

HORNET®

Model 727T

Installation Guide

driven to excel
Directed®
ELECTRONICS, INC.

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The Bitwriter® (p/n 998T)
requires chip version 2.0 or
newer to program this unit.

NOTE: This product is intended for installation by a professional installer only! Any attempt to install this product by any person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

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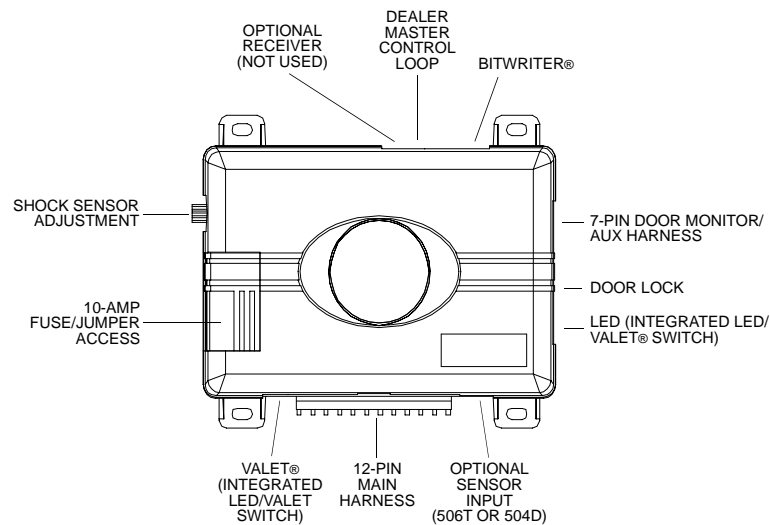
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what is included

- Control module
- 12-pin main harness
- 7-pin door monitor/Aux harness
- Siren
- Dual-diode light flash adapter
- 4-pin sensor harness
- Valet switch
- LED
- 3-pin door lock harness
- Door lock pulse adapter

control module



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!** Please read this entire installation guide before beginning the installation. The installation of this security system requires interfacing with many of the vehicle's systems. Many new vehicles use low-voltage or multiplexed systems which can be damaged by low resistance testing devices, such as test lights or logic probes. Test all circuits with a high-quality digital multi-meter before making the connections.*

***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 LED and Valet switch locations.
- 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 sensor zones, making them seem to stop working.
- Carefully reassemble the under-dash trim panels.
- Inspect the engine compartment for tools that may have been left behind.

tools required

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

- Digital multi-meter
- Wire cutters/strippers
- Nutdriver and/or socket set
- Panel removal tool

- Solderless terminal crimpers
- Cordless power drill
- Torx driver set
- Drill bit set
- Phillips head screwdriver
- Work light

deciding on component location

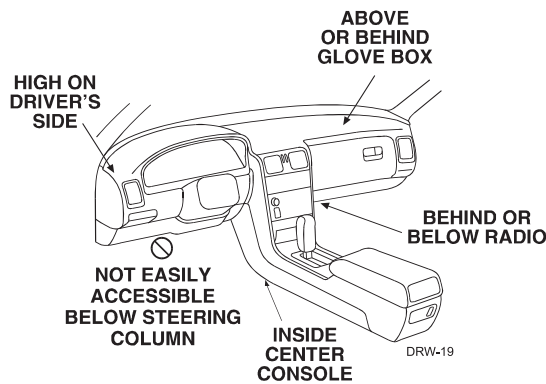
control module

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.

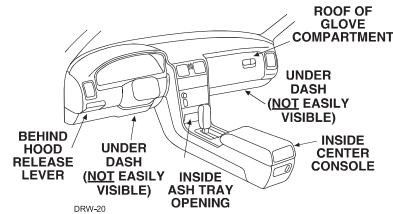
When locating the control module, try to find a secure location that will not require you to extend the harnesses' wires (they are 1.5 meters long). Keep it away from the heater core (or any other heat sources) and any obvious leaks.

Some good control module locations: Above the glove box, inside the center console, above the underdash fuse box, above the radio, etc.



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 9/32" hole.

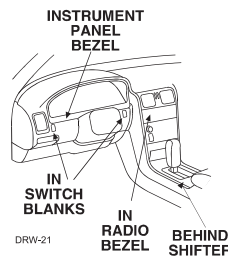


***IMPORTANT!** When the vehicle is delivered, please show the user where the switch is located and how to disarm the system with it.*

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 1/2" 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 9/32" 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 Starter Kill Relay or it's 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.

connecting your wires

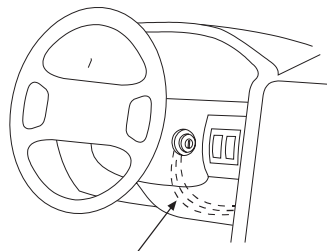
Now that you have decided where each component will be located, you're going to find the wires in the car that the security system will be connected to.

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.**

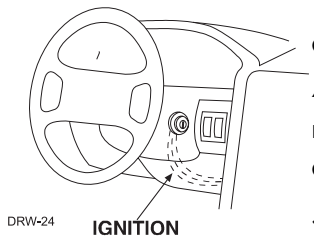
IMPORTANT! Do not remove the fuse holder on the red (H1/11) wire. It ensures that the control module has it's own fuse, of the proper value, regardless of how many accessories are added to the main power feed.



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. Use the following procedure to find (+)12V 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.

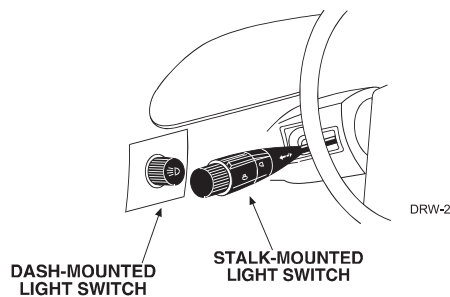
finding a parking light wire

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.

(+) parking light wire

Use the following procedure to find (+) parking light 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

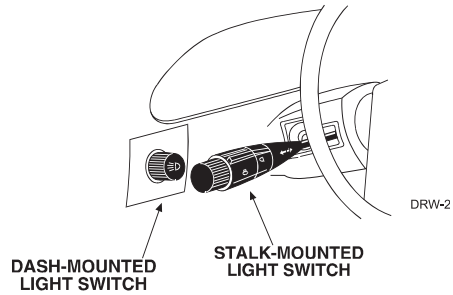


changes more than a volt when using the dimmer, look for another wire. If it stays relatively close to (+)12V, you have found your parking light wire.

(-) parking light wire

Use the following procedure to find (-) parking light wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (+) probe of the meter to +12V.
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 domelight supervision, but it will work in vehicles with completely diode-isolated pin switches.

Often the door switch wires, described above, can also be found in the windshield pillars, running boards or kick plates.

Use the following procedure to find the door pin switch 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 and the meter goes to 0 with the door closed, you have found a trigger wire.

NOTE: Make sure the wire you use "sees" all the doors! Some newer vehicles lack standard-type pinswitches. The dome light in these vehicles is turned on when the door handle is lifted. These usually have a wire coming out of the door into the kick panel which will provide a (-) trigger for all doors.

main harness wire connection guide

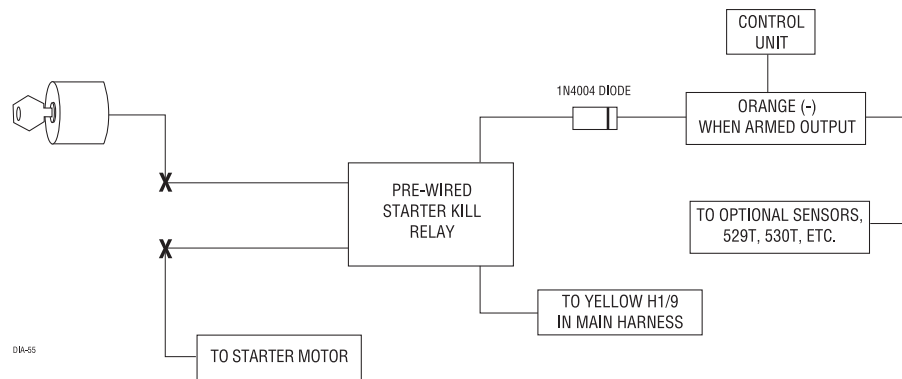
main harness wiring diagram

H1/1	ORANGE	(-) 500mA Ground When Armed
H1/2	WHITE	(+)/(-) Light Flash Output
H1/3	WHITE/BLUE	No Function
H1/4	BLACK/WHITE	(-) 200mA Domelight Supervision Output
H1/5	GREEN	(-) Door Trigger Input
H1/6	BLUE	(-) Instant Trigger (Hood and Trunk Pin)
H1/7	VIOLET	(+) Door Trigger Input
H1/8	BLACK	(-) Chassis Ground Input
H1/9	YELLOW	(+) Ignition Input
H1/10	BROWN	(+) Siren Output
H1/11	RED	(+) 12V Constant Power Input
H1/12	RED/WHITE	(-) 200mA Auxiliary Channel/Delayed Accessory Output

main harness wiring guide

H1/1 ORANGE (-) 500 mA 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. This wire controls operation of the pre-wired starter kill relay and can be used to control other optional accessories.

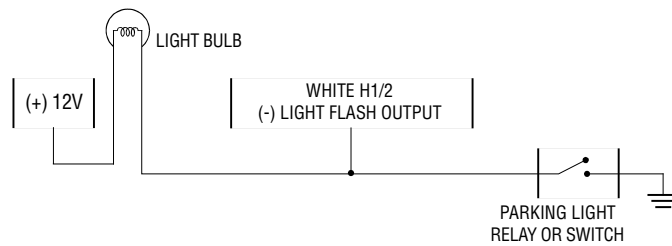
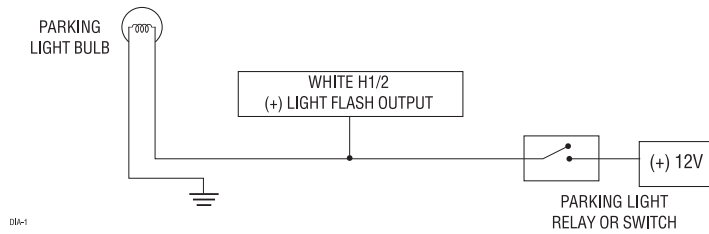
NOTE: If connecting the orange wire to control another module, such as a 529T or 530T window controller, a 1 amp diode (type 1N4004) will be required. Insert the diode as shown below.



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

H1/2 WHITE light flash output: As shipped, this wire should be connected to the (+) parking light wire. It will supply a (+) 10A output. If the light flash polarity fuse jumper inside the unit is moved to the opposite position (see Internal Jumpers), this wire supplies a (-) 10A output. This is suitable for driving (-) parking light wires.

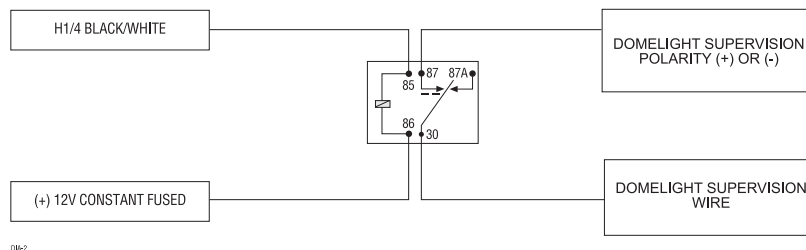
NOTE: A dual diode harness assembly is provided (Viper model only) for European vehicles which have parking light capability for illumination of only the parking lights on the side of the vehicle to the road when parked.



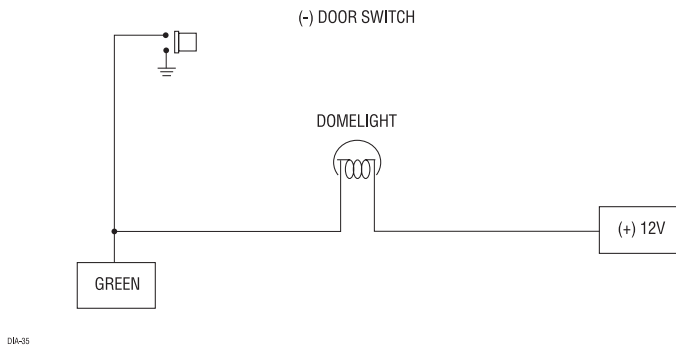
H1/3 WHITE/BLUE no function.

H1/4 BLACK/WHITE (-) 200 mA domelight-supervision output: Connect this wire to the optional domelight supervision relay.

***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.*

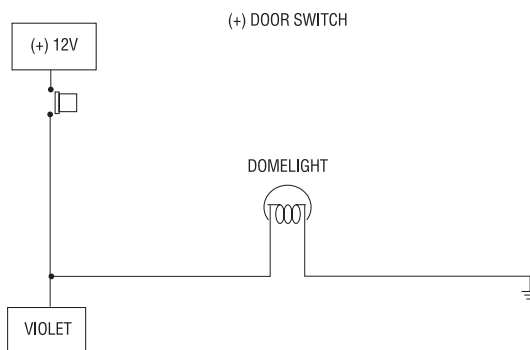


H1/5 GREEN (-) door trigger input: Most vehicles use negative door trigger circuits. Connect the green wire to a wire which shows ground when any door is opened. In vehicles with factory delays on the domelight circuit, there is usually a wire that is unaffected by the delay circuitry.

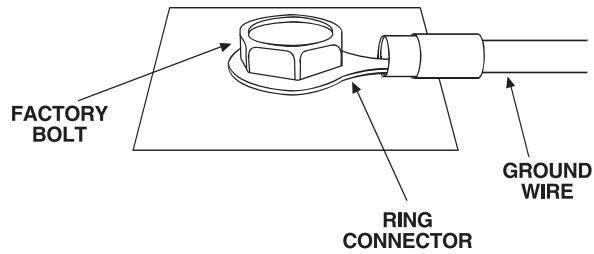


H1/6 BLUE (-) instant trigger: This input will respond to a negative input with an instant trigger. It is ideal for hood and trunk pins and will report on zone one.

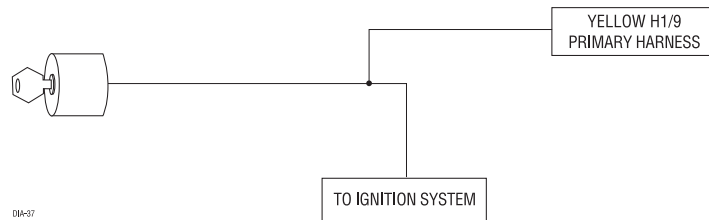
H1/7 VIOLET (+) door trigger input: This wire is used in vehicles that have a positive (+) switched dome light circuit. Connect the violet wire to a wire that shows (+)12V when any door is opened, and ground when the door is closed.



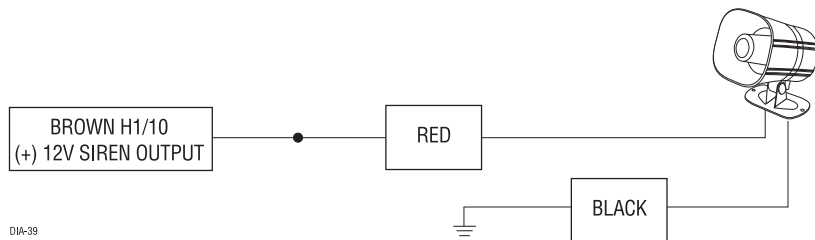
H1/8 BLACK (-) chassis ground connection: Connect this wire to bare metal, preferably with a factory bolt rather than your own screw. Screws tend to either strip or loosen with time. All components, should be grounded to the same point in the vehicle if possible.



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 vehicle 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 connected 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 1.5A fuse in the harness for this purpose. This fuse protects the module itself.

H1/12 RED/WHITE (-) 200mA auxiliary channel/delayed accessory output: If programmed for an auxiliary output, this wire will provide a (-) pulse when the lock button on the factory transmitter is pressed twice within three seconds. This output can be used to control optional accessories. If programmed for delayed accessory output, this wire will provide (-) ground when the ignition is turned off and will continue to output (-) ground until a door is opened then closed. This can be used to energize the accessory circuit in the vehicle to keep the radio and other accessories on after the ignition is turned off.

***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.*

NOTE: Sensors and other triggers can be bypassed if this output is used to open the vehicle trunk while the alarm is armed. See H2/5 Gray zone shunting for programming and connection descriptions.

auxiliary harness wire connection guide

auxiliary harness wiring diagram

H2/1	BROWN	(-) Horn Honk Output
H2/2	GREEN	Arm Input
H2/3	RED	Disarm Defeat Input
H2/4	BLUE	Disarm Input
H2/5	GRAY	(+) Trunk Release/Sensor Shunt Input
H2/6	VIOLET/BLACK	No Function
H2/7	YELLOW/BLACK	Light Flash Monitor Input

auxiliary harness wiring guide

H2/1 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 armed/disarmed and 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 vehicle's horn circuit.

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.

H2/2 GREEN for arm input: Connect this GREEN wire to a wire that changes state when the doors are locked using the factory keyless entry transmitter. This wire can accept a positive (+) or negative (-) input. The vehicle's power door lock motor wire is ideal.

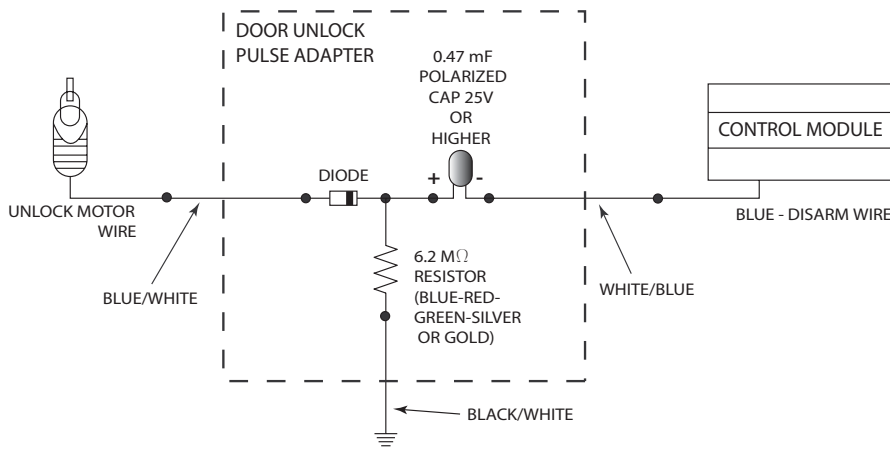
H2/3 RED disarm defeat input: This wire is used to prevent the interior door lock switches from disarming the system. To determine the best location to interface this wire, first test the operation of the remote keyless entry system. When unlocking the doors with the factory remote transmitter, does the driver's door unlock first? Most

vehicles operate this way. If this is the case connect the RED wire to the passenger unlock motor wire. When testing this wire be sure that it shows 12V (+) ONLY when the unlock button on the factory transmitter is pressed the second time to unlock the passenger doors. If the factory keyless entry system unlocks all of the doors at the same time, it is recommended that the H2/7 YELLOW/BLACK wire be used for disarm defeat input.

NOTE: The H2/3 wire connection is not required if using H2/7 YELLOW/BLACK as a disarm defeat wire.

H2/4 BLUE disarm input: Connect the BLUE wire to a wire that changes state when the doors are unlocked using the factory keyless entry transmitter. If the factory transmitter unlocks the driver's door first, the BLUE wire must be connected to the wire that changes state when the driver's door is unlocked by itself. In this case, find the driver's door unlock motor wire. In most vehicle's this wire can be found in the driver's kick panel.

NOTE: Some vehicles (some models of the Honda, GM and Ford) have long door lock pulses. These long pulses may interfere with the disarm function of this system when unlocking all doors using the factory OEM remote. Use the supplied door unlock pulse adapter for these vehicles. Refer to the diagram below.



H2/5 GRAY trunk release/sensor shunt input: This input is used to bypass the sensor inputs when the trunk is opened using the factory keyless entry system or trunk release relay while armed. When the system receives a (+) input on this wire, zones 1, 2 and 4 are bypassed for 3-seconds. If during that 3-seconds, ground is applied to the H1/6

BLUE wire then the alarm zones are bypassed (See Feature menu 1/8) and will remain bypassed until the ground input is removed. This means that when the trunk is open with the factory transmitter the only triggers that remain active while the trunk is open are the doors and ignition. 3-seconds after the trunk is closed the bypassed zones again become active.

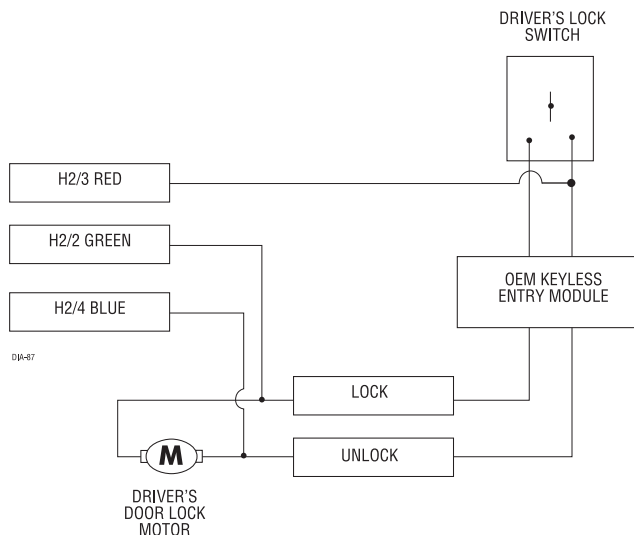
H2/6 VIOLET/BLACK no function.

H2/7 YELLOW/BLACK light flash monitor input: This input monitors the factory system light flash output and can be used as a disarm defeat wire. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc., depending on the vehicle type and manufacturer. This wire can accept a (+) positive or (-) negative input.

keyless entry systems—three types

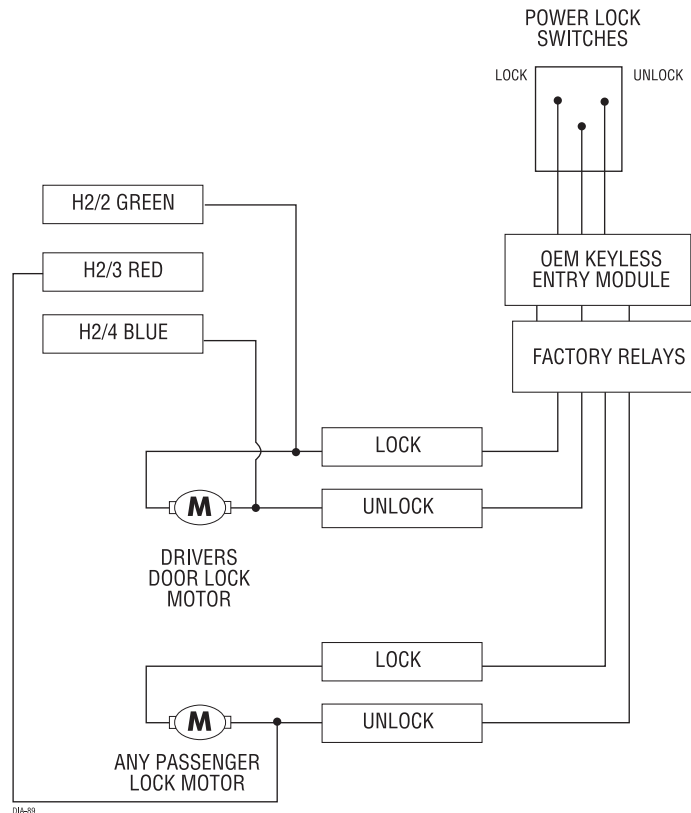
There are three main types of keyless entry systems. Systems that unlock the driver's door first and have internal relays, systems that unlock the driver's door first but have external relays, and systems without driver's priority door unlock.

factory remote—driver's door unlock



external relays—driver's door unlock

This system is used in many four-door GM sedans. To test for this type of system, probe the unlock wire from the interior switch (black or white). Unlock the driver's door, by itself, using the factory remote. If the switch wire shows (+) 12V, then use the following diagram:

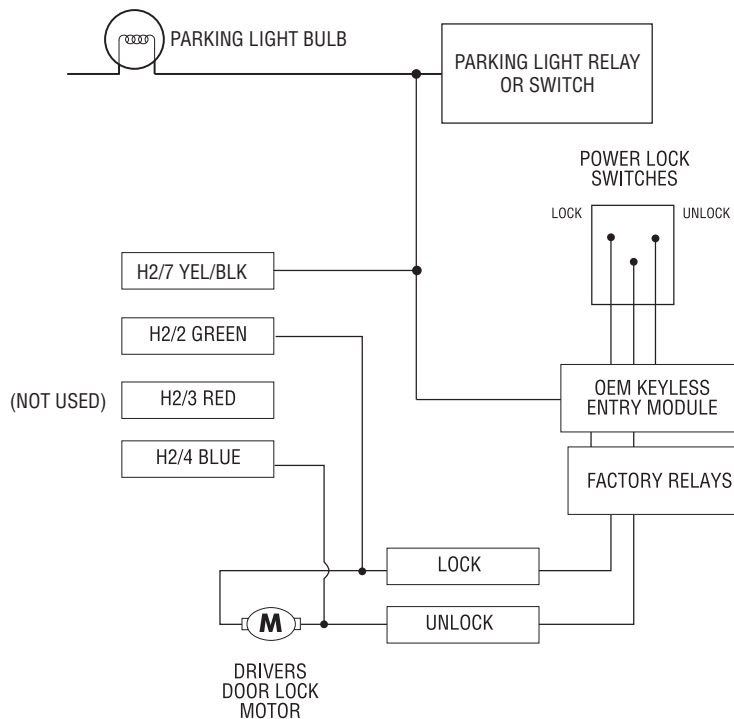


NOTE: It is often easy to access the passenger unlock wire going to the rear door motor on the driver's side.

no priority—driver's door unlock

This type of keyless entry system is common in import vehicles as well as many Jeep vehicles. When unlocking the doors with the transmitter all doors unlock at the same time. It is recommended to use H2/7 YELLOW/BLACK wire for Disarm Defeat instead of the H2/3 RED wire. This input wire monitors the factory system light flash output. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc., depending on the vehicle type and manufacturer. Do NOT connect this wire to the domelight. This wire can accept a (+) positive or (-) negative input.

For installation, please refer to the diagram below.



door lock harness wire connection guide

These door lock outputs are for Passive arming control of the factory door locks. They can also be used to control the door locks with the ignition switch for vehicle that do not have this feature in the factory RKE system.

H3/A	GREEN	(-) Lock, (+) Unlock Output
H3/B		Not Used
H3/C	BLUE	(-) Unlock, (+) Lock Output

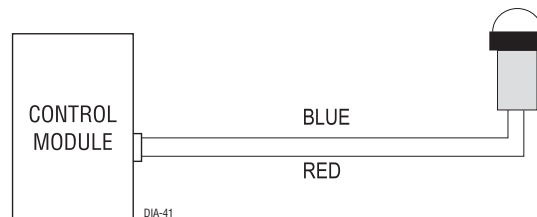
The control module can control 2 common power door lock types without any additional parts. With certain vehicles, or if an actuator is to be installed, either a 451M Door Lock Relay Satellite or two relays will be required. Refer to TechTips document 1041.

plug-in harnesses

super bright LED, 2-pin WHITE plug

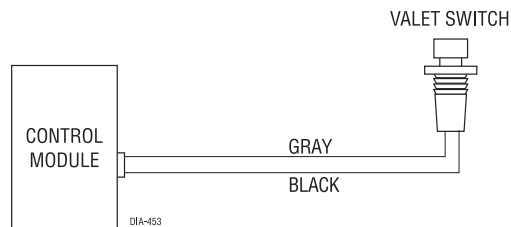
The super bright LED operates at (+) 2 volt DC and plugs into the two-pin WHITE port. Make sure the LED wires are not shorted to ground as the LED will be damaged. Multiple LED's can be used, but they must be wired in series. The LED fits into a 9/32-inch mounting hole. Be sure to check for clearance prior to drilling the mounting hole.

NOTE: Never use a BLUE LED in combination with a RED LED.



valet/program button, 2-pin BLUE plug

The Valet/Program button 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 using the remote transmitter, the button can be well hidden. Consider how the button will be used before choosing a mounting location. Check for rear clearance before drilling a 9/32-inch hole and mounting the button. 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.)



data port—Bitwriter®

The black three-pin port can be used for programming the unit using the Directed Bitwriter, a hand held programming tool. The Bitwriter also allows programming of features that are not available in the feature menus.

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. This port can be used for optional sensors such as: the 506T—glass breakage sensor, or the 504D—field disturbance sensor.

door lock learn routine

Before the unit will respond to the factory remote keyless system, it must learn the polarity of the door lock wires. To learn the lock polarity:

NOTE: It is important that all the INPUT signals to the control module are in the rest status state (no activity) before entering the learn routine.

to learn lock:

NOTE: Make sure the doors, hood and trunk are closed so the factory RKE system operates as it would when the user is using it.

1. **With all the doors, hood and trunk closed:** Press and HOLD the Valet® button.
2. **Within 5-seconds:** Turn the ignition On and then Off (leave for less than 2-seconds in the on position).
3. **Within 5-seconds:** Release the Valet® button.
4. **Within 5-seconds:** Press and release the Valet® button once.
5. **Within 5-seconds:** Press and HOLD the Valet® button. The LED will flash to indicate that the lock routine is ready to be learned.
6. **Press lock button:** Press the lock button on the factory transmitter. Wait for the LED to illuminate to indicate the the lock learn was successful. If the learn was unsuccessful the LED would continue to flash.
7. **Release the Valet® button.** Now advance to the learn Unlock routine.

to learn unlock:

1. **Within 5-seconds** of the learn lock routine (step 7), press and release the Valet® button once.
2. **Within 5-seconds:** Press and HOLD the Valet® button. The LED will flash in groups of two flashes to indicate that the unlock routine is ready to be learned.
3. **Press unlock button:** Press the unlock button on the factory transmitter. The LED will illuminate for a maximum of 5-seconds to indicate that the unlock learn was successful. If the learn was unsuccessful the LED would continue to flash in groups of two.
4. **Release the Valet® button.**

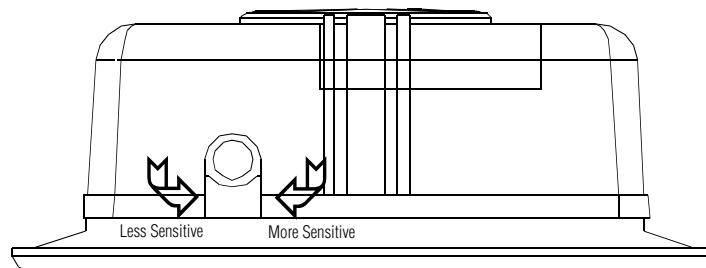
***NOTE:** If the Unlock learn was unsuccessful, the Unlock procedure can be repeated by using the LOCK learn procedure, except that at step 4 press and release the Valet® button TWICE. (The LED will flash in groups of two flashes.)*

to exit the learn routine:

Do one of the following:

- Turn the ignition on.
- No activity for longer than 15 seconds.
- Press the Valet® button too many times.

on-board dual stage shock sensor

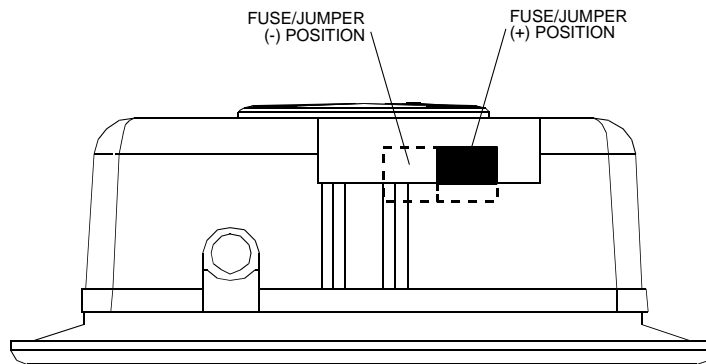


There is a dual-stage shock sensor inside the control module. Adjustments are made via the rotary control as indicated above. Since the shock sensor does not work well when mounted firmly to metal, we recommend against screwing down the control module. The full trigger of the onboard shock sensor reports zone 2. See Table of Zones.

***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.*

internal programming jumper

A 10A fuse is used as both a fuse and a program jumper. This jumper determines the light flash output polarity. 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 enabled for (-) output on the WHITE wire, H1/2. To access the jumper, remove the sliding door from on top of the control module, as shown below.



zones

Zone Number	Trigger Type	Input Description
1	Instant trigger	Hood and/or trunk pin switches.
2	Multiplexed input	Heavy impact from on-board Doubleguard® shock sensor.
3	Two-stage, progresses from warning to full alarm	Door switch circuit.
4	Multiplexed	Optional sensor, Inputs shorter than 0.8 seconds will trigger Warn Away® response, while inputs longer than 0.8 seconds will instantly trigger full alarm.
5	Two-stage (similar to zone 3)	Ignition input.

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

long term event history

The control module will store the last 2 triggers in memory that are not erased when the ignition is turned on. This can be helpful for trouble shooting false alarm reports. To access the event history use the following procedure.

1. Turn the ignition switch off and press and hold the Valet® button.
2. While holding the Valet® button turn the ignition On.
3. Release the Valet® button.
4. Within 5-seconds, press and release the Valet® button.

The LED will flash in groups indicating the last two zones reported triggered. For example, if zone 2 and 3 were the last two zones to be triggered, the LED will flash two times followed by a pause and then flash three times followed by a pause.

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

The Long Term Event History will exit if the ignition is turned off or there is no activity for 60-seconds.

rapid resume logic

The current state of the alarm will be stored in non-volatile memory. If power is lost and then reconnected, the system will recall the stored state from memory (arm, disarm, and Valet® mode).

feature programming

The feature programming routine is used to access and change any of the feature settings in the two menus below. The feature settings can be accessed and changed by using one of the following:

- The Valet® button to enter the feature programming routine.
- Use of the Directed Electronics Bitwriter® is recommended. Expanded programming options are only available when using the Directed Electronics Bitwriter®.

NOTE: If Feature Programming Lockout is set to ON, all features will be locked and can ONLY be accessed by using a Bitwriter®.

to enter feature programming routine

1. Open a door.
2. Turn the ignition on and then off.
3. Close the door.

NOTE: If the domelight is used for the door trigger input, the dome light must be OFF before proceeding to the next step.

4. Within 5-seconds, press and HOLD the Valet® button. After 3-seconds the horn will sound once to indicate entry into the first features menu. To select the second features menu, continue to hold the Valet® button until the horn sounds twice. Once the desired menu is selected, release the Valet® button.
5. Within 5-seconds, press and release the Valet® button the number of times corresponding to the desired feature listed below. Then press the Valet® button one more time and **hold**. The horn will sound the number of times equal to the feature number selected.
6. While holding the Valet® button, assign the selected feature to a factory button by either pressing Lock for 1 short horn honk setting or pressing Unlock for 2 short horn honk setting.

once a feature is programmed

- Another feature(s) can be programmed.
- The other feature menu can be selected.
- The Learn Routine can be exited.

accessing another feature

- Release, then press and release the Valet® button the number of times to advance from the feature just programmed to the next feature desired.
- Press and **hold** the Valet® button once more.
- The horn will chirp to confirm the feature selected.

accessing another menu

- Release, then press and release **hold** the Valet® button.
- After 3-seconds, the unit will advance to the next menu and the horn will sound 2 times to indicate feature menu 2 has been entered.

exiting feature programming

- Open the door.
- Turn the ignition On.
- No activity for 15-seconds.
- Press and release the Valet® button too many times.

Bitwriter® ONLY features

Due to memory limitations for this system, the following features can only be programmed using Directed's Bitwriter® programmer. Factory default settings are shown in **bold**.

B-1	Forced passive arming ON	Forced passive arming OFF
B-2	NPC ON	NPC OFF
B-3	Panic with ignition ON	Panic with ignition OFF
B-4	Dealer security features ON	Dealer security features OFF
B-5	Transmitter programming UNLOCKED	Transmitter programming LOCKED
B-6	Feature programming UNLOCKED	Feature programming LOCKED
B-7	Siren duration — 0 to 180 seconds programmable	

features #1 menu

Factory default settings are shown in **bold**.

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
1-1	Active arming	Passive arming
1-2	Chirps ON	Chirps OFF
1-3	Door Trigger Error Chirp ON	Door Trigger Error Chirp OFF
1-4	Ignition-Controlled Domelight ON	Ignition-Controlled Domelight OFF
1-5	Panic Enabled (OEM upgrade)	Auxiliary Output Enabled (OEM upgrade)
1-6	Auxiliary Output	Delayed Accessory Output
1-7	Delayed Door Trigger	Instant Door Trigger
1-8	Sensor shunt zones 1, 2 & 4	All zones
1-9	Siren Duration–30 seconds	Siren Duration–60 seconds
1-10	Valet® switch input: 1-pulse	Valet® switch input: 2-5 pulses
1-11	Horn pulse honk duration 0.020 seconds (does not affect full trigger pulse duration)	0.030, 0.040, 0.050 seconds

features #2 menu

Factory default settings are shown in **bold**.

NOTE: Feature step number 6 and 7 are not applicable to the this model.

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
2-1	Ignition-Controlled Locking ON	Ignition-Controlled Locking OFF
2-2	Ignition-Controlled UnLocking ON	Ignition-Controlled Unlocking OFF
2-3	Active Locking	Passive Locking
2-4	Door Lock Pulse Duration–0.8 sec.	Door Lock Pulse Duration–3.5 sec.
2-5	Single Unlock Pulse	Double Unlock Pulse
2-6	Channel 3: Validity	Channel 3: Second Unlock
2-7	Code Hopping ON	Code Hopping OFF

features description

bitwriter®

- B-1 FORCED PASSIVE ARMING ON/OFF: These settings control whether the system arms passively in the event a door is left open accidentally by the user. Passive arming must be programmed on for this feature to work.
- Forced passive arming ON (Default): in this setting if passive arming is programmed on and a zone is active (door open) after the ignition is turned off, the system will bypass the zone after 1 hour, then arm and monitor the rest of the security zones.
 - Forced passive arming OFF: in this setting the system will not passive arm if any zone is left open after the ignition is turned off.
- B-2 NUISANCE PREVENTION CIRCUITRY™ (NPC™) ON/OFF: These settings control the number of times a sensor can trigger the system within a given time period.
- NPC ON (Default): in this setting any sensor that triggers more than 3 times within a 1 hour period will be bypassed for a minimum of 1 hour. If within that 1 hour the system sees the same sensor trigger again it will not activate the siren and will restart the 1 hour timer.
 - NPC OFF: in this setting the sensors will trigger repeatedly until the system is disarmed.
- B-3 DEALER SECURITY FEATURES ON/OFF. This feature is not available on this model.
- B-4 TRANSMITTER PROGRAMMING UNLOCKED/LOCKED: This feature is not available on this model.
- B-5 FEATURE PROGRAMMING UNLOCKED/LOCKED:
- Unlocked (default): In this setting the features can be changed using the Valet switch and the vehicle OEM transmitter.
 - Locked: in this setting the features can not be changed using the Valet switch and the vehicle OEM Transmitter. If locked, the unit will emit 1 long chirp when trying to enter feature programming.
- B-6 SIREN DURATION The Bitwriter can adjust the siren duration setting anywhere from 1 second to 180 seconds in length.

menu #1

- 1-1 ACTIVE/PASSIVE ARMING: These settings control the systems mode of arming.
- Active arming mode (default): the system will only arm when the transmitter is used.
 - Passive arming mode: the system will arm automatically 30 seconds after the last door is closed or can be armed anytime using the transmitter.
- 1-2 CHIRPS ON/OFF: This setting controls the systems arming & disarming chirps.
- Chirps ON (default): the system will emit chirps when arming and disarming.
 - Chirps OFF: the system will NOT emit chirps when arming and disarming.
- 1-3 DOOR TRIGGER ERROR CHIRP ON/OFF: These settings control the warning chirp that is generated if the system is armed with the door trigger input active, either due to an open door or factory delayed dome light circuit.
- Error chirp ON (default): The siren will emit a single chirp and bypass the active input when arming the system.
 - Error chirp OFF: The siren will NOT emit a chirp due to an active input when arming and will bypass the active input. This setting is helpful for vehicles with factory delayed dome lights.
- A few seconds after the input stops (delay dome light off, door closed) the system will again monitor the door trigger input.
- 1-4 IGNITION-CONTROLLED DOMELIGHT ON/OFF: These settings control whether or not the dome light illuminates when turning the ignition off.
- IGN dome light ON (default): The dome light will illuminate for 30 seconds each time the ignition is turned off
 - IGN dome light OFF: The dome light will only turn on when disarming the system and turn off when the ignition is turned on.
- 1-5 PANIC/AUXILIARY OUTPUT ENABLED: These settings change the systems ability to activate panic mode or the Channel 2 output.
- Panic mode enabled (Default): in this setting if the system sees the vehicle doors lock 2 times rapidly the Panic mode will be activated for the programmed siren duration.
 - Auxiliary channel output: in this setting the auxiliary channel output described in Feature #6 will be activate as programmed.

- 1-6 AUXILIARY/DELAYED ACCESSORY OUTPUT: These settings change Red/white auxiliary output operation.
- Auxiliary output (default): in this setting if the system sees the vehicle doors lock 2 times rapidly the red/wht auxiliary channel will activate for 800mS. This is useful for adding trunk release option.
 - Delay accessory output: In this setting the red/wht auxiliary channel will turn on a few seconds after the ignition is turned on and remain on until a door is opened/closed, the system is armed or 1 hour lapses.
- 1-7 DELAYED/INSTANT DOOR TRIGGER: These setting control the siren output when the system is set off by the door trigger input.
- Delay ON (default) in this setting if the door is opened while the system is armed the siren will chirp 10 times prior to the constant siren output. This is still an instant trigger and closing the door quickly will not stop the trigger sequence.
 - Delay Off: in this setting if the door is opened while the system is armed the siren will emit a constant siren output immediately
- 1-8 SENSOR SHUNT ZONES 1, 2 AND 4/ALL ZONES: These settings define which zones are bypassed when opening the trunk while the system is armed.
- Sensor zones 1, 2 & 4 (default): in this setting zones 1, 2 & 4 are shunted when the H2/5 gray wire sees a +12V input moments before H1/6 blue sees a ground input.
 - All zones: in this setting ALL zones are shunted when the H2/5 gray wire sees a +12V input moments before H1/6 blue sees a ground input. ALL zones will be bypassed until 5 seconds after the ground ceases on the blue wire.
- 1-9 SIREN DURATION 30/60 SECONDS: These settings change the siren output from 30 seconds to 60 seconds duration when in the panic mode and when the system is fully triggered. The siren duration can also be programmed from 1-180 seconds in 1 second increments using the Bitwriter®.
- 1-10 VALET® PULSE COUNT 1-5 PULSES: These settings change the number of times the valet switch must be pressed to disarm the system without a transmitter.
- 1 pulse (default): setting is 1 pulse.
 - 2-5 pulses: these settings will make it more difficult for a thief to defeat the system.

1-11 HORN PULSE HONK DURATION: These settings adjust the pulse length of the optional horn honk output and allow for connection to more and less efficient vehicle horns without annoyingly loud arm/disarm honks.

- 20mS (default): for more efficient vehicle horns
- 30/40/50mS: for less efficient vehicle horns

menu #2

2-1 IGNITION-CONTROLLED LOCKING ON/OFF: This settings control whether the doors lock automatically after ignition is turned on.

- Lock ON (default): in this setting the doors will lock automatically 3 seconds after the ignition is turned on.

NOTE: This output is bypassed if a door is opened at the time the ignition is turned on.

- Lock Off: The doors will not lock automatically when the ignition is turned on.

2-2 IGNITION-CONTROLLED UNLOCKING ON/OFF: This settings control whether the doors unlock automatically when ignition is turned off.

- Unlock ON (default): in this setting the doors will unlock automatically when the ignition is turned off.
- Unlock OFF: The doors will not unlock automatically when the ignition is turned off.

2-3 ACTIVE/PASSIVE LOCKING: These settings control whether the doors lock when the system arms passively. Passive arming must be programmed on for this feature to work.

- Passive locking OFF (default): in this setting the doors will not lock when the system arms passively. They will only lock when the transmitter is used to arm the system.
- Passive locking ON: in this setting the doors WILL lock when the system arms passively. The doors can also be locked when using the transmitter to arm the system.

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.

- 2-4 DOOR LOCK PULSE DURATION: These settings control the pulse length of the door lock output.
- 0.8seconds (Default): in this setting the output length is 800mS and can control the majority of vehicle door lock systems.
 - 3.5 seconds: in this setting the output length is 3.5 seconds and is usually used in European vehicles with vacuum pump operated door locks.
- 2-5 SINGLE/DOUBLE PULSE UNLOCK: These settings control the number of unlock output pulses.
- Double pulse unlock OFF (default): in this setting the door lock output will pulse 1 times only.
 - Double pulse unlock ON: in this setting the door lock output will pulse 2 times. This is needed in vehicles that have driver door priority unlocking on the first pulse and passenger unlock on the 2nd pulse.
- 2-6 CHANNEL 3 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED/SECOND UNLOCK OUTPUT/DELAYED ACCESSORY OUTPUT: This feature is not available on this model.
- 2-7 CODE HOPPING™ ON/OFF: This feature is not available on this model.

troubleshooting

starter kill does not 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.
- Is the yellow wire connected to "true" ignition? Make sure this wire is connected to a wire that has power in the run and start positions.

the Valet® switch does not work.

- Is it plugged into the correct socket?
- Is the H1/9 YELLOW wire properly connected? See Primary Harness (H1) Wire Connection Guide section of this guide.
- Was the correct hole size drilled (5/16"). See *Valet® button* section of this guide.

status LED does not work.

- Is the LED plugged into the small white port on the side of the control unit?

Passive or Ignition controlled door locks operate backwards.

- This unit has easily-reversed lock/unlock outputs. Recheck Harness 3, (+/-) Door Lock Outputs section to see if you have reversed these.

the siren sounds when the unit enters panic mode, but the confirmation chirps do not work when locking and unlocking.

- Are the confirmation honks turned on in programming? See Operating Settings Learn Routine and Feature Descriptions sections.
- Is the unit in Valet mode.

Door Lock Learn Routine does not learn door locks.

- Check connections to be sure everything is properly connected. Refer to the *Keyless Entry Systems—Three Types* section of this guide for correct wire connections.
- Check the *Door Lock Learn Routine* section of this guide to ensure the correct procedure is being used.

Door Lock Learn Routine does not work, the unit enters the learn routine then chirps horn and exits.

- Some cars do not flash the parking lights with the door open. For these vehicles, to program the unit correctly the door needs to be closed (so that the parking lights will flash with the factory keyless system).

Feature Programming routine does not work, the unit enters the learn routine then chirps and exits.

- Check the Door Input connections. If the dome light is used for door trigger input, then the dome light must turn off in step 3.

wiring quick reference guide

