

STEELMATE[®]
Automotive

Ranger-4328

2-Way Car Alarm System



Manual

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Disclaimer

- 1.This system is for vehicles with 12V DC only.
- 2.System should be installed by a professional auto technician.
- 3.The installation position of ECU should be kept away from water and dust.
- 4.All components should be fixed tightly and the wires must be long enough to avoid disconnection from heavy vibration during driving.
- 5.This system will help to reduce the possibility of losing the vehicle by discouraging theft. Please take out the valuables when leaving the vehicle.
- 6.When the transmitter operating distance is shorter or its indicator light turns dark, please recharge the transmitter battery ASAP.
- 7.It is highly recommended to read this manual before using this system.
- 8.Perform a functional test after installation.
- 9.The operation distance may affected by constructions, topography or weather.
- 10.Please do not open or change the PCB without authorization.

Key features

- LoRa™ technology
- Ultra long operation distance with 2-way LCD transmitter
 - Receive distance of transmitter: up to 8 km
 - Control distance of transmitter: up to 5 km
- Rechargeable lithium battery for transmitter
- 2-way transmitter with TFT monitor
- Comfort closure
- Vehicle battery voltage display on transmitter
- Match with central locking system
- Valet mode
- Emergency override
- Anti-hijack

Specifications

System:

Operating voltage: 12±3V
Operating current: (FSK modem) < 20 mA
(LoRa™ modem) < 10 mA
Operating frequency: 433.92 ±0.015MHz
Horn sound level: 105 ~ 125 dB

2-Way transmitter:

Modulation mode: LoRa™
Operating frequency: 433.92 ±0.015MHz
Operating voltage: 3.2~4.4V
Static current: ≤ 35 uA

1-Way transmitter:

Modulation mode: FSK
Operating frequency: 433.92 ±0.015MHz
Operating voltage: 2.0~3.3V
Static current: < 0.5 uA

Charging:

Operating voltage: 12V ±3V
Output voltage: 5V ±0.5V
Static current: ≤ 5mA

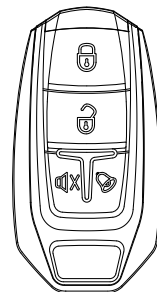
Brief look of transmitters

Buttons

🔒 : Arm button 🔇 : Mute
🔓 : Disarm button 🚗 : Trunk release
📶 : Car locating



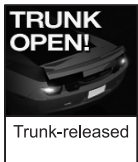
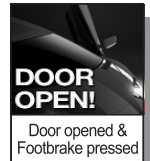
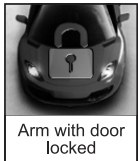
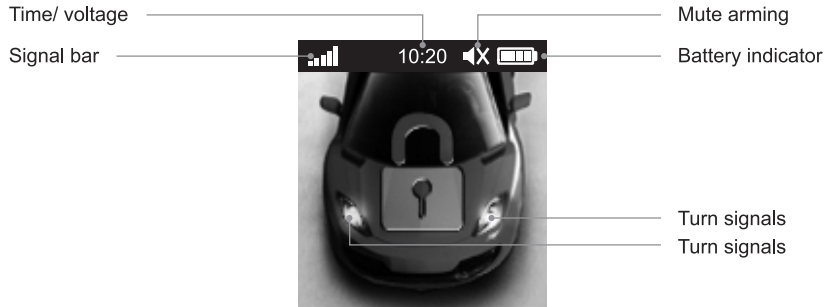
4328



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**The above graphics only for reference.

2-way transmitter interface



Turn transmitter ON/OFF (For 2-way transmitter)

The transmitter needs to be turned on before the first use, the default setting is OFF.

Turn transmitter ON: Press and hold  button for 2 seconds.

Turn transmitter OFF: Press and hold  button for 5 seconds.

Note: Transmitter will be shut down when the battery is used up. If the transmitter cannot be turned on, please charge it according to "Transmitter charging".

Battery level indication (For 2-way transmitter)

When transmitter's battery level is low, it will have warning sound after any button is pressed.

When the battery indicator is empty, the transmitter needs to be charged immediately.



Battery is full
Voltage: $\geq 3.8V$



Battery is enough
Voltage: $3.65V\sim 3.8V$



Battery is in a half
Voltage: $3.45V\sim 3.65V$



Battery is low
Voltage: $3.20V\sim 3.45V$



Battery is empty
Voltage: $< 3.20V$

Note:

- The transmitter will be turned off automatically when battery voltage is lower than 3.1V
- The transmitter can be turned on when battery voltage is more than 3.3V
- The transmitting range will be affected when the battery is low

Transmitter setting

Time setting:

- 1) Hold **0** & **1** button for 2 seconds, the transmitter will "Bi" once to enter the setting mode.
- 2) Press **0** button to adjust the hour value.
- 3) After set the hour, press **0** button to choose minute setting, press **1** button to adjust the value. The hold **0** & **1** button for 2 seconds to save and exit the setting.

Passive Arming:

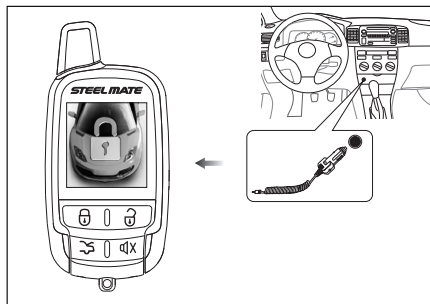
- 1) Hold **0** & **1** button for 2 seconds, the transmitter will "Bi" once to enter the setting mode.
- 2) Press **0** button for 2 times to choose hour setting, press **1** button to select turn on or off. Then hold **0** & **1** button for 2 seconds to save and exit the setting.

Note:

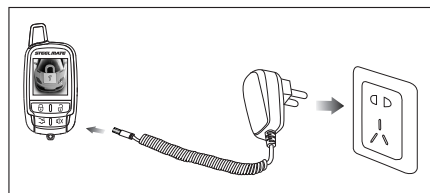
- The value can be saved only press **0** and **1** button to exit the setting mode.
- The transmitter will save and exit the setting without any operation in 15 seconds.

Transmitter charging

Method 1: Thru cigarette lighter



Method 2: Thru other terminals (not included)



Note: The charger only for 2-way transmitters

1. Alarm arming & lock the doors (Active arming)

Press **Ⓜ** button once on transmitter, the doors will be locked with chirp and turn signals flash once. The LED light flashes to indicate that system is armed in alarm arming mode.

The 2-way transmitter will "Bi" once with turn signals icon flashes once, and "Arm with door locked" interface will show on the screen.

2. Mute arming & lock the doors (Active arming)

Press **Ⓜ** button once on transmitter, the doors will be locked with turn signals flash once and the siren will not chirp. The LED light flashes to indicate that system is armed in mute arming mode.

The 2-way transmitter will "Bi" once with turn signals icon flashes once, **Ⓜ** & "Arm with door locked" interface will show on the screen.

3. Disarming & unlock the doors

In alarm arming mode, press **Ⓜ** button once, the doors will be unlocked, the siren will "Bi" twice with turn signals flashing, then the system will be disarmed.

The transmitter will "Bi" twice and "Disarm with door unlocked" interface will show on the screen. In mute arming mode, press **Ⓜ** button once, the doors will be unlocked, the siren will not chirp, turn signals will flash twice. Then the system will be disarmed.

The transmitter will "Bi" twice and "Disarm with door unlocked" interface will show on the screen.

4. Shock sensor triggering

In alarm arming mode, the first impact to vehicle will trigger the system, the siren will chirp for

3 times with turn signals flash for 5 times. The transmitter will "Bi" with vibrations, the "Impact" interface will shown on the screen. If the system is triggered again within 15 seconds, the siren will chirp sharply and turn signals will flash for 30 seconds, the engine will be immobilized for 40 seconds. The transmitter will "Bi" with vibrations, the "Impact" interface will show on the screen.

In mute arming mode, the shock impact will trigger the system. The siren will not chirp, other actions are the same as that in alarm arming mode.

5. Shock sensor bypass

This function is suitable for thunderstorm and severe weather or other situation which is easy to trigger vibration alarm.

Press **Ⓜ** button for 3 times in 5 seconds, shock sensor will be bypassed and the transmitter will make a warning tone without any vibrations.

Once ACC is on or doors are opened for 2 times, the shock sensor will work normally again.

6. Ignition on, opening door/ trunk, footbrake trigger

In alarm arming mode or in mute arming mode, if the system is triggered by ignition on, doors opened, trunk released or footbrake pressed, the siren will chirp for 30 seconds with the turn signals flashing continuously, the engine will be immobilized for 40 seconds.

If the system is triggered by ignition on, the transmitter will "Bi" with vibrations, the "ACC ON triggered" interface will show on the screen.

If the system is triggered by doors opened or footbrake pressed, the transmitter will "Bi" with vibrations, the "Door triggered" interface will show on the screen.

If the system is triggered by trunk released, the transmitter will "Bi" with vibrations, the "Trunk released" interface will show on the screen.

In Arming mode, if ignition on, opening door/trunk/hood, footbrake are triggered for a long time. The system will alarm with turn signals flash for 4 minutes. The transmitter will show the triggered interface alternately on screen.

7. Alarm pause

In armed status, opening door/trunk/hood, ignition on will trigger the system and alarm chirping continuously, press **🔒** button or **🔑** button to stop the alarm and system will return to its former arming status.

8. Remote trunk released

Hold the **🔒** button or hold **🔒** + **🔑** buttons together for 2 seconds to release trunk. In arming mode, after trunk release, the shock sensor will be bypassed, if detected ignition on, opening door or footbrake is pressed after 30 seconds, the system will alarm with turn signals flashing.

If the trunk is not closed completely after 2 minutes, the transmitter will "Bi" with vibrations for 3 times, and the "Trunk released" interface will be show on the screen.

9. Vehicle voltage checking

Press **🔌** once to check current time and vehicle battery voltage.

10. Car locating

Press **📍** button for 2 seconds the siren will chirp with turn signals flashing for 10 seconds to locate the car. Yet, the siren will not chirp in the mute warning mode.

Press **🔒** or **🔑** button to stop the function.

11. Anti-hijack

When ignition is on, hold **🔑** button for 2 seconds, the siren will chirp with turn signals flashing until the **🔒** button be pressed.

12. Door closing reminder

When the system is armed in alarm mode and the door or trunk did not close properly in 8 seconds, the siren will "Bi" 3 times with turn signals flashing. The transmitter will "Bi" with vibrations, the "Door opened" or "Trunk released" interface will show on the screen.

The doors should be closed properly, or 45 seconds later, the siren will chirp sharply for 4 minutes.

13. Re-arming automatically


Press **🔒** button once, the system will be disarmed with the doors unlocked. If the door is not opened in 25 seconds, the system will re-arm automatically.

For the car with dome light function, the system will re-arm automatically after the dome light turned OFF.

14. Dome light delay


The function is specially designed for the vehicle with dome light function. The system will enter the arming mode automatically once the dome light turned OFF.

15. Passive arming

When the engine is OFF and doors are closed, the system did not arm in 10 seconds, the siren will chirp 3 times with turn signals flashing, the transmitter will "Bi" for 3 times with vibrations for 5 times and the "Arm with door locked" and "Disarm with door unlock" interface will flash on the screen alternately to remind arm the system. The system will enter to the mute arming mode after 1 minute, but the doors will not be locked, the transmitter sends out strident sound once with "Disarm with door unlocked" interface &  icon show on screen.

Note: This function can be turned off, please refer to page 8.

16. Central door lock / unlock

The doors will be locked by pressing the footbrake after the engine is running 15 seconds. Press  button, the doors will be locked/unlocked during driving.

If door or trunk did not close properly, the siren will "Bi" for 3 times while turn signals will flash 3 times as a reminder.

The doors will be unlocked automatically after engine OFF.

17. Warning for roadside stop

When stopping by the roadside with the door opened, the turn signals will flash for 15 seconds to warn the approaching vehicles.

18. Warning for triggered system


If the system has been triggered in armed status, the siren will alarm when the system is disarmed and the door is opened:


- 1) The siren will chirp twice when shock sensor is triggered.
- 2) The siren will chirp 4 times when door/ trunk/ hood is opened, or ACC is ON, or footbrake is pressed.
- 3) In mute arming mode, the LED indicator will flash continuously to indicate that the vehicle has been triggered.
- 4) The trigger memory will be clear when ACC is ON or open the door for 2 times.

19. Staus preserving

The system will return to the former status when the power is on again, even the power is cut off.

20. Valet mode

In valet mode, the system will not arm even with the transmitter, but convenience functions (door lock / unlock and trunk release) will work normally. In disarming mode, press footbrake and turn ACC ON, then hold  button, system will chirp 3 times with turn signal flash 3 times and enter valet mode.

In valet mode, hold  button to exit the valet mode.

21. Transmitter programming

Method 1:

1) Hold the learning button in the ECU, the LED indicator will turn on the system and enter to the code learning mode.

2) Press any button on the first transmitter once, the transmitter will play a music tone and the LED indicator will flash.

3) Press any button on second transmitter within 8 seconds, the transmitter will play a music tone and the LED indicator will flash to indicate the transmitter is programmed successfully.

Note: Hold the learning button during transmitter programming mode

Method 2:

1) Press footbrake, turn ACC OFF to ON for 8 times and leave the ACC in ON position, the LED indicator will turn on and the system will enter the code learning mode.

2) Press any button on the first transmitter once, the transmitter will play a music tone and the LED indicator will flash.

3) Press any button on second transmitter within 8 seconds, the transmitter will play a music tone and the LED indicator will flash to indicate the transmitter is programmed successfully.

Note:

- Only 2 transmitters can function with the same system
- Hold the learning button in the ECU for 10 seconds with the siren "Bi" once to clean/reset the transmitter


22. Comfort window closure (optional)

The window closure function is only for the vehicle with convenient system (turn key to lock position and hold until the roof/ windows are closed), please jump the J1 to "ON" position to active this function. The windows and roofs will be closed when arming the system. (Default setting is in "OFF" position)

23. Emergency override

If the transmitter lost or failed to operate, the system can be disarmed by the emergency override.

Open the door and, step footbrake and turn ACC ON to OFF for 10 times, and stay in "ON" position, the LED indicator will turn on to indicate the system will be emergency override.

Press  button will deactivate the emergency override function.

24. Signal intensity indication

The system can transmit the signal to the transmitter every 2 minutes. The signal can be monitored through the transmitter:

- : No signal, out of reception range
- ■ : Weak signal
- ■ ■ : Good signal
- ■ ■ ~ ■ ■ ■ ■ : Strong signal

25. LED indication

LED	Indication
Flash once then pause 2 seconds	The system is in arming mode with shock sensor bypassed
Flash twice then pause for 2 seconds	The system is armed in alarm/ mute arming mode
Flash 4 times then pause for 2 seconds	Shock sensor triggered
Keep flashing	Door/ trunk, footbrake, ACC triggered
Turn ON	After emergency override

Includes



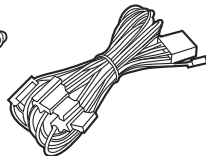
Transmitters X2



ECU



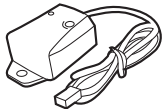
LED indicator



Cables



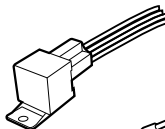
Siren



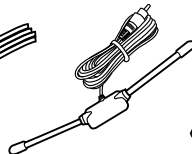
Shock sensor



Ribbon



Relay



Antenna



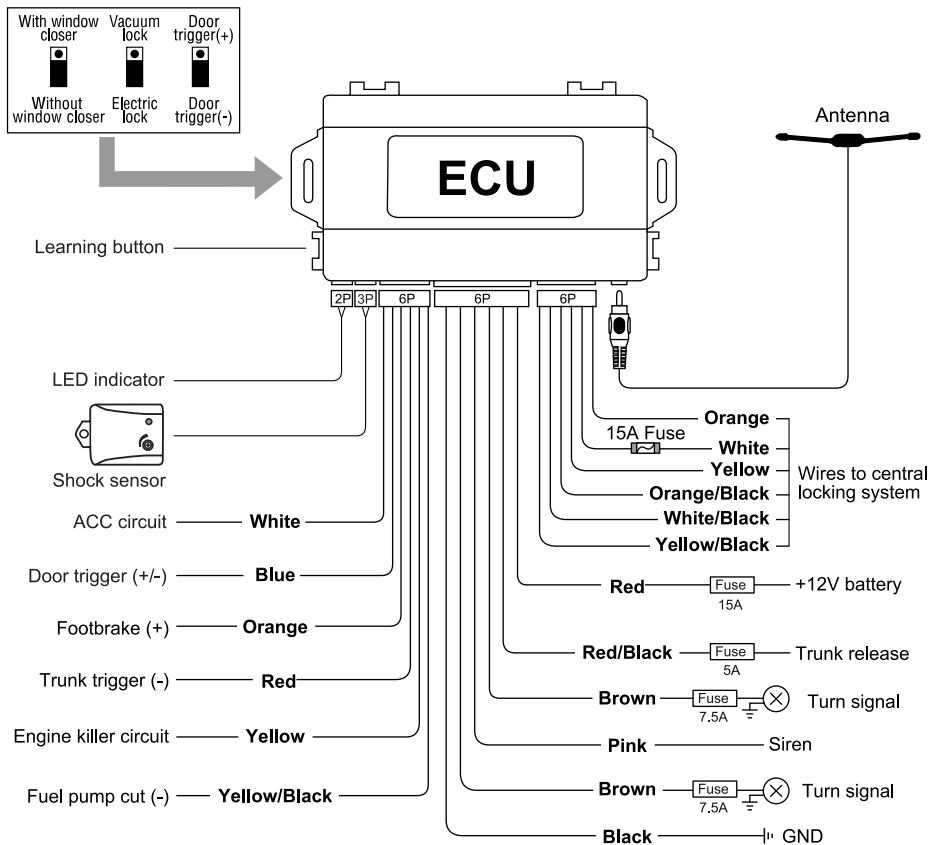
Manual

※ The above graphics are for reference only

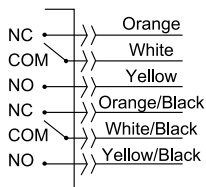
Tips for ECU installation

1. The ECU should be fixed at a concealed place under dashboard.
2. The ECU should be installed away from water.
3. Connect wires according to the wiring diagram properly.
4. Binding all wires after installation.

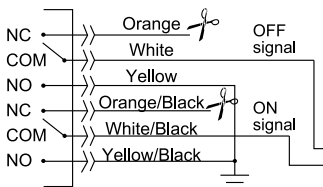
Wiring diagram



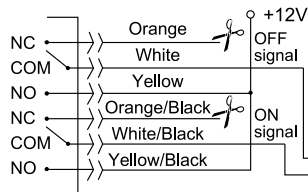
Central locking system installation



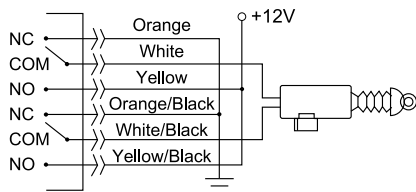
1. Principle



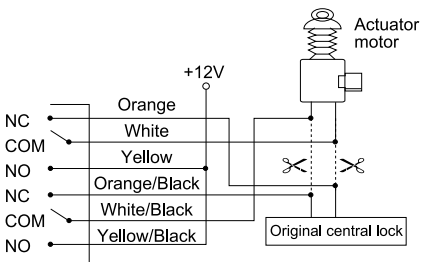
2. Negative trigger



3. Positive trigger



4. Positive/Negative trigger






5. Vacuum-lock circuit

1. For the vehicle with original electric central door lock, check its triggering type (negative or positive), then connect wires as per wiring diagrams (Fig.2 or Fig.3).
2. For the vehicle with central locking system, the driver's door does not have a motor, the other doors have motors. A new motor for driver's door is needed. (Fig.4).
3. For the vehicle with vacuum-lock, please change the jumper J2 to "vacuum-lock" position of the ECU. (Fig.5).
4. For the vehicle without central locking system, please install one set of central locking system to match with the car alarm system.

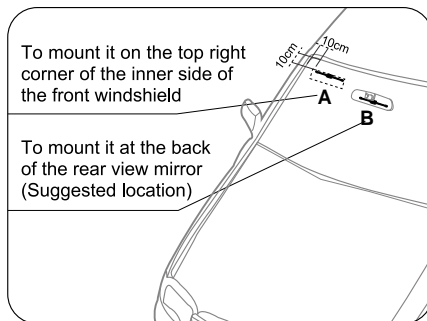
Jump switch setting

Jump switch no.	Function	Default setting
J1	Window closer	
	No window closer	No window closer
J2	Vacuum lock	
	Electric lock	Electric lock
J3	Door trigger(+)	
	Door trigger(-)	Door trigger(-)

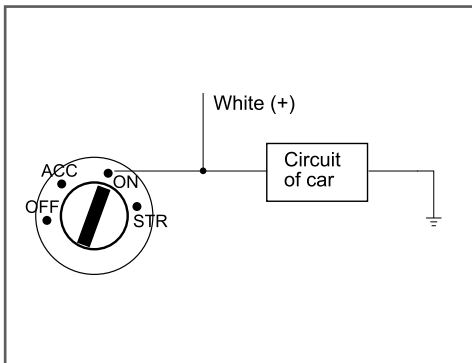
With window closer	Vacuum lock	Door trigger(+)
		
1	2	3
Without window closer	Electric lock	Door trigger(-)

Installation of antenna

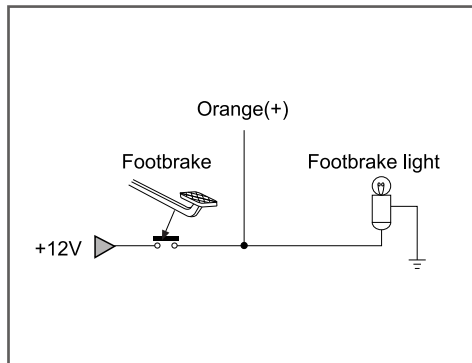
1. The antenna can be mounted at position "A" or "B" if there is no solar film on the front windshield.
2. If the front windshield is covered with solar film, please remove the solar film within the dotted line before installing it at position "A".
3. If all the windshield are covered with film, please mount it at position "B".
4. The antenna must be kept away from any metal parts.



ACC circuit

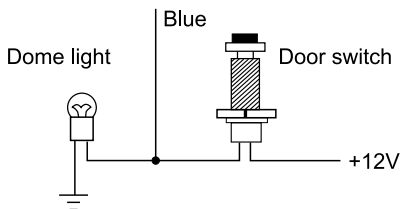


Footbrake (+)

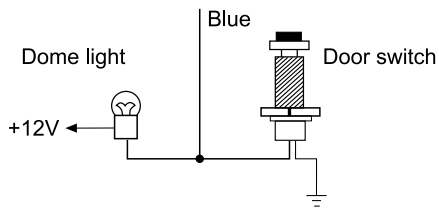


Door trigger (+) / (-)

Positive door trigger circuit (+)

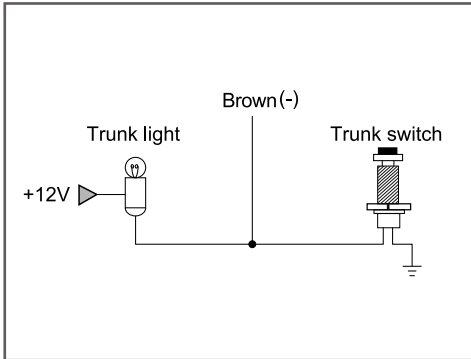


Negative door trigger circuit (-)

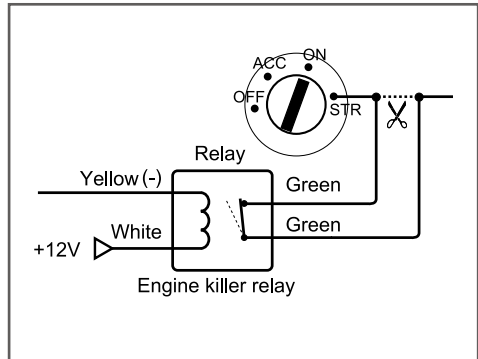


Notes: Default setting is Door trigger(-)

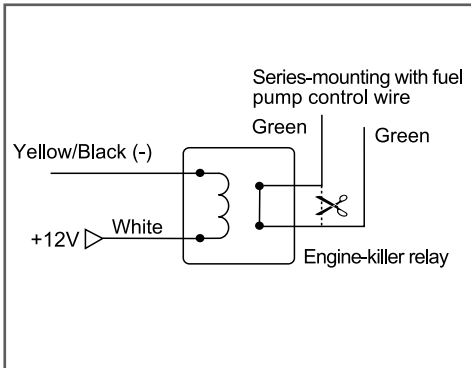
Trunk trigger (-)



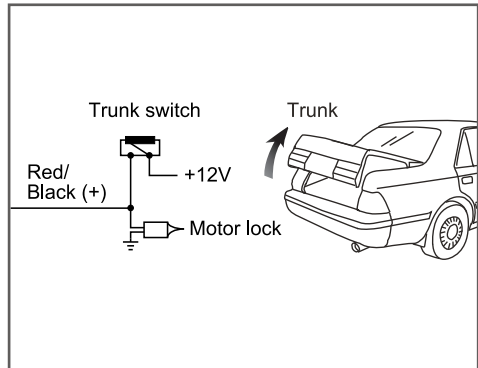
Engine killer circuit



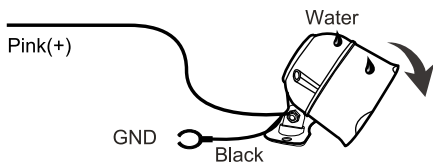
Fuel pump cut (-)



Trunk release circuit

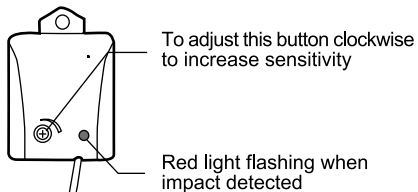


Siren installation



Please mount the siren downward to prevent water

Shock sensor installation



(Default setting sensitivity is suggested)

Troubleshooting

Problems	Reasons
1.The continuous chirping of the siren cannot be stopped by transmitter after installed ECU.	<ul style="list-style-type: none"> ● The plug is improperly inserted ● The wire is improperly connected ● The transmitter does not match the ECU ● The siren is damaged ● The fuse of the ECU is broken
2.Turn signals does not flash after disarming the system and opening the door, or the siren does not chirp when the door is opened without disarming.	<ul style="list-style-type: none"> ● Door trigger wire is not connected properly ● Door switch has problem ● The siren is damaged
3. When the car parks on roadside and armed, there is false alarm when the heavy vehicle is passing.	<ul style="list-style-type: none"> ● The sensitivity of the sensor is too high
4.The central door lock does not work normally or does not work at all.	<ul style="list-style-type: none"> ● The motor of central lock is damaged ● The wiring of central lock system is wrong ● Fuse is broken
5.The siren does not chirp when the alarm system is triggered.	<ul style="list-style-type: none"> ● The siren is damaged ● The wire connection between the siren and ECU has problem
6.The siren chirps sharply in 10 seconds after arming and the same situation happened after disarming and re-arming	<ul style="list-style-type: none"> ● The sensor is damaged ● The doors or trunk is not closed
7.Transmitter is ineffective or the control distance decreased significantly.	<ul style="list-style-type: none"> ● The installation location of the antenna is wrong ● The wiring of the antenna to ECU has problem ● Tall building, radio tower or high frequency electromagnetic wave may affect the control range ● Low power of the battery ● The frequency of the transmitter has been changed ● The transmitter is broken or damaged



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