



Model 435

Installation Guide



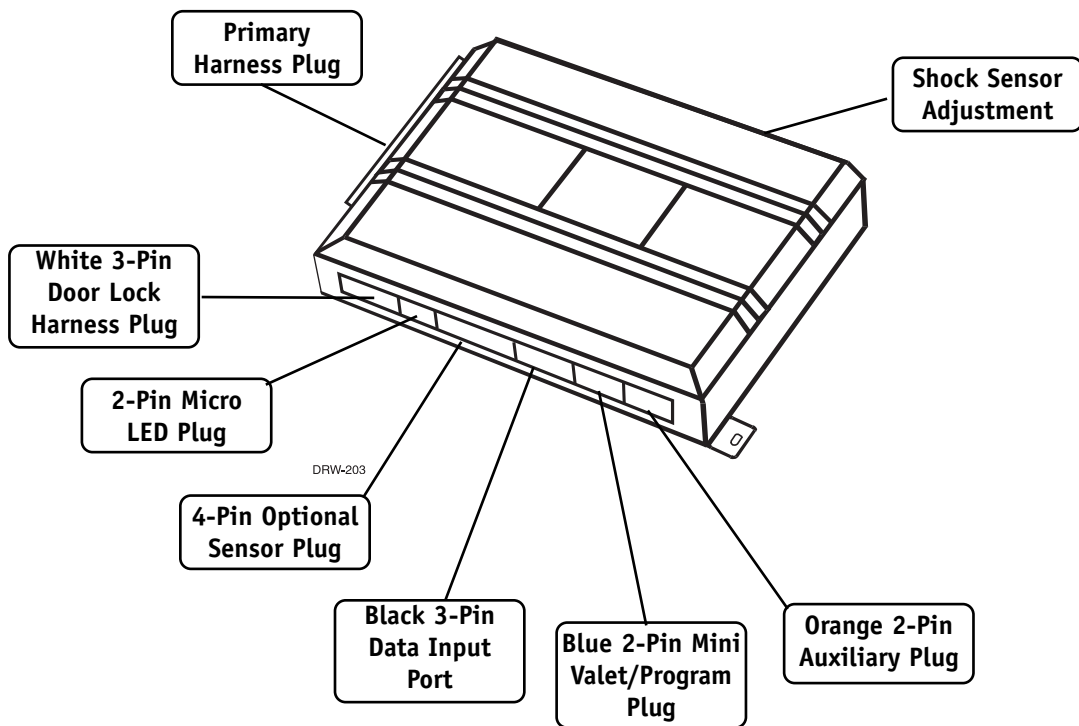
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Bitwriter™, Car★Com™, Code Hopping™, DEI®, Doubleguard®, ESP™, FailSafe®, Ghost Switch™, Learn Routine™, Nite-Lite®, Nuisance Prevention Circuitry®, NPC®, Revenger®, Silent Mode™, Soft Chirp®, Stinger®, Valet®, Vehicle Recovery System®, VRS®, and Warn Away® are all Trademarks or Registered Trademarks of Directed Electronics, Inc.

what is included

- The control module (see diagram)
- A Stinger® Doubleguard® shock sensor on-board the control module
- A Revenger® Soft Chirp® siren
- Two 476A remote transmitters
- The plug-in status LED
- The plug-in Valet®/Program switch
- Primary Harness
- Door Lock Harness
- 2-Pin Auxiliary Harness
- Pre-wired FailSafe® Starter Kill Relay



installation points to remember

This product represents many years of research and development. It is very sophisticated and should be installed by experienced security installers only. Please do not attempt installation of this product without reading this guide. The system has been designed to provide the ultimate in security, coupled with limitless convenience and expansion options.

This product is not intended for consumer installation and will have NO WARRANTY unless it is installed by an authorized dealer.

Do not disconnect the battery if the vehicle has an anti-theft coded radio. If equipped with an airbag, avoid disconnecting the battery if possible.

***IMPORTANT!** Many airbag systems will display a diagnostic code through their warning light after they lose power. Disconnecting the battery requires this code to be erased, a procedure that can require a trip to the dealer.*

Before beginning the installation:

- Check with the customer to determine the Status LED location.
- Remove the domelight fuse. This prevents accidentally draining the battery.
- Roll down a window to avoid being locked out of the car.

After the install:

- Test all functions. The “Using Your System” section of the Owner’s Guide is very helpful when testing.
- When testing, don’t forget that this system is equipped with Nuisance Prevention® Circuitry. NPC™ can bypass both instant trigger zones, making them seem to stop working.

tools required

- | | |
|--------------------------------|-------------------------------|
| ■ Digital multi-meter | ■ Nutdriver and/or socket set |
| ■ Wire cutters/strippers | ■ Panel removal tool |
| ■ Solderless terminal crimpers | ■ Drill bit set |
| ■ Cordless power drill | ■ Phillips head screwdriver |
| ■ Torx driver set | ■ Work light |

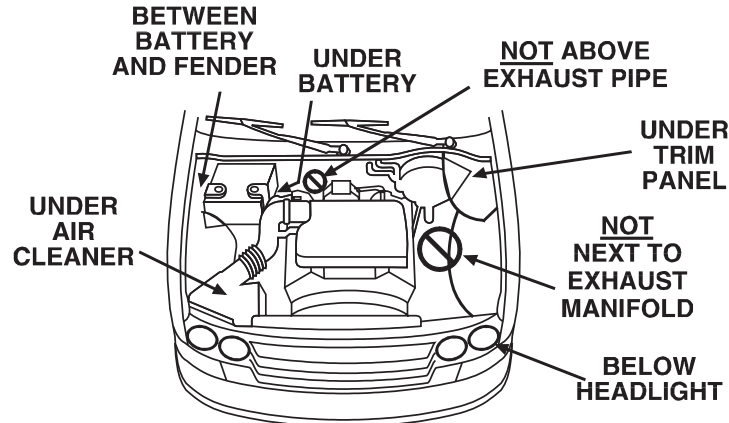
This is a general list of tools required to complete the installation of this DEI® security system in most vehicles. Some vehicles may require additional tools.

deciding on component locations

locations for the siren

Some things to remember when mounting the siren:

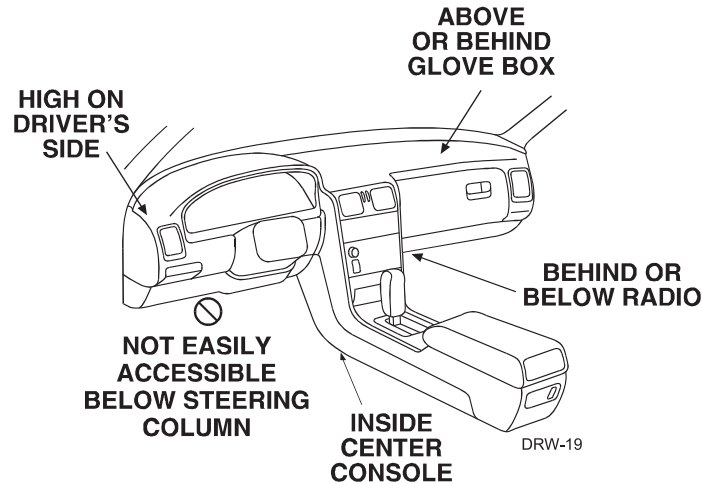
- Keep it away from heat sources. Radiators, exhaust manifolds, turbochargers, and heat shields are all things to avoid.
- Mount it where a thief cannot easily disconnect it, whether the hood is open or shut. Both the siren and its wires should be difficult to find. This usually involves disguising the wire to look like a factory harness.
- We recommend against grounding the siren to its mounting screws. Instead, we recommend running both the red and black wires into the passenger compartment and grounding to one common point for all devices. After all, both wires are the same length and come already bonded together. Whenever possible, conceal your wires in the factory harnesses or in the same style loom as the factory.
- When possible, put the siren on the same side of the vehicle as the control module, where its wires will reach the control module's wires without extending them. Always run the wires through the center of a grommet, never through bare metal!
- Point the siren down so water does not collect in it.



locations for the control module

- Never put the control module in the engine compartment!
- The first step in hot-wiring a vehicle is removing the driver's side underdash panel to access the starter and ignition wires. If the control module is placed just behind the driver's side dash it can easily be disconnected.
- When locating the control module, try to find a secure location that will not require you to extend the harnesses' wires (they are 1.5 meters long). Keep it away from the heater core (or any other heat sources) and any obvious leaks.

- The higher the control module is in the vehicle, the better the transmitter range will be. If you put the control module under a seat or inside a metal dashboard, range will suffer.
- Some good control module locations: Above the glove box, inside the center console, above the underdash fuse box, above the radio, etc.

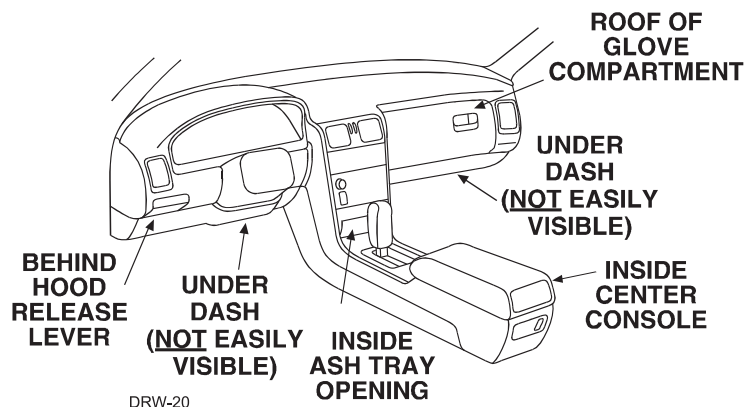


locations for valet/program switch

Ensure that the location you pick for the switch has sufficient clearance to the rear. The switch should be well hidden. It should be placed so passengers or stored items (such as in a glove box or center console) cannot accidentally hit it. The switch fits in a $\frac{9}{32}$ -inch hole.

This system has Remote Valet®. The user can enter and exit Valet® Mode without having to reach the Valet®/Program switch. DEI® introduced this feature so that switch location was less critical in day-to-day use. As long as the Valet®/Program switch can be reached to disarm without a transmitter, easy access is not important.

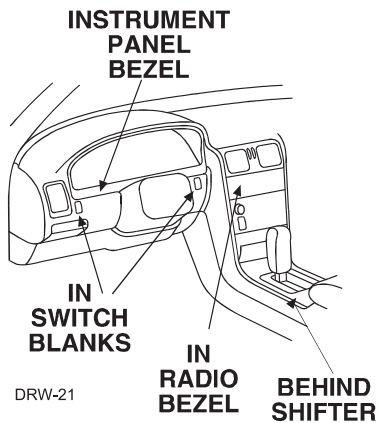
IMPORTANT! When the vehicle is delivered, please show the user where the switch is located and how to disarm the system with it.



locations for the status LED

Things to remember when positioning the Status LED:

- It should be visible from both sides and the rear of the vehicle, if possible.
- It needs at least $\frac{1}{2}$ -inch clearance to the rear.
- It is easiest to use a small removable panel, such as a switch blank or a dash bezel. Remove it before drilling your $\frac{9}{32}$ -inch hole.
- Use quick-disconnects near the LED wires if the panel is removable. This allows mechanics or other installers to remove the panel without cutting the wires.



starter kill relay

If the Failsafe® Starter Kill Relay or its connections are immediately visible upon removal of the underdash panel, they can easily be bypassed. Always make the relay and its connections difficult to discern from the factory wiring! Exposed yellow butt connectors do not look like factory parts, and will not fool anyone! For this reason, routing the starter kill wires away from the steering column is recommended.

finding the wires you need

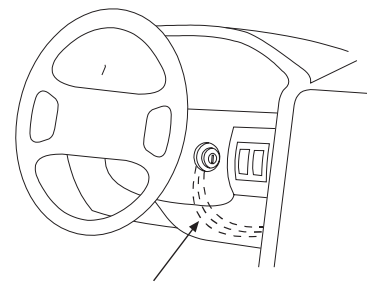
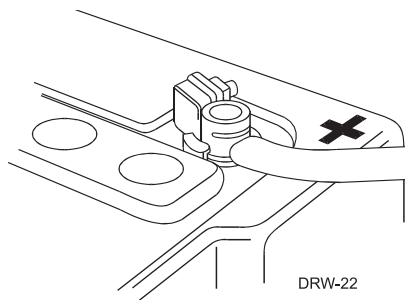
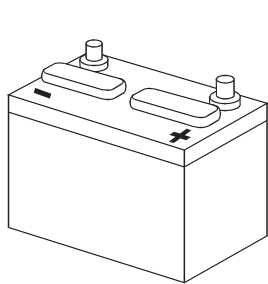
Now that you have decided where each component will be located, you're going to find the wires in the car that the security system will be connected to.

IMPORTANT! Do not use a 12V test light to find these wires! All testing described in this manual is described using a digital multimeter.

obtaining constant 12V

We recommend two possible sources for 12V constant: The (+) terminal of the battery, or the constant supply to the ignition switch. Always install a fuse within 12 inches of this connection.

IMPORTANT! Do not remove the fuse holder on the red (H1/11) wire. It ensures that the control module has its own fuse, of the proper value, regardless of how many accessories are added to the main power feed.



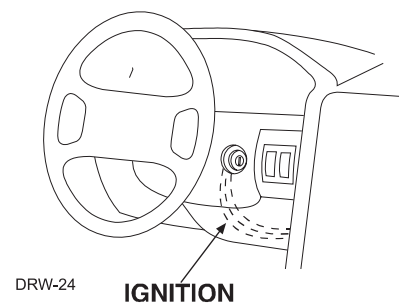
CONSTANT 12V DRW-23

finding the 12V switched ignition wire

The ignition wire is powered when the key is in the run or start position. This is because the ignition wire powers the ignition system (spark plugs, coil) as well as the fuel delivery system (fuel pump, fuel injection computer). Accessory wires, on the other hand, lose power when the key is in the start position to make more current available to the starter motor.

How to find (+)12V ignition with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the ignition wire. The steering column harness or ignition switch harness is an excellent place to find this wire.



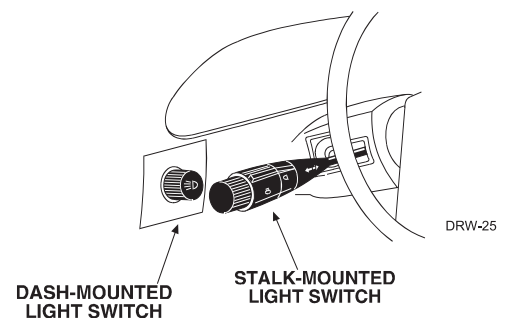
4. Turn the ignition key switch to the run position. If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Now turn the key to the start position. The meter display should stay steady, not dropping by more than a few tenths of a volt. If it drops close to or all the way to zero, go back to step 3. If it stays steady at (+)12V, you have found an ignition wire.

finding a (+) parking light wire

The (+) parking light wire is often found near the switch. Many cars have the switch built into the turn signal lever, and in these cars the parking light wire can be found in the steering column. The same wire is often available in the kick panel or running board.

How to find a (+) parking light flash wire with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the parking light wire. Usually, the area near the headlight/parking light switch is an excellent area to start, as is the kick panel.
4. Turn on the parking lights. If your meter shows (+)12V, turn off the parking lights and make sure it goes back to zero.
5. If it does return to zero, turn the parking lights back on and, using the dash light dimmer control, turn the brightness of the dash lights up and down. If the meter changes more than a volt when using the dimmer, look for another wire. If it stays relatively close to (+)12V, you have found your parking light wire.



finding the door pin switch circuit

The best places to find the door switch wire are:

- At the pin switch: When testing at the pin switch, check the wire to ensure that it "sees" all the doors. Often, the passenger switch will cover all the doors even if the driver's switch will not.
- At the dome light: This may not be your best choice if the vehicle has delayed dome light supervision, but it will work in vehicles with completely diode-isolated pin switches.

Once you have determined the wire color, the easiest place to connect to the wire is often at the kick panel, at the windshield pillar, or in the running board. When an easy location is not available, running a wire to the dome light itself is often the best solution.

How to find a door pin switch trigger wire with your multimeter:

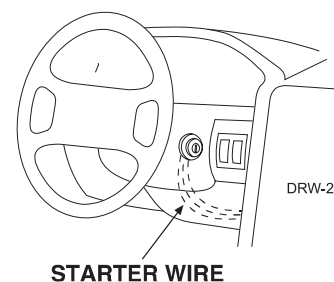
1. Set to DCV or DC voltage (12V or 20V is fine).
2. In most cars, fasten the (+) probe of your meter to (+)12V constant.
3. Probe the wire you suspect of being the door trigger wire. If the meter reads (+)12V when any door is opened, you have found a trigger wire.

NOTE: Make sure the wire you use “sees” all the doors! Some newer GM vehicles lack standard-type pin switches. The dome light in these vehicles is turned on when the door handle is lifted. These usually have a blue/white or white wire coming out of the door into the kick panel which will provide a (-) trigger for all doors. Some GM vehicles (some Cavaliers, Grand Ams, etc.) have a yellow wire coming out of the door which provides a (+) door trigger.

finding a starter wire

How to find the (+)12V starter wire with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the starter wire. The steering column is an excellent place to find this wire. Remember you do not need to interrupt the starter at the same point you test it. Hiding your starter kill relay and connections is always recommended.
4. Turn the ignition key switch to the start position. Make sure the car is not in gear! If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Cut the wire you suspect of being the starter wire.
6. Attempt to start the car. If the starter engages, reconnect it and go back to step 3. If the starter does not turn over, you have the right wire.

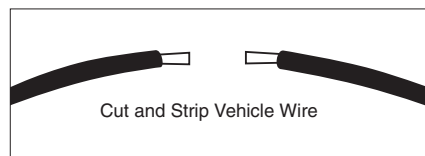


making your connections

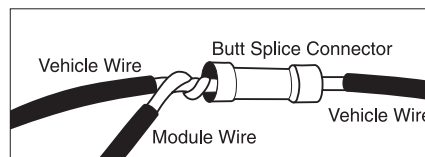
When connecting the security system's wires to the wires in the vehicle it is important that the connections are tight and no bare wire is exposed. In this section, two types of connections are described that may be used to connect the wires from the security system into the vehicle's wiring. Both types of connections are electrically acceptable if made correctly. Other types of "tap-in" connections, such as T-Taps are not acceptable.

solderless butt connections

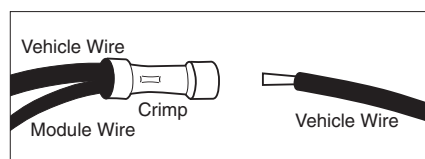
1. Cut the wire and strip back about $\frac{1}{4}$ -inch of insulation on each end of the wire.



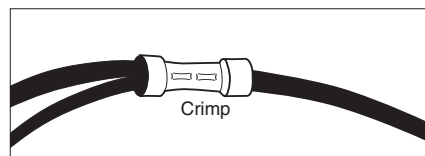
2. Twist one end of the vehicle's wire with the security module's wire.



3. Insert the twisted pair of wires into one end of the butt connector and crimp securely.

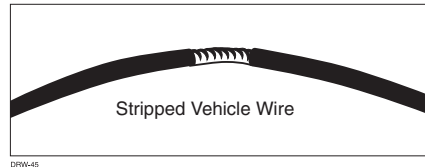


4. Insert the other end of the vehicle's wire into the other end of the butt connector and crimp securely.

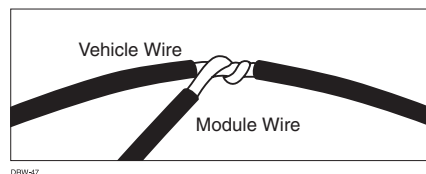


solder connections

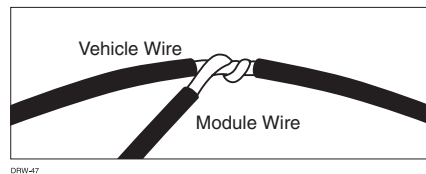
1. Using your wire strippers and razor knife, strip approximately $\frac{1}{2}$ -inch of insulation off the wire to be connected to, without cutting the wire.



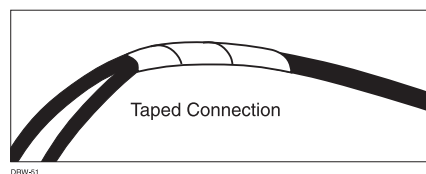
2. Twist the security module's wire around the bare section of the vehicle's wire.



3. Solder the bare connection thoroughly using rosin core solder.



4. Completely insulate the connection with electrical tape.



primary harness (H1), 12-pin connector

H1/1	ORANGE	(-) 500 mA ARMED OUTPUT
H1/2	WHITE	(+)/(-) SELECTABLE LIGHT FLASH OUTPUT
H1/3	WHITE/BLUE	(-) 200 mA CHANNEL 3 SELECTABLE OUTPUT
H1/4	BLACK/WHITE	(-) 200mA DOMELIGHT SUPERVISION OUTPUT
H1/5	GREEN	(-) DOOR TRIGGER INPUT, ZONE 3
H1/6	BLUE	(-) INSTANT TRIGGER INPUT, ZONE 1
H1/7	VIOLET	(+) DOOR TRIGGER INPUT, ZONE 3
H1/8	BLACK	(-) CHASSIS GROUND INPUT
H1/9	YELLOW	(+) SWITCHED IGNITION INPUT, ZONE 5
H1/10	BROWN	(+) SIREN OUTPUT
H1/11	RED	(+) CONSTANT POWER INPUT
H1/12	RED/WHITE	(-) 200mA CHANNEL 2 VALIDITY OUTPUT

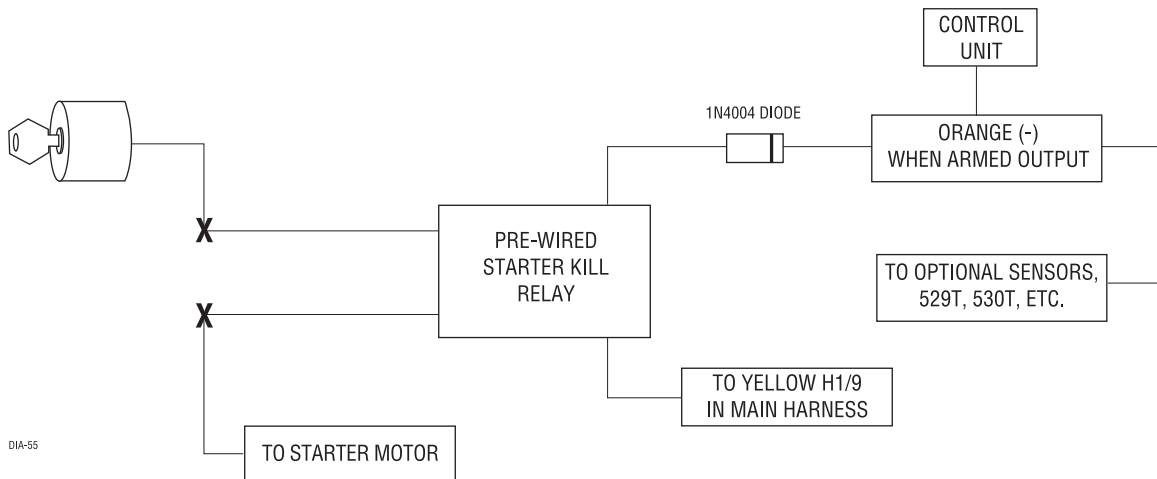
primary harness wire connection guide

This guide describes in detail the connection of each wire. Also included are possible applications of each wire. This system was designed with the ultimate in flexibility and security in mind. Many of the wires have more than one possible function. Please read carefully to ensure a thorough understanding of this unit.

H1/1 ORANGE (-) ground-when-armed output

This wire supplies a (-) ground as long as the system is armed. This output ceases as soon as the system is disarmed. The orange wire is used to control the pre-wired starter kill relay. It can supply up to 500 mA of current.

NOTE: If connecting the orange wire to control another module, such as a 529T or 530T window module, a 1 amp diode (type 1N4004) will be required (see below).

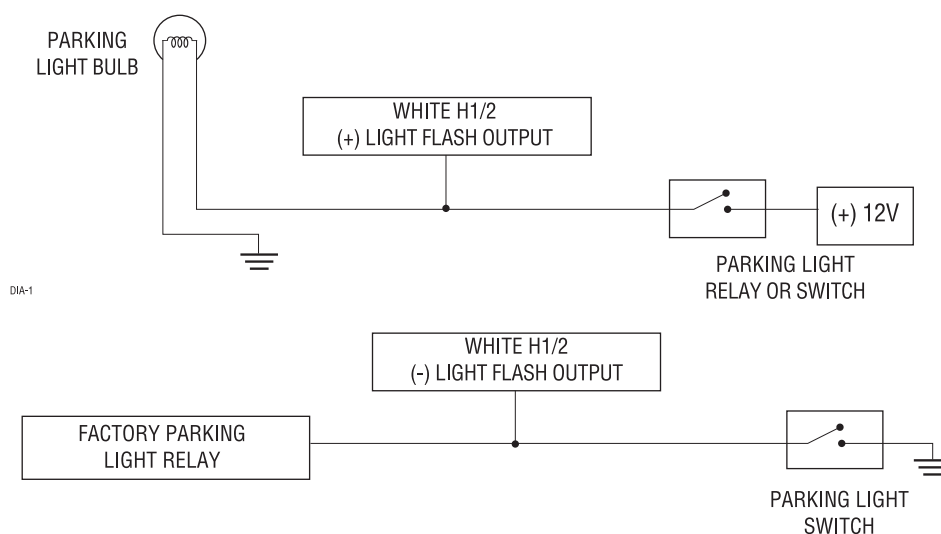


IMPORTANT! Never interrupt any wire other than the starter wire.

H1/2 WHITE (+/-) selectable light flash output

As shipped, this wire should be connected to the (+) parking light wire. If the light flash polarity jumper inside the unit is moved to the opposite position (see *Internal Programming Jumper* section of this guide), this wire supplies a (-) 200 mA output. This is suitable for driving (-) parking light wires.

See diagrams on the following page.



H1/3 WHITE/BLUE 200 mA (-) channel three output

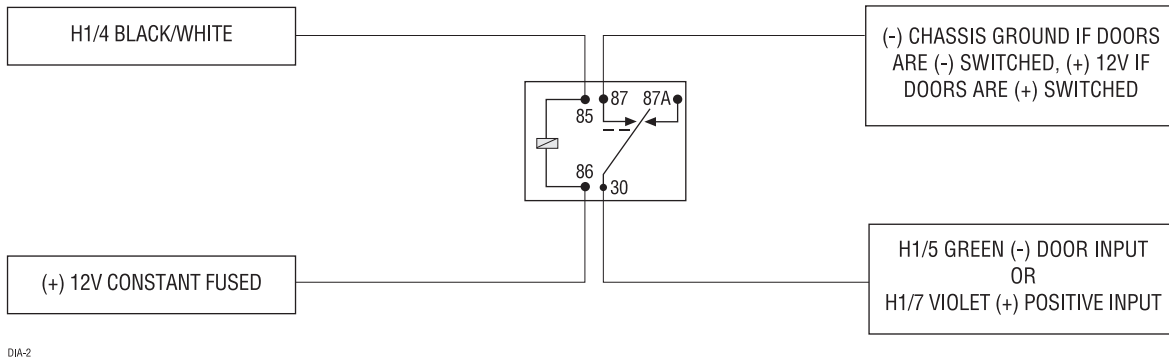
This wire provides a 200 mA (-) output whenever the transmitter button(s) controlling channel three is pressed. This output can be programmed to provide the following type of outputs (see *System Features Learn Routine* section of this guide):

- A **validity** output will send a signal as long as the transmission is received.
- A **latched** output will send a signal continuously when channel three is pressed and will continue until channel three is pressed again.
- A **latched/reset with ignition** output works similar to the latched output, but will also reset (output will stop) when the ignition is turned on then off.
- A **30-second timed** output will send a signal for 30 seconds when channel three is pressed. This output can also be programmed to provide a second unlock pulse when the disarm button is pressed within 15 second after disarming the system. This can be used to unlock the passenger doors when installing progressive door locks.
- A **second unlock** output will provide a second unlock pulse whenever the disarm button is pressed within 15 seconds after disarming the system. This setting could be used to unlock the passenger doors when installing progressive door locks, for instance.
- A **delayed accessory** output provides a 200mA (-) latched output three seconds after the ignition is turned on. It will remain active when the key is turned off, until a door is opened and closed. This setting could be used in conjunction with a relay to energize certain circuits in the vehicle that would normally require the key to be turned on i.e. the radio, power windows, etc.

IMPORTANT! Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply (-)200 mA, and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.

H1/4 BLACK/WHITE 200 mA (-) domelight supervision output

Connect this wire to the optional domelight supervision relay as shown below:

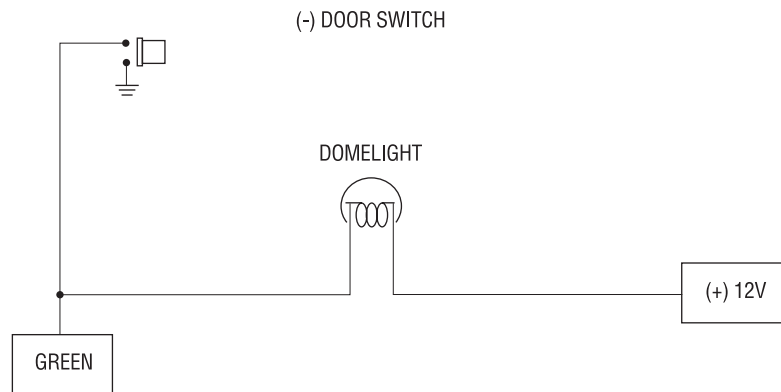


DIA-2

IMPORTANT! This output is only intended to drive a relay. It cannot be connected directly to the domelight circuit, as the output cannot support the current draw of one or more bulbs.

H1/5 GREEN (-) door trigger input

Most vehicles use negative door trigger circuits. Connect the green wire to a wire which shows ground when any door is opened. In vehicles with factory delays on the domelight circuit, there is usually a wire that is unaffected by the delay circuitry.



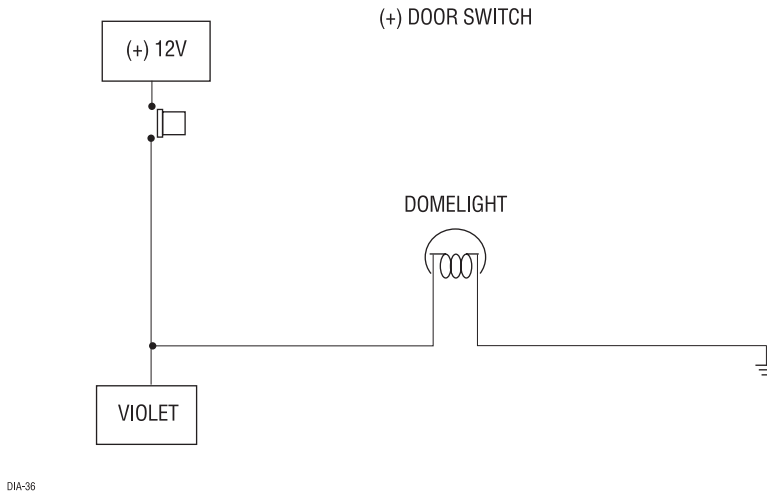
DIA-35

H1/6 BLUE (-) instant trigger

This input will respond to a negative input with an instant trigger. It is ideal for hood and trunk pins and will report on zone one.

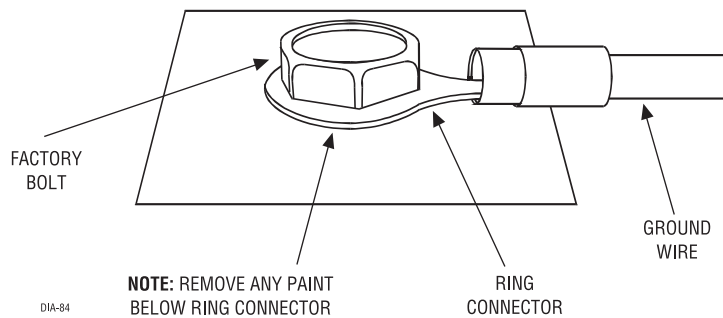
H1/7 VIOLET (+) door trigger input

This wire is used in vehicles that have a positive (+) switched dome light circuit . Connect the violet wire to a wire that shows (+)12V when any door is opened, and ground when the door is closed.



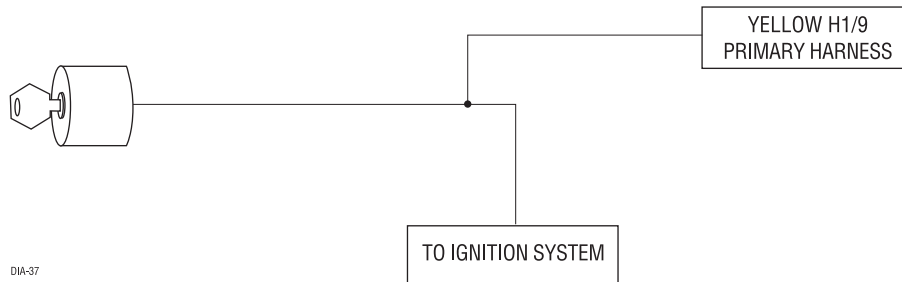
H1/8 BLACK (-) chassis ground connection

Connect this wire to bare metal, preferably with a factory bolt rather than your own screw. Screws tend to either strip or loosen with time. All components, including the siren, should be grounded to the same point in the vehicle if possible.



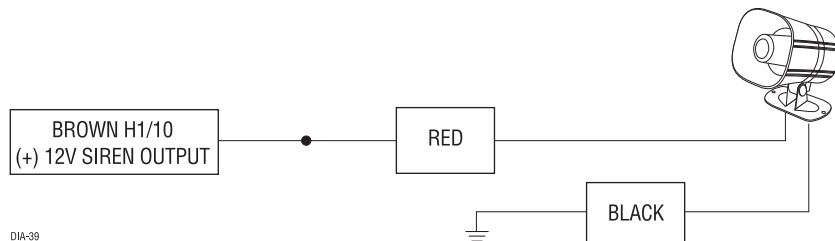
H1/9 YELLOW (+) ignition input

Connect this wire to the (+)12V ignition wire. This wire must show (+)12V with the key in Run position and during cranking. Take care to insure that this wire cannot be shorted to the chassis at any point.



H1/10 BROWN (+) siren output

Connect this to the red wire of the siren. Connect the black wire of the siren to (-) chassis ground, preferably at the same point you connect the control module's black ground wire.



H1/11 RED (+) 12V constant power input

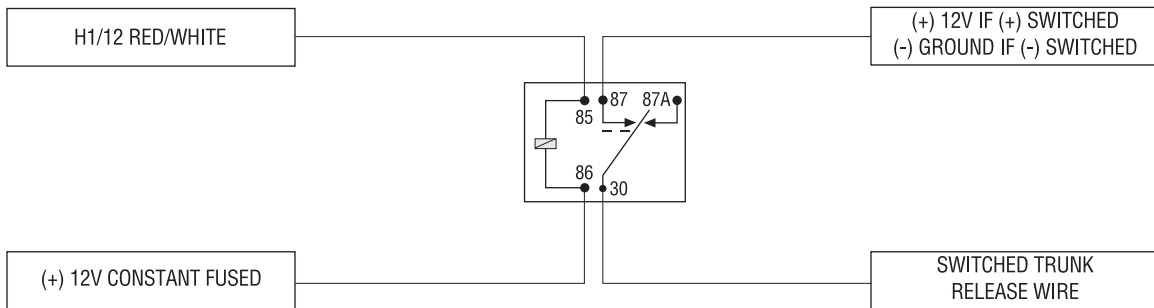
Before connecting this wire, remove the supplied fuse. Connect to the battery positive terminal or the constant 12V supply to the ignition switch.

NOTE: Always use a fuse within 12 inches of the point you obtain (+)12V. Do not use the 15A fuse in the harness for this purpose. This fuse protects the module itself.

H1/12 RED/WHITE 200 mA (-) channel 2 output

When the system receives the code controlling Channel Two for longer than 1.5 seconds, the red/white will supply an output as long as the transmission continues. This is often used to operate a trunk/hatch release or other relay/driven function.

IMPORTANT! Never use this wire to drive anything but a relay or a low-current input! The transistorized output can only supply 200 mA of current. Connecting directly to a solenoid, motor, or other high-current device will cause it to fail.



harness 2 (H2), (+/-) door lock outputs

H2/A	GREEN	(-) LOCK, (+) UNLOCK OUTPUT
H2/B	EMPTY	UNLESS USING 451M
H2/C	BLUE	(-) UNLOCK, (+) LOCK OUTPUT

This system can control two common power door lock types without any additional parts! With certain vehicles, or if an actuator is to be installed, either a 451M Door Lock Relay Satellite or two relays will be required.

IMPORTANT! If you mistake a Type C direct-wired system for a Type A positive-pulse system, the module will be damaged!

door lock harness (H2) wire connection guide

type A: (+) 12V pulses from the switch to the factory relays

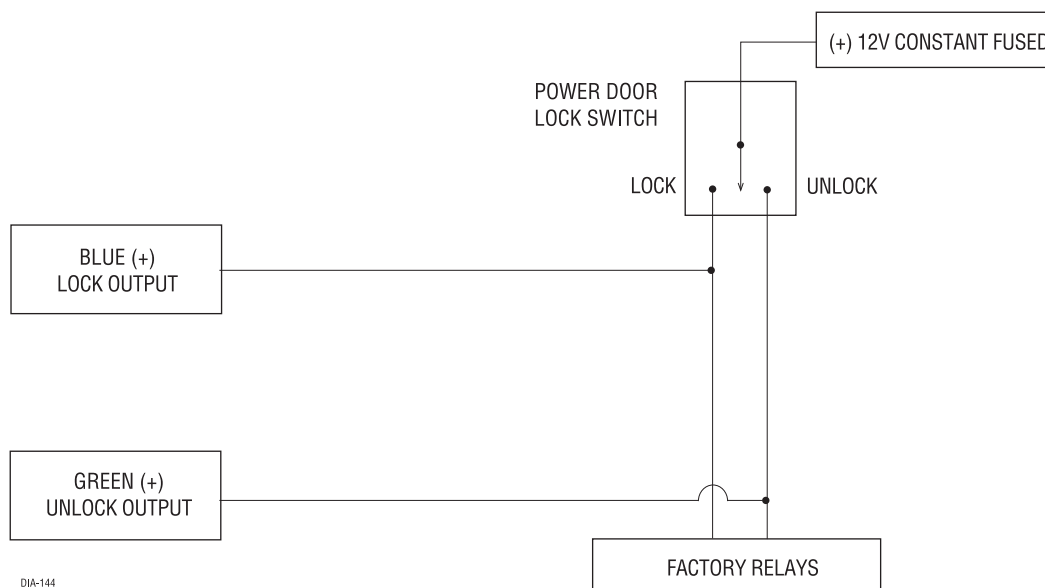
The system can control a Type A system directly, with no additional parts. The switch will have three wires on it, and one will test (+)12V constantly. The others will alternately pulse (+)12V when the switch is pressed to the lock or unlock position.

If you cannot get to the switch, and you find a set of wires that pulse (+)12V alternately on lock and unlock, you must take care to ensure that it is not a Type C direct-wire system.

Here is a test: Cut the wire which pulses (+)12V on lock, and then operate the switch to unlock. If all doors unlock, the vehicle uses type A system. If you lose all door lock operation in both directions, you are operating the master switch in a Type C system.

If you lose all door lock operation of one or more doors, but not all motors stop operating, and other doors still work, you have cut a wire leading directly to one or more motors. You must instead find the actual wires leading to the switch.

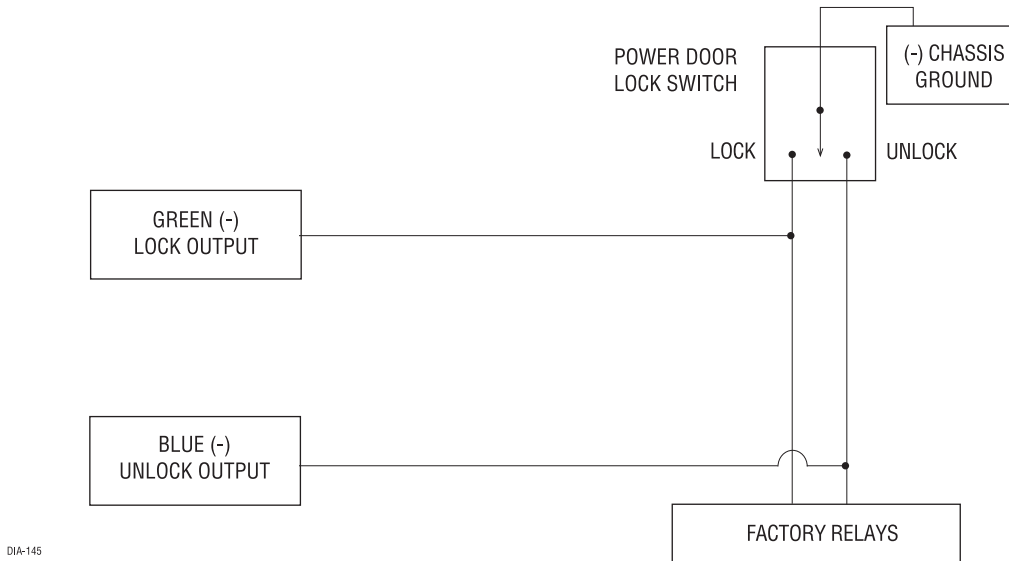
Many domestically-made GM vehicles use Type A locks. However, many more GM vehicles are Type C than in previous years. The full-size pickups (1989-up), many of the S10 Blazers, the Corvette, 1995 Cavalier/Sunfire 1993 and newer, Camaro/Firebird all use Type C door locks, and cannot be controlled without a 451M! Almost all domestically-built Fords are Type C. Ford builds very few Type A systems. Chrysler builds both Type A and Type C, so use caution.



type B: (-) pulses from the switch to the factory relays

This system is common in many Toyota, Nissan, Honda, and Saturn models, as well as Fords with the keyless-entry system (some other Fords also use Type B).

The switch will have three wires on it, and one wire will test ground all the time. One wire will pulse (-) when the switch locks the doors, and the other wire will pulse (-) when the switch unlocks the doors. This type of system is difficult to mistake for any other type.

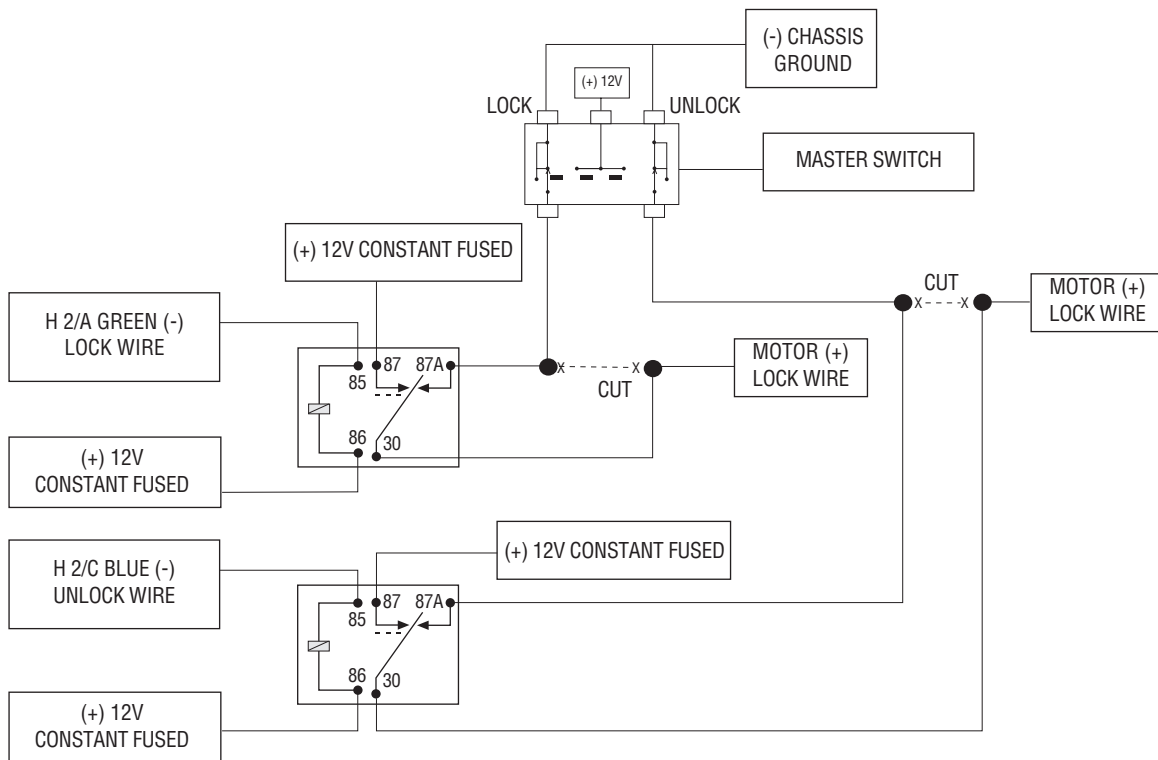


type C: reversing polarity

Interfacing with a reversing polarity system requires either two relays or one 451M (not included).

It is critical to identify the proper wires and locate the master switch to interface properly. Locate wires that show voltage on lock and unlock. Cut one of the suspect wires and check operation of the locks from both switches. If one switch loses operation in both directions and the other switch operates in one direction only, you have located one of the target wires. The switch that lost all operation is the master switch. If one switch works both directions and the other switch works only one direction, you have a Type A system. If both switches still operate, but one or more doors have stopped responding entirely, you have cut a motor lead. Reconnect it and continue to test for another wire. Once both wires have been located and the master switch identified, cut both wires and interface as shown below.

IMPORTANT! If these are not connected properly, you will send (+) 12 volts directly to (-) ground, possibly damaging the alarm or the factory switch.

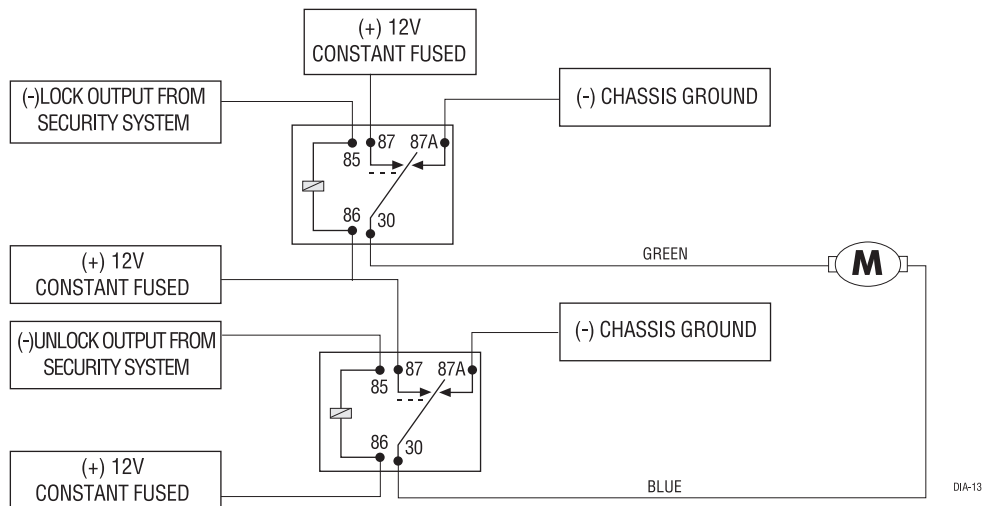


DIA-27

type D: after-market actuators

In order for this system to control one or more after-market actuators, a 451M or two relays (optional) are needed.

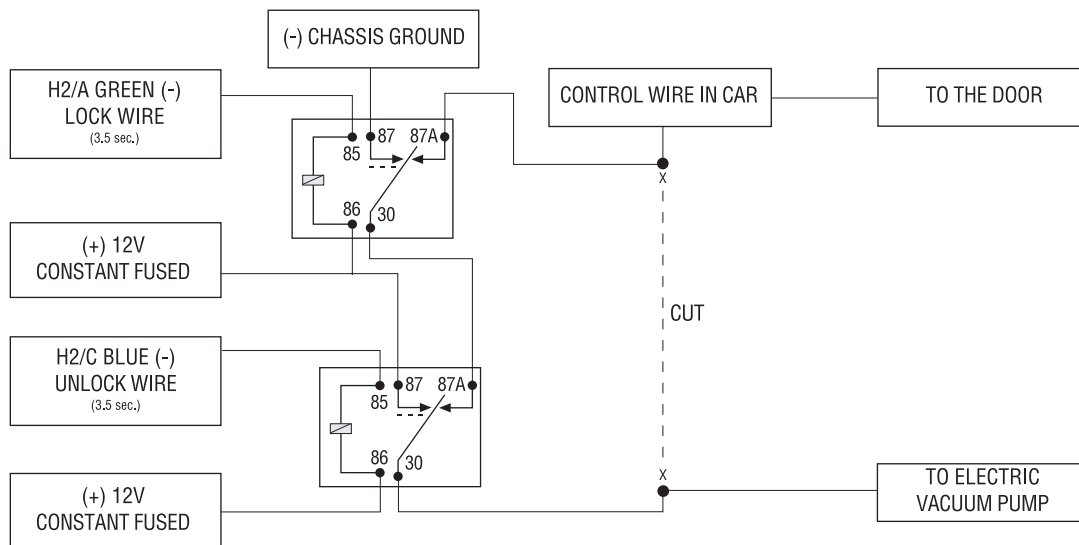
Vehicles without factory power door locks require the installation of one actuator per door. This requires mounting the door lock actuator inside the door. Other vehicles may only require one actuator installed in the driver's door if all door locks are operated when the driver's lock is used. This type of installation is required to operate factory lock systems in Volvo (except 850), SAAB, and most Mazda, Isuzu and Subaru models. The fuse used on 12-volt inputs should be 7.5A per motor installed in the vehicle.



type E: mercedes-benz and audi (1985 & newer)

Door locks are controlled by an electrically activated vacuum pump. Some Mercedes and Audi models use a Type D system. Test by locking doors from the passenger key cylinder. If all the doors lock, the vehicle's door lock system can be controlled with just two relays (optional). The control wire can be found in either kick panel and will show (+)12V when doors are unlocked and (-) ground when doors are locked.

To interface, see diagram below. The system must be programmed for 3.5 second door lock pulses. (See *System Features Learn Routine* section of this guide.)

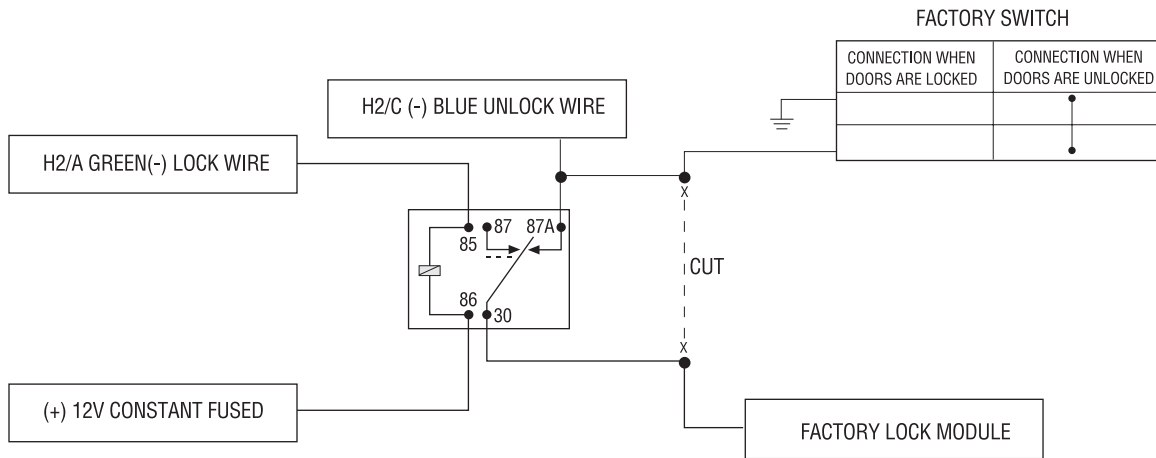


DIA-14

type F: one-wire system

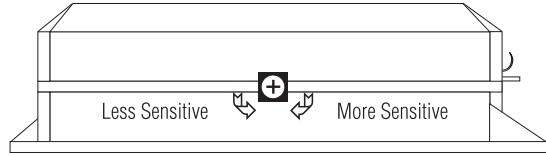
This system usually requires a negative pulse to unlock, and cutting the wire to lock the door. In some vehicles, these are reversed. It is found in late-model Nissan Sentras, some Nissan 240SX, and Nissan 300ZX 1992-up. It is also found in some Mazda MPV's and some Mitsubishi's.

One relay (optional) is used to interface to this type of system as follows:



DIA-15

on-board doubleguard shock sensor



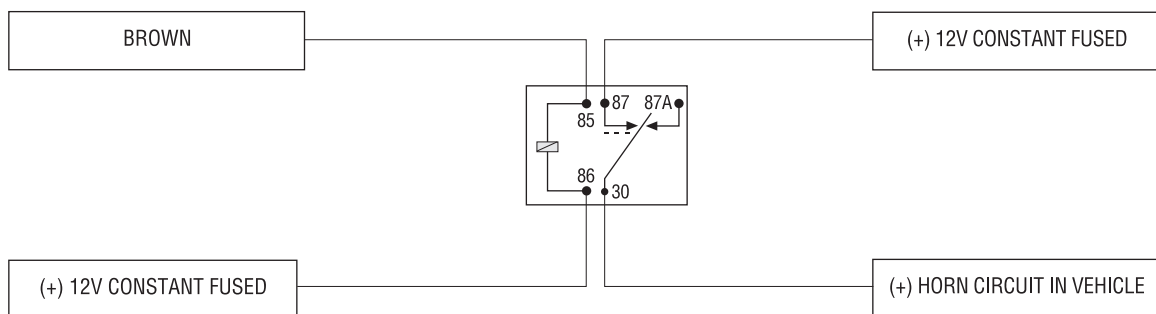
There is a Doubleguard® shock sensor inside the control unit. Adjustments are made via the rotary control as indicated above. Since the shock sensor does not work well when mounted firmly to metal, we recommend against screwing down the control module. The full trigger of the on-board shock sensor reports zone 2. (See *Table of Zones* section of this guide.)

NOTE: When adjusting the sensor, it must be in the same mounting location that it will be after the install is completed. Adjusting the sensor and then relocating the module requires readjustment.

auxiliary harness (H3), 2-pin connector

H3/1 BROWN (-) horn honk output

This wire supplies a 200 mA (-) output that can be used to honk the vehicle's horn. It provides a pulsed output when the security system is in the triggered sequence or in panic mode. In most vehicles with (-) horn circuits this wire can control the vehicle's horn without adding a relay. If the vehicle has a (+) horn circuit, an optional relay must be used to interface with the horn circuit.



DIA-135

H3/2 VIOLET/BLACK (-) 200 mA channel 4 output

This wire supplies a 200mA (-) output whenever the button(s) controlling Channel Four is pressed and will continue until the button(s) is released. This output can be used to control optional accessories.

IMPORTANT! Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply 200 mA (-), and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.

plug-in harnesses

super-bright LED, 2-pin white plug

The super bright LED operates at 2V DC. Make sure the LED wires are not shorted to ground as the LED will be damaged. The LED fits into a $\frac{9}{32}$ -inch mounting hole. Be sure to check for clearance prior to drilling the mounting hole.

valet/program switch, 2-pin blue plug

The Valet®/Program switch should be accessible from the driver's seat. It plugs into the blue port on the side of the unit. Since the system features Valet® by remote, the switch can be well hidden. Consider what the switch will be used for before choosing a mounting location. Check for rear clearance before drilling a $\frac{9}{32}$ -inch hole and mounting the switch. The GRAY wire in the two-pin plug may also be used as a (+) Ghost switch™ input and can be connected to any (+) switch in the vehicle. (See *Feature Descriptions* section of this guide.)

NOTE: Please note for the customer the location of the Valet®/Program switch in the section provided in the Owner's Guide.

data input port, 3-pin black port

The black three-pin port can be used for programming the unit or to accommodate a serial controller. When using the optional DEI Bitwriter™ or PC Interface module (DEI part number 996T) for programming, it is possible to configure any or all of the programmable functions using an IBM-compatible personal computer. When using a serial controller, such as DEI's 103T Keypad or the DEI 400A Car★Com, basic operating functions can be controlled without the use of a remote transmitter. For more information please refer to the guides packaged with these DEI compatible products.

four-pin optional sensor harness

RED wire

The red wire supplies constant power to the optional sensor.

BLACK wire

The black wire supplies ground to the optional sensor.

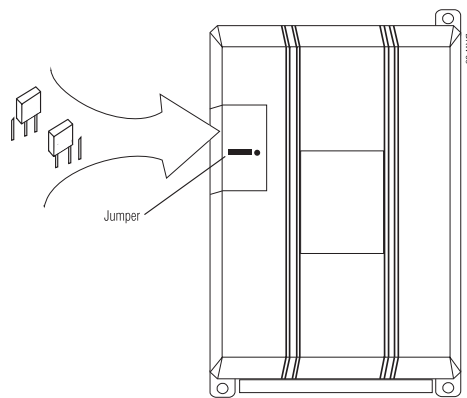
BLUE, GREEN wires

The blue and green wires are multiplex inputs. They are both tied to the same zone. If an input of less than 0.8 seconds is supplied to either wire the Warn-Away® response will occur. An input longer than 0.8 seconds to either wire will initiate the triggered sequence and report zone 4.

internal programming jumper

light flash jumper

This jumper is used to determine the light flash output. In the (+) position, the on-board relay is enabled and the unit will output (+)12V on the WHITE wire, H1/2. In the (-) position, the on-board relay is disabled. The WHITE wire, H1/2, will supply a 200 mA (-) output suitable for driving factory parking light relays. To access this jumper, you must open the control module.

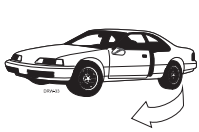


(-) Light flash output ●●● (+) Light flash output

system features learn routine

The System Features Learn Routine dictates how the unit operates. It is possible to access and change any of the feature settings using the Valet®/Program switch. However, this process can be greatly simplified by using the optional Personal Computer Interface, or DEI® Bitwriter™. Any of the settings can be changed and then assigned to a particular transmitter, up to four, a feature called Owner Recognition. Each time that particular transmitter is used to disarm the system, the assigned feature settings will be recalled. Owner Recognition is only possible when programming the unit via the computer interface or DEI® Bitwriter™. If programming with the PC interface or the DEI® Bitwriter™, the learn routine can be locked or unlocked. If it is locked no features can be changed.

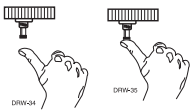
To enter the System Features Learn Routine:



1. **Open a door:** The GREEN wire, H1/5, or the VIOLET, H1/7 must be connected.



2. **Turn the ignition on, then off:** The YELLOW wire, H1/9 must be connected.



3. **Select a feature:** Press and release the Valet®/Program button the number of times corresponding to the step you wish to change. For example, to access the third feature, press and release three times. Then press the button once more and HOLD it. The siren will chirp the number of times equal to the step you have accessed.



4. **Program the feature:** While holding the Valet®/Program button, you can toggle the feature on and off using the remote transmitter. Pressing the arm button will select the one chirp or default setting. Pressing the button that is assigned to Channel Two (or the disarm only button on an OEM configuration transmitter, see *Transmitter/Receiver Learn Routine* section of this guide), will select the two chirp setting.

NOTE: The Valet® pulse count feature (8) and the Channel three timed output (9) have five possible settings each. Pressing the Channel Two (or disarm only) button will toggle through all the possible settings.



5. **Release the Valet®/Program button.**

once a feature is programmed

- Other features can be programmed.
- The Learn Routine can be exited if programming is complete.

to access another feature

Press and release the Valet®/Program button the number of times necessary to advance from the feature you just programmed to the next one you want to program. Then press the Valet®/Program button once more and hold it. For example, if you just programmed the third feature and you would like to program the seventh feature in the menu, you would: Press and release the Valet®/Program button four times. Then press the Valet®/Program button once more and hold it. The siren would chirp seven times to confirm access to the seventh feature.

to exit the learn routine

The learn routine will be exited if any of the following occurs:

1. Close the open door.
2. Turn the ignition on.
3. No activity for longer than 15 seconds.
4. Press the Valet®/program button too many times.

system features menu

FEATURE NUMBER	ONE-CHIRP SETTING*	TWO-CHIRP SETTING*
1	Active arming	Passive Arming
2	Audible arm/disarm confirmation on	Audible arm/disarm confirmation off
3	Ignition-controlled locking on	Ignition-controlled locking off
4	Ignition-controlled unlocking on	Ignition-controlled unlocking off
5	Active locking	Passive locking
6	0.8 second door lock pulses	3.5 second door lock pulses
7	Single unlock pulse	Double unlock pulse
8	Door trigger error chirp on	Door trigger error chirp off
9	Ignition-controlled domelight on	Ignition-controlled domelight off
10	Valet switch input: 1 pulse	Valet switch input: 2-5 pulses
11	Channel 3: validity	Channel 3: latched/latched, reset with ignition/30-second timed/second unlock/delayed accessory output

*Default settings indicated in bold.

feature descriptions

1 ACTIVE/PASSIVE ARMING: When active arming is selected, the system will only arm when the transmitter is used. When set to passive, the system will arm automatically 30 seconds after the last door is closed. To alert the consumer of passive arming, the siren will chirp 20 seconds after the door is closed. This provides the consumer with an audible warning prior to the system actually arming. At the 30 second mark, the system will arm but the siren will not chirp.

2 AUDIBLE ARM/DISARM CONFIRMATION ON/OFF: This feature controls the chirps that confirm the arming and disarming of the system. In the ON setting (default) the siren will provide audible confirmation when arming and disarming the system. If programmed to the OFF position no siren chirps will be heard when arming and disarming.

3 IGNITION-CONTROLLED LOCKING ON/OFF: When turned on, the vehicle doors will lock three seconds after the ignition is turned on.

4 IGNITION-CONTROLLED UNLOCKING ON/OFF: When turned on, the vehicle doors will unlock when the ignition is turned off.

5 ACTIVE/PASSIVE LOCKING: If passive arming is selected in step 1, then the system can be programmed to either lock the doors when passive arming occurs, or only lock the doors when the system is armed via the transmitter. Active locking means the system will not lock the doors when it passively arms. Passive locking means that the system will lock the doors when it passively arms.

***NOTE:** Remember, when passive arming is selected, the unit will chirp 20 seconds after the last door is closed. The system does not actually arm or lock the doors until 30 seconds after the door has been closed.*

6 DOOR LOCK PULSE DURATION: Some vehicles require longer lock and unlock pulses to operate the door lock vacuum pump. Programming the system to provide 3.5 second pulses, will accommodate the door lock interface in these vehicles. The default setting is 0.8 second door lock pulses.

7 DOUBLE PULSE UNLOCK ON/OFF: Some vehicles require two pulses on a single wire to unlock the doors. When the double pulse unlock feature is turned on, the unlock relay will provide two pulses instead of a single pulse.

8 DOOR TRIGGER ERROR CHIRP ON/OFF: With the door trigger error chirp programmed off, the system will not report an invalid zone on arming when the door trigger wire is active. This eliminates the extra chirps that occur when interfacing with vehicles that have exceptionally long dome light delay circuits.

9 IGNITION-CONTROLLED DOMELIGHT ON/OFF: If turned on, the system will turn on the domelight for 60 seconds when the ignition is turned off. The H1/4 BLACK/WHITE domelight supervision output must be connected as described in the *Primary Harness Wire Connection Guide* section of this manual in order to control this feature.

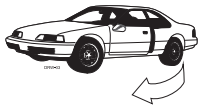
10 VALET® PULSE COUNT 1-5 PULSES: The system can be programmed to count the number presses of the Valet® switch before disarming the security system. The factory default setting is one pulse. The unit can be set for 2 to 5 pulses using the Channel Two button (or disarm only button on an OEM transmitter) to select the setting.

Ghost Switch™ Option: For added security, the GRAY wire on the two-pin Valet®/Program button can be connected to any switch in the vehicle that provides a positive (+) momentary pulse.

11 CHANNEL 3 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED/SECOND UNLOCK OUTPUT/DELAYED ACCESSORY OUTPUT: Channel 3 can be programmed for these output configurations. The unit is set to the default validity output. To change the configuration, use the disarm (or channel 2) button to toggle to the different settings.

transmitter/receiver learn routine

The system comes with two transmitters that have been taught to the receiver. The receiver can store up to 4 different transmitter codes in memory. Use the following learn routine to add transmitters to the system or to change button assignments if desired. The transmitter learn routine can be locked using the optional PC interface or DEI® Bitwriter™. If the learn routine is locked no transmitters can be programmed to the system.



1. **Open a door:** The GREEN wire, H1/5, or the VIOLET, H1/7 must be connected.



2. **Turn the ignition on:** The YELLOW wire, H1/9 must be connected.




3. **Select the receiver channel:** Press and release the Valet®/Program button the number of times necessary to access the desired channel. Press and hold the Valet®/Program button once more. The siren will chirp and the LED will blink the number of times corresponding to the channel that is accessed.

CHANNEL NUMBER	FUNCTION	WIRE COLOR
1	Auto learn	
2	Delete all transmitters	
3	Arm/Disarm/Panic	
4	Channel Two	Red/White
5	Channel Three	White/Blue
6	Channel Four	Violet/Black
7	Arm	
8	Disarm	
9	Panic	



4. **Press the transmitter button:** While holding the Valet®/Program button, press the button from the transmitter that you wish to assign to that channel. The unit will chirp indicating successful programming. It is not possible to teach a transmitter button to the system more than once.

Channel 1 AUTO-LEARN: Programming  to Channel One will automatically configure the channels in the standard configuration. (Refer to owner's guide, standard configuration)

Channel 2: If any transmitter button from a known transmitter is programmed to Channel Two, all transmitters will be erased from memory, and system features will return to factory default settings. This is useful in cases where one of the customer's transmitters is lost or stolen. This will erase any lost or stolen transmitters from the system's memory. It can also be used to start from scratch if the transmitter buttons were programmed incorrectly.

Channel 7-9: To configure the system's remote transmitters for OEM mode, Channels Seven through Nine are used to assign the arm, disarm, and panic functions to separate buttons on the remote control. If the remote transmitter being used has already been programmed to the system it will be necessary to delete all transmitters (see Channel Two) before that transmitter can be programmed to Channels Seven through Nine.

table of zones

When using the diagnostic functions, use the Table of Zones to see which input has triggered the system. It is also helpful in deciding which input to use when connecting optional sensors and switches.

Zone Number	Trigger Type	Input Description
One	Instant	H1/6 BLUE wire. Connect to optional hood/trunk pins
Two	Multiplexed	Heavy impact detected by the on-board Doubleguard® shock sensor.
Three	Two-stage, progresses from warning to full alarm	Door switch circuit. H1/5 GREEN or H1/7 VIOLET.
Four	Multiplex	BLUE and GREEN wires of optional sensor plug. Inputs shorter than 0.8 seconds will trigger a Warn Away® response, while inputs longer than 0.8 seconds will instantly trigger full alarm sequence.
Five	Two-stage (similar to doors)	Ignition input. H1/9 YELLOW.

NOTE: The Warn Away® response does not report on the LED.

long-term event history

The system stores the last two full triggers in memory. These are not erasable. Each time the unit sees a full trigger, the older of the two triggers in memory will be replaced by the new trigger. To access long-term event history:



1. Turn on the ignition.



2. Press and hold the Valet®/program switch.

The LED will flash in groups indicating the last two zones that triggered the unit.

NOTE: The Warn Away® triggers are not stored to memory.

rapid resume logic

This DEI® system will store its current state to non-volatile memory. If power is lost and then reconnected the system will recall the stored state from memory. This means if the unit is in Valet® mode and the battery is disconnected for any reason, such as servicing the car, when the battery is reconnected the unit will still be in Valet® mode. This applies to all states of the system including arm, disarm, and Valet® mode.

troubleshooting

■ Starter kill doesn't work:

Is the correct starter wire being interrupted? If the car starts when the starter kill relay is completely disconnected, the wrong starter wire has been cut and interrupted. Yellow (H1/9) wire is not connected to true ignition. It is connected to an accessory circuit.

■ Shock sensor doesn't trigger the alarm:

Has Nuisance Prevention® Circuitry been triggered? If so, you will hear five chirps when disarming. To check this, turn the ignition key on and off to clear NPC™ from memory, and then retest the shock sensor. For a detailed description of this feature, see the Owner's Guide.

■ Door input does not immediately trigger full alarm. Instead, first I hear chirps for three seconds:

That's how the progressive two-stage door input works! This is a feature of this system. This is an instant trigger, remember, since even if the door is instantly closed, the progression from chirps to constant siren will continue.

■ Closing the door triggers the system, but opening the door does not:

Have you correctly identified the type of door switch system? This happens often when the wrong door input has been used. (See *Finding the Wires You Need* section of this guide.)

■ System will not passively arm until it is remotely armed and then disarmed:

Are the door inputs connected? Is a blue wire connected to the door trigger wire in the vehicle? Either the green H1/5 or the violet H1/7 should be used instead.

■ Door input does not respond with the progressive trigger, but with immediate full alarm:

What zone does the LED indicate? If the LED indicates that the impact sensor caused the trigger, the sensor may be detecting the door opening. Reducing the sensitivity or relocating the sensor can often solve this problem. (See *Table of Zones* section of this guide.)

■ **The Valet® switch doesn't work.**

Is it plugged into the correct socket? (See *Plug-In Harnesses* section of this guide.)

Check the System Features Learn Routine for the programmed Valet® pulse count. (See *System Features Learn Routine* section of this guide.)

■ **Status LED doesn't work.**

Make sure that it is plugged in. (See *Plug-In Harnesses* section of this guide.) Is the LED plugged into the correct socket?

■ **Cannot access the Transmitter/Receiver Learn Routine through the Valet switch:**

Is the Valet switch plugged into the correct socket? (See *Plug-In Harnesses* section of this guide.)

The system may be programmed for Transmitter Lockout. This feature can only be toggled on or off by using a DEI Bitwriter or PC interface module (DEI part number 996T).

■ **Cannot access the System Features Learn Routine through the Valet switch:**

Is the Valet switch plugged into the correct socket? (See *Plug-In Harnesses* section of this guide.)

Are the door inputs connected?

Is the YELLOW H1/9 wire connected to the primary ignition wire of the vehicle?

The system may be programmed for Feature Lockout, which can only be toggled on or off by using a DEI Bitwriter or PC interface module (DEI part number 996T).