REMOTE AUTO START

Optional Keyless Entry and 2-way Transmitter Instructions Included

SYSTEM MANUAL

STANDARD FEATURES

Some of the system's standard features include:

- 4-button remote transmitter
- LED Status indicator
- Valet switch
- Extended Range Receiver
- Flashing parking lights
- Remote Valet mode
- Auto Cold Start feature
- Stop & Go feature
- Programmable engine run-time
- Hood & brake pedal safety inputs

OPTIONAL FEATURES

This system has many optional features that may require additional parts and/or labor. Please contact your dealer for more details.

- Remote keyless entry (door lock/unlock)
- Illuminated entry
- LCD 2-way remote transmitter
- Trunk/hatch release
- Automatic window defroster activation

Note: Some features may not be appropriate for certain vehicles.

REMOTE TRANSMITTER BUTTONS

Button 1 Button 2

Button 3 Button 4

Transmitter Icons

NOTE: Transmitter cosmetics may differ between models and between standard 1-way and LCD 2-way transmitters, but button functions remain the same as described below.

Each transmitter button has two operating modes: standard and level shifted. Pressing a transmitter button for less than one second activates the standard function associated with that button (such as lock or unlock). Pressing a button for more than one second changes the color of the standard transmitter's LED to green and activates the level shift feature. While the LED is green (level shifted), pressing any transmitter button accesses another level of commands providing expanded operation.

SYSTEM OPERATION

DOOR LOCKING

To lock the system press transmitter button 1:

- The LED will flash once.
- The parking lights will flash once.
- The doors will lock.*

***Optional Feature**

DOOR UNLOCKING

To unlock the system press transmitter button 2.

- The LED will flash twice.
- The parking lights will flash twice.
- The doors will unlock.*
- The dome light will turn on.*

* Optional Feature.

IGNITION CONTROLLED LOCKS

The ignition controlled locks feature automatically locks the doors when the brake pedal is pressed (after turning on the ignition and closing all doors), and unlocks when the ignition key is turned off. This feature may also be programmed for ignition lock without ignition unlock, and off (no ignition control).

VALET MODE

When the system is placed into the Valet Mode the remote start feature will be disabled. However, the optional keyless entry and trunk release features will still function if installed. The valet mode may be accessed with either the valet switch or a remote transmitter.

To enter or exit valet mode using the switch:

1. Be sure the system is in unlock mode.
2. Turn ignition on.
3. Press and hold the valet switch for 3 seconds.
   - The LED will turn on solid indicating the system is in valet mode, or turn off indicating valet mode exit.
   - The parking lights will flash 4 times to enter and 3 times to exit valet.
   - The LED will turn on solid indicating the system is in Valet Mode, or turn off indicating Valet Mode exit.
4. Turn ignition off.

To enter or exit valet mode using the remote:

1. Press and hold button 1 for level shift.
2. Press button 1 again to turn valet mode.
   - The optional 2-way LCD transmitter display will show "zzz" for valet .

OPTIONAL TRUNK RELEASE

The activate the system's auxiliary feature (or trunk release) press button 3 for level shift, then press button 3 again. The parking lights will flash 3 times.

CAR LOCATOR FEATURE

The activate the system's car locator feature press button 3 twice rapidly. The parking lights will flash 6 times.

REMOTE START FEATURES

Important: Only start the vehicle in a well ventilated area. Do not use in a closed garage or indoors. Be sure to familiarize yourself with all features prior to using the remote start.

REMOTE STARTING THE VEHICLE

To remote start the vehicle:

1. Press and hold button 2 for level shift.
2. Press button 2 again.
   - The parking lights will begin flashing (or remain on depending on programming).
   - The system will attempt to start the vehicle.
   - Once the car has started, the heater or air conditioner will turn on and run for the pre-programmed time. If the engine fails to start on the first attempt, it will attempt to start 3 more times. If the vehicle fails to start after a total of 4 times the system will shut down.

To drive the vehicle after Remote Starting:

Unlock the door by pressing button 2 on the remote transmitter. Enter vehicle, turn ignition key to the on position

NOTE: Do not turn the key to the start position as the engine is already running.

If brake pedal is pressed prior to turning on ignition, engine will turn off.

REMOTE ENGINE SHUTDOWN

If the vehicle has been remotely started and you desire to turn the vehicle off, simply press and hold button 2 for level shift, then press button 2 again.

STOP AND GO

The Stop and Go feature allows the vehicle to remain running without use of the ignition key during short stops.

To activate the Stop and Go feature:

1. Make sure the engine is running.
2. Press and hold button 2 for level shift.
3. Press button 2 again.
4. Turn ignition off.
   - The doors will unlock.
   - The LED will turn on.
   - The engine will remain running.
5. Exit the vehicle and lock the doors using transmitter button 1.

To resume driver control:

1. Unlock the doors by pressing transmitter button 2.
2. Turn on the ignition.
   - The vehicle resumes driver control, when the brake pedal is pressed.

AUTO COLD START

This feature allows the system to start and run the vehicle every 1, 2, 4, or 12 hours (selectable by your installer) in a 24 hour period.This allows the engine to remain at an operational temperature in extremely cold weather. Auto Cold Start interval timing must be chosen during installation.

Engaging the Auto Cold Start feature:

To turn Auto Cold Start on:

1. Press and hold the brake pedal.
2. Press and hold button 2 for level shift.
3. Press button 1.
4. Release the brake pedal.
   - The display will show "DAILY 2-1."
   - The vehicle will start and run the first interval to confirm cold start activation.

Press and hold button 2 for level shift then press button 2 again to shut down remote start before first run cycle is completed. The Auto Cold Start feature will remain engaged and start at the pre-programmed intervals until deactivated.

NOTE: The Auto Cold Start feature is not compatible with manual transmission vehicles.

Disengaging the Auto Cold Start feature:

The Auto Cold Start feature can be deactivated by pressing the brake pedal.

SAFETY FEATURES

The System will not start the vehicle if the brake pedal is pressed or the hood is open. Also, if the brake is pressed or the hood is opened while remote running, the remote start will shut down.

MANUAL TRANSMISSION MODE

On manual transmission vehicles, the remote start feature will not operate unless the proper vehicle exit sequence is performed. This operating mode protects against in-gear starting but is not completely without risk. Installation and safe use of the remote start feature on a manual transmission vehicle is at the sole risk of the vehicle's owner, and the manufacturer assumes no liability for installation in manual transmission vehicles.

Manual Transmission Mode Exit Sequence: With engine running, press the unlock button. Turn ignition off (engine will stay running) and open the doors, then exit the vehicle. When all doors are closed, press lock button to turn off the engine and lock the doors. The system will be able to remote start as long as the system is not unlocked prior to remote starting.

NOTE: If the turbo timer feature is programmed, the engine will not turn off until the end of the turbo timer program cycle.

TURBO TIMER MODE

For vehicles equipped with a turbo-charged engine, the optional turbo timer feature may be programmed to run the engine at idle for an additional period of time after the ignition is turned off. The run-time may be programmed for a 1, 3, or 6 minute cycle, allowing the turbo proper time to cool down, extending its life.

To activate the Turbo Timer feature:

1. Make sure the engine is running.
2. Press button 2.
3. Turn ignition off.
   - The engine will continue to run for 1, 3, or 6 minutes.
4. Exit the vehicle.

LED AND PARKING LIGHT INDICATIONS

STATUS INDICATOR (LED) FUNCTIONS

On Solid = Valet Mode

Slow Flash = System Locked

Rapid Flash w/ Ignition on = Open Hood Warning

Double Flash = Auto Cold Start Mode Activated

PARKING LIGHT FUNCTIONS

On Solid = Vehicle Remote Starting

Flash I x = System Locked

Flash 2x = System Unlocked

TRANSMITTER FUNCTION QUICK REFERENCE

TRANSMITTER OPERATION CHART

Operation	System Status	Ignition	1st Button	2nd Button
Lock	Locked	Off	Button 1	
Unlock	Unlocked	Off	Button 2	
Remote Valet	Unlocked	Off	Button 1 Level Shift	Button 1
Remote Start	Either	Off	Button 2 Level Shift	Button 2
Auxiliary 1	Either	Off	Button 3 Level Shift	Button 3
Stop N Go	Unlocked	On	Button 2 Level Shift	Button 2
Car Locator	Either	Off	Button 3	Button 3*
Auto Cold Start	Unlocked	On	Button 2 Level Shift	Button 2**

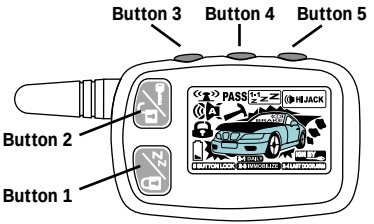
* Must press button two times very quickly

** Brake pedal must be pressed while performing button sequence

Level Shift: Pressing and holding a transmitter button for more than one second enters the Level Shift mode for two seconds. The 1-way transmitter's LED turns Green to indicate level shift, while the optional 2-way transmitter plays a chime to indicate level shift. While in level shift mode, pressing a transmitter button accesses the system's special features such as Valet, Auxiliary, etc. After two seconds, the transmitter will automatically exit level shift mode if no other transmitter button has been pressed.

OPTIONAL 2-WAY TRANSMITTER WITH LCD DISPLAY
OPERATING INSTRUCTIONS

REMOTE TRANSMITTER LAYOUT



5-Button 2-way LCD Transmitter

Each LCD transmitter button has two operating modes: standard and level shifted. Pressing a transmitter button for less than one second activates the standard function associated with that button (such as lock or unlock). Pressing a button for more than one second activates the level shift feature, then plays a chime and vibrates to signal the level is shifted. While the transmitter is level shifted, pressing transmitter buttons 1-4 accesses another level of commands providing expanded operation.

The basic operation of the optional 2-way LCD transmitter is the same as the standard 4-button transmitter, with a few added features. The built-in LCD display provides visual confirmation of system operations and status. After a function such as lock is selected, the LCD display will show confirming icons to indicate that the function has taken place. In addition to LCD display, the 2-way transmitter also provides audible and vibration alert in case the display is out of view. And, for night-time use the LCD is equipped with a backlight feature which is activated by pressing button 5.

SYSTEM STATUS RECALL

Real-time system status can also be recalled at any time by pressing transmitter button 3 for less than one second. The system's current status will be shown on the LCD display.

RANGE INDICATION

The LCD display has an antenna icon that flashes every 4 seconds while the system is locked, to indicate the transmitter is in-range of the vehicle. 60 seconds after unlocking the antenna icon will stop flashing. If the transmitter is not in-range of the vehicle when pressing a button, a low pitched audible alert will be heard.

LOW BATTERY

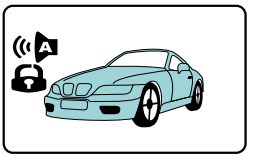
When the transmitter battery is in need of replacement, the display will show the battery icon. Replace with a fresh AAA alkaline battery.

BUTTON LOCK

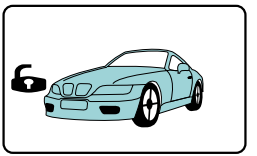
The transmitter is equipped with a button lock feature to avoid accidental feature activation while in a purse or pocket. To lock the buttons press button 1 and button 5 together. To unlock the buttons press button 2 and 5 together.

OPTIONAL 2-WAY TRANSMITTER INDICATIONS

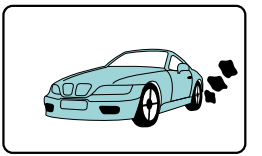
The optional 2-way LCD transmitter displays many different screens to provide real-time indications for feature activation and system status. the different display indications are shown below for reference.



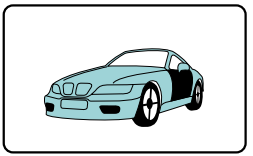
Lock



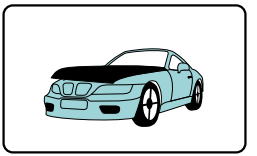
Unlock



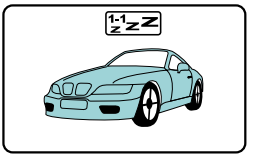
Engine Run



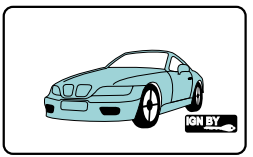
Door Open



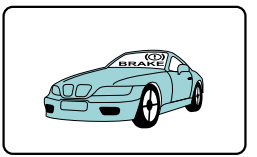
Hood Open



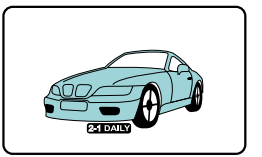
Valet Mode



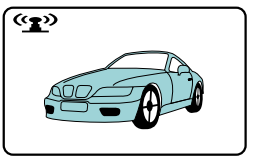
Ignition Key On



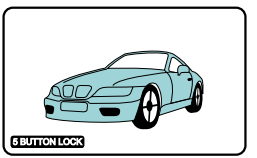
Brake Pedal



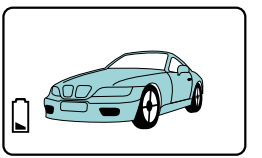
Cold Start



Range Indicator



Button Lock



Low Transmitter Battery

REMOTE AUTO START

Optional Keyless Entry and 2-way Transmitter Instructions Included

INSTALLATION INSTRUCTIONS

BEFORE INSTALLING THIS PRODUCT PLEASE READ THE INSTALLATION DIRECTIONS THOROUGHLY!!

BEFORE YOU BEGIN

This system is compatible with electronic fuel injected engines only! Not intended for use with carbureted engines.

- This product must be installed by qualified personnel according to these instructions and and observing all safety features.
- Check to see if the vehicle is equipped with any type of factory security system.
- Check to see if there is a pin switch for the hood, if not one must be installed.
- Verify that the vehicle starts and idles properly before beginning the installation.
- Always use a multi-meter to verify wiring.
- Before mounting the product, verify with the customer the desired location for the valet switch and LED.

MOUNTING SYSTEM COMPONENTS

Mounting System Module

Mount the remote start module under the dash where it will be away from moving parts such as brake pedals, etc.

Mounting LED

Mount the LED in an area that is easily seen from outside either side of the vehicle. Consult with the vehicle's owner to verify placement before drilling.

Mounting Valet Switch

Mount the valet switch in an area that is not easily seen yet within reach of the driver from the seated position. Consult with the vehicle's owner to verify placement before drilling.

Mounting Extended Range Receiver

Mount the extended range receiver (or transceiver on 2-way equipped systems) to the inside of the windshield using the supplied double-sided tape. Make sure the chosen location does not obscure the driver's view.

MODULE WIRING

12-Pin Main Harness

- BLACK WIRE - Ground input (-). Connect to a solid chassis ground that is clean and free of paint or dirt.
- GRAY/BLACK WIRE - Tachometer input. If the tach wire is unavailable, leave the GRAY/BLACK wire disconnected, and set Remote Start Programmable Feature #1 to button 2 or 3 setting.
- ORANGE/VIOLET WIRE - Brake switch input wire. Connect this wire to the brake switch wire that provides +12V when the brake pedal is pressed. This safety input **must** be connected or the remote start feature will not operate.
- PINK WIRE - Auxiliary start input (-). This wire can be used as an optional auxiliary start

or stop input when connected to an external device that supplies a pulsed ground output. This wire can be programmed to require 1, 2, or 3 pulses to start/stop the engine.

• BLACK/YELLOW WIRE - Glow plug light input (+/-). For diesel vehicles without a glow plug wire, no connection is needed. A 10-second timer will engage before cranking the starter. Most diesel vehicles will have a glow plug wire located in the instrument cluster. For these vehicles, test the wire to confirm proper operation and connect to it. Negative glow plug wire systems will show +12V when the the glow plug (wait-to-start) light is on, then show ground when the light turns off. Positive glow plug wire systems will show ground when the wait-to-start light is on. The BLACK/YELLOW wire automatically senses the system type and should be connected directly to the glow plug wire. When using the glow plug input, program Remote Start Programmable Feature #4 with button 3.

• BLACK/RED WIRE - Ground when running output (-). The BLACK/RED wire can be programmed for use as a Ground when running output, Factory Disarm output, Pulsed Defrosted, or Latched Defroster output.

Ground when running (default): Normally used to provide a ground when the remote start is engaged to activate an optional factory security bypass module or 3rd ignition relay, etc.

Factory Disarm: Connect to the wire that requires a ground pulse to disarm the factory alarm. The BLACK/RED wire will pulse on disarm or remote start.

Defroster: Most rear defroster circuits are usually activated by either a pulsed or latched output from a switch in the vehicle. Test the vehicle's switch with a multi-meter to determine the type of activation pulse required, and also verify that the defroster automatically turns off when the defroster cycle is complete. Connect the BLACK/RED wire to a relay to trigger the vehicle's defroster circuit and program Remote Start Programmable Feature #8 for the proper circuit type. *See Relay Diagrams, page 14.*

• GREEN/BLACK WIRE - Parking Light output (+) 7.5A relay. Connect to the vehicle's parking light wire. If the vehicle is equipped with more than four parking lights a relay is required. For vehicle's with independent left and right parking light circuits, connect the GREEN/BLACK wire to one side and the GREEN/YELLOW wire to the other. NOTE: Do not connect the GREEN/BLACK or GREEN/YELLOW wire to the vehicle's headlight circuit.

• GREEN/YELLOW WIRE - Parking Light output (+) 7.5A relay. Used for vehicle's with independent left and right parking light circuits; see GREEN/BLACK wire.

• YELLOW/BLACK WIRE - Auxiliary / trunk release output (-) 500mA. The YELLOW/BLACK wire can programmed for use as an auxiliary output or a dome light output.

Auxiliary (default): Connect to a relay for optional features such as trunk release, etc. The output length can be programmed for momentary, 10-second timed, or latched operation (on until pressed again).

Dome Light: Connect to a relay to activate the vehicle's dome light. The dome light relay output is usually connected to the same wire used for the door trigger input (See BLUE/RED and BLUE/BLACK wires).

• BLUE/RED WIRE - Positive door trigger (+). Connect to the door switch circuit wire that shows +12V when the door is open. This type of door circuit is usually found on Ford vehicles.

• BLUE/BLACK WIRE - Negative door trigger (-). Connect to the door switch circuit wire that shows ground when the door is open.

• ORANGE/GRAY WIRE - Hood trigger (-). Connect to supplied hood pin switch that shows ground when the hood is open.

Module Connectors

2-Pin Large Black Connector: Plug-in connector for valet switch. Mount switch in an area easily accessible from the driver's position.

2-Pin Small Black Connector: Plug-in connector for LED. Mount LED in an area where it may be easily seen from either side of the vehicle.

4-Pin Connector: Plug-in connector for extended range receiver.

2-Pin White Connector: Plug-in connector for door locks.

- BLUE WIRE - Unlock output (-).
- GREEN WIRE - Lock output (-).

6-Pin Starter Harness

• BLUE WIRE - Main accessory output (+). 12V output for heater and/or air conditioning system. For cars with more than one accessory wire add a relay(s) to power the extra accessory wire(s) or set dip switch #3 to ON and use the GREEN wire for second accessory.

• YELLOW WIRE - Main ignition output (+). Connect to the main ignition wire that switches +12 V and does not drop out during cranking.

• GREEN WIRE - Second ignition output (+). Connect to the wire that switches +12V and does not drop out during cranking. This wire may be optionally set for use as a second accessory wire or second starter wire.

• BLACK/YELLOW WIRE (small) - Starter anti-grind input from key switch (+). If the optional anti-grind feature is desired, cut the vehicle's starter wire and connect the small Black/Yellow wire to the side coming from the keyswitch. Connect the large Black/Yellow wire to the side going out to the starter.

• BLACK/YELLOW WIRE (large) - Start output (+). Connect to the vehicle's starter wire. If using the optional anti-grind feature, connect as explanined under small Black/Yellow wire description.

• RED WIRE - Main power input (+). Using the supplied inline fuse holder, connect directly to the vehicle's battery or alternate power source with a minimum 30 Amp supply.

SYSTEM PROGRAMMING

Entering Programming

To enter System Programming

1. Turn on ignition.
2. Within 5 seconds, press valet the proper number of times for the desired mode:
   5 presses = Start Programming
   10 presses = Convenience Programming
   - The LED will flash to indicate programming mode entered:
     5 chirps = Start Mode
     10 chirps = Convenience Mode
3. Press the valet switch the number times equal to the Feature you want to change.
   - The LED will flash each time the valet switch is pressed. A long flash is equal to 5 presses. (Example: step 7 = 1 long flash and 2 short flashes.)
4. Within 5 seconds, press the transmitter button corresponding to the desired operating mode for that Feature.
   - The LED will flash either 1, 2, 3, or 4 times to indicate the button setting.
5. Repeat steps 3 and 4 to change additional features.
6. Turn off ignition to save changes.

Default Reset

Follow this procedure to set the Programming Features to factory default settings.

1. Enter Start Feature or Convenience Feature program mode.
2. After entering programming mode, press Transmitter Button 4.
   - The LED will flash 4 times indicating the reset signal was received.
   - All Programming options are now set to factory default settings.
3. Turn ignition off.

Remote Start Programmable Features

1. Engine Start Sense. Selects between Tach Start for actual RPM monitored starting or Smart Start for tachless operation. Smart Start Ext extends the starter crank time to 1.8 seconds.

2. Ignition 2 Relay Programing. Selects between Ignition 2, Starter 2, or Accessory 2 output timing for this relay. In accessory 2 mode the output will not turn on until after engine cranking.

3. Transmission Type. Selects between automatic transmission and manual transmission types. On manual transmission vehicles, the remote start feature will not operate unless the proper vehicle exit sequence is performed. This operating mode protects against in-gear starting but is not completely without risk. Installation and safe use of the remote start feature on a manual transmission vehicle is the sole risk of the vehicle's owner, and the manufacturer assumes no liability for use in manual transmission vehicles.

Manual Transmission Mode Exit Sequence: With engine running, press unlock button. Turn ignition off (engine will stay running) and exit vehicle. When all doors are closed, press lock button to turn off engine and lock doors. The system will be able to remote start as long as the doors have not been unlocked prior to remote starting.

4. Engine Type. Selects between gasoline and diesel engine types. There are two operation choices for diesel engine equipped vehicles, 10-second timer mode for vehicles without a glow plug wire and glow plug monitor mode for vehicles with a wait-to-start indicator light.

10-Second Timer Mode: For diesel engines where a proper glow plug wire cannot be located, set the Engine Type to button 2 setting which automatically cranks the starter after a 10-second warm up period for the glow plugs.

Glow Plug Monitor Mode: For vehicles with a wait-to-start indicator, connect to the proper vehicle wire and set Engine Type to button 3 setting which automatically cranks the starter

REMOTE START PROGRAMMABLE FEATURES

Step	Function	Button 1	Button 2	Button 3	Button 4
1.	Engine Sense	Tach/RPM	Smart Sense	Smart Sense Ext	
2.	Ignition 2 Relay	Ignition 2	Starter 2	Accessory 2	
3.	Transmission Type	Automatic	Manual		
4.	Engine Type	Gasoline	Diesel Timer	Diesel Glow Plug	
5.	Engine Run Time	10 minutes	15 minutes	20 minutes	30 minutes
6.	Cold Start Timer	1 hour	2 hours	4 hours	12 hours
7.	Turbo Timer Mode	Off	I minute	3 minutes	6 minutes
8.	Black/Red Wire Program	Ground w/Run	Factory Disarm	Defroster pulse	Defroster latch
9.	Remote Start Input	1 Pulse	2 Pulses	3 Pulses	
10.	Tach Locator Feature	Off	On		

after the wait-to-start indicator turns off. If the indicator does not turn off, the starter will automatically crank after 60 seconds.

5. Engine Run Time. Selects between 10, 15, 20, and 30 minute run cycles.

6. Cold Temperature Starting. Allows the vehicle to automatically start and run every 1, 2, 4, or 12 hours for severe cold weather.

7. Turbo Timer Feature. For vehicles equipped with a turbocharger, this feature allows the engine to continue running for up to 6 minutes after the ignition is turned off, so the turbo has time to cool down.

8. Black/Red Wire Programming. Selects between Ground When Running, Factory Disarm, and Pulsed or Latched Defroster output. When set for Ground When Running output, the wire turns on as when remote start is activated and remains on until remote start shuts down. When set for Factory Disarm output, the Black/Red wire pulses on disarm and remote start to turn off a factory alarm. When set to Pulsed Defroster output, the wire pulses 10 seconds after remote starting. When set to Latched Defroster, the wire turns on 10 seconds after remote starting and remains on for 5 minutes.

9. Remote Start Input. Sets the number of pulses required on the Pink wire to activte or shut down the remote start. This feature is normally used when adding remote start to factory keyless entry systems.

10. Tach Locator Feature. The tach wire locator feature is used to identify a proper tach wire in the vehicle.

To aid in the locating and testing of a suitable tach wire, the system's LED flashes to indicate presence of a RPM signal. To use this tach locator feature, program Starter program feature #10 to On (button 2).

With the engine running and hood pin disconnected, probe the suspected tach wire with the Gray/Black wire (tach input). The LED will begin flashing if the Gray/Black wire is reading a proper tach signal. If the LED does not flash, continue testing suspected tach wires until the correct wire is found. After the proper tach wire is located and all start module connections have been made, test the remote start.

NOTE: pressing any transmitter button while using the Tach Locator feature will automatically exit Tach Locator mode. If after testing the remote start feature it becomes necessary to locate another tach wire, the Tach Locator feature must be programmed again.

Convenience Programmable Features

1. Ignition Lock/Unlock. Automatically locks the doors when ignition is turned on and unlocks when ignition is turned off. The system will not lock if any door is open when the ignition is turned on. Brake/On mode- the doors will lock after closing all doors and pressing the brake pedal with ignition on; the

CONVENIENCE PROGRAMMABLE FEATURES

Step	Function	Button 1	Button 2	Button 3	Button 4
1.	Ignition Lock/Unlock	Brake/On	On/On	On/Off	Off/Off
2.	Door Lock/Unlock Pulse	1secL/1secUL	3secL/3secUL	1secL/1secULx2	30secL/1secUL
3.	Yellow/Black Wire	Momentary	10s Timed	Latched	Dome Light
4.	Lock on Remote Start	No lock	Lock		
5.	Lock on End Start Cycle	No Lock	Lock		
6.	Parking Light w/Start	Flashing	Continuous	Off	

doors will unlock when ignition is turned off. On/On mode- the doors will automatically lock or unlock when ignition is turned on and off. On/Off mode- the doors will automatically lock with ignition, but not unlock with ignition. Off mode- no ignition control of door lock system.

2. Door Lock/Unlock Pulse. Selects between four door lock configurations: a 1-second lock and unlock pulse (standard), a 3-second lock and unlock pulse (for vacuum locks), a 1-second lock and two 1-second unlock pulses (for some Japanese cars), or a 30-second lock pulse and 1-second unlock pulse (for automatic window roll-up on some European cars).

3. Yellow/Black Wire Programming. Selects between momentary, timed, or latched operation auxiliary output operation, and Dome Light operation.

Momentary operation provides an output for .8 seconds.

Timed operation provides an output that turns on for 10 seconds each time the transmitter button is pressed. If the button is pressed again during the 10 seconds, the output will turn off.

Latched operation provides an output that turns on when the transmitter button is pressed and turns off when the button is pressed again.

Dome Light operation provides an output that turns on for 30 seconds whenver the unlock button is pressed.

4. Lock with Remote Start. Automatically locks the doors after remote starting.

5. Automatically locks the doors after the remote start is shut down.

6. Parking Light Mode. Selects the operation of the parking light output while the vehicle is remote started. Choose between flashing output, constant output, and off.

REMOTE START NOTES

Smart Start and Tach Start

In order for the system to properly start and run the vehicle, the unit must be able to determine if the engine is cranking or if the engine is actually running. This system is equipped with two means of detecting the engine's run status: Smart Start and Tach Start.

The *Smart Start* feature detects the engine's run status using specially designed software that interprets certain characteristics of the engine, without connection to the vehicle's tachometer wire. This feature allows a faster installation, but may not be compatible with all vehicles, or under extreme temperatures.

The *Tach Start* feature requires connection the the vehicle's tachometer wire, or an injector wire if the tach wire is not available. The Tach Start provides reliable operation with virtually any vehicle, even under extreme temperatures.

Tach Wire Locator

To aid in the locating and testing of a suitable tach wire, the system's LED can be programmed to flash when detecting the presence of a RPM signal. The Gray/Black tach input wire can then be used to probe for a proper tach signal. See *Remote Start Programmable Features*, Step 10.

Gas and Diesel Modes

The default setting for the engine type is **Gasoline**. For diesel vehicles, the engine type for Remote Start program feature #4 must be set to one of the two **Diesel** options. If a glow plug wire is not available, the unit has a built-in timer that waits 10 seconds before cranking the starter (button 2 option). For vehicle's with a glow plug light (wait-to-start indicator) the Orange/Violet wire should be connected (button 3 option) to make sure the glow plugs are warm up before the engine begins cranking.

BYPASSING FACTORY THEFT DETERRENT SYSTEMS

Many newer vehicles are now factory-equipped with anti-theft systems that use either a resistor coded key or a passive transponder that disables the fuel system unless a properly coded key is inserted into the ignition cylinder. To integrate a remote starter into these vehicles, you must determine which type of factory anti-theft system is equipped, then use the proper bypass module for that system.

General Motors Anti-theft Systems:

Many late-model GM vehicles are equipped with one of three basic anti-theft systems; Passkey, Passlock, and Passkey 3. Standard Passkey systems are easily identified by the resistor chip visible on the shaft of the key. Passlock systems do not rely on a resistor equipped key. Instead they use a resistance code generated when the key is turned in the ignition cylinder. Both of these systems have an anti-theft indicator in the instrument cluster. To properly interface into these systems and retain full functionality of the factory anti-theft system, VATS/PASSLOCK bypass module must be installed.

The Passkey 3 system, which is found on GM vehicles 1999 and newer, is a transponder based system described below.

Passive Transponder Systems:

Passive transponder systems have become the most popular anti-theft system among vehicle manufacturers (Ford, Honda, BMW, Toyota, Nissan and others). This system requires use of a tiny passive transmitter housed in the base of the key. This device activates when placed close to the vehicle's ignition switch. The starter will usually crank but the fuel system will be disabled, not allowing the vehicle to run, if the transponder is not detected. To properly interface into transponder systems, a transponder bypass module must be installed. These modules allow full functionality of the factory anti-theft system and usually require the use of a spare key.

ADDING TRANSMITTERS

To add a new transmitter to the system have the desired transmitters ready and follow the Code Learning sequence.

To enter Code Learning Mode:

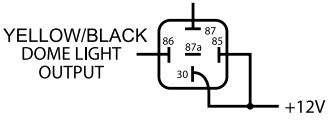
1. Turn the ignition on, off, on, off and leave on.
   - The LED will flash.
2. Press and hold the Valet switch.
   - The status LED will turn on, then flash 3 times and turn off.
3. Release the Valet switch.
4. Press the Lock Button on the transmitter.
   - The LED will flash.
5. Repeat step 3 for each additional transmitter, up to four total transmitters.
   - The LED will flash to indicate the transmitter number learned.
6. Turn off the ignition.
   - The lights will flash 3 times.

NOTE: If a transmitter is lost or stolen, make sure to code all 4 transmitter memory locations. (Example: If only one transmitter is used, repeat step 3 three more times to remove any previously programmed transmitters.)

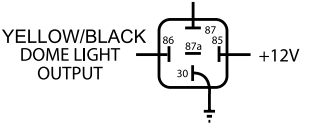
RELAY WIRING DIAGRAMS

DOME LIGHT DIAGRAMS

TO POSITIVE DOME LIGHT WIRE

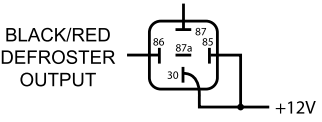


TO NEGATIVE DOME LIGHT WIRE

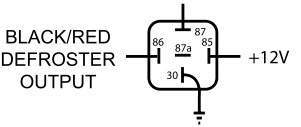


DEFROSTER DIAGRAMS

TO POSITIVE DEFROSTER WIRE

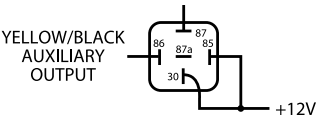


TO NEGATIVE DEFROSTER WIRE



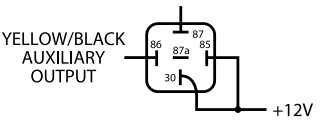
TRUNK RELEASE DIAGRAM

TO TRUNK RELEASE WIRE



OPTIONAL HEADLIGHT ACTIVATION

TO HEAD LIGHT WIRE

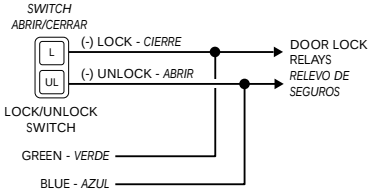


Program the Auxiliary output for timed operation and the headlights will turn on with Auxiliary for the preset timer duration then automatically turn off.

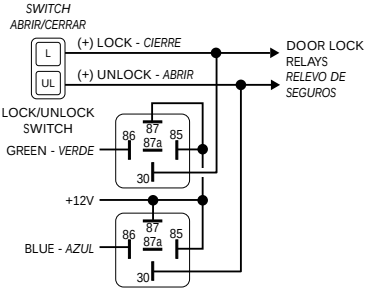
Program the Auxiliary output for latched operation and the headlights will turn on with Auxiliary and remain on until the Auxiliary function is pressed again.

DOOR LOCK WIRING DIAGRAMS

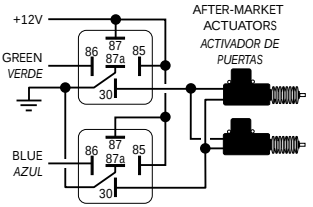
NEGATIVE PULSE LOCK SYSTEM



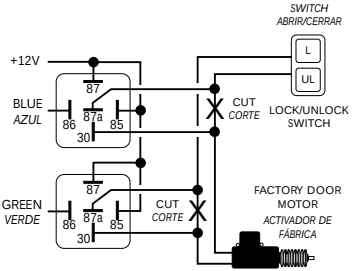
POSITIVE PULSE LOCK SYSTEM



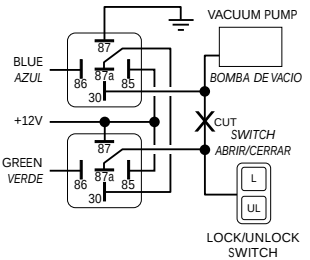
ADDING ACTUATORS



REVERSE POLARITY LOCK SYSTEM



VACUUM LOCK SYSTEM



WIRING DIAGRAM