

Pandora would like to thank you for choosing  
our immobilizer Pandora Immo

 **Pandora**

CAR IMMOBILIZER

USER INSTALLATION MANUAL

[pandorainfo.com](http://pandorainfo.com)  
Made in Russia  
20a, Kirova str., Kaluga, Russia



Product is in conformity  
with Electromagnetic Compatibility  
Directive EMC 2004/108/EC and R&TTE  
Directive 1999/5/EC

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## GENERAL INFORMATION

**Pandora** is a brand of Russian Experimental Engineering Factory, a full production cycle electronics R&D facility. We design and produce car service-security systems for more than 10 years and have reached a considerable success on Russian and post-communist markets – biggest security system markets in the world. Our systems are made to withstand severe weather conditions and criminal situation of northern Eurasia.

Immobilizer **Pandora Immo** is a high-tech safeguard system that is intended to prevent car theft attempts and hijacking. It can be used on modern cars without damaging of original electronic systems. This system that is designed with using high-efficient integrated solutions is convenient and reliable. This immobilizer has a built-in three-coordinate accelerometer (motion sensor) that allows blocking engine when starts moving. It prevents device detection and allows for remote start and engine preheating to operate without deactivation of anti-theft immobilizer function. System's RF tag has a smallest size among similar systems and the highest energy efficiency. 'Proximity detection of the owner' programmable algorithm detects either RF tag is approaching or distancing from the car, bringing anti-theft and anti-robbery function to a new level.



### WARNING!

IT IS STRONGLY ADVISED TO HAVE PROFESSIONAL CAR MECHANIC INSTALLING THE SYSTEM. CERTIFIED INSTALLERS ARE RARE OUTSIDE RUSSIA, BUT ANY CAR ELECTRONICS INSTALLER SHOULD BE ABLE TO INSTALL PANDORA IMMO USING INSTALLATION SCHEME IN THIS MANUAL AND ALARMSTUDIO SOFTWARE. MOST FEATURES ARE HIGHLY DEPENDENT ON COMPETENT INSTALLATION. OUR SYSTEMS ARE THOROUGHLY TESTED FOR QUALITY, SO IF A FEATURE FAILS TO PRODUCE EXPECTED RESULTS, MOST LIKELY THE PROBLEM IS IN IMPROPER INSTALLATION.

It is essential for systems functioning that you read and understand instructions in this manual. Note that all radio devices are subject to interference, which could affect proper performance.

This device has limited external factors resistance. It should not be subjected to water beyond occasional splatter, or operated in temperatures outside -40 to +80 °C range.

## System features

### Base unit

- Dialog coding of control commands.
- Individual 128-bit encryption key.
- Built-in integral accelerometer for determining motion.
- Built-in module 2,4 GHz with Bluetooth 4.2 Low Energy support.
- Monitoring of on-board voltage.
- Built-in blocking relay.
- Status output to enable additional functions.
- Antihijack 1 and Antihijack 2.
- Pandect BT mobile app.

### Immobilizer tag

- Dialog coding of control commands.
- Button to enable/disable maintenance/valet mode.
- Individual 128-bit encryption key.
- Built-in LED indicator.
- Built-in integral accelerometer.
- CR-2032 battery (not shipped with the system).

## System set

1. Base unit	1
2. Immobilizer tags	2
3. Plastic card with PIN-code to pair	1
4. Leather case for tags	1
5. Beeper (compact sound emitter)	1
6. User installation manual	1
7. Fastening kit	1
8. Packaging	1

**Manufacturer reserves the right to change set and construction of the product to improve its technological and operational parameters without notification.**

## SYSTEM OPERATION

To authorize owner and then disable engine blocking, immobilizer tag should be carried. When the ignition is being switched on, note the sound notification of the tag detection. If there is no notification, engine can be blocked. Check the immobilizer tag, so absence of sound notification can be caused by discharged battery, tag failure, a temporary loss of signal with the base unit. In the case of emergency use the spare tag or valet mode for switching off immobilizer tag (see page 13). When leaving the car, do not place the tag inside or near the car even if its battery is discharged. For a comfortable fit use the tag case (see 'System set', page 4).

Additional algorithms of tag authorization (Antihijack, Antihijack+) are used to prevent car theft attempts and hijacking and to enhance the owner's safety. Algorithms can be enabled via the mobile app.



**WARNING!**  
FACTORY PRESET PIN-CODE IS 1-1-1. PLEASE REMEMBER TO CHANGE PIN-CODE, SEE PAGE 22. DO NOT GIVE NEW PIN-CODE TO ANYBODY! IF SOMEONE KNOWS IT, THEY CAN DISABLE PROTECTIVE IMMOBILIZER FUNCTIONS. IF PIN-CODE IS LOST, IT WILL CAUSE INABILITY OF IMMOBILIZER/TAGS EMERGENCY DISARMING, OF PROGRAMMING MODE ENTERING, OF MOBILE APP CONNECTION WITH THE BASE UNIT. IF PIN IS LOST, THE SYSTEM BASE UNIT MUST BE REPLACED.



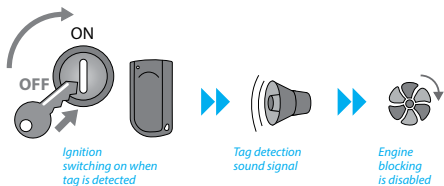
**WARNING!**  
IF ONE OF IMMOBILIZER TAGS WAS LOST, PERFORM TAGS RECORDING PROCEDURE (SEE PAGE 21) OR CONTACT THE SERVICE CENTER.



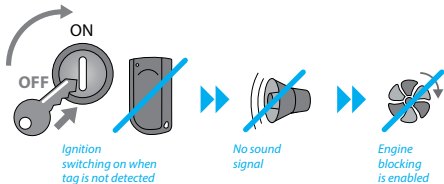
**WARNING!**  
SYSTEM WILL NOT FUNCTION IF THE CAR BATTERY IS LOW.  
WHEN CHARGING CAR BATTERY, THERE IS NO NEED IN DIS-  
ABLING THE SYSTEM OR PUTTING IT INTO VALET MODE.

## Immobilizer mode

Immobilizer mode is original system operation mode. Every time the ignition is being switched on, the system base unit checks tags availability in radio zone: sound signal will confirm connection after the ignition is switched on. Tag detection disables engine blocking algorithm and allows the car to start moving.



If there are no tags detected in radio coverage zone when the ignition is being switched on, the system will block engine operation. Engine blocking can be performed according to system settings: when motion sensor function is enabled the engine will be blocked as soon as car starts moving.

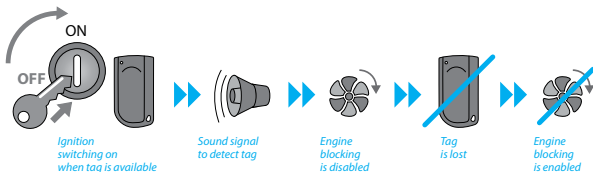


## Antihijack 1

Originally disabled setting. AntiHiJack mode helps to prevent aggressive seizure of the vehicle using delayed engine blocking when the immobilizer tag is lost.



**WARNING!**  
THIS ALGORITHM CAN BE SET VIA MOBILE APP.

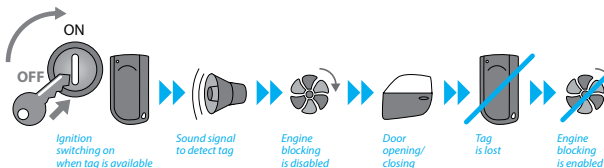


## Antihijack 2

Original setting is disabled. AntiHiJack+ mode helps to prevent aggressive seizure of the car using delayed engine blocking on door opening/closing.



**WARNING!**  
THIS ALGORITHM CAN BE SET VIA MOBILE APP. FOR ALGORITHM OPERATION DOOR TRIGGER CONTROL SHOULD BE CONNECTED.



## Algorithms of unconditional engine blocking and blocking when starts moving

Blocking when there is motion is original system setting. Engine blocking algorithm depends on adjusting that was set via mobile app. There are two blocking options:

1. When there is motion – engine blocking will occur in whatever modes (immobilizer, Antihijack 1, Antihijack 2) only on fact of motion.
2. Unconditional engine blocking – engine blocking will occur in whatever modes (immobilizer, Antihijack 1, Antihijack 2) without motion. Blocking operates throughout the ignition is being switched on.



WARNING!  
THIS ALGORITHM CAN BE SET VIA MOBILE APP.

### Status output

Analogue negative output of immobilizer Pandora Immo is designed to work with additional devices of third-party manufacturers. Status output operation algorithm can adjust the event when negative potential signal will be sent to the status output of the immobilizer base unit:

1. When immobilizer tag is detected.  
When the tag is in radio coverage zone of immobilizer, negative potential signal will be sent to the status output until tag is lost.
2. When blocking is occurred.  
When blocking of whatever modes (immobilizer, Antihijack 1, Antihijack 2) is enabled, negative potential signal will be sent to the status output until algorithm of blocking is disabled.



WARNING!  
THIS ALGORITHM CAN BE SET VIA MOBILE APP.





**WARNING!**  
ALGORITHM 1 'WHEN IMMOBILIZER TAG IS DETECTED'  
CANNOT BE DISABLED IN MAINTENANCE/VALET MODE. IT  
WILL OPERATE ACCORDING TO SELECTED LOGIC.

### Algorithms of outputs operation, sound notifications, engine blocking

	<b>Immobilizer</b>	<b>Antihijack 1</b>	<b>Antihijack 2</b>
Ignition switching on when tag is not available	1. The first switching on ignition: blocking will be performed in 15 seconds. 2. The second switching on ignition: blocking will be performed in 10 seconds. 3. The third and following switching on ignition: blocking will be performed in 2 seconds.		
Tag is lost after the ignition is switched on or door is open	Blocking is not performed.	Blocking is performed in 60 seconds.	When door opening: blocking can take about 2 minutes.
		When the ignition is switched on again: 1. The first switching on ignition: blocking will be performed in 10 seconds. 2. The second and following switching on ignition: blocking will be performed in 2 seconds.	
Sound signal: 'Enable'	Switching on ignition without tag: 1. The first and second ignition switching on: 10 seconds of frequent 'blocking' signals. 2. The third and following switching on ignition: without sound signals.		

	Immobilizer	Antihijack 1	Antihijack 2
Sound signal: 'Enable'		Tag is lost after switching on ignition: 55 seconds of frequent 'blocking' signals.	When door opening: 55 seconds of frequent 'blocking' signals.
		When the ignition is switched on again: 1. The first and second ignition switching on: 10 seconds of frequent blocking signals. 2. The third and following ignition switching on: without sound signals.	
Sound signal: 'Disable'	All sound signals will be disabled when whatever blocking algorithm is active		
Status output 'When blocking is occurred'	Blocking algorithm will be duplicated (immobilizer, Antihijack 1, Antihijack 2)		



**WARNING!**  
THESE OPERATING ALGORITHMS CAN BE ADJUSTED BY MANUFACTURER TO IMPROVE IMMOBILIZER OPERATION.

### Sound signals

'Tag is detected' – this signal will be sound when the ignition is switched on and tag is in radio coverage zone.

'Tag's battery is discharged' – battery of immobilizer tag is low on power.

This signal will sound:

1. When the ignition is being switched on (three beeps).
2. Every minute when the ignition is switched on (three beeps).

**'Blocking is enabled' – sound signal will emitted when there is any blocking algorithm (immobilizer, Antihijack 1, Antihijack 2).**

Single tones that become more frequent – warning signal that signifies the start of any blocking algorithm.

**'Maintenance/valet mode' – this signal means that maintenance/valet mode is enabled.**

This signal will sound:

1. When enabling/disabling maintenance/valet mode (double beep).
2. Every minute when the ignition is switched on (double beep).

### Sound signals of programming menu

'Enter PIN-code' 1 beep – input the first digit of PIN-code.

'Enter PIN-code' 2 beeps – input the second digit of PIN-code.

'Enter PIN-code' 3 beeps – input the third digit of PIN-code.

Up to 10 single beeps – PIN-code digit entering.

Up to 6 prolonged beeps – selection of operation modes or system programming levels.

Ringtone – PIN-code is incorrect.

## IMMOBILIZER TAG

Immobilizer tag is intended for owner's authorization in Bluetooth coverage zone. The system produces and sending data throughout protected (AES-128 encryption) interactive dialog channel of exchange of authorization codes on the Bluetooth frequency. Built-in accelerometer (motion sensor) that reacts on changing of tag's location is used to save energy. Tag has control button to activate/deactivate maintenance/valet mode (see 'Maintenance/valet mode', page 13). Built-in LED indicator on tag shows battery level and can help find a lost tag.

## Tag's LED indicator

### When inserting battery:

0 flashes – battery is discharged.

1 flash – low battery level.

3 flashes – high battery level.

### Short tag's button press:

0 flashes – battery is discharged.

1 flash – tag works normally.



**WARNING!**  
DO NOT ALLOW ANY MOISTURE TO REACH IMMOBILIZER TAG. KEEP TAG AT A CONSIDERABLE DISTANCE FROM THE MAGNETS OR PRODUCTS WITH THEIR OWN MAGNETIC FIELD.

## Replacing immobilizer tag battery

Low battery level is confirmed with 3 beeps per minute (from beeper, see System set, page 4) when the ignition is switched on. Battery should be replaced if it sounds.

To check the battery when there is no connection with the base unit, shortly press built-in tag's button: LED indicator will confirm serviceability of battery with 1 flash. If LED indicator is lit for longer, or does not light at all, the tag's battery should be replaced.



Carefully open the cover of the tag's battery compartment. Extract discharged battery and insert a new one keeping in mind the correct polarity. Replacing a battery will not cause a loss of tag code information, as authorization data is stored in the non-volatile memory of the MCU. Carefully close the cover of the tag's battery compartment. All elements of construction should be rigidly locked in places. If it is so, the tag can be operated as usually.



**WARNING!**  
WHEN BUYING A NEW BATTERY, MAKE SURE THAT THE BATTERY LIFETIME IS NOT EXPIRED, AND THE BATTERY COVER DOES NOT HAVE TRACES OF CORROSION. IT IS PREFERRED TO BUY BATTERIES PRODUCED BY INTERNATIONALLY RECOGNIZED COMPANIES.



**WARNING!**  
EXTRACT BATTERY FROM SPARE IMMOBILIZER TAG OR IT WILL BE DISCHARGED.

## **Emergency deactivation of immobilizer tag. Maintenance/valet mode**

If immobilizer must be deactivated (in case it was lost or battery is discharged), enable maintenance/valet mode via programming menu or mobile app. Factory preset PIN-code is 1-1-1.

Personal PIN-code:

PIN-code to enter immobilizer programming menu

-  -  -

PIN code in Pandect BT mobile app



**WARNING!**  
FACTORY PRESET PIN-CODE SHOULD BE CHANGED BEFORE USING THE DEVICE. KEEP IN MEMORY OR WRITE YOUR NEW PIN-CODE AND DO NOT PLACE IT IN OR NEAR YOUR CAR.

It is recommended to put system into maintenance mode before handing it to the car service or valet parking. When this mode is switched on, security system stops interfering with built-in electronics and disables all functions to ease maintenance or parking. Moreover, you will not have to leave immobilizer tag to the valet or the mechanic. This mode can be activated via programming menu, app or immobilizer tag. Active maintenance/valet mode is confirmed with 1 beep. Deactivation of this mode is confirmed with 2 beeps.

1. Programming menu:

Enter PIN-code (see 'PIN-code input', page 20). Correct PIN-code will be confirmed with 6 beeps for 5 seconds. Immobilizer tag will be temporary deactivated until the ignition is switched off. If PIN is incorrect, incorrect entering ringtone (PIN-code is incorrect) will sound.

To permanently deactivate the tag, activate maintenance/valet mode (see 'Enabling maintenance/valet mode, page 17).

2. Immobilizer tag:

Place the tag in radio coverage zone, switch on the ignition and wait for detection tag ringtone. To enable maintenance/valet mode, press and hold tag's button until LED indicator will flash 3 times, then release the button. Disabling procedure is similar to enabling one.

3. Mobile app.

'Enabling of maintenance/valet mode' detailed description on page 17.



**WARNING!**  
IF THE TAG'S BATTERY IS DISCHARGED/ABSENT OR THE TAG IS DEFECTIVE, MAINTENANCE/VALET MODE CANNOT BE ENABLED VIA IMMOBILIZER TAG.

## PANDECT BT MOBILE APP

The main function of mobile app is adjusting of immobilizer, control over maintenance/valet mode, checking of immobilizer tags.

This app is available only on Android with Bluetooth 4.0. Connection between the base unit and mobile app is performed via special code channel Bluetooth Smart, providing information about protection against connection hijacking and immobilizer control. The base unit connection with the app is carried out only with the device that is in the system's memory. To save energy, the connection with the app is performed only when the ignition is switched on. When the ignition is switched off, the system disconnects Bluetooth-connection.

### App's installation

Download free app Pandect BT for your device in Google Play.

After app's installation, perform the recording procedure of mobile device into the system's memory.



**WARNING!**  
TURN ON BLUETOOTH IN MOBILE DEVICE FOR APP'S OPERATION.

### Recording and deleting mobile app

To record mobile device into the immobilizer's memory, enter PIN-code. Factory preset PIN is 1-1-1 (see 'Entering PIN-code', page 21). When you have entered the last digit, do not switch on the ignition. The system will proceed to the pairing mode that lasts 2 minutes. Open mobile app and select 'Search for devices'. The app will search immobilizer via Bluetooth-connection. Enter six-digit code in your device (this code is located on plastic PIN-card). When entering is performed, devices will be paired.



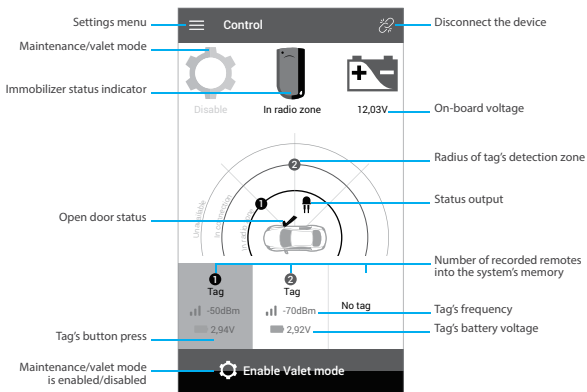
**WARNING!**  
PIN-CODE ON THE PLASTIC CARD IS NOT HIDDEN, SO IT IS REQUIRED FOR AN INSTALLER TO INSTALL AND SET THE SYSTEM.

## Using app

Pairing of mobile app with immobilizer unit will be performed only when ignition is switched on in radio coverage zone. Availability and unavailability of immobilizer tags do not affect the app's operation.

Every time when you enter the app, PIN-code is required to prevent the entrance in case of theft of a phone. Factory preset PIN-code is 1-1-1-1. After entering correct PIN-code, the app allows access to control immobilizer.


There is a limited number of attempts to enter mobile app PIN-code. If three attempts to enter PIN-code were incorrect, immobilizer will block access to the app. Procedure to reset the number of incorrect PIN attempts should be performed to restore the operation. Reset will be performed when PIN-code of the base unit is entered (detailed description of 'PIN-code input', page 20).

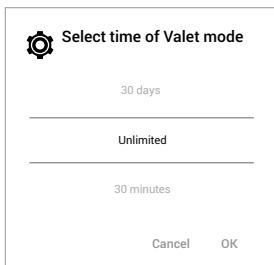




## Enabling maintenance/valet mode

This mode is intended to put system into maintenance mode before handing it to the car service or car wash service with ability to select maintenance mode period. If the vehicle is handed into service for a long time, select the 'Unlimited' or set time period. Use a minimum time period '30 minutes, 1 hour, 2 hours...' to hand the vehicle into car wash service.

Enabled maintenance/valet mode is shown on the main screen 'Control' . Maintenance/valet mode can be disabled in whatever moment of assigned period via mobile app, tag or programming menu.



**WARNING!**  
WHEN THE MAIN POWER SUPPLY OF IMMOBILIZER BASE UNIT THAT IS IN VALET MODE FOR CERTAIN TIME PERIOD IS DISCONNECTED, IMMOBILIZER WILL RESTORE THE INITIAL TERM PERIOD WHEN POWER.

## Settings menu

### Control

Return to 'Control' main menu.

### App

**SOUND** – enabling/disabling of sound notifications in the app.

**RINGTONE** – selection of notification ringtone.

**NOTIFICATIONS VIBRATION** – enabling/disabling of vibration for receiving notifications.

### Settings

**CHANGING PIN-CODE** – changing of PIN-code to enter app and service PIN. When changing the code via mobile app, service PIN-code to enter programming menu will be changed, herewith the code will consist of the first three digits of app's new PIN-code. Changed PIN should be written down on page 13.

**SOUND SIGNALS OF VALET MODE** – enabling/disabling of sound signals in maintenance/valet mode.

**SOUND SIGNALS WHEN TAG IS LOST** – enabling/disabling sound signals of blocking activation at whatever algorithm (immobilizer, Antihijack 1, Antihijack 2).

### Advanced settings

**RADIO RELAY MOTION SENSOR** – enabling/disabling of the base unit motion sensor. When enabling sensor, engine blocking will be performed only when moving and the ignition is switched on. When disabling sensor, engine blocking will be performed after the ignition is switched on without taking into account the motion.

**RADIO RELAY MOTION SENSOR SENSITIVITY** – setting of built-in accelerometer sensitivity in immobilizer unit. Set sensitivity from 0 to 100. Level 0 is lowest sensitivity level, 100 is the highest one.

**ANTIHIJACK MODE** – selection of Antihijack mode (Antihijack 1, Antihijack 2). Algorithm operation description is in 'Antihijack mode' section.

**STATUS OUTPUT** – selection of status output mode (Tag is in radio zone, Engine blocking). Algorithm operation description is in 'Status output' section.

**TAG'S DETECTION THRESHOLD** – changing of radius of tag's detection

zone (-127 – max threshold of tag's detection, 0 – minus threshold).

**TAG MOTION SENSOR SENSITIVITY** – setting of built-in accelerometer sensitivity in immobilizer tag. Set sensitivity is from 0 to 7. Level 0 is lowest sensitivity level, 7 is the highest one.

When there is no movement, immobilizer tag will proceed to energy saving mode, stopping information sending via radio channel. Power saving mode is canceled when motion is detected.

**NOTIFICATION ABOUT DISCHARGED BATTERY** – voltage threshold when there is notification about tag's immobilizer discharged battery.

### Software update

Base unit software update.

Download base unit software update to the phone. In 'PANDECT BT' app enter 'Update software' menu and set 'Downloader' mode. 'Downloader' mode will prompt you to select software downloaded earlier, select the software and download it to the unit.



**WARNING!**  
TO UPDATE SOFTWARE VIA MOBILE APP, ALLOW ACCESS TO THE PICTURES AND MULTIMEDIA FILES ON YOUR DEVICE FOR 'PANDECT BT' APP.

### Device selection

This function is intended to proceed between pairing devices, to search a new device, to delete the device from phone's memory.



**WARNING!**  
MANUFACTURER RESERVES THE RIGHT TO CHANGE DESIGN AND FUNCTIONALITY OF THE MOBILE APP.

## INSTALLATION AND CONFIGURATION OF THE SYSTEM

### Programming system

#### PIN-code input

Use PIN-code for emergency deactivation and access to immobilizer settings. PIN-code entering is performed via switching on/off the ignition.

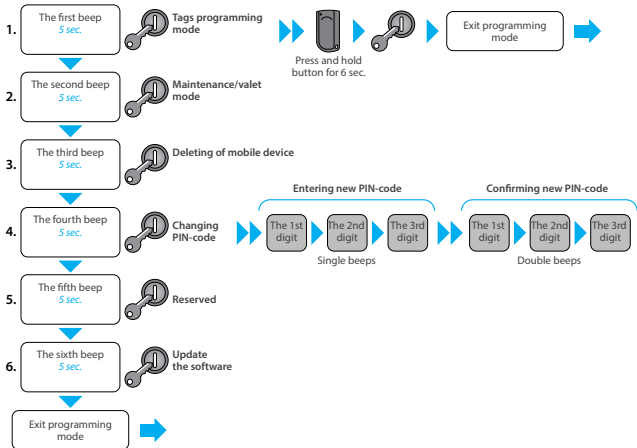
Remove the tag from the immobilizer radio coverage zone or remove battery from the tag. Switch on the ignition and wait for the termination of warning signals, in several seconds after the ignition is switched on, 'Enter PIN-code' ringtone will sound once (the first digit entering). If the ignition was switched on repeatedly, when the tag is lost, warning signals will not be emitted (the system will proceed to enter the first digit), after that 10 beeps will start sounding. Switch off the ignition immediately after the signal with the number that matches the first digit of the PIN-code. Switching off the ignition after the first beep will correspond to the digit '1' and after tenth one – to the digit '0'.

Switch on the ignition, 'Enter PIN-code' ringtone should sound twice (the second digit entering), then 10 beeps will sound. Switch off the ignition immediately after the signal with the number that matches the second digit of PIN-code.

Switch on the ignition, 'Enter PIN-code' ringtone should sound three times (the third digit entering), then 10 beeps will start sounding. Switch off the ignition immediately after the signal with the number that matches the third digit of PIN-code.

Switch on the ignition. If PIN-code is incorrect, 'PIN-code is incorrect' ringtone will sound, the system will return to the beginning of PIN-code entering procedure. If PIN-code is incorrect, six 5-second-long beeps will sound.

## Programming menu



### 1. Program immobilizer tags.

To proceed to the tags programming mode, switch off and then on the ignition when the first signal sounds.

When the ignition is switched on, searching for tags procedure will be performed. Insert batteries into the tags, then press and hold control button on the tag until LED indicator flashes 6 times (6 seconds), then release the button. If procedure was performed correctly, beeper will emit 1 beep. Perform this procedure for the second and the third tags. Pause between recording tags into the system's memory is limited (up to 2 minutes). To finish programming procedure, switch off, then on the ignition.



**WARNING!**  
THE SYSTEM SUPPORTS WORK UP TO 3 TAGS.



**WARNING!**  
AFTER PROGRAMMING THE FIRST TAG, ALL PREVIOUS TAGS AND RADIO RELAYS WILL BE PURGED FROM SYSTEMS MEMORY AND WILL NEED TO BE PROGRAMMED AGAIN IN THIS PROGRAMMING SESSION.

## **2. Maintenance mode activation.**

To proceed to maintenance/valet mode, switch off the ignition when the second signal sounds.

Exit this mode via immobilizer tag or mobile app.

## **3. Deleting of mobile device from the system's memory.**

To proceed to this mode, switch off the ignition when the third signal sounds.



**WARNING!**  
THIS PROCEDURE SHOULD BE PERFORMED AFTER THE SYSTEM'S INSTALLATION IF ADDITIONAL SETTINGS WERE CARRIED OUT VIA APP OR THE SYSTEM IS PASSED TO THE NEW OWNER.

## **4. PIN-code changing.**

To proceed to this mode, switch off the ignition when the fourth signal sounds.

PIN-code consists of 4 digits, factory preset PIN is 1-1-1. Avoid occasional pauses that can prevent correct procedure when entering new PIN-code. Switch on the ignition. 'Enter PIN-code' ringtone will sound once (the first digit of the new code entering) after that 10 beeps will sound. Switch off the ignition immediately after the signal with the number that matches the first digit of the new code. The first digit of new PIN-code will correspond to the number of beeps from 1 to 9 when the ignition is switched on, zero will correspond to the switching off the ignition after tenth beep.

Switch on the ignition. 'Enter PIN-code' ringtone will sound twice (the

second digit of the new code entering) after that 10 beeps will sound. Switch off the ignition immediately after the signal with the number that matches the second digit of the new code.

Switch on the ignition, 'Enter PIN-code' ringtone should sound three times (the third digit of the new code entering), then ten beeps will sound. Switch off the ignition immediately after the signal with the number that matches the third digit of PIN-code.

The system will await for PIN-code confirming after third digit input. Switch on the ignition. 'Enter PIN-code' ringtone will sound. Confirming procedure of the new code is similar to the first one (but beeps will be double, not single). If PIN-code is correct, the ringtone will sound when the ignition is being switched on.

If PIN-code is incorrect, the ringtone will sound and the system will proceed to the beginning of PIN-code entering procedure.

## **6. Software update.**

To update a software, switch off the ignition when the sixth signal sounds. Download the software via Pandect BT mobile app (detailed description 'Software update' on page 19).

## **The system installation**

Immobilizer Pandora Immo is designed to be installed on vehicles with on-board voltage of 12V.

Blocking module should be placed in any remote cavities of the car body that are not available for inspection without partial disassembly of the body, engine or interior components.

Blocking radio relay can be placed in car interior or in engine compartment (under the hood) taking appropriate precautions related to allowable temperature, aggressive environment, liquids and water. Place the unit away from other metal parts of the car or provide clearance of a few centimeters from the solid metal surface to avoid problems in radio relay operation (it should be respected especially for built-in aerial location).

When installing in a radio shielded space, radio channel range should be checked. Generally, for normal operation the range from blocking unit's location to the driver's seat should be double the maximum range (the radio path structure of this immobilizer eliminates the range dependence on the

tag's battery level). The immobilizer base unit can be mounted in the wiring of the car.

Position of the base unit should be changed if radio range between tag and base unit is insufficient (rotate, or select another installation location).



**WARNING!**  
DO NOT CONNECT THE SYSTEM TO THE WIRING OF ANOTHER CAR TYPE OR TO A VOLTAGE DIFFERENT FROM 12V.



**WARNING!**  
DO NOT EXCLUDE FUSES THAT ARE NOMINALLY PROVIDED IN SECURITY SYSTEM WHEN CONNECTING TO THE CAR WIRING.



**WARNING!**  
DO NOT CONNECT SECURITY SYSTEM THAT HAS DAMAGED OUTPUT CABLES.



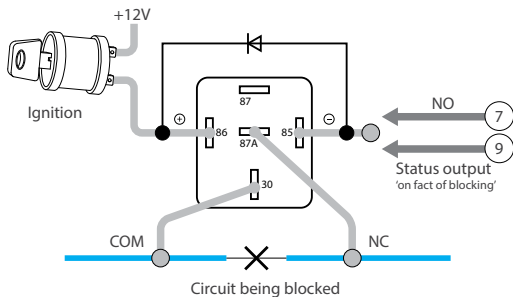
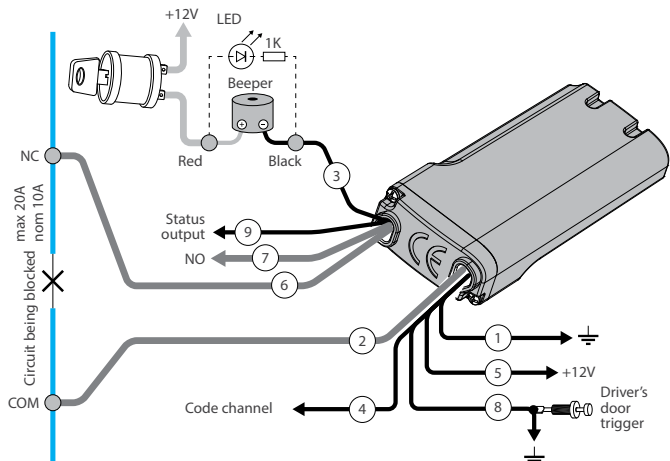
**WARNING!**  
TO INSTALL THE SYSTEM COMPONENTS, SELECT PLACES THAT EXCLUDE THEIR MECHANICAL DAMAGE OR AGGRESSIVE LIQUIDS AND WATER SEEPING ON THEM.



**WARNING!**  
IMMOBILIZER IS A MAINTENANCE-FREE DEVICE. DO NOT DISASSEMBLE THE BODY. IN CASE OF FAILURE, REPAIR SHOULD BE PERFORMED IN AUTHORIZED WORKSHOPS.



## Installation scheme



## Wiring description

Nº	Assignment
1	GND
2	COM relay
3	Ignition
4	Code channel
5	+12V
6	N.C. relay
7	N.O. relay
8	Driver's door input
9	Status output

**Wire 1 (Ground)** This wire should be connected to the car body in a grounding spot. The wire should be connected FIRST during installation.

**Wires 2, 6, 7 (COM, N.C., N.O. relays)** Contacts of built-in electromagnetic relay are used to perform blocking. Normally closed group (COM and N.C.) is used for the circuit being blocked. Normally open group (COM and N.O.) is used for blocking with bypass grafting or for additional relay switching. Switching current must be no more than 10A permanently and no more than 20A (for switching circuits without inductive load component).

**Wire 3 (Ignition)** This wire connects to the negative output of beeper that is located to be heard by driver's ear. Positive output of beeper connects to the ignition switch or to appropriate wire where 12V voltage appears when ignition is switched on and doesn't disappear until the moment ignition is

switched off. LED can be connected in parallel to beeper throughout resistor with resistance of 1000...1500 Ohm.



**WARNING!**  
DO NOT CONNECT IGNITION CONTACT WITHOUT BEEPER  
TO THE CAR CIRCUITS DIRECTLY.

**Wire 4 (Code channel)** It is special digital output that is used when connecting additional devices.

**Wire 5 (Power supply)** This wire should be connected to reliable conductor with constant voltage of 12V and this voltage does not disappear when switching on/off the ignition, arming/disarming.

**Wire 8 (Driver's door input)** This input connects to a wire that becomes grounded when the door opens. This wire **MUST** be connected for AntiHiJack 2 mode to function.

**Wire 9 (Status output)** It connects to a negative input of the external device to operate with third-party additional devices. Working algorithms can be set in the mobile app.

## Specifications

Name of parameter	Base unit	Tag
Dimensions, mm	56x25x11	51x28x6
Supply voltage, V	8...18	3
Current consumption, mA	3	–
Current consumption when blocking, mA	70	–
Maximum load current, switching on blocking output, A	Nominal 9 (max 20, no more than 1 minute)	–
Battery	–	CR2032 (not shipped with the system)
Radio frequency, GHz	2,4 – 2,5	2,4 – 2,5
Type of control code	Dynamic dialogue Bluetooth Smart	
Operating temperature range, °C	From -40 to 85	From -20 to 70 (limited by battery features)

## WARRANTY OBLIGATIONS

Manufacturer guarantees correct operation of the service-security system if exploitation, installation, storage and transportation conditions described in this manual were met.

The system should only be used according to installation scheme and user manuals.

The system is meant to be installed by the professional car electronics installers. We recognize that outside Russia the system can be installed by amateurs – those installations are still a subject of limited warranty. The installer should fill in installation certificate that is included in this manual.

Parts malfunctioning during warranty period on the fault of the manufacturer should be repaired or replaced by the installation center of the manufacturer or by certified service center. List of certified service centers outside Russia can be found on [pandorainfo.com](http://pandorainfo.com)

The user loses the right for warranty services in the following cases:

- when warranty period expires;
- if exploitation, installation, storage or transportation conditions were not met;
- if there is mechanical damage of the external parts of the system after it is sold. This includes: fire damage, consequential damage in case of car accident, aggressive liquids and water seeping damage, damage caused by improper use;
- if the damage was caused with incorrect settings and parameter adjustment;
- if system devices are replaced with any devices that are not recommended by the manufacturer;
- if manufacturer sealing is broken;
- if there is no properly filled warranty card and installation certificate.

Warranty period is 3 years since the moment of purchase, but no more than 3,5 (three and a half) years since the moment of production.

This warranty does not include batteries of the remotes, as they have their own service life time. Maintenances and repairs of the system with expired warranty period are carried out at the expense of the user on a separate contract between the user and the installer/service center.

## Transportation rules

Products should be transported in the original packaging by any means of transport as long as they are protected from mechanical damage and precipitation.

Packaged products should be stored on racks in piles of 6 or less boxes, in enclosed, dry, heated rooms (no less than 1m from heating) which exclude possible interaction with moisture, oil products and damaging environmental factors.

## INSTALLATION CERTIFICATE

I, the undersigned \_\_\_\_\_

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Position, name

professional installer, certify that installation of the service-security system, specified below, was carried out by me in accordance with manuals and schemes provided by the manufacturer.

### Car specifications

Car model \_\_\_\_\_

Type \_\_\_\_\_

ID number (VIN) \_\_\_\_\_

Registration number \_\_\_\_\_

### Security system specifications:

Model **Pandect Immo**

Serial number \_\_\_\_\_

Service center name, full address and installer's stamp \_\_\_\_\_

Signature \_\_\_\_\_ / \_\_\_\_\_ /

Signator

Work accepted \_\_\_\_\_ / \_\_\_\_\_ /

Signator

Date « \_\_\_\_ » \_\_\_\_\_ 20\_\_ y

## ACCEPTANCE CERTIFICATE

Pandora Immo is in conformity with Electromagnetic Compatibility Directive EMC 2004/108/EC and R&TTE Directive 1999/5/EC

Serial number \_\_\_\_\_

Date of production \_\_\_\_\_

Responsible person's signature

(stamp)

Packager \_\_\_\_\_

Signature (personal stamp)

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## WARRANTY CARD

Model **Pandora Immo**

Serial number \_\_\_\_\_

Date of purchase « \_\_\_\_ » \_\_\_\_\_ 20\_\_y

\_\_\_\_\_  
Seller's (installer's) stamp

\_\_\_\_\_  
Seller's signature