Feel the vibration and the sound of engine after soft touching~
Your may experice more comfort and elegance driving life.

Thanks for choosing dowon-tech product.

The following instruction must be observed before start installation.
Before start the work, read this manual several times and
fully understand the contents.
Some vehicle may have wiring should be grounded or of useless.
After installation, must check the vehicle & the product
for any abnormal reaction and record the customer relationship card.

⚠Warning ⚠Caution

. All the instruction have to be observed, or may have a potential for property damage, personal injury.
. This product designed for sensing the alarm device of the vehicle with immobilizer.
. This product provide convenience for sensing alarm device to control vehicle, but have no responsibility of any possible robbery or damage.
. Some vehicle may need additional costs to buy additional parts to installation.
. Before start maintenance work of the vehicle, please turn-off the power of the product and preserve this condition during work.
. The design and functions of the product may be changed without notice.
. All the damage caused by installed in improper way must be charged to installation shop or person. Customer should check the list on the product warranty card and get a sign from a installation shop or person.
. Please keep the original genuine key with immobilizer from car-maker in case of any possible faults of the product.
. This product is designed only for the automatic transmission vehicle.

CONTENTS

INSTALLATION GUIDE

(Installation Guide)

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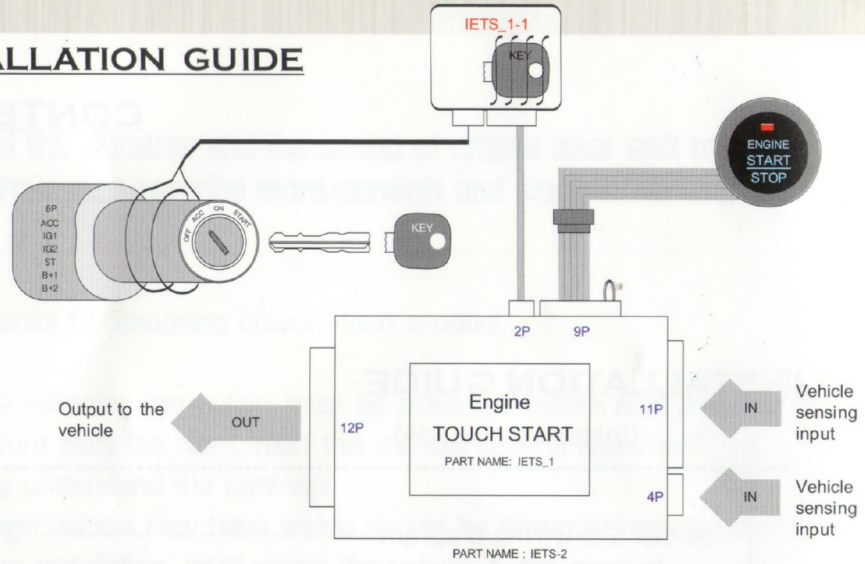


⚠Warning ⚠Caution (Engine Touch-start IETS-2 Wiring diagram)

. Product installation must be performed at the even surface and safe place.
. Check the signal with the multimeter to find the right wiring and connect. Bulb tester should be avoided cause current value is too high and could damage the electrical circuit and parts.
. Wiring color and spec. could be changed without notice. Please refer the installation manual and check each wiring with the multimeter and connect with proper method.
. Imperfect connection/installation and a water leak into product could cause accident during drive a car. (Proper wiring connection method is explained in our web-page. Please refer it.)
. All the wiring connection should be protect with insulation tape and be careful not to be short-connected. Short circuit may cause the fire in vehicle.
. Touch switch should be fitted in the vertical surface. Dust or any contaminants could affect the touch switch fitted in horizontal surface and cause the accident during drive a car.
. When you work on a vehicle with airbag system, disconnect a fuse and power of a airbag system during the installation and re-connect the fuse and power after all the work is done.
. A vehicle with a aftermarket alarm device or a engine switch, the characteristic should be noticed before installation. All the problem caused by mis-installation and using of the product should be charged by user and installation shop.
. If installation worker has a color blindness, non-color-blindness helper should be involved during work.

Disconnect all connectors of the main module and connect wires as explained in below sequence.

Some vehicle may has much of wires to be grounded or useless. Read carefully this installation guide and beware each wire's characteristics and tape all useless wires not to be shorted.

1) 11 PIN Connector wiring diagram

* **White Wire (Door-lock sensing wire)** : Wire to be used to sense door-lock function with 4 Pin Alarm alert wire. In most case, this white wire is grounded to body cause door-lock signal is sensed together when alarm alert is to be sensed at blink signal. (refer. Page 9)

  Door lock signal wire is connected to ETACS(BCM) in door lock motor. Find and connect wire which shows (+) in the door lock and (-) after cancelled. This wire could find easily using (-) polarity current tester.

* **BLUE Wire(Immobilizer (-) sensing wire)** : Wire to be used only when the vehicle has high-sensitivity to recognize the immobilizer. In other vehicles, this wire should be (-) grounded to the body. Immobilizer signal wire located in instrument panel. Find and connect wire which shows (+) signal when key-on and turns (-) signal when immobilizer lamp on.

* **RED Wire (Parking P Gear(-) sensing wire)** : Wire to sense(-) signal when parking gear located. (When to connect this red wire, don't use ORANGE color wire. Check the polarity and connect 1 wire only.)

* **ORANGE Wire (Parking P Gear(+) sensing wire)** : Wire to sense(+) signal when parking gear located. (When to connect this orange wire, do not use RED wire. Check the polarity and connect 1 wire only.)

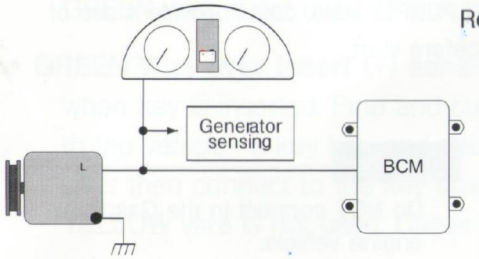
Ref.1: Vehicle's parking gear signal wire is connected in the parking gear position switch with instrument panel & ETACS(BCM). Find and connect the nearest wire in the vehicle's power ON condition.

Ref.2: Basically, parking sensing wire should be connected directly in the parking gear position switch but for the easy-work, when above RED wire (parking P gear (-) sensing wire) is connected to start output wire, system is programmed to sense the parking automatically.
But, read below cautions and check the voltage.

⚠Warning

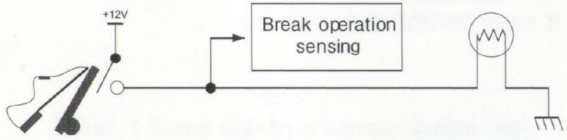
After connect RED wire (parking P gear(-) sensing wire) to the start output wire, must check the RED wire's voltage with multimeter. Just before installation connect power to the main module of the product and check in condition of vehicle's power ON and engine running.
After check shows under 1.5V when gear located in the P and N position, and over 5V in other position and continue installation.
If voltage shows other value, refer each vehicle's maintenance manual and connect wires to match signals of parking gear position switch's parking output voltage.

* **SKY BLUE wire (generator)** :This wire is generator's warning light wire and check the condition of engine running. This wire is connected in the generator's L terminal with the instrument panel and ETACS(BCM) Find and connect the wire as below which shows under 2V when key-on and engine stopped, and shows 5V~14V when engine running



Ref. : When generator's L terminal voltage is unstable or has problem with signal, ask dowon inc. for buying adequate RPM recognition module (not included). You would not change your generator

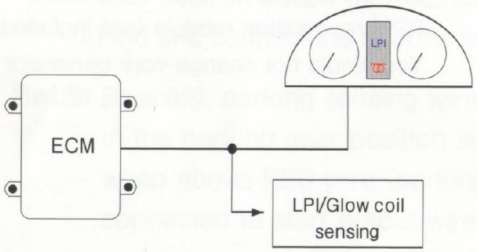
* **BROWN wire (break sensing wire) :** Wire to check (+)12V signal when apply a breaking action. Vehicle' s break signal wire is located in the break pedal. Find and connector wire as below which shows (+)12V when apply a breaking action.



- Ref. : Some luxury car has 2 signal wires which shows (+)5V only for the circuit signal and (+)12V normal signal.
Please check and must connect to the(+)12V signal line.

* **PURPLE Wire (LPI/Glow Coil) :** Wire to sense the action of the LPI or Glow Coil (Diesel Preheating Coil) (Not in use for the Gasoline Engine) Connected in the ETACE(ECM) with the instrumental panel
Find and connect the wire as below which shows (-) signal when key is ON position and automatically turns to (+) signal after LPI/Glow Coil Lamp is off

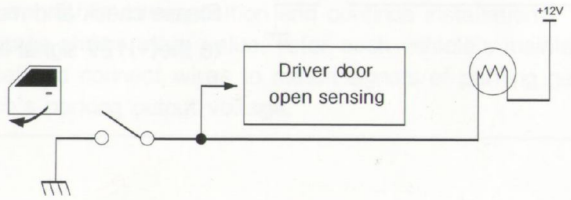
Ref. : If you cut the GREEN loop line in the product without connect this PURPLE wire, could provide 4 sec of delay time before start.



⚠Caution

Do NOT connect in the Gasoline engine vehicle.
If this PURPLE line is not connected, apply insulation tape and left.

* **GRAY Wire (driver door pin(-) sensing wire) :** Wire to check the door open(-) signal and decide driver is in seat position or not.
Vehicle' s door open signal wire is connected in door pin with door lamp.
Find and connect the wire as below which shows (+) signal when door is closed and change to (-) signal when door is opened.
(-) polarity current tester make it easy to find the wire.

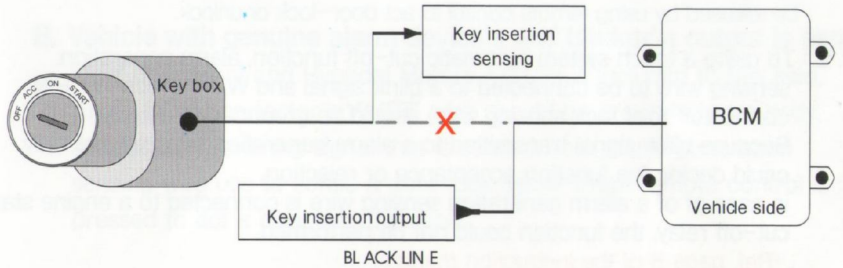


This stage should NOT be dond this time.
You must finish all other wiring work before start this stage.

* **YELLOW Wire (Key insert (-) sensing wire) :** Wire to sense (-) signal when key is inserted. Find and cut the wire which connected to the vehicle' s key box and shows (-) signal when key is inserted, after then connect to the key box. (When this YELLOW wire is connected GREEN wire is not used. Check the polarity and connect only 1 wire.)

* **GREEN Wire (Key insert (+) sensing wire) :** Wire to sense (+) signal when key is inserted. Find and cut the wire which connected th the vehicle' s key box and shows (+) signal when key is inserted, after then connect to the key box. (When this GREEN wire is connected YELLOW wire is not used. Check the polarity and connect only 1 wire.)

* **BLACK Wire (Key insert (+/-) output wire) :** Wire to transmit the polarity key insert signal to the vehicle depend on the system' s decision.
Cut the wire as below and connect to the vehicle.



Ref. : Some old-type vehicle shows lower volume of the chime-bell or blinker action when door is opened. You may need additional relay to cover current value of key insert signal to solve the problem.
Ex. : Grandeur XG, Dynasty, Santa-fe (old), etc.
(refer the web-page to check the installation list)

2). 4 PIN Connector wiring diagram

* **BLUE Wire (ACC input wire) :** Wire to sense the ACC input signal of key box
  Caution : Start the process with the 12 PIN connector wiring work

* **GREEN Wire (Alarm generation (+) sensing wire) :** Wire to sense the vehicle's alarm generation (+) and shut down the system
  (Ref. A, F of page 10,12)

* **WHITE Wire (Alarm generation (−) sensing wire) :** Wire to sense the vehicle's alarm generation (−) and shut down the system
  (Ref. B, C, D, E, F of page 10~12)

- Ref. 1 : A vehicle with a remote control react a blink, alarm horn and engine stop relay at a same time when alarm has generated. Choose one of these signal and connect to a alarm generation sensing wire.
  Check the polarity and connect the matching one of GREEN or WHITE wire.

[Ex.] Most of vehicles and all the vehicles with a aftermarket alarm device connect a alarm generation sensing wire to a blink and alarm horn wire. Our product programmed to sense and release the alarm generation only with a output signal of a blink and alarm horn, so the 11 PIN connector' s WHITE wire (door lock sensing wire) of the product should be grounded to the body. (Ref. page 10)

- Only except the case of a alarm generation sensing wire is connected to the start release wire

* in case of of a alarm generation, after alarm has released, system could be released by using remote control to act door−lock or unlock.

- Ref. 2 : To using a touch system automatic cut−off function, alarm generation sensing wire to be connected to a blink signal and WHITE Wire (11 PIN connector door lock sensing wire) should be grounded to a body. Because blink signal transmitted to a alarm generation sensing wire only could decide the function acceptance or rejection.
  in case of of a alarm generation sensing wire is connected to a engine start cut−off relay, the function could not be performed.
  (Ref. page 8 of the instruction manual)

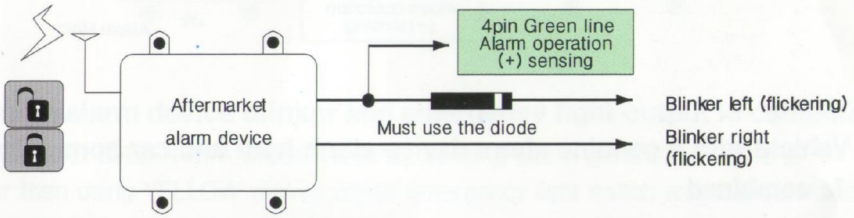
***YELLOW Wire (emergency light switch sensing wire) :** Wire to sense overlapping signal by checking the emergency light' s working condition of the vehicle with a output and emergency light output system is combined. There are little vehicle to use these kind of a system.
lin case of of using this sensing wire, connect to a wire of emergency light switch wires that show (−) signal when emergency light act. In other case, an insulating tape should be applied to the wire.

Ref.: * This wire is not recognize (+) signal. Change to (−) polarity then use.
* in case of of using this YELLOW wire, emergency generation and door lock sensing function could not work. (Ref. F of page 12)

3) Alarm device wiring diagram

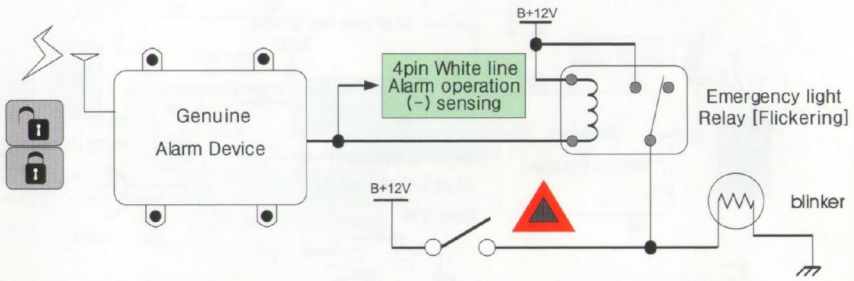
A. Vehicle with a aftermarket alarm device

Because the vehicle with a aftermarket alarm device doesn't use a genuine alarm device, connect to a aftermarket alarm device's blink wire. In this case, to check only the aftermarket alarm device's blink signal, using diode to disconnect a reverse signal. Because the aftermarket alarm device's alarm horn has not a flickering signal, do not connect to a alarm horn.
And 11 PIN connector's WHITE wire should be grounded to a body, as blinker's flickering signal that is sensed from alarm generation sensing wire use to sense a door lock signal when remote control is pressed to act a door lock function.



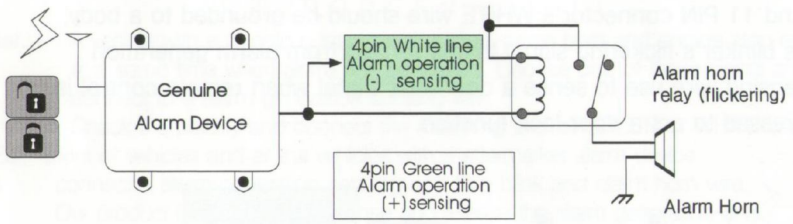
B. Vehicle with genuine alarm device's and blinker' s output is separated

Most of general and Hyundai Motors. vehicle is included to this field.
And 11 PIN connector's WHITE wire should be grounded to a body, as blinker's flickering signal that is sensed from alarm generation sensing wire use to sense a door lock signal when remote control is pressed to act a door lock function.



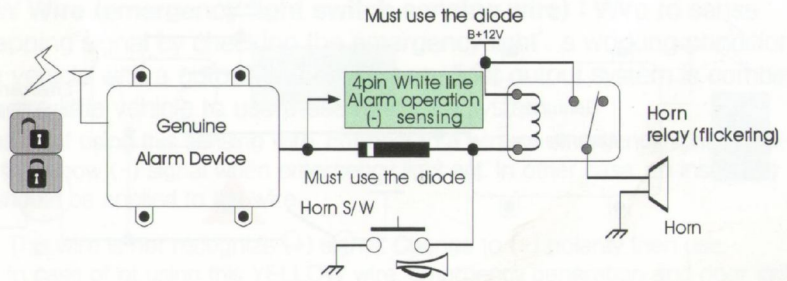
C. Vehicle with a exclusive genuine alarm device

Connect after press remote control to act door lock function then check alarm horn(1 time) is occurred.
And 11 PIN connector's WHITE wire should be grounded to a body,
as an alarm horn (1 time) output's flickering signal that is sensed from alarm generation sensing wire use to sense a door lock signal when remote control is pressed to act a door lock function.



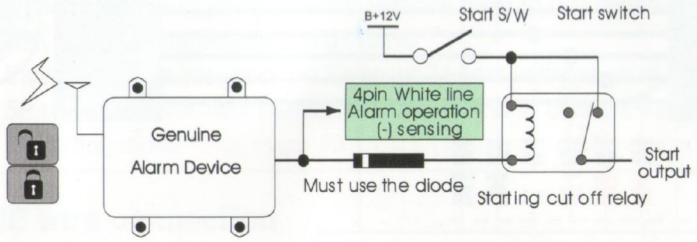
D. Vehicle with a genuine alarm device alarm horn and car horn output line is combined

In this case, using diode to separate the overlapping signal.
But, connect after check the alarm horn (1 time) output is occurred.
And 11 PIN connector's WHITE wire should be grounded to a body,
as an alarm horn (1 time) output's flickering signal that is sensed from alarm generation sensing wire use to sense a door lock signal when remote control is pressed to act a door lock function.



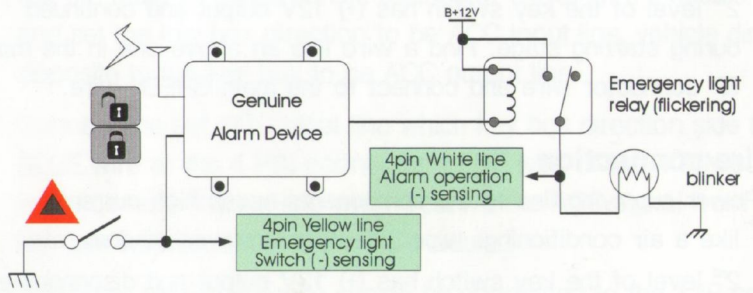
E. Vehicle with a genuine alarm device engine start cut-off relay

In this case, using diode to intercept the reverse signal.
Door lock signal isn't sensed in engine start cut-off wire, connect 11 Pin connector's WHITE wire to vehicle's door lock/release sensing wire to sense directly.
Ref. : This method can't check the availability of the touch system automatic cut-off function.



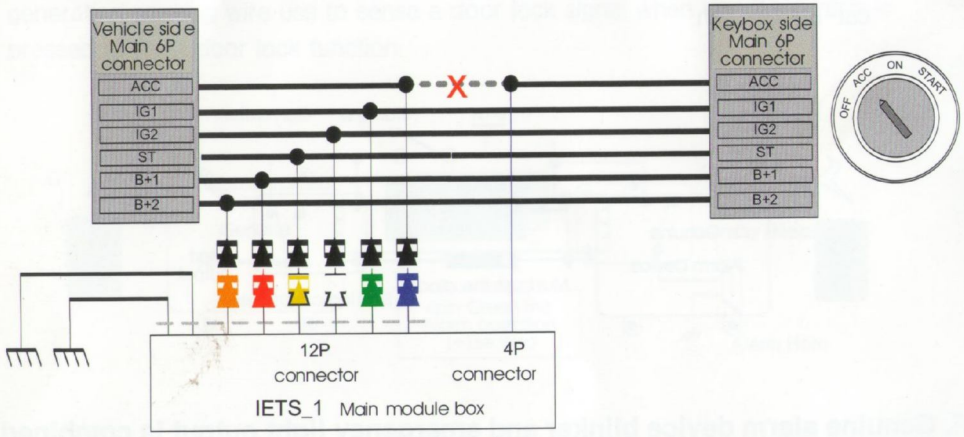
F. Genuine alarm device blinker and emergency light output is combined

After connect GREEN wire which works for sensing alarm generation (+) to a blinker then using YELLOW wire to check emergency light switch working condition to separate the overlapping signal.
And 11 PIN connector's WHITE wire should be grounded to a body,
as blinker's flickering signal that is sensed from alarm generation sensing wire use to sense a door lock signal when remote control is pressed to act a door lock function.



4) 12 PIN Connector wiring diagram

Please read carefully below diagram, descriptions and have to fully understand each wire s characteristics before start the wiring work.



* Insert the product' s main 6P male & female connector to key box connector and connect each wires.
* in case of of vehicle with aftermarket alarm device, connect main 6P connector between key box and alarm device.

* GREEN wire connection

- **IG_1:** Important power line supply power to main components to move vehicle like a Engine and ECU, Airbag, Instrument panel, etc. 2nd level of the key switch has (+) 12V output and continued during starting stage. Find a wire like an above one in the main 6P connector wire and connect to the main GREEN wire.

* WHITE wire connection

- **IG_2 :** Power supplying line to the components needs high current like a air conditioning, wiper, headlight, power window, etc. 2nd level of the key switch has (+) 12V output and disconnected during starting stage. Find a wire like an above one in the main 6P connector wire and connect to the main WHITE wire.

* YELLOW wire connection

- **START :** (+) 12V output line drive start motor during engine start. 3rd level of the key switch has (+) 12V output. Find a wire like an above one in the main 6P connector wire and connect to the main YELLOW wire.

⚠Warning

Samsung Motors or some of other vehicles need to use separate 5P relay with over 40A permissible range parts.
Especially when you work on Samsung Motors vehicles, must use diode and 5P relay with over 40A permissible range parts to connect this YELLOW wire to starting motor. (Ref. Page 20 ? circuit diagram for 5P relay application)

* BLUE wire connection

- **ACC :** Power supplying line to the cigar socket, audio light, clock, etc. 1st and 2nd level of the key switch has (+) 12V output and disconnected during starting stage. Find a wire like an above one in the main 6P connector wire and connect to the main BLUE wire, and cut the main 6P(ACC) wire in the middle position referring below power input/output division connection.

ACC power input/output division connection

1. Cut the main 6P male/female connector (ACC) wire's middle position and set the key box direction to be ACC input line, vehicle direction opposite to the key box to be ACC output line.
2. Connect the cut ACC input line which key box direction side to the BLUE wire of the 4 PIN connector. BLUE wire of the 4 PIN connector is the communication line which receive the ACC signal from the key box and send it to the main module.
3. The other side of cut wire should be connected to the 12P connector's thick BLUE wire (ACC output wire

* Connection of the RED and ORANGE wire

- **Key box (+) power line :** The power line supply continuous power from battery B(+) 12V to the key box via over 30A fuse, and actuate ACC, IG1, IG2, START terminals. Depends on the type of the vehicle (esp. Hyundai Motors) separated into 2 wires. Find a wire like an above one in the main 6P connector wire and connect to the 12P RED & ORANGE wire.

⚠Warning

- In case of the (+) main power line in the key box is only one, have to combine main RED & ORANGE line into one line and continue to connect.
- Keep in mind to use main power line of the key box which comes via over 30A fuse. You may have a potential for property damage or personal injury, in case of connecting directly from battery to the product.

* BLACK wire 1, 2 connection

- **Body earth (-) BLACK :** The (-) power line related to all the function of the product and needed for a safe driving. Secure to the body with bolt. For the safety, two (-) power lines are prepared. Secure each line to different position with the bolt and there must not be a inferior contact.

⚠Warning

- In case of the paint is covered on the earth point, must be removed before secure the (-) power line to the body. If there are inferior contacts, engine trouble could be happen during driving a vehicle.
  For the safety, two (-) power lines are prepared. Must secure each line to different position.

* GRAY wire connection

- **GRAY wire (IG1) 250mA (-) output line :** Output line generate less than 250mA during vehicle's power is the ON condition. This GRAY line could actuate the separate relay and specially needed for installation on the Winstorm vehicle.

⚠Warning

- This GRAY line should be connected to the relay of less than 250mA rated. This output line couldn't actuate high level of the current parts and could be seriously damaged if connected to the over rated relay.

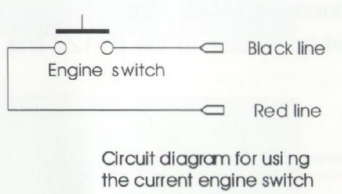
5) 9 PIN Connector wiring diagram

1. Start delay mode (GREEN loop line)
2. Start delay mode (GREEN loop line)
   * The functional jump line for delaying about 4 seconds when actuate automatic start function in the key-on condition. If the GREEN loop line is disconnected, automatic delaying time is set.

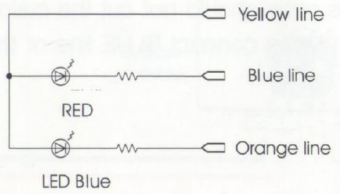
⚠Warning

MUST NOT extend the GREEN loop line length.
If you need to re-connect after cutting the line, should keep the short length. (less than 5cm)

3-1. BLACK line: A contact point line of the switch. Always shows (-).
3-2. BROWN line: Touch chip (+) 3.3V power line.
(Caution : Do NOT use in case of the vehicle using current engine switch)
3-3. RED line: B contact point line of the switch and contact to the A contact point when actuate the touch function.
3-4. ORANGE line: BLUE LED actuation output line
((-)output when the function is actuated)
3-5. YELLOW line: (+)12V power line (BLUE LED,REDLED,Vibrator)
3-6. GREEN line: Vibrator actuation output line
((-)output when the function is actuated)
3-7. BLUE line: REDLED actuation output line
((-)output when the function is actuated)



Circuit diagram for using the current engine switch



6) 2 PIN Connector wiring diagram

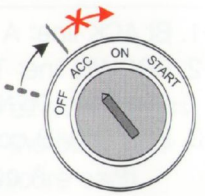
Bypass module control line
Connect to the connector 5P of the bypass module IETS_1-1.

7) KEY cutting for the immobilizer

To use this product, release the handle lock by rotating the key till ACC position. Insert the key to the key box and see on the side and indicate the cutting line not over the position. Then pull out the key and cut with the cutting line. You must check if key is cut too short. The key cut too short can' t be pulled out and must not use.
If the key length and condition is allowable, use a long-nose plier or substitute to turn to the ACC (key 1st step) position.

⚠Caution

Do NOT turn to the KEY ON (key 2nd step) position.
If you turn to the KEY ON (key 2nd step) position, the system enter to the temporary warning stage. To release this stage, use the original genuine key with immobilizer to start the engine and stay over 4 seconds.
Cut portion of the handle of the key must be kept to insert to the bypass module (IETS_1-1).



Fixing the ACC with cutting key

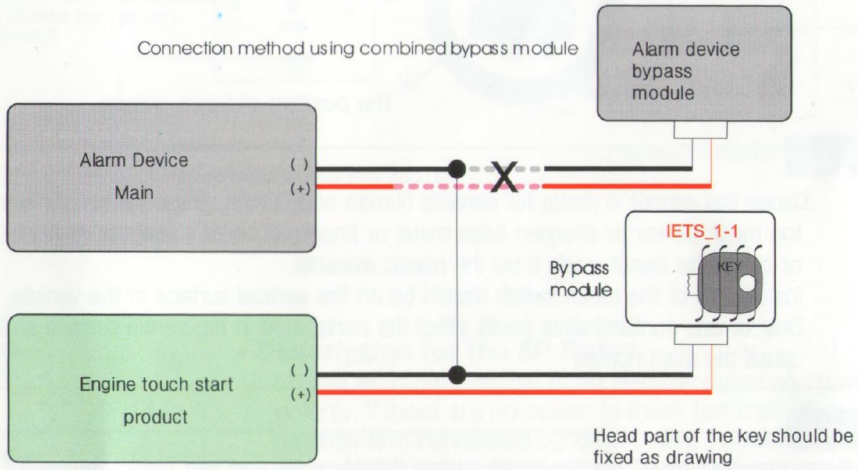
- Ref. : To stop the engine, you could touch the button for a long time or turn the inserted KEY to the OFF position.

- Ref. : The vehicle without handle lock function need not to insert the cutting key.
In this case, should not cut the main 6P connector (ACC) wire.
And, always connect BLUE line of the 4 PIN connector to the B+12V line.

8) Bypass Module (IETS_1-1)

The Bypass Module is to check the engine start availability by RF-communication to the key box.

* Open the case and secure firmly the cut key handle(immobilizer chip) to the antenna coil tunnel.
* To protect during case assembling work add adhesives to secure.
Secure the assembled module with checking the immobilizer communication.
* The vehicle with the aftermarket warning device could combine the bypass module with this one.
If you use the combined bypass module, module' s (-) polarity power line should be combined together to connect.
At this time, (+) polarity power lind should NOT be connected, or each module could be seriously damaged and could be a possibility of a fire.
(+) polarity power line connected to the alarm device' s bypass module is not used.
3PIN connector wire is the antenna line. Wind over immobilizer sensing coil of the key box more than 2 times and attach insulation tape to secure.

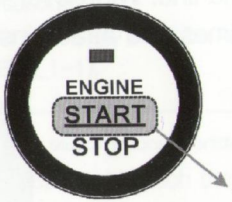


Antenna line & Antenna coil should NOT be damaged.
Do NOT make a knot when you install the antenna line.

9)Touch-switch Installation

Make a enough size of the hole to be passed the wire through rubber around the key box and secure on the key box surface. Must be attached on the vertical surface. Dust or any contaminants could affect the parts fitted in horizontal surface and cause the malfunction.

* The touch pad which sensing the human touch located in the center of the touch switch' s START position (letter window).
* The touch sensing could be well operated when the even surface of the human skin is touched.
* After one-touch signal is recognized (vibration feeling) then take off the end of the finger tip. Vibrating the finger tip on the touch panel could transmit the wrong signal to the system.
* The wrong signal cause the stress and malfunction to the product & vehicle.
* To transmit the long one-touch signal to the system, touch and wait for a second



The position of touch sensor

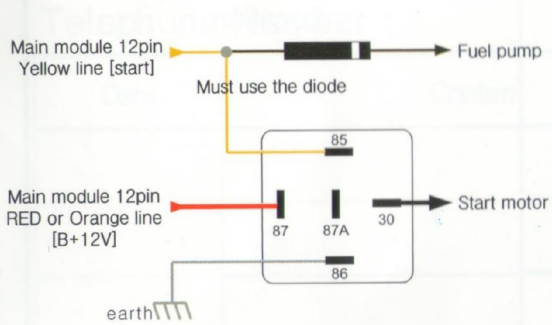
⚠Caution

Cause this sensor is made for sensing human body touch, press the sensor with too much power or sharpen edge metal or fingernail could cause the malfunction or break the panel made from the plastic material.
Installation of the touch switch should be on the vertical surface of the vehicle. Dust or any contaminants could affect the parts fitted in horizontal surface and cause the malfunction.

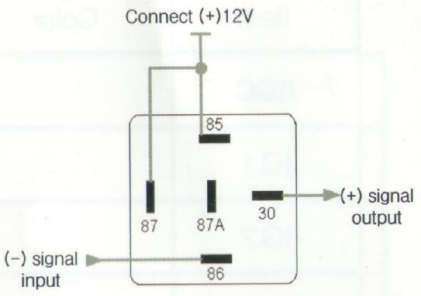
⚠Caution

Keep the vinyl cover on the touch switch during work and test then remove it just before installation. Touch action could be possible with the vinyl cover. This one could protect the touch switch surface' s damage and wiring condition
Touch switch wire should be secured in enough length before installation.

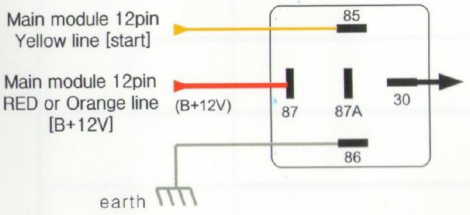
10) 5P Relay Application



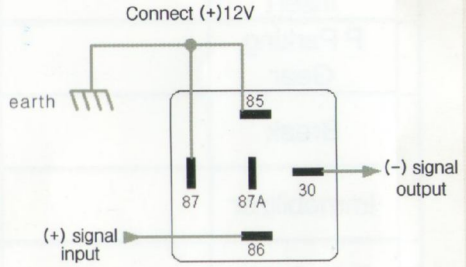
Samsung motors vehicle start wiring diagram
Connection method using 5P relay over 40A rate.



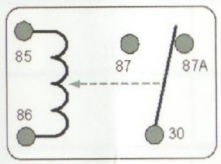
Changing (-) signal to (+) signal
using 5P relay



start wiring diagram
Connection method using 5P relay over 40A rate.



Changing (+) signal to (-) signal
using 5P relay



Structure of the 5P relay

*** Description for the 5P Relay**

- 85 and 86 is the terminal of an electromagnet and have no polarity. If there are no power to these terminal, 30 and 87A terminal is in connected condition , and if power is connected, 30 and 87A is disconnected and 30 and 87 is connected.