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Introduction

Warning! Vehicle security system is a complex technical device that requires special knowledge and experience in conducting of installation work.

Incompetent and unqualified actions may lead to failure of the security system and serious damages to electrical equipment.

Before installing the system, please read user manual and installation guide of the security system.

When reading this manual, pay special attention to the programmable functions and system parameters. To ensure the efficiency of functions described in the operation manual, the installer should not only to produce programming of basic parameters of these functions, but also to ensure their hardware implementation.

Main technical characteristics

Supply voltage of the central processing module .... 9 ... 18 V
Maximum permissible levels of input voltages .... 18 V
Maximum permissible amplitude of impulse noise (up to 10 ms) .... 200 V
Guaranteed operating temperature range.... –40…+85°C
Maximum permissible voltage of low logic level of inputs:
- Ignition .... 3 V
- Universal inputs; hood; doors; trunk; parking.... 1 V

Minimum permissible voltage of high logic level of inputs:
- Ignition .... 9 V
- Universal inputs; hood; doors; trunk; parking.... 3 V

Nominal impedance of inputs:
- Ignition; tachometer; starting control.... 100 kOhm
- Universal inputs; hood; doors; trunk; parking.... 56 kOhm

Range of automatic adjustment of input levels:
- Tachometer of the connector of engine starting .... 3 - 18 V
- Tachometer of the main connector .... 1 - 6 V

Maximum permissible load current of outputs:
- Horn .... 3 A
- Engine locking.... 8 A
- Universal outputs 1 .... 2 × 8 A

Universal outputs 2 - 9; Closed central door locking;
Opened central door locking .... 300 mA
Current consumed by the system during standby mode, no more.... 18 mA
Heating current of the SIM-card with an air temperature of -40 ° C, no more .. 20 mA
Heating current of the GSM-module with an air temperature of -40 ° C, no more 40 mA
Maximum operating range of remote key fobs .... 20 - 80 m
Maximum radiated power of remote key fobs, no more .... 8 mW
Approximate battery life of remote key fobs .... 2 years

General recommendations for system installation

1. The central unit of the system is installed inside the vehicle in a hidden remote place and securely fastened by means of adhesive tape, screws or clamps. Orientation of the unit housing can be completely random. To avoid changing the orientation and position of the central unit at changing temperature of the ambient air, it is not recommended to mount it on the wiring harness and other «moving» surfaces.

2. Antenna 433.92 MHz is a single black wire coming from the central unit without connector - stretches the entire length and held horizontally and as high as possible and away from metal surfaces.

3. GSM-antenna is mounted inside the vehicle behind glass or under the "car dashboard". In order to avoid a significant increase of output power of the GSM-module, it is not recommended to install the antenna closer than 10 cm from the metal structures of the vehicle body. Increasing of GSM-module output power will lead to an increase in power consumption and to possible impact on the receiver 433.92 MHz and built-in microphone. It is strongly recommended not to twist the antenna cable to the bay or to link it with other wires or cables of the system.

4. Microphone is installed inside the vehicle, as far as possible from the GSM-antenna and its cable, and such a way that it does not overlap various elements of the interior. Microphone cable must not pass parallel to or in the vicinity of the antenna cable.

5. LED indicator, among other things, is used for entering a personal code, and, therefore, must be installed in the driver's field of view.

6. Motion sensor (optional) is installed horizontally in the center of the vehicle interior and is oriented by wiring harness forward. To avoid false alarms of the motion sensor, it is not recommended to install it closer than 5 cm from the metal structures of the vehicle body.

7. Contact sensors of doors, hood and trunk are installed in locations where accumulation or leakage of water is eliminated. You can use the standard contact sensors of the vehicle. It is not recommended to connect the "door" input of the system to the standard backlight lamp of the vehicle interior.

8. The horn is installed in the underhood space, at a location remote from moving and hot parts of the engine and away from the vehicle underbody. In order to avoid ingress of water into the horn, voice tube should be directed a few below the horizontal line.

9. Engine temperature sensor is pressed by the metal ties to the cooling connection, as close as possible to the cylinder block or using a screw or a nut is mounted directly on the cylinder block.

It is recommended to previously grease the sensor with heat conducting paste.

10. Air temperature sensor (optional) is installed inside the vehicle, under one of the front seats of the vehicle.

Preparation of SIM-card for installation into the system

1. Install SIM-card of the security system in any mobile phone.
2. Disable request of PIN-code when you turn on in the "Security" section.
3. Disable "Call waiting" function in the "Network Setup" section.
4. If the SIM-card is new, make an outgoing call to activate it.
5. Activate the GPRS-packet on SIM-card in case of need.
6. Open the cover «SIM» on the body of the receiving- processor unit.
7. Install SIM-card in the card insertion slot of the system (corner forward).
8. Install cover «SIM» back.

Note 1: Installing and replacing the SIM-card must be carried out only in the "disarmed" mode and when external power is off.

Note 2: To prevent discharge of the internal battery before disconnecting the regular vehicle battery, you must first disarm the system and clear the events memory.

Personal code of the security systems

Warning! We strongly recommend explaining importance of changing of factory personal code to the owner and help him with reprogramming of the code.

Personal code can be used for emergency shutdown of the system, to control the system by phone, to unlock the engine, to reset security programs against car theft, as well as in those cases where it is necessary to produce certain changes in the functions and settings of the system.

Factory setting of a personal code is 1111.

Entering a personal code

1. Turn on the ignition - LED indicator of the system by short flashes begins to count the numbers of a personal code in a second.
2. After the flash, corresponding 1st digit of the code, press the remote key fob button ◇ or switch off the ignition – LED will start to count the second digit.
3. After the flash, corresponding 2nd digit of the code, press the remote key fob button ◇ or switch on the ignition – LED will start to count the third digit.
4. After the flash, corresponding 3rd digit of the code, press the remote key fob button ◇ or switch off the ignition – LED will start to count the fourth digit.
5. After the flash, corresponding 4th digit of the code, press the remote key fob button ◇ or switch on the ignition – a personal code is entered.

Note 1: In case of error when entering a personal code, second attempt of entering can be begun at the next the ignition is switched on at any time.

Note 2: Number of attempts to enter the code is not limited.

Programming of the system functions

1. Initial state: the system is disarmed.

2. Open the hood and leave it open.

3. Turn on the ignition - LED indicator of the system by short flashes begins to count the numbers of a personal code in a second.

4. After the flash, corresponding 1st digit of the code, press the remote key fob button – LED will start to count the second digit.

5. After the flash, corresponding 2nd digit of the code, press the remote key fob button – LED will start to count the third digit.

6. After the flash, corresponding 3rd digit of the code, press the remote key fob button – LED will start to count the fourth digit.

7. After the flash, corresponding 4th digit of the code, press the remote key fob button – the system will give 3 short sound signals.

8. Press and hold the remote key fob button or for one second to select the first or second table - the system will give 1 or 2 sound signals and will go to the zero line of the selected table of programming.

9. Press the remote key fob button necessary number of times to select the line of the programming table– pressing is confirmed by the system's LED.

10. No later than 8 seconds after last pressing the remote key fob button , press the remote key fob button necessary number of times to select the column of the programming table - pressing is confirmed by the system's LED.

11. No later than 8 seconds after last pressing the remote key fob button , press the remote key fob button – the system will give 3 short sound signals, save the modified parameters and return to the zero line of the programming table.

12. If necessary programming of several parameter in one of the tables, Steps 9 - 11 are repeated.

13. Upon completion of programming - switch off the ignition - the system will give two short sound signals and exits the programming mode.

14. Close the hood, in case of necessity.

Note 1: In case of any errors during writing of lines or columns, you simply need to stop write - after 8 seconds, the system emits a long sound signal and returns to the zero line of the table without changing the settings.

Note 2: When you exit the programming mode, GSM-module is automatically rebooted and registered in the network.

Note 3: Improper change of programmable functions and some of their parameters can lead to failure of the security system as well as the standard electrical equipment of the vehicle.

Note 4: Programming of functions and basic parameters of the system can also be produced by a personal computer through the specialized USB-adapter (optional).

TABLE OF THE PROGRAMMABLE FUNCTIONS

TABLE No1	Button									
	1	2	3	4	5	6	7	8	9	10
1.Programmable function: **Alert about the critical fund balances, UAH**										
1	10	20	30	40	50	60	70	80	90	OFF
2.Programmable function: **Type of alert about disarming SMS /Voice message /Single alert**										
2	-/-/-	-/-/+	-/+/-	-/+/+	+/-/-	+/-/+	+/+/-	+/+/+		
3.Programmable function: **Short call upon disarming, sec**										
3	1	2	3	4	5	6	7	8	9	OFF
4.Programmable function: **Confirmation signals: Light / Horn**										
4	-/-	-/+	+/-	+/+						
5.Programmable function: **Alarm signals: Light / Horn / Illumination**										
5	-/-/-	-/-/+	-/+/-	-/+/+	+/-/-	+/-/+	+/+/-	+/+/+		
6.Programmable function: **Delayed arming, sec**										
6	5	10	20	30	60	90	120	300	600	OFF
7.Programmable function: **Automatic recovery of arming , sec**										
7	5	10	20	30	60	90	120	300	600	OFF
8.Programmable function: **Automatic engine blocking, sec**										
8	5	10	20	30	60	90	120	300	600	OFF
9.Programmable function: **Auto-Arming, sec**										
9	5	10	20	30	60	90	120	300	600	OFF
10.Programmable function: **Closing the central door locking at auto-arming**										
10	ON	OFF								
11.Programmable function: **Personal code, thousands**										
11	1	2	3	4	5	6	7	8	9	0
12.Programmable function: **Personal code, hundreds**										
12	1	2	3	4	5	6	7	8	9	0
13.Programmable function: **Personal code, tens**										
13	1	2	3	4	5	6	7	8	9	0
14.Programmable function: **Personal code, units**										
14	1	2	3	4	5	6	7	8	9	0
15.Programmable function: **Personal code when disarming**										
15	ON	OFF								

TABLE No1 🔓	Button 🔓									
🔒	1	2	3	4	5	6	7	8	9	10
16.Programmable function: **Access mode to the system control**										
16🔒	**1**	**2**	**3**	**4**						
17.Programmable function: **Automatic closing of the central door locking / Automatic opening of the central door lock (I –ignition, P – parking, S- displacement sensor activation)**										
17🔒	**- / -**	**I /-**	**P /-**	**S /-**	**I / I**	**I / S**	**P / I**	**P / P**	**S / I**	**S / P**
18.Programmable function: **Anti Hi Jack from the driver's door, sec**										
18🔒	**5**	**10**	**20**	**30**	**60**	**90**	**120**	**300**	**600**	**OFF**
19.Programmable function: **Anti Hi Jack from the ghost button, sec**										
19🔒	**5**	**10**	**20**	**30**	**60**	**90**	**120**	**300**	**600**	**OFF**
20.Programmable function: **Delay of sensors diagnostic, sec**										
20🔒	**1**	**2**	**3**	**5**	**10**	**20**	**30**	**40**	**50**	**60**
21.Programmable function: **Delay of engine stalling, min**										
21🔒	**0**	**1**	**2**	**3**	**5**	**10**	**15**	**20**	**30**	**OFF**
22. Programmable function: **Automatic engine starting, min**										
22🔒	**1**	**2**	**3**	**5**	**10**	**20**	**30**	**40**	**∞**	**OFF**
23.Programmable function: **Maximum waiting time of the GSM-channel control**										
23🔒	**5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**OFF**
24.Programmable function: **Vehicle battery voltage for sending SMS about discharge**										
24🔒	**11,00**	**11,25**	**11,50**	**11,75**	**12,00**	**12,25**	**12,50**	**12,75**	**13,00**	**OFF**
25.Programmable function: **Vehicle battery voltage for the engine autostart**										
25🔒	**11,00**	**11,25**	**11,50**	**11,75**	**12,00**	**12,25**	**12,50**	**12,75**	**13,00**	**OFF**
26.Programmable function: **Upper temperature of the engine autostart, ˚C**										
26🔒	**+20**	**+22**	**+24**	**+26**	**+28**	**+30**	**+35**	**+40**	**+50**	**OFF**
27.Programmable function: **Lower temperature of the engine autostart, ˚C**										
27🔒	**0**	**-5**	**-10**	**-15**	**-20**	**-25**	**-30**	**-35**	**-40**	**OFF**
28.Programmable function: **Temperature of heating activation of the SIM-card**										
28🔒	**0**	**-5**	**-10**	**-15**	**-20**	**-25**	**-30**	**-35**	**-40**	**OFF**

TABLE No 2 🔒	Button 🔓									
🔒	1	2	3	4	5	6	7	8	9	10
1.Programmable function: **Universal input 1**										
1🔒	**Pas. door**	**Oil**	**Spark Plugs**	**A.H.J. (-)**	**A.H.J. (+)**	**Master (-)**	**Master (+)**	**Zone 1**	**Zone 2**	**OFF**
2.Programmable function**: Universal input 2**										
2🔒	**Pas. door**	**Oil**	**Spark Plugs**	**A.H.J. (-)**	**A.H.J. (+)**	**Master (-)**	**Master (+)**	**Zone 1**	**Zone 2**	**OFF**
3.Programmable function: **Universal input 3**										
3🔒	**Pas. door**	**Oil**	**Spark Plugs**	**A.H.J. (-)**	**A.H.J. (+)**	**Master (-)**	**Master (+)**	**Zone 1**	**Zone 2**	**OFF**
4.Programmable function**: Universal input 4**										
4🔒	**Pas. door**	**Oil**	**Spark Plugs**	**A.H.J. (-)**	**A.H.J. (+)**	**Master (-)**	**Master (+)**	**Zone 1**	**Zone 2**	**OFF**
5.Programmable function**: Universal input 5**										
5🔒	**Pas. door**	**Oil**	**Spark Plugs**	**A.H.J. (-)**	**A.H.J. (+)**	**Master (-)**	**Master (+)**	**Zone 1**	**Zone 2**	**OFF**
6.Programmable function: Tachometer - T / Onboard Network - O.N./ Voltage threshold -V										
6🔒	**T**	**O.N.**	**1 V**	**2 V**	**3 V**	**5 V**	**7 V**	**9 V**	**11 V**	**OFF**
7.Programmable function: **Hood / Door / Trunk**										
7🔒	**-/-/-**	**-/-/+**	**-/+/-**	**-/+/+**	**+/-/-**	**+/-/+**	**+/+/-**	**+/+/+**		
8.Programmable function: **Parking / Threshold / Oil**										
8🔒	**-/-/-**	**-/-/+**	**-/+/-**	**-/+/+**	**+/-/-**	**+/-/+**	**+/+/-**	**+/+/+**		
9.Programmable function: **Universal output 1**										
9🔒	**turn light**	**Door**	**Brake**	**N.O. Locking**	**Trunk opening**	**Opening C./D/L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
10.Programmable function: **Universal output 2**										
10🔒	**turn light**	**Door**	**Brake**	**N.C. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
11.Programmable function: **Universal output 3**										
11🔒	**turn light**	**Door**	**Brake**	**N.O. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
12.Programmable function: **Universal output 4**										
12🔒	**turn light**	**Door**	**Brake**	**N.C. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
13.Programmable function: **Universal output 5**										
13🔒	**Key**	**Door**	**Brake**	**N.O. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
14.Programmable function: **Universal output 6**										
14🔒	**ACC**	**Door**	**Brake**	**N.C. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**
15.Programmable function: **Universal output 7**										
15🔒	**Ignition**	**Door**	**Brake**	**N.O. Locking**	**Trunk opening**	**Opening C.D.L 2**	**Interior Light**	**Comfort**	**Chanel 1**	**Chanel 2**

TABLE No 2 🔒	Button 🔓									
🔒	1	2	3	4	5	6	7	8	9	10
16.Programmable function: **Universal output 8**										
16🔒	**Starter**	Start button	Brake	N.C. Locking	Trunk opening	Opening C.D.L 2	Interior Light	Comfort	Chanel 1	Chanel 2
17.Programmable function: **Universal output 9**										
17🔒	**Door**	Key	Brake	N.O. Locking	Trunk opening	Opening C.D.L 2	Interior Light	Comfort	Chanel 1	Chanel 2
18.Programmable function**: Starter pulse, sec.**										
18🔒	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**
19.Programmable function: **Control pulse of the central locking, sec.**										
19🔒	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**4.0**
20.Programmable function: **Comfort pulse, sec.**										
20🔒	**1**	**2**	**5**	**10**	**15**	**20**	**30**	**45**	**60**	**OFF**
21.Programmable function**: Lighting duration, sec**										
21🔒	**1**	**2**	**5**	**10**	**15**	**20**	**30**	**45**	**60**	**OFF**
22. Programmable function: **Delay of channel 1, sec**										
22🔒	**0.5**	**1**	**2**	**5**	**10**	**20**	**30**	**45**	**60**	**OFF**
23.Programmable function: **Delay of channel 2, sec**										
23🔒	**0.5**	**1**	**2**	**5**	**10**	**20**	**30**	**45**	**60**	**OFF**
24.Programmable function: **Duration of channel 1, sec**										
24🔒	**0.5**	**1**	**2**	**5**	**10**	**20**	**30**	**60**	Trigger	**OFF**
25.Programmable function: **Duration of channel 2, sec**										
25🔒	**0.5**	**1**	**2**	**5**	**10**	**20**	**30**	**60**	Trigger	**OFF**
26.Programmable function**: Activation of interior lights**										
26🔒	Arming	Disarming.	Arming *	Disarming *	Arming Disarmig	Arming* Disarmig	Arming Disarm.*	Arming* Disarm.*		**OFF**
27.Programmable function**: Activation of channel 1**										
27🔒	Arming	Disarming.	Arming *	Disarming *	Arming Disarmig	Arming* Disarmig	Arming Disarm.*	Arming* Disarm.*		**OFF**
28.Programmable function**: Activation of channel 2**										
28🔒	Arming	Disarming.	Arming *	Disarming *	Arming Disarmig	Arming* Disarmig	Arming Disarm.*	Arming* Disarm.*		**OFF**
29.Programmable function: **Pulse for closing the central door locking / Pulse for opening the central door locking**										
29🔒	**1/1**	**1/2**	**2/1**	**2/2**	**1/1 P**	**1/ 2 P**	**2/ 1 P**	**2/ 2 P**		**OFF**
30.Programmable function: **Gearbox (M-manual, A- Automatic) / Fuel type (P-Petrol, D- Diesel / Turbo timer – TT -** turbocharged engine										
30🔒	**M/P**	**A/P**	**M/D**	**A/D**	**M/P/ TT**	**A/P/ TT**	**M/D/ TT**	**A/D/ TT**		

Table description of the programmable functions No.1

Line 1 is designed for programming of warnings of the vehicle owner about the critical balance on the card of the system.

Line 2 is designed for programming of warnings of the vehicle owner about disarming by the SMS and voice messages, as well as for programming the need to one-time activate the functions of warning before leaving the vehicle: "+" - on, "-" - off.

Line 3 is designed for time programming of short call of the voice message at disarming the system, in seconds.

Line 4 is designed for programming light and sound signals at arming and/or at disarming, when you turn off sensors and when activating the "Search" mode: "+" there are signals, "-" - no signals.

Line 5 is designed for programming light and sound signals in the "Alarm" mode: "+" - there are signals, "-" - no signals.

Line 6 is designed for programming the maximum waiting time of the system of closing the doors in the «delayed arming» mode.

Line 7 is designed for programming the automatic arming time in case the vehicle owner accidently disarmed the system.

Line 8 is designed for programming the time of engine blocking after ignition switching off and door opening.

Line 9 is designed for programming the time of automatic arming after ignition switching off and door opening or, in the case of the automatic locking - after engine locking.

Line 10 is designed for programming of automatic closing of the central door locking at auto-arming (line 9 of Table 1).

Lines 11 - 14 are designed for bitwise programming of "thousand", "hundreds", "tens" and "units" of a four-digit personal code.

Line 15 is designed for programming the necessity of entering the first digit of a personal code to unlock the engine after disarming.

Line 16 is designed for programming of one of the four basic modes of access to the control system via mobile phones.

Line 17 is designed for programming of automatic closing of the central door locking, when turning ON the ignition (I / -) when turning OFF the parking (P / -), or displacement sensor activation (S / -), as well as for programming of automatic opening the central door locking at ignition switching OFF (- / I) or when turning ON the parking (- / P).

Line 18 is designed for programming the time delay of engine failure simulation at activation of the «Anti Hi Jack from the driver's door" function.

Line 19 is designed for programming the time delay of engine failure simulation at activation of the "Anti Hi Jack from the ghost button" function.

Line 20 is designed for programming the time delay of diagnosis of the state of the doors, hood and trunk sensors when arming.

Line 21 is designed for programming the time delay of engine stalling at arming with the engine running.

Line 22 is designed for programming the engine operating time at remote and automatic engine start.

Line 23 is designed for programming the timeout of the security system of controlling calls from the GSM-channel control module.

Line 24 is designed for programming of voltage of the standard car battery, at which will be produced sending SMS messages about discharge.

Line 25 is designed for programming automatic engine start at the discharge of onboard battery below the set threshold.

Line 26 is designed for programming the automatic engine start when the interior temperature rises above the set threshold.

Line 27 is designed for programming the automatic engine start when the interior temperature decreases below the set threshold.

If programmed only the lower temperature of the engine autostart, the system considers that it is equipped with the engine temperature sensor.

Line 28 is designed for programming enabling of electric heating of SIM-card when the temperature of the GSM-module decreases below the set threshold.

Table description of the programmable functions No.2

Lines 1 - 5 are designed for programming of functional purposes of the universal inputs 1 - 5.

Line 6 is designed for programming of options for control of engine operation: by the tachometer, by the onboard network or by the threshold voltage in volts.

Line 7 is designed for programming of inputs polarity "Hood", "Doors" and "Trunk." Negative polarity "-", positive polarity "+".

Line 8 is designed for programming of inputs polarity "Parking", "Threshold" and "Oil." Negative polarity "-", positive polarity "+".

Lines 9 - 17 are designed for programming of functional purposes of the universal outputs 1 - 9. "Starter" or "Start Button" outputs (line 8 of Table 2) define one of the operation algorithms of engine starting.

Line 18 is designed for programming the maximum duration of operation of the outputs "Starter" or "Start button."

Line 19 is designed for programming the pulse duration of control of the central door locking of the vehicle.

Line 20 is designed for programming the pulse duration "Comfort" generated at the output of "Closing of the central door locking," or at the separate output.

Line 21 is designed for programming the duration of operating time of the output "Interior light." Interior light automatically turns on when opening the doors, and turns off when arming, as well as when the ignition is switched on. With the ignition on, the interior light is immediately switched off when closing the door. If any of the doors remain open - output "Light" will turn off automatically after 10 minutes.

Line 22 is designed for programming the reaction delay of the output "Additional channel 1". "Off" corresponds to enabling of the output without delay.

Line 23 is designed for programming the reaction delay of the output "Additional channel 2". "Off" corresponds to enabling of the output without delay.

Line 24 is designed for programming the operation duration the output "Additional channel 1". Position "Trigger" provides continuous operation of the output up to its reactivation or change the main armed mode.

Line 25 is designed for programming the operation duration the output "Additional channel 2". Position "Trigger" provides continuous operation of the output up to its reactivation or change the main armed mode.

Line 26 is designed for programming the conditions of automatic activation of the output "Interior light" - when arming and (or) disarming the system, as well as at arming and (or) disarming by the remote key fob buttons with holding for one second - if marked "*" - asterisk

Line 27 is designed for programming conditions of activation of the output "Additional channel 1" - at any arming and (or) disarming the system, as well as at arming and (or) disarming by the remote key fob buttons with holding for one second - if marked "*"

Line 28 is designed for programming conditions of activation of the output "Additional channel 2" - at any arming and (or) disarming the system, as well as at arming and (or) disarming by the remote key fob buttons with holding for one second - if marked "*."

Line 29 is designed for programming the pulse number of closing of the central locking, the pulse number of opening of the central locking, as well as for programming the presence or absence of the pause between the pulses of closing of the central locking and the "Comfort" pulse.

Line 30 is designed for programming the type of gearbox (M - Mechanical, A - automatic), programming of the engine type (P - petrol; D - diesel) and the availability of turbine, requiring mandatory cooling before engine stalling (TT - turbocharged engine).

Note 1: For safety reasons, in the factory setting is programmed «Manual transmission», that requires reservation of engine starting. For engine startup is necessary a special procedure of programming check of enabling of "neutral gear".

Note 2: At the engine startup, the delay time "Starter" for gasoline engines is 3 seconds, for diesel ones - 10 seconds.

Note 3: In case of turbo engine, the ignition support will be switched on automatically when turning on the parking. In the case of not turbocharged engine the ignition support will be switched on automatically, when turning on the parking as well as the subsequent opening of the central door locking.

Training of the system to remote key fob codes

Simultaneously all remote key fobs are prepared for training process. Remote key fobs, which not involved in training process in the future, will be inactive.

1. Initial state: the system is disarmed.
2. Open the hood and leave it open.
3. Turn on the ignition - LED indicator of the system by short flashes begins to count the numbers of a personal code.
4. After the flash, corresponding 1st digit of a personal code, turn off the ignition– LED will start to count the second digit.
5. After the flash, corresponding 2nd digit of a personal code, turn on the ignition– LED will start to count the third digit.
6. After the flash, corresponding 3rd digit of a personal code, turn off the ignition– LED will start to count the fourth digit.
7. After the flash, corresponding 4th digit of a personal code, turn on the ignition – the system will give 3 short sound signals.
8. Alternately press and release the buttons ⚿ of all simultaneously prepared remote key fobs - the system will give short sound signals.
9. Upon completion of training - turn off the ignition - the system will give two short sound signals and exits the programming mode.
10. Close the hood, if necessary.

Note 1: When training the system for a code of at least one remote key fob - all previously recorded remote key fobs are automatically deleted from the system memory.

Note 2: Maximum number of simultaneous trained remote key fobs is 8.

Programming of the idle speed

If for the automatic engine starting as a feedback will be used the input "Tachometer" of the main connector or connector of the starting, it is necessary to produce programming of the engine idle speed:

1. Implement all necessary connection and installation.
2. Disarm the system.
3. Open the hood and leave it open.
4. Enter a personal code (page 4) - the system will give 3 short sound signals..
5. Press and hold for one second the remote key fob button 🔇 - the system will give 5 short sound signals and goes into programming mode of the engine idle speed.
6. Start the engine and wait until it is fully warmed-up and will come out into stable nominal idle speed.
7. Close the hood - the system again will give 5 short sound signals, remembers the engine speed and exits the programming mode.

Note: If during closing the hood the system will give one long sound signal - the system was unable to determine engine speed.

Algorithms of starting and stalling the engine

Choice of algorithm of automatic starting and stalling the engine is determined by programming of the outputs "Starter" or "Start Button" (Table 2).

Starting the engine in vehicles with the ignition lock

1. System checks the state of the armed mode.
2. System checks the condition of doors, hood and trunk sensors.
3. System checks the reservation of engine starting (only for vehicles with manual gearbox).
4. System activates the output "Key".
5. After 1 second, system activates the output "Accessories".
6. After 1 second, system activates the output "Ignition".
7. After 1 second, system activates the output "Brake".
8. After 3 seconds (petrol) or 10 seconds (diesel) or in 1 second after switching off the glow plug, the input "Parking" is checked, the output "Accessories" is off and the output "Starter" is on.
9. Upon reaching of the specified threshold of voltage (line 6 of Table 2) or a programmed engine speed at the input "Startup Control", or at registration of specific noises in the onboard network or at working off the preset time by the starter (line 18 of Table 2) - outputs "Starter" and "Brake" are turned off, and the output "Accessories" is turned on.
10. In case of a successful engine starting, the system will send to the vehicle owner the appropriate voice or SMS-message.

Stalling the engine in vehicles with the ignition lock

1. Output "Ignition" is switched off.
2. Output "Accessories" is switched off after 1 second.
3. Output "Key" is switched off after 1 second.
4. Pulse of the door opening simulation (duration 1 second) is generated at the output "Door" after 1 second - it is necessary to turn off the dipped headlights, which automatically turned on in darkness on some vehicles.
5. After 1 second central door locking is closed - it is necessary for vehicles, in which signal of doors opening, provokes signal of opening central locking.

Starting the engine in vehicles with the button "Start"

1. System checks the state of the armed mode.
2. System checks the condition of doors, hood and trunk sensors.
3. System checks the reservation of engine starting (only for vehicles with manual gearbox).
4. System activates the output "Key".
5. After 1 second, system activates the output "Accessories".
6. Short control pulse is generated at the output "Start Button" after 1 second (line 18 of Table 2).

7. After 1 second, system activates the output "Ignition".

8. If the system by its input "Ignition" will not register the vehicle ignition switch - the output "Start Button" will generate a repeated pulse.

9. After 1 second activates the output "Brake".

10. After 3 seconds (petrol) or 10 seconds (diesel) or in 1 second after switching off the glow plug, the input "Parking" is checked, the output "Accessories" is off and the pulse "Start Button" is generated.

11 Upon reaching of the specified threshold of voltage (line 6 of Table 2) or a programmed frequency at the input "Startup Control", or at registration of specific noises in the onboard network – the button "Start Button" is released early..

12. In case of a successful engine starting - "Brake" is released, and the system begins to give warning lights.

13. After a moment, the system will send the owner of the vehicle voice or SMS-message about the fact of engine starting.

Stalling the engine in vehicles with the button "Start"

1. Outputs "Accessories" and "Ignition" are switched off.

2. Pulse is generated at the output "Start Button" (line 18 of Table 2).

3. If, by means of the input "Ignition", the system will not register the ignition switching off - at the output "Start Button" is formed a repeated pulse.

4. Output "Key" is switched off after 1 second.

5. Pulse of the door opening simulation (duration 1 second) is generated at the output "Door" after 1 second to turn off the dipped headlights in the dark.

6. After 1 second central door locking is closed - it is necessary for vehicles, in which doors opening provokes central locking opening.

Note 1: If any part of the outputs: "Key", "Accessories", "*Ignition*", "Brake" or "Door" will not be programmed, then at working off the algorithms of starting and stalling of the engine will be skipped and the phase corresponding to these outputs.

Note 2: In case of an unsuccessful attempt to start the engine, as well as in the case of starting and subsequent stalling of the engine - the outputs "Ignition", "Accessories", "Brake" and "Key" will turn off, and after 10 seconds, the system will produce second attempt to start or restart the engine.

Note 3: Maximum number of start and restart attempts of the engine are 3. If startup or normal operation of the engine will not be possible - to the first number for SMS-messages will be sent information about the reasons for the impossibility of starting or running engine.

Note 4: If during start-up or operation of the engine occur activation of doors, hood, trunk, parking sensors, third zones of impact, tilt, displacement or motion sensors, as well as when the engine temperature rises above 110 °C, at increasing of the engine idle speed in 2.5 times, or in case of emergency lowering of oil pressure - engine operation will be locked and to the first SMS-number will be sent the corresponding message.

System control via GPRS-channel

1. Do the programming your phone number, as the first number for the SMS-messages in system (cell 4 in voice menu - programming mode).

2. Activate GPRS-packet of data transmission on the system's card.

3. If Access Point Name (APN) to the Internet differs from www.kyivstar.net - send to the system's number SMS: **1111 SET APN www…** , where www… – new Access Point Name (APN) of your GSM operator, and where **1111** – a personal code of the system

4. Send to the system's number SMS: **1111 SET KEY 1234**, where **1111** – a personal code of the system; **1234** – a random encryption key (Think of yourself up to 6 digits).

5. Send to the system's number SMS: **1111 GPRS ON**, where **1111** – a personal code of the system

6. Go from your smartphone on **the Play Market or App Store**, install and run the application **MAGNUM GSM car alarm system**.

7. Add car with mandatory input of IMEI and private key encryption, corresponding to sent in the SMS: **1111 SET KEY 1234.** IMEI system can be obtained by requesting the service message. To do this, call to the system number, enter a personal code and press the number "6". After a time you will receive a SMS containing a 15-digit IMEI code system

Note: The system confirms acceptance and implementation of correct SMS-commands by applying two short sound signals.

Software update

1. Do the programming your phone number, as the first number for the SMS-messages in system (cell 4 in voice menu – programming mode).

2. Activate GPRS-packet of data transmission on the system's card.

3. If Access Point Name (APN) to the Internet differs from **www.kyivstar.net** - send to the system's number SMS: **1111 SET APN www…** , where **www…** – new Access Point Name (APN) of your GSM operator, where **1111** – personal code of the system.

4. If in the system has not yet been activated GPRS-channel – send to the phone number of the system SMS: **1111 GPRS ON**, where **1111** – personal code of the system.

5. Disarm the system and cancel the automatic recovery of security.

6. Exit the programming and remote control mode.

7. Send to the system's number SMS: **1111 UPDATE d26**, where **d26** – software version, and where **1111** – a personal code of the system. Information on the current software version can be found at: **magnum.org.ua**

8. The system will give a short sound signal - beginning of the firmware upgrade.

9. During upgrade (approximately 90 seconds) is necessary to ensure a reliable and stable power of the system and does not produce any actions with it - the system will give two short sound signals after completion of upgrade.

Note 1: If during the upgrade occur any failure - the system will give 5 short sound signals, rollback to the previous firmware and send a message to the first SMS-number.

Note 2: Upgrading within the same version (d1 → d2 → d9 ...) occurs with saving all settings and can be done on the installed system.

Note 3: Upgrading to a new version of firmware with a change in the name of the letter (d32 → e1) occurs with a full reset to factory settings.

Note 4: If GPRS-channel will not be used for system control - it is recommended to send to the system's number SMS: **1111 GPRS OFF.**

Pin assignment of the main connector

Pin "GND" - black - is connected by clamp of special terminal with a screw and a nut to thoroughly cleaned metal surface having a good contact with the chassis of the vehicle (GROUND).

Pin "+12" - red - is connected directly to the power bus of standard wiring of the vehicle with permanent power supply of +12 V.

Input "Ignition" - pink - is connected to the bus of standard wiring of the vehicle where potential of +12 V occurs with the ignition on and does not disappear when you turn on the starter.

Input "Hood" - purple - is connected to the contact sensor of the hood.

Polarity of the input "Hood" is programmed (line 7 of Table 2).

Special USB-adapter for programming the system by PC can be connected to the input "Hood".

Input "Doors" - yellow-black - is connected to the contact sensor of the driver's door or to the general circuit of contact sensors of all doors.

If you connect the input "Doors" to the undivided circuits of driver and passenger doors, functions "Engine immobilization", "Auto-Arming" and «AntiHiJack from the driver's door" - will be run from any door.

Polarity of the input "Doors" is programmed (line 7 of Table 2).

Universal input "Passenger doors" - green and black - is connected to the contact sensors of passenger doors, excepted from the general circuit.

Input "Passenger doors" is designed to provide the ability to run functions "Engine immobilization", "Auto-Arming" and «AntiHiJack from the driver's door" only when opening the driver's door.

Polarity of all the inputs "Doors" is programmed (line 7 of Table 2).

Input "Trunk" - blue and white - is connected to the standard or additional contact sensor of trunk opening.

At remote trunk opening in the armed mode, trunk sensor, impact sensors, tilt, displacement, motion and additional sensors are blocked for 30 seconds and for all time during which the trunk is opened. 10 seconds after closing trunk activates the output "Closing of the central door locking ", and after 2 seconds turn on all the sensors, which were blocked earlier. Polarity of the input "Trunk" is programmed (line 7 of Table 2).

Input "Parking" - black and red - is connected to the sensor "Parking" or to the sensor of manual brake. Input "Parking" is required for the organization of functions, "Turbo timer", "Security with the engine running", "Remote engine start", "Automatic engine start" and "Automatic control of the central door locking", when turning on the parking.

Polarity of the input "Parking" is programmed (line 8 of Table 2).

Input "Tachometer" - orange - is connected to the tachometer, to the nozzle or to the switch of ignition for organization of automatic and remote engine starting. When using the input "Tachometer" is necessary to carry out the procedure for programming of the engine idle speed (see "Programming of the idle speed").

Universal input «AntiHiJack» - blue-black - is connected to any standard or optional electrical circuit of the vehicle for organization the functions of protection against car theft with the activation of a "ghost button" (line 19 of Table 1 of the programmable functions).

Input «AntiHiJack» can also be used to activate single sending of messages about disarming the system (line 2 of Table 1).

Polarity of the input «AntiHiJack» is programmed (columns 4 and 5 of Table 2).

Universal input "Master" - red and green - is connected to the position sensor of the master-actuator for organization functions of the central locking. At supply of voltage of negative level to the input "Master", the central locking will be closed, and at circuit break - opened.

Polarity of the input "Master" is programmed (columns 6 and 7 of Table 2).

Universal input "Plugs" - red and blue - is connected to the indicator of glow plugs or directly to the plugs.

Input is intended for organization the reaction delay of a starter in both automatic and remote engine starting. If with the ignition on, the system will register at the input "Plugs" active level of the signal, the output "Starter" will be activated in a second after loss of the signal.

Polarity of the input "Plugs" is positive.

Universal input "Oil" - yellow and red - is connected to the oil pressure indicator. Input "Oil" is intended for organization oil pressure control at automatic engine starting.

Active level of the signal should be registered at the input "Oil" at ignition is switched on, and after starting the engine - the signal should disappear.

Polarity of the input "Oil" is programmed (line 8 of Table 2).

Universal input "Zone 1" – is not programmed in the factory setting and connects to low-current negative output of the warning zone of the additional sensor.

Universal input "Zone 2" - is not programmed in the factory setting and connects to the low-current output of the main zone of the additional sensor.

Pin "+12" of the additional sensor connects to any power bus of standard or additional wiring of the vehicle with voltage +12 V.

Pin "GND sensor" of the additional sensor can either be connected to the vehicle body (ground) (permanent sensor supply), or to one of the low-voltage negative output which automatically activated in the armed mode.

Output "Horn (+)" - brown - is connected to red wire of the horn. Black wire of the horn is connected to the vehicle body (GND). Horn with independent power supply is connected in accordance with guidelines for its connection.

Power outputs "N.C Engine lock" - yellow - galvanic isolated normally closed contacts of the built-in power relay - are designed for organization of break of any standard or optional electrical circuit, which provides engine working.

Low-current negative output "Closing of the central door locking" - green - is designed to control the standard controller of the central door locking.

Low-current negative output «Opening of the central door locking» – blue – is designed to control the standard controller of the central door locking.

Power outputs "Turn signal lights" - white - are connected to the port and starboard side lights or turn signals of the vehicle.

Pin "Power supply of turn signal lights" - white and red - depending on the polarity required for the power supply of turn lights, is connected either to +12 V or to the vehicle body GND.

Universal output "Trunk opening" - orange and black - is designed for implementation of remote trunk opening.

Pulse duration "Trunk opening" - is 1.2 seconds.

Universal output "Additional channel 1" - gray - is designed for implementation of automatic and remote control of all sorts of the vehicle service devices.

Pulse "Additional channel 1" is programmed for 5 seconds (line 24 of Table 2) without automatic activation at arming and disarming (line 27 of Table 2) in the factory setting.

Universal output "Additional channel 2" - gray and white - is designed for implementation of automatic and remote control of all sorts of the vehicle service devices.

Pulse "Additional channel 2" is programmed for 10 seconds (line 25 of Table 2) and for an automatic activation at arming (line 28 of Table 2) in the factory setting.

Such settings can be used for the automatic lifting of glasses and closing the hatch when the system is armed.

Universal output "Opening of II stage of the central door locking" - is not programmed in the factory setting and designed for organization of the second stage of opening of the central door locking. If vehicle's electric equipment does not provide a separate opening of the door locks, then it is necessary to break the standard opening circuit and organize two power circuits. Opening of the first stage of the central door locking should be provided by the vehicle's electric equipment and opening of the second stage by the security system through the internal or external power relay.

Universal output "Brake" - blue-black - is designed for organization of automatic and remote engine starting which required pressing the brake pedal or the clutch coupling to start.

Universal output "Interior light" - is not programmed in the factory setting and is designed for organization of intellectual illumination of the interior through the internal or external power relay.

Interior light automatically turns on when opening the doors, and is switched off when arming and when ignition turning on. With turned on ignition, interior light is immediately switched off when closing the door.

In the alarm mode, the interior light in phase opposition duplicates turn signals or parking lights, and in the armed mode with the engine running - works regardless of the state of vehicle ignition.

Universal output "N.C. Engine lock" - is not programmed in the factory settings and designed to provide additional engine locking by means of the internal or external relay.

The relay contacts should recover any standard or additional electrical circuit which provides working capacity of the engine.

In order to avoid the discharge of the standard vehicle battery, winding of built-in relay of engine locking is activated only when turning on the ignition.

Winding of the external power relay must be connected in such a way that it has been powered only at turned on ignition or when starting the engine.

Universal output "N.O. Engine lock" - is not programmed in the factory settings and designed for organization engine locking by means of the external power relay.

The relay contacts must break any standard or additional electrical circuit which provides working capacity of the engine.

Winding of the external power relay must be connected in such a way that it has been powered only at turned on ignition or when starting the engine.

Universal output "Comfort" - is not programmed in the factory settings and designed for the organization of automatic lifting of glasses and closing the hatch of the vehicle without adequate standard functions.

Output is designed to control all kinds of modules or adapters, providing safe (with the current cutoff or any other feedback) glasses lifting, hatch closing, mirrors folding and so on.

For vehicles with built-in standard function "Comfort" - any system outputs should not be programmed as a "Comfort". Only in this case, the pulse "Comfort" (line 20 of Table 2) will be automatically generated at the output "Closing of the central door locking" when arming the system.

Line 29 of Table 2 specifies the number of pulses of closing the central door locking, number of pulses of opening the central door locking, and the presence or absence of the pause between pulses of closing the central door locking and the pulse "Comfort".

Pin assignment of the connector of the engine starting

Low-current negative output "Key" - orange - is designed for organization of automatic and remote engine starting.

The output should allow the simulation of having the key in the ignition through one or more additional relays.

Low-current negative output "ACC" - red - is designed for organization of automatic and remote engine starting. The output should ensure duplication of contacts of ignition lock in the "Accessories" position.

Low-current negative output "Ignition" - yellow - is designed for organization of automatic and remote engine starting and car security with the engine running. The output should ensure duplication of contacts of ignition lock in the "On" position.

Low-current negative output "Starter" - green - is designed for organization of automatic and remote engine starting. The output should ensure duplication of contacts of ignition lock in the "Start" position.

Low-current negative output "Door" - yellow-black - is designed to simulate opening the driver's door after the automatic starting and stalling the engine for turning off the dipped beam headlights in vehicles with automatic light switch. By means of additional power relay is necessary to ensure the closure of the sensor of the driver's door opening.

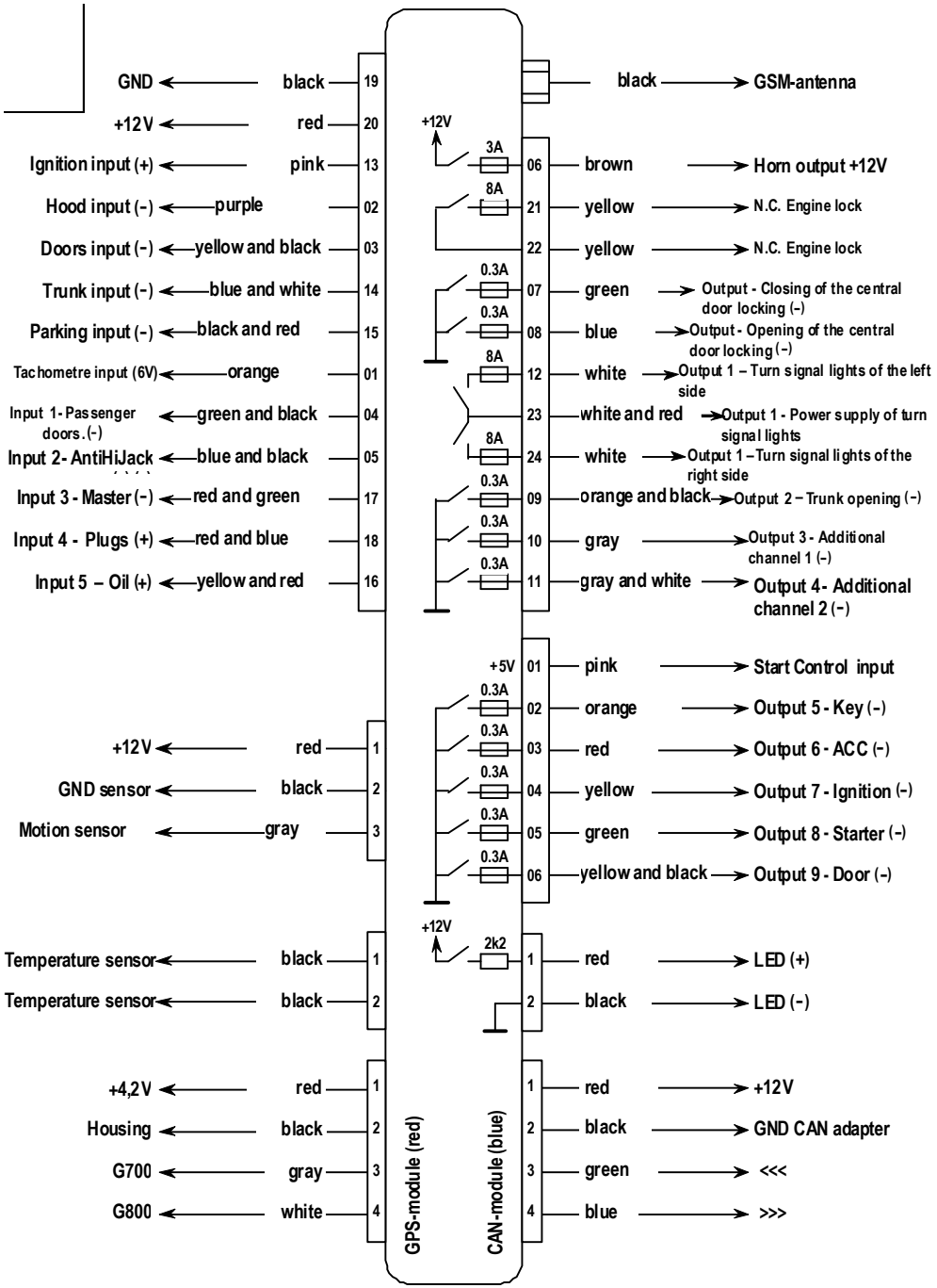
Low-current negative output "Start Button" - is not programmed in the factory settings and designed for organization of the automatic starting and stalling the engine by means of the "Start" button. The output should provide contact closure of the "Start" button by means of the additional relay.

Universal input "Start Control" - pink - is designed for organization of control of automatic engine starting by the threshold of voltage and by the frequency of rotation of the engine crankshaft.

"Start Control" input is connected to the "Charge Control" and "Oil" indicators or directly to the control output of the generator or oil pressure sensor for implementation of control by the threshold of voltage. Thus polarity of the pulse threshold should be chosen in line 8 of Table 2 and the threshold voltage should be set in line 6 in Table 2 to turn OFF a starter.

"Start Control" input is connected to the tachometer, to the nozzle or to the ignition switch for implementation of control by the tachometer. Thus, the "Tachometer" position should be selected in line 6 of Table 2 and it is necessary to carry out the programming procedure of the engine idle speed.

If for any reason the "Start control" input cannot be implemented, the system can exercise control of engine starting on the voltage of the onboard network (line 6, column 2 of Table 2) or start up the engine without feedback (line 6, column 10 of table 2).



Wiring diagram for the security system