up to -55°C). Automatic check of SIM-card account balance and notification at its lowering below the set value makes GSM Guard Control system truly autonomous.

Main functions

- movement detection in the protected zone (person's movements in the premises at the distance of 7 m)
- notification by dialing and sending SMS messages to telephone numbers which have been saved on a SIM -card of the device (up to 8 numbers)
- "automatic redial" function, if one or several numbers to be notified are engaged
- notification by voice messages, if dialing is not longer than 4 seconds
- recording of voice messages in non-volatile memory of the device through a built-in microphone
- listening of guarded object through a built-in microphone in case of alarm

- built-in battery (automatic recharge and control of built-in battery)
- notification by SMS message in the event of failure/restoration of external supply
- notification by SMS message in the event of built-in battery discharge
- activation / deactivation of control system through SMS messages
- built-in GSM micromodule (industrial standard) for operation with GSM network
- remote programming of the device through SMS messages (including via the Internet)
- guaranteed operation of the system at negative temperatures up to -25° C (-55°C when internal heating up is switched on)
- power saving mode when operating in the car (in the event of external supply 220 V failure, it is automatically switched off)
- built-in GSM antenna
- two independent inputs for line loops connection of external wire sensors
- "alarm button" mode - for operation in case of emergency in premises or cars
- automatic check of SIM-card account balance and notification at its lowering below the set value
- external device management (low-current output)
- operation with a shock sensor
- operation with radio breloques (up to 10 pieces)
- operation with wireless sensors (up to 32 pieces)
- ability to connect 433 MHz external antenna (optional)
- Periodical SMS message – system status report

System specification

Max operation distance with wireless sensors (radio breloques) 433 MHz (direct visibility)	100 meters 300 meters (433 MHz external antenna)
Max quantity of wireless sensors	32 pcs.
Max quantity of radio breloques	10 pcs.
Max quantity of phone numbers to be notified:	8
Supply voltage:	~ 220 V
from alternative network adapter	8..20 V
current consumption in guard mode	30 mA
current consumption in sleep mode	3 mA
Built-in battery capacity:	1.1 A/h
Operating time in the event of internal supply failure (at the temperature +20°C)	3 days
GSM-module operational standards	GSM-900, GSM-1800, GSM-1900
Operating temperature range	- 20..+55 °C
when internal heating is switched on	- 55..+0 °C

Delivery set

GSM Guard PRO Control System
Network adapter 220 V.
Remote control (radio breloque)
Wireless shock sensor with a connector and a cable 5 m*.
Wireless sensor of door opening with a connector and a cable 5 m*.
adapter - splitter 1x2*
Siren kit with a cable of 5 m and network adapter 220 V *.
Cable connector for external sensors connection (two-channel). *
Cable connector for external power supply connection. *
External GSM -antenna with a cable 1 m. *
User's manual
Packing

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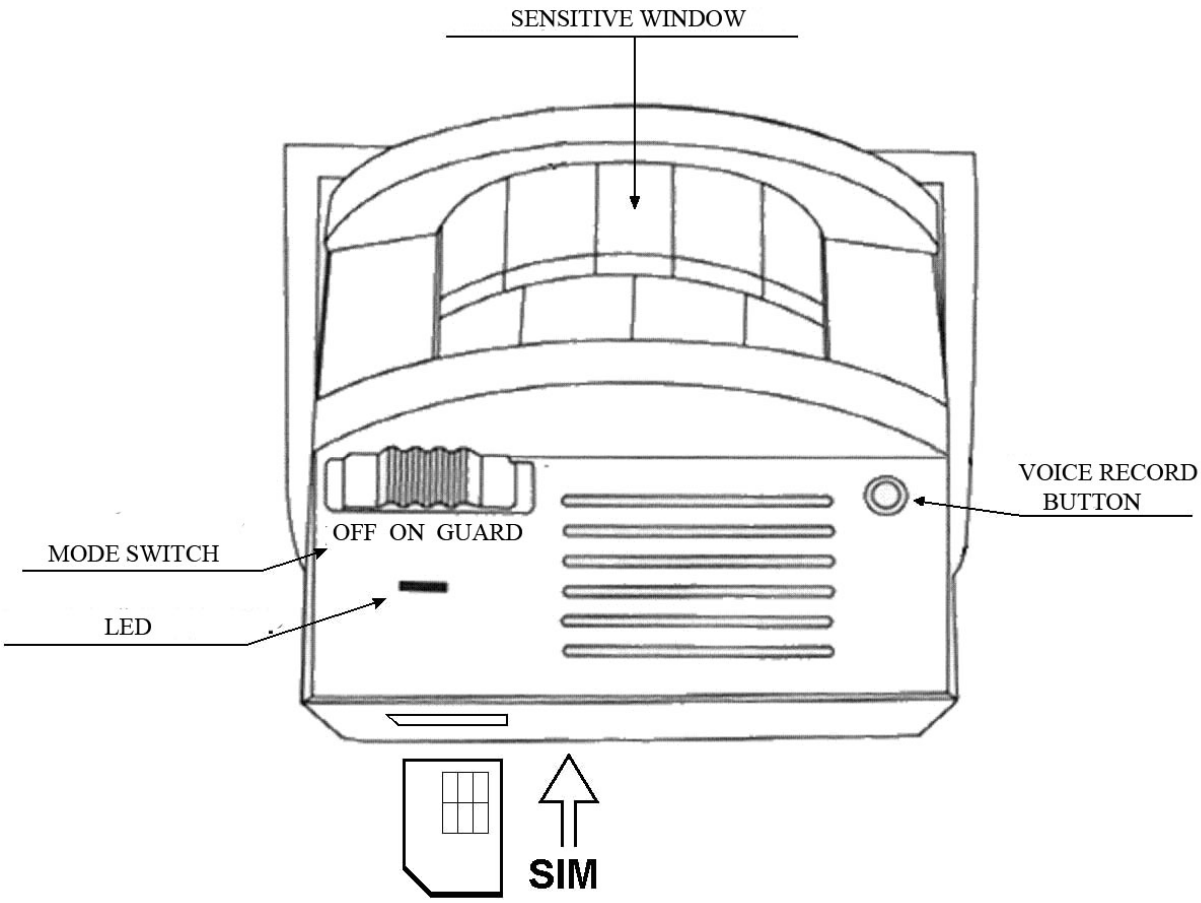
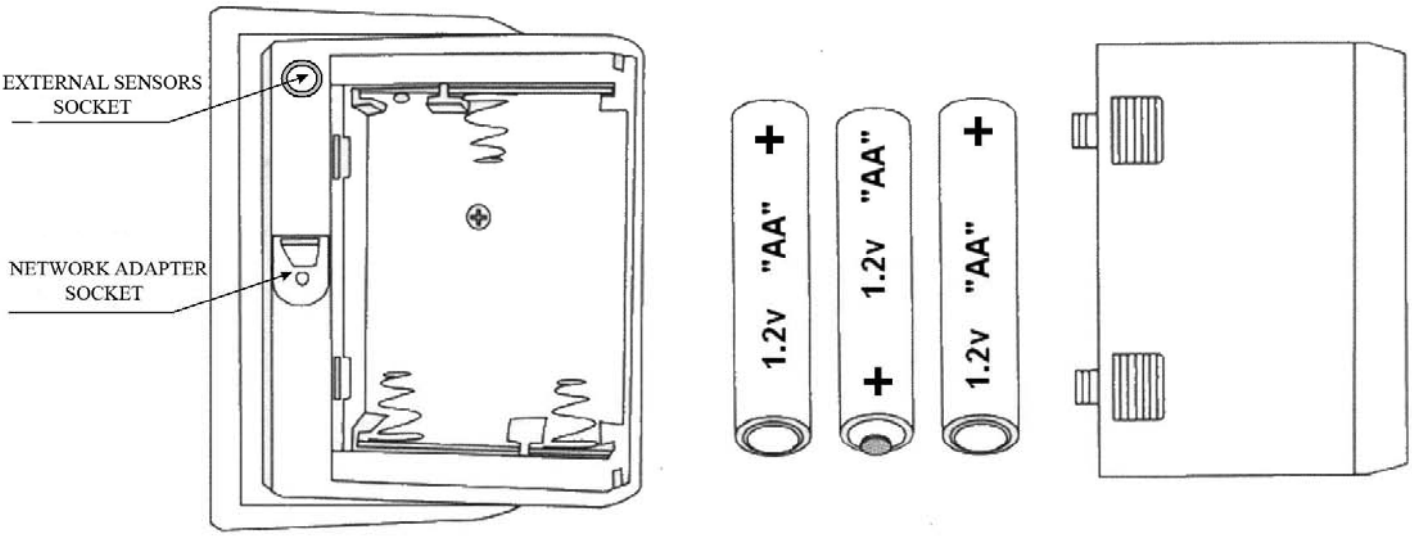
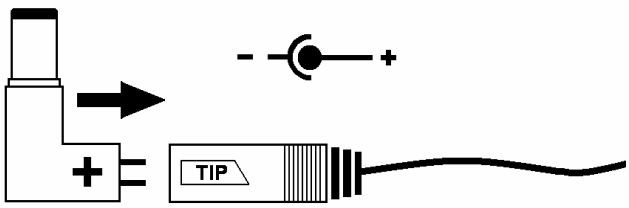
* – separately delivered







If you have by chance disconnected a network adapter connector, reconnect it as shown in the Figure, **maintaining to polarity.**

Figure 1. System controls application.

System operation modes

The system has mode selection switch:

"OFF" (switched off) - the system is switched off, the internal battery is disconnected.

"ON" (guard mode) - sensor reaction control through light indicator (1 sec flash). For wireless sensor - two short flashes.

Voice message recording - press the button. In five seconds red LED indicating record process will flash for 4 seconds. During this time say voice phrase. Voice erasing - press the button and hold for several seconds. LED will once blink - voice message is erased from the memory. Listening functions are also available (listening of the guard area is only possible with "their" phones present in notification numbers list) and programming (guard activation) through SMS messages.

GUARD" - in this mode at actuation of sensors the notification is fulfilled (taking into account delay of an exit from the premise) functions through SMS (including guard deactivation) are available, sending of SMS at failure/restoration of external supply, sending of SMS messages when a built-in battery is discharged to 50 %, automatic control of a SIM- card account balance. The light-emitting diode indicator in a mode "guard" is switched off with a view of installed device masking.

Order of connection and system operation.

Insert a programmed SIM -card into a reader connector, as shown in the picture, with a positive balance. Insert batteries in a battery compartment. Вставьте аккумуляторы в батарейный отсек.

Attention! Do not switch on the system if there are no batteries in the batteries compartment. It can lead to a system breakdown!

Connect a network adapter. Switch over the system in a guard mode.

Right after switching on the light indicator should start to blink. During an indicator blinking, a SIM - card is loading. After loading the indicator will die down. The system is ready for operation. If after loading the light indicator blinks often (within 1 minute), it means there is no GSM network signal.

When you first start:

1. Clear your SIM card (notebook book)
2. Disable entering of the security code, SIM card PIN
3. Insert SIM card into system connector and activate control system or guard mode.
4. After the end of light indicator flashing (2-3 minutes) the table with the cells (default setting) will automatically be recorded on SIM card.
5. For operation it is necessary to record notification number only.

Notification number may be recorded automatically if to call from this number to the system immediately after the end of automatic recording of cell template on clean SIM card.

Cells editing can be made using GSM standard mobile phone. See the table of SIM card cells.

Attention! The information needs to be recorded in SIM card notebook rather than in phone memory. If after programming the system does not work - it is recommended to remove SIM card, to insert it into a mobile phone and to try to make call for check.

When installing the device must take into account the following features:

- movement sensor responds well to the movement of an object only in the horizontal plane
- sensor is designed with an angle of 120° coverage in the horizontal plane
- for sensor reliable operation it is necessary to avoid installation near to thermal noise sources (radiator, electrical heaters, draughts)
- operation of cell phones and other sources of electromagnetic radiation in the vicinity of the device may cause false alarms of movement sensor

In case of false alarms, it is recommended to reduce the sensitivity.

In the event of 220V network failure if the system is in a guard mode, sending SMS message "Power Off" and passing to energy saving mode (GSM module is switched off, the call acceptance and SMS messages does not work). When actuating the sensor the system "wakes up", sends the notification and falls asleep after 15 minutes. This time is necessary to receive incoming calls and listen the guard object.

Operation of wire shock sensors and door opening sensors, siren connection

Possibility of connection of siren, a shock sensor or two additional sensors is provided in the system.

Siren and a shock sensor can be connected separately by cables -adapters coming with a delivery set (5m length). If necessary to connect additional sensors together with siren (a shock sensor) you need an adapter -splitter 1x2 (comes with a delivery set together with siren or a shock sensor). Joint connection of a shock sensor and siren is permitted. Siren takes the input N 1 (the central contact of a stereo connector), a shock sensor takes the input N 2.

Parallel connection of several shock sensors is available. You shall use a probe adapter group, coming with a delivery set, for this purpose. It is not recommended to connect more than three shock sensors. Parallel connection of door opening sensors is available. The quantity of simultaneously connected door opening sensors is not limited.

Possible variants of **siren** and additional sensors connection:

- Siren (input N 1) + shock sensors (parallel connection available) (input N 2)
- Siren (input N 1) + switch for activation of a monitoring system (input N2)
- Siren (input N 1) + "alarming button" (input N2)
- Siren (input N 1) + contact sensors (parallel connection available) (input N2)

Possible variants of a **shock sensor** and additional sensors connection:

- a shock sensor (input N 2) + siren (input N 1)
- a shock sensor (input N 2) + auto alarm system (input N 1)
- a shock sensor (input N 2) + switch for activation of a monitoring system (input N1)
- a shock sensor (input N 2) + " alarming button " (input N1)
- a shock sensor (input N 2) + contact sensors (parallel connection available) (input N1)

Shock sensor settings.

Connect the shock sensor and switch on a system guard mode. Set the minimum sensitivity of the shock sensor (a sensitivity regulator on the case of the shock sensor). Increase sensitivity smoothly, controlling flashes of the light indicator of the shock sensor. The shock sensor should react on pitapats made on its case. Program a number of reactions of the shock sensor per minute for determining the alarm fact - the cell N 26 "Shock Sensor" of a SIM- card (there shall be a pause of 1 second between reactions). A final check of the shock sensor after its installation and programming can be made by indicator flashes on the system case in a guard mode (taking into account number of reactions per minute).

Siren settings.

Program a siren operating time (in minutes) at alarm occurrence (the cell N 25 "Sirena" of a SIM -card). Connect siren to supply 220 V using an adapter (comes with a delivery set) and to the system. Switch on the system guard mode. At switching over from a guard mode to a protection one and back, siren will sound shortly 1 time for working capacity control.

Car protection

The system can be used in cars equipped with a regular alarm system in order to add some functions to the regular alarm system, namely: notification and listening on the GSM channel.

The system is connected to an output "Siren" of a regular alarm system (can work if siren is connected). At siren actuation for more than 3 seconds (can be changed) the system works the notification (call, listening, SMS).

Using in a car it is possible to switch on a power saving mode. This mode is recommended for protection of cars while a long-term (up to 1 year) parking.

Important!

GSM Guard Control System is a source of electromagnetic radiation (if operating in GSM network). Installing in a car it is advised not to arrange a device in immediate proximity to car onboard electronic blocks and wire bundles in order to avoid undesired signals in their operation.

Attention! The auto alarm system shall be connected to "a central contact of a stereo connector" only. Thus, this input for operation with an auto alarm system is to be programmed.

In case of connecting to a connector "supply", a wire of black colour shall be connected to "ground" of a car. A wire of red colour is connected to a"+" battery.

In case of auto alarm system connection to a connector of the sensor input, a wire of black colour also is connected to "ground" of a car, and a red one is to an output "Siren".

Alert at system actuation

If system actuation made by a built- in movement-detecting sensor, an external sensor or auto alarm systems, the system can carry out the following actions:

- siren switching on during the set time interval (siren can come with a delivery set)
- dialing (autodialing)
- sending of SMS messages
- sending of SMS messages and dialing (autodialing)

The logic of work of notification is programmed in a notebook of a system SIM - card.
"Dialing" - 3 modes of autodialing logic:

1. The system gets at one of the set numbers, stops dialing other numbers and "falls asleep" during the set time interval. After the expiration of this time it again activates a control system.
2. The system gets at one of the set numbers, stops dialing other numbers and "falls asleep" during the set time interval. After the expiration of this time it again activates a control system.
3. The system gets at all set numbers, then automatically deactivates a monitoring system and goes to a guard mode.

A quantity of autodialing attempts to reach each number is equal and programmed in a system SIM-card. Dialing to an unset number, the system waits for lifting the receiver within 1 minute. If dialing to an unset number is successful, right after "lifting the receiver", a voice message from the system memory is played. Message duration is 4 seconds. To make the receipt of messages by a telephone subscriber more reliable, the repetition of messages (with pauses) is provided. A number of repetitions of voice messages and pauses are programmed in a system SIM - card.
"Sending of SMS messages" - consecutive sending of SMS messages to telephone numbers, preliminary saved on a SIM - card, for notification. The text of all messages is Trevoga" in the N 2 cell. It can be changed to other text with the length not more than 14 symbols.
If notification is impossible (caused by a GSM network overload or a miss of a signal), the system will automatically send notification when GSM networks recommence its operation.
At a single actuation of a system, notification will be sent 1 time. A long repeated system actuation may cause continuous sending of notifications that can be unacceptable. A termination of calls and sending SMS messages during a set time interval is provided (it is programmed in a range 1… 200 minutes) or till next activation/ deactivation of control system.

Sending and reception of SMS messages

Message transmission by the system.
The text of any SMS messages to be sent is programmed in a system SIM - card. As the text is taken from a name of a SIM - card corresponding cell, its length is limited by a permitted length of a cell name of a SIM - card notebook (15 symbols). Operation with messages containing Russian letters is not guaranteed.
SMS messages are sent in the following cases:

- System actuation (notification)
- Failure in external power supply 220 V
- Restoration of external supply 220 V (SMS is sent only in case when the system is switched over to a mode "guard" if there is external supply and its subsequent failure).
- Discharge of a built in battery to 50 % (working without external supply)
- Reading of a SIM - card cell
- SIM- card balance reading
- System state question answering
- SIM-card account balance lowering below the set value
- Activation or deactivation of control system
- Periodical SMS message – system status report
- SMS message at each activation of control system
- SMS message at each deactivation of control system

Important!
When the loading on a GSM network is maximal there is some delay in delivery of SMS messages lasting even for several hours.

The text of all SMS messages about system actuation is the name of a cell N 2 ("Trevoga") of a SIM card with the first recorded telephone number for notification.

The text of all SMS messages about a failure in external supply is the name of a cell N 12 ("Power Off") of a SIM card with recorded references to numbers for notification.
The text of all SMS messages about restore of external supply is the name of a cell N 13 ("Power On") of a SIM card with recorded references to numbers for notification.
The text of all SMS messages about lowering of means on a SIM - card account (lower the set value) is the name of a cell 24 ("Balans SIM Low ") of a SIM card with recorded references to numbers for notification.
The text of all SMS messages about a discharge of a built in battery to 50 % is the name of a cell N 14 ("Bat Low 50%") of a SIM card with recorded references to numbers for notification.
System state message text (including periodic) is fixed and has the form: "out=0 ohrana=1 220v=1" (management output is switched off (or is tuned for siren operation), system is in Protection mode, 220 V external supply is switched on).

Reception of messages by the system
The text of all incoming SMS messages is fixed, and cannot be changed by the user. All incoming messages should contain a system access password. The password shall have a length from 1 to 6 symbols and may contain figures and letters of the Latin alphabet. The password is programmed in a system SIM - card. All incoming SMS messages are automatically deleted from the incoming messages memory of a SIM - card. Messages with a wrong password are ignored.
The following actions can be made by sending SMS messages to the system:

- Activation of control system
- Deactivation of control system
- Reactivation of control system (the system shall be in a mode "Protection")
- Reading of a SIM - card cell
- Reading of a SIM - card cell
- SIM- card balance reading
- Switch on of a management output by an external device (or siren)
- Switch off of a management output by an external device (or siren)
- System state check

When the operation of a SIM - card cell record is completed, the system will be rebooted and will return to an initial operating mode.
"Activation of control system" - the message text shall be in a form of **123456on**
Right after the reception of this message the system will go to a protection mode (with level indication of a GSM network and a delay of going to a mode). If the system was in a protection mode in the moment of the message reception, there will be activation/ deactivation of control system. Thus a built in switch is ignored till a following event "deactivation of a monitoring system by the switch".
"Deactivation of control system" - the message text shall be in a form of **123456off (or 123456of)**
Right after the reception of this message the system will go to a stand-by mode (with level indication of a GSM network). Built-in switch is ignored till a following event "activation of a control system by the switch".
"Reactivation of control system" - the message text shall be in a form of **123456on.**
The system shall be in a protection mode. Right after the reception of this message the event "activation/ deactivation of control system" will happen. The logic of usual activation of a monitoring system will be made.
"SIM- card cell record" - the message text shall be in a form of **123456W16-9-SensorTime**
where: 123456 - system access password
W (or w) - command of SIM- card cell record
16 - ordinal N cell of SIM - card
9 - digital content of SIM- card cell
SensorTime - SIM- card cell name
"SIM- card cell record reading" - the message text shall be in a form of **123456R01**
where: 123456 - system access password
R (or r) - SIM- card cell record
01 - ordinal N cell of SIM - card
After sending of a command to read a SIM - card notebook cell, the system will send a reciprocal SMS message to a reference number (number from which the first message has been sent).

"Switch on of a management output by an external device (or siren)" - the message text shall be in a form of **1234561.** Right after reception of this message the management output (control voltage +3.5V will be at output) will switch on.
"Switch off of a management output by an external device (or siren)" - the message text shall be in a form of **1234560.** Right after reception of this message the management output (control voltage +3.5V will be at output) will switch off (control voltage 0 V will be at output).
"System state check" - the message text shall be in a form of **1234562.** Right after reception of this message the system will send a message: "out=0 ohrana=1" - a siren management output switched off, the system is in a mode "protection".

Examples of SMS messages **received** by the user:
"Balans SIM Low" - system message about lowering of SIM-card balance (lower the set value)
"Trevoga" - system message about actuation
"PowerOff" - system message about a failure in external supply
"Bat Low 50%" - system message about battery discharge to 50 %
"SensorTime,1" - system respond to a command to read a cell with the "SensorTime" name
"out=0 ohrana=1 220v=1" - system respond to the request of a system state

Examples of SMS messages **sent** by the user:
"123456B" - to read SIM -card balance of a device
"123456w16-9-SensorTime" - to record the name "SensorTime" and content "9" in a SIM -card cell N 9
"123456r01" - to read SIM -card cell N 1
"123456OFF" - to deactivate control system
"123456on" - to activate control system
1234560" - to switch off control output

External device management

For external device management the siren management output is used. For setting a siren output as a management output it is necessary to program the cell N 17 "Input1" correctly. Switch on and switch off of the output is made by sending SMS massages "1234561" and "1234560" respectively. Control voltage appearing at switching on is equal to+3.5 V. It is possible to use while setting the output for work with siren. The siren management logic will have the priority. For power relay control it is necessary, in addition, to connect a control switch. The management output is low-current and takes a central contact of a stereo connector.

Internal heating up function for operation at temperatures below freezing

A mode of internal heating up is provided for operation at temperatures below freezing. To switch on this mode you shall record the number "1" in the cell № 22 "Winter". **Attention! Do not switch on the mode of internal heating up at temperatures above 0°C in order to avoid system overheating and its break down.**

Incoming calls and system operation remote control

System operation can be checked at any point by calling to its number. After a small pause (2-3 signals of a call) the system "will lift the receiver " and will switch on a built in microphone for listening of a protected object (listening of a protected zone only using phones which are in a list of numbers for notification) or will cancel an incoming call (the logic of work at an incoming call is programmed in a device SIM -card). At listening the system keeps connection no matter how long, till a break of connection by a subscriber. If the system works in a power saving mode, incoming calls are not accepted as well as system operation remote control is impossible (a built in GSM module switched off).

System mode control is possible in two ways:

1. By a call to the device. If the protection mode is switched on, "pip … pip" is heard, and then listening switches on. If in a stand-by mode, listening switches on.
2. By sending SMS messages - request of a system state: 1234562. In respond the device will send a reciprocal message in a form of "out=0 ohrana=1"

Indicating light reading

blinking 1 time per minute	system loading
frequent blinking within one minute	no GSM network signal (or SIM -card is blocked)
continuous light within 4 seconds	a voice record mode in the system memory (during record)
single flash	operation of a movement-detecting sensor (a shock sensor)
double flash	operation of wireless sensor
series of flashes (1, 2 or 3) at activation/deactivation of control system	GSM network signal level (1 - weak, 2 - good, 3 - strong)

Automatic control of a SIM-card account balance

In order to prevent system blocking a mode of an automatic check of a SIM-card account balance is provided. Twice a day the device sends the request (it is programmed, by default "*102 #", MTS "*100 #") and compares the obtained data and the set value. If the balance is lowering below this set value the device sends SMS messages. The first check starts in 5 minutes after switching over the system in a mode "guard". The automatic control of a SIM-card account balance works only in a protection mode. In a power saving mode the automatic control does not work (a built in GSM module switched off). In order to prevent undesirable spending of means and reduction of a SIM -card balance, SMS messages requesting a balance are sent twice (the period is 12 hours) till next activation/ deactivation of control system.

The table of programming of a SIM - card notebook

№	cell name	cell content	parameter description
1	Profile	n	**Auto loading of SIM- card cell template** 0: – not to update a template of cells 1: – to update a template of cells **By default: 0.**
2	Trevoga	nnnnnnnn*aaa	**Telephone numbers for notification** The cell name is the text of SMS messages sending to all numbers in case of alert nnnnnnnn – telephone number aaa – notification mode: 000-sms-off, dialing-off, listening-off 011-sms-off, dialing-on, listening-on 101-sms-on, dialing-off, listening-on 110-sms-on, dialing-on, listening-off Number of digits up to 20 If less than 8- digit numbers is used in the system, free cells must be filled by four zeros Example: +79033898787*011 **By default: 0000*000**
3	Number2	nnnnnnnn*aaa	
4	Number3	nnnnnnnn*aaa	
5	Number4	nnnnnnnn*aaa	
6	Number5	nnnnnnnn*aaa	
7	Number6	nnnnnnnn*aaa	
8	Number7	nnnnnnnn*aaa	
9	Number8	nnnnnnnn*aaa	
10	Password	nnnnnn	**Password** For programming and reading of SIM-card cells through SMS messages nnnnnn - number from 000000 to 999999 Example: 123 **By default: 123456**
11	Re Call	a*nnn*kkk	**An auto dialing type, a quantity of attempts and a pause of a dialing** a – auto dialing type 0 – to stop autodialing after the first successful connection with one of the set numbers 1 – autodialing to all set numbers nnn – quantity of autodialing attempts (from 1 to 255) kkk – pause of autodialing (from 1 to 255), sec Example: 50*5*1 **By default: 0*10*1**
12	Power Off	nnnnnnnn	**Notification at a power supply failure** The cell name is the text of sending SMS messages nnnnnnnn - references to numbers for notification Example: 11000000 -SMS messages to be sent to the first and second numbers **By default: 10000000**
13	Power On	nnnnnnnn	**Notification at restoration of power supply after a failure** The cell name is the text of sending SMS messages nnnnnnnn - references to numbers for notification Example: 10100000 - SMS messages to be sent to the first and third numbers **By default: 10000000**

14	Bat Low 50%	nnnnnnnn	**Notification at battery discharge to 50** % The cell name is the text of sending SMS messages nnnnnnnn - references to numbers for notification Example: 11000000 - SMS messages to be sent to the first and second numbers **By default: 10000000**
15	Sensor Level	n	**Movement-detecting sensor sensitivity level** n - level (from 0 to 5) 0 - movement-detecting sensor switched off 1 - protected zone 2 meters 2 - protected zone 3 meters 3 - protected zone 4 meters 4 - protected zone 5 meters 5 - protected zone 7 meters (local reactions are possible) **By default:4**
16	Sensor Time	n	**Time of movement-detecting sensor active signal for reaction** n - time (from 1 to 9), sec **By default: 1**
17	Input1	p*a*k*t	**Sensor input №1 (a central contact of a stereo connector)** p - reaction type 0 - reaction at sensor open (a positive signal if auto alarm system) 1 - reaction at sensor close (negative signal if auto alarm system) a - sensor type 0 - standard sensor (reacts only in a mode "protection") 1 - alarm button (always reacts) 2 - button for activation of a monitoring system (shall have a fixture or a switch) 3 - external device management output к - sensor type 0 - contact sensor (reed type) 1 - auto alarm system output t - time of auto alarm system active signal for reaction (from 0 to 9), sec This input is not available at siren switching on Example: 0*0*1*5 **By default: 0*0*0*0 (for a door opening sensor)**
18	Input2	p*a	**Sensor input №2** p - reaction type 0 - reaction at sensor open 1 - reaction at sensor close a - sensor type 0 - standard sensor (reacts only in a mode "protection") 1 - alarm button (always reacts) 2 - button for activation of a monitoring system (shall have a fixture or a switch) This input is not available at shock sensor switching on Example: 0*1 **By default: 0*0**
19	Voice	n*a*p	**Quantity of repetition of voice phrases at dialing with pauses and a mode of listening** n - quantity of repetition of voice phrases (from 0 to 9) 0 - voice off a - pauses between repetitions (from 1 to 9), sec p - logic of system work at an incoming call 0 - cancellation of a call 1 - a mode "listening of a protected zone" on Example: 3*1 *1 - three voice phrases with intervals 1 second, a mode of listening is on **By default: 1*1*1**
20	Delay	nnn*aaa	**Delay in movement-detecting sensor switching on in reference to activation of a monitoring system and delay in notification sending** n - delay in movement-detecting sensor switching on in reference to activation of a monitoring system (from 0 to 250), sec a - delay in notification sending (from 0 to 250), sec Example: 5*15 **By default: 40*0**
21	Interval	nnn*a	**Interval of repetitive reaction of the system and a energy saving mode**

			nnn - interval of repetitive reaction of the system (from 0 to 250), min 0 - interval - off. Sending of notification one time and automatic deactivation of a system a - energy saving mode 1 - energy saving mode on 0 - energy saving mode off Example: 5*0 **By default: 1*0**
22	Winter	n	**Mode "Winter"** n - internal heating up mode 1 - internal heating up on 0 - internal heating up off **By default: 0**
23	Balans Sim	nnnnn	**Command of SIM-card balance request** nnnnn -5-sign command of SIM-card balance request **By default: *102#**
24	Balans SIM Low	nnnnnnnn*kkk	**Notification when SIM-card balance is lower the set value and SIM-card minimum balance threshold** The cell name is the text of sending SMS messages nnnnnnnn - references to numbers for notification kkk - SIM-card minimum balance threshold (from 0 to 999) if kkk = 0, automatic check of a balance switched off Example: 10100000*15 - SMS messages to be sent to the first and third numbers if the balance is lower 15 units of money (local unit of money is determined by a network operator) **By default: 10000000*0**
25	Sirena	kkk	**Time of siren actuation in case of alert, min** kkk - time of siren operation in case of alert, min (from 0 to 200). If κ = 0, siren off Example: 30 **By default: 0 (siren off)**
26	Shock Sensor	kkk	**Quantity of shock sensor reactions per minute for determining the event of alert** kkk - quantity of reactions (from 0 to 200). If κ = 0, shock sensor off Example: **By default: 3 (shock sensor off)**
27	Trevoga Move	n	**Logic of wireless movement-detecting sensor reaction** The cell name is the text of sending SMS messages in case of reaction n - reaction type 0 - reaction only in protection mode 1 - always reacts **By default: 0**
28	Trevoga Door	n	**Logic of wireless door opening sensor reaction** The cell name is the text of sending SMS messages in case of reaction n - reaction type 0 - reaction only in protection mode 1 - always reacts **By default: 0**
29	Trevoga Gas	n	**Logic of wireless gas loss sensor reaction** The cell name is the text of sending SMS messages in case of reaction n - reaction type 0 - reaction only in protection mode 1 - always reacts **By default: 0**
30	Trevoga Shock	n	**Logic of wireless shock sensor reaction** The cell name is the text of sending SMS messages in case of reaction n - reaction type 0 - reaction only in protection mode 1 - always reacts **By default: 0**
31	Arm	nnnnnnnn	**SMS confirmation at activation of control system** The cell name is the text of sending SMS messages nnnnnnnn – references to numbers for notification Example:

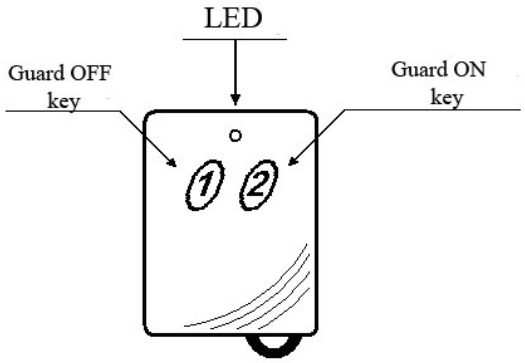
			10100000 – sending SMS messages at the first and the third numbers for notification **By default: 00000000**
32	Disarm	nnnnnnnn	**SMS confirmation at deactivation of control system** the cell name is the text of sending SMS messages nnnnnnnn – references to numbers for notification Example: 10100000 – sending SMS messages at the first and the third numbers for notification **By default: 00000000**
33	Period	nnnnnnnn*a*k	**Period of SMS sending about system state report** nnnnnnnn – references to numbers for notificatio a – sending type 0 – send the report always 1 – send the report only at 220V network failure k - sending period, hours (number from 0 to 200). At k=0 sending is on Example: 10100000*1*1 – sending SMS messages at the first and the third numbers for notification **By default: 10000000*1*0**

Wireless sensor and radio breloque connections

The system has a service mode "training" for programming of wireless sensors and radio breloques. Sensors can be programmed for operation only in a mode of protection or always, that allows to disconnect some sensors at deactivation of a monitoring system.

All wireless sensors are divided in groups (virtual loops):

- 1 group - radio breloques – up to 10 breloques
- 2 group - movement-detecting sensors – up to 8 sensors
- 3 group - door opening sensors – up to 8 sensors
- 4 group - gas loss sensors – up to 8 sensors
- 5 group - shock sensors – up to 8 sensors



The user can change the names of groups and texts of sent SMS messages by changing N26 … N30 cells of SIM card. The maximum length of cell name (SMS text) is 14 symbols.

It is necessary to take into account the following while installing wireless sensors:

- A code of each sensor shall not be repeated (sensors are delivered with a unique code; some sensors allow changing a code if some bus ties are installed on the plane).
- No more than one sensor with each loop can be used for each protected zone. The aim is to avoid errors occurring in the process of code transferring over the radio simultaneously by several sensors. For example, one movement-detecting sensor shall be used for protection of one room.
- The distance to the mainframe shall provide reliable reception of a signal.

SMS messages are sent at sensor reaction. The message text is taken from a SIM - card cell corresponding to the group of sensors. SMS messages contain a number of a reacted sensor of the group. Numbers are obtained in the process of programming of sensors of a respective group. Also the system dials (listening) numbers for notification according to parameters (dialing and/or SMS), numbers for notification (cells N 2 … N 9). The breloque with two buttons enables to manage the device at a distance (activate/deactivate of control system). Management of the device works equally both when the switch is in "ON" position and in "GUARD" position. Wireless sensor reaction in guard mode is confirmed by double LED blinking. The device sounds when it receives a control command from the panel:

1. single signal - activation of control system
2. double signal – deactivation of control system

Wireless sensors (radio breloques) work only when the circuit voltage is 220 V.

Training service mode

The following actions shall be done to enter in Training service mode:

1. Move a mode switch to "OFF" position.
2. Disconnect a network interface card plug from the device
3. Press the button of voice record and keep it pressed. After having heard a sound signal, release the button. The device is in the first memory bank (wireless breloques).
4. Press the button to go to the next memory bank. The device will sound twice (for the memory bank N 3 - it will sound three times and etc).
5. Switch over of the banks goes circle -wise, namely: to go to the first bank, the preceding banks shall be switched over.
6. It is to switch on a sensor and force its actuation (for a breloque: press any button and keep it pressed for 1-2 sec) if storage of a sensor the current bank is needed. The device will give a signal of confirmation.
7. Press the button of voice record and keep it pressed for one second. The device will give two short signals.
8. The sensor cannot be registered several time (including different memory banks).
9. If it is impossible to program the sensor, there are some reasons:
    a) the sensor has already programmed or has repeated (nonstandard) code
    b) low battery of the sensor
    c) actual frequency of the sensor differs from 433.92 MHz
10. Disconnect a supply plug from the device and switch it on in a customary mode (without pressing the button) in order to exit training mode.
11. The device has **sensor sound testing mode**. To enter this mode you should move mode switch in ON position being in training mode. The device will give an audible signal at reaction of any programmed sensors (breloques). This mode is useful for wireless sensor setting and control over signal consistent reception distance by docking station. To return in training mode you should move mode switch back in ON position

Possible faults and remedial procedures

problem	possible causes	remedial procedure
The system is not included. The indicator is not working.	Batteries are improperly installed. Network adapter is improperly connected. Network adaptor is faulty	Check the correctness of battery installation Check the polarity of network adaptor connection (Fig. 1). Check the network adaptor
After installation of blank SIM card and power up the indicator flashes for a long time (more than 5 min.).	SIM card is improperly inserted. SIM card is improperly programmed SIM card PIN code input mode is switched on SIM card memory consists of extraneous SMS messages	Check the correctness of SIM card installation (Fig. 1) Insert SIM card into cell phone. Clear SIM card notebook, insert in the device and switch it on in a guard mode. Insert SIM card into cell phone and disable PIN code input Insert SIM card into cell phone and clear the memory of received SMS messages
After connection and termination of load the light indicator often flashes during 1 minute	No signal reception of GSM network in installation site SIM card is blocked because of negative account balance.	Insert SIM card into the cell phone. Select another installation place (the signal can be measured by the cell phone scale). Recharge a SIM card account.
The system does not make outgoing calls and does not send SMS though sensors are functioning	New SIM card is not activated. Low account balance of SIM card Notification numbers are incorrectly programmed Technical problems at the operator System is out of service area	Insert SIM card into cell phone and try to make a call (send an SMS message), if necessary, activate the SIM card. Recharge a SIM card account. Check the correctness of SIM card programming Select another installation place
Immediately after control system activating the system does not respond to the movement and does not make outgoing calls	Delay of control system activating (to exit the premise) is programmed	Check N20 "Delay" cell
The system poorly responds to the built-in movement sensor	Insufficient sensitivity of built-in movement sensor is programmed	Increase the sensitivity in N15 "Sensor Level" cell
Built-in movement sensor causes the false alarm	Too high sensitivity of built-in movement sensor is programmed Sun rays (hot air, draught and other thermal noise) are get on the movement sensor	Reduce the sensitivity in N15 "Sensor Level" cell, if does not help - increase the duration of activity (movements) in N16 "Sensor Time" cell

Technical support

Technical support is provided free of charge on the web-site **www.storozh.com**

Responsibility restriction

The maker bears responsibility only under the warranty for device operation and does not assume responsibility for quality of its installation, mounting, network operator's services, radio signal pass, and etc. The maker does not bear responsibility for any damage incurred in the course of its use by its owner and the third parties.

Guarantee card

_____

The company _____ undertakes obligations for warranty repairs of the device within the space of one year from the date of its sale. Claims relating warranty repairs are not accepted if:

- standard code is broken (mechanical damage)
- no seal of the company _____ on the present document
- Problems relating to return-exchange of the device are settled with a company-seller according to Act "Protection of consumers".

Number _____ Date of sale _____