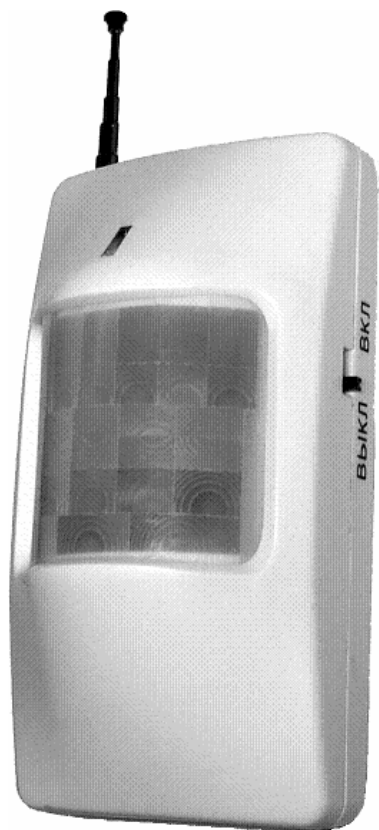


THE MONITORING SYSTEM "GSM Storozh SMART"



Contents

Contents.....	2
The general data.....	3
The basic functions.....	3
The delivery set	4
Technical characteristics.....	5
The device set-up.....	5
Radio sensors and the wireless siren	7
Installation of the device.....	7
The built-in movement sensor	8
Installation site choice	8
SMS messages and entering calls.....	9
Indications of the light indicator	11
Wireless siren.....	12
The sound alarm system.....	12
"Energy saving" mode.....	13
Factory device settings "on default"	14
Recommendations for movement sensor sensitivity choice.....	14
Technical support.....	15
Requirements to service conditions	15
Manufacturer's warranty.....	15
Warranty service coupon.....	15

The general data

The monitoring system "GSM Srorozh SMART" is inexpensive system for protection of apartments, offices, garages, summer residences, warehouses.

The main system designation is the guaranteed and operative notification about a situation of the danger which have arisen on object.

When happens nonauthorised penetration into a protected object "GSM Storozh SMART" will include a powerful siren and will begin dialling and dispatching SMS messages under the list of numbers which have been written down in memory of the device.

There is the accumulator onboard, providing independent work of the device till the 1st month (in a mode "energy saving 2") at a loss of the external system power supply.

The built-in high-sensitivity microphone allows to listen in to a protected premises at any moment.

Set-up of all functions of the device is carried out by installation of crosspieces on its motherboard and does not depend on change of a SIM-card. Each position is signed the way it was possible to set up the device, not having the instruction.

"GSM Storozh SMART" can work with trinkets for activation or deactivation of a security mode, wireless sensors and a wireless siren.

In the delivery set the device has a sliding telescopic GSM aerial and the built-in aerial for work with wireless sensors and trinkets.

The basic functions

- ✓ Definition of movement in a protection zone (movement of the person indoors at the distance of 8 m);
- ✓ The notification by dialling and sending SMS messages under the list of telephone numbers which have been written down in memory of the device (5 numbers);
- ✓ Listening of protected object through the built-in microphone;
- ✓ The built-in accumulator (automatic additional charge and the control of the built in accumulator);
- ✓ The built-in aerials for work with GSM network and wireless sensors of 433 Mhz;
- ✓ The guaranteed work of the system at negative temperatures below 30°C;
- ✓ Two modes of the lowered current consumption;
- ✓ Work with wireless sensors and radio trinkets 433 MHz (up to 50 units);
- ✓ Work with a wireless siren of 433 MHz;
- ✓ Time blocking of the sensor (built-in or wireless);
- ✓ Sending SMS message on the activation or deactivation of a security mode;
- ✓ Notification by SMS message at loss/restoration of the external power supply;
- ✓ Activation or deactivation of a security mode through SMS message;
- ✓ Periodic SMS message – the report on a system condition;
- ✓ Reception of a SIM-card balance through SMS inquiry;
- ✓ Notification by SMS message with the discharge of the built-in accumulator.

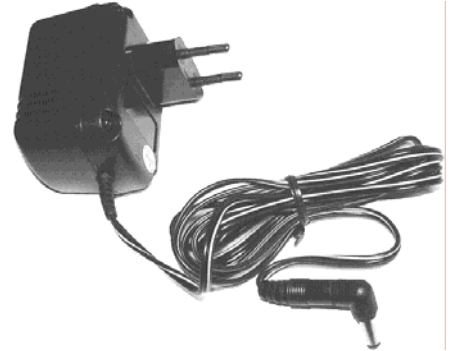
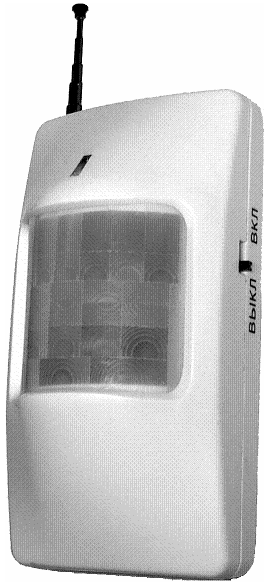


The device has function to protect against the full discharge of the accumulator, at a power failure of the accumulator to 3 V, the device power supply will automatically be switched off.

The delivery set

The base delivery set includes:

- ✓ The device "GSM SMART" 1 unit;
- ✓ The network adapter 220 V 1 unit;
- ✓ Remote control (radio trinket) 1 unit;



The device "GSM Storozh SMART" a radio trinket

the network adapter 220 V

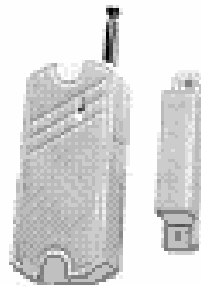
Drawing 1. The base complete set of delivery.

Delivered in addition:

- ✓ The external light indicator (light-emitting diode) with a wire of 3 metres;
- ✓ The wireless gauge of movement;
- ✓ The wireless gauge of opening of a door (геркон);
- ✓ Wireless siren;
- ✓ Radio charm.



The wireless sensor



movement



The wireless sensor for opening a door

the Wireless siren



Radio trinket

Portable light indicator (light-emitting diode)

Drawing 2. The additional equipment.

Technical characteristics

Power pressure, V (DC)	8 ... 16 V (Protection against wrong polarity)
Current consumption from the network adapter in an active mode (average)	50 mA
Current consumption from the built-in accumulator in a mode "energy saving 1 (the GSM module is switched off)"	15 mA
Current consumption from the built-in accumulator in a mode "energy saving 2 (the GSM module and radio channel are switched off)"	100 mA
The built-in accumulator	Li-ion, 700 mA/ch
Time of independent work from the accumulator in a mode "energy saving 1"	24 hours
Time of independent work from the accumulator in a mode "energy saving 2"	To 30 days
The GSM modem	Work in network GSM 850/900/1800/1900
Working temperature range	-30 ... +60°C
Maximum quantity of wireless sensors and radio trinkets (in general)	50
Maximum quantity of notification numbers	5
Overall dimensions (the aerial is combined)	60 mm x 70mm x 120 mm
Weight	100 g
Case material	ABS plastic
Влагозащищенность	No
Warranty	12 months from the date of purchase
Average service life	10 years
Service life of the storage battery	500 cycles of a charge/category, But no more than 2 years

Device set-up

Simple and convenient procedure of set-up is carried out by crosspieces on the device motherboard and does not demand programming of SIM-card.

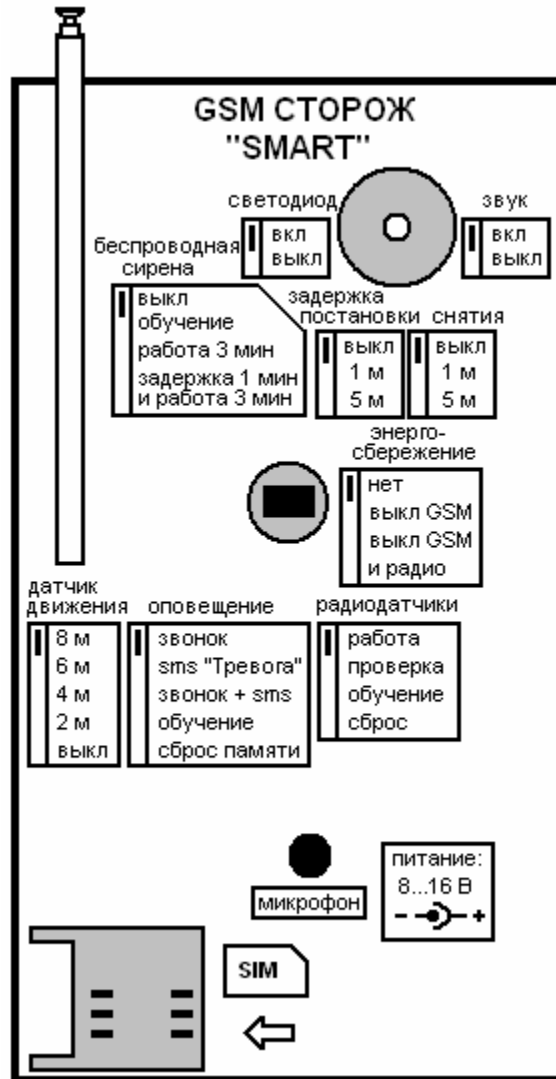


In order to avoid defeat by electric pressure it is necessary to disconnect the power supply of the network device adapter of 220V before setting-up.

The information from crosspieces is read out by the device at the moment of power supply, therefore it is necessary to change position of crosspieces only when the device is switched off, the network adapter should be thus necessarily disconnected.



Notification numbers (a maximum quantity 5) are programmed by a call on a device SIM-card. Thus the crosspiece "notification" should be in position "training". For clearing notification numbers memory it is necessary to use a mode "memory dump".



Drawing 3. An arrangement of crosspieces on the device motherboard.

Some functions are adjusted **only by means of SMS messages**:

- ✓ Record of notification numbers which cannot be programmed with an entering call;
- ✓ Choice of notification numbers for sending SMS messages at security mode activation-deactivation (the function is switched off on default);
- ✓ Choice of notification numbers for sending SMS of messages at loss/restoration of the external power supply food (the 1st number on default);
- ✓ Installation of the period and choice of notification numbers for sending periodic SMS messages (the function is switched off on default);
- ✓ Choice of notification numbers for sending SMS messages at the discharge of the built-in accumulator (the 1st number on default).

The list of functions which are set up **by crosspieces on the motherboard**:

- ✓ The movement sensor sensitivity (a zone of protection 2, 4, 6, 8 metres);
- ✓ Radio sensors;
- ✓ Notification;
- ✓ Delay of security mode activation;
- ✓ Delay of security mode deactivation;
- ✓ Energy saving;
- ✓ Light indication;
- ✓ sound projector (on/off);

- ✓ Wireless siren.

Radio sensors and the wireless siren

The device has a service **mode "training"** for programming of wireless sensors and radio trinkets. The maximum total quantity of wireless sensors and radio trinkets is 50. For a wireless siren the mode "training" is established in group "wireless siren".

To connect a new sensor it is necessary to switch off the device (to disconnect the network adapter), to establish a crosspiece in position "training", then to connect the network adapter and to power-up. Then it is necessary to switch on the sensor and to initiate its operation (for a trinket – to press its any key and to keep 1-2 sec). The device gives a confirming sound signal.

While install wireless sensors it is necessary to consider the following features:

- ✓ The code of each sensor should not repeat (sensors are delivered with the unique code, some sensors allow to change a code installation of crosspieces on the motherboard).
- ✓ For each zone of protection it should be used no more than one sensor of each loop for an exception of errors by transfer of a code by radio simultaneously by several sensors. For example, to secure one room it is necessary to use one movement sensor.
- ✓ The distance to the mainframe should provide reliable reception of a signal.



The device independently defines connection of a trinket when it adds to memory of wireless sensors.

When a sensor operates in a security mode, SMS message is sent, containing the text "Trevoga" and number of the sensor which is defined as a serial number at addition of the given sensor in a "training" mode. Numbering is the general for all wireless trinkets and the sensors which are in memory of the device.

If the notification mode is defined as "call", there will be only a dialling on set numbers of the notification numbers (with listening-in) in this case.

The device has a **mode "check"** (it is established by a crosspiece). This mode is provided for wireless sensors set-up (thresholds of their operation, etc. options) and the control of distance of confident sensors signals reception by the mainframe. When wireless sensor operates in this mode, the device gives out a sound signal.

The wireless siren is switched on for 1 second at an input in a "check" mode.

For memory clearing of the written sensors, the device has a mode "memory dump" (it is established by a crosspiece). After an input in this mode a memory dump occurs (the light indicator lights up at the end) then it is necessary to return a crosspiece in one of the operating positions.

At malfunction of one of the sensors for which reason the sensor constantly gives out false operations, it can be blocked temporarily by sending an SMS message (see the section "SMS messages"). Blocking will operate before the following security mode activation or deactivation.

Device installation



Do not insert a SIM-card into the device before disconnecting in it an inquiry of PIN-code input. Otherwise blocking of the SIM-card is possible.

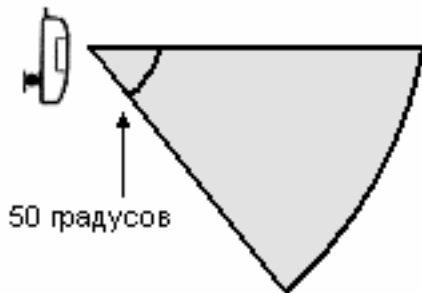
Before the device installation it is necessary to execute a set-up by installation of crosspieces on corresponding positions, to insert a SIM-card and close the device case. Then it is necessary to connect the network adapter and to switch the device. After switching on the device will pass to a standby mode.



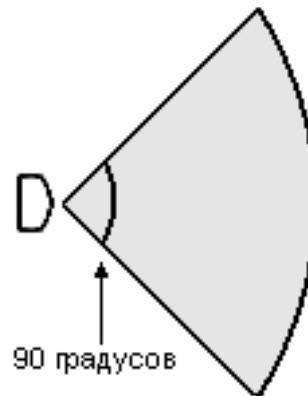
Operating in a network of 220V, "security" mode is switched on only with a trinket. Operating from the built-in accumulator in energy saving mode (the radio channel is switched off), the device activates immediately when switched on.

The built-in movement sensor

The built-in movement sensor reacts to the slightest changes of thermal radiation caused by moving of subjects in the protected premises. As there is indoors always there is a non-uniform thermal background indoors, even moving of an unheated object leads to change of a thermal background and activation of a sensor. For decrease in the level of hindrances there is the optical filter in front of the sensor, passing radiation only in a range of 5-14 microns waves lengths, the most typical for radiation of a human body. The sensor has no its own radiation (passive) and is absolutely safe for people and animal.

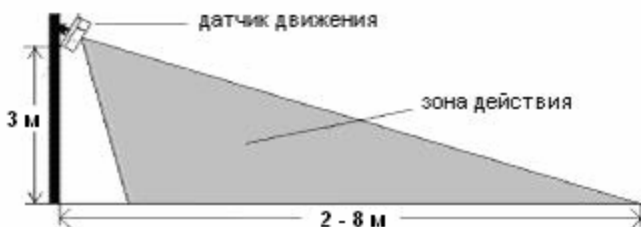


Drawing 4.
The orientation diagramme
The sensor in a vertical plane.



Drawing 5.
The orientation diagramm.
The gauge in a horizontal plane.

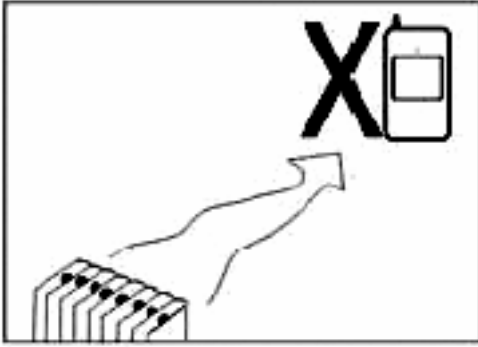
It is necessary to mount a sensor on a vertical surface at level of 2 – 3 metres from a floor. Thus it needs to be inclined a little downwards for maintenance of the best coverage of a security zone, as it is shown in drawing 6.



Drawing 6. The Operating zone of the movement sensor.

Installation site choice

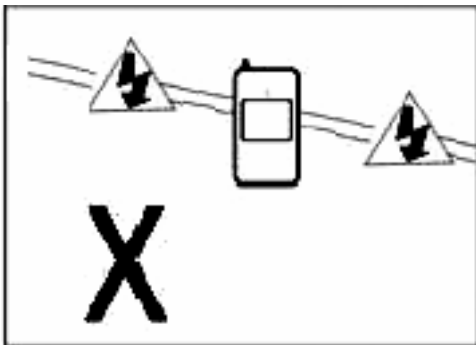
The quality of the built-in movement sensor operation and presence of false operations directly depends on a device installation site. The illustrations below show possible errors of a device installation site choice.



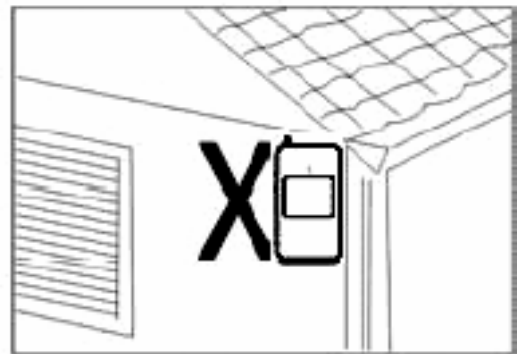
Warm air from heating systems



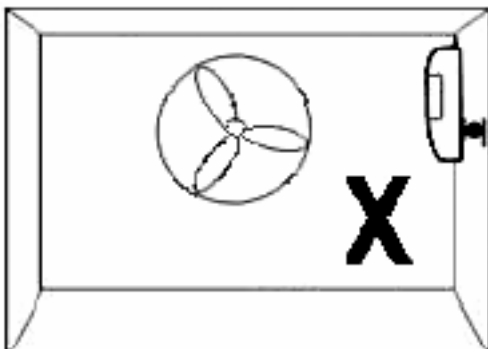
Direct solar beams



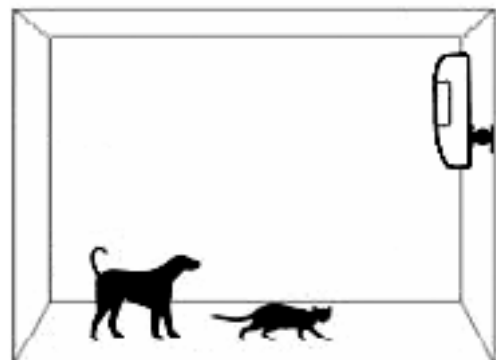
Installation near to electric cables



Installation in the street.



Air fans and draughts.



Animals in a protection zone.

Presence of animals in a protection zone increases probability of false operations, therefore in this case it is necessary to reduce sensitivity of the movement sensor.

SMS messages and entering calls



Listening-in of the protection zone is carried out by a call to a number SIM-card device number.

It is possible to carry out the following actions by sending SMS messages to the device :

- ✓ Security mode activation or deactivation;
- ✓ Inquiry of a SIM-card balance;
- ✓ Inquiry of the report on a system condition;
- ✓ Set-up – a record of a notification number which cannot be programmed with an entering call;
- ✓ Set-up – what notification numbers to send SMS notices to on loss – restoration of the power supply of 220V
- ✓ Set-up – what notification numbers to send SMS notices to on security mode activation or deactivation;
- ✓ Set-up - what notification numbers to send SMS notices to on a discharge of the built-in accumulator;
- ✓ Set-up – what notification numbers to send periodic SMS notices to on the report of a system condition with instructions of the sending period;
- ✓ Time blocking of the sensor (built-in or wireless) – before the following security mode activation or deactivation;
- ✓ Dump (RESET) of the device.

SMS messages, transferred by the device:

- ✓ The notification at alarm;
- ✓ The notice on security mode activation or deactivation;
- ✓ The notice on loss – restoration of the power supply of 220V;
- ✓ The notice on a discharge of the built-in accumulator;
- ✓ Periodic SMS message – the report on a system condition;
- ✓ The answer to inquiry of a SIM-card balance;
- ✓ The answer to inquiry of the report on a system condition;
- ✓ The answer to a set-up change ("Ok").

SMS the messages transferred by the user. For convenience – capital and the lower case letters containing in the text of SMS messages are considered to be equivalent.

SMS message text	Function
0	Security mode is deactivated.
1	Security mode is activated.
2xxxx	Inquiry of SIM-card balance, including an inquiry command. E.g.: 2*100 #
3	Inquiry of the report on a system condition
4xxxxx	Set-up – what notification numbers to send SMS notices to on loss – restoration of the power supply of 220V. xxxxx are references to the notification numbers. E. g.: 411000 – SMS to the first and second numbers.
5xxxxx	Set-up – what notification numbers to send SMS notices to on security mode activation or deactivation. xxxxx are references to notification numbers. E. g.: 511000 – SMS to the first and second numbers.
6xxxxx	Set-up – what notification numbers to send SMS notices to on a discharge of the built-in accumulator. xxxxx are references to notification numbers. E. g.: 611000 – sending SMS on first and second numbers.
7xxxxxpp	Set-up – what notification numbers to send periodic SMS notices to on the report of a system condition. xxxxx are references to notification numbers, pp is a sending period in

	hours (number 00. 99). E. g.: 71100024 – sending SMS to the first and second numbers each 24 hours.
8xx	Time blocking of the sensor (built-in or wireless), where xx is a number of the wireless sensor. If a number of a sensor is equal to 0, blocking of the built-in movement sensor is carried out. E. g.: 81 – blocking of the wireless sensor N1
Nxxxxxxxxxxx	Programming of the notification number, where xxxxxxxx is a number. Example: N+79101234567
R (or r)	Dump (RESET) of the device.

SMS messages transferred by the device.

SMS message text	Function
Trevoga! Nxx	Alarm with instructions of number of the sensor activated. When the built-in movement sensor activates, the number is absent.
Arm	Security mode is activated.
Disarm	Security mode is deactivated.
Power Off	Loss of the external power supply of 220V
Power On	Restoration of the external power supply of 220V
Bat low 50 %	Discharge of the built-in accumulator is up to 50 %.
ohrana=1 220v=1	The report on a system condition (periodic SMS message). The information includes a condition of the security mode and presence of the external power supply of 220V.
Balans SIM = xxx	The answer to an inquiry of SIM-card balance, where xxx is a value of the balance in local monetary units.
Balans SIM = ERROR	The error of a SIM-card balance check is caused by wrong inquiry, inaccessibility of service at the given operator, overload of GSM-network.



For economy of means, a transfer of the SMS message on a loss of the external power supply of 220V does not occur, if the device is initially switched on in its absence. The transfer is made only in a security mode.



At the category of the built in accumulator, the condition of a mode of protection remains in non-volatile memory of the device and is restored at food occurrence.

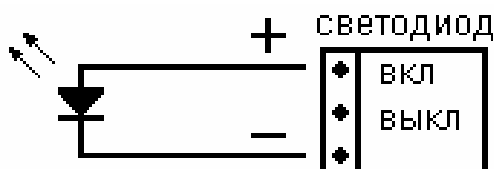
Indications of the light indicator

The light indicator is located on a face sheet of the device case and shows the device operating modes, level of GSM-network and operations of sensors.

When necessary, it is possible to switch off the light indicator with a crosspiece "light-emitting diode" in position "off" on the motherboard device.

The light indicator	Device functions
Switched off	Standby state
The red constant	Security mode
The red blinking	Search of GSM-network (only in a standby state)
A series of short flashes at the moment of security activation-deactivation mode	Level of GSM-network signal (1 – weak, 2 – good, 3 – excellent)
Short flash in a standby state	Operation of the built-in movement sensor
Two flashes in a mode on duty	Operation of the wireless sensor
Blinking and sound signals at the moment of statement – removals from protection	Search of GSM-network

There is a possibility of connection of the external light indicator in the device. Connection of a plug with a wire for contacts of a crosspiece "light-emitting diode" is used for this purpose.



Drawing 7. Connection of an external light-emitting diode.

The wireless siren

The device may work with a wireless siren. The siren connection is carried out similarly to addition of the wireless sensor. The "training" mode is switched on with a "wireless siren" crosspiece in "training" position at the switched-off power supply and subsequent energizing. After that it is necessary to connect a siren to the network adapter of 220 V, which is a part of a delivery set and to energize. The device gives a confirming sound signal.

The siren is switched on when there is a sensor trigger signal (alarm) for the period of 3 minutes. For listening-in of premises there is a possibility of 1-minute pause before beginning of a siren operation.

One may check up how the siren works in a mode of wireless sensors check. The siren should work for the period of 1 second immediately after switching on device power supply (a crosspiece "radio sensors" in position "check").

The sound alarm system

The sound radiator is located on the motherboard of the device and signals some operating modes of the device.

When necessary, it is possible to switch off the sound radiator by means of installation of a crosspiece "sound" in "off" position.

Sound signal	Device functions
Single signal at the moment of security mode activation	Security mode activation
Double signal at the moment of security mode deactivation	Security mode deactivation
A series of short signals at the moment of security mode activation and deactivation	Search of the GSM-network
Single signal in a mode of sensors' training	Addition of a new sensor to the memory of the device
Single signal in a mode of notification numbers training	Addition of a new notification to the memory of the device
Double signal at the moment of device switch-on	Input in one of the service modes of check, training, dump of wireless sensors (notification numbers) or training for a wireless siren

"Energy saving" mode

At the loss of external power source of 220 V, the device is switched to the power supply from the built-in accumulator and passes in one of the two energy saving modes. These two modes have different functions of the device operation and time of independent operation activity.



The transfer of calls and SMS messages at alarm occurs with a delay of 30 seconds in any of the two energy saving modes. This time it is required for search and device registration in network GSM.

Energy saving	Device functions	Time of independent operation	Current consumption from the accumulator
Switched off	High-grade work	12 hours	40 mA
Mode 1 ("off GSM")	The monitoring of the built-in sensor, wireless sensors, sending of periodic SMS. Absent: call acceptance and SMS messages	24 hours	20 mA
Mode 2 ("выкл GSM and radio")	The monitoring of the built-in sensor and sending of periodic SMS. Absent: light indication, the monitoring of wireless sensors, call acceptance and SMS messages.	Till 1 month	100 mA

While the device works in a mode "energy saving 2" (switched off GSM and radio) security mode activation is carried out by the power switch located on the device case. It allows to use the device with preliminary charged accumulator on the objects which have been not equipped with the mains supply of 220 V.



Before working check up correctness of crosspieces position on the device motherboard. If at least one of them is in position of "training", "memory dump" or "check", the device signals about it with a frequent blinking of the light indicator and a double sound signal at power-up.



Switching on the device without a SIM-card (or with a card out-of-work), the device signals with a frequent blinking of the light indicator and short sound signals in some seconds.

Factory device settings "on default"

Function	Set-up
SMS notices on loss – restoration of power supply 220 V	Transfer to the 1st number of notification
SMS notices on activation – deactivation security mode of the device	Switched off
SMS notices on the category of the built-in accumulator by 50 %	Transfer to the 1st number of notification
Periodic SMS	Switched off

Recommendations for choice of the movement sensor sensitivity

Correct set-up of the built-in movement sensor provides a minimum of false operations at operation activity of a device in various conditions.

Set-up	Notes
8 metres	To use for premises which area is of 50 m ² in the absence of thermal hindrances (draughts, solar beams, streams of warm air from heating systems)
6 metres	To use for premises which area is of 30 m ² in the absence of thermal hindrances
4 metres	To use for premises which area is of 20. 50 m ² in the presence of small thermal hindrances
2 metres	To use for premises which area is of 20 m ² or in the presence of strong thermal hindrances

Technical support

Technical support is carried out free of charge on the site www.gsm-storozh.ru

Requirements to service conditions

- ✓ Range of ambient temperatures: - 30C to +60°C.
- ✓ Working supply voltage: from 8 to 16V of DC.
- ✓ The device should be installed in a place protected from moisture, dust and direct solar beams.
- ✓ The device to establish far from sources of electromagnetic radiation and heat.

Manufacturer's warranty

The firm-manufacturer bears obligations on warranty repair of the device within a year from the moment of sale. Claims on warranty repair are not accepted in cases:

- ✓ Violence of transportation, storage, installation rules and requirements to service conditions;
- ✓ Presence of mechanical damages of the device case, internal modules, elements, conductors and presence of rebrazings, punctures and damage of connecting wires, warranty labels, seals and mechanical damages of other parts;
- ✓ Presence of traces of non-qualified repair attempts;
- ✓ Presence of changes in the device design not provided by the Manufacturer.
- ✓ Detection of the damages caused by hit in the device case, and connecting cables of extraneous subjects, substances, liquids, insects;
- ✓ Violation of motherboard printed circuit and modules of the device owing to oxidation or inflammation;
- ✓ Installation and device service by non-qualified personnel;
- ✓ Misuse of the device;
- ✓ Change of an insertion and program options of the device, which led to malfunction.

The manufacturer: "RADIOTERMINAL" Ltd., 121059, Moscow, Kiev Street, 14

Tel.: +7(495) 921-14-51, +7(495) 543-44-88

Warranty service coupon

Serial number	
Sale date	
The seller	

MP