



Model AS9233ST
Installation Manual

SELECTABLE FEATURES

The selectable features can be set manually as explained below, or with the RF feature programmer. To set features using the RF programmer, follow the instructions packaged with the programmer. Factory default settings are indicated by bold text.

Note : The method of manual override can either be selected to operate from the valet switch or operate as custom code. Be certain to place a check mark indicating the method used in the box located on the last page of the owner's manual.
NOTE: Keyless Entry Models with no horn output will Flash the Parking Lights instead of chirp where chirp is indicated. Also, No data will be indicated if a feature is not available for a particular model. The unit will enter the feature but no selection will be available.

RF Programmable Feature Bank 1 Is For Transmitter Programming See Transmitter Programming Guide.

RF Programmable Features Bank 2 Is Alarm Selectable Features:

<u>Feature Selection</u>	<u>1 Chirp</u>	<u>2 Chirps</u>	<u>3 Chirps</u>	<u>4 Chirps</u>	<u>5 Chirps</u>	<u>6 Chirps</u>
<u>1st Door/L/UL</u>	1 Sec.	3.5 Sec.	1 Sec L, Dbl. U/L	Dbl L, 1 Sec UL	Dbl L, Dbl UL	1 S I/350mS ul
<u>2nd Accy Lock</u>	Auto Lock On	Auto Lock Off				
<u>3rd Accy. UL</u>	Auto UL On	Auto UL Off				
<u>4th Headlights</u>	Not Available					
<u>5th Passive Locks</u>	Passive	Active				
<u>9th Pass/Act Arm</u>	Passive Arm	Active Arm				
<u>7th Siren/Horn</u>	Siren/Horn	Siren Only	Horn Only			
<u>8th Horn Chirp</u>	10mS	16mS	30mS	40mS	50mS	
<u>9th O/R Method</u>	Custom Code	Valet				
<u>10th 2 Step U/L</u>	NA					
<u>11th Chp Del Tx</u>	NA					
<u>12th Volts/HdWire</u>	N/A					
<u>13th Trigger Circuits</u>	N/A					
<u>14th L/UL Poll</u>	120mS	80mS				
<u>15th Aux Channel 5 Select</u>	NA					
<u>16th Aux Channel 6 Select</u>	NA					
<u>17th Aux Channel 7 Select</u>	NA					
<u>18th Trigger Delay</u>	Instant	Delayed				

When using the RF programmer, enter the program mode as follows:

- Turn the ignition on.
- Press and release valet switch 3 times;
- turn ignition off then on.
- Press and hold valet switch for 5 seconds.
- Siren chirps 2 times indicating access to RF feature program mode.

Note: Where indicated, press transmitter lock button to change, the Factory Transmitter Lock button, Door Lock Switch, or the supplied transmitter can be used.

To program these selectable features;

	<u>Action</u>	<u>System Response</u>
	Turn ignition on Press and release the valet switch 3 times Within 3 seconds, turn ignition Off Then On This Action Accesses Feature Bank 2 Alarm	No response 1 Chirp - LED 1 flash Short chirp, then long chirp Selectable Features
<u>First</u>	Press and release the valet switch 1 time Press transmitter lock button to change Press transmitter lock button to change Press transmitter lock button to change Press transmitter lock button to change Press transmitter lock button to change	1 chirp = 1 second door lock & unlock 2 chirps = 3.5 second door lock & Unlock 3 chirps = 1 sec. lock, dbl 1 sec. unlock 4 chirps = dbl 1 sec lock, 1 sec unlock 5 chirps = dbl 1 sec lock, dbl 1 sec unlock 6 chirps = 350mS unlock. 1 sec lock
<u>Second</u>	Press and release the valet switch Press transmitter lock button to change	2 chirps = auto locks off 1 chirp = auto locks on
<u>Third</u>	Press and release the valet switch Press transmitter lock button to change Press transmitter lock button to change	3 chirps = auto unlock off 1 chirp = auto unlock drivers door only 2 chirps = auto unlock all doors
<u>Fourth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Fifth</u>	Press and release the valet switch Press transmitter lock button to change	2 chirps = active locks 1 chirp = passive locks
<u>Sixth</u>	Press and release the valet switch Press transmitter lock button to change	2 chirps = active arming 1 chirp = passive arming
<u>Seventh</u>	Press and release the valet switch Press transmitter lock button to change Press transmitter lock button to change	1 chirp = siren and horn output 2 chirps = siren output only 3 chirps = horn output only
<u>Eighth</u>	Press and release the valet switch Press transmitter lock button to change Press transmitter lock button to change Press transmitter lock button to change Press transmitter lock button to change	2 chirps = horn chirp output 16mS 3 chirps = horn chirp output 30mS 4 chirps = horn chirp output 40mS 5 chirps = horn chirp output 50mS 1 chirp = horn chirp output 10 mS
<u>Ninth</u>	Press and release the valet switch Press transmitter lock button to change	2 chirps = valet switch override operation 1 chirp = custom code override operation
<u>Tenth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Eleventh</u>	Press and release the valet switch	Non Functional On This Unit
<u>Twelfth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Thirteenth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Fourteenth</u>	Press and release the valet switch Press transmitter lock button to change	1 chirp = 120mS Polling 2 chirps = 80mS Polling
<u>Fifteenth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Sixteenth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Seventeenth</u>	Press and release the valet switch	Non Functional On This Unit
<u>Eighteenth</u>	Press and release the valet switch Press transmitter lock button to change	1 chirp = Trigger Instant 2 chirps = Trigger Delayed
	Press and release the valet switch or turn the ignition off to:	Exit Programming Mode
	Turn ignition switch off then on to advance to feature Bank 3:	

To exit program mode, turn ignition off, or press and release valet switch.

RF Programmable Features Bank 3 Is Remote Start Selectable Features:

<u>Feature Selection</u>	<u>1 Chirp</u>	<u>2 Chirps</u>	<u>3 Chirps</u>	<u>4 Chirps</u>	<u>5 Chirps</u>	<u>6 Chirps</u>
1st Defrost Output	NA					
2nd RF Start Chirp	Off	On	On & Carfinder			
3rd Run Time	5 Mins	10 Mins	15 Mins	20 Mins	45 Mins	60 Mins
4th Parking Lights	On Steady	Flashing				
5th Input Check	Voltage	Tach	DBI Tach	Hybrid		
6th Voltage Level	>0.5V B4 Start	< 0.5V B4 Start				
7th Ign. 2 Select	Off During Crank	On During Crank	Same As Accy.			
8th Ign. 3 Select	NA					
9th Diagnostics	Off	On				
10th Crank Time	0.8 Sec	1.0 Sec	1.5 Sec	2.0 Sec		
11th Gas/Diesel	Gas	Diesel 10	Diesel 15	Diesel 20		
12th Transponder O/P	While R/S On	During Start	Until Ign. Off			
13th Temp Start	NA					
14th Crank Averaging	Averaging	Preset Time				

Note: When averaging, the engine must be started 4 times with the key to be effective.

15th R/S Shock **Shunt Until Clear** Shunt R/S Cycle Shunt From Tx

16th Turbo Select NA

17th Black/Blue (Aux O/P) **Single Pulse** As Feat #1 Bank 2

18th 1 or 2 Pulse to Start **2 Pulse** 1 Pulse

When using the RF programmer, enter the program mode as follows:

Turn the ignition on.

Press and release valet switch 3 times.

Turn ignition off then on.

Press and hold valet switch for 5 seconds.

The siren chirps 2 times indicating access to RF feature program mode.

When using the RF programmer, exit the program mode as follows:

To exit program mode, turn ignition off, or press and release valet switch.

<u>Action</u>	<u>System Response</u>
	Turn ignition on Press and release the valet switch 3 times Within 3 seconds, turn ignition Off, On, Off, On This Action Accesses Feature Bank 3 Remote Start Selectable Features
	No response 1 Chirp - LED 1 flash Short chirp, then 2 long chirps
<u>First</u>	Press the valet switch one time or Press and release the valet switch Press transmitter Lock button to change
<u>Second</u>	Press and release the valet switch Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Third</u>	Press and release the valet switch Press transmitter Lock button to change Press transmitter Lock button to change Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Fourth</u>	Press and release the valet switch Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Fifth</u>	Press and release the valet switch Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Sixth</u>	Press and release the valet switch Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Seventh</u>	Press and release the valet switch Press transmitter Lock button to change Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Eighth</u>	Press and release the valet switch or Press and release the valet switch Press transmitter Lock button to change
<u>Ninth</u>	Press and release the valet switch Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Tenth</u>	Press and release the valet switch Press transmitter Lock button to change Press transmitter Lock button to change Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Eleventh</u>	Press and release the valet switch Press transmitter Lock button to change Press transmitter Lock button to change Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Twelfth</u>	Press and release the valet switch Press transmitter Lock button to change Press transmitter Lock button to change or Press and release the valet switch Press transmitter Lock button to change
<u>Thirteenth</u>	Press and release the valet switch or Press and release the valet switch Press transmitter Lock button to change
<u>Fourteenth</u>	Press and release the valet switch Press transmitter Lock button to change
<u>Fifteenth</u>	Press and release the valet switch or Press and release the valet switch Press transmitter Lock button to change
<u>Sixteenth</u>	Press and release the valet switch or Press and release the valet switch Press transmitter Lock button to change
<u>Seventeenth</u>	Press and release the valet switch Press transmitter Lock button to change Press and release the valet switch or Press and release the valet switch Press transmitter Lock button to change
<u>Eighteenth</u>	Press and release the valet switch Press transmitter Lock button to change or Turn the ignition off to:
	Non Functional On This Unit 2 chirps = RF start chirp on 1 chirp = RF start chirp off 2 chirps = run time set for 10 mins 3 chirps = run time set fro 15 mins 4 chirps = run time set for 20 mins 1 chirp = run time set for 5 mins 1 chirp = parking lights on steady w/RS active 2 chirps = parking lights flashing w/RS active 2 chirps = tachometer input checking 1 chirp = voltage sense input checking 1 chirp = greater than 0.5 V check before start 2 chirps = less than 0.5 V check before start 2 chirps = ign 2 on during crank 3 chirps = ign 2 same as accessory 1 chirp = ign 2 off during crank Non Functional On This Unit 1 chirp = diagnostics off 2 chirps = diagnostics on 2 chirps = crank time 1.0 sec 3 chirps = crank time 1.5 sec 4 chirps = crank time 2.0 sec 1 chirp = crank time 0.8 sec 1 chirp = unit set for gasoline engine 2 chirps = unit set for diesel engine 10 sec delay 3 chirps = unit set for diesel engine 15 sec delay 4 chirps = unit set for diesel engine 20 sec delay 1 chirp = transponder output while R/S active 2 chirps = transponder output during start only 3 chirps = transponder output until ignition turned off Non Functional On This Unit 1 chirp = crank averaging w/voltage input checking 2 chirps = preset crank time w/voltage input check Non Functional On This Unit Non Functional On This Unit 1 chirp = aux o/p Black/Blue single pulse 2 chirps = aux o/p Black/Blue as alarm feature #1 1 chirp = Double pulse required on Blue/Black Start Input 2 chirps = single pulse required on Blue/Black Start Input Exit Programming Mode

Note: Once you enter the feature programming mode, do not allow more than 15 seconds to pass between steps or the programming will be terminated.

This Remote Start/Alarm System is designed to be used with **Automatic Transmission Vehicles Only!** The unit provides a selectable ignition control that allows a number of selectable timed outputs for glow plug pre-heat which may be required for certain diesel vehicles, (see selectable feature #9). If the diesel engine has a instant fire, (no glow plug pre-heat system), feature #9 should remain in the default Gasoline mode setting. For diesel applications, consult your dealer for the type of ignition system used in your particular vehicle. Regardless of the vehicle, Gasoline or Diesel, for every installation, the vehicle **MUST HAVE a Tach Signal Input, and an Automatic Transmission.**

INSTALLATION OF THE MAJOR COMPONENTS:

CONTROL MODULE:

Select a mounting location inside the passenger compartment (up behind the dashboard). The mounting location selected must be within 24" of the ignition switch wiring harness to allow connection of the 6 pin main wiring harness.

Be certain that the chosen location will not interfere with proper operation of the vehicle. Avoid mounting the module to or routing the wiring around the steering shaft/column, as the module or wiring may wrap around or block the steering wheel preventing proper control of the vehicle. Secure the module in the chosen location using cable ties or screws as necessary.

Do not mount the module in the engine compartment, as it is not waterproof.

OPTIONAL SIREN:

Select a location in the engine compartment that is not accessible from below the vehicle. The selected location must be clear of hot or moving parts within the engine compartment. The siren must be pointed downward to prevent water retention and the flared end must be pointed away from and out of the engine compartment for maximum sound distribution. Before securing the siren, check behind your chosen location to assure that the mounting screws will not penetrate any factory wiring or fluid lines. Secure the siren mounting bracket using #8 self tapping screws or by first using the mounting bracket as a template, scribe or mark the mounting holes. Drill the marked holes using a 1/8" drill bit, then mount the siren using #8 sheet metal screws.

HOOD AND OPTIONAL TRUNK PIN SWITCHES:

The pin switch included in this package is intended for protecting the hood area of the vehicle. In all cases, the switch must be mounted to a grounded metal surface. When the pin switch is activated, (hood open), it will supply a ground to the input wire activating the alarm. In addition, the hood switch is required for the safety shut down of the remote start unit. If the vehicle is being worked on, this hood switch prevents the remote start activation even if the RF command to start is issued. **This switch must be installed in all applications.**

Failure to do so may result in personal injury or property damage. Mount the switch in the hood locations away from water drain paths. If necessary, the use of an L bracket may be used to move the switch away from rain gutters or allow mounting to the firewall behind the hood seal. In both cases the switch must be set up to allow the hood to depress the switch at least 1/4 inch when the hood closed, and fully extended when the hood is opened. For direct mounting, a 1/4 inch hole must be drilled. Carefully check behind the chosen location to insure the drill will not penetrate any existing factory wiring or fluid lines.

Drill a 1/4" hole in the desired location and thread the pin switch into it using a 7/16" nut driver or deep well socket. If using the mounting bracket, first secure the bracket to the desired location and secure the pin switch in the pre-threaded mounting bracket hole.

For Trunk areas a similar installation method may be used and an optional switch may be purchased from the Audiovox Accessory Catalog.

THE RECEIVER/ANTENNA/PUSHBUTTON/LED ASSEMBLY:

The Superheterodyne Receiver Antenna Assembly provided with this unit allows routing from below the dash board for maximum operating range. Choose a location above the belt line (dashboard) of the vehicle for best reception. Special considerations must be made for windshield glass as some newer vehicles utilize a metallic shielded window glass that will inhibit or restrict RF reception. In these vehicles, route the antenna toward a rear window location for best reception. Secure the antenna with double stick tape provided. After securing the antenna with tape, we advise also securing a section of the antenna cable to a fixed support. This will prevent the antenna from dropping down in case the double stick tape is exposed to extreme heat which may loosen its gummed surface. Route the 3 connectors toward the control module and plug the single blue wire's white connector into the mating LED connector on the module, plug the single grey wire's blue connector into the mating valet/override connector on the module and plug the 3 wire RF connector into the mating connector of the module. Use caution not to pinch the cable as this will cause poor or no RF reception no LED, or the inability to program the unit.

SHOCK SENSOR:

Select a centrally located, solid mounting surface for the shock sensor that will allow consistent operation

from all areas of the vehicle. The selected location must be within 18" of the control module to allow routing and connecting of the 4 pin harness. Secure the shock sensor to the chosen location using two #8 self tapping sheet metal screws. The sensor can also be secured to an existing dash brace using cable tie straps. Whichever mounting method is used be sure to allow access to the sensitivity adjustment potentiometer for use later in the installation.

STARTER INHIBIT RELAY:

Select a mounting location within 12" of the ignition switch's low current start solenoid wire. Secure the relay to an existing harness in the chosen location using a cable tie around the relay's wiring harness. Caution! Do not wire tie the metal bracket to an existing wiring harness as vibration may cause chaffing and shorting damaging the factory wiring. If an existing harness is not available then secure the relay's metal mounting tab to an under dash metal brace with a #8 self tapping sheet metal screw. Wire the relay as per the diagram found later in this manual.

This system is to be used in vehicles with **AUTOMATIC TRANSMISSIONS** only! Although this combination Alarm/Remote Start unit is a sophisticated system with many advanced features, **IT MUST NOT** be installed into a vehicle with a manually operated transmission. Doing so may result in serious personal injury and property damage.

IMPORTANT!

DO NOT PLUG THE SIX PIN MAIN POWER HARNESS OR THE MULTI PIN INPUT / OUTPUT HARNESS INTO THE CONTROL MODULE UNTIL ALL CONNECTIONS TO THE VEHICLE HAVE BEEN MADE. AFTER SELECTING YOUR TARGET WIRES AS DEFINED BELOW, DISCONNECT THE NEGATIVE BATTERY CABLE FROM THE VEHICLE BATTERY PRIOR TO MAKING ANY CONNECTIONS.

WIRING THE 6 PIN MAIN POWER HARNESS:

Note: Do not remove the fuse holders from this wire harness. Fuses must be used and located as close as possible to the power source for adequate protection of the vehicle.

Fused RED w/ WHITE TRACE WIRE: + 12 volt Battery 1 Source

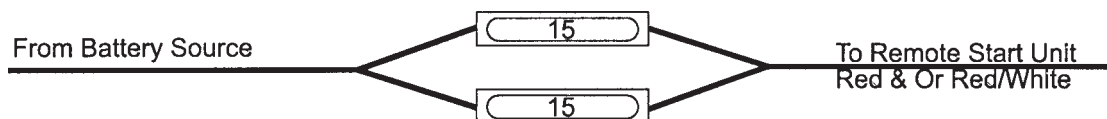
Locate the vehicle battery wire(s) at the ignition switch. Verification: These wires will register voltage in all positions of the ignition switch. Connect the Red w/White wire to the vehicle's battery wire. This wire provides power for the control circuit as well as the ignition 1 and ignition 2 relays.

Fused RED WIRE: + 12 Volt Battery 2 Source

Locate the vehicle battery wire(s) at the ignition switch. Verification: These wires will register voltage in all positions of the ignition switch. Connect the Red wire to the vehicle's battery wire. This wire provides power for the start relay and the accessory relay.

IMPORTANT!

IT IS THE RESPONSIBILITY OF THE INSTALLING TECHNICIAN TO DETERMINE THE LOAD FACTOR OF THE VEHICLE'S ELECTRICAL CIRCUITS WHEN THE VEHICLE IS RUNNING AND TO ADEQUATELY FUSE THE TWO POWER WIRES BASED ON THAT LOAD. IF THE VEHICLE RUNNING UNDER LOAD WITH THE AIR CONDITIONER, HEATER BLOWER MOTOR, AND ACCESSORIES EXCEEDS 24 AMPS CONTINUOUS, WE RECOMMEND THAT TWO FUSES BE USED IN COMBINATION ON EACH POWER WIRE AS SHOWN BELOW. FOR ADDITIONAL INFORMATION, SEE TECH UPDATE ISSUED 9/30/96.



YELLOW WIRE: Starter Output

Careful consideration for the connection of this wire must be made to prevent the vehicle from starting while in gear. Understanding the difference between a mechanical and an electrical Neutral Start Switch will allow you to properly identify the circuit and select the correct installation method. In addition you will realize why the connection of the safety wire is required for all mechanical switch configurations.

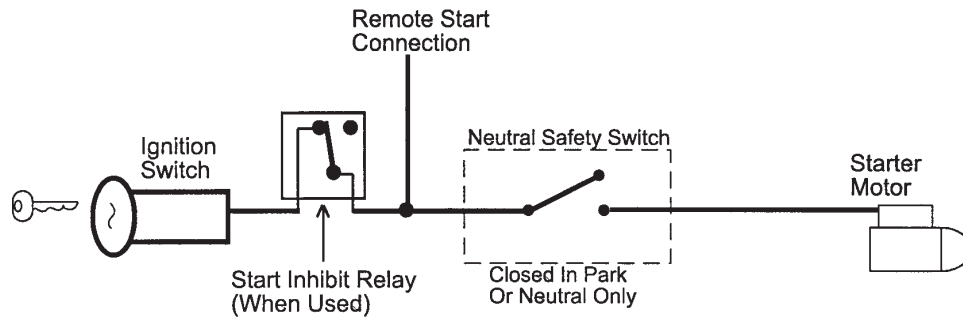
Failure to make this connection properly can result in personal injury and property damage. In all installations it is the responsibility of the installing technician to test the remote start unit and assure that the vehicle cannot start via RF control in any gear selection other than park or neutral.

In both mechanical and electrical neutral start switch configurations, the connection of the Yellow wire will be made to the low current start solenoid wire of the ignition switch harness. This wire will have +12 volts when the ignition switch is turned to the start (crank) position only. This wire will have 0 volts in all other ignition switch positions.

Note: This wire must be connected to the vehicle side of the starter cut relay (when used). For the electrical neutral switch configuration, this connection must be made between the starter inhibit relay, (when used) and the neutral safety switch as shown in the following diagram. Failure to connect this wire to the ignition switch side of the neutral safety switch can result in personal injury and property damage.

SEE NEUTRAL START SAFETY TEST FOR FURTHER DETAILS.

YELLOW START WIRE DETAIL



BLUE Wire: Ignition 1 Output

Connect this wire to the ignition 1 wire from the ignition switch. This wire will show +12 volts when the ignition key is turned to the "ON" or "RUN" and the "START" or CRANK" positions, and will have 0 volts when the key is turned to the "OFF" and "ACCESSORY" positions.

For Diesel Applications, this wire must be connected to the ignition circuit that powers the glow plugs if the vehicle requires glow plug pre-heating. (See selectable feature #9)

GREEN Wire: Ignition 2 Output

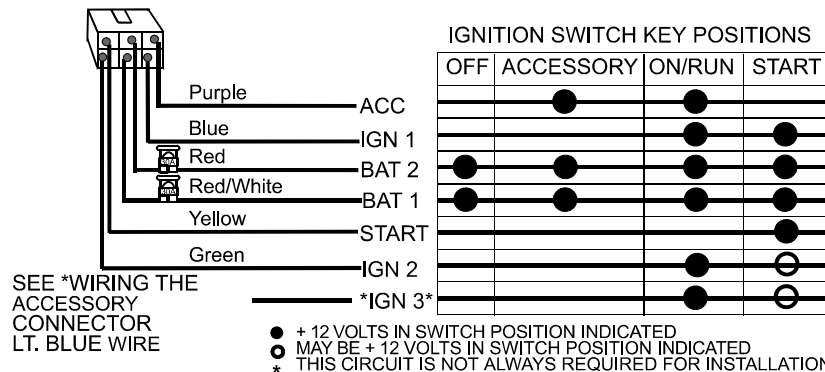
Connect this wire to the ignition 2 wire from the ignition switch. This wire will show + 12 volts when the ignition key is turned to the "ON" or "RUN" position and in some cases the "START" or CRANK" position. This wire will show 0 volts when the key is turned to the "OFF" and "ACCESSORY" positions.

Note: See programming information concerning this wire to allow output during the "START" mode.

VIOLET Wire: Accessory Output

Connect this wire to the Accessory wire from the ignition switch. This wire will show + 12 volts when the ignition switch is turned to the "ACCESSORY" or "ON" and "RUN" positions, and will show 0 volts when the key is turned to the "OFF" and "START" or "CRANK" positions.

WIRING THE 6 PIN MAIN POWER HARNESS



WIRING CONNECTIONS: Multi Pin Accessory Input/Output Harness

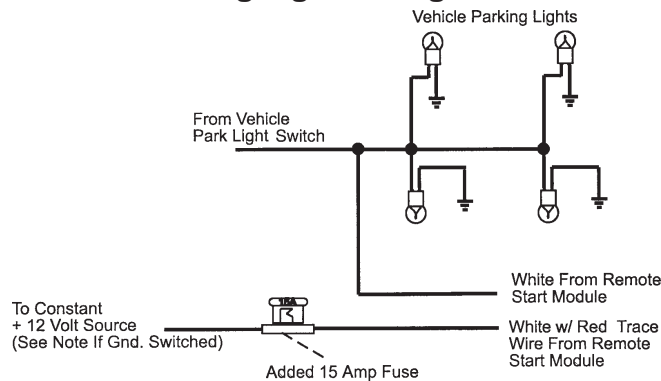
White w/ Red Trace Wire: Parking Light Flasher Feed

This wire is the common contact of the on board parking light flasher relay. If the vehicle you are working on has +12 volt switched parking lights, connect this wire to a fused + 12 volt source. (Max. 15 Amps)
Note: If the vehicle's parking lights are ground switched, connect this wire to chassis ground.

White Wire: Parking Light Flasher Output

This wire is the normally open contact of the on board parking light flasher relay. Connect this wire to the vehicle parking light feed wire. See diagram below for details on wiring positive switched parking light circuits.

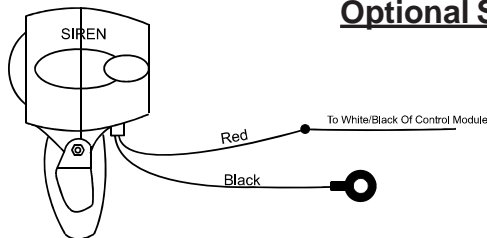
Parking Light Wiring Detail



White w/ Black Trace Wire: (+) Siren Output

This is the positive siren feed wire. Route this wire through a grommet in the firewall to the siren location. Connect the White w/ Black Trace wire to the Red wire of the Siren. Secure the Black wire of the Siren to a known chassis ground or solid clean metal surface.

Optional Siren Wiring Detail

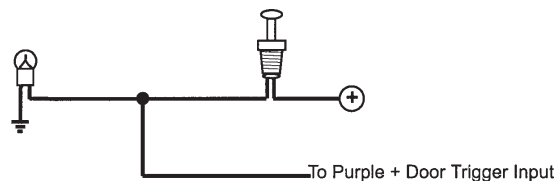


Purple Wire: (+) Door Trigger Input

If the vehicle's door courtesy light switches + 12 volts when the door is opened, (Some Fords and some Imports), you must connect this wire to the positive output from one of the vehicle's door pin switches. In most cases, the Purple wire will need to be connected to only one door switch no matter how many doors the vehicle has as most door lighting circuits are wired in parallel.

Note: For vehicles with interior delay lighting see programming under title "Completing The Installation".

Positive Door Switch Wiring Detail

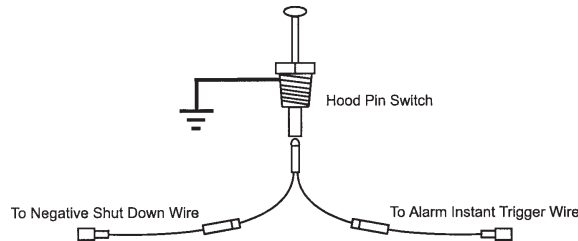


Dark Green Wire: (-) Instant Trigger Input

This is the instant on ground trigger input wire. This wire must be connected to the hood and trunk pin switches where installed.

Note: This wire will be shunted when remote control channel 3 is accessed, (trunk release). This wire will remain shunted all the while there is ground present and for 5 seconds after the ground is removed. This allows the operator to open the trunk via the remote transmitter without having to first disarm the alarm system. See below for wiring detail.

Hood Pin Switch Detail



Light Blue Wire: Ignition 3 Output

This wire provides a 300mA ground output that becomes active 3 seconds before the Remote Start Unit initializes, and remains grounded while running plus an additional 4 seconds after the Remote Start Unit turns off. In all of the applications described below, a relay will be required.

The Light Blue wire can be used to accommodate the following situations:

A. Shock Sensor By Pass:

If there is a Non Plug in Shock Sensor used with the alarm system and it is not shunted during the Remote Start activation period, then vibration from the running vehicle can cause the alarm to trigger. In this case, connect the Light Blue Wire to terminal #86 of an external relay. Connect terminal # 85 of the relay to a fused + 12 volt battery source. Cut the shock sensor trigger wire and connect one end of the cut wire to terminal #30 and the other end of the cut wire to terminal #87a. Just before the Remote Start unit is activated, the relay contacts will open, preventing the shock sensor's operation until the Remote Start unit shuts off.

B. Ignition 3 Output:

Some newer vehicles use a third ignition wire which is required to start and keep the vehicle's engine running. If this is the case, connect the Light Blue wire to terminal #86 of an external relay. Connect terminal # 30 & # 85 to a fused + 12 volt battery source rated for a minimum of 25 Amp. Connect terminal # 87 to the third ignition wire in the vehicle.

C. GM VATS Key Override:

If the vehicle has the General Motors VATS system installed, you will need to bypass the system while the vehicle is operating under the control of the Remote Start Unit. To do this;

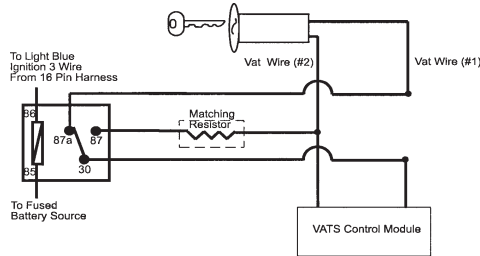
1. Measure the resistance of the resistor pellet on the ignition key then select a resistor within 5% of the key's value from the resistor pack supplied.
2. Locate the pair of VATS wires in the vehicle, usually a pair of thin gauge wires running from the ignition switch to the VATS control module.

Note: These wires are typically White w/ Black trace and Violet w/ Yellow trace, however in later model Cadillacs, they are run through an orange sleeve, and are either both Black, both Yellow, or both White wires. Consult the factory service manual for additional information.

3. Connect the Light Blue Wire from the Remote Start Unit to terminal #86 of an external relay. Connect terminal #85 of the relay to a fused + 12 volt battery source.
4. Cut (#1) wire (as shown), and connect the ignition switch side of the cut wire to terminal #87a of the relay. Connect the other side of the (#1) wire to terminal #30.
5. Connect the previously selected resistor from terminal #87 to the second (#2) wire (as shown).

Note: The above information and following diagram is for the GM VATS system only. For GM PASS LOCK System you will require the Audiovox AS-PASS II Module.

General Motors VATS By-Pass Diagram



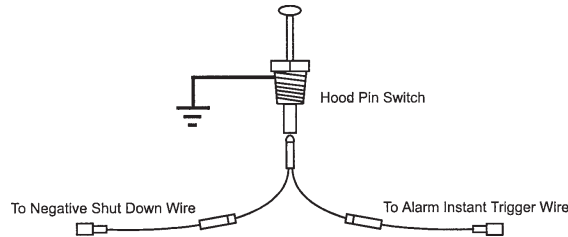
Grey Wire: Negative Inhibit Input

The Grey w/ Black Trace wire provides an instant shutdown for the Remote Start Control Module whenever it is grounded. Connect the Grey trace wire to the hood pin switch previously installed. This wire must be routed through a grommet in the firewall and connected to the hood pin switch.

If the factory switch is used, a diode assembly as shown below may be used to isolate the factory circuit from the this circuit.

IMPORTANT! This connection is a safety wire and must be connected as shown and tested as specified. Failure to do so may result in personal injury or property damage. See detail of wiring in the following diagram. This wire may also be used if the vehicle brake light circuit switches ground to the brake lights. An isolation diode must be used for ground switched brake light circuits and must be connected to the output of the brake switch.

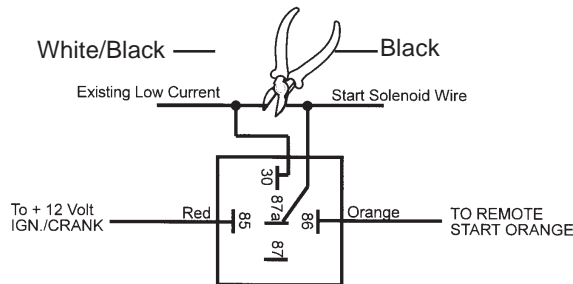
Grey Negative Inhibit Safety Shut Down Detail



Orange Wire: Ground When Armed Output

This wire provides a 300 mA ground output when the alarm circuit is armed to control the starter inhibit relay. Connect the Orange wire to terminal #86 (orange wire) of the relay provided. Connect terminal #85 (red wire) of the relay to an ignition wire in the vehicle that is +12 volts when the ignition switch is turned to the on and start positions and off when the key is off. Locate and cut the low current start solenoid wire found at the vehicles ignition switch harness. This wire will have + 12 volts when the ignition key is moved to the start (crank) position and will have 0 volts in all other key positions. Connect one side of the cut wire to terminal #87a (Black wire) of the relay. Connect the other side of the cut wire to terminal #30 (White/Black wire) of the relay. See below for detail of wiring, also see Yellow Start wire detail for connection to vehicle considerations.

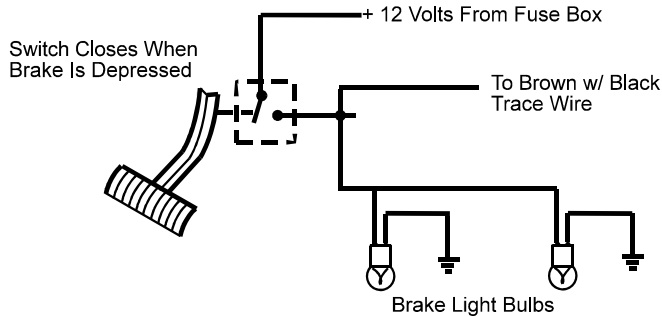
Starter Inhibit Wiring Detail



Brown w/ Black Trace Wire: Positive Inhibit Input

The Brown w/ Black Trace wire provides an instant shutdown for the Remote Start Control module whenever it gets + 12 volts. If the Brake lights switch in the vehicle switches + 12 volts to the brake light circuit, connect the Brown w/ Black trace wire to the output side of the brake switch. This will allow the Remote Start to shut down if an attempt is made to operate the vehicle without the key while running under the control of the Remote Start. In most vehicles, in order to shift into gear, the brake pedal must be depressed. The brake input will in turn cause the remote start unit to shut off. See detail in the following diagram for wiring the brake light circuit.

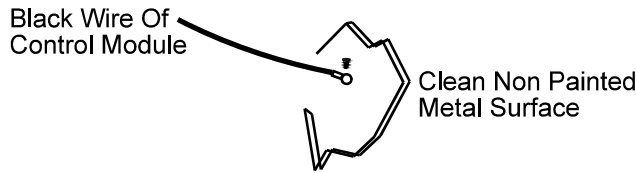
Brake Switch Positive Shutdown Detail



Black Wire: Chassis Ground Source

Connect the Black wire to a known vehicle ground source or to a solid clean metal part of the chassis. Be certain to remove any paint or grease and secure this wire with a self tapping screw and ring terminal.

Chassis Ground Connection Detail

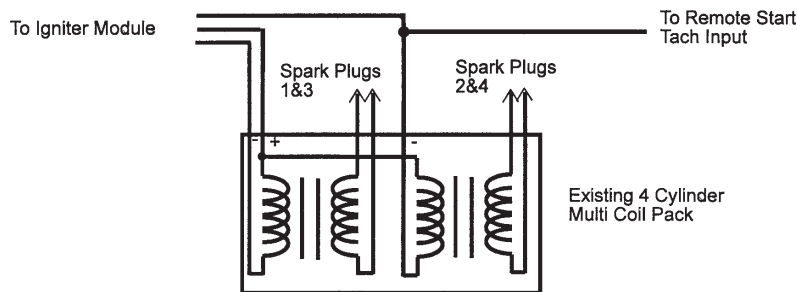


Green w/ Orange Trace Wire: Tachometer Input Signal

This wire will continually monitor the engine's tach rate while the unit is under power of the Remote Start module. This wire will be routed to the vehicle ECM tach input or through the firewall into the engine compartment and connect to the negative side of the ignition coil. This Remote Start unit learns the tach rate of the vehicle and in most cases will operate properly from one multi coil pack regardless of the number of cylinders. If the vehicle has a single coil unit for each cylinder, it may be necessary to connect this wire to more than one cylinder for proper tach reference. See multi coil wiring detail shown later in this manual for additional information.

Note: For Hybrid mode, Bank 3 feature selection 5, this connection is not used, the unit will start the vehicle and run the allotted time based on feature selection and crank duration.

Tachometer Input Wiring Detail



Green/Yellow Wire: Diesel Wait To Start Input

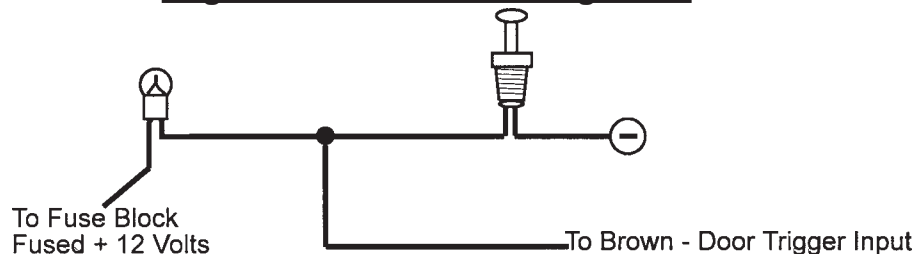
The Green/Yellow wire will connect to a diesel vehicles glow plug wire. When the unit receives a start command, this wire must go to + 12 then to ground to allow the crank sequence to begin. When ignition #1 is activated by the remote start unit, the glow plug circuit gets energized, (+ 12 volts), when the glow plug circuit of the vehicle drops the + 12 volts, which effectively grounds the wait to start input, then 500mS later the starter will engage. This wire can also be connected to the Glow Plug Bulb wire in the vehicle if this bulb wire gets + 12 volts when the ignition comes on and drops low when the glow plug circuits temperature is reached. Be sure to fuse the wire with a 1 Amp Fuse when connecting to a high current circuit such as a factory glow plug wire. The fuse should be installed as close to the high current wire as possible. If you are installing this unit in a Gasoline vehicle, this wire is not used.

Note: If the Glow Plug sense wire, Green/Yellow is connected, this wire will have priority over the setting of feature Bank 3 Feature #11.

Brown Wire: Negative Door Trigger

If the vehicle's door courtesy light switches ground when the door is opened, (Most GMs and Imports), you must connect this wire to the negative output from one of the vehicle's door pin switches. In most cases the Brown wire will need to be connected to only one door switch no matter how many doors the vehicle has as most door lighting circuits are wired in parallel.

NOTE: For vehicles with interior delay lighting see programming under title "Completing The Installation"

Negative Door Switch Wiring Detail**Dark Blue/Black Trace Wire: External Trigger Input**

The Dark Blue/Black trace wire allows the remote start unit to be activated from an external source. The intent of this wire is to allow the unit to be controlled from a "POSSE/CAR-LINK" paging system or similar device. When this wire receives a ground pulse, the unit will start the vehicle. Connect this wire to a ground pulsed output from the controlling circuit.

Black w/ White Trace Wire : 300 mA Horn Output

The black w/ white trace wire is provided to beep the vehicle's horn. This is a transistorized low current output, and should only be connected to the low current ground output from the vehicle's horn switch.

If the vehicle uses a + 12 VDC horn switch, then connect the black w/ white trace wire to terminal 86 of the AS 9256 relay (or an equivalent 30 Amp automotive relay), and connect relay terminal 85 to a fused + 12 VDC battery source. Connect relay terminal 87 to the vehicle's horn switch output, and connect relay terminal 30 to a fused + 12 VDC battery source.

YELLOW w/ BLACK Tracer Wire: + 12 Volt Alarm By - Pass Output

Note: You must disconnect the ignition input of the alarm from any other wire that it is presently connected to in the vehicle.

This wire provides a + 12 Volt output when the ignition key is turned to the "ON" position, and 0 Volts when the ignition key is "OFF" and when the vehicle is running under the control of the remote starter.

This wire should be connected to the ignition input of the alarm system.

The Yellow w/ Black wire output will allow you to remote start the vehicle while leaving the alarm armed, and to lock/unlock the doors while running under control of the remote start unit.

UNDERSTANDING ARM & DISARM #1 AND #2:

Because of the complexities of the different factory installed Remote Keyless Entry Units on the market today, this system uses two disarm and two arm inputs. Whether installing into a vehicle using a 2-step unlock circuit, single step unlock circuit, or as a stand alone passive alarm, both disarm and arm wires must be connected in all installations.

The arm and disarm functions of this system are learned during power up, by monitoring the resting state of the factory wires when power is applied to the unit. Be certain all wires are connected to the vehicle before applying power to the circuit to insure the system responds only during operation from the factory transmitters.

5 PIN WHITE CONNECTOR: GREEN/BLACK, RED, GREEN, RED/BLACK, & BLUE FACTORY KEYLESS INPUTS:

Note! When installing this system as a stand alone passive security system, the RED wire in this connector must be connected to a rest at ground, + 12 VDC switched ignition source. RED w/BLACK, GREEN & GREEN/BLACK wires must be connected to ground. The BLUE wire in this connector will not be required for the stand alone installation. The Trigger Input, feature # 18 must be set for delay instead of instant, to insure the consumer has time to get into the vehicle and turn the ignition on before the alarm triggers. The Green/Black, Red, Green, and Red/Black wires of the 5 pin connector are polarity learning inputs to be connected to the vehicle lock & unlock 1, and lock & unlock 2 control wires. When the control circuit is first powered up, these wires will learn the resting state of the circuits they are connected to. DO NOT operate the vehicle's door lock circuits, (switch or remote), while power is being applied to this upgrade alarm system.

WIRING THE ARM / DISARM INPUTS IN VEHICLES WITH REMOTE 2 STEP UNLOCK

The following represents the most common wiring routine in vehicles using the remote 2 step unlock feature.

GREEN/BLACK WIRE : ARM INPUT #2

Connect this wire to the vehicles door lock switch input wire, which will receive either a switched positive or switched negative when the door lock switch is moved to the lock position. This wire will be used to compare the two inputs Arm #1 & Arm #2. If both inputs are active at the same time, the vehicle will not arm. The intent of this wire is to prevent the system from arming when the in vehicle door lock switch is used to lock the doors, insuring only the transmitter arms the system. If you do not desire this feature or the customer prefers that the door lock switch arm the system as well as the transmitter, connect this wire to chassis ground.

RED WIRE : DISARM INPUT #1

Connect this wire to the driver's door unlock motor wire, which will receive a negative or positive pulse when the drivers door is unlocked with the remote transmitter, and the door switch, but does not receive a pulse when all doors are unlocked using the remote transmitter.

GREEN WIRE : ARM INPUT #1

Connect this wire to the lock side of the door lock/unlock switch or, the driver's door lock motor leg wire, which will receive a negative or positive pulse when the doors are locked using the door switch or the remote transmitter.

RED w/BLACK TRACE WIRE : DISARM INPUT #2

Connect this wire to the unlock side of the door lock/unlock switch or any passenger door unlock motor wire, which will receive a negative or positive pulse when all doors are unlocked using the door panel switch or the remote transmitter, **but will not receive a pulse when the driver only door is unlocked using the remote transmitter.**

NOTE: The Green/Black, Red, Green, & Red/Black wires **MUST** be connected to their respective source before powering up the module as these wire are polarity learn and will not function properly if connected after power up. In addition, these wires **if not used as indicated above must be connected to ground.** This will insure proper operation and prevent inadvertent arming and disarming unintentionally.

BLUE WIRE : TRUNK TRIGGER SHUNT INPUT

This wire will determine if the vehicle's trunk has been opened using the OEM transmitter, and prevent the alarm from triggering when the factory transmitter is used. This wire requires a positive trigger input and must be wired to the switched + 12 volt trunk control wire from the vehicle's keyless entry unit or, the switched + 12 volt side of the vehicle's trunk release solenoid.

WIRING THE ARM / DISARM INPUTS IN VEHICLES WHEN THE SYSTEM IS SET UP AS A STAND ALONE PASSIVE (IGNITION CONTROL) ALARM SYSTEM

For this mode of operation, be certain to set selectable features # 6 for passive arm, feature #18 for trigger delay.

GREEN/BLACK & GREEN WIRE: ARM INPUTS

Connect these wires to chassis ground.

RED WIRE : DISARM INPUT #1

Connect this wire to an ignition source that has +12 volts when the ignition switch is turned to the on and start positions and has 0 volts when the switch is in any other position.

RED w/BLACK TRACE WIRE: DISARM INPUT #2

Connect this wire to chassis ground.

BLUE: TRUNK SHUNT INPUT

This wire is not used for the stand alone passive alarm application.

WIRING THE 4 PIN AUXILIARY OUTPUT HARNESS

The auxiliary 4 pin connector provides low current outputs to control various functions in the vehicle during different stages of the Remote Start unit's operation. Understanding these outputs and the time in which they occur will allow you to determine if they are needed for the particular vehicle you are working on as well as how to use them.

Black w Blue Trace Wire: Pulsed Ground Output Before Start

The Black w/ Blue Trace wire will provide a 1 second 300 mA pulsed ground output 1.5 second before the remote start unit activates as well as when the transmitter is used to disarm the system. Typical use for this

output would be to disarm a factory theft deterrent system to prevent false triggering of the factory alarm when the remote start unit engages or when the 785 is used to unlock the doors.

Black w/ Light Green Trace Wire: Pulsed Ground Output After Start

The Black w/ Light Green Trace wire will provide a 1 second mA pulsed ground output after the vehicle is started under control of the remote start unit. Typically this wire will be used to re-lock the vehicle doors if the doors unlock automatically when the factory anti-theft system is disarmed.

Black w/ Red Trace Wire: Pulsed Ground Output After Shutdown

The Black w/ Red Trace wire will provide a 1 second 300 mA pulsed ground output after the remote start unit shuts down. This output will occur regardless of whether the circuit times out or is manually terminated. Typically this output will be used to re-lock the vehicle doors if the doors unlock automatically when the ignition circuit transitions to off.

Black w/ Yellow Trace Wire: Ground Output During Start (Crank)

The Black w/ Yellow Trace wire will provide a 300 mA ground output while the starter output of the remote start unit is active. This output can be used to activate the Crank Low/Bulb Test wire found in some GM vehicles. This wire is also referred to as the ECM wake up wire in some vehicles.

Note: The outputs above are low current outputs and must be used with a relay if the circuit's requirement is more than 300mA.

2 Pin Transponder Control Output: (Yellow Connector)

This output is intended to allow the control of a transponder bypass interface module or transponder bypass relay. The system also allows software selections to control the way in which this output operates, see remote start feature # 10 for setting this output.

When the unit is selected for output during the start sequence, this output will be active at the same time Ign. 3 becomes active, and will remain active until the vehicle has started. This will be used for one time read transponder circuits.

When the unit is selected for transponder on, this output will become active at the same time Ign. 3 becomes active, and will remain active all the time the unit is operational under the control of the remote start. When the unit is selected for continuous and the vehicle is started via the Remote Start, this output will become active at the same time Ign. 3 becomes active and will remain active until the ignition in the vehicle goes low. This will allow the unit to be used for continuous read transponders circuits.

Receiver Pushbutton LED/Valet/Program/Override Switch: (Blue, White & Black Connectors)

The Grey and the Blue wires loaded into individual 2 pin connectors, and the Black, Green & Red wires loaded into the 3 pin black connector are the Valet enable, LED cathode, & the RF power ground and RX. When the Grey wire is grounded, under certain conditions, the unit will enter the valet mode. When the Grey wire is sequentially grounded under other conditions, the unit will enter the various program modes indicated on the integral LED built into the receiver. Route the Blue, White and Black connectors from the Combination receiver assembly to the remote start unit and plug these connectors into the mating blue, white, and black connectors of the control module. For valet, remote start override, and alarm override information, refer to the owners manual.

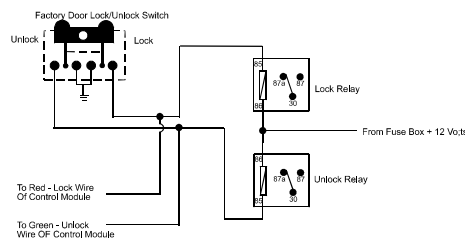
2 Pin Door Lock/Unlock Harness: (White Connector)

The Red and Green wires will provide either a pulsed ground output to the factory door lock control relay, or a pulsed + 12 volt output to the factory door lock control relay. In either case, the maximum current draw through these outputs must not exceed 300mA.

3 Wire Ground Switched Door Lock Circuits:

In this application, the Red wire of the door lock harness provides a ground pulse during the arming sequence, or pulsed ground lock output. Connect the Red wire to the low current ground signal wire from the factory door lock switch to the factory door lock relay.

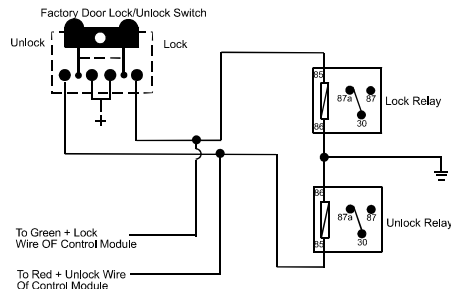
The Green wire of the door lock harness provides a ground pulse during the disarming sequence, or pulsed ground unlock output. Connect the Green wire to the low current ground signal wire from the factory door unlock switch to the factory door unlock relay. See Below For Wiring Detail.



3 Wire Positive Switched Door Locks:

In this application, the Red wire of the door lock harness provides a + 12 volt pulse during the disarming sequence, or pulsed 12 volt unlock output. Connect the Red wire to the low current 12 volt signal wire from the factory door unlock switch to the factory door unlock relay.

The Green wire of the door lock harness provides a + 12 volt pulse during the arming sequence, or pulsed 12 volt lock output. Connect the Green wire to the low current 12 volt signal wire from the factory door lock switch to the factory door lock relay. See Below For Wiring Detail.



Note: Resistive Circuits, As Well As 4 Wire Polarity Reversal and 5 Wire Alternating 12 Volt Door Lock Control Circuits

These applications require the use of additional components which may include relays, fixed resistors, or for convenience, the DLRK Door Lock Interface. Refer to the AUDIOVOX Door Lock Wiring Supplement and or the Audiovox fax back service for information on your particular vehicle for properly connecting to these types of circuits.

TIMED START PROGRAM:

The Remote Start unit has the ability to start the vehicle automatically at timed intervals. This feature is useful in extremely cold climates where starting the engine is the only means to keep the battery charged and fluids warm. The operator has the option to have the unit start every 2 or 4 hours for a maximum of 48 hours. Factory preset is to start at 4 hour intervals. To select 2 or 4 hour automatic start timer:

1. Start By Holding the Push Button Switch On.
2. While Holding the Push Button Switch Turn The Ignition Switch On Then Off
 - 3a) Within 10 seconds of turning the ignition switch off, Release and then Push On and release the Push Button Switch 2 times holding it on the second time until the siren and or lights flash and chirp 2 times indicating that the 2 Hour Start Interval has successfully been set. or
 - 3b) Within 10 seconds of turning the ignition switch off, (Step 2) Release and then Push On and release the Push Button Switch 4 times holding it on the fourth time until the siren and or lights flash and chirp 4 times indicating that the 4 Hour Start Interval has successfully been set.

Note: Once selected, 2 or 4, this timer interval will remain in memory until it is manually changed. To change, the above sequence will have to be followed.

TIMED START OPERATION:

To begin the start timer, within 10 seconds of turning off the ignition switch, activate the RF command to start 2 times. (Press the start button four times). The lights will flash and the siren will chirp 4 times. Indicating timed interval mode has been initiated. The vehicle will automatically start every 2 or 4 hours as programmed. To cancel the timed start mode start the vehicle either by RF or by the ignition key.

Programming Tach Rate:

Note: All applications require that tach be programmed.

The unit will not operate unless tach is programmed. If an attempt is made to start the vehicle via the remote start without first programming tach, the unit will flash the parking lights 7 times indicating tach has not been learned and stored. If the tach rate is not properly programmed to the specific vehicle, the unit may not realize that the vehicle is running in certain instances reengage the starter motor.

The Remote Start Unit will learn the tach rate of most vehicle's single coil, multiple coil packs, or single injector.

To Learn Tach

1. Turn the ignition key to the On position.
2. Press and release the valet/program push button switch 3 times.
3. Immediately turn the ignition key Off.
4. Press and hold the valet/program push button switch, then start the vehicle using the key.
5. When the unit senses the tach signal, the parking lights will begin to flash.
6. Release the valet/program pushbutton switch. The parking lights will turn on for three seconds to indicate that the learned tach signal is stored and the unit is out of the tach learn mode.

NOTE: If the unit fails to learn tach rate due to an improper tachometer connection or a poor tach source, the parking lights will not flash.

To correct this situation, locate and connect the Green/Orange wire to the proper tach signal, and then repeat the tach learn routine.

Diagnostics:

Enter selectable feature #7 and turn on as described above.

Note: Diagnostic mode is a temporary mode. Once you have accessed the diagnostic mode, the unit will pause for two seconds then begin to flash the last stored shut down code. This code will be displayed two times in succession, then the unit will automatically exit the diagnostic on mode.

The parking lights will flash a number of times indicating the reason for the last remote start shutdown. The light flash indications are as follows:

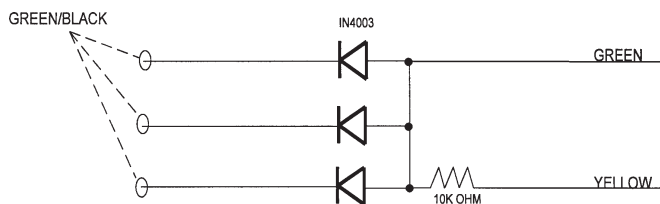
- | | |
|------------------|--|
| 1 Flash | 5, 10, 15, or 20, minute run timer expired. |
| 2 Flashes | Low or No tach signal received. |
| 3 Flashes | Positive input shut down. |
| 4 Flashes | Control switch was moved to "Off" position. |
| 5 Flashes | RF Shutdown command received. |
| 6 Flashes | High RPM signal over speed shut down. |
| 7 Flashes | Tach has NOT learned. |
| 8 Flashes | Negative input shutdown 4 Flashes Control switch moved to the off position |

Multi Coil Pack Adaptor: (Optional)

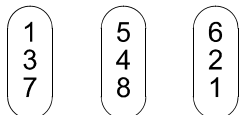
The multi coil pack adaptor is designed for use with vehicles having multiple ignition coils where a single point tach signal is unavailable, or non responsive. Construct the adaptor as shown below.

To use the adaptor, the Green/Black wires must connect to the negative side of the ignition coil(s).

1. For vehicles utilizing independent coils per cylinder, connect the three Green/Black leads to alternate coils. To achieve optimum performance the coil signals must be evenly distributed. This is accomplished by first mapping out the firing order of the engine in groups of as indicated below. Draw a circle around any of the columns. The Green/Black wires should be connected to the negative (-) terminal of the respective cylinder number which appears in any of the circles.
2. For vehicles utilizing 2 cylinder firing per coil pack, connect Green/Black to the tach side of each coil pack. For 8 cylinder, four coil systems, connect to any of the three coils.
3. Connect the Yellow wire to a +12 volt ignition 1 source. This wire will have +12 volts with the ignition in the on and start position and have 0 volts with the ignition in the off position.
4. Connect the Green wire to the (Green) or (Orange/Green) tach input of the Audiovox remote start unit.

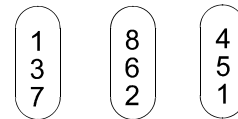


IF THE FIRING ORDER IS 1,5,6,3,4,2,7,8



CONNECT TO CYLINDERS 1,3,7 OR 5,4,8 OR 6,2,1

IF THE FIRING ORDER IS 1,8,4,3,6,5,7,2



CONNECT TO CYLINDERS 137, OR 862, OR 451

TESTING YOUR INSTALLATION:

CAUTION!! The following procedure must be performed after the installation of an Audiovox Remote Start Device. It is the responsibility of the installing technician to complete these tests. Failure to test the unit in the following manner may result in personal injury, property damage, or both.

HOOD PIN SAFETY SHUT DOWN:

The intention of the hood pin safety shut down is to prevent the Remote Start unit from being activated while a mechanic or vehicle owner is performing normal routine vehicle maintenance.

To test the integrity of this circuit:

1. With the drivers window in the down position, start the vehicle using the RF transmitter.
2. Reach inside the car and pull the hood release.
3. Raise the hood and confirm that the remote start unit shuts down.

If the unit fails this test, recheck your pin switch connection to the Gray/Black wire of the Audiovox Remote Start Unit.

DO NOT RELEASE THIS VEHICLE TO THE CONSUMER UNTIL YOU CONFIRM THE OPERATION OF THE HOOD PIN SAFETY SHUT DOWN FEATURE.

MANUAL SHUT DOWN/ENABLE CIRCUIT:

The intent of the manual shut down / enable circuit is to allow the vehicle operator to prevent operation of the Remote Start Unit regardless of the RF transmitter operation.

1. With the system disarmed/unlocked, and the ignition switch off press and hold the pushbutton switch located on the receiver unit on.
2. Turn the ignition switch on, off, on, off, on, off.
3. The LED begins to flash two short flashes followed by one long flashes and continues this pattern until returned to normal mode of operation.

This puts the unit into the R/S Override mode indicating that the remote start is in the service mode and will not start from RF or any other input Posse or otherwise.

To Exit R/S Override Mode

1. With the system disarmed, press and hold the pushbutton switch located on the receiver unit on.
2. Turn the ignition switch on, off, on, off, on, off.
3. The LED turns off indicating that the R/S unit is fully functional one again.

DO NOT RELEASE THIS VEHICLE TO THE CONSUMER UNTIL YOU CONFIRM THE OPERATION OF THE MANUAL SHUT DOWN / ENABLE FEATURE.

NEUTRAL START SAFETY TEST:

The intent of the neutral start switch is to prevent the vehicle from starting while the gear selector is in any position other than Park, or Neutral. When installing a Remote Start Device, it is imperative that the Yellow Starter wire be connected to the ignition switch side of the Neutral Start Switch. Consideration for the placement of a starter inhibit relay is important as well, and should be connected to the ignition switch side of the Yellow Start Wire.

To test the integrity of the Neutral Start Safety Circuit:

1. Set the vehicle parking brake.
2. Block the drive wheels to prevent vehicle movement.
3. Temporarily disconnect the Brown/Black positive shut down wire from the vehicle's brake switch.
4. Sitting in the vehicle, start the engine using the vehicle's ignition key.
5. Step on the brake pedal and shift the gear selector into reverse.
6. Allow the transmission to shift. When you feel the engine pull, do not move the gear selector just turn the ignition switch off. DO NOT attempt to remove the key.
7. Keeping the brake pedal depressed, activate the RF transmitter in an attempt to start the vehicle. The car should not start.
8. Repeat the above test this time move the gear selector to the drive position. If the unit attempts to start, failing this test, recheck your Yellow Wire's connection. This wire must be connected to the ignition switch side of the Neutral Start Switch. If the vehicle you are working on does not have an Electrical Neutral Safety Switch, it will be necessary to reconfigure the Remote Starts Wiring to accommodate this vehicle. The information concerning the Mechanical Neutral Safety Switch provided below will help you to determine if the vehicle you are working on has this type of safety switch and will provide alternate wiring methods to accommodate this situation.

CAUTION!

REMEMBER TO RECONNECT THE BROWN/BLACK WIRE TEMPORARILY DISCONNECTED IN STEP 3

DO NOT RELEASE THIS VEHICLE TO THE CONSUMER UNTIL YOU CONFIRM THE OPERATION OF THE NEUTRAL SAFETY START FEATURE.

MECHANICAL NEUTRAL SAFETY SWITCH CONSIDERATIONS:

Mechanical neutral safety switch configurations differ slightly in that they do not offer the same level of safety when installing a remote start device. Often when the ignition switch is turned off while the gear selector is in any position other than park or neutral, the mechanical function will not allow the key to be turned to the start position or be removed from the ignition cylinder. This configuration prevents mechanical operation while the vehicle is in gear but offers no consideration for electrical operation. Because of this potential problem, this installation requires the additional connection of a safety wire from the remote start device to the vehicle Park/Neutral ECM Input or the vehicle key in sensor. This connection will prevent remote start operation if the key is left in the ignition switch regardless of the gear selectors position.

KEY IN SENSOR CIRCUITS:

If the vehicle you are working on does not have or you cannot locate the ECM reference wire, there are two alternatives available. Although not preferred, the vehicle Key In Sensor may be reconfigured to allow a margin of safety and will prevent the vehicle with a Mechanical Neutral Start Switch from starting in gear.

AUDIOVOX ADVISES THAT YOU MAINTAIN THE FACTORY CIRCUIT WHENEVER POSSIBLE. The following two circuits may be used only if the above circuit is not available.

Note: When completing an installation using either of the following key in sensor circuits, if the operator inserts the ignition key while the vehicle is running under the control of the Remote Start, the vehicle will shut down. This must be explained to the operator as it is in contrast to the normal operation of a vehicle utilizing an electrical neutral start switch and is inconsistent with the operators manual.

Additional information concerning Key In Sensor methods 1 & 2 are listed below and should be reviewed before considering either alternative.

Method 1 will allow the safety required for the remote start unit and prevent the vehicle from starting while in any gear other than Park or Neutral while the key is in the ignition cylinder however, if the key is left in the ignition switch and the door is left opened, the added relay will be energized causing a 150mA drain on the battery.

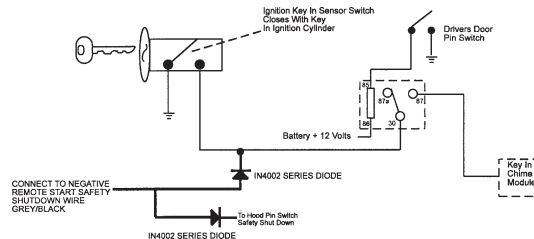
Method 2 will allow the safety required for the remote start unit and prevent the vehicle from starting while in any gear other than Park or Neutral while the key is in the ignition cylinder however, the original factory key in chime module will not alert the owner that the key has been left in the ignition switch. In addition, this may also effect other warning tones such as the light on reminder.

These situations should be carefully considered before altering the vehicle's wiring and must be fully explained to the consumer. Circuits may be used only if the above circuit is not available.

METHOD 1

To connect to the key in sensor as shown in method 1:

- A. Locate the control wire that connects the drivers door pin switch to the key in sensor switch.
- B. Cut this wire and connect the ignition cylinder side to chassis ground.
- C. Locate the key in sensor switch wire that connects the chime module to the ignition cylinder.
- D. Cut this wire and connect the ignition cylinder side to terminal 30 of a P&B VF45F11 or equivalent relay.
- E. Connect the cathode (striped) side of a 4002 series diode to this same wire, and connect the (non striped) side to the negative shut down safety wire (Gray / Black) of the Audiovox Remote Start Unit.
- F. Connect terminal 86 of the relay to a fused +12 volt constant battery source.
- G. Connect terminal 87 of the relay to the Chime Module side of the previously cut wire in step D.
- H. Connect terminal 85 of the relay to the Drivers Door side of the pin switch wire previously cut in step B.

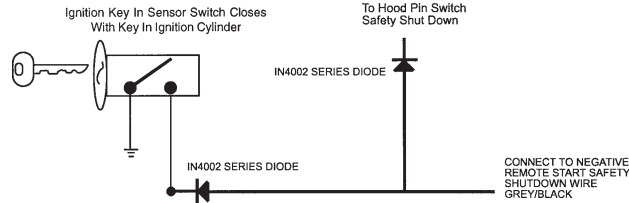


NOTE: A second 4002 series diode may be required to maintain the integrity of the hood open, shut down circuit. If this is the case, it must be installed as shown in the diagram above. The anode (Non Striped) side must be connected to the Gray/Black wire of the Remote Start Unit. The cathode (Striped) side must be connected to the hood pin switch. If the hood pin switch is also used for an alarm trigger input, be certain to use the dual diode setup as shown in this installation guide under the heading hood switch.

METHOD 2

To connect to the key in sensor circuit as shown for method 2:

- A. Locate the control wire that connects the drivers door pin switch to the key in sensor switch.
- B. Cut this wire and connect the ignition cylinder side to chassis ground.
- C. Locate the key in sensor switch wire that connects the chime module to the ignition cylinder.
- D. Cut this wire and connect the ignition cylinder side to the Remote Start Negative Safety Shut down Wire Gray/Black, using a 4002 series diode as shown above.



Note: A second 4002 series diode may be required to maintain the integrity of the hood open, shut down circuit. If this is the case, it must be installed as shown in the diagram above. The anode (Non Striped) side must be connected to the Gray/Black wire of the Remote Start Unit. The cathode (Striped) side must be connected to the hood pin switch. If the hood pin switch is also used for an alarm trigger input, be certain to use the dual diode setup as shown in this installation guide under the heading hood switch.

AFTER THE CONNECTION OF THE NEUTRAL START SAFETY WIRE AS INDICATED IN ANY OF THE PREVIOUS ALTERNATE CONFIGURATIONS, THIS CIRCUIT MUST BE TESTED FOR OPERATION.

Retest by following the steps outlined in the NEUTRAL START SAFETY TEST shown in this manual.

4 Pin Upgrade Data Bus/Flash Logic Module:

If you are using an Audiovox Flash Logic module, it can be connected directly to the Alarm/Remote Start's control module. Using the Blue 4 pin blue, red, black, & white harness and connect to the mating connector on the Alarm/Remote Start control module. Wire the Flash Logic/Data Bus module to the vehicle as prescribed in it's installation guide.

Note: This unit has the ability to learn the dome light delay time, up to 60 seconds. If the vehicle has delay interior lights, and you wish to avoid three chirp, defect zone, indication normally associated with this type of interior light, we suggest you learn the interior light delay.

To learn the light delay, start with all doors closed:

1. Use the transmitter to Lock / Unlock / Lock / Unlock / Lock / Unlock / Lock, the system.

The LED turns on solid to confirm the system entered the learn mode.

2. Immediately open and close the door of the vehicle to initiate the dome delay.

The unit will monitor the door trigger input Positive, (Purple), and Negative, (Brown) when active.

When the dome light turns off, the unit will add 2 seconds then exit the learn mode.

3. The LED will begin flashing the Armed indication indicating the unit has exited the learn mode and is armed.

COMPLETING THE INSTALLATION:

After you have confirmed the operation of the Audiovox Remote Start Alarm system and tested all the safety features of the system:

1. Mount the control module up and behind the dash securing it in place with cable ties or screws. Be certain that the chosen mounting location will not inhibit any of the controls of the vehicle.
2. Securely harness and tie all wiring up and away from all hot and moving parts that they may come in contact with under the dash board or in the engine compartment areas.

CAUTION: Particularly avoid the area around the steering shaft and column, as wires can wrap around these mechanisms and impair the safe operation of the vehicle.

3. Apply the Caution Labels supplied with this kit to a conspicuous area in the engine compartment. Make sure to clean the surface before affixing the label.
4. Check the vehicle's wipers, lights, horn, etc.... to insure proper operation.
5. Replace all panels that were removed during installation, and retest the system.
6. Explain all activated features and safety systems associated with Remote Start Unit installed to the customer.
7. Place the Valet/Program/Override Switch Tag around the P/LED switch so the customer notes its location.

