FREEDOM
KEYLESS ENTRY & SECURITY

""PROTECT YOURSELF AND YOUR INVESTMENT

INSTALLATION MANUAL

MODEL: FREE-200+

Contents

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 - (Negative Ground Input): The Black wire's function is to supply Negative chassis ground for the security system's operation.

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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. When power or ground is first applied the alarm will trigger "on" instantly. **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 Volt Positive Input): 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 the state it was in previously. The Red wire also supplies 12 Volt Positive to the built-in relay for flashing the parking lights.

CONNECTION: Connect the Red wire to a Constant Positive 12 Volt source. This source should have Positive 12 Volt 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. The connection location must have at least a 15 Amp capacity.

Yellow Wire - (12 Volt Positive 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 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.

Orange Wire - (Negative Output For Optional Starter Interrupt): The Orange wire is for an optional starter disable socket and relay. The function of this wire is to provide a 500ma Negative 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,

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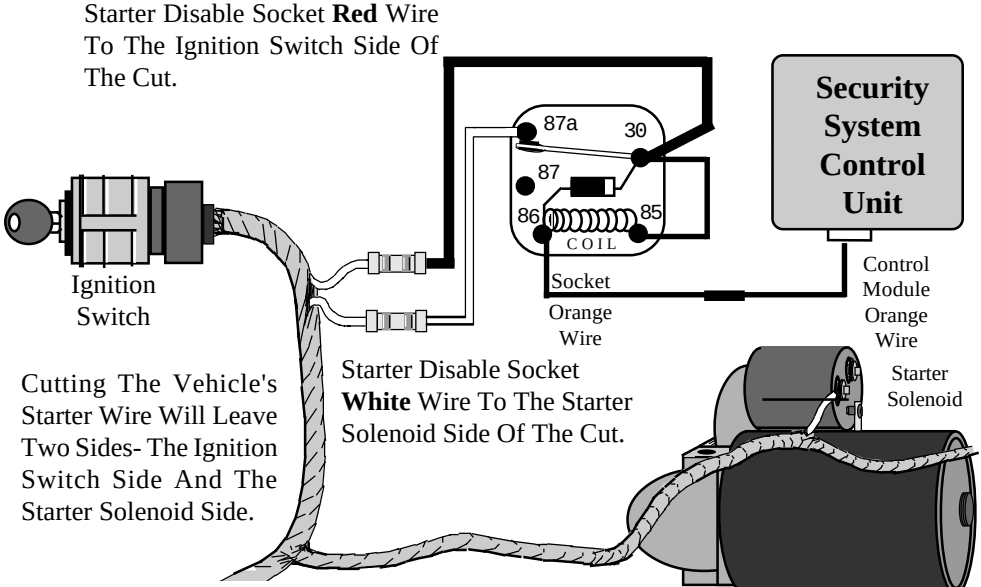


Configuring A Starter Disable Using The AU-SOCKET And SPDT Relay.

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. 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 - (Positive Siren Output): The Brown wire is a 1 Amp Positive output designed to operate the electronic siren for audible confirmations, and also to sound if the security system is triggered.

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.

CONNECTION: The Brown wire may be connected directly to the siren's Red wire, and the siren's Black wire is connected to Negative 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.

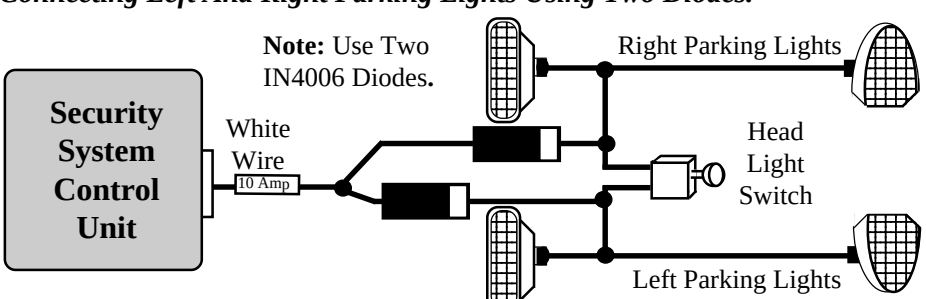
White Wire - (Positive Flashing Light Output): This is a Positive 12 Volt out- put for exterior flashing light confirmation and to attract attention to the vehicle if the security system is activated. Also, upon disarming, this circuit will stay on for 30 seconds to confirm disarming and to illuminate 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. Some vehicles, notably Toyotas, have a parking light relay which is triggered by a Negative Ground circuit 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. 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

Connecting Left And Right Parking Lights Using Two Diodes.



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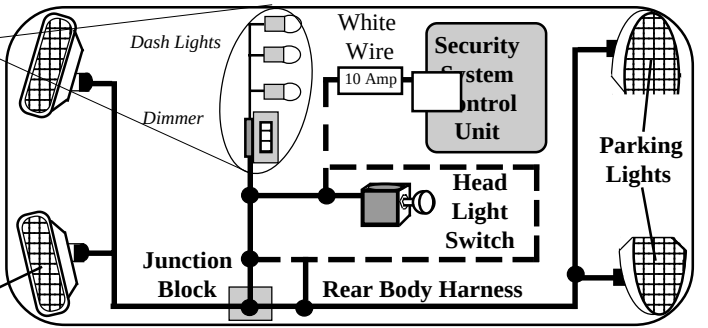
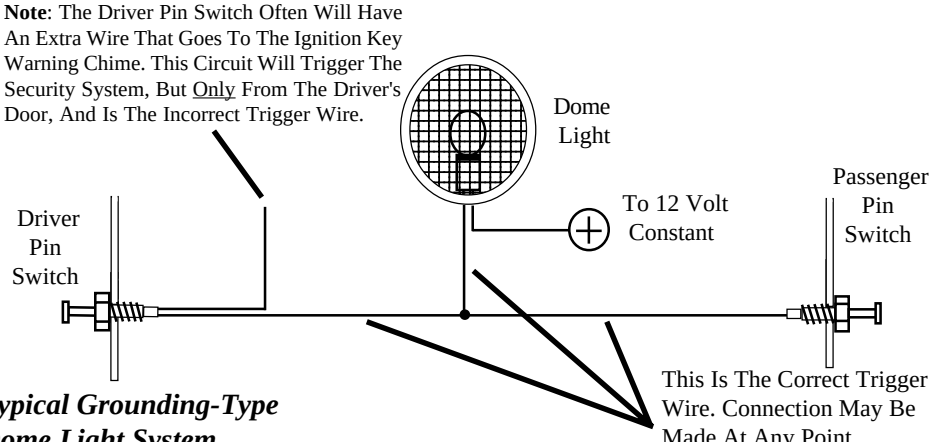
3 Suggested Parking Light Connections: Do not connect to the dimmer circuit! Damage to the control unit or vehicle can occur!



wire touches chassis ground, the system's control module may be damaged.

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 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 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.

Green Wire - (Negative Door Trigger Input): The Green wire's function is an open door input to the control module for vehicles having *Negative 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 exterior and interior lights) if in an armed state. If the Last Door Arming and Automatic Rearming features are utilized, after turning "off" the ignition switch and closing the door, the Last Door Arming sequence will begin, and be suspended if a door is reopened.



Typical Grounding-Type Dome Light System.

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Opening a door during Automatic Rearming will also suspend that feature. Last Door Arming and Automatic Rearming are related automatic arming features. Utilizing the Last Door Arming feature automatically turns on the Automatic Rearming feature.

Opening a door while the exterior lights are on after disarming the security system will cause the exterior lights to turn off 10 seconds after the opening of the door. If the system has been programmed to lock and unlock the doors with the ignition switch being turned "on" and "off", an open door bypass of this feature may also be programmed. If a door is opened while the ignition switch is "on", the trunk release via the transmitter will operate.

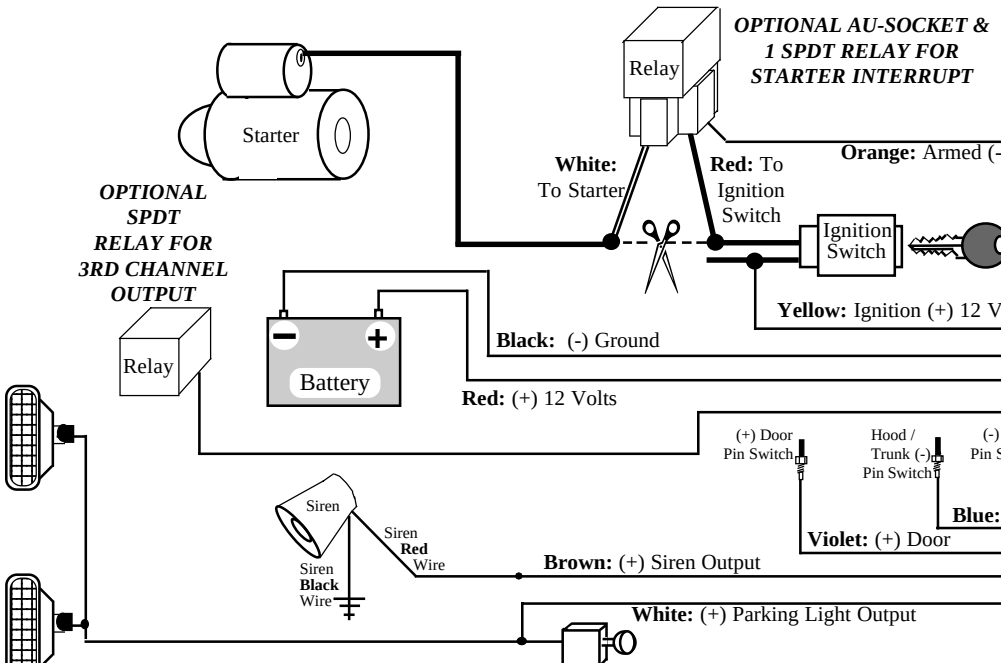
CONNECTION: Connect the Green wire to a wire in the vehicle which is common to all the door pin switches. The correct wire in this type of dome light/door jamb pin switch system will have no voltage present and will also show chassis ground when the doors are opened, and up to 12 volts when the doors are closed. 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 Circuit Bypass feature will allow the system to be armed from the transmitter instantly 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 below illustrates a basic negative courtesy light system.

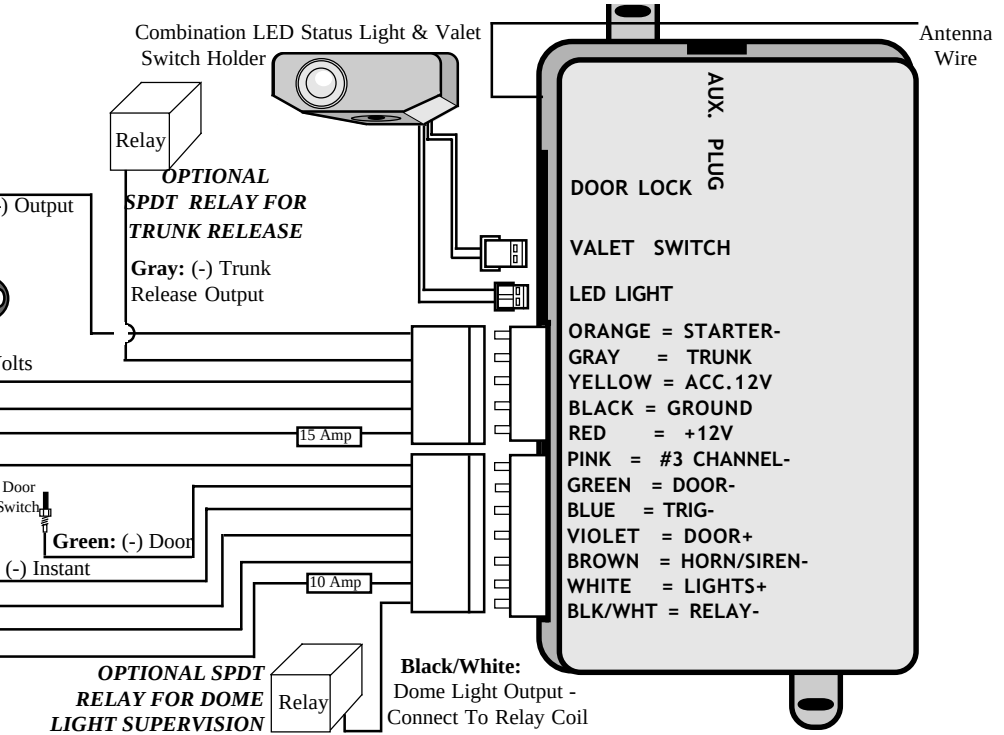
If the pin switch is mounted in the metal structure of the vehicle, and the dome light goes out when the switch is removed, suspect a grounding-type dome light system. If the switch

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.

Violet Wire - (Positive 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 *Positive 12 volt* door pin switches.

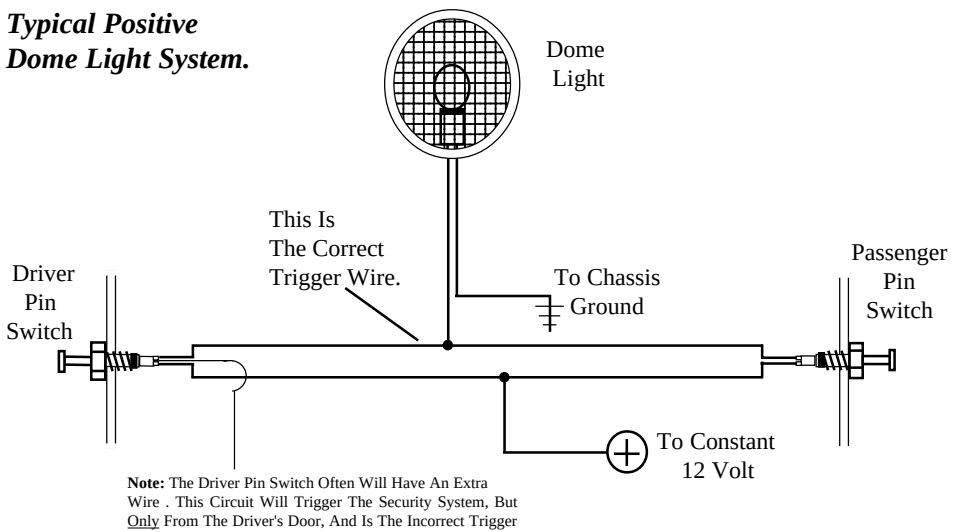
CONNECTION: Connect the Violet wire to a wire in the vehicle which is common to all the door pin switches. The correct wire for this type of dome light/door jamb pin switch system will have 12 volts present when the doors are opened, and chassis ground when the doors are closed. The correct wire will show this change when any of the doors are opened. If the car has a delay dome light the Circuit Bypass feature will allow the system to be armed from the transmitter instantly and will start protecting the Violet wire circuit when the dome light turns off. In Last Door Arming mode, the system arms 30 seconds after the dome light turns off. In addition, some vehicles utilize switches in the doors, either connected to the exterior door handles or to the latching mechanism. A car that features the dome lights illuminating when the exterior door handle is lifted is an example of this type of switching system.


Starter
Relay
OPTIONAL AU-SOCKET & 1 SPDT RELAY FOR STARTER INTERRUPT
Orange: Armed (-
White: To Starter
Red: To Ignition Switch
Ignition Switch
OPTIONAL SPDT RELAY FOR 3RD CHANNEL OUTPUT
Relay
Battery
Yellow: Ignition (+) 12 V
Black: (-) Ground
Red: (+) 12 Volts
(+) Door Pin Switch
Hood / Trunk (-) Pin Switch
Blue:
Violet: (+) Door
Siren
Siren Red Wire
Siren Black Wire
Brown: (+) Siren Output
White: (+) Parking Light Output


Combination LED Status Light & Valet Switch Holder
Antenna Wire
Relay
OPTIONAL SPDT RELAY FOR TRUNK RELEASE
Gray: (-) Trunk Release Output
) Output
olts
15 Amp
Door Switch
Green: (-) Door
(-) Instant
10 Amp
OPTIONAL SPDT RELAY FOR DOME LIGHT SUPERVISION
Relay
Black/White: Dome Light Output - Connect To Relay Coil
AUX. PLUG
DOOR LOCK
VALET SWITCH
LED LIGHT
ORANGE = STARTER-
GRAY = TRUNK
YELLOW = ACC.12V
BLACK = GROUND
RED = +12V
PINK = #3 CHANNEL-
GREEN = DOOR-
BLUE = TRIG-
VIOLET = DOOR+
BROWN = HORN/SIREN-
WHITE = LIGHTS+
BLK/WHT = RELAY-

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

Typical Positive Dome Light System.



Note: The Driver Pin Switch Often Will Have An Extra Wire . This Circuit Will Trigger The Security System, But Only From The Driver's Door, And Is The Incorrect Trigger Wire.

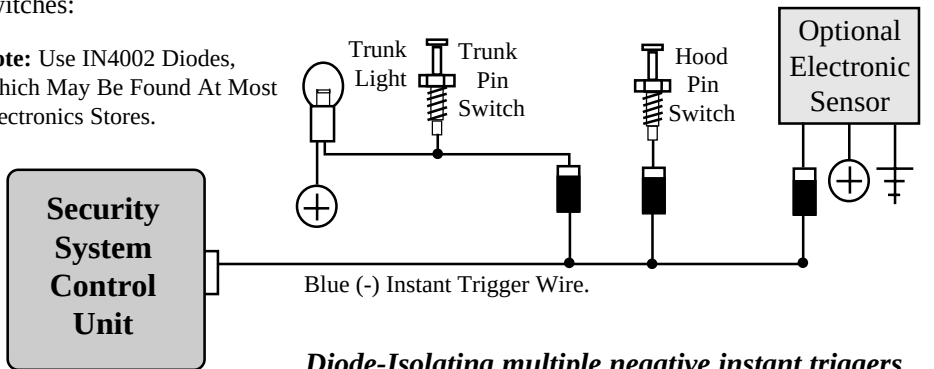
Blue Wire - (Negative Instant Trigger Input): The Blue wire is a Negative instant trigger used to detect entry into the hood or trunk area of a vehicle. The primary function of this circuit is to activate the security system (sounding the siren and flashing the exterior and interior lights) if in an armed state. If the Last Door Arming and Automatic Rearming features are utilized, after turning "off" the ignition switch and closing the door, the Last Door Arming sequence will begin, provided the Blue wire is not grounded. If the Blue wire is grounded during Automatic Rearming, the process will be interrupted. When the Last Door Arming feature is utilized, if the Blue wire is grounded when the last door is closed, the Last Door Arming process will not start until the Blue wire is ungrounded.

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

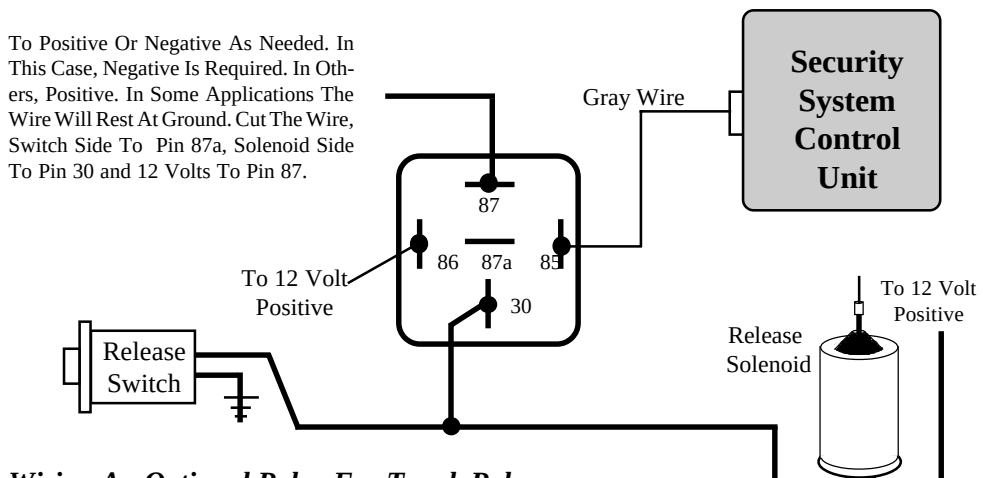
Note: Use IN4002 Diodes, Which May Be Found At Most Electronics Stores.



Diode-Isolating multiple negative instant triggers

Gray Wire - (Negative 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 two seconds to activate this output. When activated the siren will chirp twice and 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.

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", or, it may also be operated while ignition key is "on" provided a door is open at the same time. This prevents the trunk or rear hatch from being opened from the transmitter while driving. Unless the vehicle's trunk release switch negatively triggers a release relay which draws no more than 250ma, an optional relay must be used.



Wiring An Optional Relay For Trunk Release.

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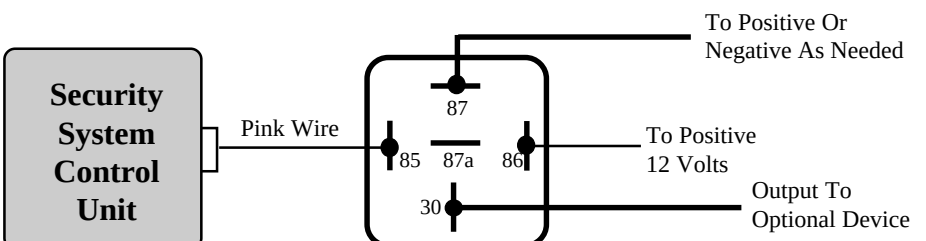
CONNECTION: An optional relay is required. Configure the Gray wire to relay pin 85, and connect Constant Positive 12 Volts to relay pin 86. Connect pins 87, 87a & 30 as indicated in the diagram on Page 17 of a typical trunk release circuit.

Pink Wire - 3rd Channel Output: The function of the Pink wire is to provide an optional output similar to the Gray trunk release wire. Press both transmitter buttons for two seconds to activate this output. Once activated, this output will last for one second, or, for as long as the transmitter buttons are 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).

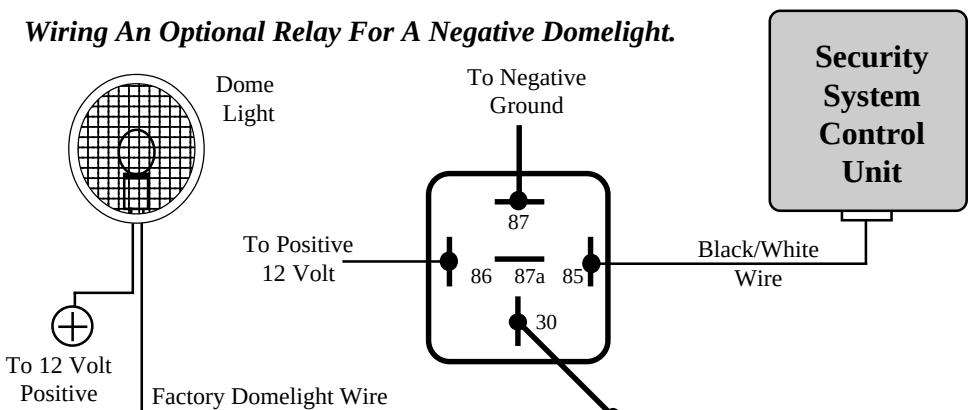
CONNECTION: For most applications an optional relay will be needed (Use the following diagram). This output will not disarm the security system when activated.

Optional Relay Wiring Diagram



Black/White Wire - (Negative Output For Optional 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 (and also duplicate the confirmation flashes). This output's operation is identical to the White Parking Light Output. If required, this output may be used instead, in conjunction with the White wire, to operate European-style split parking lamp circuits, but a relay must still be utilized.

Wiring An Optional Relay For A Negative Domelight.



Prewired Plug-In Features

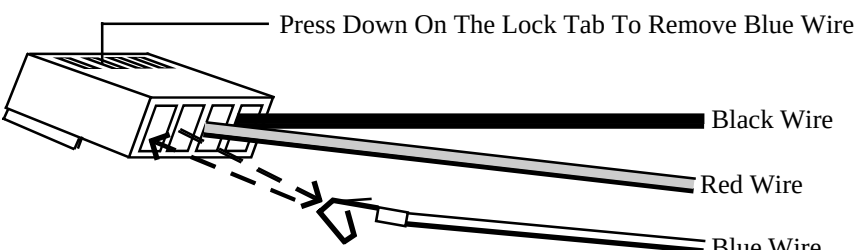
Red LED Status Light: The Red LED Status Light may be mounted in the included combination LED Status Light and Valet Switch holder. Mount the holder in a location where it can easily be seen by the driver, and preferably where it can be seen from outside, as the LED Status Light provides a level of visual 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 single zone shock sensor. This port supplies constant 12 volt, grounded output when the system is armed, a negative instant trigger, and a negative prewarn trigger. Most Omega Research and Development, Inc. sensors will 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.".

Please note that the included sensor is configured to activate the system as plugged into the control module. If desired, the installer may opt for the sensor to activate the Prewarn circuit by removing the Blue wire from its cavity on the sensor's connector and then inserting it into adjacent empty cavity. Use a suitable tool (such as a slotted jeweler's screwdriver) to depress the Blue wire's terminal locking tab to remove the Blue wire. Then, ensure that the locking tab is still bent slightly away from the terminal when inserting it into the next empty cavity so that the terminal will stay secure.

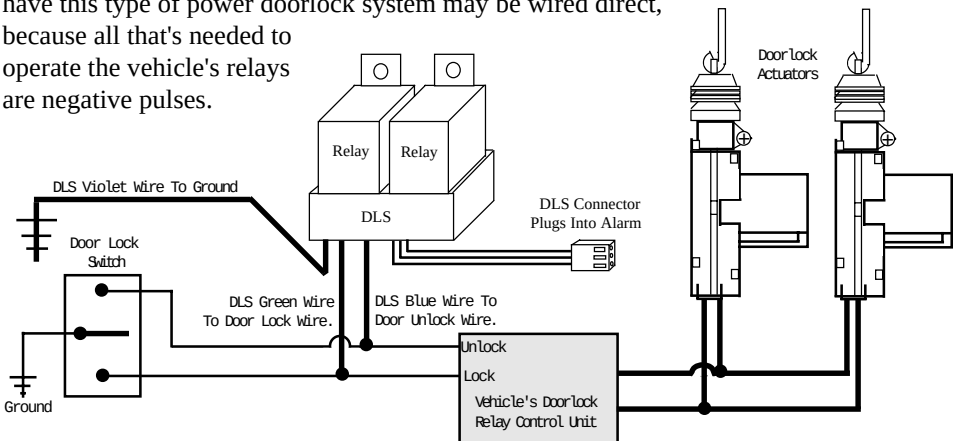


Plug-In Power Doorlock Interface Port:

This security system features a plug-in port for an optional doorlock interface. The 3 pin port on the alarm control module produces a negative pulse for lock, a constant 12 volt pin *for the optional relay coils only*, and a negative 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 negative pulse, 3 wire positive 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.

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

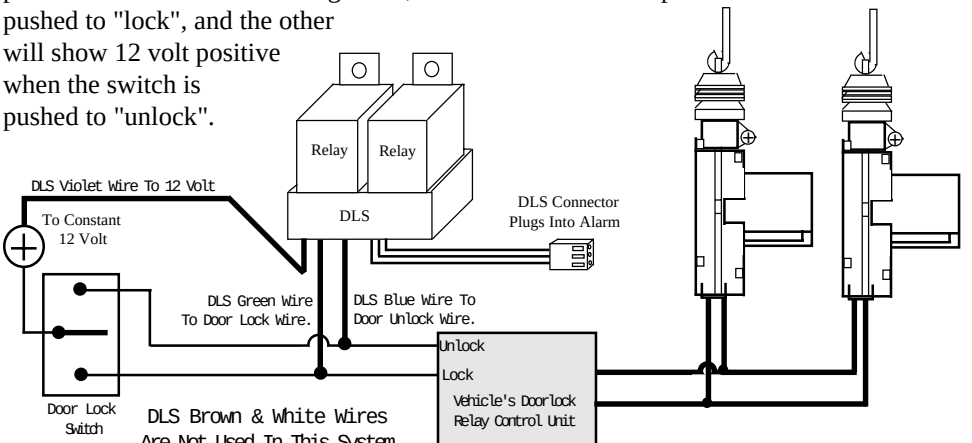
the switches operate doorlock relays or a doorlock control unit with built-in relays. The correct connection point is between the switches and the relays. In most cases, vehicles that have this type of power doorlock system may be wired direct, because all that's needed to operate the vehicle's relays are negative pulses.



3 Wire Negative Doorlocks With The Optional DLS And 2 SPDT 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 doorlock relays/control unit. Examine the wires on the back of the

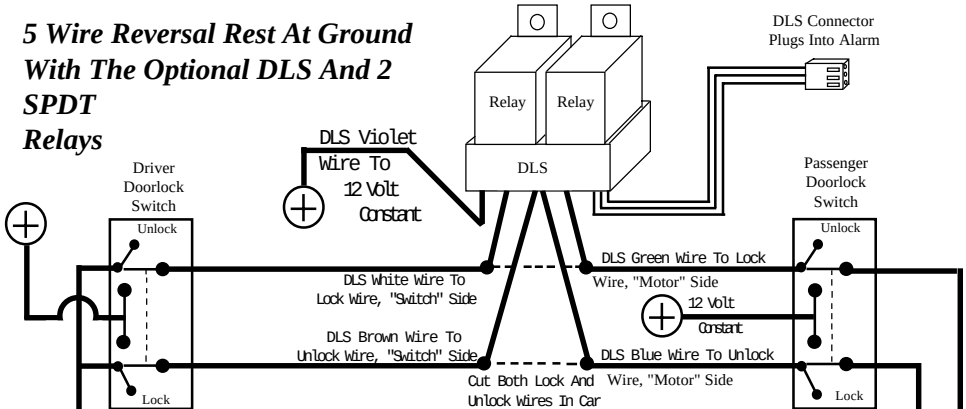
switch. Of the three wires, one will be constant 12 volt positive, regardless of the switch's position. Of the two remaining wires, one will show 12 volt positive when the switch is pushed to "lock", and the other will show 12 volt positive when the switch is pushed to "unlock".



3 Wire Positive Doorlocks With The Optional DLS And 2 SPDT Relays

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

5 Wire Reversal Rest At Ground With The 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 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". 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.

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.

Programmable Features & Encoding Transmitters

The FREDOM-200+ Transmitters will require encoded to the control module's processing unit. This easy procedure is explained in detail in the Owner's Manual. The FREDOM-200+ has 16 Programmable Features which can easily be changed by utilizing the Valet Switch and Transmitter. The 16 Programmable Features and the programming procedure are also explained in detail in the Owner's Manual. Owner's and Installation Manuals, if needed, can be obtained from Omega Research and Development, Inc.; PO Box 508, Douglasville, Georgia 30133.

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.