

# IMMOBILIZER

## OI-101

### **Summary Introduction**

This immobilizer system is a new generation of car security system, which not only prevents the car jacking in a covert way, but also prevent the injury to car owners.

This immobilizer system could install on any kinds of vehicles while without destroy the original electrical system of vehicles. It is very convenient and perfect design. It is easy to install, and it is very difficult for a thief to find out an alarm system like this model which had been installed in the vehicle, as the driver no need to make any operation like normal car alarm, just only need to put the key within a valid communication range 3-5 meters. If the car has been installed another car alarm with engine start function, this immobilizer system also can work very well to cooperate with another alarm system.

### **Operation**

When the immobilizer smart key is within the range of 3-5 meters, the system will be activated. A melody sound will chirp and LED flashing from the key to confirm the communication between the key and the brain is successful. If the key is out of the valid range 5 meters and the engine have started for 5-7 seconds, the system will alarm max. 10 seconds continuously, and furthermore, the alarming sound will be more faster and faster in last 5 seconds to warn the driver that the car engine will be cut off, if your car will stop moving within alarming period, this system will not die off, but if the car still moving, the system die off immediately.

### **Anti-carjacking**

This anti-carjacking mode force the system to cut off the engine, it can prevent the possibility of any carjacking.

In case the key is lost during driving, and the anti-carjacking function activated, the system allows the engine still can work for 60 seconds(it will guarantee security during driving), in the following 25 seconds, the system melody alarming is intermittent to remind owner, while the system will alarm more urgent in the last seconds, then the system will cut off engine.

In any case, if the system could not detect the key signal, when the engine is started there would be melody music and 10 single-tone signals to require to enter PIN code, if any PIN entering error, the wrong melody will emit. When the smart keys is in range, the system will unlock the engine and return to normal status.

Normally, the battery can be used for at least half a year or longer, then the car owner need to replace in time. After the ignition on, the siren always chirp 3 sounds per one minute, that means the battery need to replaced soon.

In order to avoid the battery running out problems, is suggested to prepare a spare CR2032 battery in the car for emergency using. When you are driving, if the alarming siren is chirping, it should be stopped within 30 seconds before the engine immobilized. When the car is engine immobilized status, the steering wheel will be stiffen to turn or even hard to press the footbrake. Because the fluid amplifier stop working in this situation. It is very dangerous if the car is running in high speed, don't put the smart key in the wallet or together with car key, just put in the pocket.

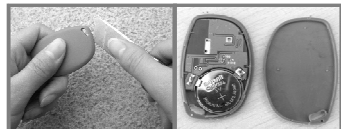
#### **Valet mode/Service mode**

When the car is valet mode or service mode, if you don't want to expose this immobilizer system which have been installed, it is suggested that put the smart key in the hidden place inside the car to keep normal driving status.

#### **Check the smart key working performance**

If the smart key in valid range but without any melody music reminding, it have to be checked the performance, use a knife to open the case of smart key, check and adjust the Cr2032 battery, if the performance is in good condition, the LED will flash 3 times, if the battery is in low level status, the LED flashing turns very weak. If without any flashing at all, it means battery have run out of.

#### **Change battery.**



When engine starting, if the system beeps 3 sounds every other one minute, it means low level power. It has to replace it with a new battery. Use a knife to open the case of smart key and replace it then close the case. Please aware that polarity of battery should be correct.

**! Note: You have to install the battery before using.**

#### **PIN Code activated**

The pin code consists of 3 digits. Keep out of working range and ignition on, the system will alarm for 60 seconds. When the alarming sound stops, ignition off then ignition on immediately, the interim time should not exceed 1 second.

When engine starting for about 8 seconds, melody sound signal emits once as reminding for enter the first number. Then 10 "Di" sound signals emit, count the "Di" sound signals until the number of sound signal coincides with the first digit of the PIN code, then turn off the ignition.(The first digit of the PIN code has been entered). For example, ignition off when you hear the first "Di" sound signal means you are entering "1" digit; ignition off when you hear the tenth "Di" sound signal means you are entering "0" digit.

Turn on the ignition, melody sound signal emits twice as reminding for entering the second number. Then 10 "Di" sound signals emit, count the "Di" sound signals until the number of sound signal coincides with the second digit of the PIN code, then turn off the ignition.

Turn on the ignition, melody sound signal emits three times as reminding for entering the third number. Then 10 "Di" sound signals emit, count the "Di" sound signals until the number of sound signal coincides with the third digit of the PIN code, then turn off the ignition.

If you are entering the wrong number, one melody sound signal also emits as reminding, the system would go back to the status of password entering.

If the password entered is correct, 5 "Di-" long sound signals would be emitted (each "Di" sound signal will last for 5 seconds). If you turn off the ignition when you hear the third "Di-" long

sound signals, and ignition on again, the system will go into service mode.( the buzzer will “Di” once per one minute). If the system detects the smart key for 70 seconds, it will exit the service mode automatically.

**! Note: Before entering service mode, please make sure at least one smart key has been programmed.**

### Enter system controlling mode.

Keep smart key out of range, or take the battery out from the smart key. Follow the above steps to enter password. If the entered password is correct, the system will emit 5 “Di-” long sound signals. (each signal will last for 5 seconds).

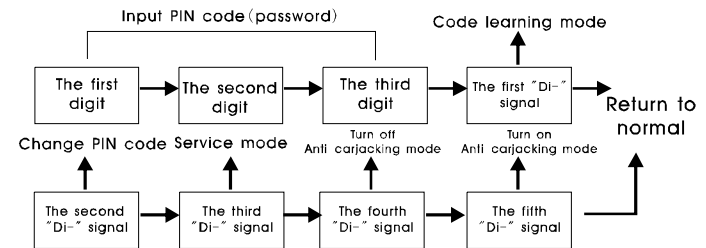
For entering code learning mode, the ignition should be turned off when you hear the first “Di-” sound signal.

For entering password setting mode, the ignition should be turned off when you hear the second “Di-” sound signal.

For entering service mode, the ignition should be turned off when you hear the third “Di-” sound signal.

For turn off anti-carjacking mode, the ignition should be turned off when you hear the fourth “Di-” signal.

For turn on anti-carjacking mode,the ignition should be turned off when you hear the fifth “Di-” sound signal.(Factory default setting is anti-carjacking mode on)



### Smart key operation

5 keys are allows to be programmed. Please make sure the key you are going to program is equipped with battery, the other keys should not be equipped with battery. Enter into code learning mode, and ignition on, a melody emits for code learning. Put the battery into the key for code learning one by one. It will confirm with three sounds if code learning is successful . If there is no any melody reminding means unsuccessful code learning. In this case please take off battery and reinstall it.


**! Note: There will come with three sounds as confirmation whichever key is finished to be programmed. All transmitters must be programmed in one time, as it will delete the previous programming record during programming. Die out the engine to exit the code learning mode.**

### **PIN code Setting**

PIN code is consisting of three digits, the factory default setting is "111". **Enter into PIN code setting mode. (See PIN code activated)**

1. Turn on the ignition. One melody sound signal emits as reminding to enter the first number. Then ten "Di" sound signals emit, count the "Di" sound signal until the number coincides with the first digit of the PIN code, then turn off the ignition.
2. Turn on the ignition, two melody sound signals emit as reminding to enter the second number. Then ten "Di" sound signals emit, count the "Di" sound signal until the number coincides with the second digit of the PIN code, then turn off the ignition.
3. Turn on the ignition, three melody sound signals emit as reminding to enter the third number. Then ten "Di" sound signals emit, count the "Di" sound signals until the number coincides with the third digit of the PIN code, then turn off the ignition.

When finished the above processes mean three password digits have been entered in the status, however the new password should be confirmed to be effective. Just repeat the above steps to confirm the password.

 Note: When changing the password, you should take measures to prevent forgetting or lost password. Once lost the password, you won't have the possibility to be supplied new smart key and eliminate the old smart key's PIN code.

### **Anti-carjacking ON/OFF**

Enter system controlling mode.

For turn off anti-carjacking mode, the ignition should be turned off when you hear the fourth "Di-" sound signal, then ignition on, the Anti-carjacking mode is off now. Note: Anti-carjacking is off, the alarm system doesn't be protected.

For turn on anti-carjacking mode, the ignition should be turned off when you hear the fifth "Di-" sound signal, then ignition on, the Anti-carjacking mode is on now.(The factory default setting is anti-carjacking mode on).

### **Installation guide**

**This system is designed to install in vehicle or motorcycle with 12 v power supply**

**This brain unit should be installed in a hidden place. For example, it can be installed in the engine hood or in the passenger cabin, avoid the place with high temperature and caustic substance. If possible, please place this unit far away from metal parts for at least 12 centimeters so as to avoid wireless transmission jamming. This unit should not be fully covered.**

**Connect wire ④ for power supply 12v**

**Connect wire ① for GND**

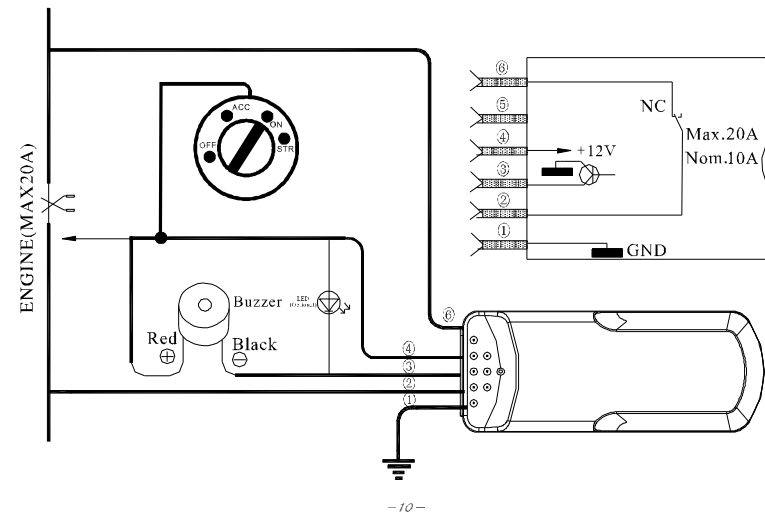
**Wire ② and ③ are connected through relay inside. The relay contact should be in closed circuit as NC. For long-term using, the current should not be larger than 10A. For short time using(within 1 minute), the max. current should be 20A.**

**Wire black wire of buzzer with ③, Connect wire of buzzer with wire ④. When ignition on, there should have 12 V power supply, and when ignition off, the power should be out off.**

**This system can work without buzzer, but you will be unable to receive any alarming information that will cause the problem of system setting. We will not install the battery inside the smart key for the purpose of preventing power loss, but the completed set should include the CR2032 battery. Before battery installation, please check if the battery is on valid date, and its surface is on good condition.**

**! Note: After installation finished, you have to check if the system is working properly, and then change the PIN code.**

## OI-101 Wiring Diagram



### **System diagnose**

During installation or using this system, it may have to check system working. To check the condition of the battery, open the casing of key, and remove the battery from the element plate, then put the battery back in the contact holder in line with the indicated polarity. Observe the operation of the LED. If it is flashing 3 times means the battery is in good condition. If it is flashing but very weak, means power level is very low. If the LED doesn't flash, replace the battery with a new one.

To check proper working of wireless communication system, turn on the ignition, if the key is within sensing range, melodic music emits from buzzer, means the wireless communication is in good condition.

### **Sound signals from the buzzer**

If the brain unit module doesn't detect the signal of the smart key after loaded the CR2032 battery, one "Di" sound signal per one second, total 5 sounds in 5 seconds.

During driving, if the brain unit module doesn't detect the signal of the smart key, 60 seconds later, one "Di" sound signal per one second, total 25 sounds within 25 seconds, and then one "Di" sound signal per 0.5 second means the engine will be immobilized within 5 seconds .

When ignition on, if there will be three "Di" sound signals per one minute, means low power level of battery and remind you replacing the new battery soon.

One sound signal per one minutes, means the system is in service mode.

### **Melody sound signal for entering PIN code**

One signal ("Di" sound) per two seconds 10 times for entering PIN digits

One signal (melody sound and "Di" sound) per two seconds 10 times for confirming PIN code

Five "Di-" long sound signals (each signal last for 5 seconds) for entering system controlling mode.

Melody sound for PIN code changing

Melody sound for PIN code entering error

Melody sound for system attempts to communicate.

### **Completed set includes:**

1. Brain unit module × 1 pc
2. Smart key × 2 pcs
3. Buzzer × 1 pc
4. Tapes (120~150mm): 3 pcs
5. Grounding wire contacting: 1 pc
6. User manual × 1 pc
7. Leather cover × 1 pc
8. Package box × 1 pc
9. Key chain × 2 pcs

**Technical specifications.**

Operation current:  $\leq 21\text{mA}$ .

Operation current in anti-carjacking  $\leq 85\text{mA}$

Key operation current :  $\leq 10\text{mA}$

Brain unit operation voltage: 9~15V

Radio frequency: 2.4~2.5GHz

Radiation intensity:  $< 0\text{MB7}$

Operation temperature:  $-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$

Max. Current of brain unit: 20A

Brain unit size: 68x26x11mm

Smart key size: 51x33x5mm

Battery: CR2032, 3V

Wires length from brain unit: 50cm

Wires length from buzzer: 50cm

**After installation finished, please keep the user manual for future reference.**

**Attention: Keep the user manual away inside the car, the best place would be the robber can't find it.**