



""PROTECT YOURSELF AND YOUR INVESTMENT

## INSTALLATION MANUAL

Freedom 200+2

This device complies with FCC Rules part 15. Operation is subject to the following two conditions, (1) This device may not cause harmful interference and, (2) This device must accept any interference that may be received, including interference that may cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

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## Programming Transmitters

Up to 4 different transmitters may be programmed to operate your security system. When a new transmitter is programmed into the system, all previous transmitters will be deleted. If a third or fourth transmitter is desired, all of the transmitters must be programmed at the same time into system. To program transmitters to operate your system, follow this procedure:

**Step #1:** Turn “on” the ignition; within 10 seconds press the Valet Switch 5 times. The siren will sound a long siren chip indicating Transmitter Programming Mode.

**Step #2:** To program the first transmitter, within 10 seconds press the large upper transmitter button until the siren sounds one short chirp. Repeat this step for each transmitter which is to operate the system.

The system will exit Transmitter Programming Mode if 10 seconds pass without receiving a new transmission, or immediately upon turning the ignition switch “off” or upon the entry of a fourth transmitter. Exit from Transmitter Programming Mode is indicated by a long siren chirp.

In the above Step #2, pressing the transmitter’s large upper button assigns that button to arm, disarm and panic the system. The other two button’s functions are automatically assigned per the operations as described in the Owner’s Manual.

To exit Feature Programming Mode, allow 10 seconds to expire without programming activity, or turn on the ignition switch. A long siren chirp indicates the system exiting Feature Programming Mode.

The Programmable Features, and their factory-set default setting, are:

- Feature #1:** Current Sensing: Default ON.
- Feature #2:** 3 Minute or 3 Second Current Sensing Delay: Default 3 Minute.
- Feature #3:** Last Door Arming: Default ON.
- Feature #4:** Doors Lock With Last Door Arming: Default OFF.
- Feature #5:** Automatic Rearming: Default ON.
- Feature #6:** Doors Lock with Automatic Rearming: Default OFF.
- Feature #7:** Steady Siren or Pulsed Horn Output: Default Steady Siren.
- Feature #8:** Doors Lock and Unlock With Ignition On and Off: Default ON.
- Feature #9:** 30 or 60 Second Activation Duration: Default 30 Seconds.
- Feature #10:** Double Unlock Pulse: Default OFF.
- Feature #11:** Open Door Arming Alert: Default OFF.
- Feature #12:** Trunk Release Disarms System: Default ON.
- Feature #13:** Transmitter Activated Anti-Carjacking Protection: Default OFF.
- Feature #14:** Door Activated Anti-Carjacking Protection: Default OFF.
- Feature #15:** Ignition Activated Anti-Carjacking Protection: Default OFF.
- Feature #16:** Confirmation Chirps: Default ON.

## Installation

**Mounting The Main Control Module:** The Main Control Module contains the electronics necessary for the security system's operation. Always mount this module in the vehicle's interior compartment, in a secure location that is not easily accessible. Ensure that moisture, vibration and temperature extremes are minimized. Acceptable locations may include mounting behind the dash, behind the glovebox or other interior panels.

**Mounting The Siren:** Find a location in the engine compartment away from the extreme heat of the engine and manifold. A suitable location will offer a firm mounting surface, will also allow sound dispersion out of the engine compartment, and not be accessible to a thief. The siren must be pointed downward to avoid moisture collecting inside it and to enhance sound dispersal.

**Wiring Connections:** The security system's wires should be securely connected to the appropriate vehicle wires with the proper terminals, connectors, or by soldering and insulating with quality vinyl electrical tape or heat shrink tubing. All wiring should be carefully routed to avoid the possibility of chaffing or otherwise being damaged. Make all required connections, then plug the harnesses into the control module.

## Wiring Connections

**Black Wire - (- Ground Input):** The Black wire's function is to supply - Ground,

CONNECTION: Using the correct sized crimp-on ring terminal, connect the Black wire to the metal frame of the vehicle, preferably using an existing machine-threaded fastener. Make sure that the ring terminal attached to the Black wire has contact with bright, clean metal. If necessary, scrape any paint, rust or grease away from the connection point until the metal is bright and clean. If the control module has an insufficient ground connection, the security system can find partial ground through the wires that are connected to other circuits, but the alarm will not function correctly, giving the impression of a defective control module. The alarm can partially work, so a bad ground wire connection would be suspected. In some cases the alarm could arm and disarm properly -but not function correctly otherwise.

**The Black wire attached to the control module is the antenna wire. Do not connect this wire to anything or the transmitter's range will be reduced or eliminated.** Stretch the Black antenna wire out and as high as possible for the best operating range.

**Red Wire - (+12 Volts Input):** The Red wire's function is to supply Constant +12 Volts to the security system. When +12 Volts is first applied to the Red wire, the system will revert to the state it was in previously. The Red wire also supplies +12 Volts to the built-in relay for flashing the parking lights.

CONNECTION: Connect the Red wire to a source which has +12 Volts at all times.

**5 Wire Reversal Rest At - Ground Systems:** This power doorlock system differs from the - Ground and +12 Volts pulse systems in the fact that there are no relays or doorlock control unit. In this type of system, the switches themselves supply the positive voltage directly to the doorlock actuators, and, more importantly, provide the return ground path. The correct doorlock interface for this type of system is the optional DLS and 2 SPDT relays. The important thing to remember is that the wires in this system *rest at - Ground*, which means that the wires must be "opened", or cut, to make the connections.

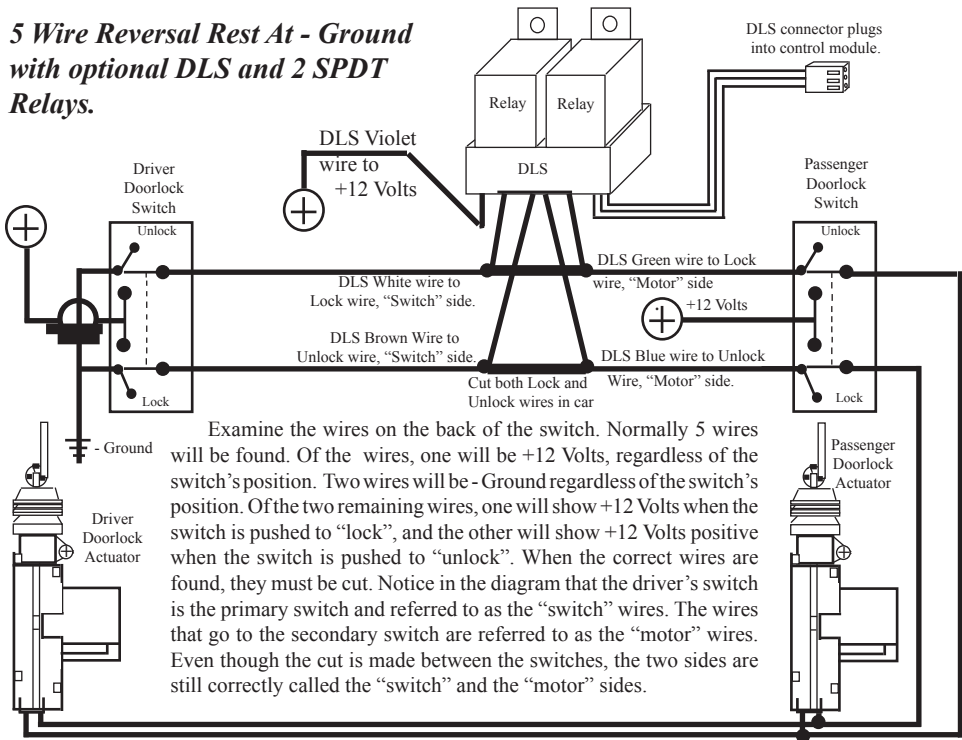
## Programming Features

**Step #1:** Turn "off" the ignition; within 10 seconds press the Valet Switch 5 times. The siren will sound a long and short siren chirp indicating Features Programming Mode.

**Step #2:** Within 10 seconds select the desired feature by pressing the Valet Switch the number of times as the feature number. The siren will chirp the same number of times to confirm which feature is selected.

**Step #3:** Within 10 seconds press either the transmitter's large upper button to turn the feature on (response is one siren chirp), or the small center button to turn the feature off (response is two siren chirps). Select and program each desired feature.

**5 Wire Reversal Rest At - Ground with optional DLS and 2 SPDT Relays.**



Examine the wires on the back of the switch. Normally 5 wires will be found. Of the wires, one will be +12 Volts, regardless of the switch's position. Two wires will be - Ground regardless of the switch's position. Of the two remaining wires, one will show +12 Volts when the switch is pushed to "lock", and the other will show +12 Volts positive when the switch is pushed to "unlock". When the correct wires are found, they must be cut. Notice in the diagram that the driver's switch is the primary switch and referred to as the "switch" wires. The wires that go to the secondary switch are referred to as the "motor" wires. Even though the cut is made between the switches, the two sides are still correctly called the "switch" and the "motor" sides.

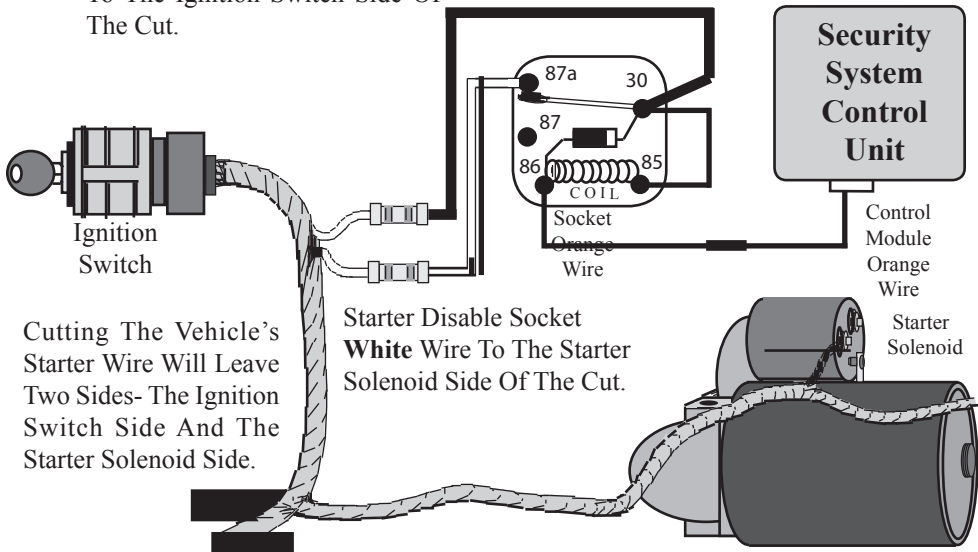
block or the fuse/junction block. *Never* just insert the Red wire or any other security system wire behind a fuse. Also, please note that connecting directly to the battery's Positive terminal will expose this connection to failure due to a corrosive environment. The source connection must have at least a 15 Amp capacity at all times.

**Yellow Wire - (+12 Volts Ignition Input):** The Yellow wire is an ignition "on" input to the security system. This connection is critical to the proper operation of many of the security system's operations.

**CONNECTION:** This wire supplies +12 Volts to the control module whenever the ignition switch is "on". This connection should be made at the ignition switch harness, to the primary ignition circuit. Primary ignition has 0 Volts when the ignition key is in the "Lock", "Off" and "Accessory" positions; and +12 Volts in the "Run" and "Start" positions. Locate the correct wire at the ignition switch harness and securely splice the Yellow wire to it. This connection is critical to the proper operation of "Enhanced 3rd Channel Operation", which is explained in the Owner's Manual.

**Orange Wire - (- Ground Output For Starter Interrupt):** The Orange wire is for the starter disable socket and relay. The function of this wire is to provide a 500mA - Ground Output whenever the security system is in an armed state. This output supplies - Ground to one side of the relay's coil. The other side of the relay coil will be supplied with +12 Volts from the ignition switch, but only if the ignition switch is turned

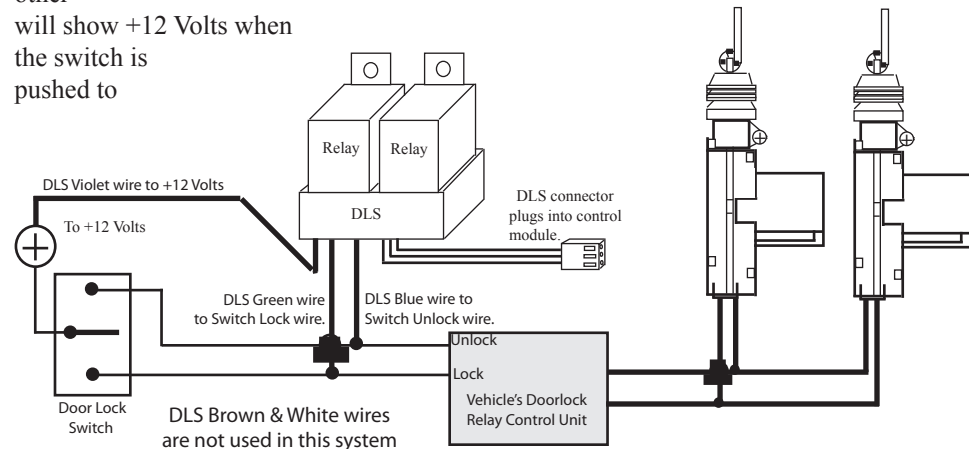
Starter Disable Socket **Red** Wire  
To The Ignition Switch Side Of  
The Cut.



Cutting The Vehicle's  
Starter Wire Will Leave  
Two Sides- The Ignition  
Switch Side And The  
Starter Solenoid Side.

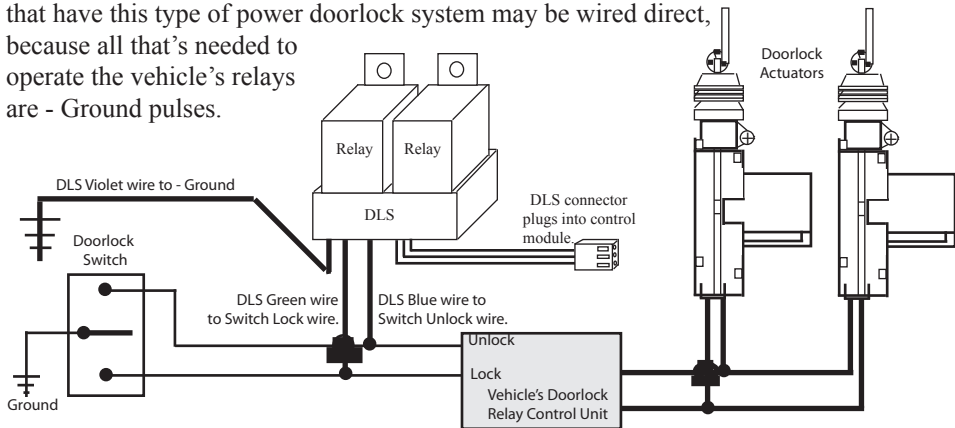
*Configuring a Starter Disable using the Socket & Relay.*

**3 Wire +12 Volts Pulse Systems:** This power doorlock system is very similar to the 3 wire - Ground pulse system except the vehicle's doorlock switches use +12 Volts pulses to operate the doorlock relays/control unit. Examine the wires on the back of the switch. Of the three wires, one will be +12 Volts, regardless of the switch's position. Of the two remaining wires, one will show +12 Volts when the switch is pushed to "lock", and the other will show +12 Volts when the switch is pushed to



*3 Wire +12 Volts doorlocks with the optional DLS and 2 SPDT Relays.*

**3 Wire - Ground Pulse Systems:** This power doorlock system is indicated by the presence of three wires at the switch. Of these, one will show constant - Ground, regardless of whether the switch is being operated or not (at rest). Of the remaining two wires, one will show - Ground when the switch is pushed to the “lock” position, and the other wire will show - Ground when the switch is pushed to the “unlock” position. With the switch at rest, these two wires will read voltage, usually +12 Volts, but in some cases less. The switches operate doorlock relays or a doorlock control unit with built-in relays. The correct connection point is between the switches and the relays. In most cases, vehicles that have this type of power doorlock system may be wired direct, because all that’s needed to operate the vehicle’s relays are - Ground pulses.



**3 Wire - Ground doorlocks with the optional DLS and 2 SPDT Relays.**

to the “start” position. If this occurs, the coil will energize, activating the relay, which in turn will open the starter circuit. The starter interrupt prevents the vehicle from starting only if the alarm is armed (including while the alarm is activated), and will draw current from the vehicle’s electrical system only if an attempt is made to start the vehicle.

CONNECTION: To interrupt the vehicle’s starter circuit, the starter wire must be located and cut. It is recommended that this connection be done as close to the ignition switch as possible. Use a voltmeter, not a test light, to find the correct wire, which is the wire from the ignition switch to the starter solenoid. **CAUTION!** *Avoid the airbag circuit! Improper use of a test light can cause deployment of the airbag, which may result in bodily injury! Test lights can also damage on-board computers and associated sensors.*

The starter wire will read +12 Volts only when ignition key is in “start” position (cranking the engine). Cut this wire at a suitable location. Confirm that this is the correct wire by turning the ignition switch to the “start” position. The starter should not engage.

Connect the starter disable socket’s Red wire to the ignition switch side, and its White wire to the starter solenoid side. Be sure that good, solid electrical connections are made as this generally is a high amperage circuit. Connect the security system’s Orange wire to the Orange wire of the starter disable socket. **Note:** If the Orange wire touches 12 volts positive directly or has more than a 500ma ground load, the circuit will be damaged.

**Brown Wire - (Audible Output):** The Brown wire is the system's audible output. It is capable of being configured for either +12 Volts or Negative output, and it can be programmed to be a steady output or pulsed output. Configured +12 Volts it is a high amperage output to drive an electronic siren; configured Negative it is a low amperage output to operate a relay to sound the vehicle's existing horn. Typically, the former configuration is programmed as steady, and the later configuration is programmed as pulsed.

**Using The Siren:** Confirm that the control module is configured for its "as shipped" configuration of +12 Volts. The top of the control module has an access panel marked "(-) Horn" on its left side and "(+) Siren" on its right side. Open this panel by sliding it to the right, and pivoting it down. Below is a 3-pin standup; ensure that the attached jumper is installed on the right two pins, in the "(+)" position. Replace the access panel. This standup and jumper are shown in the Wiring Diagram Overview on pages 16-17.

**Mounting The Siren:** Find a location in the engine compartment away from the extreme heat of the engine and manifold. A suitable location will offer a firm mounting surface, will also allow sound dispersion out of the engine compartment, and not be accessible to a thief.

The last point is most important; it is advisable to seek a location for the siren which requires removal of engine compartment components, the battery, for example, to access the siren. This greatly reduces the "defeatability" of the security system. The siren must be pointed downward to avoid moisture collecting inside it and to enhance sound dispersal. The siren's wires should be carefully routed so as to be not easily detectable, and to

plug directly into the control module. Omega sensors are available which include those that monitor shock to the vehicle, detect changes in atmospheric pressure within the vehicle, and radar sensors that can detect motion inside and outside the vehicle. When adding an optional sensor, follow the installation instructions included with the sensor. After installing, route the harness and connector from the sensor to the security system control module. Plug the sensor's connector into the module's White port marked "Aux."

**Plug-In Power Doorlock Interface Port:** This security system features a plug-in port for an optional doorlock interface. The 3 pin port on the alarm control module produces a - Ground pulse for lock, a +12 Volts pin *for the optional relay coils only*, and a - Ground pulse for unlocking the doors. The doorlock connections needed will depend upon the type of power doorlocks the vehicle has. The vehicle must have existing power doorlocks. If not present, power doorlocks may be added to the vehicle by utilizing one of several Omega power doorlock kits. The vast majority of power doorlocks are found as three system types: 3 wire - Ground pulse, 3 wire +12 Volts pulse and 5 wire reversal. The best way to identify a doorlock system is to examine the doorlock switch's wiring. The following pages will show schematic diagrams of how to connect an optional DLS (also requires two relays) to these power doorlock systems. The DLS is a dual relay socket with a harness and connector to plug into the alarm control module and non-terminated wires to splice into the vehicle's wiring. The DLS and two relays are the most universal doorlock interface available. The relays used with it are standard 30 amp single pole, double throw (SPDT) automotive relays.



## Prewired Plug-In Features

**Red LED Status Light:** The Red LED Status Light may be mounted in the included combination LED Status Light and Valet Switch holder. Mount the holder in a location where it can easily be seen by the driver, and preferably where it can be seen from outside, as the LED Status Light provides a level of visual deterrence. After mounting the combination holder, route the Red connector to the security system control module and insert it into the Red port on the control module. For a complete description of the LED Status Light's operation, please see the Owner's Manual.

**Valet Switch:** The Valet Switch may also be mounted in the included combination LED Status Light and Valet Switch holder. The Valet Switch allows the operator access to Easy Valet™ and Valet Override modes. The Valet Switch is also part of the programming operations for encoding transmitters and changing the 16 Programmable Features. These operations are explained in detail in the Owner's Manual. After mounting the combination holder, route the Blue connector to the security system control module and insert it into the Blue port on the control module.

**Auxiliary Sensor Port:** This security system features a plug-in port for an additional sensor device, and includes a dual zone shock sensor. This port supplies +12 Volts, - Ground output when the system is armed, a - Ground instant trigger input, and a - Ground prewarn trigger input. Most Omega Research and Development, Inc. sensors

CONNECTION: The Brown wire must be connected directly to the siren's Red wire, and the siren's Black wire is connected to - Ground, which may be to any clean, bare metal point of the vehicle's chassis. The use of an existing grounding point is a good location. Do not configure the control module's 3-pin standup jumper for "(-) Horn" and connect the Brown wire to the siren's Black wire.

**Using The Vehicle's Existing Horn:** This will require that the control module be configured for "(-) Horn" and that programmable feature #7 be changed from "Steady Siren" to "Pulsed Horn. To change Brown wire's polarity from the "as shipped" configuration of +12 Volts, locate the access panel marked "(-) Horn" on its left side and "(+) Siren" on its right side on top of the control module. Open this panel by sliding it to the right, and pivoting it down. Below is a 3-pin standup; remove the attached jumper from the right two pins (the "(+)" position), and reinstall it onto the two left pins (the "(-)" position). Replace the access panel. This standup and jumper are shown in the Wiring Diagram Overview on pages 16-17. Upon completion of all wiring connections, consult the Owner's Manual and program feature #7 for "Pulsed Horn" audible output setting.

CONNECTION: The Brown wire may be connected directly to the vehicle's horn switch wire, provided the circuit operates with .25 Amp of current or less. First, ensure that the vehicle's horn operates with the ignition switch "off"; if not, an optional relay and the "direct to horn" method is needed. If the horn sounds when the ignition is "off", the next step is to locate the vehicle's horn switch wire to determine the presence of an existing

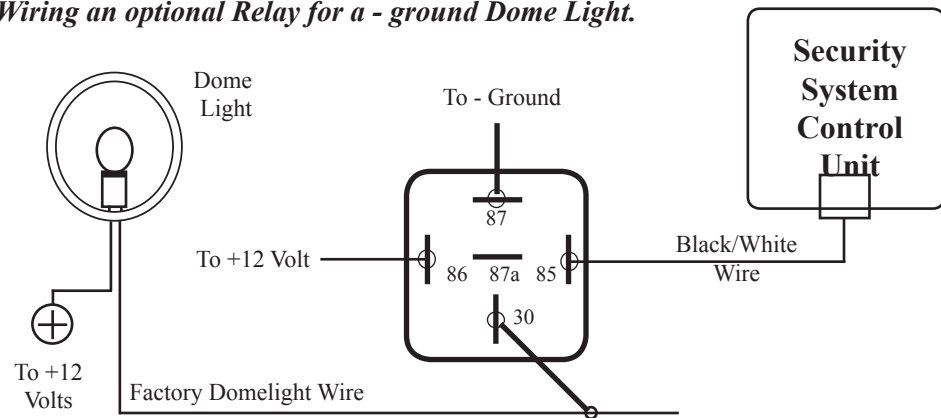
horn relay. **CAUTION! Avoid the airbag circuit!** The target wire is typically found around the steering column; the correct wire will show +12 Volts normally, and no voltage when the horn is being sounded. Once the vehicle's horn wire is identified, the electrical switching load must be determined.

The most direct method is to cut the wire and measure the switching load with a digital multimeter (DMM). Connect the meter's Black lead to the cut wire from the switch, and its Red lead to the cut wire to the horn. Set the meter to its highest scale first, then press the horn switch to obtain the switching load reading. If the results are a switching load of .25 Amp (250 milliamperes, or mA), then the control module's Brown wire may be connected directly to the vehicle's horn switch wire. Other alternative testing methods include disconnecting the horns, then operate the horn switch. Typically, a "clicking" sound from the vehicle can heard as the horn button is pressed, and released, which confirms the presence of an existing horn relay. Yet another alternative is to consult a wiring schematic of the vehicle in question to determine if an existing horn relay is present. The least desirable testing method is the use of a standard +12 Volt test light. **CAUTION! Avoid the airbag circuit! This is one of the few uses left for a standard test light in a modern vehicle; use a digital multimeter (DMM) to identify the horn wire first. Probing an airbag circuit with a standard test light can cause the Airbag to deploy!** Connect the test light clip to \_ Ground, and probe the wire. If the horn sounds when probed, a direct connection may be made. If not, use the following diagram to configure an optional relay. When the control module is configured for "(-) Horn" output, exceeding its .25 Amp capability will cause damage to the control module.

**Black/White Wire - (- Ground Output For Domelight Supervision):** The Black/White wire is provided for domelight supervision, by configuring an optional SPDT relay. This feature will illuminate the interior lights of the vehicle upon disarming the system.

CONNECTION: For all applications an optional relay will be needed- use the following diagram. If Automatic Rearming is not desired but Last Door Arming is, connect the Green or Violet Door Trigger Wire to relay pin 87a.

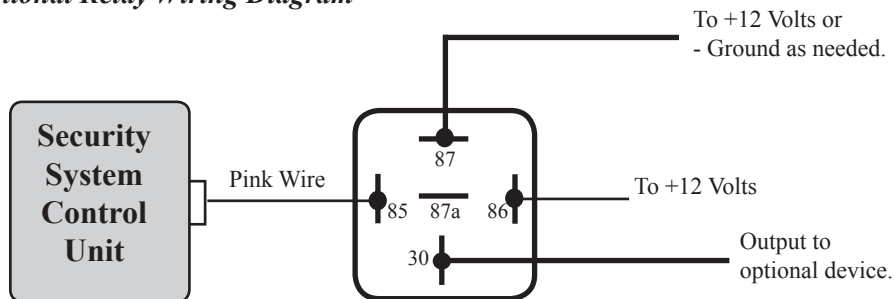
**Wiring an optional Relay for a - ground Dome Light.**



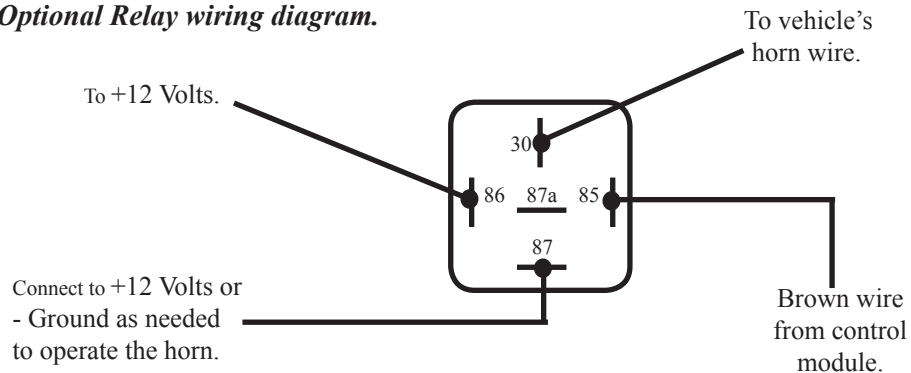
**Pink Wire - 3rd Channel Output:** The function of the Pink wire is to provide an output similar to the Gray trunk release wire. Press the small lower transmitter button for 3 seconds to activate this output. Once activated, this output will last for one second, or, for as long as the transmitter button is held down, until the transmitter battery-saver feature turns the transmitter off. This feature can be used to activate other optional modules (Example: car starting equipment or power window roll up units).

CONNECTION: For most applications an optional relay will be needed- use the following diagram. This output will not disarm the security system when activated.

**Optional Relay Wiring Diagram**



**Optional Relay wiring diagram.**



**White Wire - (+12 Volts Flashing Light Output):** This is a +12 Volts output for exterior flashing light confirmation and to attract attention to the vehicle if the security system is activated.

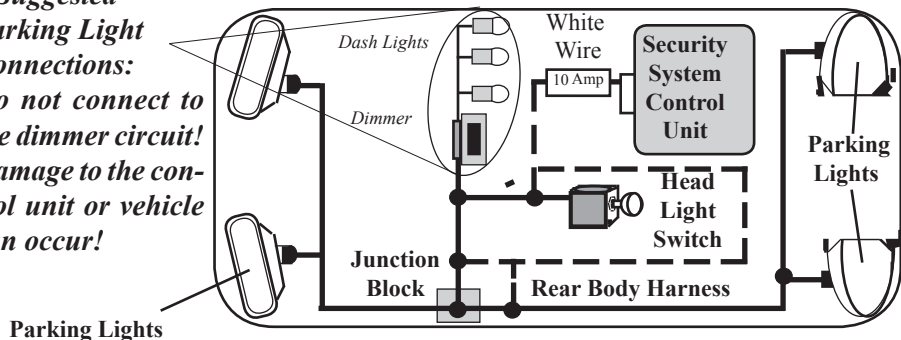
CONNECTION: Connect this wire to the vehicle's +12 Volts parking light circuit. This wire can usually be found at the following locations: at the headlight switch, at the fuse/junction block, or in the rear body harness in the driver kick panel. Some vehicles, notably Toyotas, have a parking light relay which is triggered by a - Ground circuit wire.

from the headlight switch. These cars can still be connected directly to the White wire by finding the parking light circuit after the relay, usually at the Fuse/Junction Block.

The correct wire will show +12 Volts when the headlight switch is in the “Parking Light” and “Head Light” positions. When such a wire is located, be sure to also test that it is non-rheostated: while metering the wire, operate the dash light dimmer control. The correct wire will show no change in voltage when the dimmer is operated. Do not attempt to flash the parking lights by connecting the White wire to a rheostated (dimmer) circuit! This will backfeed the parking lights through the rheostat or illumination control module, and possibly cause damage to the vehicle or the control unit. Also, if the White wire contacts - Ground, the system’s control module may be damaged.

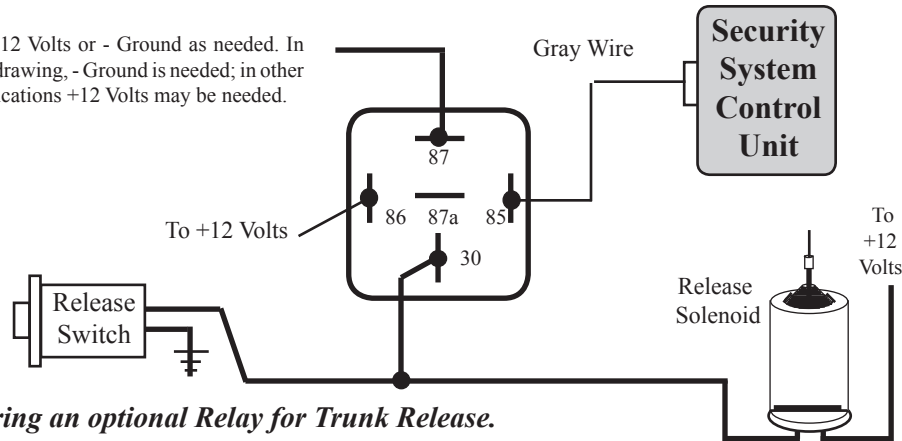
### 3 Suggested Parking Light Connections:

**Do not connect to the dimmer circuit! Damage to the control unit or vehicle can occur!**



Also, if selected, the security system will automatically disarm, unlock the doors and illuminate the exterior lights on for 30 seconds (unless a door is opened or the ignition switch is turned “on”). The trunk release feature can be operated anytime with the ignition switch “off”, but not when it is “on”. Unless the vehicle’s trunk release switch negatively triggers a release relay which draws no more than 250mA, an optional relay must be used.

To +12 Volts or - Ground as needed. In this drawing, - Ground is needed; in other applications +12 Volts may be needed.

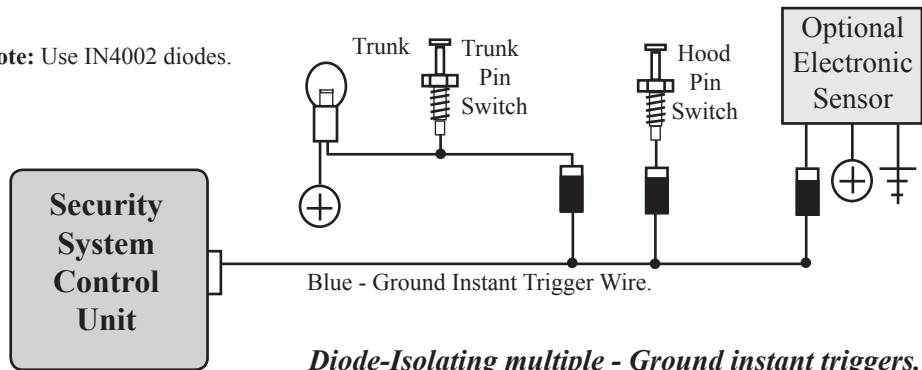


### Wiring an optional Relay for Trunk Release.

**CONNECTION:** An optional relay is required. Connect the Gray wire to relay pin 85, and connect +12 Volts to relay pin 86. Connect pins 87, 87a & 30 as indicated in the dia-

when combining electronic sensors together, or, in the same circuit with pin switches:

**Note:** Use IN4002 diodes.

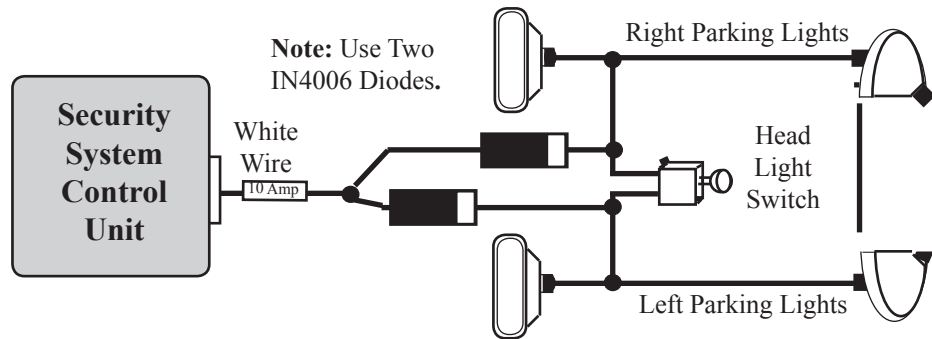


*Diode-Isolating multiple - Ground instant triggers.*

**Gray Wire - (- Ground Output For Optional Trunk Release):** The function of the Gray wire is to provide an optional output, the primary use being trunk release. Press and hold the small transmitter button for three seconds to activate this output. When activated the Gray wire will provide a 250mA Negative Ground pulse for 1 second; or, stay grounded for as long as the small transmitter button is depressed, for up to 15 seconds. Using this output can also disarm the system.

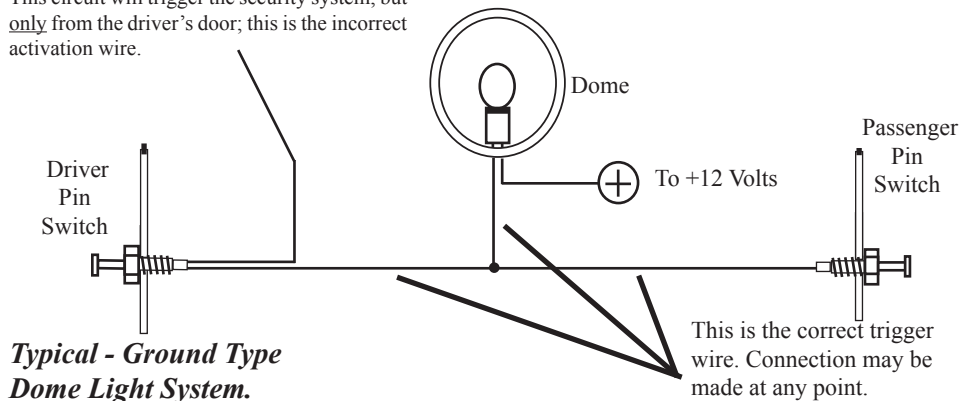
Many European-made vehicles have separate left and right side parking lights. When left & right parking lights are on separate circuits, a pair of 6 Amp to 10 Amp diodes must be used to connect the White wire to each parking light circuit. Flashing the headlights is not recommended- the halogen headlights found in modern vehicles are not designed to be rapidly turned on and off. If connected to the security system, a reduction of their useful life may be noticed. If flashing the headlights is still desired, a relay must be used, since the headlights' current draw exceeds the 7 Amp rating of the built-in relay. If flashing headlights and parking lights are desired, use two relays - one relay will supply the parking lights and the other relay will supply the headlights.

*Connecting Left & Right Parking Lights using two Diodes.*



**\_\_Green Wire - (- Ground Door Trigger Input):** The Green wire's function is an open door input to the control module for vehicles having - *Ground switching* door pin switches. This circuit has effects on many security system operations, the primary being the activation of the system (sounding the siren and flashing the parking lights) if it is in an armed state. If the Last Door Arming features is utilized, closing the door will cause the Last Door Arming sequence will begin, and it will be suspended if a door is reopened.

**Note:** The Driver Pin Switch often will have an extra wire that goes to the Ignition Key Warning. This circuit will trigger the security system, but only from the driver's door; this is the incorrect activation wire.



**\_\_CONNECTION:** Connect the Violet wire to a wire in the vehicle which is common to all the door pin switches. The correct wire for this type of dome light/door jamb pin switch system will have +12 Volts present when the doors are opened, and - Ground when the doors are closed. The correct wire will show this change when any of the doors are opened.

**Blue Wire - (- Ground Instant Trigger Input):** The Blue wire is a - Ground instant trigger used to detect entry into the hood or trunk area of a vehicle. If the security system is armed, grounding the Blue will activate it.

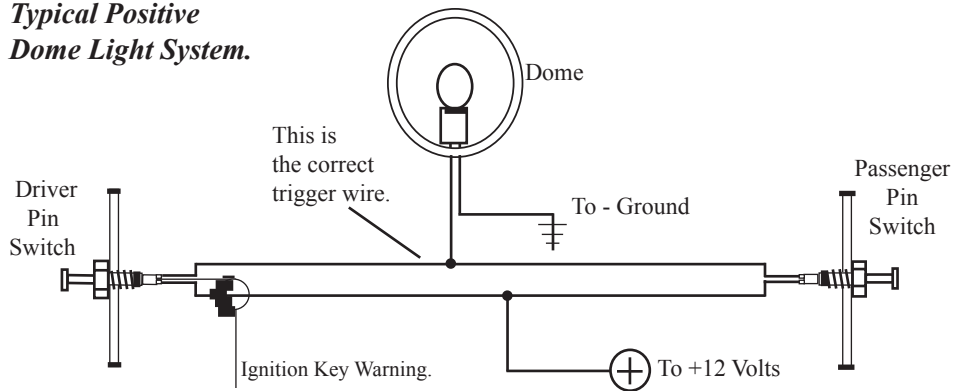
**\_\_CONNECTION:** The included pin switches may be installed to provide this trigger circuit Or, if there are existing switches (example: a light in the luggage compartment or a "Trunk Ajar" light in the dash), the Blue wire may be connected directly, provided this is a- Ground switching circuit. An indication of such a circuit is the wire having no voltage present when the hood or trunk is open, and up to +12 Volts when the hood or trunk is closed. This circuit cannot be used with mercury switch types of hood or trunk lights. If the vehicle is equipped with a usable trunk or hood circuit, locate the proper wire and splice the Blue wire directly to the vehicle's wire.

When wiring more than one of the vehicle's circuits and/or additional circuits to this wire, diode-isolation may be required to maintain each circuit's proper operation. An example would be wiring a hood pin switch and trunk light switch together. Without isolating, the trunk light will illuminate whenever the hood is raised. Also, diode-isolation is

to connect to in this type of system is the common wire which is routed to the dome light itself.

**Violet Wire - (+12 Volts Door Trigger Input):** The Violet wire's functions are identical to the Green Door Trigger wire, with the sole exception that it is an open door input to the control module for vehicles having +12 Volts door pin switches. For a description of the Violet wires complete effects upon the system's operations, please see the Green wire's description.

### *Typical Positive Dome Light System.*



Opening a door during Automatic Rearming will also suspend that feature. Last Door Arming and Automatic Rearming are related automatic arming features. If the system has been programmed to lock and unlock the doors with the ignition switch being turned "on" and "off", an open door will cancel the automatic locking or unlocking.

CONNECTION: Connect the Green wire to a wire in the vehicle which is common to all the door pin switches. The correct wire in this type of dome light/door jamb pin switch system typically has no voltage present and will also show - Ground when the doors are opened, and also up to +12 Volts when the doors are closed. The correct wire will show this change when any of the doors are opened. If the vehicle has delay dome lights, remember to take this into account when testing the wire. If the car has a delay dome light the system can be armed from the transmitter, and will start protecting the Green wire circuit when the dome light turns off. In Last Door Arming mode, the system arms 30 seconds after the delay dome light turns off. The diagram illustrates a basic negative courtesy light system.

If the pin switch is mounted in the metal structure of the vehicle, and the dome light goes out when the switch is removed, suspect a grounding-type dome light system. If the switch is mounted in plastic, a constant ground wire will also be present. While the traditional pin switch is mounted in the front door jamb area, also be aware that many vehicles utilize other types of switch devices to operate the interior lights. Some imports have a sliding type of switch and many have the pin or sliding switches in the rear door jamb area.

Also be aware of vehicles which diode-isolate each door. Typically, this is usually en-

