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Pandora would like to thank you for choosing our DXL-0050L service and security system

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 domestic markets – biggest security system markets in the world. Our systems are made to withstand severe weather conditions and criminal situation of northern Eurasia.

Pandora DXL-0050L is a premium car service-security system, built for cars with on-board voltage of 12V. It is a complex engineering solution which includes car security system, telemetry, remote and automatic engine start and various service options, all accessible via RF control remote that can replace your factory remote. This system is designed to be all-in-one car service and security solution and requires no additional modules: it includes algorithmic keyless bypass that works with many popular car models. For even more convenience, it allows remote control over Webasto or Eberspaecher preheaters – and even sequential use for automatic engine start.

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 DXL-0050L 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.

IMPORTANT! Note that this manual describes remote and manual functions for the most part. Functionality of the system is vast and would require a book-sized manual to fully describe. Instead we use a handy software named AlarmStudio that functions as both programming tool and an extended installation & functionality manual. It requires Windows and can be downloaded at pandorainfo.com

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

Table of contents

System features

2-way LCD remote

• Arming and disarming security system using separate buttons.
• Controls status of 10 independent security zones.
• Vibrating alert.
• 16 notification ringtones.
• Automatic LED lighting of the LCD.
• Vibration confirmation of the button press.
• AAA battery (1,5V) (not shipped with the system).
• Battery level indicator.
• Current time indication.
• Time synchronizes with the base unit for exact time stamp in the event history.
• Engine* and interior temperature, voltage indication.
• Prompt remote access to the settings of shock sensor.
• Prompt remote access to the settings of motion sensor.
• View event history with time and event stamps.
• Automatic control of RF coverage zone.

Base unit

• Dialog coding of control commands sent at a frequency of 868 MHz.
• Individual 128-bit encryption key.
• Event history with exact time stamps is stored in the base unit and is transferred to the remote when it is in range.
• Can be complemented with BM-103/105 single-wire digital block relay.
• Built-in integral accelerometer for determining motion and shocks with adaptive processing algorithm and sensitivity controls via the remote.
• Monitoring of on-board voltage.
• Separate inputs for hood and trunk sensors.
• Advanced processing of sensor data, eliminating false alarm possibilities.
• Precision measurement of interior and engine* temperature, displayed on the remote.
• Sequential unlocking of the doors.
• Arming when the engine is running.
• Automatic arming.
• Registers delay for interior lighting when arming.
• Software updates via built-in micro-USB socket.

---

* Engine temperature indication is available only if temperature sensor is connected. The sensor availability depends on the system set.

Car security zones

Pandora DXL-0050L service-security system guards following independent zones with corresponding zone notifications on the remote and recording alarms into the event history:

- car doors perimeter (separate for every door)
- front hood triggers
- trunk triggers
- ignition trigger
- brake pedal button
- triggering of the shock sensor (warning level)*
- triggering of the shock sensor (alarm level)
- triggering of the motion sensor
- triggering of the tilt sensor
- critically low on-board voltage

All* alarm events are recorded into system's non-volatile memory with coordinates, date and exact time the event happened. Event history can be read using a remote.

System set

1. Base unit.....1
2. Main control remote with LCD.....1
3. Cover of main control remote.....1
4. Supplementary control remote without LCD.....1
5. Main cable.....1
6. Cable with three-colored light indicator.....1
7. Cable with VALET button.....1
8. LIN interface wire.....1
9. Fastening kit.....1
10. User installation manual with wiring diagram.....1
11. Relay automatic start module.....1
12. Temperature sensor.....1
13. Packaging.....1

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

* Triggering of the warning level of shock sensor is not saved in the event history.

Control remotes

Main control remote with LCD

Supplementary control remote

Two-way remote is the main mean of control over the system. For easily distinguishable notifications the remote uses 16 ringtones. Each ringtone matches particular event.

Remote has flashing **'SEND'** and '**ALARM'** LED indicators for additional information.

The remote is already paired with the base unit and fully operational when shipped. To switch on the remote, press and hold F button for 3 seconds. **'REMOTE ON'** ringtone will play. Pressing and holding this button again for 3 seconds will cause the remote to switch off.

WARNING!
ALL CONTROL COMMANDS ARE TRANSMITTED VIA RADIO CHANNEL, FOR MAXIMUM EFFECTIVENESS AND RANGE IT IS RECOMMENDED NOT TO SHIELD AERIAL AREA (SEE PICTURE) WITH FINGERS WHEN USING A REMOTE.

WARNING!
REMOTE IS A UNIFIED CONTROL DEVICE. REMOTE CONTROL FUNCTIONS DEPEND ON SECURITY SYSTEM MODEL.

LED indicator signals

Green Send indicator

- Flashes occasionally if there is a connection.
- Goes dark when there is no connection.

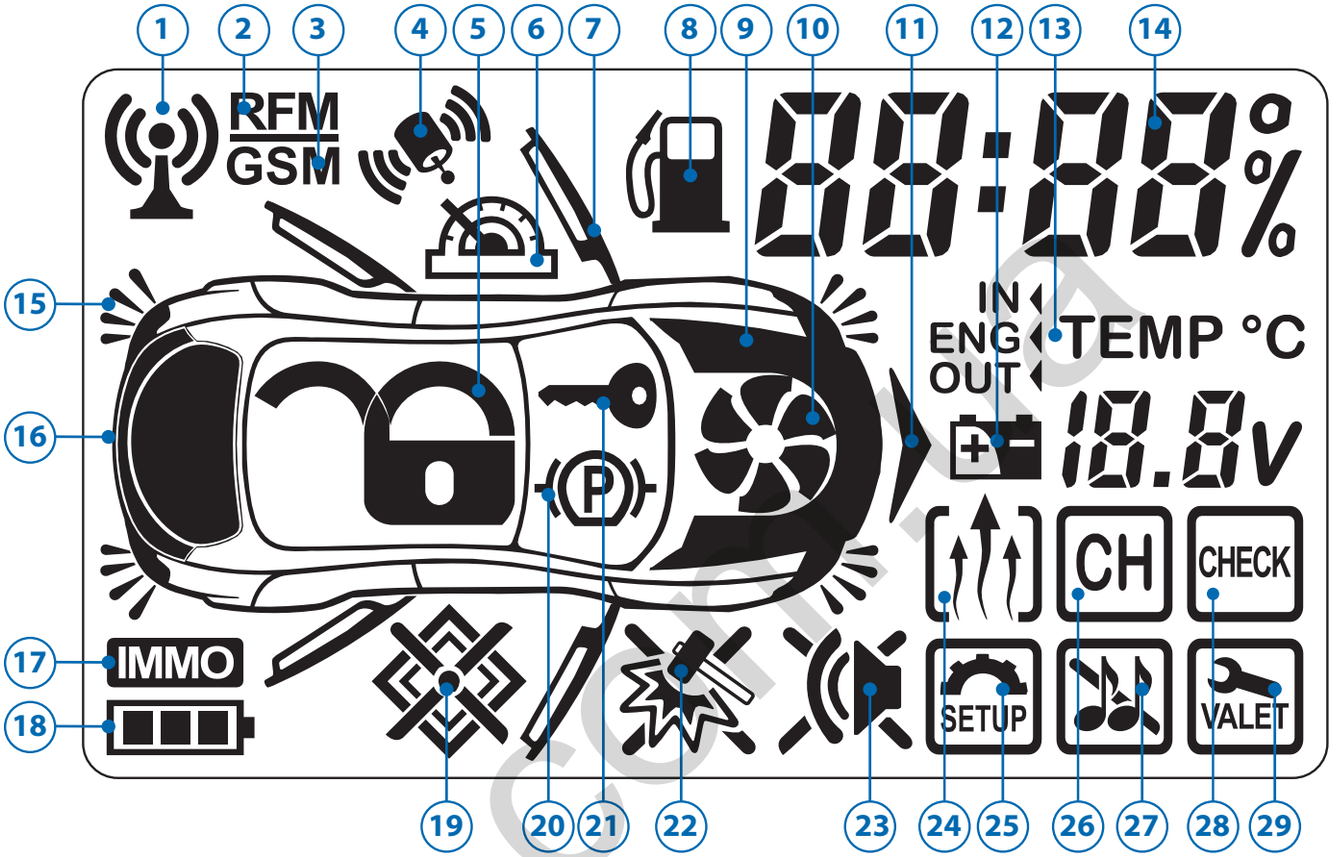
Red Alarm indicator

- Flashes frequently if there is any notification.
- Flashes occasionally when there is no connection.

Quick access functions of the main control remote

	System disarmed		System armed (no alarm events)
	Engine is running	**Engine is stopped**	
(short press)	Lock doors without arming	Arming with sound confirmation	Search mode – car will flash turn signals and sound horn for 5 seconds
(1 sec.)		Arming without sound confirmation	Search mode – car will flash turn signals without any sounds for 5 seconds
(2 sec.)	Switch on ignition support		
(3 sec.)	Switch on programmed neutral		Remote engine start
(short press)	Unlock doors	Unlock doors	Disarming with sound confirmation
(1 sec.)		Unlock doors	Disarming without sound confirmation
(>2 sec.)	Switch off ignition support		Switch off ignition when turbo timer, remote or automatic engine start is active
F (short press)	Switch on LCD lighting (available only on the remote with LCD)		
F (1 sec.)	Unlock trunk (CH1)		
F (2 sec.)	Switch on/off timer channel (CH2) Switch on/off engine preheater		
F (3 sec.)	Switch on/off remote (available only on the remote with LCD)		
+ (short press)	PANIC mode		
+ F (short press)	Arming when the engine is running with sound confirmation	Arming in 30 seconds (Hands Free mode) with sound notification	
+ F (1 sec.)	Arming when the engine is running without sound confirmation	Arming in 30 seconds (Hands Free mode) without sound notification	

Icons of remote

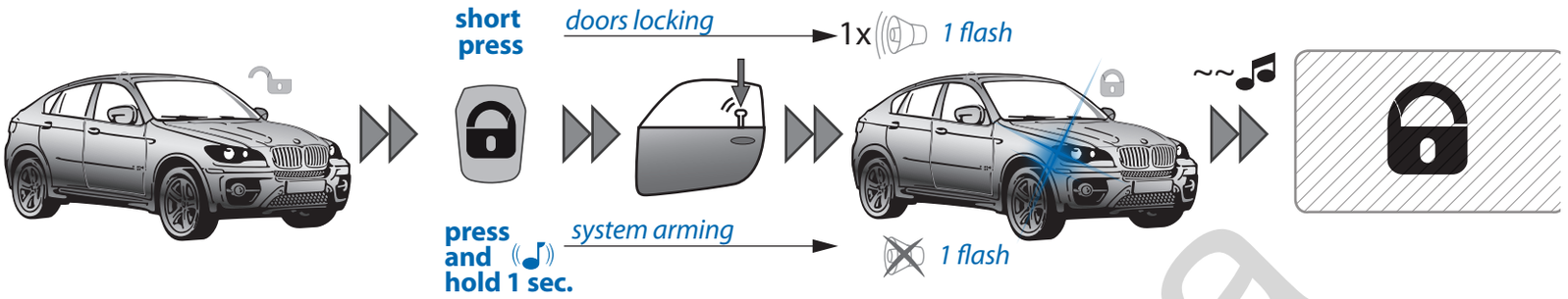


1.		Sending command indicator
2.	**RFM**	Flashes if there is no connection to the base unit
3.	**GSM**	GSM connection indicator (for systems that are equipped with GSM-modem)
4.		GPS receiver. The icon will be lit if the GPS receiver is switched on and receiving coordinates of the car. The icon flashes if it is not possible to receive the coordinates of the car
5.		Security mode status (armed/disarmed)
6.		Tilt sensor security zone

7.		Door security zone. Separate for each door
8.		Fuel left
9.		Front hood security zone
10.		Engine operation icon
11.		Motion sensor security zone
12.		Car battery voltage, voltage security zone
13.		Interior, engine and exterior air temperature
14.		Numeric indicator. Displays current time
15.		Light signalization (using marker lights, turn signals)
16.		Trunk security zone
17.		Immobilizer
18.		Remote battery level
19.		Original security system status

20.		Handbrake/neutral indicator, brake pedal security zone
21.		Ignition, ignition security zone
22.		Shock sensor security zone  Warning level of the sensor  Alarm level of the sensor  Warning level zone monitoring disabled  Shock sensor monitoring disabled
23.		Silent mode of the system  Warning signals of the system disabled  All sound signals disabled
24.		Engine preheater
25.		System settings
26.		Timer channels
27.		Silent mode of the remote (MUTE)
28.		Check current state and enter event history
28.		Car maintenance mode

Arming procedure



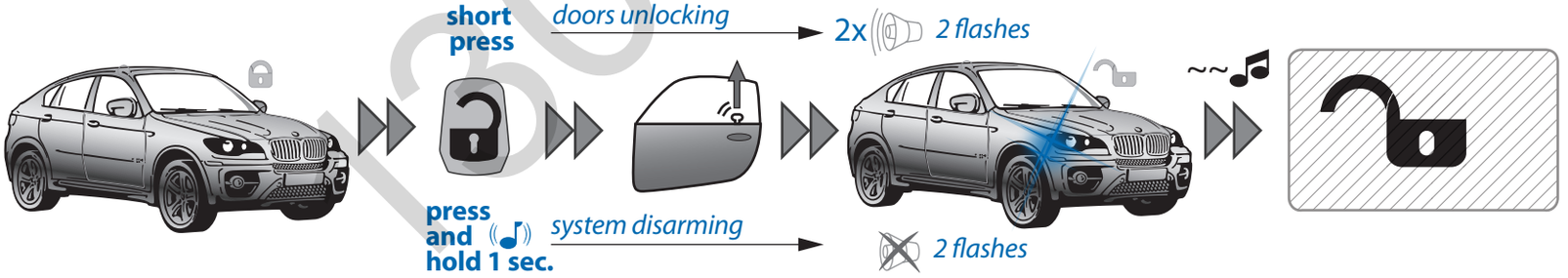
Arming the system allows monitoring of all security zones, locks the doors and blocks the engine.

To arm the system when the engine is stopped, shortly press button on the remote. The siren will sound and turn signals will flash once. The remote will play **'ARMING'** ringtone and security mode status icon (the lock) will change to:

For arming without sound confirmation press for more than 1 second. If hood or trunk was open when arming doors, the siren will sound 4 short signals instead of 1, turn signals will flash 4 times, remote will play **'WARNING!'** ringtone (after **'ARMING'** ringtone) and will show troubled zone. This zone sensor will be disabled at that moment. Sensor will be armed again in 15 seconds after the zone was set right.

For emergency arming when the ignition is switched off, press and hold VALET button for 3 seconds until the system confirms with red LED indicator flash. A car will be armed in 30 seconds.

Disarming procedure



To disarm the system, shortly press button on the remote. You will hear 2 short siren sounds and will see 2 flashes of turn signals. The remote will play **'DISARMING'** ringtone and security mode status icon will change to:

For disarming without sound confirmation press button for more than 1 second.

If there were new alarming events during the time system was armed, siren will sound 4 times, and turn signals will flash 4 times, the remote will sound **'WARNING!'** ringtone (after **'DISARMING'** ringtone) and will indicate zones triggered. All recent alarm events can be viewed in the event history.

Emergency disarming

In case you cannot disarm the system using a remote, use special service PIN-code: Factory preset PIN-code is **1-1-1-1**. Use VALET button to input PIN-code. Entering PIN-code is available only if the ignition is switched off.

1. Using VALET button, input the first digit of the code (press the button a number of times, equal to the first digit; pauses between presses should not exceed 1 second). The system will confirm with red LED indicator flash.

2. Use the same procedure to input the second, third and fourth digit. Every input will be confirmed with red LED flash.

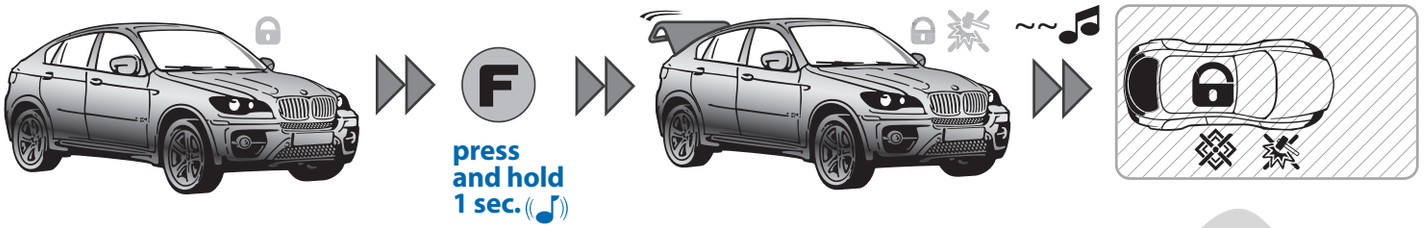
3. The system will confirm correct PIN-code with red and green flashes of LED indicator. If the input was incorrect, it will be indicated with long red flash. New input can be attempted after 5 seconds.

4. If the system was armed, it will be disarmed after entering the correct PIN-code.

If the system is disarmed and the engine is stopped, after entering PIN-code the system will enter programming mode.

WARNING!
FACTORY PRESET PIN-CODE IS 1-1-1-1. PLEASE REMEMBER TO CHANGE PIN-CODE, SEE PAGE 28.

Unlocking the trunk



To independently unlock the trunk, no matter if the system is armed or not, press button F and hold it for 1 second.

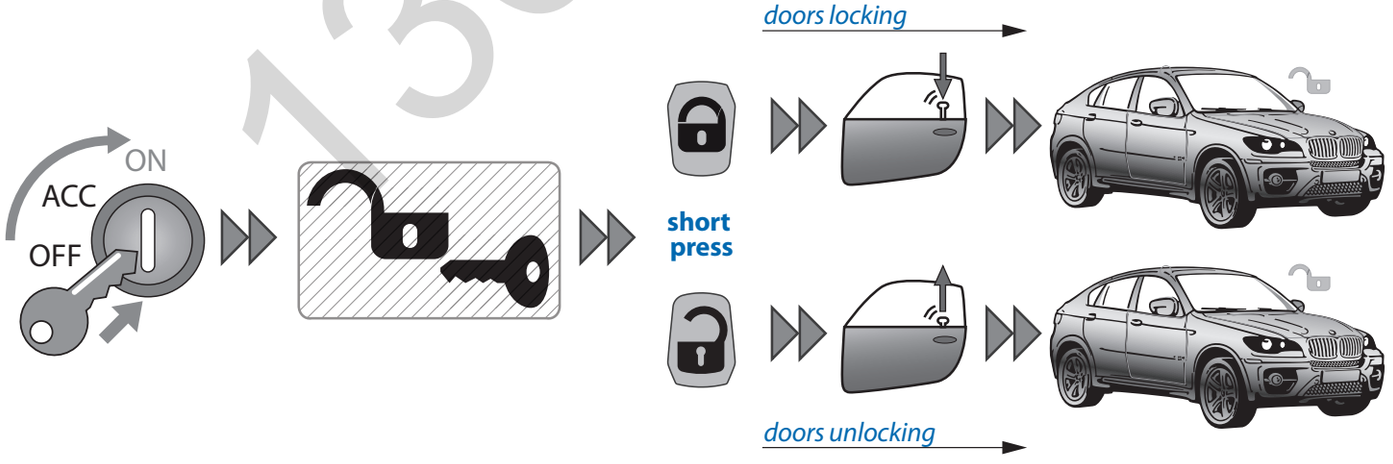
If the system is armed when this action is performed, the trunk will be disarmed, shock and supplementary sensors of the trunk will be disabled. All the other security zones will remain armed.

If the trunk was not opened in 15 seconds after using 'unlock trunk' command, the system will lock it again, enable sensors and arm trunk security zone.

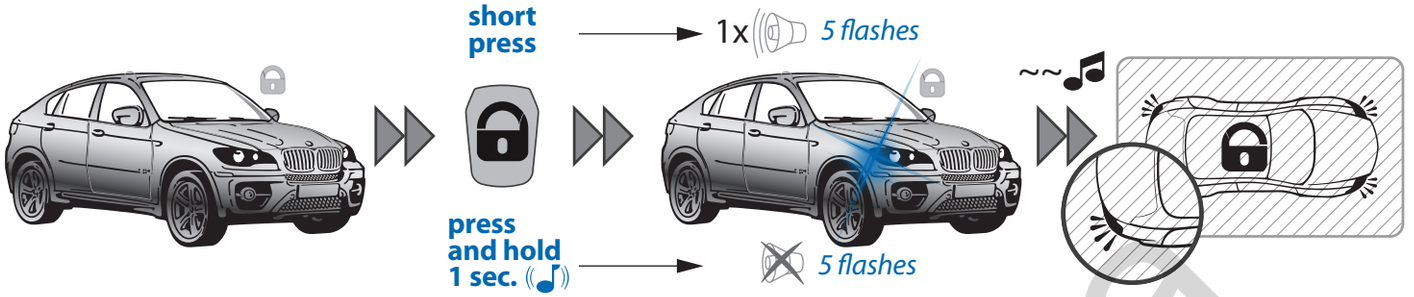
Locking/unlocking doors when the engine is running

The system controls doors locking when the engine is running. To lock doors, shortly press arming button, to unlock doors, press disarming button.

There is an automatic movement lock mode that will lock the doors at the car movement and will unlock them when the ignition is being switched off. In no less than 5 seconds after the ignition was switched on, the doors will be locked automatically when the car starts moving, and unlocked when the ignition will be switched off (programmable). If any door was opened after the ignition had been switched on, automatic locking will be disabled to prevent locking the keys inside the car.



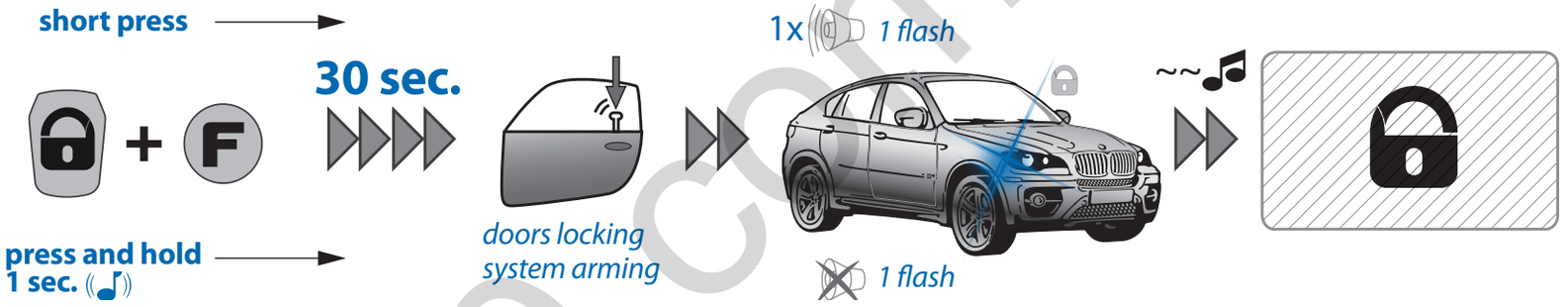
Car search function



To easily find your car on a massive parking, shortly press when the car is armed. The system will sound the siren and flash turn signals 5 times in a row.

To search for car without sound confirmation, press and hold button for more than 1 second.

Delayed arming (Hands Free mode)



If when leaving the car you cannot arm it using a remote (you have your hands full), you can use **delayed arming**.

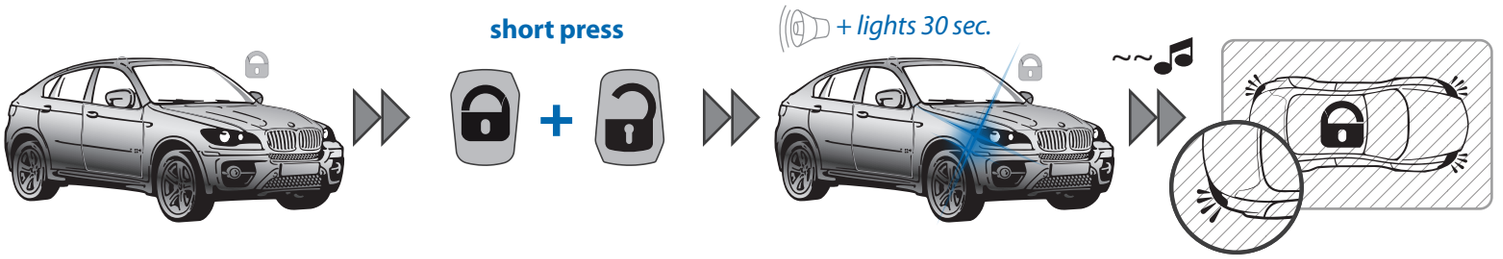
To activate this mode, shortly press and F simultaneously. LED indicator will turn red, the system will lock doors and will arm in 30 seconds, the siren will sound and turn signals will flash once, indicating that the mode is triggered.

To activate this mode without sound confirmation, press and hold both and F for more than 1 second until the sound and vibration signal.

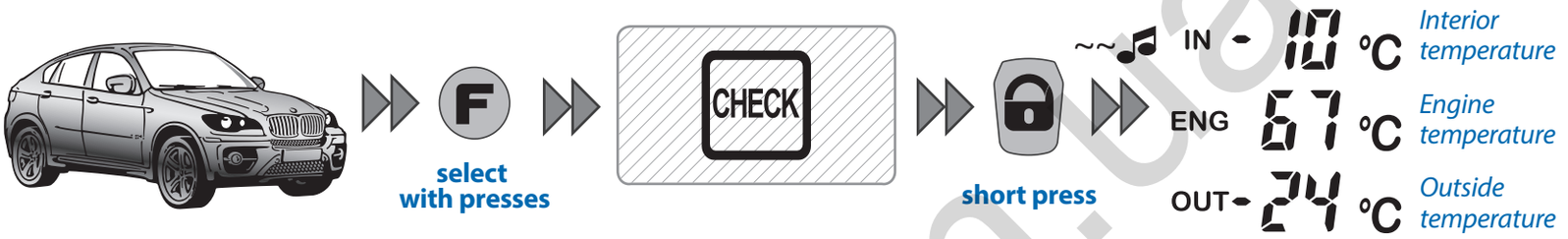
To cancel delayed arming when it is triggered, simply press .

PANIC mode

If your car or you are in danger and you want to draw attention to your car, you can use **PANIC mode**. In this mode the siren will sound and turn signals will flash repeatedly for 30 seconds. To trigger PANIC mode, press and simultaneously. To switch it off, press either or .



CHECK mode, monitoring car parameters

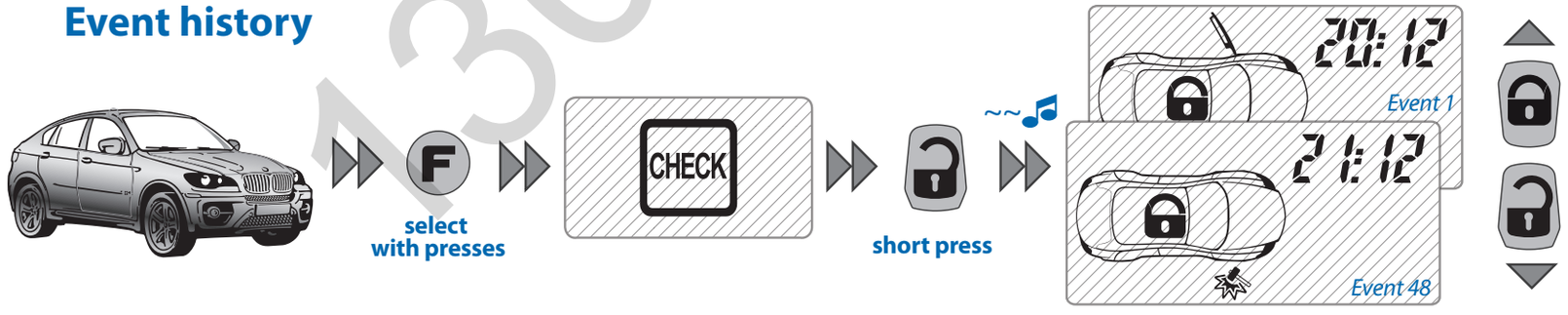


To receive information about engine temperature, interior temperature and on-board voltage, press F button, select CHECK icon and shortly press button.

For 10 seconds, numeric indicator will be sequentially showing interior temperature (IN - 10 °C), engine temperature (ENG 67 °C) and battery voltage (OUT - 24 °C). To exit this mode, shortly press F button, otherwise it will end automatically in 10 seconds.

NOTE: Temperature will only be shown if temperature sensor is connected. The sensor availability depends on the system set. Fuel level and outside temperature indication is available only if there is some information in CAN-bus.

Event history



To access event history into the system's memory, press F button and select CHECK icon and shortly press button.

Navigate several last events using (forward) and (back). Events are displayed by showing time of the events and flashing corresponding indicators. To exit this mode, press and hold F for 1 second.

Remote and automatic engine start

The system allows for **remote engine start** using remote engine start command or **automatic engine start** using preconfigured automatic engine start function. Remote start can be used to heat engine and interior, charge battery or to cool the interior with air conditioning.

Remote and automatic start can only be used when the system is armed.

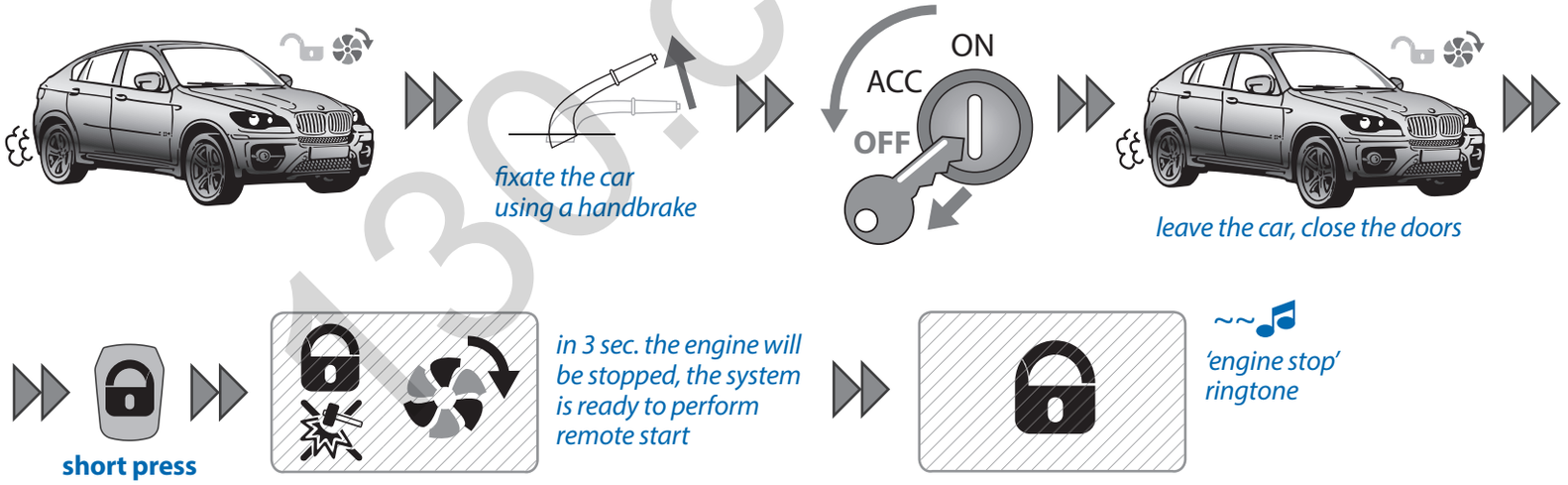
If the car has manual transmission, automatic start will only occur if **programmed neutral procedure** was followed when the car was arming.

Remote and automatic engine start on automatic transmission cars will only occur if transmission selector lever was left in a 'P' position.

When using remote and automatic engine start functions, make sure that the car is secured with handbrake or some other means of fixating the car on a parking position.

While system is in remote and automatic start mode, it keeps performing all security functions save for shock sensor, which will have lower sensitivity during engine start and for a short time after while algorithm adjusts to the new normal. To compensate, motion sensor sensitivity, responsiveness and range will be increased. If any security zone will be triggered, the engine will be immediately stopped and alarm mode will be entered. Herewith all immobilizer functions will be activated.

Programmable neutral procedure (for cars with manual transmission)



If you are planning to use remote and automatic engine start on a car with manual transmission, you will need to perform following actions before arming:

1. While the engine is running, fixate the car with the handbrake and put manual transmission lever (shift-stick) to the neutral position.

2. Turn the key in the ignition lock to the **OFF** position **(the engine should still be running)** and take it out of the lock.

3. Leave the car, close the doors.

4. Press button to arm the car and lock the doors. On LCD remote the engine operation icon will be spinning and security mode status icon will light.

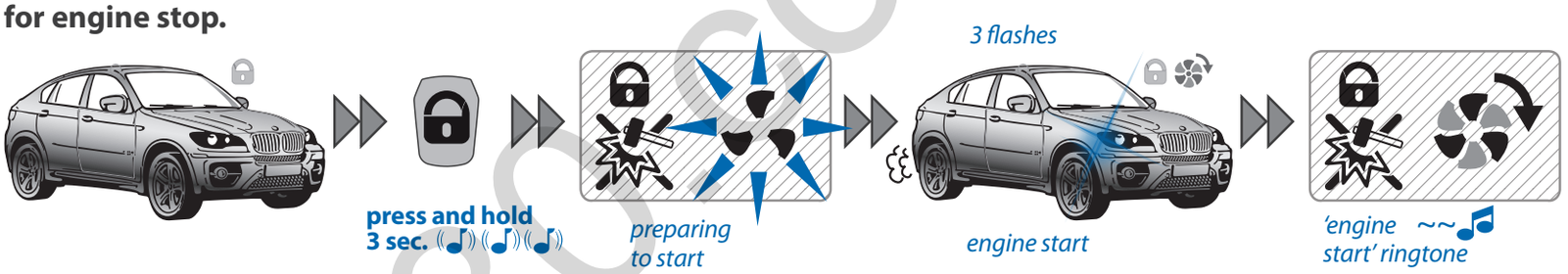
5. The engine will be stopped. Now the system is ready to perform remote and automatic engine start.

This procedure ensures that whenever remote start occurs, your car will not move by itself.

Remote engine start

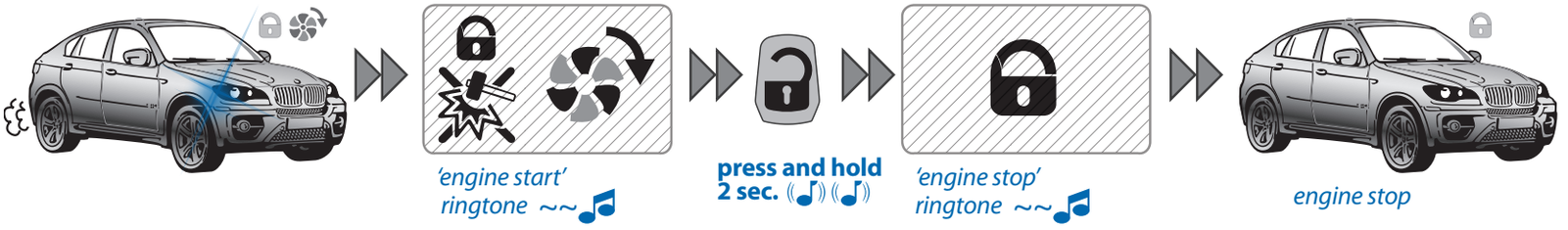
If the system is prepared for remote start, to execute it, press and hold for 3 seconds. Sound signal will confirm the command, LCD will show crossed out shock sensor icon and flashing engine operation icon signifying preparation to the engine start. In a few seconds, the engine will be started, the remote will play **'ENGINE START'** ringtone and show spinning engine operation icon.

Engine operation duration depends on system settings – either heating time or threshold temperature for engine stop.



To remotely stop the engine while it performs heating, press and hold for 2 or more seconds. The engine will be immediately stopped and it will be confirmed by remote playing of **'ENGINE STOP'** ringtone and engine operation icon fading.

The remote will give notification 1 minute before designated engine stop, icon will flash and **'ENGINE STOP IN 1 MINUTE'** ringtone will play every 10 seconds.

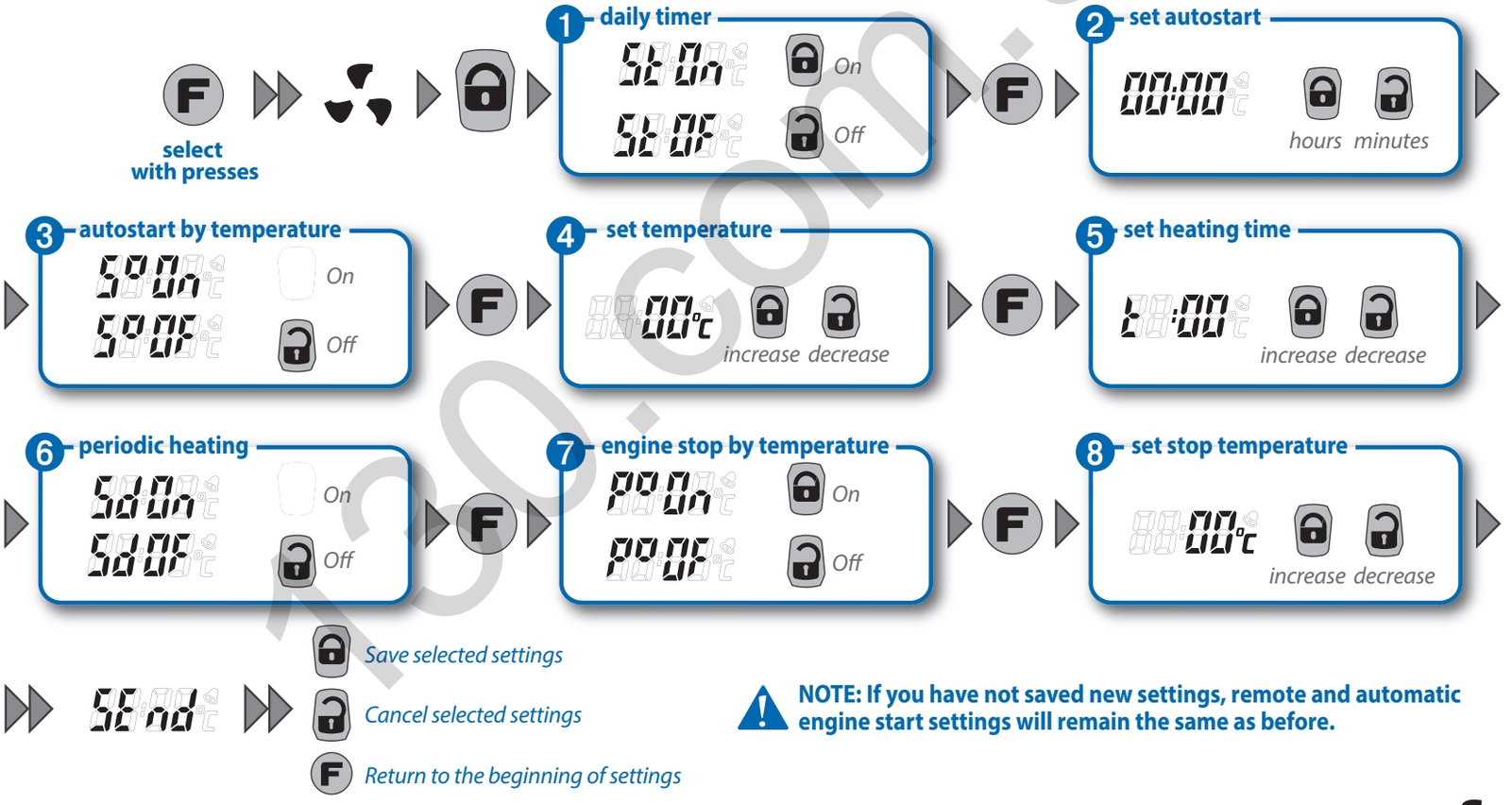


If the engine was started using remote or automatic start, remote engine start command will extend its operation period by 10 minutes. This procedure can be repeated multiple times.

Automatic engine start

The system allows setting up modes of automatic engine start and stop. Synchronized real-time clock on the remote and base unit and other autonomous system settings allow many engine start options without needing to have the remote in command radio range.

> WARNING!
> ONLY ENABLE REMOTE START IF YOUR LOCAL LEGISLATION ALLOWS DRIVERLESS CARS TO HAVE WORKING ENGINE.



Automatic start and engine work conditions programming is done using LCD remote. Select icon by pressing F button and press button to enter remote start functions menu. This menu has 8 sub-levels that can be rotated by pressing F. Sub-level values are changed using and .

When changing settings are done, the values should be saved. To do this, move to the **'send'** sub-level using F presses. Press button to save selected settings. The changes will be sent to the base

unit, double short sound signal will confirm it.

NOTE: If you have not saved new settings, remote and automatic engine start settings will remain the same as before.

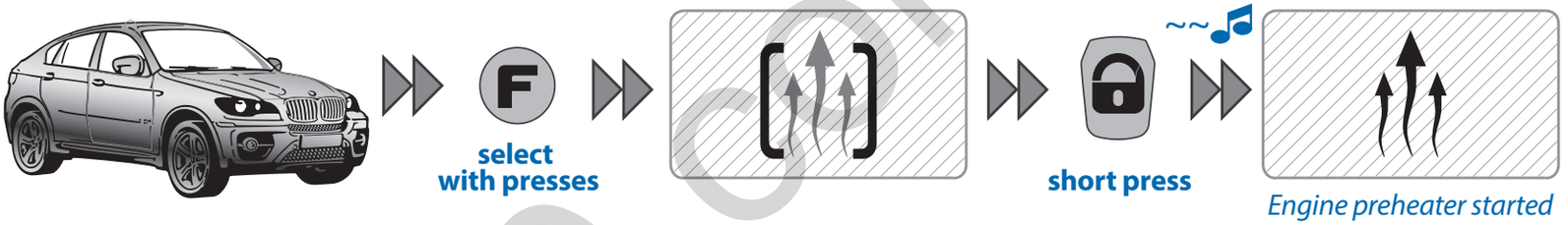
- To move to the settings of the next parameter, shortly press F.

- To exit remote start settings, press and hold F for 1 second (or the menu will be exited in 10 seconds). All unsaved settings will thus be lost.

NOTE: Engine start via temperature is available only if temperature sensor is connected. The sensor availability depends on the system set.

Engine preheater

To switch on engine preheater, select icon by pressing F button and then shortly press button. Sound notification will confirm reception of the command. If preheater monitoring is connected and enabled, LCD will display icon during engine preheater operation.

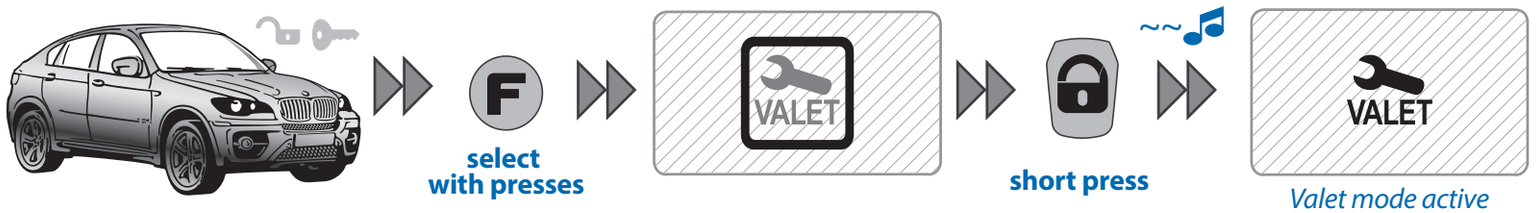


Engine preheater started

To switch off engine preheater using a remote, select icon by pressing F button and confirm by shortly pressing button. Sound notification will confirm reception of command. LCD will display icon.

NOTE: To start/stop the engine preheater immediately, press and hold F button for 2 seconds. Available for the current base unit software.

Maintenance/valet mode

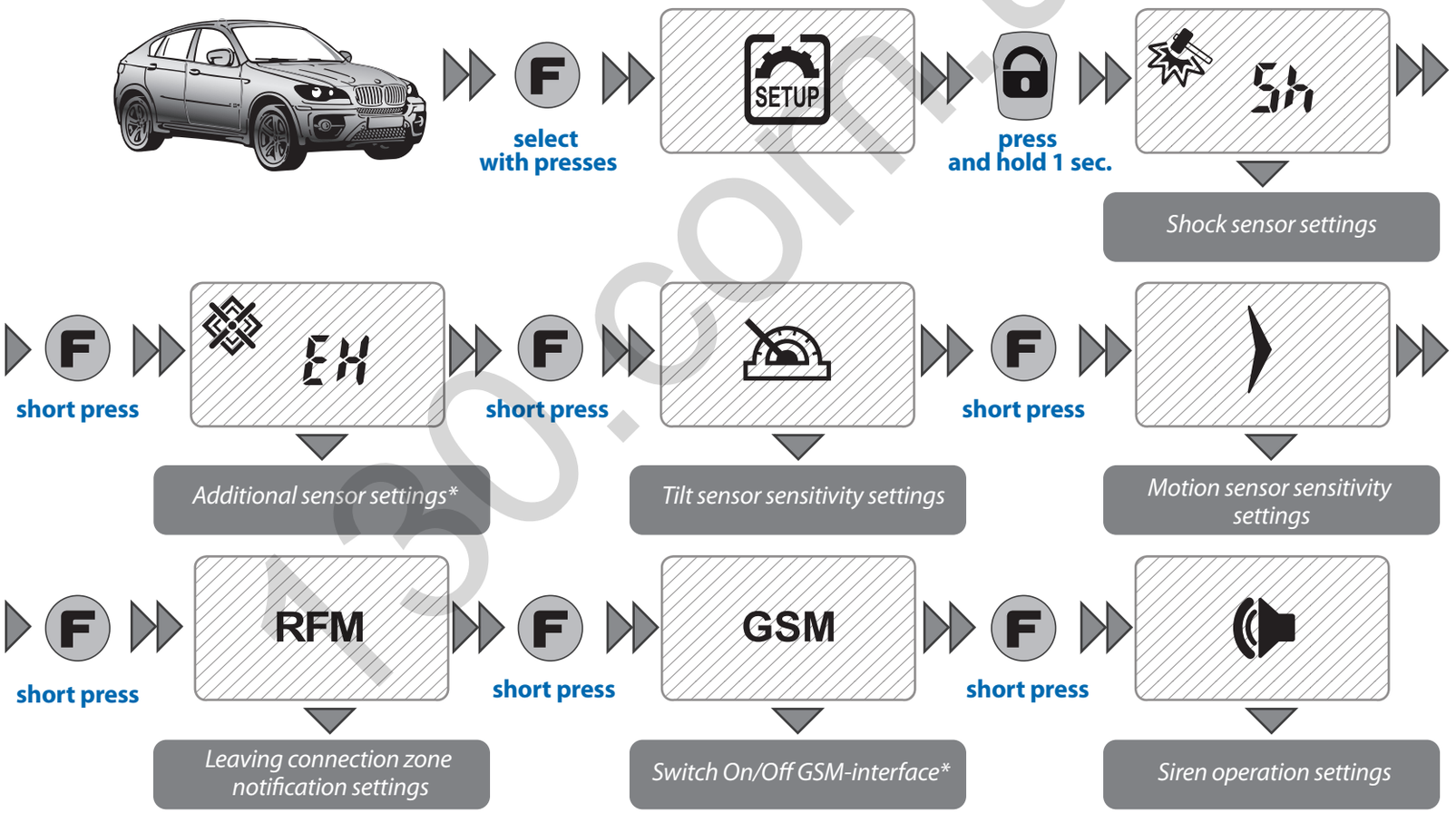


Valet mode active

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 the remote to the valet or the mechanic. Disabling valet mode is not possible without using the remote. This feature is implemented to prevent recording additional remotes during maintenance without the owner knowing.

To activate maintenance mode while the engine is running, select VALET icon by pressing F button and confirm by shortly pressing button. To exit maintenance mode, select icon VALET by pressing F button and confirm by shortly pressing button.

System settings menu



Main system parameters and settings can be changed using LCD remote. To enter the settings menu, select SETUP icon by pressing F button and confirm by pressing button for 1 second. To

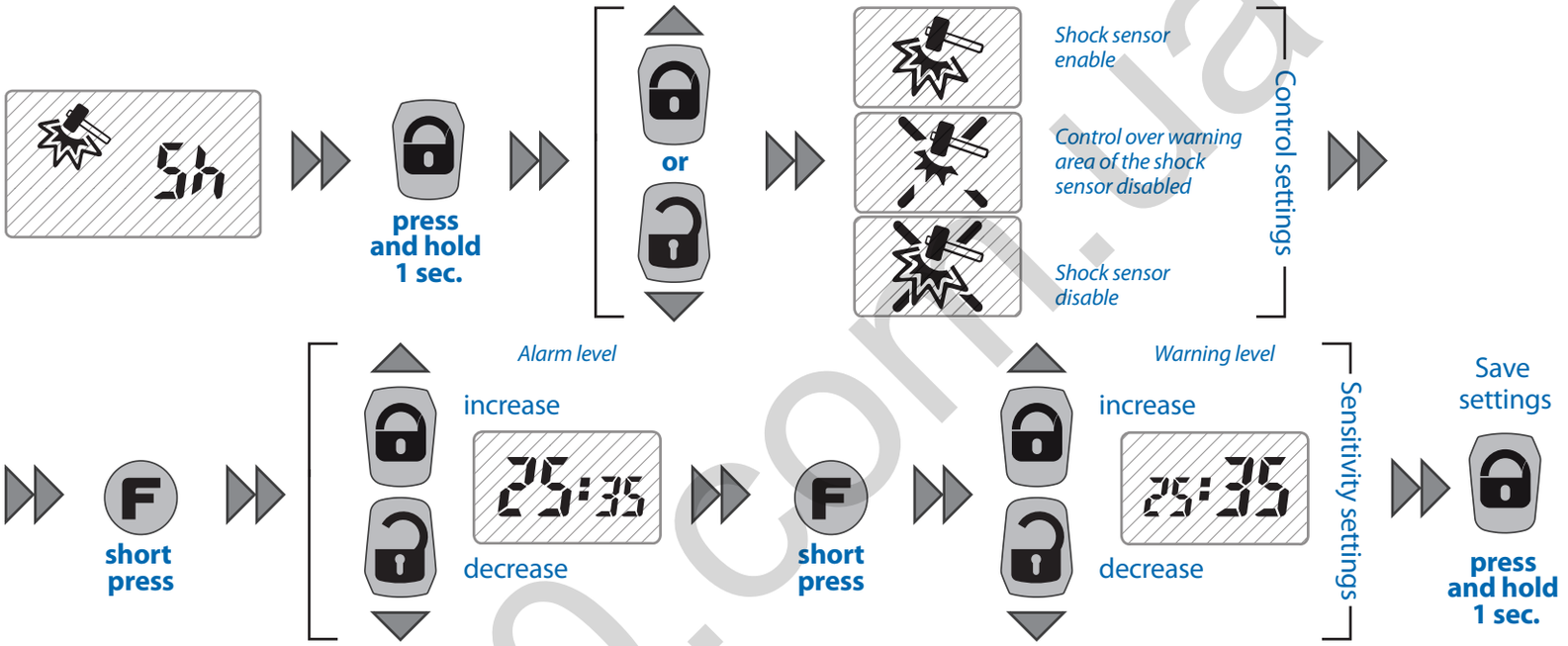
* Additional sensors control and GSM interface are not supported by this model.

cycle between sub-levels of settings, use F button, to enter sub-level of settings, press and hold for 1 second.

If there is no connection to the base unit, LCD will display 'Err'.

Remote sensor settings

Shock sensor control and sensitivity settings

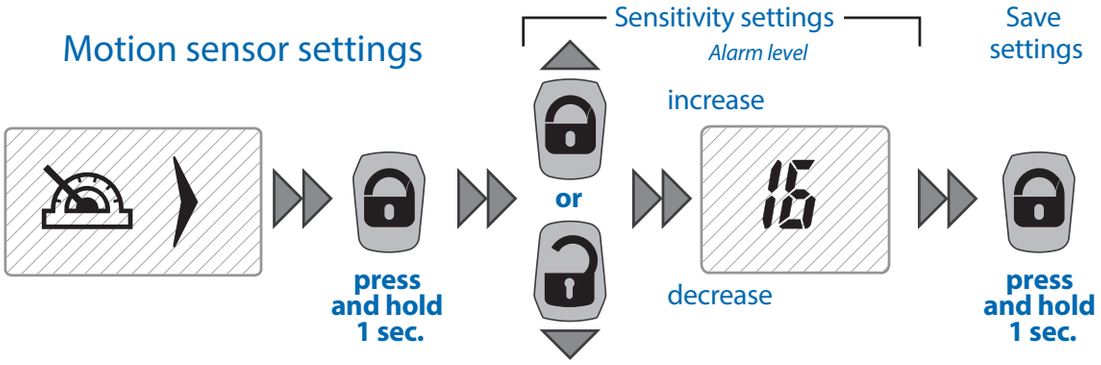


For prompt remote adjustment of alarm and warning levels of the shock sensor enter the settings menu, select icon with F button presses and press button for 1 second. Press F button to cycle between control and sensitivity settings of warning and alarm sensor levels.

icon and left part of the numeric indicator will flash indicating that alarm level of shock sensor is being adjusted. Short presses of button will increase the sensitivity of the alarm level (i.e. sensor will trigger from smaller impacts), short presses of button will decrease the sensitivity of the alarm level of the shock sensor.

Short presses of F button will switch between sensitivity settings of warning and alarm levels of the shock sensor. To save the new sensitivity values of the shock sensor, shortly press . To exit this mode without saving, press and hold F button for 1 second, otherwise it will end automatically in 10 seconds.

Max sensitivity value of warning and alarm level of sensors is 50.



For prompt remote adjustment of alarm and warning levels of the motion/tilt sensor enter the settings menu, select or icon with F button presses and press button for 1 second.

Short presses of button will increase sensitive of motion/tilt sensor, short presses of button will decrease it.

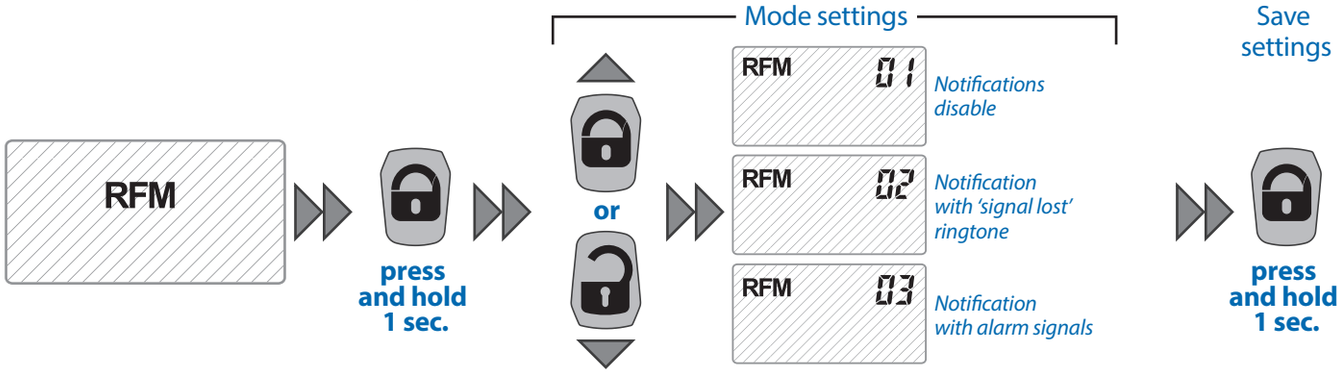
To save the new sensitivity values of the tilt sensor, shortly press . To exit this mode without saving, press and hold F button for 1 second, otherwise it will end automatically in 10 seconds.

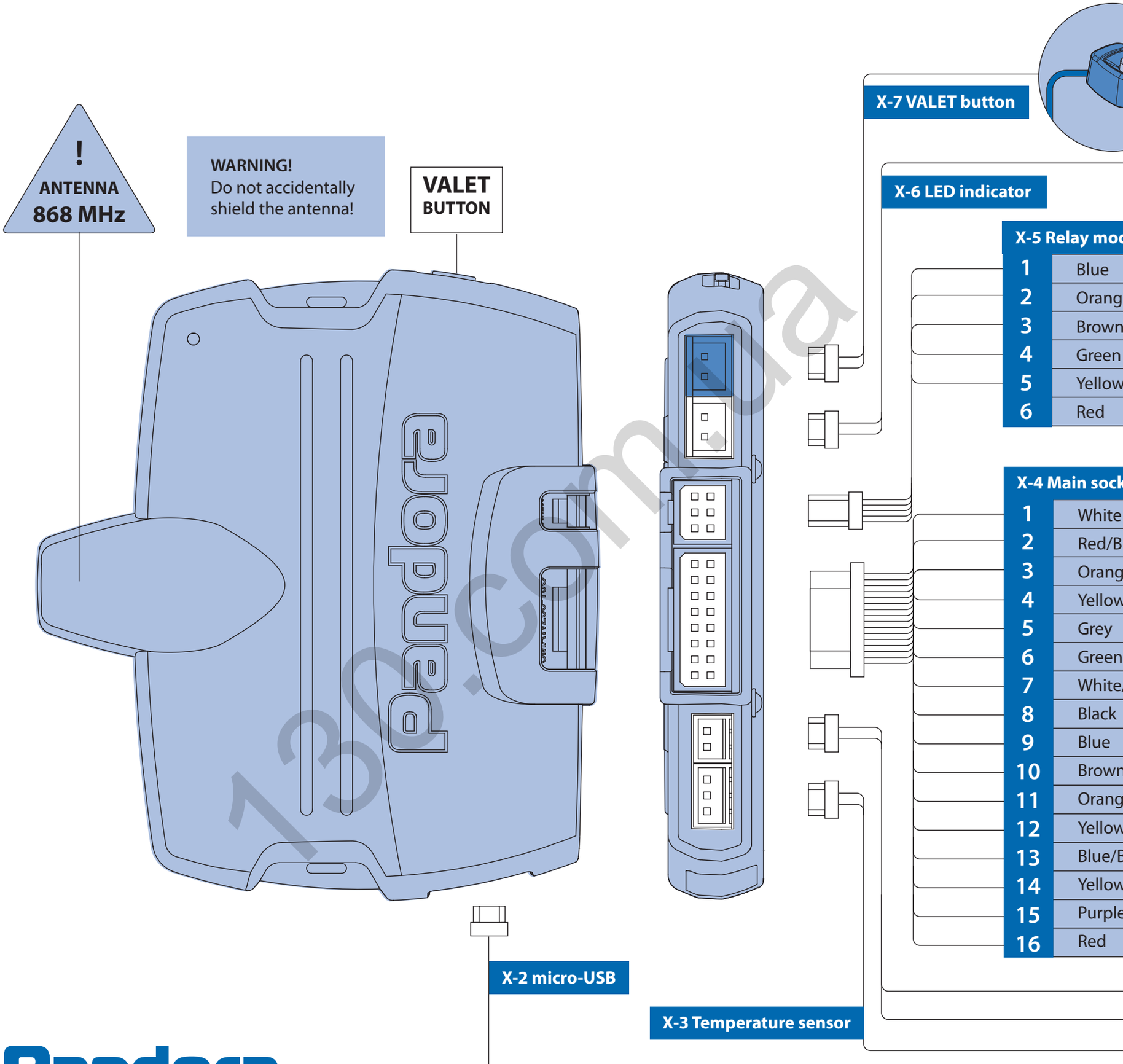
Leaving connection zone notification settings

When the owner with the remote leaves the range of system's radio connection, there are three possible notification options. To set up one of the options, enter the settings menu, select **RFM** icon by pressing F button and confirm by pressing for 1 second. With short presses of or select one of three notification options:

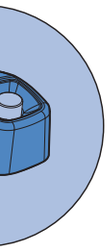
1. RFM 01 disable notifications;
2. RFM 02 enable notification with **'SIGNAL LOST'** ringtone;
3. RFM 03 enable notification with alarm signals.

To exit and save the new settings, press button. To exit this mode without saving, press and hold F for 1 second, otherwise the menu will be exited automatically in 10 seconds.

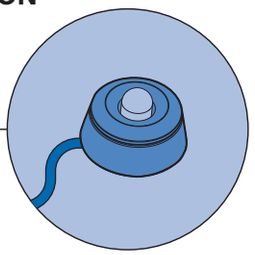



!
ANTENNA
868 MHz
WARNING!
Do not accidentally
shield the antenna!
VALET
BUTTON
X-7 VALET button
X-6 LED indicator
X-5 Relay mod
1 Blue
2 Orang
3 Brown
4 Green
5 Yellow
6 Red
X-4 Main sock
1 White
2 Red/B
3 Orang
4 Yellow
5 Grey
6 Green
7 White/
8 Black
9 Blue
10 Brown
11 Orang
12 Yellow
13 Blue/B
14 Yellow
15 Purple
16 Red
X-2 micro-USB
X-3 Temperature sensor
Pandora
Autogoods “130”

MODEL: DXL-OO5OL



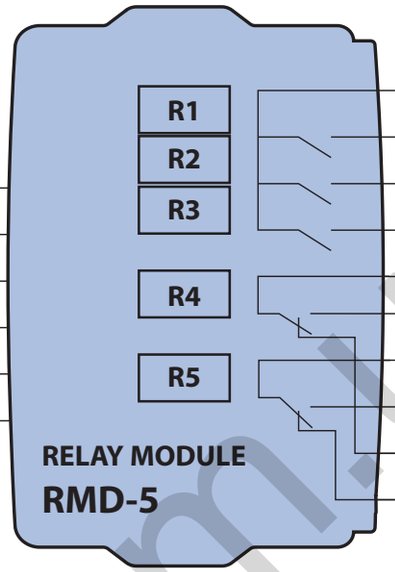
VALET
BUTTON



LED
INDICATOR

dule

	(–)	**OUT-7** • ENGINE BLOCK
e	(–)	**OUT-6** • ACCESSORIES
	(–)	**OUT-9** • IGNITION
	(–)	**OUT-8** • KEYLESS BYPASS
	(–)	**OUT-10** • STARTER
	+ 12V	**POWER +12V**



Red	Fuse 40A
Yellow	
Brown	
Orange	
Green	
Green/Red	
Blue	
Blue/Red	
Green/Black	
Blue/Black	

ket

	3..100V min 8Hz	**TACHOMETER**
lack	(–) 200mA	**OUT-5** • OPEN TRUNK
e/White		**CAN-HIGH**
/White	(–) 200mA	**OUT-4** • OPEN CENTRAL LOCK
	(–)	**INP-2** • DOOR TRIGGERS
	(–) 200mA	**OUT-3** • TO TURN SIGNALS
/Blue	(+)	**INP-5** • BRAKES
	(–)	**GROUND**
	(–)	**INP-4** • HANDBRAKE/NEUTRAL
/White	(–)	**INP-3/IMO**** • HOOD PIN
e/Black		**CAN-LOW**
/Black	(–) 200mA	**OUT-2** • CLOSE CENTRAL LOCK
Black	(–) 200mA	**OUT-1/INP-1/IMI**** • TRUNK TRIGGER
	(+)	**INP-6** • **TO** IGNITION SWITCH
	(+) 2A	**OUT-11** • SIREN
	(+) Fuse 3A	**POWER +12V**

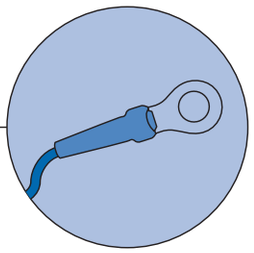
WARNING!!!
Total current relay R1 + R2 + R3 should not exceed 40A!

WARNING!!!
For proper installation a connected laptop with AlarmStudio software is required. Switch the system to programming mode (see page 30) and select your car model in AlarmStudio for detailed installation instructions. AlarmStudio can be downloaded from pandorainfo.com

* See 'System set' on page 4
** Connect when keyless start function in Toyota, Lexus is enabled

X-1 Engine Preheater

1	White	LIN OUT
2	Black	LIN IN



TEMPERATURE SENSOR
DS-1820*

Wiring description

X-4 socket (main)

Wire 1 (White) (tachometer input) It is analog input that should be connected to wire of tachometer or signal wire of injector, a wire with stable impulses of any polarity that correspond with motor shaft rotation frequency.

Wire 2 (Red-black) (OUT-5) Factory setting is 'Open trunk'. Negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate in accordance with selected logic.

Wire 3 (Orange-white) ('CAN-High') It connects to appropriate CAN-High wire of the car.

Wire 4 (Yellow-white) (OUT-4) Factory setting is 'Open central lock'. A negative impulse of 0,8 seconds is formed on the wire to open central lock. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate in accordance with selected logic.

Wire 5 (Grey) (INP-2) Factory setting is 'Door switches'. This wire connects to a wire that becomes grounded when the door opens. This input is multipurpose, it can operate in accordance with selected logic.

Wire 6 (Green) (OUT-3) Factory setting is 'Control turn indicators'. This wire connects to the hazard flashers button. Negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate in accordance with selected logic.

Wire 7 (White-blue) (INP-5) Factory setting is 'Brake On/Off switch'. This wire connects to the brake pedal button where 12V voltage appears when the pedal is pressed (stop lights wire). Brake pedal signal is one of the system's security zones. This input is multipurpose, it can operate in accordance with selected logic.

Wire 8 (Black) (ground) It should be connected to the car body in a grounding spot. This wire should be connected FIRST during installation.

Wire 9 (Blue) (INP-4) Factory setting is 'Neutral/Handbrake'. This wire connects to appropriate wire of the car (preferably handbrake button). This input is multipurpose, it can operate in accordance with selected logic.

Wire 10 (Brown-white) (INP-3/IMO) Factory setting is 'Front hood limit switch'. This wire connects to appropriate wire that becomes grounded when the front hood opens. This input is multipurpose, it can operate in accordance with selected logic. The channel can be programmed as IMO input, for keyless bypass of the immobilizer (connects according to the installation diagram).

Wire 11 (Orange-black) ('CAN-Low') It connects to appropriate CAN-Low wire of the car.

Wire 12 (Yellow-black) (OUT-2) Factory setting is 'Close central lock'. A negative impulse of 0,8 seconds is formed on the wire to close central lock. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 13 (Blue-black) (OUT-1/INP-1/IMI) Factory setting is 'Trunk limit switch'. This wire connects to appropriate wire that becomes grounded when trunk opens. This output is multipurpose, it can operate as input or output in accordance with selected logic. The channel can be programmed as IMI output, for keyless bypass of the immobilizer (connects according to the installation diagram).

Wire 14 (Yellow) (INP-6) Factory setting is 'Ignition'. This wire connects to ignition switch or to appropriate wire where 12V voltage appears when ignition is enabled and doesn't disappear until the moment ignition is disabled. This input is multipurpose, it can operate in accordance with selected logic.

Wire 15 (Purple) ('siren') It connects to siren control wire (+) (maximum load current is 2A). This channel is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 16 (Red) ('Power supply' 12V) It should be connected to reliable conductor with constant voltage of 12V.

X-5 socket (start relay module)

Wire 1 (Blue) (OUT-7) Factory setting is 'N.O. blocking'. The channel is used to control blocking relay with normally open logic (it becomes grounded when switching on the ignition and security system is not armed). A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 2 (Orange) (OUT-6) Factory setting is 'Accessories'. The channel is used to control accessories. If 'Car with START/STOP button' setting is enabled, the channel will control brake pedal during remote or automatic engine start. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 3 (Brown) (OUT-9) Factory setting is 'Ignition'. This output is used to switch on ignition. It allows for automatic engine start, turbo timer, ignition support and incut connection to ignition. If 'Car with START/STOP button' setting is enabled, the channel will operate in impulse mode to control the button. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 4 (Green) (OUT-8) Factory setting is 'Bypass'. Output activates during remote or automatic engine start. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

Wire 5 (Yellow) (OUT-10) Factory setting is 'Starter'. This output is used to switch on starter of the car. A negative output of additional channel with maximum load capacity 200mA. This output is multipurpose, it can operate as input or output in accordance with selected logic.

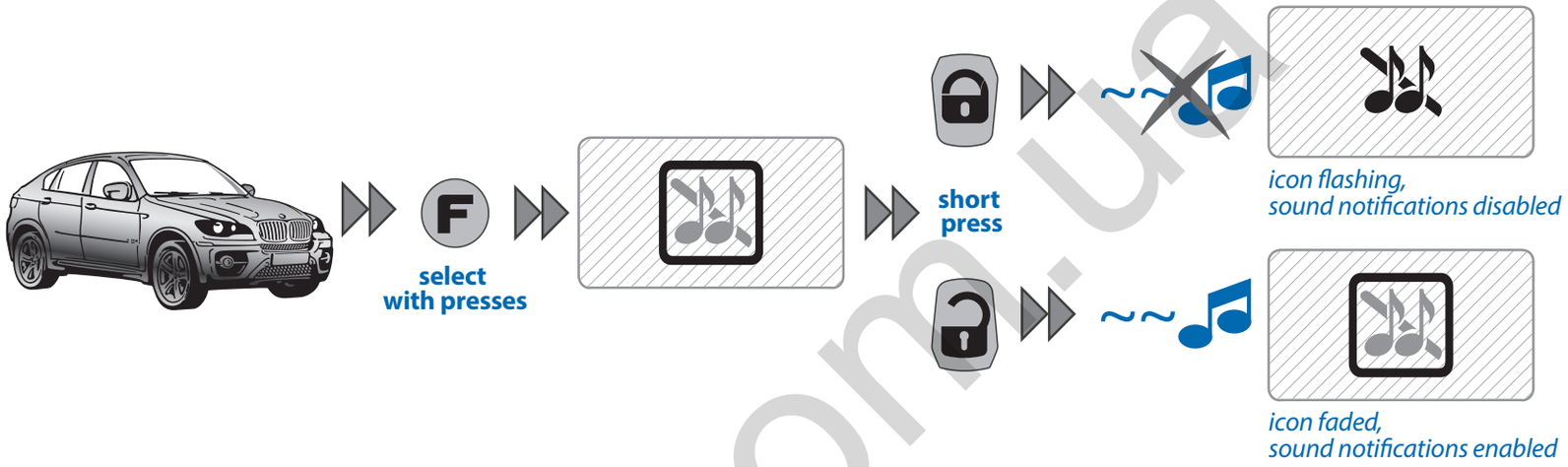
Wire 6 (Red) It is relay module power supply 12V.

Silent mode of the remote

This function disables all sound signals of the remote, this mode does not apply to alarm clock and main zones triggering. LED indication and vibration remain enabled.

To set silent mode of the remote, select icon by pressing F button.

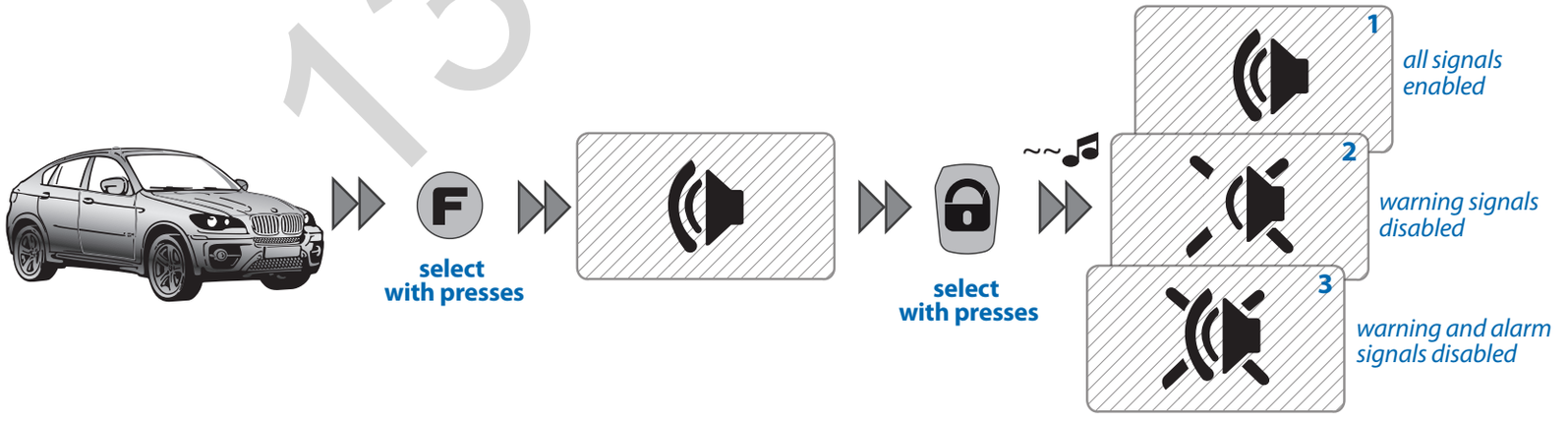
This function can be set using button (all sound signals are disabled) and button (all sound signals are enabled).



Siren signal settings

To configure siren sounds, enter system settings menu and select icon by pressing F button. Select one of three siren sound options using or button.

To exit this mode and save, press and hold button for 1 second; to exit without saving, press and hold F button for 1 second or this mode will end automatically in 10 seconds.



Time settings

To set up time, select clock icon with F button presses. With short presses of set hours, with short presses of set minutes. Longer presses of buttons and will cause numbers to rotate faster.

To proceed to setting alarm clock, shortly press F button, to exit this mode, press and hold F button for 1 second, otherwise it will be exited automatically in 10 seconds.

Changing the factory preset service PIN-code

To improve the protection of the system, we recommend you to change service PIN-code.

1. Disarm the system, switch off the ignition.

2. Using VALET button, input service PIN-code. Factory preset PIN-code is **1-1-1-1**.

3. Using VALET button, input the first digit of the code (press the button a number of times, equal to the first digit; pauses between presses should not exceed 1 second). The system will confirm entering of the first digit with red LED indicator flash.

4. Similarly input the second, third and fourth digit. Every input will be confirmed with red LED flash.

5. The system will confirm correct PIN-code with red and green LED flashes and proceed to the programming mode. If the input was incorrect, it will be indicated with long red flash and the system will proceed to previous mode. New input can be attempted after 5 seconds.

6. To proceed to setting service PIN-code, press VALET button twice. The system will confirm with double siren signal and double LED red flashes.

• LED indicator is not lit. Press VALET button a number of times, equal to the first digit. LED will flash orange for every press. Pauses between presses should not exceed 1 second;
• the system will confirm input of the first digit with red LED flash;
• similarly input other digits of PIN-code;
• the system will confirm with red and green LED flashes;
• input PIN-code again;
• if the double input of new service PIN-code was correct, the system will confirm it with red and

green flashes of LED indicator and new code will be recorded, the system will enter programming mode;

• if the input was incorrect, it will be indicated with red flash and the system will enter programming mode.

When you finished inputting PIN-code, LED indicator will be faded and the system will wait for new level input.

WARNING!
PLEASE WRITE DOWN YOUR NEW PIN-CODE ON PAGE 11.

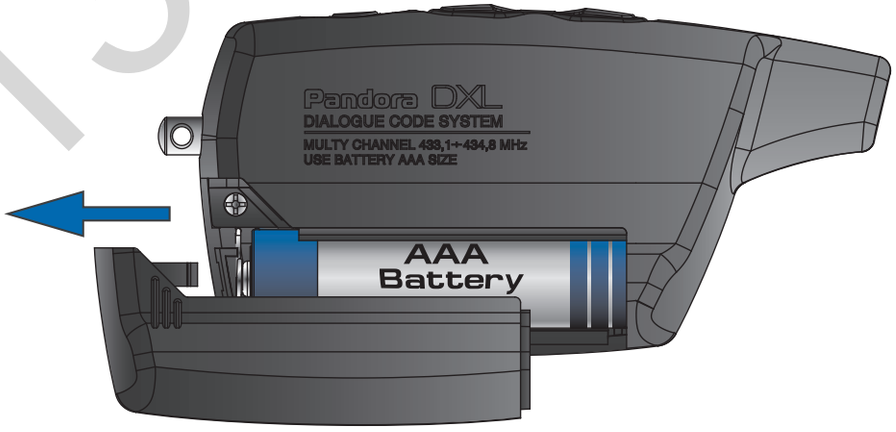
Checking the number of recorded remotes

Number of recorded remotes can be checked every time the ignition is switched on when disarmed. Number of orange LED flashes will indicate the number of remotes recorded.

Number of recorded remotes can also be checked by taking off and putting back on battery terminal. The system will sound the siren several times, equal to the number of recorded remotes.

Replacing a battery in the remote

If high quality batteries are used, service-security system remote can function up to 4 months without needing a replacement. Battery needs to be replaced if the remote is not turning on or the icon has only one bar left and starts flashing.



To replace the battery:

• move battery cover lock in the direction shown with arrow;
• take the battery out and place a new one on its place;
• the remote is ready for use (switch it on by pressing and holding F for 3 seconds).

It is recommended to keep an extra AAA battery in the car.

Changing core settings

Changing core settings via computer

The system allows programming all settings and updating software of the base unit via the interface micro-USB cable. It does not matter, whether base unit is installed into a vehicle or not. Software reads the current settings and allows changing them. If base unit has not yet been installed in the vehicle, it should be powered via micro-USB cable while programming. To program using a computer connected via cable, you need a standard micro-USB cable, a computer with Windows and a special piece of software – **Pandora AlarmStudio**.

AlarmStudio can be downloaded from the official company web-site pandorainfo.com

In preparation to the programming following stages should be followed:

- connect micro-USB cable to any free USB socket of the computer;
- start Pandora AlarmStudio;
- enter the programming mode by entering the service PIN-code on the base unit using base unit's VALET button;
- use AlarmStudio for installation tips and to adjust settings.

Entering programming menu, PIN-code input:

1. Disarm the system, switch off the ignition.
2. Connect the base unit of the system to a computer via micro-USB cable (X-2 socket).
3. Using VALET button, input service PIN-code. Factory preset PIN-code is **1-1-1-1**.
4. Using VALET button, input the first digit of the service code (press the button a number of times, equal to the first digit; pauses between presses should not exceed 1 second). The system will confirm entering of the first digit with red LED indicator flash.

5. Similarly input the second, third and fourth digit. Every input will be confirmed with red LED flash.

6. The system will confirm correct PIN-code with red and green LED flashes and proceed to the programming mode. If the input was incorrect, it will be indicated with long red flash and the system will proceed to previous mode. New input can be attempted after 5 seconds.

Changing core settings using VALET button

Entering programming levels:

1. Using VALET button, input the desired level number (press the button a number of times, equal to this number; pauses between presses should not exceed 1 second).

The system will confirm correct input with red LED flashes and short siren signals and proceed to the desired level. If the input was incorrect, the system will not confirm input and will await a new level input after a series of green and red flashes.

2. While changing the settings of levels 1 – 21, move from selected level to the next one by shortly pressing VALET button. The system will confirm moving to the next level with short siren signals. The number of signals corresponds with selected level number.

3. When one of levels 6 – 21 is selected, indicator LED will display current state of the selected level with red or green light. Setting is changed with  or  .

Most of the times  button is **'enable'** (LED lights green),  button is **'disable'** (LED lights red). To exit programming mode and save the settings, switch on the ignition at any stage of programming (except stages that require you to switch on ignition during programming process).

Level 1– Recording remotes into the system's memory

Enter the first level of programming. Remotes are recorded (paired) one by one. To pair the remote, press three buttons simultaneously (on the remote) and hold them for 1 second (until a short beep for the LCD remote; until the LED fades for the additional remote), then release the buttons. If the recording was successful, LCD remote will emit 2 short beeps and the base unit will emit 1 beep, after that you can move to recording the next remote. The pause between recordings of remotes should not exceed 20 seconds.

To finish the recording of the remote units into the system, VALET button should be pressed again, the status LED will produce series of red and green flashes; then switch on and off the ignition to leave the programming mode.

	Name of function	LED indicator	
		Red • Button 2 	Green • Button 1 
Level 1	Recording remotes into the system's memory	See description of levels	
Level 2	Changing the factory preset service PIN-code		
Level 3	Recording the idle speed to the system's memory		
Level 4	Resetting to factory settings		
Level 5	Selecting car model		
Level 6	Transmission type (manual or automatic)	Manual transmission	Automatic transmission
Level 7	Engine operation control	Tachometer	Dashboard indicator
Level 8	Tachometer signal source	CAN Tachometer	Analog tachometer
Level 9	Ignition connection type	In series	Parallel
Level 10	Turbo timer	Disabled	120 sec.
Level 11	Delay before starter is enabled	Gas (2 sec.)	Diesel (15 sec.)
Level 12	Switching on N.C., N.O. blocks	Disabled	Enabled
Level 13	Locking doors when on movement start and unlocking doors when ignition is switched off	Disabled	Enabled
Level 14	Re-arming	Disabled	Enabled
Level 15	Delay of doors triggers arming (for interior lighting)	0 sec.	45 sec.
Level 16	Additional locking command after ignition is switched off when armed	Disabled	Enabled
Level 17	Turn signals control	Direct	Button
Level 18	Control over hazard lights	Potential	Impulse
Level 19	Control over original security system	Disabled	Enabled
Level 20	Disarming original security system before remote start	Disabled	Enabled
Level 21	Setting up keyless bypass of built-in immobilizer	See description of levels	

Level 2 – Changing the factory preset service PIN-code

• Indicator LED is not lit. Press VALET button the number of times equal to the first digit of the security code. Each pressing of VALET button is followed by orange flash of the indicator. The interval between the presses should not exceed 1 second.

• The input will be confirmed by red flash of indicator.

• Enter the other numbers in the same manner.

• The fourth number input will be confirmed by series of red and green LED indicator flashes.

• Enter all four numbers again.

• If you were able to correctly enter code twice, the indicator will produce series of red and green flashes and a new PIN-code will be recorded, the system will return to the programming mode.

• In case of the incorrect code input, the indicator will flash red and the system will return to the programming mode.

After the input is complete, the indicator goes out, the system awaits a new programming level input.

Level 3 – Recording the idle speed to the system's memory

At this programming level the idle turns speed of the engine is recorded (into non-volatile memory). Upon entering this level you need to switch the ignition on and start the engine (it should be warmed-up and the idle speed should match a normal rate for the pre-heated engine). Wait until the stable idle speed is reached (it takes about 30 seconds). Then press VALET button once. Successful recording of the idle speed will be confirmed with 1 beep, if recording has failed, 5 sound signals will be emitted. The ignition should be switched off after recording. While on this programming level, you can start and stop the engine many times – it will only be exited on VALET button press.

Level 4 – Resetting to factory settings

To reset to the factory settings, you need to enter fourth programming level, then press and hold VALET button for 3 seconds until siren sound. Once VALET button is released, the status indicator will confirm a successful reset to factory settings with a long red flash.

Level 5 – Selecting car model

On this level car model can be selected from a pre-programmed list in the built-in multisystem CAN adapter.

Car model is represented here as four digits 1 to 9, the first two digits indicate car makes, the next two digits indicate models.

Enter this level (to enter level 5, press VALET button 5 times after moving to the programming mode) to select car model:

• Status LED is not lit. Press VALET button the number of times equal to the first digit of the car model. Each pressing of VALET button is followed by orange flash of the indicator. The interval between presses should not exceed 1 second;

• Enter the other numbers in the same manner.

When finished selecting of a car model, the system will return to the programming mode. LED indicator will confirm CAN-bus activity by series red and green flashes.

The list of supported car models and additional information is on the official company web-site pandorainfo.com

WARNING!
IN CASE CAR MODEL DIGITAL CODE YOU ENTERED DOES NOT EXIST, LED INDICATOR WILL PRODUCE SERIES OF RED AND GREEN FLASHES (SAME AS IF CAR MODEL SELECTION WAS CORRECT) AFTER INPUT WAS DONE, BUT DEFAULT CAR MODEL (11 11) WILL BE SELECTED.
BE WARNED, THERE IS NO WAY OF TELLING IF INPUT WAS INCORRECT.

WARNING!
IF LED INDICATOR DOES NOT CONFIRM CAN-BUS ACTIVITY BY GREEN FLASHES AFTER CAR MODEL WAS SELECTED, LOCK AND UNLOCK DOORS TO WAKE THE BUS. DO NOT SWITCH ON IGNITION! IT CAN MAKE SYSTEM TO EXIT A PROGRAMMING MODE. IF LED INDICATOR DOES NOT CONFIRM CAN-BUS ACTIVITY BY GREEN FLASHES AFTER WAKING THE BUS, CAR MODEL SELECTION WAS DONE INCORRECTLY – THE SYSTEM DOES NOT RECOGNISE DIGITAL BUS. TRY TO REPEAT INPUT OF CAR MODEL CODE.

Level 6 – Transmission type (manual or automatic)

The factory preset is **manual transmission**. To enable remote (or automatic) start, perform the programmable neutral procedure (see page 15), which normally means activating handbrake

while engine is still running. If **automatic transmission** is selected, automatic start will be enabled whenever the system is armed. Herewith neutral/handbrake limit switch will be checked while attempting to start engine.

Level 7 – Engine operation control

The factory preset is **tachometer**. The system monitors if there are tachometric signals by analog input or by digital CAN-bus, depending on level 8 settings. To monitor engine operation by tachometer, it is necessary to register idle turns speed on the level 3. 'Dashboard indicator' option disables monitoring of tachometric signal and enables the control of engine operation by analog **dashboard indicator** input. Starter operation will be stopped when selected dashboard indicator (e.g. battery or oil pressure) fades during remote start.

Level 8 – Tachometer signal source

The factory preset is **tachometer CAN**. This setting allows the system to read tachometer signals from digital CAN-bus. For analog input it is necessary to change this setting to **tachometer analog**.

Level 9 – Ignition connection type

The factory preset is **parallel**. The setting determines logic of 'Ignition' channel (wire) operation. If the setting is changed to **in series**, the system will block switching ignition on when armed. When ignition is connected in series (by incut), control is performed via analog input; control by CAN will be disabled.

Level 10 – Turbo timer

The factory preset is **disabled**. This level determines time the engine will keep running after the ignition lock was turned to OFF with a key. Turbo timer will be activated only if engine was running with a key for more than 1 minute and **neutral/handbrake** input registered a change (i.e. only after actually riding a car).

Level 11 – Delay before starter is enabled

The factory preset is **2 seconds**. Using this setting, period of switching electronics on before engine start can be extended to heat spark or glow plugs.

Level 12 – Switching on N.C., N.O. blocks on movement start

The factory preset is **disabled**. If this level is enabled, channels, which are set as Normally Closed and Normally Open engine blocks, will only be activated when car movement is registered by the base unit.

Level 13 – Locking doors on movement start and unlocking doors when ignition is switched off

The factory preset is **disabled**. If this level is enabled, the system will close the central lock of the car on movement start and will open it when ignition is switched off.

Level 14 – Re-arming

The factory preset is **disabled**. When enabled, re-arming will commence in 30 seconds, if doors were not opened or ignition was not switched on (i.e. the system was disarmed accidentally). When the system is re-arming, closing impulse is issued to the central lock.

Level 15 – Delay of door triggers arming (for interior lighting)

The factory preset is **disabled**. If this setting is enabled, the system will ignore the state of door triggers when arming for 45 seconds.

Level 16 – Additional locking command after ignition is switched off when armed

The factory preset is **disabled**. This setting allows to send additional closing impulse after engine was stopped when the system is armed. If this setting is enabled, impulse will be sent to the 'close central lock' wire when engine is stopped after any kind of remote start (remote start, automatic start, turbo timer, ignition support and programmable neutral).

Level 17 – Turn signals control

The factory preset is **button**. This level allows to select control option for turn signals. The system simulates press of 'Hazard lights' button. The wire of designated channel should be connected in parallel to hazard lights button. Selecting **direct** control, the system will operate using direct control over turn signals, sending impulses equal to the number and duration of required flashes.

Level 18 – Control over hazard lights

The factory preset is **impulse**. This setting simulates button operation without fixing it in pressed position. Turn signals are switched on and off with impulses. When **potential** is setting, it simulates button operation with fixing it in pressed position. Original logic of hazard light button is used: turn signals flash while button is in pressed position.

Level 19 – Control over original security system

The factory preset is **disabled**. If this setting is enabled, alarm will take control over original security system using digital buses of the car.

Level 20 – Disarming original security system before remote start

The factory preset is **disabled**. If this setting is enabled, before remote or automatic engine start, original security system will be disarmed by digital bus of the car (after original security system is disarmed, the system will send a command to lock doors).

Level 21 – Setting up keyless bypass of built-in immobilizer

This level enters programming mode to teach algorithmic keyless bypass of built-in immobilizer. LED indicator will be lit green when on this level. If system installation was performed correctly on successful engine start using a key, LED indicator will flash green and siren will emit a short signal. To save and finish, press VALET button. Now the system should be able to simulate key for remote starts. For more in-depth instructions, use AlarmStudio.

Siren sounds and turn light signals

Signal name	Signal description
Alarm mode, PANIC mode	Incessant sound and light signals for 30 seconds
Arming	1 sound and 1 light signals
Disarming	2 sound and 2 light signals
‘Sensors triggered’ signal when disarming	4 sound and 4 light signals
‘Sensor malfunction’ signal when arming	4 sound and 4 light signals
Sensor warning level triggered	3 sound and 1 light signals
Car search	5 sound and 5 light signals

Meaning of indicator LED colors

Indicator status	Meaning
Short red flashes	The system is armed
Lit red	The system is preparing for automatic arming
Orange flash	Confirms VALET button press
Orange flashes	Confirms a number of recorded remotes (when switching on ignition)
Red and green flashes	PIN-code confirmed
Faded	The system is disarmed

Glossary of terms

AlarmStudio – an installation helper software that is to be installed on a Windows PC (preferably, laptop). AlarmStudio allows changing any parameters in the system and provides installation tips for particular cars. Easy to use and intuitive, AlarmStudio is required for in-depth and highly customized installation. Installation without AlarmStudio, although entirely possible, may be incomplete and lacking in functionality.

Base Unit – it is a small box that acts as a 'brain' of the system. It contains a printed circuit board, sensors and supplementary devices like 3D accelerometer and sockets for connecting it to car systems. Powerful processor unit and ingenious algorithms allow for hundreds of programmable parameters, accessible via AlarmStudio (and via VALET button for some).

Car alarm system – a set of third-party electronic devices that are installed in a car body and connected to its electric and data networks in order to provide enhanced security.

Car service-security system – same as car alarm system but with more service options, e.g. telemetry, remote engine start, various control options.

Channel – a name we use in our service-security systems to indicated a combined position and function of particular output socket and corresponding wiring.

Original security system – a built-in security system that is present on some car models. You can set up particular logic of interaction between this system and ours – control over it.

Telemetry – in car service-security systems is a combined capability to gather, process and convey to user various data regarding the car – temperatures, voltages, fuel level, sensor data, etc.

Timer channel – a term we use in our service-security systems to name channels that activate additional options or accessories (e.g. seat heating, light path, additional block relays). Any channel (output) can be set as timer channel (up to 4), that can be activated from the remote, or incorporated into scheduled and sequential routines. To assign timer channels, use AlarmStudio.

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

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 _____

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 Pandora DXL-0050L

Serial number _____

Service center name, full address and installer's stamp _____

_____

_____

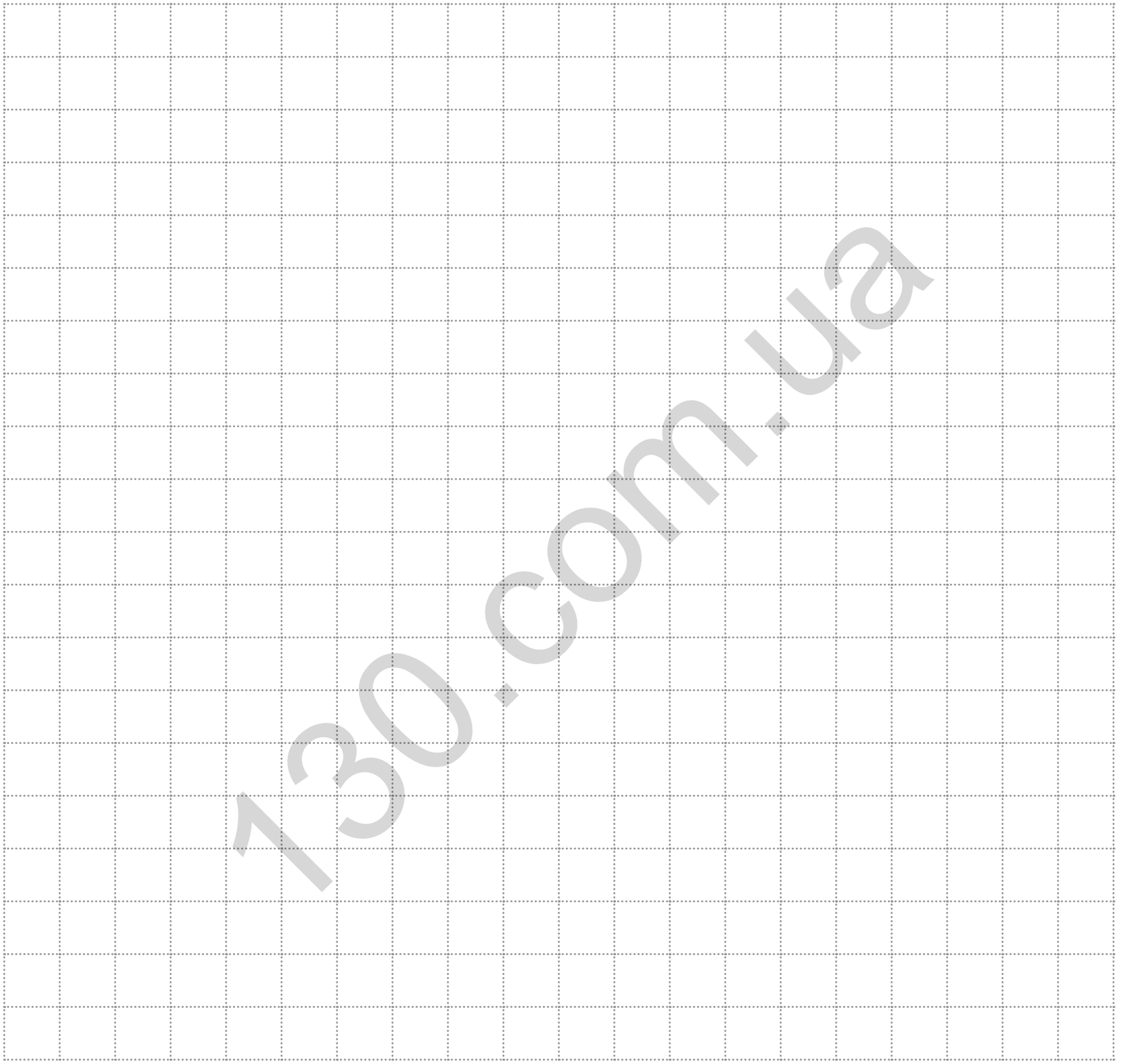
Signature_____/_____/

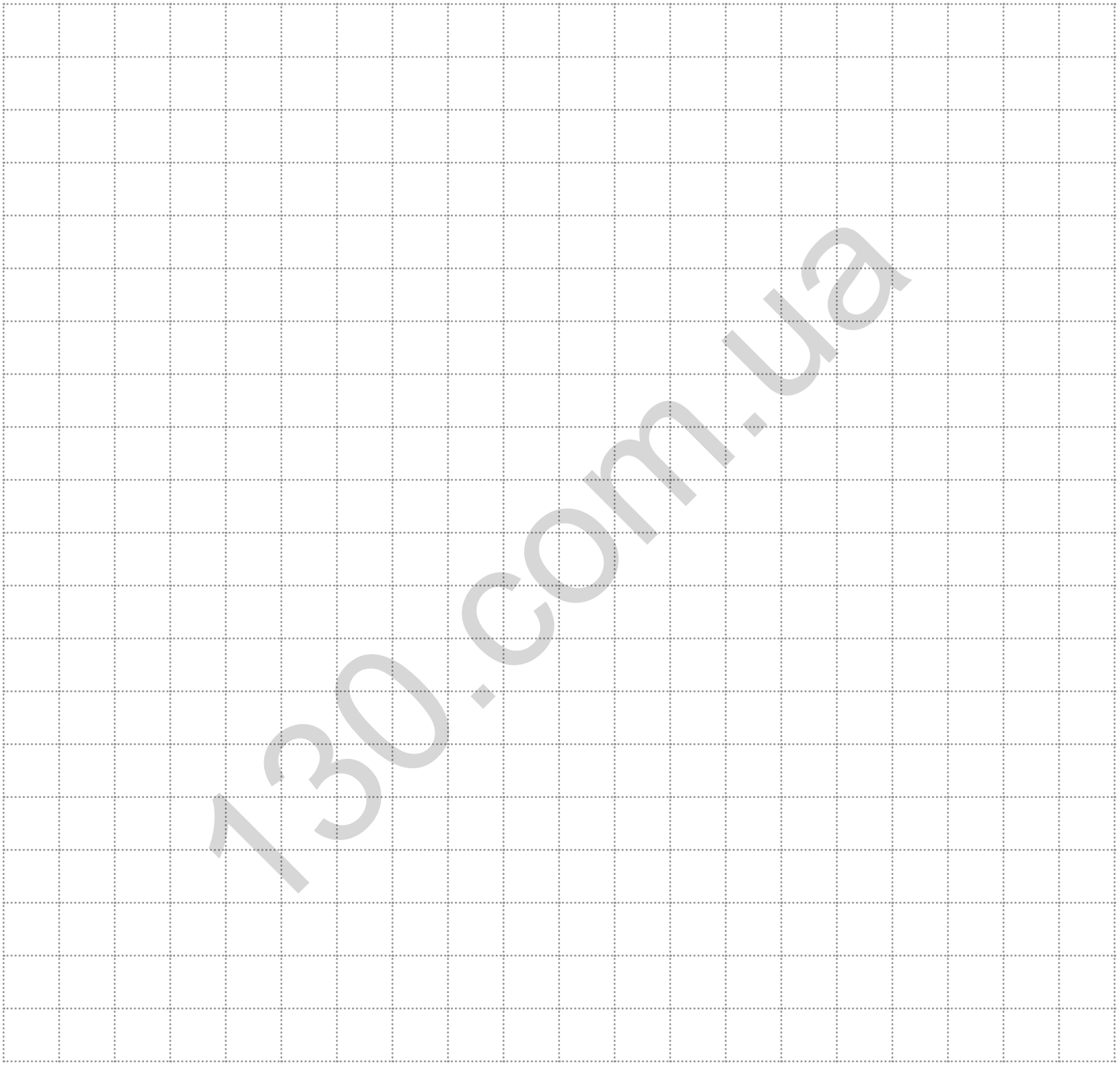
Signator

Work accepted_____/_____/

Signator

Date «____»_____20___y

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Acceptance certificate

Pandora DXL-0050L 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)

Warranty card

Model Pandora DXL-0050L

Serial number _____

Date of purchase «____» _____ 20____y

_____

Seller's (installer's) stamp

Seller's signature _____