

VSS-201

REMOTE KEYLESS ENTRY "PLUS" SYSTEM

Vehicles equipped with Retained Accessory Power (RAP) or a negative triggered hatch release require an additional relay. GM P/N 12343297 (not included in kit) for installation of this keyless entry system.

IMPORTANT

Before beginning installation, please observe the following Pre-installation considerations:

- · Read through this manual and familiarize yourself with the installation and system layouts.
- · Remove the courtesy light fuse.
- · Roll down the drivers side window.
- Please use fender aprons and seat covers to protect the vehicle during installation.
- Review the wire color and location chart

TOOLS REQUIRED

- Wire cutters/Strippers
- Solderless terminal crimpers
- 1/4", 7mm & 8mm Nutdrivers
- #1 & #2 Phillips head screwdrivers Power Drill
- 1/8", 1/4" & 5/16" drill bits
- Voltmeter or 12 volt test light
- T-15 Torx driver

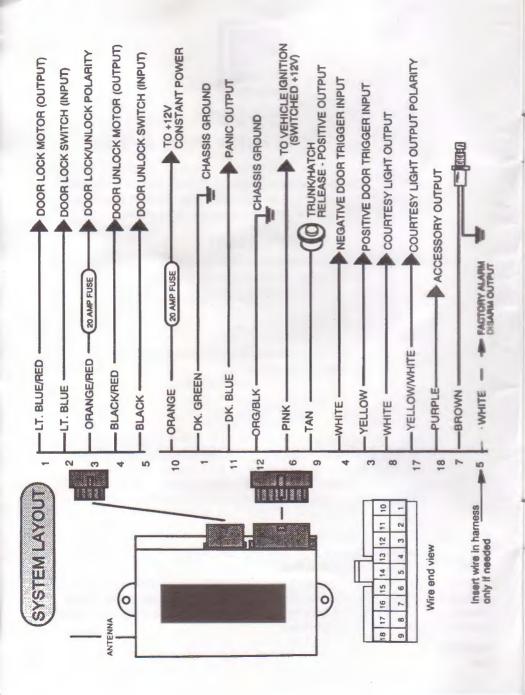


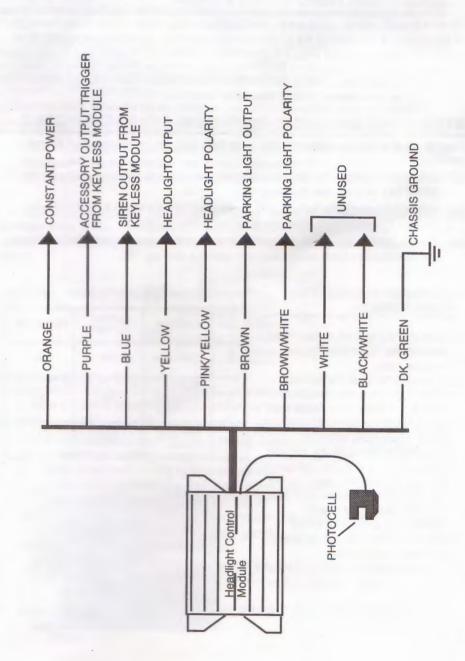
TECHNICAL SERVICE

MONDAY - FRIDAY 8:00 am - 7:00 pm (EST) SATURDAY 10:00 am - 2:00 pm (EST)

Every effort has been made to insure that this installation manual is as complete and accurate as possible. Should you require any additional assistance or experience problems with the operation of this keyless entry system, call the Technical Service Hotline at 1-800-GM-TECH1 (468-3241).

INS0330B 8/96





CONVENTIONS USED IN THIS MANUAL

When a specific wire is called out in an installation step, references to wires that originate at the Keyless Entry Module will be preceded by a number which describes that wires location in the module wire plug. For example, #10 ORANGE is an ORANGE wire located in cavity #10 of the Keyless Entry Modules 18 way connector. Wires originating from the Headlight Control Module will be preceded by HCM (example: HCM BLUE). Wires in the vehicle will be preceded by Vehicle (example: Vehicle LT. BLUE).

STEP 1: PROGRAMMING OPERATING CHARACTERISTICS

The following operating characteristics of the VSS-201 can be programmed at time of install:

- L1 Long lock--Changes the duration of the door lock/unlock pulses.

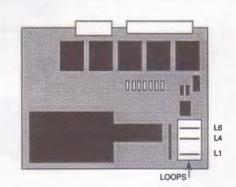
 NOTE: DO NOT cut this loop on any GM vehicle.
- L4 Ignition-triggered door locks--Locks doors when ignition key is turned to the on position. Unlocks doors when key is turned to the off position.
- L5 Two-car mode--allows one transmitter to control two separate cars, both equipped with GM Keyless Entry and/or Security systems (see pg. 16).

TO CHANGE AN OPERATING CHARACTERISTIC:

- Remove the four (4) phillips head screws from the bottom of the module case.
- Separate the case halves and carefully remove the circuit board from the module case. Make sure not to knock the receiver board off of the main circuit board.
- Holding the circuit so the component side is up and the connectors are facing away from you, locate the LOOPS in the lower right hand corner of the circuit board.
- Without disturbing any of the components on the circuit board, cut the desired loop(s).
- 5. Re-assemble module.

The chart below illustrates the possible settings:

LOOP	FUNCTION	FACTORY SETTING	W/LOOP CUT	
1	LONG LOCK	OFF	ON	
4	IGNITION TRIGGERED LOCKS	ON	OFF	
6	TWO-CAR MODE	OFF	ON	



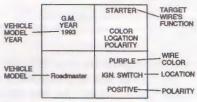
STEP 2: PRE-INSTALLATION

- 1. Plug the 18-way and 5-way wiring harnesses on to the keyless entry module.
- Remove the fuses from the #10 ORANGE (18-way harness) and #3 ORANGE/RED (5-way harness) wires.
- Moving to the vehicle, remove any underdash panels required to allow access the necessary wiring harnesses.
- 4. Find mounting locations for the Keyless Entry and Headlight Control modules.
- 5. Review the system layout on pages 2 & 3. Plan wire routing and connection points.

HINT: When making connections, hold the module in its mounting location, route the module wire along factory harmesses, then cut all wires to length. This will help to create a factory looking, neat installation.

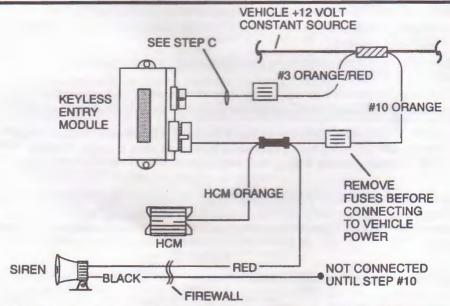
IMPORTANT

The wire color and location chart included with this kit should be used a guide only. Verify all target wires before making any connections. When used properly the wire color and location chart will be a valuable time saving tool. The chart below shows how the chart is set up.



STEP 3: SIREN MOUNTING

- A. Locate a suitable mounting location under the hood to mount the siren.
- B. Observe the following considerations when choosing a mounting location:
 - Keep the siren away from hot or moving engine components such as exhaust manifolds or steering linkages.
 - Keep away from moving body parts, such as flip up headlights.
 - Mount the siren where the "bell" can be mounted facing down.
 - 4. Mount the siren where water splash will be minimal.
- C. Mount the siren using the three (3) supplied 1/4" self tapping screws.
- Route the siren wires through an existing grommet in the firewall, to the area where the Keyless Entry module will be located.
 - HINT: It is suggested that the siren wires be wrapped with electrical tape or bundled in convoluted tubing, to protect the wires and create a factory appearance.
- E. Do not connect the siren wires until instructed to do so in steps 4 & 10.



- A. Using a Yellow butt connector, connect the siren RED wire and HCM ORANGE wire to the #10 ORANGE constant power wire as shown in the diagram. This connection must be made between the module plug and the fuse holder.
- B. Using a test light find a constant +12 volt wire that can supply 20 Amps.
 HINT: One of the ignition switch constant power feed wires (on most GM vehicles this is a RED 12 gauge wire) is the preferred target wire for this connection.
- C. All GM vehicles (except GEO):

Connect the #10 ORANGE and #3 ORANGE/RED wires to the vehicle constant 12 volt power wire.

GEO and others:

Connect the #10 ORANGE wire to the vehicle constant +12 volt power wire.

The BLACK siren wire is not connected until step #10.

STEP 5: SWITCHED POWER

A. Using a test light find a vehicle wire that shows +12 volt when the key is in the "run" and "start" positions.

NOTE: On vehicles equipped with the Retained Accessory Power option, make sure that your target wire is not a RAP wire. To test for a NON-RAP IGNITION wire, CLOSE ALL DOORS and test for a wire that only has power only when the ignition key is in the "run" and "crank" positions. A RAP wire will continue to have +12 volts present after the ignition key is turned to the "off" position (opening any

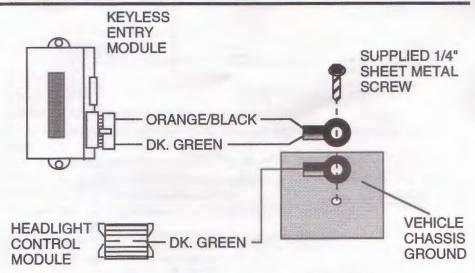
6 door will shut off the Retained Accessory Power).

STEP 5: SWITCHED POWER (CONTINUED)

B. Connect the #6 PINK wire to the vehicle switched power wire.

HINT: The IGN. 1 power feed in the Ignition switch wiring harness is an excellent choice, however it is also recommended that you install a 5A. fuse (not included in kit) on the #6 PINK wire within 6 inches of point where this wire is connected to the vehicle wire. There are also fused IGN. power sources in the fuse box if a fuse is not available.

STEP 6: GROUND



A. Using the supplied ring terminal and 1/4" sheet metal screw, connect the #1 DK. GREEN, #12 ORANGE/BLACK and HCM DK. GREEN wires to a chassis ground.

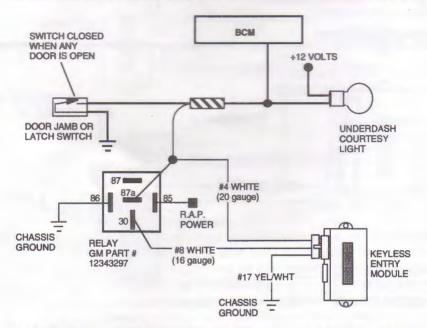
Warning: Underdash metal brackets are not always a good ground source.

HINT: For the best possible ground connection, first clean away any paint, rust or corrosion until you reach a shiny metal surface. Using a ring terminal, attach the ground wires to this ground point with a sheet metal screw. DO NOT OVER-TIGHTEN. Protect this connection point from future corrosion by applying a coating of light grease or rust inhibiting paint.

STEP 7: COURTESY LIGHT CIRCUIT

VEHICLES WITH RETAINED ACCESSORY POWER (RAP)

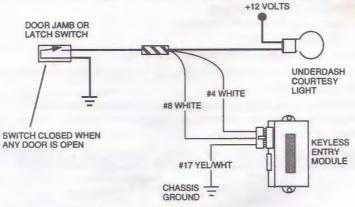
RELAY P/N 12343297 is required for remote controlled illuminated entry hook-up. If illuminated entry is not desired, follow the steps for GM vehicles without RAP and only connect the #4 WHITE wire.



- A. Access the wires for an underdash courtesy light or door jamb switch. For vehicles equipped with the photocell sensor that turns the dome light off in bright sunlight, you must go directly to the drivers side door jamb or latch switch for this connection.
- B. Determine which wire shows GROUND when <u>any door</u> is open. This is the target wire.
- C. Connect the #8 WHITE (16 gauge) wire to terminal #30 on the relay.
- D. Connect terminal #87a from the relay to the target wire.
- E. Connect the #4 WHITE (20 gauge) wire to the wire leading from terminal #87a of the relay as shown in the diagram.
- F. Connect both the #17 YELLOW/WHITE wire and terminal #86 of the relay to chassis ground. If desired these wires can be tied into the HCM DK. GREEN ground wire.
- G. Connect terminal #85 of the relay to a Retained Accessory Power source such as the radio's switched power lead.
- H. The #3 YELLOW wire is unused. Tape this wire off and bundle with harness.

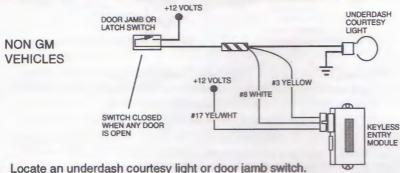
GM VEHICLES W/O RETAINED ACCESSORY POWER (RAP)

(And other vehicles with Negative courtesy light circuits)



- Locate an underdash courtesy light or door jamb switch.
- Determine which wire shows GROUND when any door is open. This is the target wire.
- C. Connect both the #4 WHITE and #8 WHITE wires to the target wire.
- Connect the #17 YELLOW/WHITE wire to chassis ground. If desired this wire can be tied into the HCM DK. GREEN ground wire.
- E. Tape off the #3 YELLOW wire and bundle with the wiring harness.

POSITIVE TRIGGER COURTESY LIGHT CIRCUIT



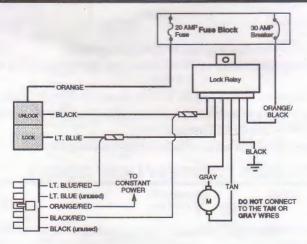
- A.
- Determine which wire shows +12 volts when any door is open. This is the target wire. B.
- Connect the #3 YELLOW and #8 WHITE (16 gauge) wire to the target wire. C.
- Connect the #17 YELLOW/WHITE wire to a fused constant +12 volt source. D.
- E. Tape off the #4 WHITE wire and bundle with the wiring hamess.

STEP 8: DOOR LOCKS

- A. Refer to the Wire Color and Location Chart, supplied with this kit, and look up:
 - 1. The door lock circuit type
 - 2. The door lock/unlock wire colors
 - 3. The wire location.
- B. Locate and access the vehicle door lock wires.
- Refer to the wiring instructions herein for the system type indicated by the Wire Color and Location Chart.

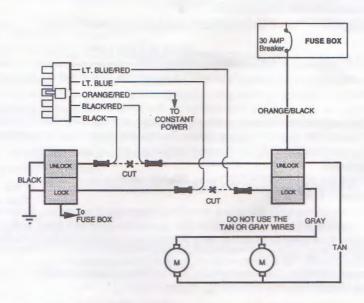
NOTE: If you are working on a non- GM vehicle and are unsure about which type of door lock circuit that vehicle uses, contact the Technical Service department before proceeding any further.

DOOR LOCKS - TYPE #1 (POS. TRIGGER - 3 WIRE SWITCH)



- A. Locate the vehicle's LT. BLUE lock switch wire. Verify you have the correct wire by pressing the lock switch and testing the targeted wire with a test light or voltmeter. The correct wire will show +12 volts when the switch is pressed.
- B. Connect the #1 LT. BLUE/RED (5-way plug) wire to the vehicle lock switch wire.
- C. Locate the vehicle's BLACK unlock switch wire. Verify you have the correct wire by pressing the unlock switch and testing the targeted wire with a test light or voltmeter. The correct wire will show +12 volts when the switch is pressed.
- D. Connect the #4 BLACK/RED (5-way plug) wire to the vehicle unlock switch wire.
- E. The #2 LT. BLUE and #5 BLACK wires are unused. Cut, tape, and bundle them with the rest of the wiring harness.
- F. If working a non-GM vehicle, connect the #3 ORANGE/RED wire to a constant power source.

DOOR LOCKS - TYPE #2 (POS. TRIGGER - 5 WIRE SWITCH)



- A. Unplug the 5-way plug from the module.
- B. Using a 12 volt test light or voltmeter identify the wires that show 12 volts when the driver's side* lock & unlock switches are pressed.

NOTE: Do not use the TAN or GRAY wires.

- C. Cut both the lock and unlock wires in half.
- D. You should now be looking at four (4) wires ends. Using a test light or volt meter find the wire end that shows 12 volts when the driver's side* LOCK switch is pressed. This is the vehicle LOCK SWITCH wire. The other half (or wire end) of that wire is the vehicle LOCK MOTOR wire.
- E. Connect the #2 LT. BLUE (5-way plug) wire to the vehicle LOCK SWITCH wire using a supplied blue butt connector.
- F. Connect the #1 LT. BLUE/RED (5-way plug) wire to the vehicle LOCK MOTOR wire using a supplied blue butt connector.
- G. Again, using a test light or volt meter, find the wire end that shows +12 volts when the driver's side* UNLOCK switch is pressed. This the vehicle UNLOCK SWITCH wire. The remaining wire end is the vehicle UNLOCK MOTOR wire.
- H. Connect the #5 BLACK (5-way plug) wire to the vehicle UNLOCK SWITCH wire with a supplied blue butt connector.
 - * On some vehicles, the master switch is on the passenger side. These vehicles are identified in the Wire Color / Location Chart.

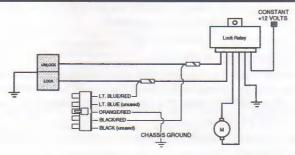
STEP 8: DOOR LOCKS - TYPE #2 (CONTINUED)

- Connect the #4 BLACK/RED (5-way plug) wire to the vehicle UNLOCK MOTOR wire with a supplied blue butt connector.
- J. If working a non-GM vehicle, connect the #3 ORANGE/RED wire to a constant power source.

TYPE #2 DOOR LOCK VERIFICATION

- A. Using a test light or voltmeter (with the 5-way module connector unplugged) preform the following tests:
 - Probe the #2 LT. BLUE wire and press the driver's side* LOCK switch.
 There should be +12 volts present only when the lock switch is pressed.
 - Probe the #5 BLACK wire and press the driver's side* UNLOCK switch.
 There should be +12 volts present only when the unlock switch is
 pressed.
 - Probe the #3 ORANGE/RED wire, this wire should have +12 volts present at all times.
- B. If any of the above tests are failed, there is an improper connection. Return the vehicle wires to their factory condition and repeat the door lock tests and connection procedure. If all tests are passed, plug the 5-way connector back in to the module and proceed with the next step.
 - * On some vehicles, the master switch is on the passenger side. These vehicles are identified in the Wire Color / Location Chart.

DOOR LOCKS - TYPE #3 (NEG. TRIGGER)



- A. Using a 12 volt test light or voltmeter, determine the lock and unlock switch wires.
 - Using a 12 volt test light, connect the clip lead to +12 volts and probe the target wires. The correct wire will cause the test light to light when the switch is pressed.
 - 2. Using a voltmeter set to +DC VOLTS, connect the black lead to chassis ground and the red lead to the target wire. The meter will show +12 volts at rest and 0 volts when the switch is pressed.

- B. Connect the #1 LT. BLUE/RED (5-way plug) wire to the vehicle lock switch wire.
- C. Connect the #4 BLACK/RED (5-way plug) wire to the vehicle unlock switch wire.
- D. Connect the #3 ORANGE/RED (5-way plug) wire to CHASSIS GROUND.
- E. The #2 LT. BLUE and #5 BLACK wires are unused. Cut, tape, and bundle them with the rest of the wiring harness.

STEP 9: TRUNK/HATCH RELEASE

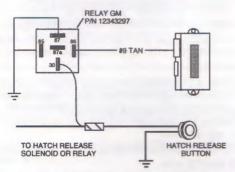
- A. Refer to the wire color and location chart for the trunk release system polarity.
- B. Follow the steps for the system type indicated by the wire color and location chart.

POSITIVE POLARITY:

- A. Locate and access the trunk/hatch release switch wiring.
- B. Using a +12 volt test light or voltmeter determine which wire shows +12 volts only when the switch is pressed.
- C. Connect the #9 TAN wire to the vehicle trunk/hatch release wire identified in the previous step.

NEGATIVE POLARITY:

Vehicles with negative polarity hatch release systems require an additional relay GM P/N 12343297 to hook-up the hatch release option.



- A. Locate and access the trunk/hatch release switch wiring.
- B. Using a voltmeter, determine which switch wire shows ground only when the switch is pressed. With the voltmeter in the +DC VOLTS setting connect the black lead to chassis ground and probe the target wire with the red lead. The correct wire will show +12 volts at rest and 0 volts when the switch is pressed.
- C. Connect the #9 TAN wire to terminal #86 on the relay.
- D. Connect both terminals #85 & #87 to chassis ground.
- E. Connect terminal #30 to the vehicle hatch release wire.

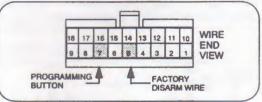
STEP 10: SIREN OUTPUT

A. Connect the BLACK siren wire and the HCM BLUE wire to the #11 DK. BLUE wire with a blue butt connector as shown.



STEP 11: PROGRAMMING BUTTON

- A. Find a hidden location under the dash that is accessible while sitting in the driver's seat, but is not plainly visible. Make sure there is at least 1" between the back of the selected mounting surface and any other vehicle components.
- B. Drill a 9/32" mounting hole.
- Mount the override button, making sure that the button guard extends past the end of the override button.
- D. Connect the BROWN wire terminated with the ring terminal to a chassis ground.
- E. Insert the end of remaining BROWN wire into cavity #7 of the 18 way module connector.



STEP 12: FACTORY ALARM DISARM (OPTIONAL)

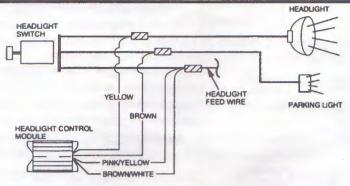
This step is for vehicles equipped with factory installed alarm systems only (not all vehicles equipped with factory keyless entry will have a factory alarm). If this does not apply to your application skip this step.

- A. Insert the supplied WHITE wire into cavity #5 of the 18 way module plug. This will be referred to as the #5 WHITE wire.
- B. Locate the wire in the driver's side kick panel area that shows a ground when the driver's door is unlocked with the key. This wire is usually LT. GREEN on GM vehicles. This is the factory alarm disarm wire.
- C. Connect the #5 WHITE wire to the vehicle's factory alarm disarm wire.

STEP 13: ACCESSORY OUTPUT

 Connect the #18 PURPLE wire to the HCM PURPLE wire using one of the supplied blue butt connectors.

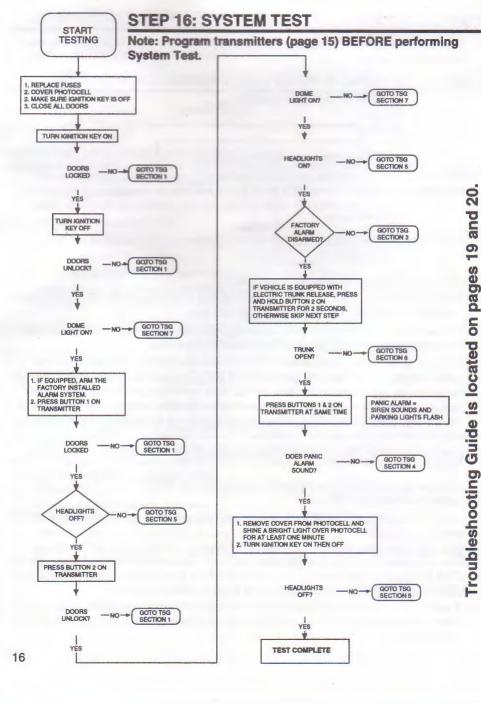
STEP 14: PARKING & HEAD LIGHT CONNECTIONS



- A. Locate and access the headlight switch wiring.
- B. Using a 12-volt test light or voltmeter, find the wire to the headlight switch that shows +12 volts at all times. This is the headlight feed wire.
- C. Connect the HCM BROWN/WHITE (parking light polarity) and HCM PINK/YELLOW (headlight polarity) wires to the verified headlight feed wire.
- D. Using a 12-volt test light or voltmeter find the wire that shows +12 volts when the parking lights are on. With the parking lights still on, rotate the dimmer switch through its full travel. The correct wire will have +12 volts present regardless of the dimmer switch position. If the target wire does not have +12 volts through the entire travel of the dimmer switch, DO NOT use that wire. Instead, look for a different wire that has +12 volts at all dimmer switch settings.
- E. Connect the HCM BROWN wire to the wire that shows +12 volts when the parking lights are on.
- F. Using a 12-volt test light or voltmeter, identify the wire that shows +12 volts ONLY when the headlights are on.
- G. Connect the HCM YELLOW wire to the wire that shows +12 volts when the headlights are on.

STEP 15: MOUNTING THE PHOTOCELL

- A. Find a location in the lower right-hand comer of the windshield to mount the photocell. DO NOT mount the photocell behind any window tinting or stickers.
- B. Peel back the two-way tape and adhere the photocell to the windshield. Make sure the windshield is at room temperature before attempting to adhere the photocell to the windshield.



STEP 17: PROGRAMMING ADDITIONAL TRANSMITTERS

GM keyless entry systems are capable of learning four (4) different transmitters.

- A. Open the driver's door.
- B. Turn the ignition key to the ON position.
- C. Press and hold the programming button in.
- D. In 15 seconds, the door locks will cycle three (3) times to indicate unit has entered learn mode. Continue holding the programming button in. Releasing the button will cause the unit to exit the transmitter learn mode.
- E. Press the LOCK button on the new transmitter.
- F. When the unit receives the transmitted signal, the doors locks will cycle one (1) time to indicate the new transmitter has been learned.
- G. Any other transmitters (up to a total of four) can also be programmed at this time.
- H. Release the programming button and turn the ignition key off to exit learn mode.

SPECIAL INSTRUCTIONS FOR TWO-CAR USE

When two-car mode is enabled, the arm, disarm, and trunk release functions are controlled by one button on the remote control transmitter. To program which transmitter button controls this car:

- A. Follow the instructions for programming additional transmitters.
- B. At STEP E, press the button on the transmitter that you want to operate this system.

SYSTEM OPERATION IN TWO-CAR MODE:

LOCK- Press and release the transmitter button that is programmed to the system.

UNLOCK- Press and release the transmitter button that is programmed to the system.

TRUNK RELEASE - Press and hold (for 1.5 seconds) the transmitter button that is programmed to the system.

PANIC MODE (both cars) - Press BOTH transmitter buttons at the same time.

STEP 18: MOUNTING CONTROL MODULES

- A. After all System testing is complete: Secure the Keyless and Headlight Control modules using the supplied 14" tie wraps. Make sure to mount the modules in a fashion so they do not interfere with the operation of any other electrical components or moving parts.
- B. Where possible allow the antenna to hang freely from the module. Do not coil the antenna wire or secure it to another wiring harness. If the antenna needs to be secured to avoid becoming tangled in a moving component, make sure that the antenna does not run parallel to other wiring harnesses.
- C. After all components are mounted, exercise all moving parts (i.e. steering wheel, brake and gas pedals) to insure that no parts of the keyless entry system interfere with the safe operation of the vehicle.

STEP 19: FINISHING THE INSTALLATION

A. Reassemble all underdash and related panels removed during the installation of the VSS-201 system.

INSTALLATION IS NOW COMPLETE

This device complies with FCC rules part 15. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

SECTION 1: DO	OR LOCKS-LOCK	
Only drivers door locks	Door lock/unlock connections are made at a point after the RH door lock switch	Move the connection point to a point between the LH and RH door lock switches
No auto-locks	Loop 4 cut	If no Auto-lock function is desired skip to remote functions tests, otherwise reconnect loop 4
	Module not seeing ignition switched power	Connect #6 PINK wire to an IGN. power source.
	#3 YELLOW wire connected to constant power	#3 YELLOW is unused on all GM vehicles, disconnect and tape off
No response from system	No power on #3 ORANGE/RED wire	Connect the # ORANGE/RED wire to a constant 12 volt supply
Door lock polarity fuse blown	Vehicle "switch" and "motor" wires are reversed.	Switch #2 LT. BLUE and #1 LT. BLUE/RED module wires
	Tied into vehicle TAN or GRAY wires.	Move connections to the proper location. Refer to installation step 8
SECTION 1: DO	OR UNLOCK	
Polarity fuse blown	Unlock output tied into relay ground wire	Move to unlock trigger on relay
	Vehicle "switch" and "motor" wires are reversed.	Switch #5 BLACK and #4 BLACK/RED module wires
	Tied into vehicle TAN or GRAY wires	Move connections to the proper location. Refer to installation step 8
No Auto Unlock	#6 PINK wire connected to a RAP power	Move to another Ignition power wire
SECTION 2: UN	T DEAD?	
No response	Module does not have power, ground or switched +12 volts	Check all power and ground connections (installation steps 4-6), make corrections as necessary
Unit not responding to the transmitter	Check transmitter battery voltage	If battery voltage is below 10 volts, replace battery
	Teach transmitter code to unit	Follow instructions - step #15
	Out of transmitter range	Move closer to vehicle
	Receiver not plugged onto circuit board	Open module case and plug receiver onto circuit board properly

SECTION 3: FACTORY AL	ARM DISARM	
Doesn't disarm	Tied into wrong vehicle wire	Refer to installation step 12
SECTION 4: PANIC ALARM		
No panic alarm operation	#11 siren output wire not connected	Connect #11 wire to siren BLACK and HCM BLUE
No Flashing lights	HCM BROWN connected to wrong vehicle wire	Identify correct parking light wire and re-do connection
	HCM BROWN/WHITE not connected to power	Connect BROWN/WHITE to constant +12 volts
No siren output	Siren RED wire not connected to power	Connect Siren RED wire to constant +12 volts
SECTION 5: HEADLIGHTS		
Headlight don't turn on	HCM YELLOW connected to wrong vehicle wire	Identify correct headlight wire and re-do connection
	HCM PINK/YELLOW not connected to power	Connect HCM PINK/YELLOW to +12 volts
Headlights don't turn off	Photocell is blocked	Move photocell to a location where it is exposed to direct sunlight
SECTION 6: TRUNK RELEA	ASE	
Positive trigger systems inop	Connection must be made after the neutral safety relay	Move connection point as necessary
	Tied into wrong wire at switch	Repeat step #9
Fuse on #10 ORANGE wire is blown	#9 TAN wire tied into a wire that is ground at all times	Identify correct trunk release wire (refer to installation step #9)
Negative trigger systems inop	Relay not grounded	Ground relay terminals #86 & #87
SECTION 7: DOME LIGHT	ILLUMINATION	
Dome light does turn on	#17 YELLOW/WHITE wire not grounded (GM vehicles)	Ground #17 YELLOW/WHITE wire to a good chassis ground
Vehicle courtesy light fuse blown	#8 WHITE wire connected to wrong wire in vehicle	Disconnect #8 WHITE wire, replace dome light fuse and redo installation step #7