

VIPER 791-XV

table of contents

what is included	4	1995 and newer vehicle anti-theft systems	
warning! safety first	4	(immobilizers)	30
installation points to remember	5	passlock I and passlock II (PL-1 and PL-2)	30
before beginning the installation	5	passkey III (PK-3), transponder-based systems	30
after the installation	5	plug-in LED and valet/program switch	31
deciding on component locations	6	programmer interface, 3-pin black plug	31
locations for the siren	6	shock sensor harness, 4-pin connector	32
locations for the control module	6	tach learning	32
locations for stinger doubleguard shock sensor	7	programming jumpers	33
mounting the antenna	7	tach threshold on/off	33
locations for valet/program switch	8	light flash (+)/(-)	33
locations for the status LED	8	transmitter/receiver learn routine™	34
finding the wires you need	9	standard configuration	36
locations for the optional starter kill relay	9	remote control diagram	37
locations for the relay satellite	9	standard mode configuration	38
obtaining constant 12V	9	multi-level security arming	39
finding the 12V switched ignition wire	10	system features learn routine	40
finding the starter wire	10	feature menus	42
finding the tachometer wire	11	menu #1 - basic features	42
finding the accessory wire	11	menu #2 - advanced features	43
finding the wait-to-start bulb wire for diesels	11	menu #3 - remote start options	44
finding a (+) parking light wire	12	feature descriptions	45
finding the door pin switch circuit	12	menu #1 - basic features	45
making your wiring connections	13	menu #2 - advanced features	46
primary harness (H1), 12-pin connector	14	menu #3 - remote start options	49
auxiliary harness (H2), 6-pin connector	14	valet mode	51
door lock harness, 3-pin connector	15	rear defogger control	51
remote start ribbon harness, wiring diagram	15	timer mode	52
heavy gauge inline connector key switch interface	16	table of zones	53
remote start harness (H3), 5-pin connector	16	shutdown diagnostics	53
horn, channel 6 (H4), 2-pin connector	16	to perform shutdown diagnostics	53
relay satellite wire connection guide	23	long term event history	54
remote start secondary harness (H3) wire		safety check	54
connection guide	24	troubleshooting	55
horn, channel 6 harness (H4) wire connection guide	26	alarm troubleshooting	55
neutral safety switch interface	26	remote start troubleshooting	56
testing the neutral safety switch	27	wiring quick reference guide	58
bypassing GM vehicle anti-theft systems (VATS)	29	relay satellite wiring quick reference guide	59

primary harness (H1), 12-pin connector

H1/1	RED/WHITE	(-) 200 mA CHANNEL 2 VALIDITY OUTPUT
H1/2	RED	(+) CONSTANT POWER INPUT
H1/3	BROWN	(+) SIREN OUTPUT
H1/4	EMPTY	NOT USED
H1/5	BLACK	(-) CHASSIS GROUND INPUT
H1/6	VIOLET	(+) DOOR TRIGGER INPUT, ZONE 3
H1/7	BLUE	(-) MULTIPLEXED INPUT, ZONE 4
H1/8	GREEN	(-) DOOR TRIGGER INPUT, ZONE 3
H1/9	BLACK/WHITE	(-) 200 mA DOMELIGHT SUPERVISION OUTPUT
H1/10	WHITE/BLUE	(-) REMOTE START ACTIVATION INPUT
H1/11	WHITE	(+)/(-) SELECTABLE LIGHT FLASH OUTPUT
H1/12	ORANGE	(-) 500 mA ARMED OUTPUT

auxiliary harness (H2), 6-pin connector

H2/1	LIGHT BLUE	(-) SECOND UNLOCK OUTPUT
H2/2	WHITE/BLACK	(-) CHANNEL 5 OUTPUT
H2/3	VIOLET/BLACK	(-) CHANNEL 4 OUTPUT
H2/4	GREEN/WHITE	(-) FACTORY ALARM REARM
H2/5	GRAY/BLACK	(-) WAIT TO START INPUT
H2/6	LIGHT GREEN/BLACK	(-) FACTORY ALARM DISARM

door lock harness, 3-pin connector

1	LIGHT BLUE	(+) LOCK (-) UNLOCK OUTPUT
2	EMPTY	NOT USED
3	GREEN	(-) LOCK (+) UNLOCK OUTPUT

Note: Refer to TechTip 1041 for wiring information.

remote start ribbon harness, wiring diagram

1	PINK/WHITE	200 mA (-) PROGRAMMABLE IGN2/ACC2 RELAY TURN ON
2	YELLOW	(+) IGNITION INPUT TO ALARM
3	PINK	(-) 200 mA IGNITION RELAY TURN-ON
4	ORANGE	(-) 200 mA ACCESSORY RELAY TURN-ON
5	PURPLE	(-) 200 mA STARTER RELAY TURN-ON
6	ORANGE/BLACK	(-) ANTIGRIND/GROUND WHEN ARMED OUTPUT
7	BLUE	(-) 200 mA STATUS OUTPUT

This ribbon harness connects to the relay satellite.

heavy gauge inline connector key switch interface

1	PURPLE	(+) STARTER OUTPUT TO STARTER (STARTER SIDE)
2	GREEN	STARTER INPUT FROM IGNITION (KEY SIDE)
3	RED	(+) HIGH CURRENT 12V INPUT
4	ORANGE	(+) OUTPUT TO ACCESSORY CIRCUIT
5	PINK	(+) OUTPUT TO PRIMARY IGNITION CIRCUIT
6	RED	(+) (30A) HIGH CURRENT 12V INPUT
7	PINK/WHITE	(+) OUTPUT TO SECOND IGNITION CIRCUIT
8	RED/WHITE	(+) (30A) HIGH CURRENT 12V INPUT

remote start harness (H3), 5-pin connector

H3/1	BLACK/WHITE	(-) NEUTRAL SAFETY SWITCH INPUT
H3/2	VIOLET/WHITE	TACHOMETER INPUT WIRE
H3/3	BROWN	(+) BRAKE SHUTDOWN WIRE
H3/4	GRAY	(-) HOOD PINSWITCH INPUT, ZONE 1
H3/5	BLUE/WHITE	(-) 200 mA 2ND STATUS/REAR DEFOGGER- LATCHED/PULSED

horn, channel 6 (H4), 2-pin connector

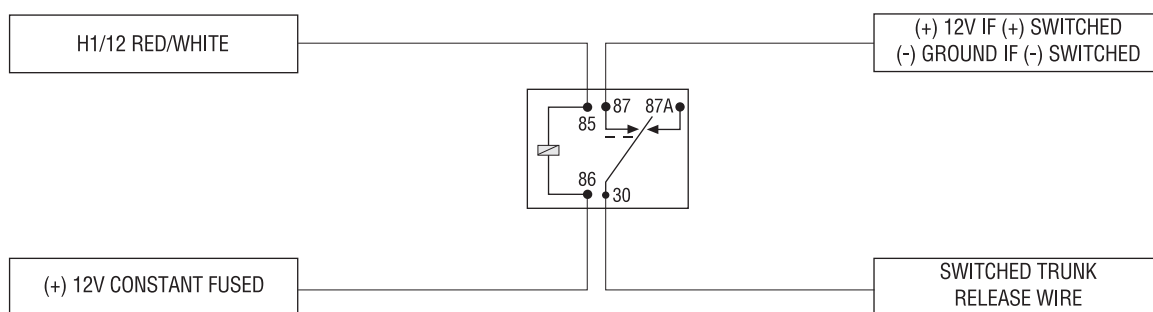
H4/1	ORANGE/BLACK	CHANNEL 6 OUTPUT
H4/2	BROWN	(-) 200mA HORN

primary harness (H1) wire connection guide

H1/1 RED/WHITE channel 2, 200mA (-) output

When the system receives the code controlling Channel 2, for longer than 1.5 seconds, the red/white wire 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.



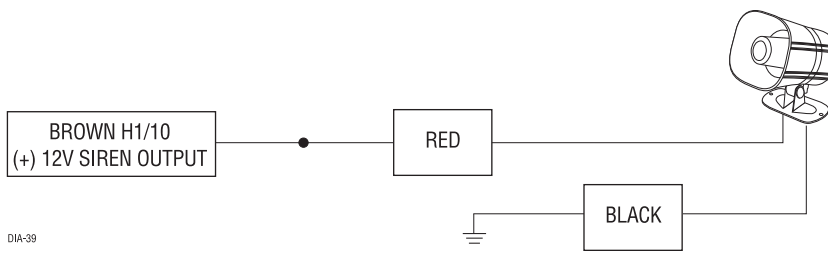
H1/2 RED (+)12V constant power input

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.

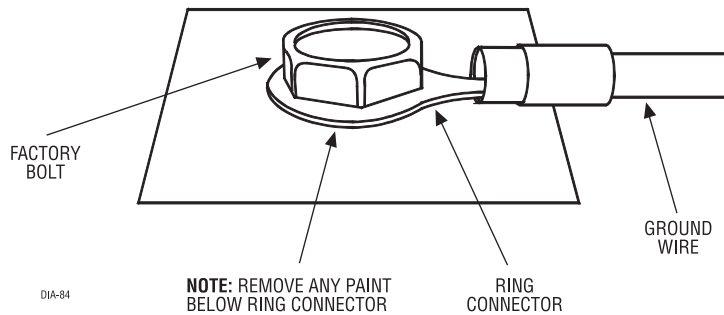
H1/3 BROWN (+) siren output

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 connected the control module's black ground wire. See *Features Description* section for horn output.



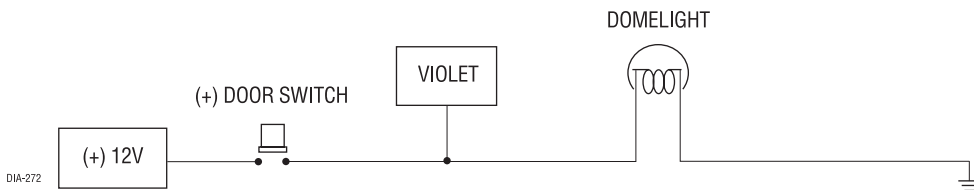
H1/5 BLACK (-) chassis ground connection

Remove any paint and 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.) We recommend grounding all your components, including the siren, to the same point in the vehicle.



H1/6 VIOLET (+) door trigger input, zone 3

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. This wire will report Zone 3.

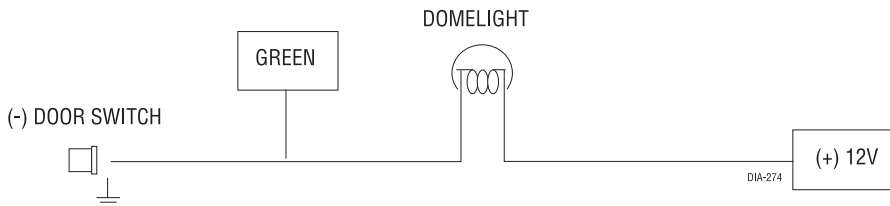


H1/7 BLUE (-) multiplex input, zone 4

Inputs shorter than 0.8 seconds will trigger the Warn Away response, while inputs longer than 0.8 seconds will trigger the full alarm sequence. If installing an optional Directed Electronics dual stage sensor, connect both the blue and the green wires of the optional sensor to this input. This wire will report Zone 4.

H1/8 GREEN (-) door trigger input, zone 3

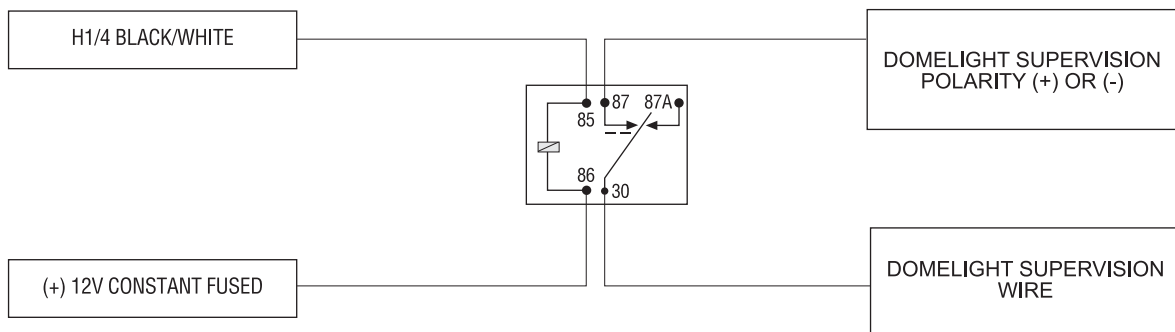
Most vehicles use negative door trigger circuits. Connect the green wire to a wire which shows ground when any door is opened. In vehicles with factory delays on the domelight circuit, there is usually a wire that is unaffected by the delay circuitry. This wire will report Zone 3.




H1/9 BLACK/WHITE (-) 200 mA domelight supervision output

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

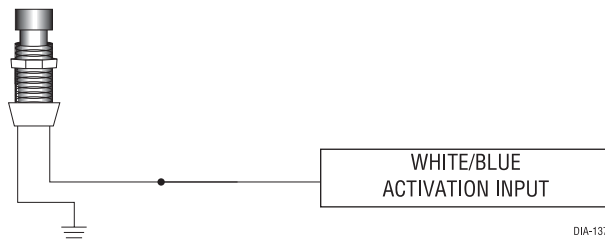
IMPORTANT! This output is only intended to drive a relay. It cannot be connected directly to the domelight circuit, as the output cannot support the current draw of one or more light bulbs.



H1/10 WHITE/BLUE remote start (-) activation input

This input comes from the factory set to 2 activation pulses. This means that it is necessary to have 2 consecutive ground pulses on the white/blue wire for the remote start to activate or to deactivate. The same holds true for the remote control activation when set to a two pulse setting it is necessary to press the  button twice for the remote start to activate or deactivate.

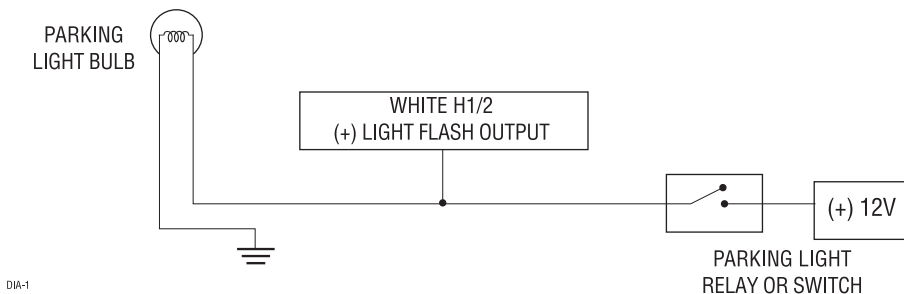
NOTE: When the activation pulse count can be programmed to 1, 2, or 3 pulses when changed it will affect both activation inputs; the White/Blue wire and the remote control activation.



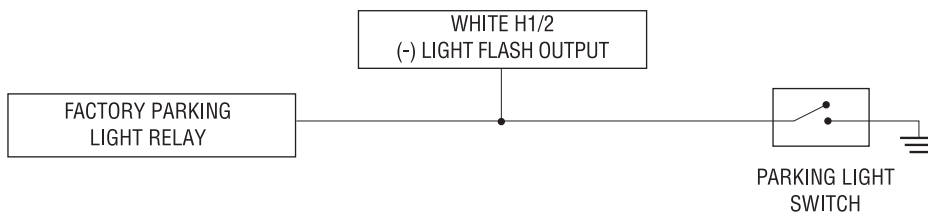
H1/11 WHITE (+/-) selectable light flash output

As shipped, this wire should be connected to the (+) parking light wire. If the light flash polarity jumper under the sliding door 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 (-) light control wires in Toyota, Lexus, BMW, some Mitsubishi, some Mazda, and other model cars.

(+) Positive Light Flash Output



(-) Light Flash Output



NOTE: For parking light circuits that draw 10 amps or more, the internal jumper must be switched to a (-) light flash output. (See the *Internal Programming Jumper* section of this guide.) **P/N 8617** or a standard automotive SPDT relay must be used on the H1/2 light flash output harness wire.

H1/12 ORANGE (-) ground-when-armed output

This wire supplies a (-)500 mA ground as long as the system is armed. This output ceases as soon as the system is disarmed. The orange wire may be wired to an optional Directed Electronics 8618 starter kill relay.

secondary harness (H2) wire connection guide

H2/1 LIGHT BLUE (-) 200mA 2nd unlock output

This wire provides a second unlock output for progressive locks. Refer to document 1041—*Door Locking System Wiring Guide* for specific applications.

H2/2 WHITE/BLACK 200 mA (-) programmable channel 5 output

This wire provides 200 mA programmable output. (See *Feature Descriptions* section of this guide.)

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.

H2/3 VIOLET/BLACK 200 mA (-) programmable channel 4 output

This wire provides 200 mA programmable output. (See *Feature Descriptions* section of this guide.)

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.

H2/4 GREEN/WHITE (-) factory alarm rearm

This wire sends a negative pulse every time the remote start shuts down or the doors are locked. This can be used to pulse the arm wire of the vehicle's factory anti-theft device. Use a relay to send a (-) or (+) pulse to the arm wire.

H2/5 GRAY/BLACK (-) diesel wait-to-start bulb input

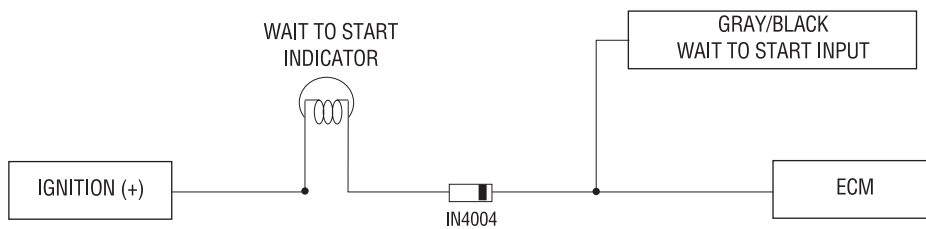
Connect this wire to the wire in the vehicle that sends the signal to turn on the WAIT-TO-START bulb in the dashboard. In most diesels the wire is negative (ground turns on the bulb) and the GRAY/BLACK wire can be directly connected to the wire in the vehicle. If the vehicle uses a positive wire (12V to turn on the bulb) a relay must

be used to change the polarity. (See *Finding the Wires You Need* section of this guide.) Here are some common colors of this wire:

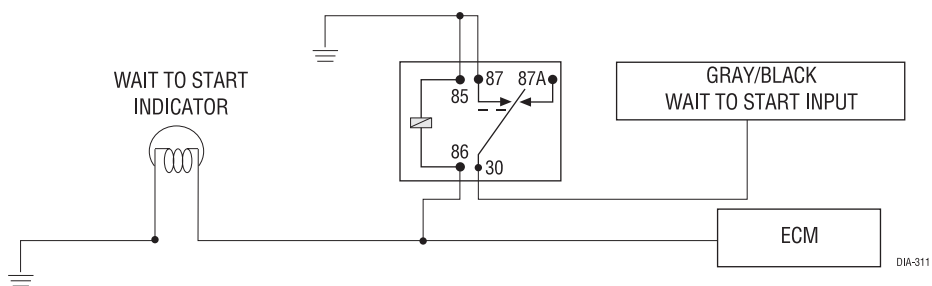
- Chevrolet and GMC trucks - Light blue or dark blue
- Ford Trucks - Black/pink
- Dodge Ram Trucks - Orange/black or black/orange

NOTE! A 1-amp diode must be installed in line on the factory wire between the wait-to-start indicator and the ECM. (See the following diagram for details.)

(-) WAIT TO START WIRE



(+) WAIT TO START WIRE

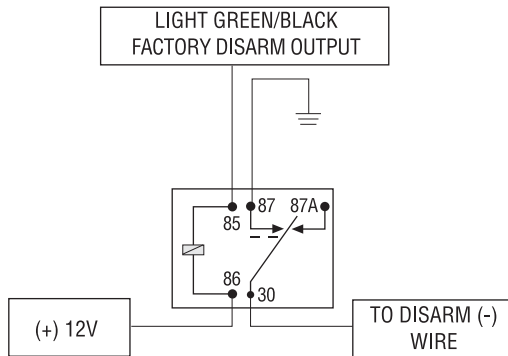


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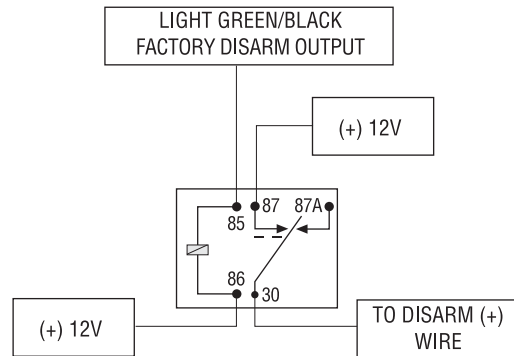
H2/6 LIGHT GREEN/BLACK (-) factory disarm

This wire sends a negative pulse every time the remote start is activated or the doors are unlocked. This can be used to pulse the disarm wire of the vehicle's factory anti-theft device. Use a relay to send a (-) or (+) pulse to the disarm wire as shown in the following diagrams.

Relay for Negative (-) Disarm Wire



Relay for Positive (+) Disarm Wire



relay satellite wire connection guide

The 8 heavy gauge wires coming from the large connector are used to energize high current circuits in the vehicle. It is crucial that these connections are well-made and capable of handling the current demands. For this reason, Scotch-Locks, T-taps and other such connectors are strongly discouraged.

PURPLE (+) starter output

Connect this wire to the starter wire in the vehicle. (See *Finding the Wires You Need* section.)

GREEN starter input

For anti grind or starter kill attach this wire to the key side of the starter wire for anti grind and for the starter kill to be active.

RED (2) (+)12V input for high current outputs

Remove the two 30-amp fuses prior to connecting these wires and do not replace them until the satellite has been plugged into the control module. These wires are the source of current for all the circuits the relay satellite will energize. They must be connected to a high current source. Since the factory supplies (+)12V to the key switch that is used to operate the motor, it is recommended that these wires be connected there.

NOTE: If the factory supplies two separate (+) 12V feeds to the ignition switch, connect one RED wire of the satellite to each feed at the switch.

ORANGE (+) accessory output

Connect this wire to the accessory wire in the vehicle which powers the climate control system.

PINK (+) ignition output

Connect this wire to the ignition wire in the vehicle.

PINK/WHITE (+) second ignition output

Connect this wire to the second ignition wire in the vehicle. (See *Finding the Wires You Need* section.)

NOTE: For vehicles that do not have a second ignition wire, this connection is not required.

RED/WHITE (+) 12V input

Connection for high current outputs.

remote start secondary harness (H3) wire connection guide

H3/1 BLACK/WHITE neutral safety switch input

Connect this wire to the provided toggle (override) switch as shown in figure A. Connect the other wire from the toggle switch to the PARK/NEUTRAL switch in the vehicle. This wire will test with ground with the gear selector either in PARK or NEUTRAL. This will prevent the vehicle from accidentally being started while in a drive gear. This input **MUST** rest at ground in order for the remote start system to operate. Connected properly the vehicle will only start while in PARK or NEUTRAL.

In some vehicles, the PARK/NEUTRAL position switch activates a factory starter lock out that will not allow the starter to operate in a drive gear. In these vehicles, connect this wire to the toggle switch as shown in figure B. Connect the other wire from the toggle switch to chassis ground.

IMPORTANT! Always perform the Safety Check section of this installation guide to verify that the vehicle cannot be started in ANY drive gear and that the override switch is functioning properly.

Figure A

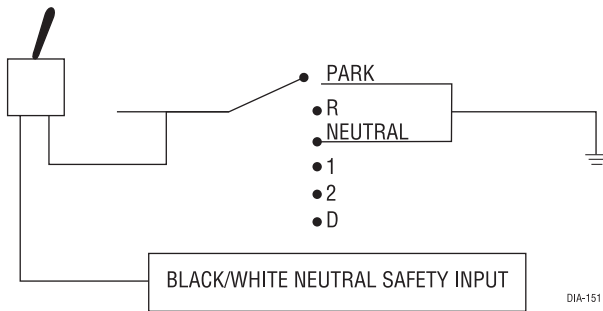
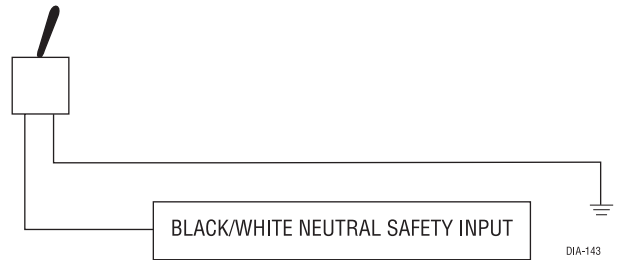


Figure B



H3/2 VIOLET/WHITE tachometer input

This input provides the module with information about the engine's revolutions per minute (RPMs). It can be connected to the negative side of the coil in vehicles with conventional coils. In multi-coil and high energy ignition systems locating a proper signal may be more difficult. (See *Finding the Wires You Need* section of this guide.) Once connected, you must teach the system the tach signal. (See the *Internal Programming Jumpers* section of this guide.)

H3/3 BROWN (+) brake switch input, zone 1

This wire **MUST** be connected to the vehicle's brake light wire. This is the wire that shows (+) 12V when the brake pedal is depressed. The remote start will be disabled or shut down any time the brake pedal is depressed. This wire will also trigger the security system if the brake pedal is pressed while the system is armed and will report Zone 1.

H3/4 GRAY (-) hood pinswitch input, zone 1

This wire **MUST** be connected to hood pinswitch. This input will disable or shut down the remote start when the hood is opened. It will also trigger the security system if the hood is opened while the system is armed and report Zone 1.

H3/5 BLUE/WHITE (-) status output

This wire supplies a 200mA output as soon as the module begins the remote start process. The H3/1 BLUE wire can also be used to activate the defogger trigger (latched/pulsed) 10-seconds after the remote start engages. (See the *Feature Descriptions* section in this guide for details about programming this output.)

horn, channel 6 harness (H4) wire connection guide

H4/1 ORANGE/BLACK 200 mA programmable (-) channel 6 output

This wire provides a (-) 200mA output whenever the transmitter button(s) controlling Channel 6 is pressed. (see also the *Feature Descriptions* section and previous channel 5 description):

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.*

H4/1 BROWN 200 mA (-) horn output

This wire provides a (-) 200mA output to the horn when programmed.

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.*

neutral safety switch interface

Some vehicles do not have an electrical neutral safety switch. Instead, a mechanical neutral safety switch that physically interrupts the starter wire is used when the vehicle is in any drive gear. If the remote start is interfaced before this switch, it will provide protection from starting in gear. However, some vehicles combine the column shift mechanism and the mechanical neutral safety switch into one mechanical part. In these vehicles, it is impossible to interface the remote start system before the neutral safety switch. With this type of vehicle, if the car is left in a drive gear and the remote start system is activated, the vehicle will move and may cause damage to persons or property.

According to available information, the only vehicles currently manufactured this way are most General Motors trucks, sport utility vehicles and column shifting passenger cars. Available information also indicates that pre-1996 Dodge Dakota pickups with 2.5 liter motors are manufactured this way as well.

GM vehicles that have the neutral safety switch built into the column shifter can usually be identified by a purple starter wire. Typically, vehicles that use an outboard mechanical switch use a yellow wire from the ignition switch

to the mechanical switch and a purple wire from the mechanical switch to the starter itself. Remember, this is only a rule of thumb and is not intended as a substitute for proper testing.

We suggest the following procedure to test for vehicles manufactured in this way.

NOTE: *You must complete the remote start system installation before doing the following test. Ensure that the remote start system is functioning normally. This includes connecting to the brake as a shut-down.*

testing the neutral safety switch

1. Make sure there is adequate clearance to the front and rear of the vehicle because it may move slightly.
2. Make sure the hood is closed and there are no remote start shut-downs active.
3. Set the emergency brake.
4. Turn the key to the "run" position, this will release the shifter.
5. Place the car in drive (D).
6. Place your foot directly over the brake pedal, but do not depress it. Be ready to step on the brake if the starter engages.
7. Activate the remote start system.
8. If the starter engages, immediately depress the brake to shut the remote start system down. If the starter does not engage, no additional safety system is required.

If the starter engages and the vehicle is a General Motors product or Dodge Dakota pickup, refer to the following text and diagrams for an alternative shut-down method which will prevent the starter from engaging. If the vehicle is not a General Motors product or a Dodge Dakota pickup, please call Directed Electronics Technical Support for an alternative shut-down method. Do not return the vehicle to the customer until this feature is properly installed!

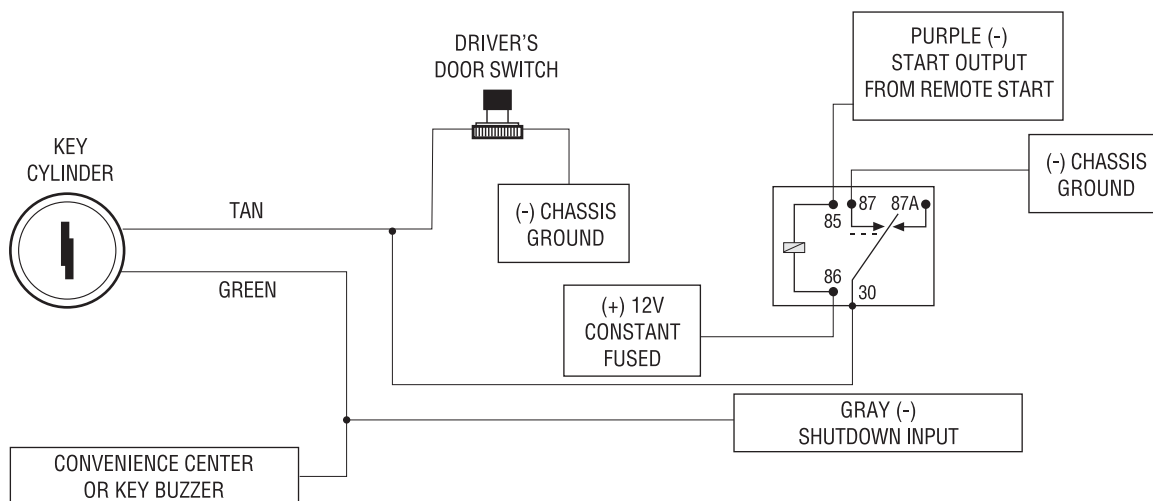
Every vehicle built in this fashion requires that the shifter be placed in park to remove the keys from the ignition. As a result, it is possible to use the key-in-ignition sense switch to prevent remote starting if the keys are in the ignition. The following diagrams illustrate how to accomplish this. The first diagram applies to all General Motors vehicles at the present time. The second diagram applies to all pre-1996 Dodge Dakota pickup trucks with 2.5 liter motors. This solution has one side effect - if the customer inserts the key in the ignition with the driver's door open, the remote start system will shut down. If this interface is used it is important to inform the customer to close the driver's door before inserting the key into the ignition when the remote start is active. This will allow the customer to turn the key on and shut the remote start down by pressing the brake without the key sense wire shutting down the unit prematurely.

In addition, you must connect a tan (+) shut-down input to the yellow wire on the relay satellite ribbon cable. This prevents the remote start system from activating if the key is left in the "run" position. If your remote start system only has one tan input, you must use diodes to isolate the ignition circuit from the brake switch input.

However, due to future manufacturer changes in vehicles, it is possible that this may not apply to all vehicles. In addition, color variations are possible from model to model; make sure to test the circuit carefully. Please call Directed Electronics Technical Support if you need assistance in making this interface.

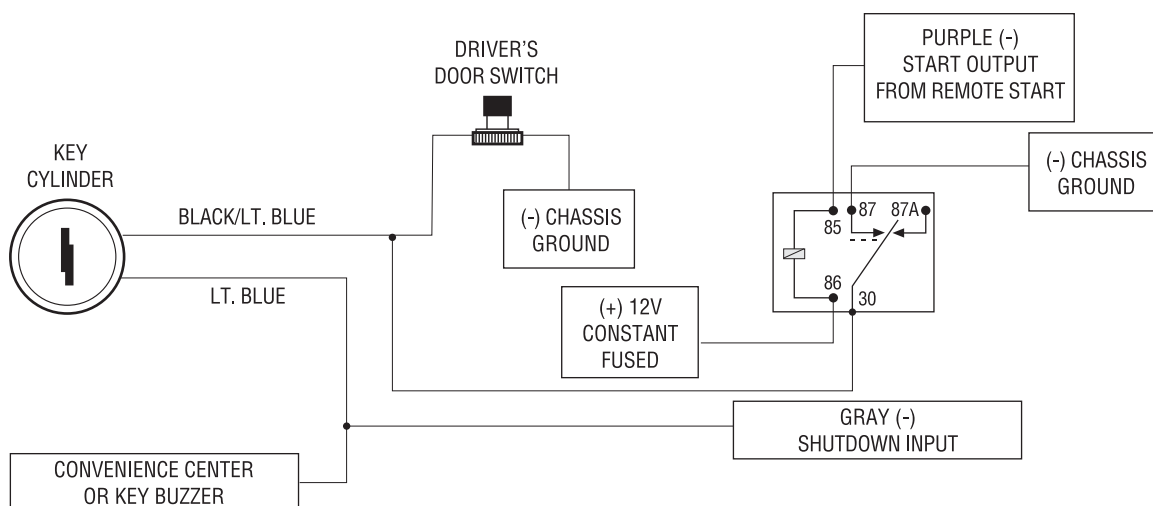
IMPORTANT! Once the interface is complete, attempt to remote start the vehicle with the door closed and the key in the ignition. The vehicle should not start. If it does, recheck the connections.

General Motors trucks, sport utility vehicles and column shifting passenger vehicles:



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Pre-1996 Dodge Dakota pickups with 2.5 liter motors:



1995 and newer vehicle anti-theft systems (immobilizers)

1995 and newer vehicle anti-theft systems (immobilizers) require a bypass module. The bypass module allows for easy interfacing, while still maintaining the OEM system's integrity.

passlock I and passlock II (PL-1 and PL-2)

The Passlock I and Passlock II systems can be found in the following General Motors vehicles:

- '95 and newer Cavalier and Sunfire
- '96 and newer Achieva, Grand Am, and Skylark
- '97 and newer Intrigue, Malibu, and Cutlass
- '98 and newer trucks, vans, SUVs
- '99 and newer Alero
- 2000 and newer Impala and Saturn

Passlock I and II systems are VATS-evolved. Passlock systems still rely on the R-code to start, but the pellet is no longer placed in the key. The resistor can now be found in the key switch. This allows for a greater number of possible R-codes. In addition, Passlock systems require "seeing" the correct R-code at the correct time. To bypass Passlock I and II, **p/n 555L** or **p/n 555T** is required.

passkey III (PK-3), transponder-based systems

The Passkey III system can be found in the following vehicles:

- '97 and newer Park Avenue
- '98 and newer Cadillac
- '99 and newer U vans, Transport, Montana, and Silhouette
- 2000 and newer Grand Prix, Lesabre, Monte Carlo, Lumina, Bonneville
- 2001 and newer Aurora, Aztek and Rendezvous

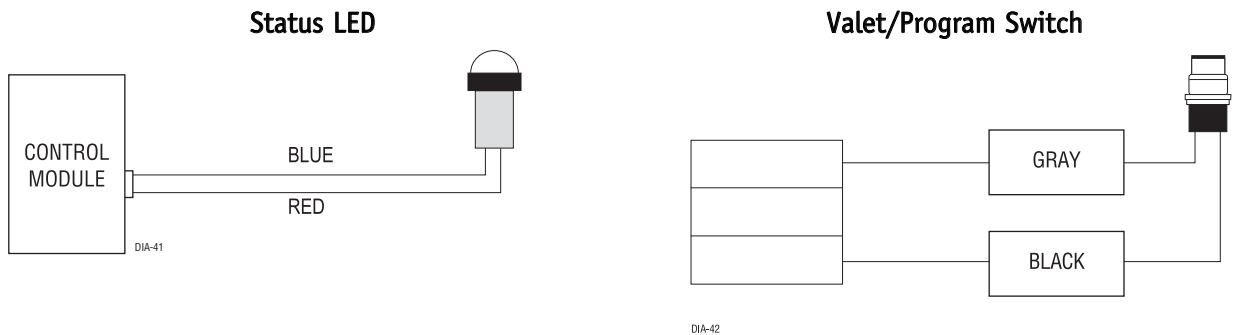
Other transponder-based systems include: Acura, BMW, Dodge/Chrysler/Jeep, Ford, Honda, Infinity, Mazda, Mercedes, Mitsubishi, Nissan, Toyota, Volkswagon, and Volvo.

PK-3 and the transponder-based systems use a transponder system that locks out the ignition and fuel system. This transponder system is comprised of two parts. The first part, the transceiver, circles the key switch and is activated when the key is placed in the key switch or turned to the run position. Upon activation, the trans-

ceiver will excite the transponder, which is located (but not visible) in the head of the ignition key. The key transponder will then send a unique code back to the transceiver for evaluation. If the code matches a valid code of the system, the vehicle will be allowed to start. Most of these transponder-based systems can be bypassed using **p/n 555U**. Some may require additional parts from the vehicle manufacturer. Consult you dealer for the applications. For most Ford PATS transponders, **p/n 555F** can be used, except for the following vehicles, which will require **p/n 555U**: '97 and newer Mark VII, and 2000 and newer Taurus/Sable, Contour/Mystique and Focus.


plug-in LED and valet/program switch

These plug into the module. The Status LED plugs into the small two-pin socket, while the Valet/Program Switch should be plugged into the larger blue two-pin connector. The Status LED fits into a $\frac{9}{32}$ -inch hole.



programmer interface, 3-pin black plug

The black 3-pin port is provided for personal computer programming of the unit. The unit can also be programmed using the Bitwriter® (**p/n 998T**). When using the optional PC Interface module, or hand-held programmer, it is possible to configure any and all of the programmable functions as well as lock the Transmitter/Receiver and System Features Learn Routines so that unauthorized users cannot change the configuration or program transmitters to the unit.

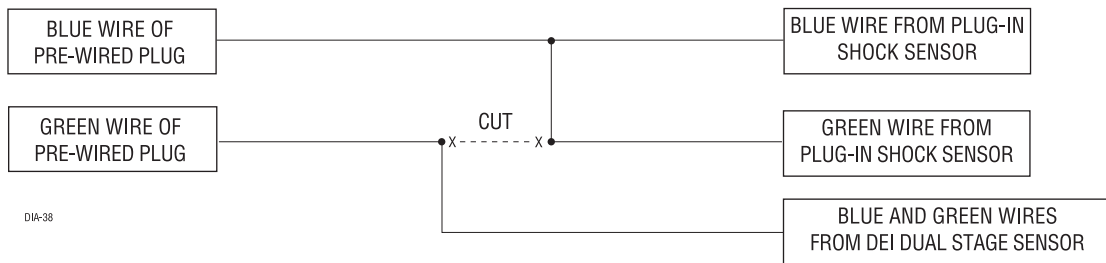
 When the learn routines have previously been programmed using an optional hand-held system programmer (**p/n 998T**) or PC Interface module, they may have been locked. Before proceeding with reprogramming the learn routines, they must be unlocked with either the 998T or the PC Interface module - this cannot be done manually with the Valet switch.

shock sensor harness, 4-pin connector

GREEN (-) multiplex input, zone 2

Inputs shorter than 0.8 seconds will trigger the Warn Away® response, while inputs longer than 0.8 seconds will trigger full alarm sequence and report Zone Two. If installing an optional Directed Electronics dual stage sensor, connect to the green wire as shown below. The diagram below eliminates the need for diodes to isolate the sensors.

Diagram for adding optional Directed Electronics dual stage sensor to green wire (Zone 2):



BLUE (-) multiplex input, zone 2

Inputs shorter than 0.8 seconds will trigger the Warn Away® response, while inputs longer than 0.8 seconds will trigger full alarm sequence and will also report Zone Two.

RED and BLACK: RED is (+)12V constant, BLACK is (-) ground

Do not use these for anything besides the plug-in shock sensor.

tach learning

To learn the tach signal:



1. Start the vehicle with the key.



2. Within 5 seconds, press and **HOLD** the Valet/Program switch.







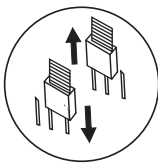
3. The LED will light constant when the tach signal is learned.



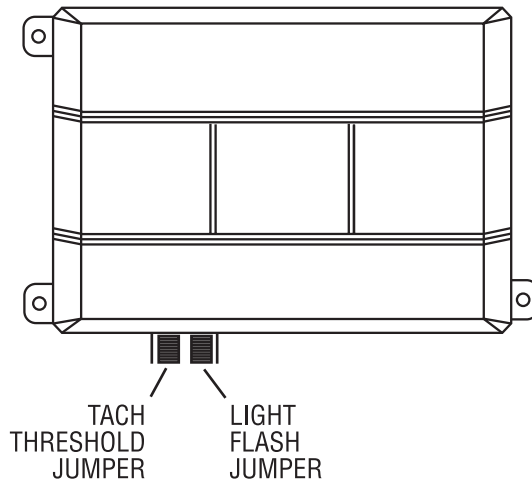
4. Release the Valet/Program switch.

programming jumpers

- TACH THRESHOLD OFF (DEFAULT) 
- TACH THRESHOLD ON 
- (-) LIGHT FLASH OUTPUT 
- (+) LIGHT FLASH OUTPUT (DEFAULT) 



TO CHANGE
JUMPER
SETTINGS



tach threshold on/off

In most cases, this jumper can be left in the OFF position. Some new vehicles use less than 12 volts in their ignition systems. The unit may have trouble learning the tach signal in these vehicles. Changing the jumper to the ON setting changes the trigger threshold of the digital tach circuit so it will work properly with these vehicles. These vehicles include many newer Dodge/Chrysler/Plymouths, such as the Neon Cirrus/Stratus/Breeze and LH-based cars.

light flash (+)/(-)

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, H1/11. 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.

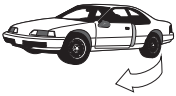
NOTE: For parking light circuits that draw 10 amps or more, the internal jumper must be switched to a (-) light flash output. P/N 8617 or a standard automotive SPDT relay must be used on the H1/11 light flash output harness wire.

transmitter/receiver learn routine™

The system comes with one transmitter 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 learn routine may be locked if previously programmed using the Bitwriter®. If the horn generates one long honk when attempting to program the unit, the learn routine is locked and must be unlocked using the Bitwriter® before proceeding.

The Valet/Program switch, plugged into the blue port, is used for programming. There is a basic sequence of steps to remember whenever programming this unit: Door, Key, Choose, Transmit and Release.



1. **Open a door.** (The GREEN wire, H1/8, or the VIOLET, H1/6 must be connected.)



2. **Key.** Turn the ignition to the ON position.



3. **Choose.** Within 10 seconds, press and release the Program switch the number of times corresponding to the desired channel listed below. Once you have selected the channel, press the switch once more and **HOLD** it. The LED will flash and the horn will honk (if connected) to confirm the selected channel. Do not release the Program switch.

CHANNEL NUMBER	FUNCTION	WIRE COLOR
1	Auto Learn Standard Configuration* (default)	
2	Arm only	
3	Disarm only	
4	Silent Mode™/Remote Valet/Trunk Release	RED/WHITE
5	Remote Start	
6	Channel 4	VIOLET/BLACK
7	Channel 5	WHITE/BLACK
8	Channel 6	
9	Short Run/Turbo	
10	Timer Mode	
11	Arm/Disarm/Panic	
12	Panic only	
13	Defogger Control	
14	Delete all transmitters**	

***NOTE:** For Auto Learn Configurations, see Transmitter Configurations section of this guide.

****NOTE:** If any button from a known transmitter is programmed to Channel 13, all transmitters will be erased from memory and will revert to the default feature settings. This is useful in cases where the customer's transmitters are lost or stolen.



4. **Transmit.** While **HOLDING** the Valet/Program switch, press the button on the transmitter that you would like to control the selected receiver channel. The unit will chirp to confirm that the code has been successfully programmed. It is not possible to teach a transmitter button to the system more than once.



5. **Release.** Once the code is learned, the Valet/Program switch can be released.

You can advance from programming one channel to another by releasing the Valet/Program switch and tapping it to advance channels and then **HOLDING** it. For instance: You have programmed Channel 1 and you want to program Channel 2. Release the Valet/Program switch. Press it one time and release it to advance from Channel 1 to Channel 2. Now, press and **HOLD** the Valet/Program switch. The LED will flash two times and the horn will honk twice (if connected). As before, do not release it.

If you want to program Channel 3 after programming Channel 1, release the Valet/Program switch, press it twice and release it to advance to Channel 3. Then press it once more and **HOLD** it. The horn will honk three times (if connected) and the LED will flash three times to confirm it is ready to receive the code from the transmitter.

Learn Routine will be exited if:









- Door is closed.
- Ignition is turned off.
- Program switch is pressed too many times.
- More than 15 seconds between steps.





transmitter configurations

The transmitter can be programmed with the standard or single button arm/disarm configurations by using the Auto Learn functions in the Transmitter/Receiver Learn Routine.

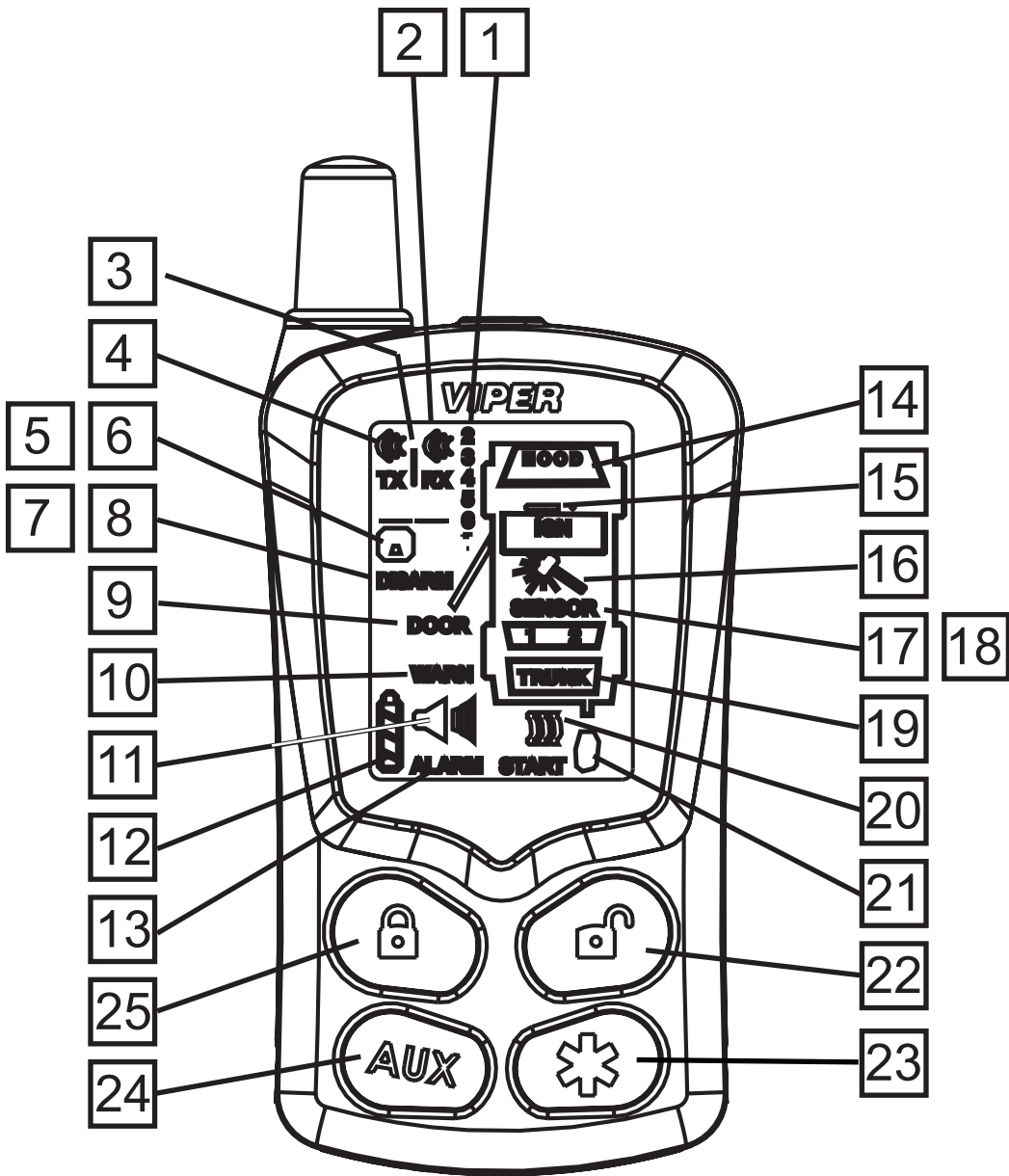
standard configuration

A remote that uses the standard configuration operates similarly to many factory keyless entry remotes. A standard configuration transmitter allows arming, disarming, and Panic Mode activation with separate buttons. When programmed for standard configuration, the transmitter buttons are assigned to the following functions:

- operatesArm/Lock,
Panic ON/Panic OFF
- operatesDisarm/Panic OFF
- operatesStart
- AUX**operatesChannel 2—trunk
release
-  and operateTimer Mode
- AUX** and operateShort Run/Turbo
timer
-  and **AUX**operateChannel 4
-  and **AUX**operateChannel 5

 and  and **AUX** operaterear defogger
 and operate.....Channel 6

remote control diagram








standard mode configuration

1. Auxiliary Channel Out
2. Receive Indicator
3. Signal Indicator
4. Transmit Indicator
5. Lock Status Indicator
6. Unlock Status Indicator
7. Arming Status Indicator
8. Disarming Status Indicator
9. Door Switch Input Indicator
10. Warn Away® Response Indicator
11. Siren Status Indicator
12. Battery Level Indicator
13. Trigger Response Indicator
14. Hood Switch Input Indicator
15. Ignition Switch Input Indicator
16. Sensor Response Indicator
17. Sensor 1 Indicator—Full Trigger and Warn Away®
18. Sensor 2 Indicator—Full Trigger and Warn Away®
19. Trunk Switch Input Indicator
20. Vibrate Mode Indicator
21. Remote Start Indicator
22. Disarm Button
23. Remote Start Button
24. Auxiliary Button
25. Arm Button

multi-level security arming

Multi-Level Security Arming is a feature that allows the user to select which of the system's inputs or sensors will be active and which will be bypassed when the system is armed. (See *Table of Zones* section of this guide.) Multi-Level Security Arming can only be accessed from a standard configuration transmitter. Pressing the arm button of the standard configuration transmitter again within five seconds of arming the system will activate the Multi-Level Security feature. Each time the arm button is pressed again, a different security level is selected. The different levels of security are selected as follows:

- Pressing  one time: The siren chirps once. The system is armed.
- Pressing  a second time within five seconds: The siren chirps twice followed by a long chirp. Zone Two is now bypassed.
- Pressing  a third time within five seconds: The siren chirps three times followed by a long chirp. Zone Four is now bypassed.
- Pressing  a fourth time within five seconds: The siren chirps four times followed by a long chirp. Zones Two and Four are now bypassed.
- Pressing  a fifth time within five seconds: The siren chirps five times followed by a long chirp. All input zones, except the ignition, are now bypassed.

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 Bitwriter®. Any of the settings can be changed and then assigned to one of up to four transmitters. This feature is 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 Bitwriter®.



If programming with the Bitwriter®, the learn routine can be locked or unlocked. If the learn routine has previously been locked, it must be unlocked before proceeding with reprogramming the learn routine. This must be done by using either Bitwriter® - this cannot be done manually with the Valet switch. If the learn routine is locked, features cannot be changed.

To enter the System Features Learn Routine™:



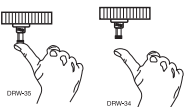
1. **Open a door.** (The GREEN wire, H1/8, or the VIOLET, H1/6 must be connected.)



2. **Ignition.** Turn the ignition on, then back off. (The heavy gauge PINK wire of the relay satellite must be connected.)





3. **Select a Menu.** Press and **HOLD** the Valet/Program switch. (The Valet/Program switch must be plugged into the blue port.) After three seconds the siren will chirp once indicating entry to the Basic Features Menu. If this is the menu you wish to access, release the button and go on to Step 4. If the button is not released, you will jump to the next menu and the siren will chirp twice. There are three possible menus. Once you have selected the desired menu, release the Valet/Program switch.



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



5. **Program the Feature.** While holding the Valet/Program switch, you can toggle the feature on and off using the remote transmitter. Pressing the button that arms the system will select the one chirp or default setting. Pressing the button that disarms the system (or the Channel Two button when in the single button arm/disarm configuration) will select the two chirp setting.

Note: Some features have more than two possible settings. Pressing  will select the one chirp setting, pressing  will toggle through the two-chirp and higher settings.)



6. **Release.** Release the Valet/Program switch.

Once a feature is programmed:

- Other features can be programmed within the same menu.
- Another menu can be selected.
- The learn routine can be exited if programming is complete.

To access another feature in the same menu:

1. Press and release the Valet/Program switch the number of times necessary to advance from the feature you just programmed to the next one you want to program.
2. Then press the Valet/Program switch once more and **HOLD** it.

For example, if you just programmed the third feature in the menu and you would like to program the seventh feature in the menu, you would press and release the Valet/Program switch four times and then press it once more and **HOLD** it. The siren would chirp seven times to confirm access to the seventh feature.

To select another menu:

1. Press and hold the Valet/Program switch.
2. After three seconds, the unit will advance to the next menu and the siren will chirp, indicating which menu has been accessed.

For example, if you just programmed some features in the first menu and you want to program a feature in the third menu, press and **HOLD** the Valet/Program switch. After three seconds, the siren chirps twice indicating access to the second menu. Continue to **HOLD** the button and three seconds later the siren will chirp three times indicating access to the third menu. Features in the third menu are then programmable following steps 4 through 6 of the System Features Learn Routine procedure.

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. There is no activity for longer than 15 seconds.
4. The Valet/Program switch is pressed too many times.

feature menus

The default settings are indicated in **bold** type. Features that have additional settings that can be programmed using the Bitwriter® are indicated with an asterisk (*).

menu #1 - basic features

FEATURE NUMBER	ONE-CHIRP SETTING (DEFAULT)	TWO-CHIRP SETTING
1-1	Active arming	Passive arming
1-2	Arm/disarm chirps on	Arm/disarm chirps off
1-3	Ignition lock ON	Ignition lock OFF
1-4	Ignition unlock ON	Ignition unlock OFF
1-5	Active locking only	Passive locking
1-6	Panic with ignition on	No panic with ignition on
1-7	0.8 second door lock pulses (1)	3.5 (2), 0.4 (3) seconds
1-8	Forced passive arming on	Forced passive arming off
1-9	Automatic engine disable on	Automatic engine disable off
1-10	Armed When Driving (AWD) on	AWD off
1-11	Code Hopping on	Code Hopping off
1-12	Horn Output Pulsed	Constant
1-13	Horn function Full Alarm Only (1)	Siren function - chirp length 20mS (2)/30mS (3)/40mS (4)/50mS (5)
1-14	Comfort Closure ON	Comfort Closure OFF

NOTE: The numbers in parentheses indicate the number of times the siren will chirp and the LED will flash.

menu #2 - advanced features

FEATURE NUMBER	ONE-CHIRP SETTING (DEFAULT)	TWO-CHIRP SETTING
2-1	30 second siren duration*	60 second siren duration*
2-2	Nuisance Prevention Circuitry ON	Nuisance Prevention Circuitry OFF
2-3	Progressive door trigger	Instant door trigger
2-4	Disarm from Valet, 1 pulse	Disarm from Valet, 2-5 pulses
2-5	Door sensor bypass chirp ON	Door sensor bypass chirp OFF
2-6	Ignition controlled domelight ON	Ignition controlled domelight OFF
2-7	Unlock output 1 pulse	Unlock output 2 pulses
2-8	Lock output 1 pulse	Lock output 2 pulses
2-9	Factory disarm with Channel Two ON	Factory disarm with Channel Two OFF
2-10	FAD function with Unlock (1)	Before Unlock (2), Remote Start only (3)
2-11	FAD 1 pulse	2 pulses
2-12	Channel 4 validity (1)	Latched (2), Latch reset with ignition (3), 30-sec. timed (4)
2-13	Channel 4 linking None (1)	Arm (2), Disarm (3), Remote Start (4)
2-14	Channel 5 validity (1)	Latched (2), Latch reset with ignition (3), 30-sec. timed (4)
2-15	Channel 5 linking None (1)	Arm (2), Disarm (3), Remote Start (4)
2-16	Channel 6 validity (1)	Latched (2), Latch reset with ignition (3), 30-sec. timed (4)
2-17	Channel 6 linking None (1)	Arm (2), Disarm (3), Remote Start (4)

*NOTE: The Bitwriter® can set 1-180 seconds.

menu #3 - remote start options

FEATURE	ONE-CHIRP SETTING (DEFAULT)	TWO-CHIRP SETTING
3-1	Engine checking ON	Engine checking OFF
3-2	Engine checking TACH	Engine checking VOLTAGE
3-3	Run time: 12 minutes (1)	Run time: 24 (2) or 60 (3) minutes
3-4	Parking lights flashing	Parking lights constant
3-5	Crank time: 0.6 seconds (1)	0.8 (2), 1.0 (3), 1.2 (4), 1.4 (5), 1.6 (6), 1.8 (7), 2.0 (8), 4.0 (9) sec.
3-6	Voltage check - high	Voltage check - low
3-7	Short Run/Turbo-1 min. (1)	3 (2), 5 (3), 10 (4) min.
3-8	Activation pulse count-1	Activation pulse count: 2
3-9	2 nd Ignition/Acc output: ignition	Accessory
3-10	Acc state during wait to start: OFF	ON
3-11	2 nd status output: Normal (1)	Rear defogger: latch 10 min. (2)/ pulse (3)
3-12	Anti grind: ON	Anti grind: OFF
3-13	Diesel timer Wait-to-Start input (1)	Timed 15 (2), 30 (3), 45 (4) seconds*
3-14	Timer mode—Timed Starts	Temperature Starts
3-15	Run Time (Timer Mode) 12 minutes (1)	3 (2), 6 (3), 9 (4) minutes**

*NOTE: The Bitwriter® can set 1-90 seconds.

**NOTE: The Bitwriter® can set 1-16 minutes.

feature descriptions

The features of the system are described below. Features that have additional settings that can be selected only when programming with the Bitwriter® are indicated by the following icon:



menu #1 - basic features

1-1 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.

1-2 CHIRPS ON/OFF: This feature controls the chirps that confirm the arming and disarming of the system.

1-3 IGNITION LOCK ON/OFF: When turned on, the doors will lock three seconds after the ignition is turned on and unlock when the ignition is turned off.

1-4 IGNITION UNLOCK ON/OFF: When ON this feature will unlock the doors when the ignition is turned off.

1-5 ACTIVE/PASSIVE LOCKING: If passive arming is selected in Feature 1-1, 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.*

1-6 PANIC WITH IGNITION ON: This feature controls whether or not the panic mode is available with the ignition ON. In some states, there are laws prohibiting a siren sounding in a moving vehicle. This feature makes the system compliant with these regulations.

1-7 DOOR LOCK PULSE DURATION: Some European vehicles, such as Mercedes-Benz and Audi, require longer lock and unlock pulses to operate the 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. Some modification to the door lock harness (H2) is also necessary. (Refer to TechTip 1041 for wiring information regarding (+/-) Door Lock Outputs Harness (H4)section, Type E - Mercedes-Benz and Audi -1985 and Newer" diagram.) The 0.4 second pulse is required on some of the newer Chrysler and Ford vehicles.

1-8 FORCED PASSIVE ARMING ON/OFF: To use this feature, passive arming must be selected in Feature 1-1. When turned on, forced passive arming will ensure that the system will passively arm, even if a zone is left open or invalid. Forced passive arming occurs one hour after the ignition is turned off.

1-9 AUTOMATIC ENGINE DISABLE (AED) ON/OFF: AED is a full-time, passive starter disable that works independently of the security system. When turned on, the orange, ground-when-armed output (H1/1) will activate 30 seconds after the ignition is turned off. The LED will flash at half its normal rate when the ignition is turned off to indicate that AED is active and will interrupt the starter in 30 seconds. AED does not occur in Valet mode and can be bypassed using the emergency override procedure. The transmitter can be used to disarm AED, however, the system must be armed and then disarmed, using the transmitter, to disarm AED.

1-10 ARMED WHILE DRIVING (AWD) ON/OFF: In the default setting (Armed While Driving), the system can be armed with the ignition on. When armed, the ground-when-armed is not active and the sensors are bypassed. The door triggers will remain active.


1-11 CODE HOPPING® ON/OFF: The system uses a mathematical formula to change its code each time the transmitter and receiver communicate. This makes the group of bits or "word" from the transmitter very long. The longer the word is, the easier it is to block its transmission to the unit. Disabling the Code Hopping® feature lets the receiver ignore the Code Hopping® part of the transmitted word. As a result, the unit may have better range with Code Hopping® off.

1-12 HORN OUTPUT PULSED/CONSTANT: Program for either a pulsed output or a continuous output when triggered.

1-13 HORN FUNCTION (FULL ALARM ONLY)/SIREN FUNCTION (20mS, 30mS, 40mS, 50mS): Program for output when the alarm is fully triggered or as the siren (arming/disarming and warnaway and full trigger with timing options).

1-14 COMFORT CLOSURE—ON, OFF: The system can be programmed to close the windows when the system is armed. A 20-second output starts 200mS after the last lock pulse. The Comfort Closure output will be canceled if the unlock button is pressed. If programmed ON, the lock output wire provides this function.

menu #2 - advanced features

 **2-1 SIREN DURATION 30/60 SECONDS:** It is possible to program the unit to sound for 30 or 60 seconds during the triggered sequence. Some states have laws regulating how long a security system can sound. When using the Bitwriter®, the siren can be programmed to sound for any length of time from 1 second to 180 seconds.

2-2 NUISANCE PREVENTION® CIRCUITRY (NPC) ON/OFF: NPC stops repeated triggering of the same zone. If one zone is triggered three times in one hour, that zone is bypassed for one hour, starting from the time of the third trigger. During that hour, if the system sees a trigger on that zone again, the system resets the one hour timer. If one hour passes and the zone has not triggered again, the zone is activated and can trigger the system again. NPC only monitors sensor inputs, and does not bypass the door trigger or the ignition trigger at any time. If NPC is turned off, the system will respond to repeated triggers on the sensor inputs and will do so indefinitely. Some states have laws regulating how many times a security system can trigger before it is considered a nuisance and the vehicle is towed away.

2-3 PROGRESSIVE DOOR TRIGGER ON/OFF: The system responds to a door trigger input with a progressive response. When the door is opened with the system armed, the siren will chirp 10 times prior to the full triggered sequence. The door trigger is still treated as an instant trigger and closing the door quickly will not prevent full triggered sequence from occurring. If the progressive door trigger is programmed off, the full siren output will occur the moment the door is opened.

2-4 VALET DISARM PULSE COUNT 1 TO 5 PULSES: The system can be programmed to count the number of presses of the valet switch before disarming the security system. The factory default setting is one pulse. The unit can also be set for two to five pulses.

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

2-5 DOOR SENSOR BYPASS CHIRP ON/OFF: This feature controls the error chirp that is generated if the system is armed with the door trigger active. This is useful in vehicles that have a long dome light delay after the door has been closed. If the system is armed before the dome light has turned off, the security system will generate the door trigger error chirp. If this error chirp is not desired, use this feature to disable the door open error chirp. If the bypass chirp is turned off, no bypass chirp will be generated, even if a door is accidentally left open.

2-6 IGNITION CONTROLLED DOME LIGHT SUPERVISION ON/OFF: If turned on, the system will turn on the dome light for 60 seconds when the ignition is turned off. The optional dome light supervision feature must be installed as described in the Wire Connection Guide.

2-7 UNLOCK OUTPUT—1, 2 PULSES: This will program the unlock output to one or two pulses. When the double pulse unlock feature is turned on, the BLUE door lock harness wire will supply two negative pulses instead of a single pulse. At the same time, the GREEN door lock harness wire will supply two positive pulses instead of a single pulse. This makes it possible to directly interface with double pulse vehicles without any extra parts for unlock and lock outputs (see below).

2-8 LOCK OUTPUT—1, 2 PULSES: This will program the lock output to one or two pulses. When the double pulse lock feature is turned on, the BLUE door lock harness wire will supply two positive pulses instead of a single pulse. At the same time, the GREEN door lock harness wire will supply two negative pulses instead of a single pulse.

2-9 FACTORY ALARM DISARM WITH CHANNEL 2: In the default setting the factory alarm disarm output will disarm the factory alarm system any time the button(s) controlling Channel Two is pressed.

2-10 FACTORY ALARM DISARM—WITH UNLOCK, BEFORE UNLOCK, REMOTE START ONLY: In the default setting the factory alarm disarm output will disarm the factory alarm system any time the button(s) controlling Unlock is pressed. The “Before Unlock” output to disarms the factory alarm before the unlock output activates and before remote start is activated. The “Remote Start Only” output disarms the factory alarm only before the remote start is activated.

2-11 FACTORY ALARM DISARM PULSES—SINGLE, DOUBLE: Selectable for a single or double-pulse for the vehicle’s factory alarm disarm input requirements.

2-12 CHANNEL 4 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED OUTPUT: This wire provides a (-) 200mA output whenever the transmitter button(s) controlling Channel 4 is pressed. This output can be programmed to provide the following types of outputs (see also the *Feature Menus* section):

- **Validity:** Output that will send a signal as long as the transmission is received.
- **Latched:** Output that will send a signal when the Channel 4 button(s) is pressed and will continue until the same button(s) is pressed again.
- **Latched, reset with ignition:** Similar to the latched output, this type of output turns on the first time the Channel 4 button(s) is pressed and turns off the next time the same button is pressed. This type of output additionally stops and resets whenever the ignition is turned on and then off.
- **30-second timed:** Output that will send a continuous signal for 30 seconds.

Note: All auxiliary channel timed outputs can be programmed using the Bitwriter® (1-90 seconds).

2-13 CHANNEL 4 LINKING (NONE)/ARM, DISARM, REMOTE START: When programming to validity or timed output this can be programmed to activate when arming or disarming (or remote start) with the transmitter.

2-14 CHANNEL 5 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED OUTPUT: Channel Five can be programmed for these output configurations. The unit is set to the default validity output. To change the configuration, use the two-chirp setting to toggle through the different configurations. Refer to feature 2-10 for additional detail.

2-15 CHANNEL 5 LINKING (NONE)/ARM, DISARM, REMOTE START: Refer to feature 2-13 for additional detail.


2-16 CHANNEL 6 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED OUTPUT: Channel Five can be programmed for these output configurations. The unit is set to the default validity output. To change the configuration, use the two-chirp setting to toggle through the different configurations. Refer to feature 2-10 for additional detail.

2-17 CHANNEL 6 LINKING (NONE)/ARM, DISARM, REMOTE START: Refer to feature 2-13 for additional detail.

menu #3 - remote start options

3-1 ENGINE CHECKING ON/OFF: In the default setting the remote start will monitor either the vehicle's tach wire or voltage depending on the programming of feature 3-2. If programmed OFF the vehicle will crank for the programmed crank time (feature 3-5) and will not verify with tach or voltage that the car is running. In the OFF setting, if the vehicle fails to start, the ignition can stay on for the entire run duration. Using tach or voltage check is always recommended if possible.


3-2 CHECKING TYPE TACH/VOLTAGE: Selects the method of engine monitoring. If set to TACHOMETER the unit will reference the learned tach signal to disengage the starter. In addition it will monitor the RPM and shut down if the engine RPM is too high or too low. When set to VOLTAGE, the unit will crank the starter for the programmed time and then attempt to sense that the engine is running by detecting an increase in voltage. The threshold for the voltage check is selectable in feature 3-6.

 **3-3 RUN TIME 12, 24, 60 MINUTES:** Selects the time in minutes that the system will operate the engine until the system "times out". This is the maximum operation period and the system may be shut down using a shutdown at any time. Using the Bitwriter®, the run time can be programmed for any duration from 1-60 minutes.


3-4 PARKING LIGHTS FLASHING/CONSTANT: In the default setting, the unit will flash the vehicle's parking lights (if connected) while remote started. The constant setting will turn the parking lights on solid for the entire run duration.

3-5 CRANK TIME 0.6/0.8/1.0/1.2/1.4/1.6/1.8/2.0/4.0 SECONDS: If the unit is programmed for no engine checking or voltage sense, the crank time must be set to the appropriate duration. The default setting is 0.6 second. If a different crank time is desired, select feature 3-5 and select either 0.6 second by using the one-chirp setting or toggle through the higher settings by using the two-chirp settings.

3-6 VOLTAGE CHECK HI/LOW: This feature only functions when programmed for voltage sense. Some vehicles have many accessories, which are turned on when remote started. In these vehicles, the variation of voltage between the engine off and the car running is very small and the remote start unit may "think" the vehicle has not started. This can cause the remote start to shut-down after the car has been started. If this happens program this feature to the LOW position.

3-7 SHORT RUN/TURBO 1/3/5/10 MINUTES: When the  and **AUX** buttons on the transmitter are pressed simultaneously, the vehicle will start for the programmed short run time. The factory default is 1 minute.

3-8 ACTIVATION PULSE COUNT 1/2: This allows the system to use 1 or 2 pulses to activate the remote start sequence. The default setting is 2-pulses.


***Note:** 1 or 2 pulses on the WHITE/BLUE remote start activation input wire as well as the  button of the remote control.*


3-9 2nd IGNITION/ACCESSORY OUTPUT: This will allow the PINK/WHITE to be used as a 2nd ignition or an accessory. The default is 2nd ignition.


3-10 ACCESSORY STATE DURING WAIT-TO-START OFF/ON: This feature will allow the selection of the accessory output to be ON or OFF during wait-to-start.

3-11 2nd STATUS OUTPUT NORMAL/REAR DEFOGGER LATCHED 10-MIN/PULSE: This feature will allow selection of status output or a rear defogger mode that turns on ten seconds after the vehicle has started if the vehicle interior temperature is below 55 degrees F. The defogger mode has two selections, latched or pulsed. Latched mode will only stay on for 10 minutes.

3-12 ANTI-GRIND ON/OFF: With the anti-grind On (default) the ground-when-armed output will be active during remote start operation. If accessories such as a voice module or window module are added to the unit, it may be necessary to program this feature off.

 **3-13 DIESEL TIMER—WAIT-TO-START/15, 30, 45 SECONDS:** Default is the “Wait-to-Start” input control wire, or programmable to ignore the input control wire by a delay of 15, 30, or 45 seconds. This feature can be also programmed with the Bitwriter® and with a delay from 1 to 90 seconds.

 **3-14 TIMER MODE—TIMED STARTS/TEMPERATURE STARTS:** The system will start every 3-hours until canceled by the brake, hood, or neutral safety shut-down wires (a maximum of 6 times). The temperature start mode will not start the vehicle unless the interior temperature of the vehicle is less than 0 degrees F. The temperature start mode will exit after 18 hours.

 **3-15 RUN TIME (TIMER MODE)—12, 3, 6, 9 MINUTES:** Selects the time in minutes that the system will operate the engine until the system “times out”. This is the maximum operation period and the system may be shut down using a shutdown at any time. Using the Bitwriter®, the run time can be programmed for any duration from 1-16 minutes.

nuisance prevention® circuitry

NPC requires that you change the way you test the system as NPC will bypass an input zone for 60 minutes. If the system “sees” the same zone trigger three times AND the triggers are spaced less than an hour apart, the system will bypass that input zone for 60 minutes. If that zone does not attempt to trigger the system during the 60-minute bypass period, the zone’s monitoring will begin again at the end of the hour. If it does attempt to trigger while bypassed, the 60-minute bypass starts over again.

Disarming and rearming the system does not reset NPC. The only way to reset NPC is for the 60 minutes to pass, without a trigger, or for the ignition to be turned on. This allows the system to be repeatedly triggered, disarmed

and rearmed, and still allow NPC to bypass a faulty zone.

When disarming the system, 5 chirps indicate NPC is activated. The LED will report the zone that has been bypassed. (See *Diagnostics* section of this guide.)

valet mode



To enter or exit valet mode with the valet/program switch:



1. Turn the ignition key on and then off.
2. At anytime during the next 10 seconds, press and release the Valet switch. Now the Status LED will light constantly if you have entered Valet® Mode, and go out if you have exited Valet Mode.

To enter or exit Valet mode with the transmitter:



To enter or exit Valet Mode with a transmitter:

1. Open any door.
2. Press  on the transmitter.
3. Press **AUX**.
4. Press  again. You have now entered or exited Valet Mode (verify by checking your status LED).

rear defogger control

The rear defogger output can be remotely turned on/off any time using the remote control. The default setting is **ON**.

To turn the rear defogger output OFF:

1. Press & release the  and  and **AUX** buttons of the remote control.
2. The parking lights will flash 2-times.
3. The rear defogger output will no longer activate when the vehicle is remote started.

NOTE: If the remote start is On the lights will turn off then flash 2-times before returning to their normal output and the defogger output, if active, will cease.

To turn the rear defogger output ON:

1. Press & release the  and  and **AUX** buttons of the remote control.
2. The parking lights will flash 3-times.
3. The rear defogger output will once again activate when the vehicle is remote started.

NOTE: *If the remote start is On the lights will turn off then flash 3-times before returning to their normal output and the defogger output will activate as programmed.*



timer mode

This unit can be programmed to start and run the engine every three hours, for a maximum of six cycles. The engine will run for the programmed run time and then shut down. After three hours, the system will restart the engine.

IMPORTANT! *Timer Mode should be used only in open areas. Never start and run the vehicle in an enclosed space such as a garage or carport.*

To enter or exit timer mode with the transmitter:

The same procedure may be used to enter or exit Timer Mode using the remote transmitter:

1. Remote start the vehicle by pressing  and  simultaneously.
2. The lights will flash 4-times.
3. After 1-second the car will start and the timer mode will run for the specified time period.

The system is in Timer Mode. The engine may be allowed to run for its programmed run time, or the transmitter can be used to shut down the engine. Either way, the remote start system will restart the engine again in three hours. Timer Mode is exited automatically after the sixth run cycle.

To enter or exit timer mode manually:

1. Make sure the remote start system is not operating the engine.
2. Turn the ignition on.

Timer Mode will be exited and the parking lights will flash four times.

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 NO.	TRIGGER TYPE	INPUT DESCRIPTION
1	Trunk Input	BLUE (H1/7)
2	Multiplexed Shock Sensor Input	Mux BLUE wire.
3	Door Trigger	GREEN (H1/8) and VIOLET (H1/6).
4	Multiplexed Shock Sensor Input	Mux GREEN wire
5	Ignition	Yellow ribbon harness wire
6	Hood Brake Trigger	GRAY on the 6-pin shutdown harness.

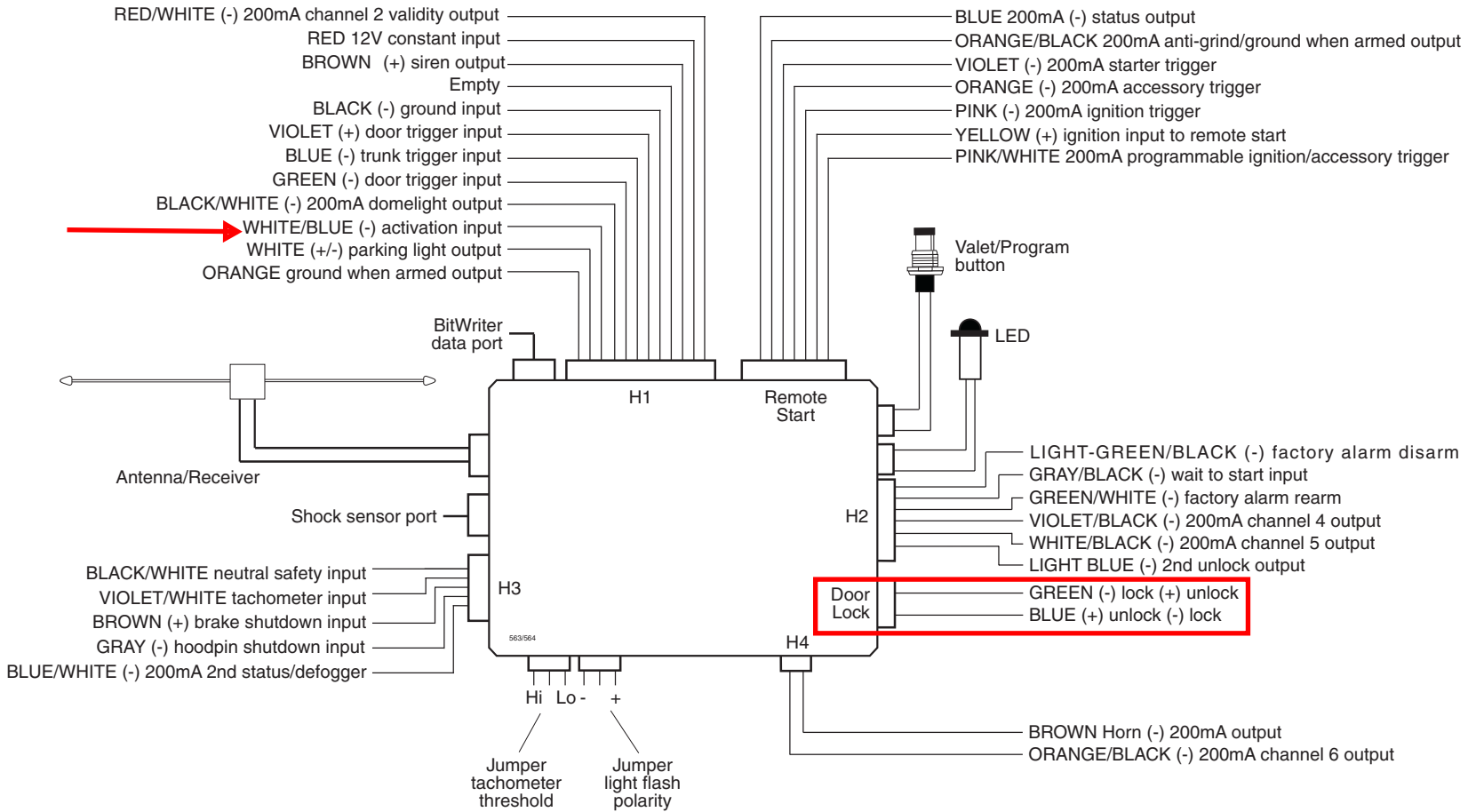
NOTE: The Warn Away® response does not report on the LED.

shutdown diagnostics

to perform shutdown diagnostics

1. With the ignition OFF, press and **HOLD** the Valet/Program switch.
2. Turn the ignition ON and then back OFF while **HOLDING** the Valet/Program switch.
3. Release the Valet/Program switch.
4. Press and release the Valet/Program switch. The LED will report the last shutdown for one minute or until the ignition is turned on.

LED FLASHES	SHUTDOWN MODE
One	Timed out
Two	Over-rev shutdown
Three	Low or no RPM
Four	Transmitter shutdown (or optional push-button)
Six	(-) Shutdown (H3/4 GRAY) or (+) Shutdown (H3/3 BROWN)
Seven	(-) Neutral safety shutdown (H3/1 BLACK/WHITE)
Eight	Wait-to-start timed out



relay satellite wiring quick reference guide

