INSTALLATION INSTR

Legendary Vehicl

Mod

Advanced Security
Ergonomic Transmitter
Featuring Unauthorized Transm

Contents

Installation Considerations

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.

Negative Ground **Black Wire**

The Black wire is the source of Negative ground which is necessary for the security system to operate. The proper connection of the Black grounding wire is vital.

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 not likely 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. <u>Do not connect this wire to anything or the transmitter's range will be reduced or eliminated.</u> Stretch the Black antenna wire out and as high as possible for the best operating range.

Constant Power — Red Wire

The Red wire's function is to supply Constant Positive 12 Volts for security system's operation. When 12 Volts is first applied to the Red wire, the system will revert to state in which it was in when power was taken away. If the vehicle to be serviced, especially if it involves the battery, the system should be placed in Valet Mode. This will prevent the system from being activated if the battery is disconnected and reconnected. The Red wire also supplies 12 Volt Positive to the module's internal relay for flashing the parking lights.

CONNECTION: Connect the Red wire to a Constant Positive 12 Volt source. This source should have Positive 12 Volts with at least a 15 Amp capacity at all times and in all ignition key positions. Connection locations can be at the supply wire at the ignition switch, the supply wire *behind* the fuse 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 unless the connection has a protective coating.

Ignition Power — Yellow Wire

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 features.

CONNECTION: This wire supplies Positive 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 Positive 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.

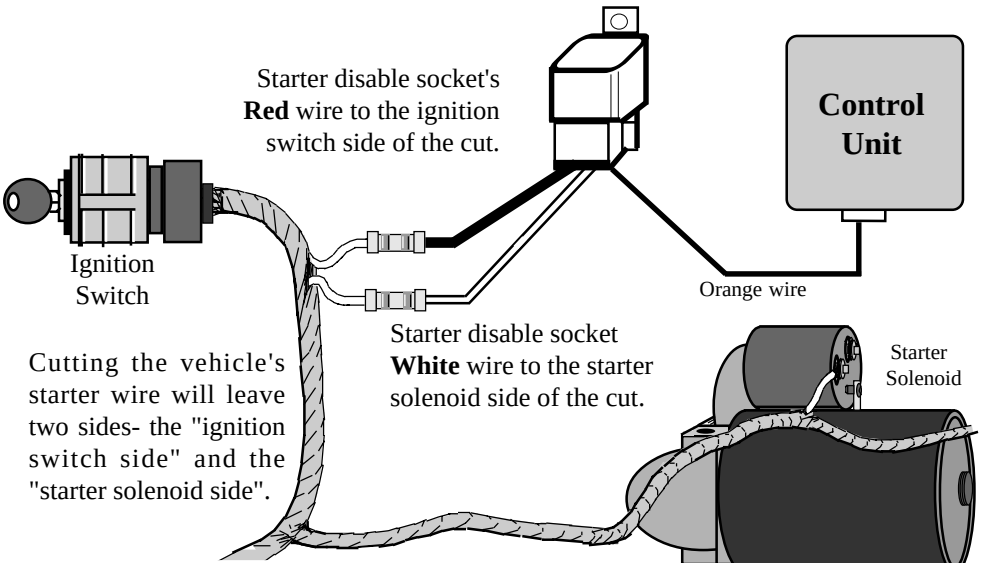
Starter Interrupt Output — Orange Wire

The Orange wire is prewired to the starter disable socket and relay. The function of this wire is to provide a Constant 500mA Ground Output whenever the security system is in an

armed state. This output supplies Negative Ground to one side of the relay's coil. The other side of the relay coil will be supplied with Positive Voltage from the ignition switch, but only if the ignition switch is turned 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 Positive 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.

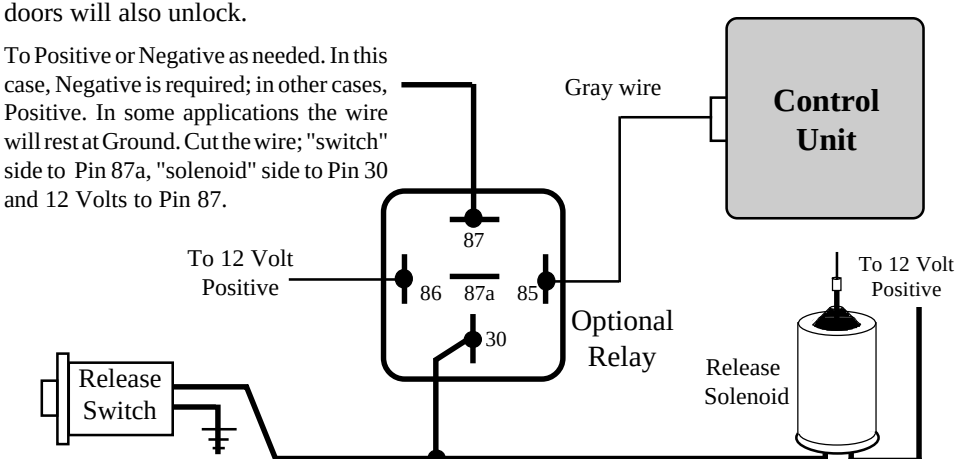
Connect the optional starter disable socket's Red wire to the ignition switch side, and its White wire to the starter solenoid side. Be sure that good, solid electrical connections are made as this generally is a high amperage circuit. As the starter interrupt socket is prewired to the control module's main wiring harness, the Orange wire connection is already made. **Note:** Should the Orange wire touch 12 volts positive directly, or have more than a 500mA ground load, the circuit will be damaged.



Configuring a Starter Disable using the AU-SOCKET and SPDT Relay.

2nd Channel / Trunk Release Output **Gray Wire**

The function of the Gray wire is to provide an optional output, the primary use being trunk release. Press and hold the transmitter's "**channel 2**" button for two 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 right transmitter button is depressed, for up to 15 seconds. The siren will chirp twice for a confirmation and the doors will also unlock.



Wiring an optional Relay for Trunk Release.

Positive Siren Output **Brown Wire**

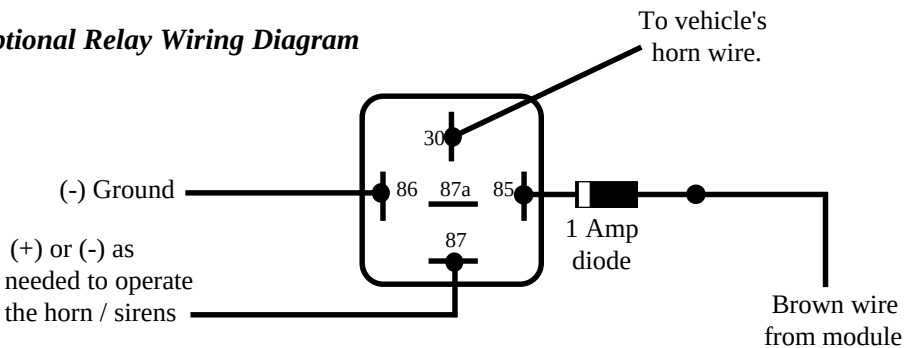
The Brown wire is a 1 Amp Positive output designed to operate the electronic siren for audible confirmations, and also to sound if the alarm is triggered. An alternative to the siren is to program the alarm to pulse this output to sound the vehicle's horn by adding a relay and diode. This would require changing Programmable Feature #18 from the preset steady output to a pulsed output.

SIREN CONNECTION: The Brown wire may be connected directly to the siren's Red wire, and the siren's Black wire is connected to (-) Ground.
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.

HORN CONNECTION: The Brown wire may be connected to the vehicle's existing horn wire, but a relay and diode must be used to switch the polarity to Negative. The horn switch wire is typically found at the steering column. Use a digital multimeter (DMM) to identify the horn wire. **CAUTION! Avoid the Airbag circuit!** The correct wire will show Positive 12 Volts normally, and no voltage when the horn is honked. Direct connection of the Brown wire to the horn itself is not recommended because the average horn requires

more than the 1 amp output that the Brown wire supplies. One alternative is to disconnect the horns, then operate the horn switch. A clicking sound from the vehicle will confirm the presence of a horn relay. Another alternative is to check a wiring schematic of the vehicle in question.

Optional Relay Wiring Diagram



Configuring An Optional Relay: The Brown Siren / Horn output wire has a 1 Amp capacity, which, if exceeded, can damage the security system control module. In certain situations, among them multiple optional sirens or utilizing the vehicle's horn, an optional SPDT relay is required. When adding a relay, a protection circuit in the form of a 1 Amp diode on the Brown Siren / Horn output wire is recommended.

Positive Flashing Parking Light Output White Wire

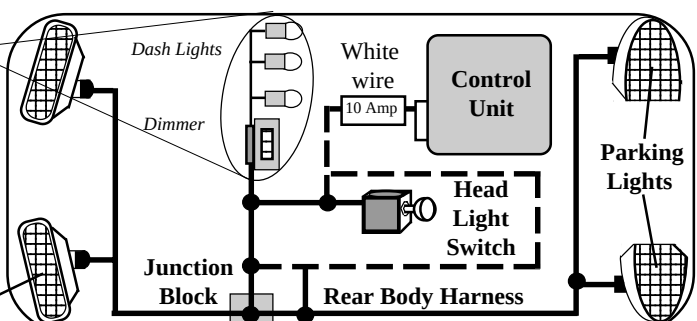
This is a Positive 12 Volt output for flashing parking light confirmation and to attract attention to the vehicle if the security system is activated. Also, upon disarming, the lights will stay on for 30 seconds to confirm disarming and to illuminate the way to the vehicle. This feature gives added security when approaching the vehicle at night.

CONNECTION: Connect this wire to the vehicle's Positive 12 Volt 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. **Note:** Some vehicles, notably Toyota, have a parking light relay which is triggered by a Negative Ground circuit

Continued Next Page

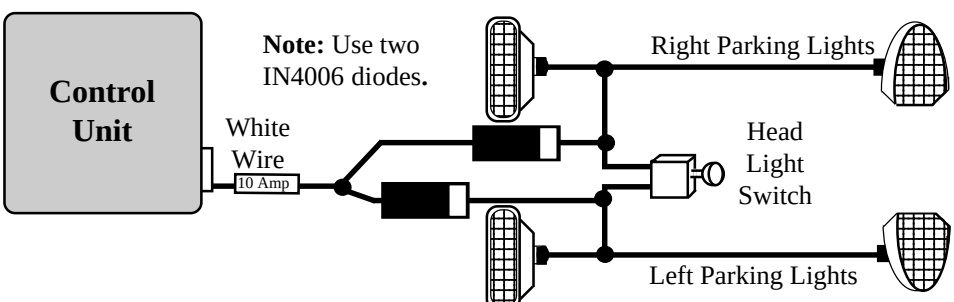
3 suggested Parking Light connection points

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



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 Positive 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. **Note:** 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 alarm control unit. Also, if the White wire touches chassis ground, the Printed Circuit Board and on-board relay may be damaged.



Connecting Left and Right Parking Lights using two diodes.

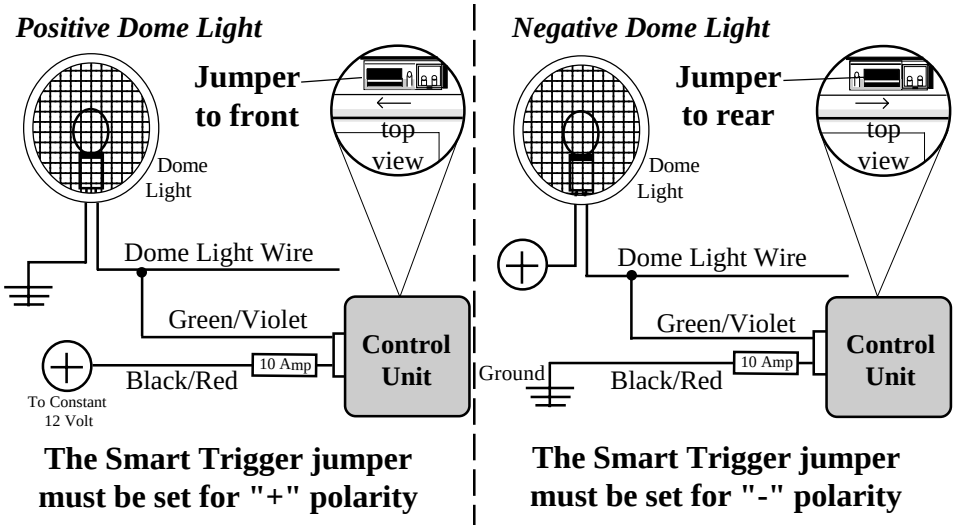
Many European imports have separate left and right side parking lights. When left & right parking lights are on separate circuits, a pair of 6 to 10 amp diodes must be used to connect the White wire to each parking light side. **Note:** Flashing the headlights is not recommended. The halogen headlights 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 headlight's 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.

"Smart Trigger" Option

This unit has unique "Smart Trigger" feature which saves installation time while offering enhanced integration flexibility. The Green/Violet Domelight Supervision output wire has an additional function; it is also a door trigger input circuit, serving the same purpose as either the Green or Violet door trigger wires.

To use the Smart Trigger feature, and the Green/Violet Domelight Supervision output wire is connected correctly, **it is not necessary to connect either the Green Negative Door Trigger or the Violet Positive Door Trigger wire.**

The Smart Trigger feature may be used or not used, as desired by the installer. If Smart Trigger is utilized, please note that **the polarity must be programmed** (via the jumper connector on the side of the control module) for "positive switching dome light" or "negative switching dome light".



If use of the Smart Trigger feature is not desired, remove completely the polarity selection jumper. Doing so separates the dome light supervision circuit from the door trigger circuits. The Black/Red and Green/Violet wires may then be connected for the Domelight Supervision only, and either the Green Negative Door Trigger or the Violet Positive Door Trigger wire must be connected for the system's door trigger. In some cases,

when opting for automatic rearming or last door arming, it may be preferable to not use the Smart Trigger, and connect the appropriate door trigger wire for the best operation of the automatic arming or rearming feature.

Domelight Supervision Input/Output
Black/Red & Green/Violet Wires

The Black/Red and Green/Violet wires are provided for domelight supervision, which illuminates the interior lights of the vehicle upon disarming.

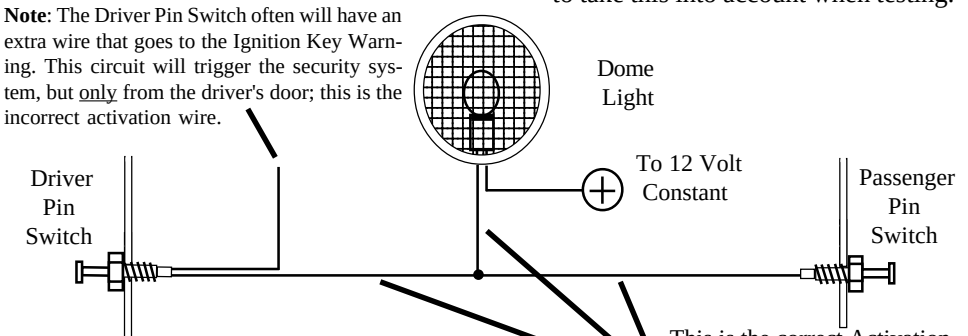
CONNECTION: The polarity of the dome light supervision output must be selected by the connection of the Black/Red wire as Positive or Negative. Determine which polarity the vehicle uses to operate the dome light; this is either "Negative switching" or "Positive switching"; the following pages explain more on how to determine which type is present. Then, connect the Black/Red wire to Positive or Negative as needed.

After connection of the Black/Red wire is completed, the next step is to **configure the Smart Trigger jumper to the correct polarity setting**. The Smart Trigger jumper, which is in the parts bag, must be installed on the control module as either Positive or Negative polarity. If the Black/Red wire was connected to Negative polarity, the Smart Trigger jumper should be aligned toward the rear of the control module; if the Black/Red wire was connected to Positive polarity, the Smart Trigger jumper should be aligned toward the front of the control module. **If desired, the Smart Trigger feature may not be used; simply do not connect for Negative or Positive**. If this option is taken, either the Green Negative door trigger wire or the Violet Positive door trigger wire **must be**

connected in order for the control unit to detect an open door. Once the Smart Trigger jumper has been properly configured, the Green/Violet wire may be connected to the vehicle's dome light activation wire.

The proper vehicle wire to connect the Green/Violet wire to, the dome light activation wire, is common to all the door pin switches. The correct wire will change polarity as the doors are opened and closed. If the vehicle uses a Negative switching dome light system, the activation wire will have no voltage present and show chassis ground when the doors are opened, and 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.

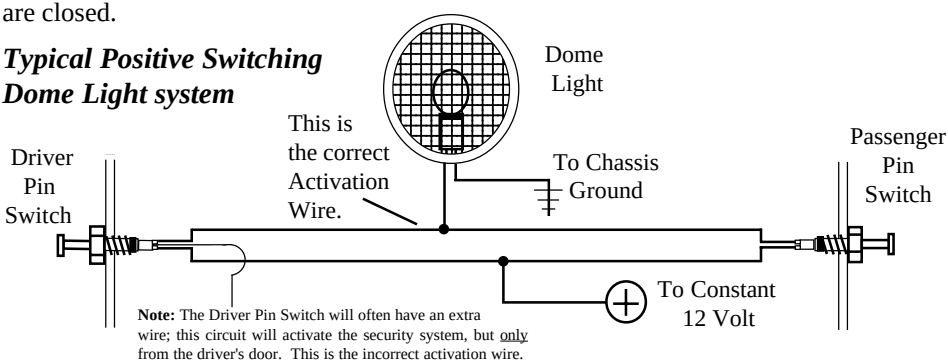
Note: The Driver Pin Switch often will have an extra wire that goes to the Ignition Key Warning. This circuit will trigger the security system, but only from the driver's door; this is the incorrect activation wire.



Typical Negative Switching Dome Light system

The correct wire for a Positive switching type of dome light/door jamb pin switch system will have 12 volts present when the doors are opened, and chassis ground when the doors are closed.

Typical Positive Switching Dome Light system



Negative & Positive Door Triggers Green & Violet Wires

If not using the Smart Trigger feature, either the Green Negative Door Trigger or the Violet Positive Door Trigger wire must be connected. If the Smart Trigger feature is being utilized, do not connect the Green Negative Door Trigger or the Violet Positive Door Trigger; insulate the ends and secure the wires. Or, remove these wires from the 8-pin harness completely by depressing the lock tabs on each wire's terminal, and then pulling the wire and terminal from the 8-pin connector.

Green Wire - (Negative Door Trigger): The Green wire is an "open door" input to the control module for vehicles having *Negative switching* door pin switches.

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 will have no voltage present and will also show chassis ground when the doors are opened, and up to 12 volts when the doors are closed.

Violet Wire - (Positive Door Trigger): The Violet wire is 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 *Positive 12 volt* door pin switches.

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 chassis ground when the doors are closed.

Notes, both types: 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 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. 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. In addition, some vehicles utilize switches in the doors, either connected to the exterior door handles or to the latching mechanism. A vehicle which has the dome

lights illuminating when the exterior door handle is lifted is an example of this type of switching system. Also be aware of vehicles which diode-isolate each door. Typically, this is encountered with dash displays that indicate individual doors being ajar. The proper wire to connect to in this type of system is the common wire which is routed to the dome light itself.

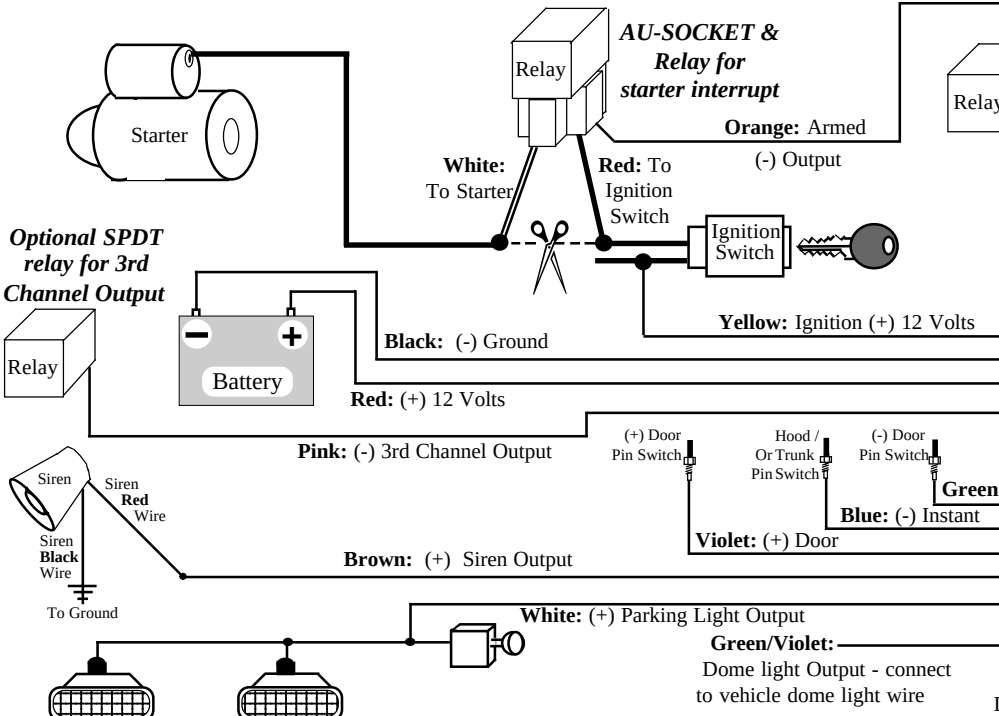
Negative Instant Trigger — Blue Wire

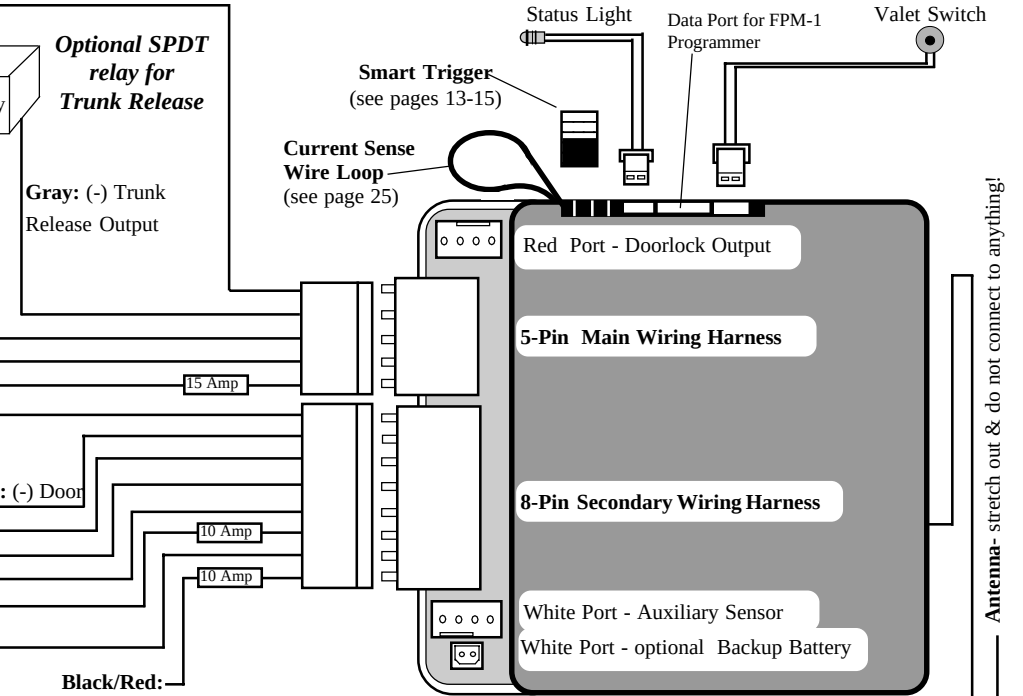
The Blue wire is a Negative instant trigger used primarily to detect entry into the hood or trunk area of a vehicle.

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 negative 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 wire 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 turn illuminate whenever the hood is raised. Diode-isolation is necessary

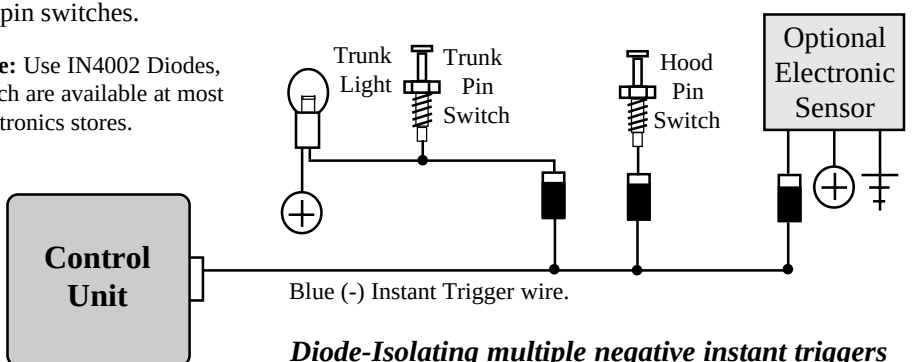
Text is continued on page 22


Starter
Relay
AU-SOCKET &
Relay for
starter interrupt
Relay
Orange: Armed
(-) Output
White:
To Starter
Red: To
Ignition
Switch
Ignition
Switch
Optional SPDT
relay for 3rd
Channel Output
Relay
Battery
Yellow: Ignition (+) 12 Volts
Black: (-) Ground
Red: (+) 12 Volts
Pink: (-) 3rd Channel Output
(+) Door
Pin Switch
Hood /
Or Trunk
Pin Switch
(-) Door
Pin Switch
Green
Blue: (-) Instant
Violet: (+) Door
Siren
Siren
Red
Wire
Siren
Black
Wire
To Ground
Brown: (+) Siren Output
White: (+) Parking Light Output
Green/Violet:
Dome light Output - connect
to vehicle dome light wire


Status Light
Data Port for FPM-1 Programmer
Valet Switch
Optional SPDT relay for Trunk Release
Smart Trigger (see pages 13-15)
Current Sense Wire Loop (see page 25)
Gray: (-) Trunk Release Output
Red Port - Doorlock Output
5-Pin Main Wiring Harness
15 Amp
8-Pin Secondary Wiring Harness
10 Amp
10 Amp
White Port - Auxiliary Sensor
White Port - optional Backup Battery
Antenna- stretch out & do not connect to anything!
Black/Red:
Dome Light Input- to (+) or (-) as needed.

when combining electronic sensors together, or when adding a sensor in the same circuit as the pin switches.

Note: Use IN4002 Diodes, which are available at most electronics stores.



Diode-Isolating multiple negative instant triggers

3rd Channel Output — Pink Wire

The Pink wire is an optional output similar to the Gray trunk release wire; however, this output is not capable of disarming the system when it is used and therefore no audible or visual confirmation is given.

CONNECTION: For most applications an optional relay will be needed; connect the Gray wire to relay pin #85, and connect Constant Positive 12 Volts to relay pin #86. Connect pin #30 to power, or ground, as needed. Pin #87 is the output, and connected to the target wire.

Plug-In Accessories And Options

Plug-In Red LED Status Light: The Red LED Status Light may be mounted in the included combination LED Status Light and Valet Switch holder. Or, if desired, the LED Status Light may mounted in a hole (9/32") drilled into one of the vehicle's existing interior panels. Mount the holder or LED Status Light 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 small White port on the control module. The small White 2-pin port for the Status Light is located next to the Blue 2-pin port for the Valet Switch. For a complete description of the LED Status Light's operation, please see the Owner's Manual.

Plug-In Valet Switch: The Valet Switch may also be mounted in the included combination LED Status Light and Valet Switch holder, or it can be mounted to an existing surface in the vehicle using double-sided adhesive tape. The Valet Switch allows the operator access to Valet Mode and Override Mode. The Valet Switch is also part of the programming operations for learning transmitters and changing the Programmable Features. All of 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 side of the control module.

LED/Valet Switch Combination Assembly: This assembly contains the LED Status Light and Valet Switch. Mount the assembly 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. Two mounting methods are provided: double-sided adhesive tape, and two screws. If using the adhesive tape, properly prepare the mounting surfaces to ensure good adhesion. If using the screws for a more permanent mounting, carefully separate the housing halves, install the screws (avoid overtightening), then snap the assembly halves back together. Carefully route the wiring harness to the control module (both ends are the same) to avoid any chances of it being chafed or pinched.

Dual Zone Port For Sensor: This system includes an electronic sensor device, which enhances the effectiveness of the system. The control module has a plug-in "Auxiliary" port for sensors. This port is dual-zoned: the first zone will respond by chirping the siren only; and the second zone will respond by triggering the system. The port supplies constant 12 volt power, grounded output when the system is armed, a negative instant trigger, and a negative prewarn trigger. When adding a 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 and plug the sensor's connector into the module's White port marked "AUX".

Optional Backup Battery Port: This port allows the plug-in addition of an optional 9 volt alkaline battery (not included) to provide alternative power source to operate the

system if power to the control module is disconnected. A built-in protection circuit will not allow the 9 volt battery to back feed voltage into the vehicle's electrical system. While on backup battery power, to conserve the backup battery, the system will not have some functions - the Parking Light output, LED Status Light output, the Doorlock outputs, Auxiliary Sensor output and Current Sensing input. The Starter Interrupt will operate, when the system is armed, from battery backup, along with the following: Aux. output and Aux. Trigger input, Negative Instant Trigger Input, Negative and Positive Door Trigger input, and the Remote Panic feature.

Current Sensing: The ATV-1000 can be triggered if it detects a current draw in the vehicle's electrical system. The Green wire loop found on the control module turns this feature on and off. If the loop is uncut, current sensing operates. If the loop is cut, current sensing will not operate.

Power Doorlock Section

Power Doorlock Interface Port: The control module has a 4-pin plug-in port for an optional doorlock interface, allowing it to operate the vehicle's existing power doorlocks.

Dual Polarity Outputs: The lock and unlock #1 outputs are dual polarity, which allows the ATV-1000 to operate both 3 Wire Negative and 3 Wire Positive doorlocks "out-of-the

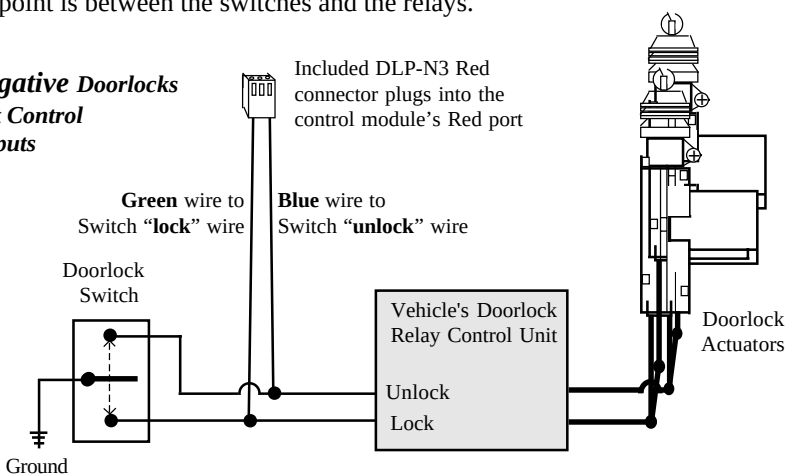
box" with the included DLP-N3 doorlock harness. In installations which require an optional interface, such as the DLS and the DLS-3 (which is used for driver door priority unlock applications), the negative pulses are used. For these applications, and the 3 Wire Negative doorlocking systems, the 4-pin port's layout is: locking the doors (inside pin), a constant 12 volt pin *for the optional relay coils only* (second pin from inside), a first negative pulse for driver door unlock (second pin from outside), and a second negative pulse for unlocking all other doors (outside pin). When connecting 3 Wire Positive doorlocks, simply reverse the DLP-N3 wire colors to be "blue is lock, green is unlock". The doorlock connection and/or the interface needed will depend upon the type of power doorlocks the vehicle has.

CONNECTION: Quick Interconnect Harnesses are available for power doorlock applications, and provide the necessary wiring connections; each has its own detailed, illustrated instructions. If using a universal interface, of which several models are offered, identify the type of doorlock system and obtain the correct interface. Connections, which are shown in the following pages, should be with 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.

The vast majority of power doorlocks are found as three system types: 3 Wire Negative (pulse), 3 Wire Positive (pulse) and 5 Wire Reversal (rest at ground). Other power doorlock systems which may be encountered are the vacuum pump types found in older Mercedes vehicles and the single wire, dual-voltage which has appeared in some late model vehicles. The best way to identify a doorlock system is to physically examine the doorlock switch's wiring.

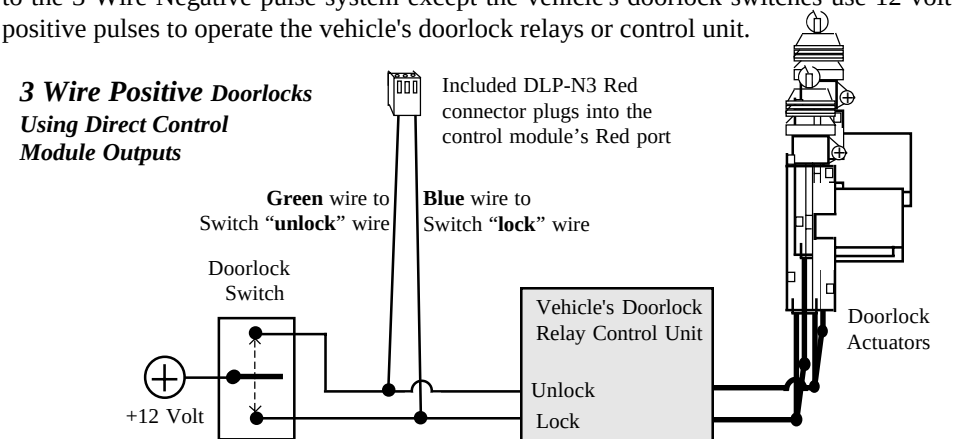
3 Wire Negative Pulse Systems: This power doorlock system is indicated by the presence of three wires at the switch. Of these, one will show constant ground, regardless of whether the switch is being operated or not (at rest). Of the remaining two wires, one will show ground when the switch is pushed 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 volt positive but in some cases less. The wires from 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.

***3 Wire Negative* Doorlocks**
Using Direct Control
Module Outputs



The included DLP-N3 harness can allow direct connection of the security system to the "lock" and "unlock" wires of the 3 Wire Negative Pulse system. Some doorlock systems, however, require more than the 500mA ground output that the security system's control module can accommodate. In these cases the optional model DLS and two relays must be used. When driver's door unlock priority is desired, the correct interface is the optional DLS-3 and three relays.

3 Wire Positive Pulse Systems: This power doorlock system is very similar to the 3 Wire Negative pulse system except the vehicle's doorlock switches use 12 volt positive pulses to operate the vehicle's doorlock relays or control unit.

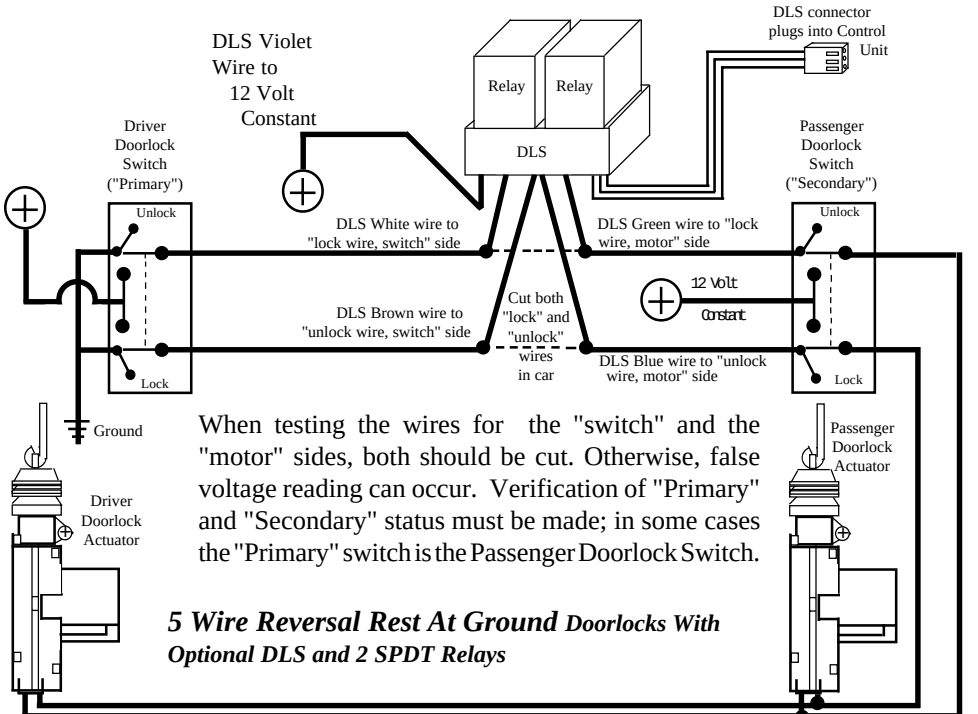


Examine the wires on the back of the switch. Of the three wires, one will be constant 12 volt positive, regardless of the switch's position. Of the two remaining wires, one will show 12 volt positive when the switch is pushed to "lock", and the other will show 12 volt positive when the switch is pushed to "unlock". Because of the dual polarity outputs, the included DLP-N3 harness can allow direct connection of the security system to the "lock" and "unlock" wires of the 3 Wire Positive Pulse system- **simply reverse the DLP-N3 "lock" and "unlock" wire colors**. To install driver door priority unlock, the optional DLS-3 with three SPDT relays must be used, which is discussed in detail later.

5 Wire Reversal Rest At Ground Systems: This power doorlock system differs from the negative and positive 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 or DLS-3 and 2 or 3 relays. The important thing to remember is the wires in this system *rest at ground,* which means that the wires must be "opened", or cut, to make the connections.

Examine the wires on the back of the switch. Normally five wires will be found. Of these wires, one will be constant 12 volts positive, regardless of the switch's position. Two wires will be grounded regardless of the switch's position. Of the two remaining wires, one will show 12 volts positive when the switch is pushed to "lock", and the other will show 12 volts positive when the switch is pushed to "unlock".

These two wires are both routed to the doorlock actuators and are connected to either end



When testing the wires for the "switch" and the "motor" sides, both should be cut. Otherwise, false voltage reading can occur. Verification of "Primary" and "Secondary" status must be made; in some cases the "Primary" switch is the Passenger Doorlock Switch.

***5 Wire Reversal Rest At Ground** Doorlocks With Optional DLS and 2 SPDT Relays*

of the actuator's motor winding. When the switch is pushed to one position, one of these two wires will have 12 volts. This voltage flows through the wire to the actuator's motor winding, and since the other wire is still *resting at ground* an electrical circuit is completed. When the switch is pushed to the opposite position the electrical flow is *reversed*. When the correct wires are found, they must be cut. Notice in the diagram (previous page) 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, with consideration of "Primary" and "Secondary" switch; please see the diagram.

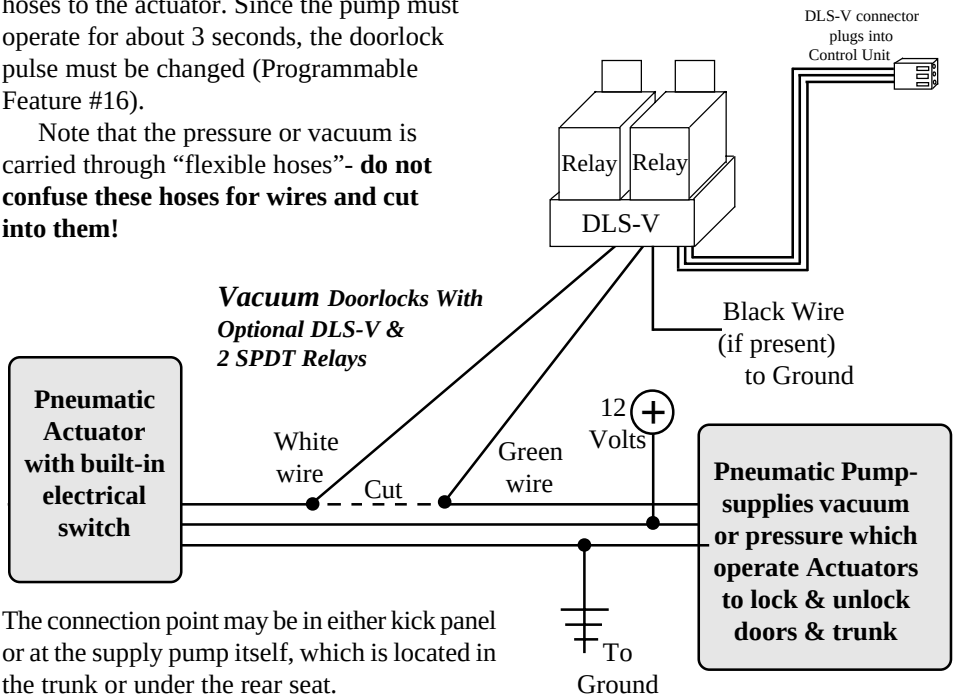
Model DLS- The DLS is a dual relay socket with a harness and connector to plug into the alarm control module and non-terminated wires to splice into the vehicle's wiring. The DLS and two relays are the most universal doorlock interface available. The relays used with it are standard 30 amp single pole, double throw (SPDT) automotive relays.

Vacuum Doorlocks and the optional DLS-V and 2 Relays

This doorlock system is used on older Mercedes Benz vehicles and consists of electrical switches (built into pneumatic actuators) which supply 12 volts or ground to a pneumatic pump. The switches are operated when the doors are locked or unlocked by the inside doorlock knob or the key in the exterior doorlock cylinders. This type of interface basically mimics the switch's operation of suppling positive or negative voltage to the pneumatic pump. The polarity supplied by the switch determines if the pump sends vacuum (hence the popular "vacuum" term for this type of system) or pressure through flexible

hoses to the actuator. Since the pump must operate for about 3 seconds, the doorlock pulse must be changed (Programmable Feature #16).

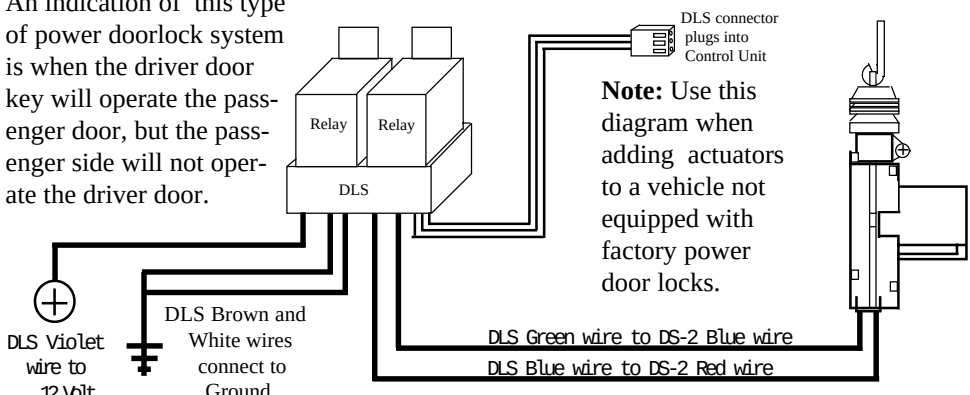
Note that the pressure or vacuum is carried through "flexible hoses"- **do not confuse these hoses for wires and cut into them!**



The connection point may be in either kick panel or at the supply pump itself, which is located in the trunk or under the rear seat.

Adding the Optional DS-2 Actuator and the DLS and 2 Relays

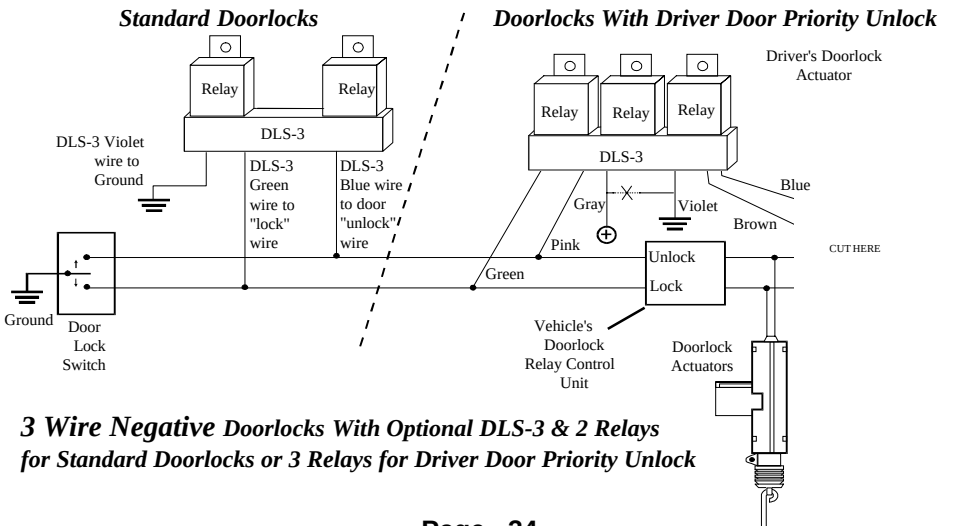
Some vehicles have a type of power doorlock system in which mechanically locking and unlocking the driver's door will operate an electrical switch in the door which supplies voltage to actuators in the other doors. There is no actuator in the driver's door, only a switch. An indication of this type of power doorlock system is when the driver door key will operate the passenger door, but the passenger side will not operate the driver door.



Vehicles Not Equipped With Power Doorlocks: This same type of interface can be used, with two variations: as shown, thus remotely unlocking the driver's door only, or with a DS-2 actuator in each door, which would remotely unlock all of the vehicle's doors when the ATV-1000 is disarmed. All of the added actuators would simply be wired in parallel.

Optional DLS -3 and 2 or 3 Relays - Driver Door Priority Unlock

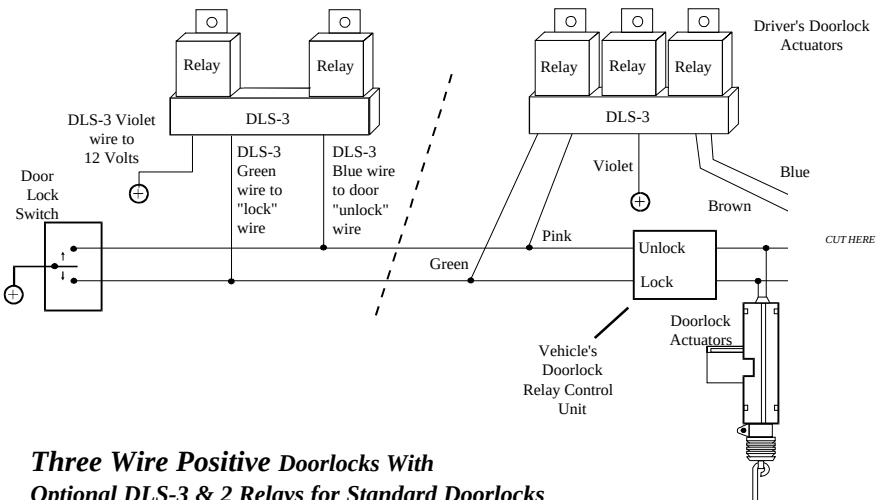
The DLS-3 is a triple relay socket (three relays are also needed) and is the most universal interface which allows the security system to lock the vehicle's doors, unlock only the driver's upon disarming (driver's door unlock priority) and, if desired, a second press of the transmitter's button within 5 seconds of disarming will unlock all of the doors. The DLS-3 used with two relays can be used in place of the DLS to lock and unlock all doors.



***3 Wire Negative** Doorlocks With Optional DLS-3 & 2 Relays for Standard Doorlocks or 3 Relays for Driver Door Priority Unlock*

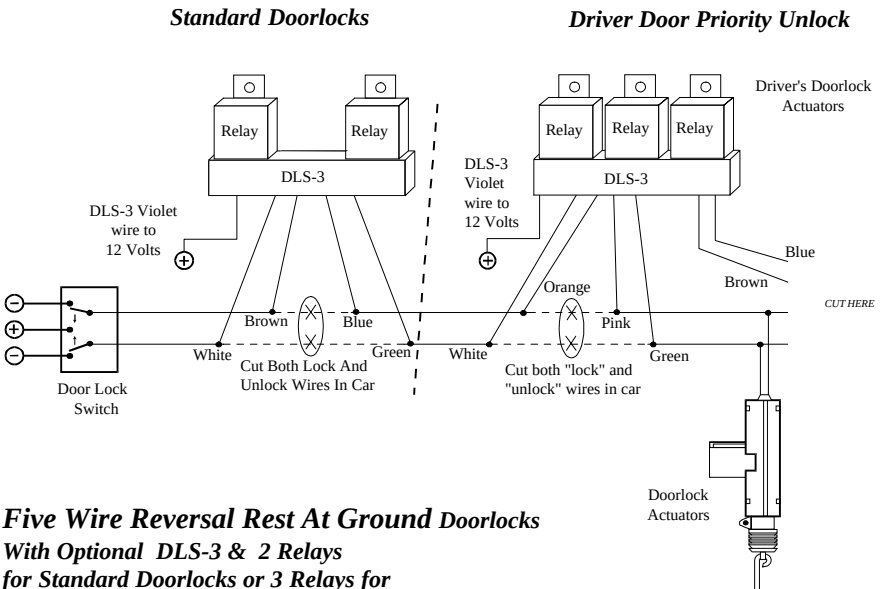
Optional DLS-3 and 2 or 3 SPDT Relays continued

Standard Doorlocks ***Driver Door Priority Unlock***



***Three Wire Positive** Doorlocks With*
Optional DLS-3 & 2 Relays for Standard Doorlocks
or 3 Relays for Driver Door Priority Unlock

Optional DLS-3 and 2 or 3 SPDT Relays continued



Five Wire Reversal Rest At Ground Doorlocks
With Optional DLS-3 & 2 Relays
for Standard Doorlocks or 3 Relays for
Driver Door Priority Unlock

Programming Transmitters

Each system includes two pre-programmed transmitters. To program transmitters, such as when adding a transmitter or changing the button assignment, follow this process:

Step 1- Turn "on" the ignition.

Step 2- Within 5 seconds of turning "on" the ignition, press the Valet Switch 5 times. The siren will chirp, confirming that for the next 10 seconds the system is ready to learn a transmitter code. When the first transmitter code is learned all existing stored codes will be erased. To enter a transmitter code, simply press and release the "**arm/lock**" transmitter button.

Step 3- Repeat this procedure for each transmitter desired to operate the security system. The system will chirp the siren once to confirm that each transmitter code was learned. All of the other transmitter button's functions will automatically be learned when the "**arm/lock**" button is learned. If a code is not received within a 10 second period, the learning process will automatically terminate.

Features Programming Checklist

This checklist helps when programming features. Before attempting feature programming, please carefully read pages 25-31 to become familiar with the features and the programming procedure. Mark each applicable box with "\" next to the feature to be changed before entering Features Programming Mode. As each feature is programmed, change its mark to "X".

Step 1 - Turn the ignition "off", and press the Valet Switch 5 times.
(the system will respond by briefly sounding the siren)

Step 2 - Press the Valet Switch the same number of times as the feature number.
(the system will acknowledge the Valet Switch entry by repeating the same number of chirps)

Step 3 - Press the transmitter's "**arm/lock**" button to turn the feature"on", or press the "**disarm/unlock**" button to turn the feature "off". (turning the feature "on" is indicated by one siren chirp; turning the feature "off" is indicated by two siren chirps)

Repeat - Steps 2 and 3 for each feature to be changed

#		FEATURE	DEFAULT
1	☐	Selectable Coded Override	1 & 0 (see Operation Guide)

2	☐	Last Door Arming	OFF
3	☐	Automatic Rearming	OFF
4	☐	Automatic Starter Interrupt	OFF
5	☐	Doors Lock With Last Door Arming	OFF
6	☐	Doors Lock With Automatic Rearming	OFF
7	☐	Doors Lock With Ignition	ON
8	☐	Ignition OFF Unlock #1	ON
9	☐	Ignition OFF Unlock #2	ON
10	☐	Open Door Bypass To Previous Three Features	ON
11	☐	Confirmation Chirps	ON
12	☐	Confirmation Chirps In Valet Mode	OFF
13	☐	Activated Alarm Cycle	60 Seconds (“**arm/lock**”)
14	☐	Lights On Upon Disarm	ON (“**arm/lock**”)
15	☐	Disarm Alarm Upon Activating 2nd Channel	ON
16	☐	Doorlock Pulse Time	.8 second (“**arm/lock**”)
17	☐	Double Unlock Pulse	OFF
18	☐	Arming Delay	3 Seconds (“**arm/lock**”)
19	☐	Pulsed Horn / Steady Siren Output	Pulsed Horn (“**arm/lock**”)
20	☐	Loud or Soft Confirmation Chirps	Loud (“**arm/lock**”)
21	☐	Total Closure Lock Output	OFF
22	☐	Ignition-Activated Anti-Carjacking Protection	OFF
23	☐	Door-Activated Anti-Carjacking Protection	OFF
24	☐	Transmitter-Activated Anti-Carjacking Protection	OFF
25	☐	Open Door Warning Upon Arming	OFF