

# ***Exhibit E ..... User's Manual***

# VS520 Alarm System

## Installation Instructions

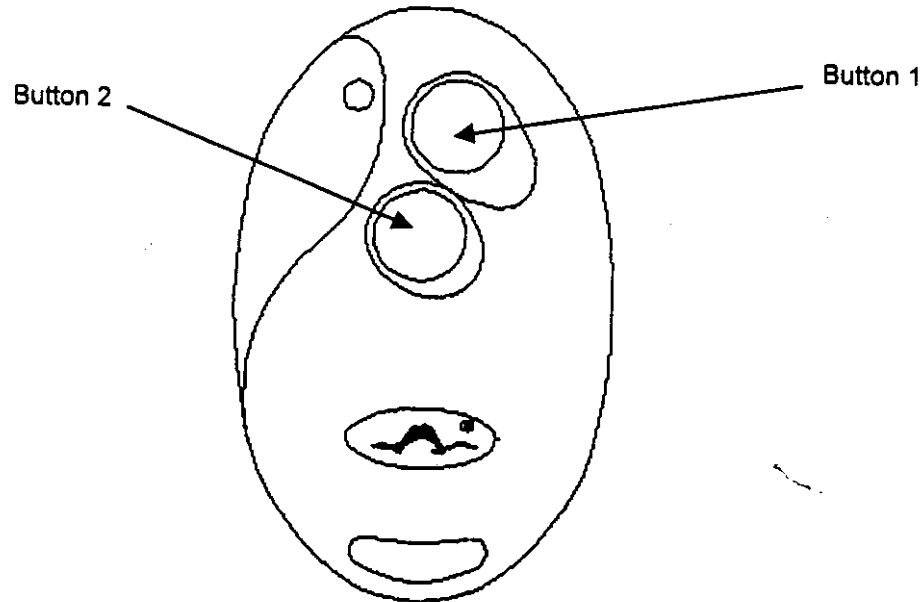
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### Introduction

The VS520 alarm is a microprocessor controlled alarm system designed to help protect a vehicle and its contents from being stolen. When armed, the alarm system will trigger if it senses vehicle entry via doors, boot or bonnet or detects movement via an optional shock or movement sensor. The system provides many advanced convenience features and functions to make the system easy to both install and use.

### Transmitter

A two button remote control transmitter is used to control the alarm's various features and functions. The VS520 system is supplied with two transmitters. The function of each button is as illustrated below :-



In case you lose or damage the transmitter (or batteries are exhausted), there is also a PIN code disarm procedure which will allow the alarm system to be disarmed by a PIN number. There is also a facility to teach new transmitters to the system and change the software switches using the PIN.

## **Parts List**

- VS520 Electronics Module
- Main Wiring Harnesses
- 2 x 12 Volt transmitters
- LED with wiring harness
- Single Stage Shock Sensor and harness
- Part Bag including cable ties, pin switch, screws and bullet connector

## **Mounting Locations**

Position the electronics module inside the passenger compartment, away from any potential sources of damp or excessive heat. The electronic module should be mounted in a location which requires the removal, using tools, of at least one piece of trim panel. Attach the electronic module to the chosen location using the screws provided in the kit.

## **LED**

Drill an 8mm hole in the dashboard for the LED and securely fit the LED in the hole. Route the wiring to the electronic module and connect it to the smaller two pin connector on the electronic module.

## **Electrical Connections**

Before making any connections, locate the following signals within the vehicle:-

- Permanent feed (+30)
- Ignition Switch feed (+15)
- Indicator connections
- Door wire (and identify if it is positive or negative)
- Boot Wire (and identify if it is positive or negative)
- Bonnet Switch (Install if necessary)
- Good vehicle earth bolt
- One immobiliser circuit either :-
  - ❖ Starter Motor (preferably the starter motor relay if available)
  - ❖ Fuel Pump Feed
  - ❖ Ignition Coil (if available)
  - ❖ Diesel Shut of valve

**Note : We advise that ECU immobilisation is not attempted**

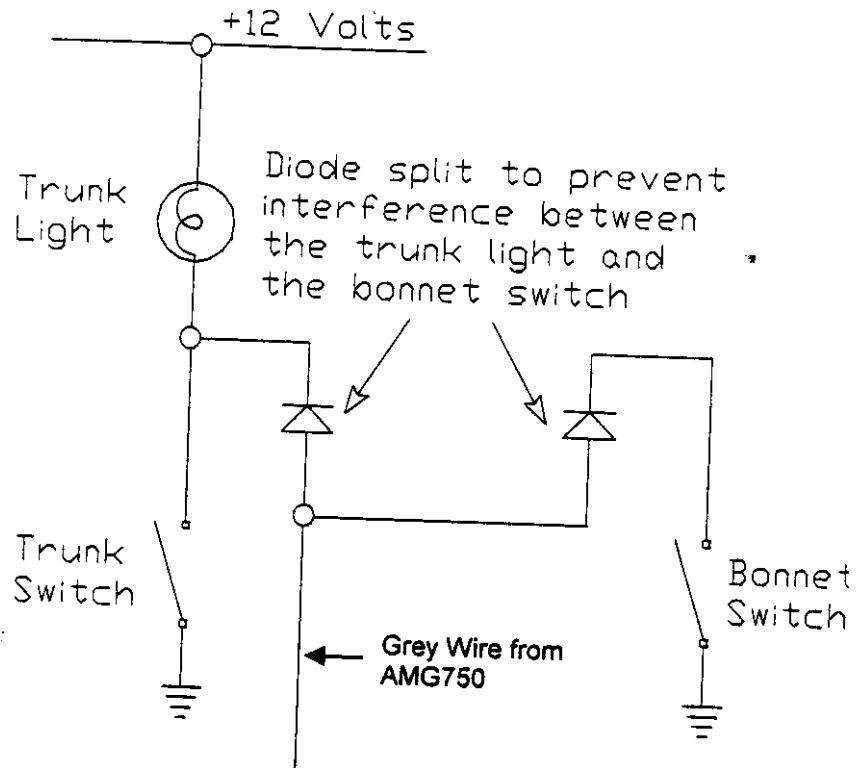
### **Main Connections**

<b>RED</b>	Connect the cable to a permanent 12 volt battery feed (+30)
<b>BLACK</b>	Connect to a good vehicle earth bolt (-31)
<b>ORANGE</b>	Connect to an ignition switched supply. Note you must connect this wire to a ignition switch feed which does not drop out when cranking i.e hot in accessory, ignition on and start (+15)
<b>BLACK/WHITE</b>	Connect to the indicator circuits. Diode split the cable if the Left and Right indicator circuits are fed separately.
<b>GREEN/BROWN</b>	This is the Flasher Polarity and should be connected to either a permanent feed or an earth. The polarity of this connection will be determined by the polarity of the signal required to turn on the indicator lights.
<b>BROWN</b>	Route the wire through the bulkhead grommet into the engine bay. Connect this wire to the positive side of the siren and the negative side of the siren to earth.
<b>GRAY</b>	Route the wire through the bulkhead grommet to the bonnet pin switch. Connect to a wire that gives an earth signal when the bonnet is open. Install a separate Bonnet pin switch if no such wire exists on the vehicle. If you want to connect a dual stage sensor to the VS520 alarm system, diode split the hood sensing wire into the door (-) connection and connect the GREY wire to the pre-warn output of the sensor. To get pre-warn operation, turn software switch 9 off (Pre-warn operation).
<b>GREEN</b>	If the vehicle has a negative polarity door circuit, connect this wire between the interior light and the door switches. Negative door polarity door circuits have switches that provide an earth signal on the door wire when the door is opened. Ensure that the wire you connect to senses all the doors on the vehicle.
<b>YELLOW</b>	If the vehicle has positive polarity door circuit, connect this wire between the interior light and the door switches. Positive polarity door circuits have switches that supply battery voltage to the door wire when the door is opened. Ensure that the wire you connect to senses all the doors on the vehicle.

**Notes:**

i) The alarm system has the facility to sense signals on door -, door + and Bonnet wires. Therefore the connection points listed above are the recommended configuration but these three wires can be connected in any configuration to make the system as easy to install as possible.

ii) If you choose to use the GRAY wire to sense both the bonnet and the trunk, two diodes should be used to prevent interference between the bonnet switch and the trunk light.



**BLUE/BLACK**

The auxiliary output (2<sup>nd</sup> Channel) supplies an earth signal (300mA current sink) output. See the table below for details of how to configure this output.

**BLACK (x2)**

The two black wires, which exit the electronic module on the left side, come directly from the internal immobiliser relay. Locate the feed wires for the circuit you wish to immobilise, cut the wire and test that the engine does not either start or run. Take care with vehicles with catalytic converters to ensure that unburned fuel can't damage the converter. Connect one wire to each end of the wire you have cut and test the functionality of the immobiliser.

**BROWN/WHITE** This is the alarm system armed output and provides an earth signal when the alarm system is armed. This wire can be used as an armed signal input for other vehicle security/tracking systems or to control an extra external immobiliser relay.

### **Central Door Locking Connections**

The VS520 alarm system has universal central door locking connections built into the alarm system to operate both original and after market central door locking systems. The wiring colours are as follows: -

<b>BLUE/YELLOW</b>	Unlock Normally Closed
<b>BLUE/RED</b>	Unlock Common
<b>RED/BLACK</b>	Unlock Normally Open
<b>GREY/YELLOW</b>	Lock Normally Closed
<b>GRAY/RED</b>	Lock Common
<b>RED/YELLOW</b>	Lock Normally Open

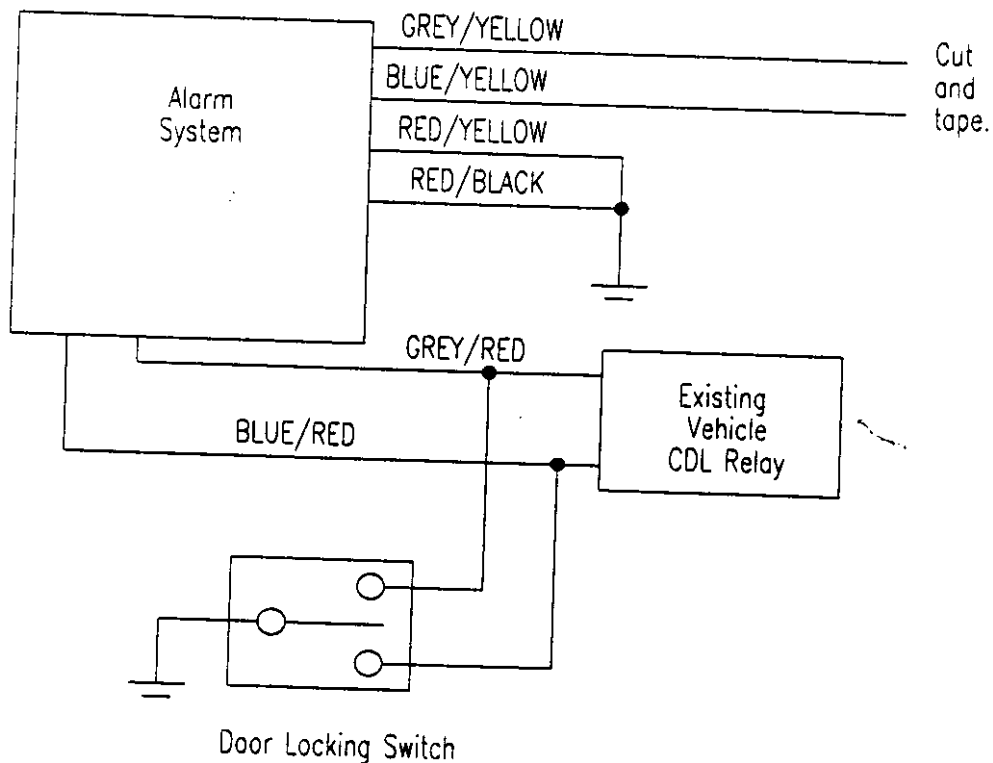
Please see the wiring diagrams that follow for the most common central door locking systems.

## 1. Door Locking Systems Using CDL Module (Negative Pulse)

This central door locking system is common on European and Japanese vehicles and many after market central door locking kits which include both motors and a central door locking relay.

- Locate the CDL module, which controls the door lock solenoids or the wiring as it, exits the drivers or passenger doors into the kick panels.
- Locate the vehicle lock wire and connect the GREY/RED from the alarm system.
- Locate the vehicle unlock wire and connect the BLUE/RED from the alarm system.
- Join the RED/YELLOW and the RED/BLACK from the alarm system and connect to a good earth point.
- Cut the GREY/YELLOW and the BLUE/YELLOW from the alarm system, as these are not required for the installation to this type of locking system.

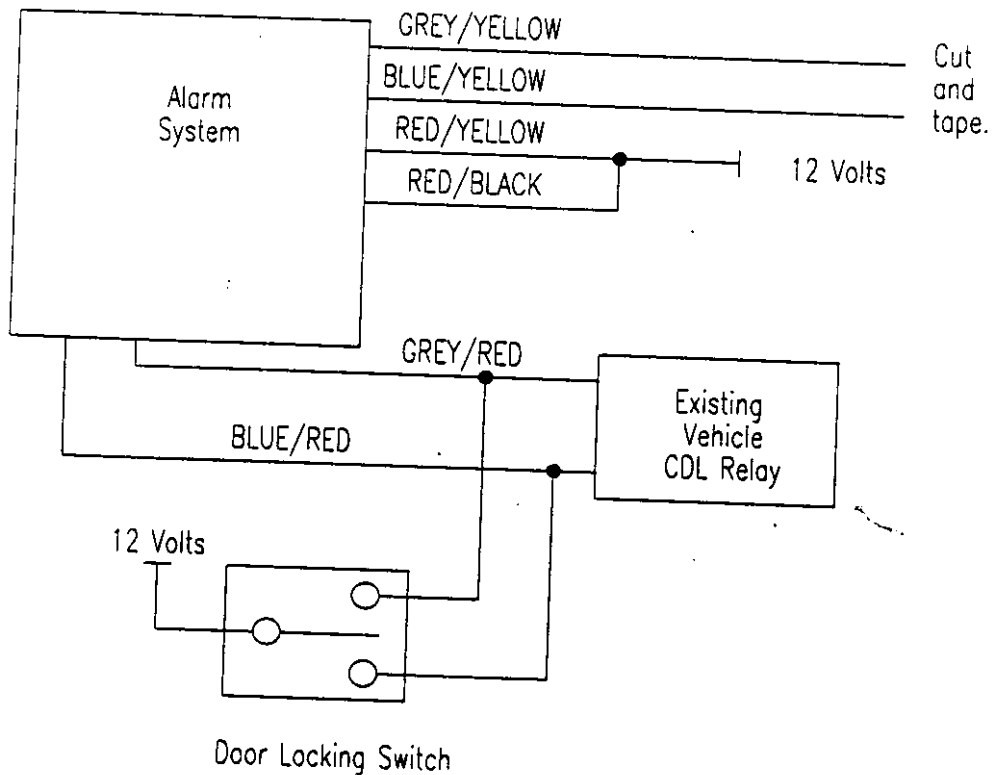
### Negative Pulse Central Door Locking System



## 2. Door Locking System Using CDL Module (Positive Switching)

- Locate the CDL module which controls the door solenoids or the central door locking wiring as it comes out of the drivers or passenger door into the kick panel.
- Locate the Lock wire and connect the GREY/RED from the alarm system to this wire.
- Locate the Unlock wire and connect the BLUE/RED from the alarm system to this wire.
- Join the RED/YELLOW and the RED/BLACK from the alarm system and connect them both to a permanent feed.
- Cut the BLUE/YELLOW and the GREY/YELLOW and tape them together, as they are not required for this type of locking system.

### Positive Pulse Central Door Locking System



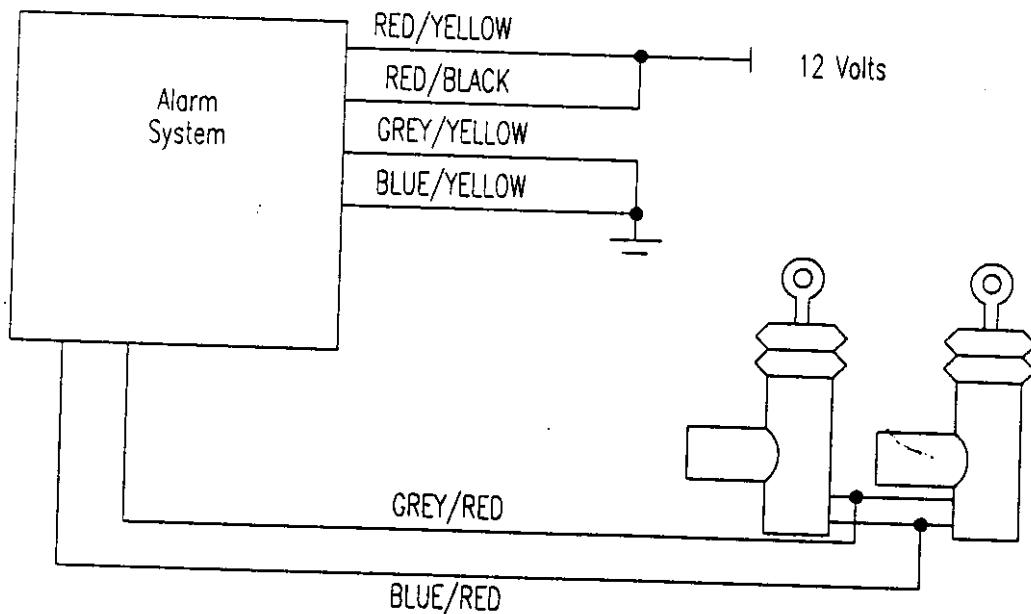


### 3. Installation of new Motors or Solenoids

This type of locking can be achieved by adding after market central door locking solenoids in each door. The central door locking in this situation can only be operated by the alarm remote control and not by the ignition key in the door lock cylinders. If an after market central door locking relay is included then follow the instructions for negative pulse locking.

- a) Join the GREY/YELLOW and the BLUE/YELLOW together and connect to a good earth point.
- b) Join the RED/YELLOW and the RED/BLACK together and connect to a permanent 12 volt source.
- c) Connect the GREY/RED to the locking motor wire, which locks the doors when 12 volts is applied to it.
- d) Connect the BLUE/RED to the locking motor wire, which unlocks the doors when 12 volts is applied to it.

#### Installation of New Door Motors

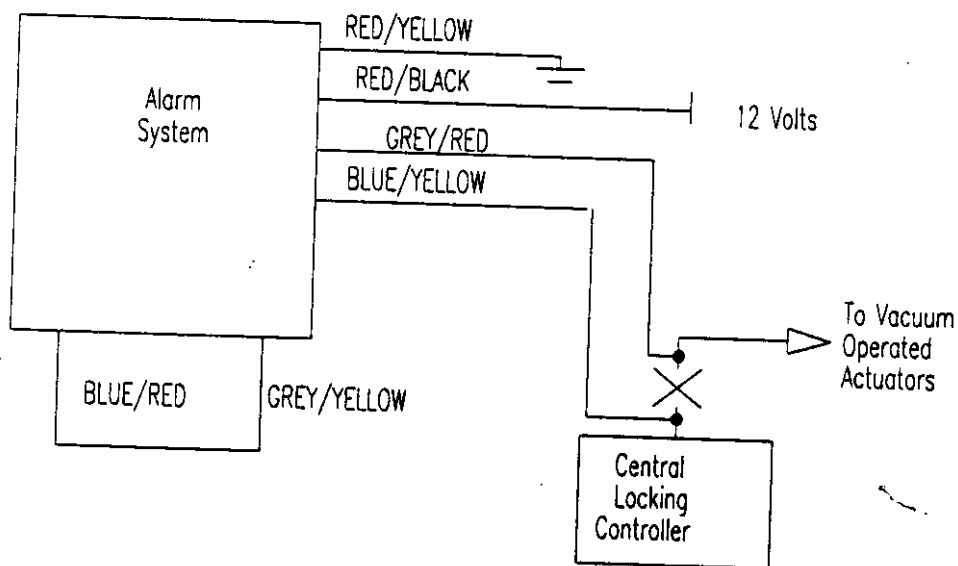


#### 4. Vacuum Door Locking System

This type of locking system is common on German vehicles such as Mercedes, VW and Audi

- a) Locate the door lock trigger wire that runs from either door to the central locking control system. This will change from 12 volts to earth when the doors are locked and unlocked.
- b) Cut this wire and connect the BLUE/YELLOW from the alarm system to the cut end, which changes voltage when the door locks are activated.
- c) Connect the GREY/RED from the alarm system to the other cut end.
- d) Join the BLUE/RED and the GREY/YELLOW together.
- e) Connect the RED/BLACK from the alarm system to a permanent feed.
- f) Connect the RED/YELLOW from the alarm system to earth.

#### Vacuum Actuated Door Locking System



The short BLACK wire that comes out of the back of the electronics module is an antenna for the RF receiver. This cable has been cut to the correct length. No improvement in performance will be achieved by either shortening or lengthening this cable. For best performance, ensure that the cable is positioned away from any other cables or potential sources of electrical interference and do not place it behind any metal panels.

Further information on electrical connections please refer to the enclosed Alarm System Wiring Diagram.

### **Emergency Disarm**

This facility is provided to allow the system to be disarmed in an emergency if the transmitter batteries have failed or you have lost your transmitter. When the vehicle is entered using the key, the alarm will trigger and the immobiliser will remain armed. To disarm the alarm and immobiliser proceed as follows :-

- a) Switch the ignition on and off twice and then back on again within 7 secs
- b) To attract the users attention, the LED will fast flash for 3 seconds
- c) After 3 secs, the LED will flash at a rate on 1 flash per second
- d) You should count the flashes and turn the ignition off after the number of flashes equal to your PIN code.
- e) If the PIN code is entered correctly, the system will return to disarm mode when the ignition is switch off. If the PIN code is incorrect, then the alarm system will remain in armed mode.

Note : The default setting for the PIN is 1 but it can be set to any number between 1 and 9 using software switch 11.

### Control Summary

FUNCTION	Button 1	Button 2	Conditions
Arm (Lock)	•		Ign OFF
Arm (Lock) Without Sensors	• 1 <sup>st</sup>	• 2 <sup>nd</sup>	Ign OFF
Lock	•		Ign ON
Silent Arm	•	•	Ign OFF
Disarm (Unlock)	•		Ign OFF
Unlock		•	Ign ON
Silent Disarm	•	•	Ign OFF
Panic Mode	• 3s		Ign OFF
Car Finder		•	Ign OFF (Disabled In Disarm)
Auxiliary Output		• 3s	Ign OFF (Disarm Only)
Anti-Hijack	• 3s	• 3s	Ign ON
Valet Mode		• 3s	Ign ON

### KEY

- Press button
- 1<sup>st</sup> Press button in indicated sequence
- 3s Press and hold button for 3 seconds

## **Introducing and Removing Transmitters**

The VS520 alarm can accommodate up to four transmitters. To teach transmitters to the system, proceed as follows :-

1. Turn the ignition on and off twice and then turn the ignition back on within a 7 second period.
2. LED fast flashes for 3 seconds.
3. After the 3 second flashing, there is a 1 second break
4. Count the flashes and turn the ignition off after the number of flashes equal to the PIN code.
5. Turn the ignition back on and press button 1 on a new transmitter to teach it to the system.
6. Turn the ignition off
7. Leave the ignition off for 10 seconds to exit or turn the ignition back on to enter software switch routine.

## **Software Switches**

The software switches are adjusted as follows :-

- a) Complete the code learn sequence and turn the ignition back on.
- b) Press button 1 once to go to switch 1, twice to go to switch 2 etc
- c) Once you have moved forward through the table, press button 2 to step backwards through the table i.e press button 2 once to move from switch 5 to switch 4.
- d) As you step through the table the siren will beep to indicate the selected switch i.e one beep switch 1, two beeps switch 2, three beeps switch 3 etc
- e) If the switch is on the LED will be ON if the switch is off the LED will be OFF.
- f) Press both buttons on the transmitter to toggle the setting of the switch from OFF to ON or ON to OFF.
- g) For the programmable output switch, each time you press both buttons the selected output will move one place in the sequence i.e press both button once to move from setting 1 to setting 2, press both buttons again to move from setting 2 to setting 3 ... press both buttons again to move from switch 5 to switch 1 etc. The LED will flash in a sequence to identify the current selected option once for option 1, twice for option 2, three times for option 3 etc.
- h) When you have adjusted the setting, turn off the ignition and wait 10 seconds for the system to exit or turn the ignition back on within 10 seconds to change or check the selections.

## Software Features

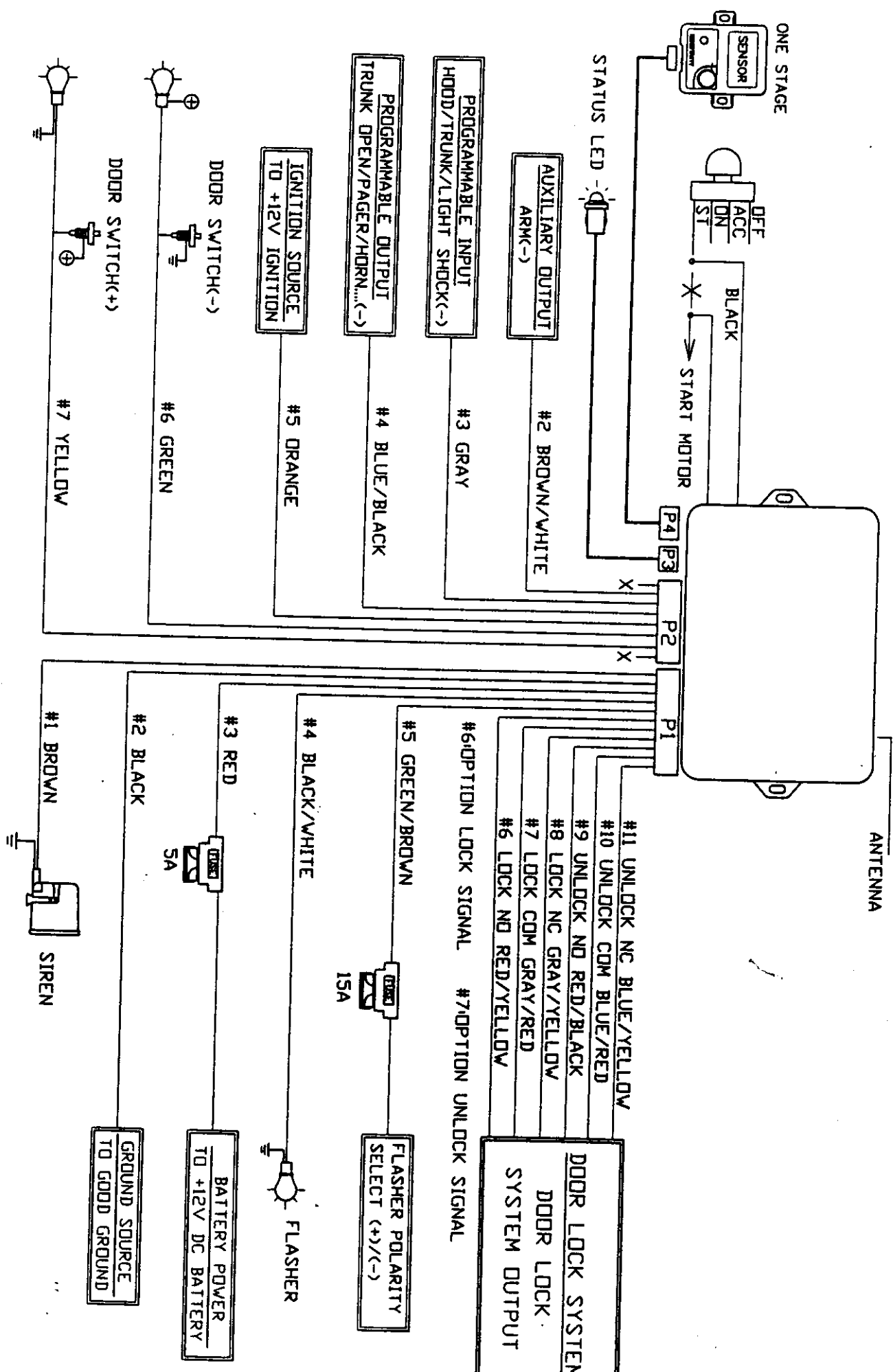
Software Switch	Software Switch Function	Default	On Setting	Off Setting
1	Passive ARM/DISARM Mode	OFF	ON	OFF
2	Ignition On door Lock	ON	ON	OFF
3	Programmable Output Setting	1	Setting between 1 and 5 (See Comments Below)	
4	Motor/Vacuum Locking	0.5s	0.5s	4s
5	Auto Re-arm	ON	ON	OFF
6	Auto Re-lock	ON	ON	OFF
7	Alarm Duration	30s	30s	60s
8	Car Jacking (ON/OFF)	OFF	ON	OFF
9	Programmable Input	Hood	Hood	Pre-Warn
10	Siren Chirp	ON	ON	OFF
11	PIN Override Code (Press both buttons once to entry change. If both buttons are pressed again the system will EXIT and up-date the PIN code.)	1	Setting between 1 and 9. Select Switch, press button 1 to increase code and button 2 to reduce code by 1. LED flashes the current selection	
12	Delete all other Transmitters		Press both buttons	
13	Return all Settings to Default		Press both Buttons	

### Programmable Output Settings

1. Auxiliary Output – provides 1 sec signal after activation from transmitter
2. Pager Output – provides signal when the alarm system is triggered or panic is activated (Constant signal)
3. Horn Output – provides signal when the alarm is trigger or panic is activated (ON time = OFF time)
4. Window Close – provides 30sec signal when armed
5. Dome Light Output – 20 sec signal when doors closed or disarmed with remote control.

# VS520 ALARM WIRING DIAGRAM

DATE: MAY/24/'9  
REV:B



# VS520 Alarm System

## User Instructions

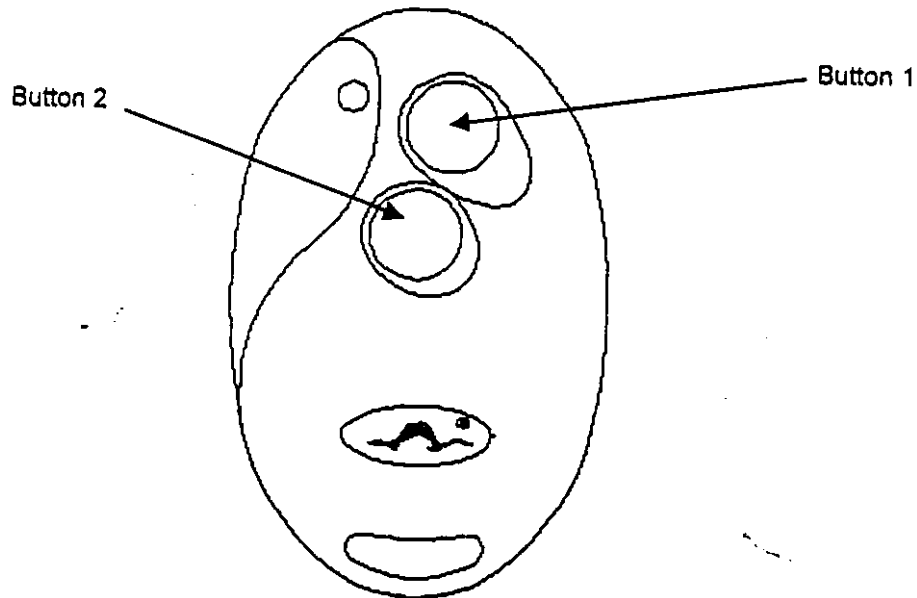
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### Introduction

The VS520 alarm is a microprocessor controlled alarm system designed to help protect a vehicle and its contents from being stolen. When armed, the alarm system will trigger if it senses vehicle entry via doors, boot or bonnet or detects movement via an optional shock or movement sensor. The system provides many advanced convenience features and functions to make the system easy to both install and use.

### Transmitter

A two button remote control transmitter is used to control the alarm's various features and functions. The VS520 system is supplied with two transmitters. The function of each button is as illustrated below :-



In case you lose or damage the transmitter (or batteries are exhausted), there is also a PIN code disarm procedure which will allow the alarm system to be disarmed by a PIN number. There is also a facility to teach new transmitters to the system and change the software switches using the PIN.

Notice : The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



## **Normal Operation**

### **Arming the Alarm System**

To manually arm the alarm system and set the immobiliser, turn off the ignition, exit the vehicle and ensure all doors (and boot/bonnet) are properly closed, then press button 1 on your transmitter. The siren will chirp and the hazards will flash once to confirm that the alarm has been armed and the LED will start to flash. If the alarm is connected to your central door locking the doors will be lock at this point.

If you would like the alarm to arm without chirping the siren, press buttons 1 and 2 together when arming the alarm. The alarm system will arm and the doors will lock with visual confirmation from the hazard lights only.

### **Disarming the Alarm System**

Pressing button 1 on the transmitter when the alarm system is armed will disarm the alarm and immobiliser. The indicators will flash and the siren will chirp twice. If the alarm is connected to the central locking system then the doors will unlock at this point. If you do not enter the vehicle for 30 seconds, the system will assume that you did not intend to disarm and includes the facility to auto-rearm. The alarm system has the facility to re-lock the doors when the alarm system re-arms. Talk to your dealer/installer to ensure that the switches are set in accordance with your requirements.

If you would like the system to disarm without chirping, then press buttons 1 and 2 together when disarming the alarm. The alarm system will disarm and the doors will unlock with visual indication only.

### **Disabling the Interior Sensors when Arming (PET MODE)**

This alarm system has motion sensors that detect the presence of an intruder or damage to the glass by using a shock sensor. If you wish to arm the system with the vehicle occupied, for example when leaving a pet in the car, you will need to disable the interior sensors. To do this, press button 2 immediately (within 3 seconds) after pressing button 1 to arm the alarm system. Each press will be separately confirmed by a chirp and indicator flash.

### **Two Stage Disarm**

To disarm the alarm system, press button 1. If the alarm system has been triggered, pressing button 1 should stop the alarm cycle but the alarm system will remain armed and the doors will remain locked. To fully disarm the alarm systems, press the disarm button again.

## **Valet Mode**

This is recommended to allow your vehicle to be taken for service or repair, as the setting is remembered even when the battery is disconnected. Disarm the system, turning on the ignition and press and hold button 2 on the transmitter for three seconds to enter valet mode. The LED will turn on after three seconds and the indicators will flash three times to indicate that the system is in valet mode. The system will remain in this mode until transmitter button 2 is pressed again with the ignition switched on. The siren will beep three times to confirm that the system has exited valet mode.

## **Additional Features**

### **Central Door Locking Features**

The VS520 alarm system has an interface to control the door locks. If you have central door locking on your vehicle and have selected this option, your doors will lock and unlock as and when you arm and disarm the system with the transmitter.

#### *Autolock with Ignition-on*

If you have selected this option, your vehicle will lock automatically 5 seconds after you switch the ignition on. This is a personal safety feature to help protect against road rage or hijack attacks. If you open a door with the ignition on and before the locking pulse is issued then the pulse will be cancelled to prevent you being locked outside the vehicle. Your installer can switch off this feature if you do not require the automatic lock with ignition on feature.

#### *In-car lock/unlock*

If you have central door locking control facility, you can also lock (or unlock) your doors from inside the vehicle by pressing button 1 or button 2 on your transmitter while the ignition is switched on. Press button 1 to lock the doors and button 2 to unlock the doors. The doors will unlock automatically when the ignition is turned off.

## **Panic Mode**

This system also includes a panic mode, which enables you to activate the alarm from the transmitter. This is an especially useful feature should you wish to ward off unwanted attention. The panic facility works only when the ignition is switched off.

If you want to trigger the alarm system, press and hold button 1 for 3 seconds. The panic facility will sound the siren and flash the indicators without immobilising the vehicle, enabling you to drive away. The panic mode can be reset by pressing button 1 on the transmitter.

## Car Finder

Press button 2 when the alarm system is armed and the ignition is switched off will cause the siren to beep once and the indicators to flash 6 times to show the cars position.

## Convenience Facilities

The VS520 Alarm System has an auxiliary output that allows you to operate an additional feature for the alarm system transmitter. The auxiliary output must be configured to the feature your want to control. The options are as follows:-

1. *Auxiliary Output* – provides a 1 second pulse output whenever button 2 on the transmitter is pressed for 3 seconds with the ignition switched off and the alarm system disarmed. Can be used to activate a trunk release solenoid.
2. *Pager Output* – provides signal when the alarm system is triggered or panic is activated (Constant signal)
3. *Horn Output* – provides signal when the alarm is trigger or panic is activated (ON time = OFF time) and can be used to sound the car horn.
4. *Window Close* – provides 30sec signal when the alarm system is armed to provide an automatic window close on arming feature.
5. *Dome Light Output* – 20 sec signal when the doors are closed or disarmed with remote control to turn on the interior light.

If you would like your alarm system to control one of these vehicle features, discuss it with your dealer and ask him to configure the system accordingly.  
Note : It may require an additional module to allow some vehicle systems to be controlled by the alarm system.

## Emergency Disarm

This facility is provided to allow the system to be disarmed in an emergency if the transmitter batteries have failed or you have lost your transmitter. When the vehicle is entered using the key, the alarm will trigger and the immobiliser will remain armed. To disarm the alarm and immobiliser proceed as follows :-

- a) Switch the ignition on and off twice and then back on again within 7 secs
- b) To attract the users attention, the LED will fast flash for 3 seconds
- c) After 3 secs, the LED will flash at a rate on 1 flash per second
- d) You should count the flashes and turn the ignition off after the number of flashes equal to your PIN code.
- e) If the PIN code is entered correctly, the system will return to disarm mode when the ignition is switch off. If the PIN code is incorrect, then the alarm system will remain in armed mode.

Note : The default setting for the PIN is 1 but it can be set to any number between 1 and 9 using software switch 11.

## Passive Arming

If selected, this option arms the alarm and set the immobiliser automatically after the ignition has been turned off and a door has been opened and closed. Note that locking will not be activated on passive arming, in order to ensure that the driver can not be locked out of the vehicle. As soon as the doors, boot and bonnet have been closed with the ignition off, the indicators will flash twice and the LED will fast flash to indicate that the arming sequence has begun. If all doors, boot and bonnet remain closed for 30 seconds, the alarm system will arm. To temporarily prevent the system passive arming open a door, boot or bonnet or use the valet mode.

## Automatic Warning Signals

The VS520 includes a number of warning sequences to inform you that either the alarm system has been triggered or that your vehicle is not fully protected:-

- a) *Three flash warning* – If you press the remote control button 1 to arm the alarm system and the indicators flash three times and the siren beeps three times, then a door, boot or bonnet is open and so the vehicle is not fully protected. Return to your vehicle, check the perimeter of the vehicle and when the doors, boot and bonnet are all correctly closed press button 1 again to lock the vehicle and arm the alarm.
- b) *Intrusion Warning* – If the indicators flash four times and the siren beeps four times when you disarm the alarm system, then you know that the alarm system has been triggered since the time that you armed the alarm. Check the vehicle carefully and ensure that the vehicle has not been damaged.
- c) *Zone Identification* - When the ignition is first turned on the sensor which has triggered the alarm system will be indicated by the number of flashes from the LED.

Flashes	Trigger Input
2	Sensor
3	Doors (-)/Door (+)
4	Programmable Input (If Hood Selected)
5	Ignition

## Car Jacking Mode

The VS520 alarm system includes a Car Jacking Mode and the sequence for this facility is as follows :-

The Car Jacking Mode is activated by :-

- Opening and closing a door with the ignition switched on
- By pressing button 1 and 2 on the transmitter

Transmitter operated Car Jacking Mode is available regardless of the setting of the Car Jacking software switch. All other Car Jacking operations can be disabled by turning off the Car Jacking software switch.

Once the Car Jacking Mode has been enabled, it will operate as follows :-

- i) Flashers will flash once to indicate that the sequence has begun
- ii) The LED will flash the disarm code sequence once (full 9 flashes of LED) and if the ignition remains on, it will then slow flash for 30 seconds. If the Car Jacking Mode was activated by the remote control, then it can be cancelled by pressing both buttons on the same transmitter for 3 seconds.
- iii) After this 30 second warn period, the siren will sound and the flashers will flash for 30 seconds.
- iv) After this 30 second alarm sounding period, the internal immobiliser will energise to immobilise the vehicle and the siren and flashers will keep flashing. This period will last for 60 seconds.
- v) After this period, the system will return to the arm mode with the doors unlocked, but the indicators will continue to flash until the alarm is completely disarmed by the Disarm Code.

There are two methods of returning the system to disarm mode once the Car Jacking Mode has been enabled:-

- i) If the Car Jacking Mode was enabled by remote control, the same transmitter can be used to return the system to disarm mode by pressing and holding both buttons on the remote control for 3 seconds. The remote control can only be used if the Car Jacking Mode was enabled by remote and only during the first 30 second pre-warn period. After this time, the disarm code must be used.
- ii) If the Car Jacking Mode Software Switch is turned on, the user must enter the Disarm Code before driving away. When the ignition is turned on, the LED will fast flash for 3 second to attract the user attention. The LED will then flash at a rate of one flash per second. The user counts the flashes and when the LED has flashed a number of times equal to the Disarm Code, they switch off the ignition. If the code is correct, when they switch the ignition back on, the system will enter fully disarmed mode. If the code is not correct, then the system will continue with the car jacking procedure.

If the car jacking mode is enabled, the trigger memory with diagnostic code will be disabled. If car jacking is started automatically by opening and closing the door with the ignition on then the transmitters will be ignored.

### Control Summary

FUNCTION	Button 1	Button 2	Conditions
Arm (Lock)	•		Ign OFF
Arm (Lock) Without Sensors	• 1 <sup>st</sup>	• 2 <sup>nd</sup>	Ign OFF
Lock	•		Ign ON
Silent Arm	•	•	Ign OFF
Disarm (Unlock)	•		Ign OFF
Unlock		•	Ign ON
Silent Disarm	•	•	Ign OFF
Panic Mode	• 3s		Ign OFF
Car Finder		•	Ign OFF (Disabled In Disarm)
Auxiliary Output		• 3s	Ign OFF (Disarm Only)
Anti-Hijack	• 3s	• 3s	Ign ON
Valet Mode		• 3s	Ign ON

### KEY

- Press button
- 1st Press button in indicated sequence
- 3s Press and hold button for 3 seconds

## **Introducing and Removing Transmitters**

The VS520 alarm can accommodate up to four transmitters. To teach transmitters to the system, proceed as follows :-

1. Turn the ignition on and off twice and then turn the ignition back on within a 7 second period.
2. LED fast flashes for 3 seconds.
3. After the 3 second flashing, there is a 1 second break
4. Count the flashes and turn the ignition off after the number of flashes equal to the PIN code.
5. Turn the ignition back on and press button 1 on a new transmitter to teach it to the system.
6. Turn the ignition off
7. Leave the ignition off for 10 seconds to exit or turn the ignition back on to enter software switch routine.

## **Software Switches**

The software switches are adjusted as follows :-

- a) Complete the code learn sequence and turn the ignition back on.
- b) Press button 1 once to go to switch 1, twice to go to switch 2 etc
- c) Once you have moved forward through the table, press button 2 to step backwards through the table i.e press button 2 once to move from switch 5 to switch 4.
- d) As you step through the table the siren will beep to indicate the selected switch i.e one beep switch 1, two beeps switch 2, three beeps switch 3 etc
- e) If the switch is on the LED will be ON if the switch is off the LED will be OFF.
- f) Press both buttons on the transmitter to toggle the setting of the switch from OFF to ON or ON to OFF.
- g) For the programmable output switch, each time you press both buttons the selected output will move one place in the sequence i.e press both button once to move from setting 1 to setting 2, press both buttons again to move from setting 2 to setting 3 ... press both buttons again to move from switch 5 to switch 1 etc. The LED will flash in a sequence to identify the current selected option once for option 1, twice for option 2, three times for option 3 etc.
- h) When you have adjusted the setting, turn off the ignition and wait 10 seconds for the system to exit or turn the ignition back on within 10 seconds to change or check the selections.

## Software Features

Software Switch	Software Switch Function	Default	On Setting	Off Setting
1	Passive ARM/DISARM Mode	OFF	ON	OFF
2	Ignition On door Lock	ON	ON	OFF
3	Programmable Output Setting	1	Setting between 1 and 5 (See Comments Below)	
4	Motor/Vacuum Locking	0.5s	0.5s	4s
5	Auto Re-arm	ON	ON	OFF
6	Auto Re-lock	ON	ON	OFF
7	Alarm Duration	30s	30s	60s
8	Car Jacking (ON/OFF)	OFF	ON	OFF
9	Programmable Input	Hood	Hood	Pre-Warn
10	Siren Chirp	ON	ON	OFF
11	PIN Override Code (Press both buttons once to entry change. If both buttons are pressed again the system will EXIT and up-date the PIN code.)	1	Setting between 1 and 9. Select Switch, press button 1 to increase code and button 2 to reduce code by 1. LED flashes the current selection	
12	Delete all other Transmitters		Press both buttons	
13	Return all Settings to Default		Press both Buttons	

## Programmable Output Settings

1. Auxiliary Output – provides 1 sec signal after activation from transmitter
2. Pager Output – provides signal when the alarm system is triggered or panic is activated (Constant signal)
3. Horn Output – provides signal when the alarm is trigger or panic is activated (ON time = OFF time)
4. Window Close – provides 30sec signal when armed
5. Dome Light Output – 20 sec signal when doors closed or disarmed with remote control.