



# Installation Manual

## Model: M6a

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference; and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

**For Technical Assistance, please call (800) 638-3600,  
or visit [www.magnadyne.com](http://www.magnadyne.com)**

## Installer Warnings!

**This remote starter is designed to be installed on fuel injected vehicles with an automatic transmission ONLY.**

- Never install this remote starter on a manual transmission vehicle.
- This system must be installed and wired through a safety switch so it will not start in any forward or reverse gear.
- Some automatic transmission vehicle (mainly older GM vehicles with a purple starter wire) have a mechanical-type park safety switch instead of electrical safety switch. The mechanical type does not interrupt the starter circuit when the transmission is any gear and does not offer the 100% level of safety required for remote starting purposes. Therefore, our system should never be installed on any vehicle that uses a mechanical type park safety switch.
- Once you install this system, you must verify that the vehicle will not start any forward or reverse gear, regardless of the vehicle type.
- Read the user's manual for operating and programming routine.
- Do not install any component near the brake, gas pedal or steering linkage.
- Some vehicles have a factory installed transponder immobilizer system that can severely complicate the installation. There is possibility that this system can not be installed on some immobilizer equipped vehicles.
- Most vehicles have an SRS air bag system. Use extreme care and do not probe any wires of the SRS system.
- Disconnect the car battery before connecting work on the vehicle.
- Use conventional crimp lock, bullet on any wiring. Poor wiring, i.e. taped joints, will possibly introduce unreliability into the alarm system and may result in false alarms or incorrect operation.
- Install wiring neatly under carpets or behind trim to prevent possible damage to wires.
- For the wires that operate at currents more than 10A, we suggest soldering all connection points. Do not use crimp lock type connectors or wire nuts.

## Installation

### Windshield Receiver/Antenna

- The combination windshield receiver/antenna mounts on the windshield, inside the vehicle.
- We suggest you mount receiver/antenna on the lower left-hand side of the windshield.

**Warning! Do not mount in such a manner that it obstructs the driver's view.**

- The receiver/antenna whip can be vertical or horizontal.
- Remove the protective tape backing.
- Carefully align the receiver/antenna and apply to windshield.
- Route the black connecting cable behind the trim and connect to receiver/antenna.
- Connect the other end to the control module.

### Valet Switch

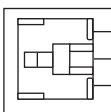
Select a mounting location for the switch that is easily accessible to the driver of the vehicle. The switch does not have to be concealed. However, concealing the switch is always recommended, as this provides an even higher level of security to the vehicle. Mount the valet switch in a hidden but accessible location. Route the valet switch wires to the control module.

### LED Status Indicator

The LED indicator status is built onto the main control module and is used only for installation programming.

## Wiring

### Harness 1: White 6-Pin Heavy Gauge Connector



The method that the remote starter uses to start the vehicle is a duplicate of the ignition switch function. Below, is an explanation of the 3 basic functions of the ignition switch. Since this installation will require analysis of the ignition switch functions, it is recommended making the three connections below at the ignition switch harness directly.

#### Violet 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 person 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 can not 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 "Violet" wire will be made to the low current start solenoid wire of the ignition switch harness. This wire must have +12 volts when the ignition switch is turned to the "Start" (crank) position only. This wire must have 0 volts in all other ignition switch positions.

**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).

#### Red Wires (2): (+12 V Power Input)

Remove the two 20A fuses prior to connecting these wires and do not replace them until the harness has been plugged into the control module. These wires are the source of current for all the circuits the relay harness will energize. They must be connected to a Hi current source.

**Note:** Connection of the "Red" wire should be made to the (+) post of the vehicle's battery for best performance.

#### Yellow Wire: (Ignition 1 Output)

Connect the "Yellow" wire to the Ignition 1 wire from the ignition switch. The ignition wire should receive +12 volts when the ignition key is in the "ON" or "RUN" and "START" or "CRANK" position. When the ignition is turned "OFF", the ignition wire should receive "0" voltage. **The yellow wire must be connected.**

## Wiring

### Harness 1: White 6-Pin Heavy Gauge Wiring Connector (continued)

#### Pink Wire: (Ignition 2 Output)

Some vehicles have (2) ignition wires that must be powered. Connect the "Pink" wire to the ignition 2 wire from the ignition switch. No connection is required on vehicles without second ignition — tape off this wire.

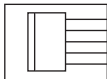
#### Brown Wire: (Accessory Output, Heater/Air Conditioning Output)

Connect the "Brown" wire to the accessory wire that powers the climate control system. An accessory wire will show +12 volts when the ignition switch is turned to the "ACCESSORY" or "ON" and "RUN" positions, it will show 0 Volts when the key is turned to the "OFF" and "START" or "CRANK" position. There will often be more than one accessory wire in the ignition harness. The correct accessory wire will power the vehicle's climate control system. Some vehicles may have separate wires for the blower motor and the air conditioning compressor. In such cases, it will be necessary to add a relay to power the second accessory wire.

### Harness 2: White 5-Pin Connector

#### Red Wire with White Stripe: (Parking Light Relay Input)

The "Red/White" wire has already been assembled to work with a +12 volt switched parking light system (most vehicles). For vehicles with ground switched parking light activation cut this wire and connect it to ground (see wiring diagram).



#### White Wire: (Parking Light Relay Output, +12V 10A Output + or - selectable)

Connect the "White" wire to the parking light wire coming from the headlight switch. Do not connect the "White" wire to the dashboard lighting dimmer switch (damage to the dimmer will result). The limitation of the "White" wire is 10 Amp max. Do not exceed this limit or damage to the alarm and parking relay will result.

#### Black Wire: (System Ground)

This is main ground connection of the alarm module. Make this connection to a solid section of the vehicle frame. Do not connect this wire to any existing ground wires supplied by the factory wire loom, make the connection directly to the vehicle's frame.

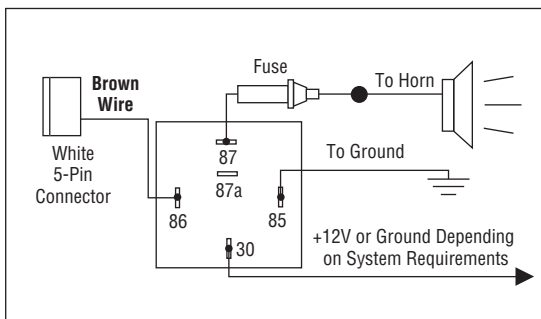
#### Brown Wire: (Programmable Horn Output - Factory Default Setting)

This is the negative (-) output connection for the horn. Current capacity is 200Ma. Connect this wire to the vehicles horn relay trigger wire coming from the horn button. If this horn button wire can not be found, an additional relay can be added and connected directly to the horn to trigger it.

**Option:** Factory Security Re-Arm Output. Alternatively, this wire can be used rearm a factory security system (see alarm feature programming) Connect this wire to the factory security system's ARM trigger wire.

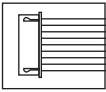
#### Red Wire: (System Power, +12V Constant)

The "Red" wire supplies power to the system. Connect this wire to a constant +12 volt source.



## Wiring

### Harness 3: White 9-Pin Mini Connector



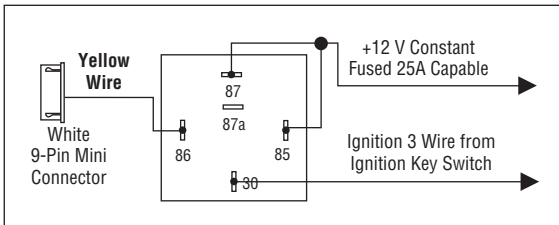
#### **Yellow Wire:** (-) 200mA Ignition 3 Output

This wire provides a 200mA (-) ground output that becomes active 4 seconds before the remote start unit initializes, and remains grounded while the engine is running.

**Note:** This wire can also be used for an immobilizer bypass module.

#### **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, wire a relay (not supplied) as shown. Do not connect any vehicle circuits together, they are isolated for a reason.



#### **Transponder Interfacing Using ALA984 Relay:**

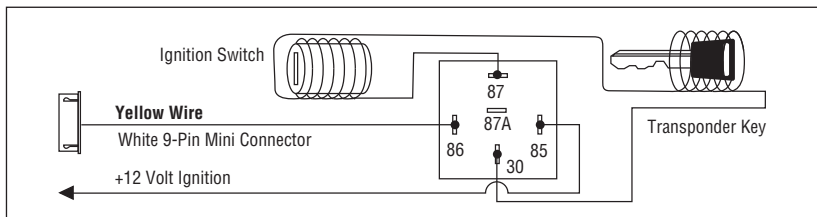
If the vehicle has a transponder system installed, you will need to bypass the system while the vehicle is operating under the control of the Remote Start Unit. To do this, follow these steps:

1. You will need a transponder key that's already programmed to the vehicle.
2. Remove the trim around the ignition switch.
3. Wrap a thin (30 awg) wire tightly around ignition switch 6 to 8 times and secure it.
4. About 6" down line make another loop of approximately 2" diameter.
5. Place the key inside this loop and secure it to the loop.
6. Connect on end of the 30 awg wire to pin (87) of the relay module.
7. Connect the other end of the loop wire to Pin (30) of relay module.
8. Connect (86) to ignition, connect (85) to the yellow wire of white 5-pin mini connector.

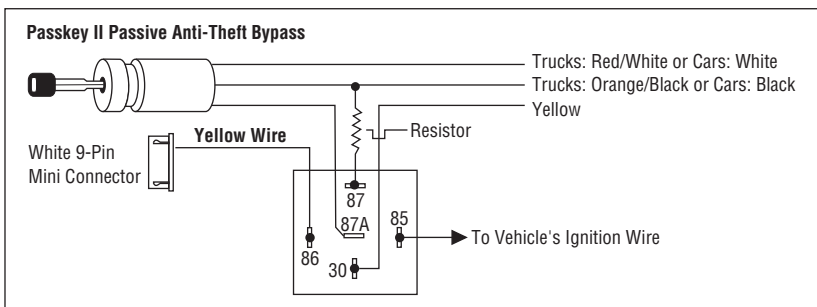
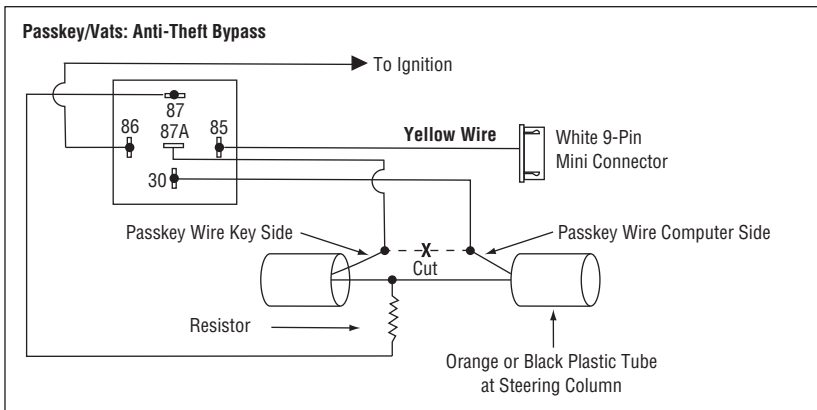
## Wiring

### Harness 3: White 9-Pin Mini Connector (continued)

**Transponder Interfacing Using ALA984 Relay:** (continued) Can also use RS-TIM bypass module.



**GM VATS Key Override Using ALA984 Relay:** (Can also use RS-PLM bypass module)



## Wiring

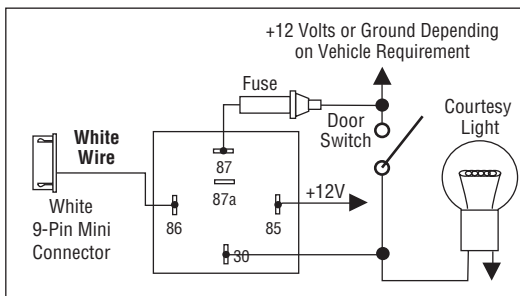
### Harness 3: White 9-Pin Mini Connector (continued)

**White Wire:** (-) 200mA Programmable Output

#### Dome Light Control Output (Factory Default Setting):

This wire becomes grounded when the dome light controls circuit of the system is active. The current capacity of this wire is 200mA. This wire can control the operation of the interior lights. An optional relay can be used as shown.

- A. Upon disarming, the interior lights will remain on for 30 seconds.
- B. If the vehicle is violated, the interior light will flash for the same duration as the siren.



#### Key Sensor By-Pass (See Alarm Feature Programming):

This wire is for connecting to the Key Sense wire bypass that some Chrysler and Toyota vehicles need to allow the remote start to active the vehicle.

**Pink Wire:** (-) 200mA Programmable Output  
(See Alarm Feature Programming Step 3)

#### Unlock the Driver's Door First Output (Factory Default Setting)

The two step unlock feature will work for the most fully electronic door lock circuit. The vehicle must have an electronic door lock switch (not the lock knob or key switch), which locks and unlocks all of the vehicle's doors. When wired for this feature, pressing the disarm (or unlock) button one time will disarm the alarm and unlock the driver's door only. Press disarm (or unlock) button two times within 3 seconds, the alarm will disarm and all doors will unlock.

#### Factory Security Disarm Signal Output

This wire can be used to disarm a factory installed security system. This wire sends a negative (-) 1 second pulse upon a remote start or remote door unlocking signal. Some factory systems must be disarmed to allow remote starting. In most cases, this wire may be connected directly to the factory alarm disarm wire. The correct wire will show negative ground when the key is used to unlock the doors or trunk. This wire is usually found in the kick panel area in the wiring harness coming into the car body from the door.

#### Start Status (Shock Sensor Bypass Control) Output: (See Alarm Feature Stage 3 Programming)

This wire is designed to bypass the shock sensor module. This wire will supply an output at all times the remote start is operating plus an additional 3 seconds after the remote start unit is turned off.

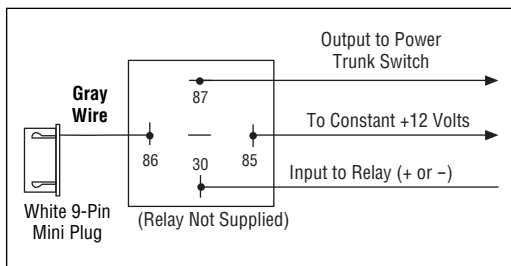
## Wiring

### Harness 3: White 9-Pin Mini Connector (continued)

#### Gray Wire: Channel 2 (Trunk

#### Release) Output

This will become a 1 second pulse ground by activating Channel 2 on transmitter for two seconds. The current capacity of this wire is 200mA. This feature allows you to remote control trunk release or other electric device.



#### Green Wire: (See Alarm Feature Programming Part 2)

This wire can turn on and off the remote start system each time it sees a momentary ground signal. This wire is normally used for testing or activating the remote starter from an after-market alarm system.

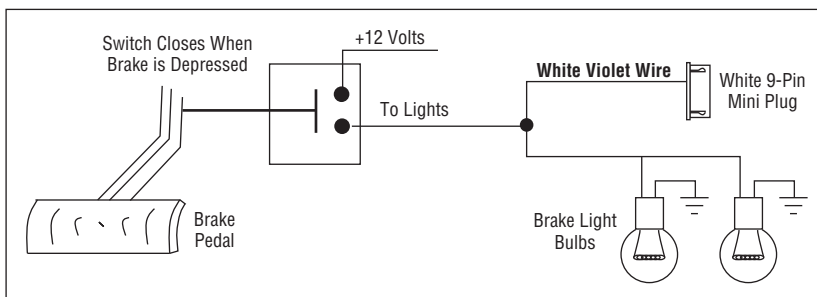
#### White/Black Wire: Negative Safety Shut Down Input

The White/Black wire provides an instant shutdown for the remote start, whenever it is grounded. Connect the 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 pin switch is to be used with an alarm system, connect this wire with diode. Diodes are required when the hood pin is used as a triggering device. Wire as shown.

#### White/Violet Wire: Positive Safety Shut Down Input

**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 or 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.

This wire provides an instant shutdown for the remote start, whenever it receives +12 volts. If the brake lights switch in the vehicle switches +12 volts to the brake light circuit, connect this 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 gears, the brake pedal must be depressed. The brake input will in turn cause the remote start unit to shut off. A relay may be required if the brake light switch is (-) type.





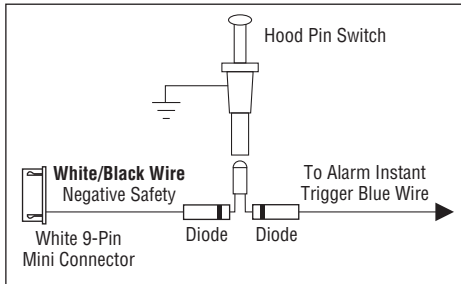
## Wiring

### Harness 3: White 9-Pin Mini Connector (continued)

#### **Black/White Wire:** (-) Remote Start Enable Toggle Switch Input, (-) Neutral Safety Switch Input

When the Black/white wire is grounded, the remote start unit is operable. When this wire is disconnected from ground, the remote start is disabled.

1. An optional "remote start toggle switch" can be added on to temporarily disable the Remote Start Device, it can prevent the vehicle from being remote started accidentally. This feature is useful if the vehicle is being serviced or stored in an enclosed area. To disable the remote start, move the optional remote start enable toggle switch to the OFF position. To enable the remote start, move the optional remote start enable toggle switch to the ON position.
2. If needed, this wire can connect to the Park/Neutral switch in the vehicle (see testing).



**Important Note:** Directly connect the Black/White wire to the "Ground" when this wire is not used for it's intended safety purpose / or remote start system will not function.

#### **White/Red Wire:** (-) Tachometer Signal Connection

This input provides the remote start system with information about the engine's revolutions per minute (RPM). It can be connected to the negative side of the coil in vehicles with conventional coils. In multi-coil and high energy ignition systems, locating a proper signal may be more difficult. Once connected, you must program the Start Feature Stage 2 to "Tachometer Checking Type".

In a multi-coil ignition system, the system can have individual coil wires. Individual coil wires in a multi-coil ignition system will register lower amounts of AC voltage. Common locations for a tachometer wire are the ignition coil itself, the back of the gauges, engine computers and automatic transmission computers.

**Important! Do not test tachometer wires with a test light or logic probe. Electronic components of the ignition system will be damaged.**

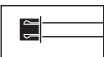
#### **How to find a tachometer wire with your multi-meter:**

1. Set the ACV or AC voltage \*(12 or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Start and run the vehicle.
4. Probe the wire you suspect of being the tachometer wire with the red probe of the meter.
5. If this is the correct wire the meter will read between 1V and 6V at idle, and will increase as engine RPM increases.

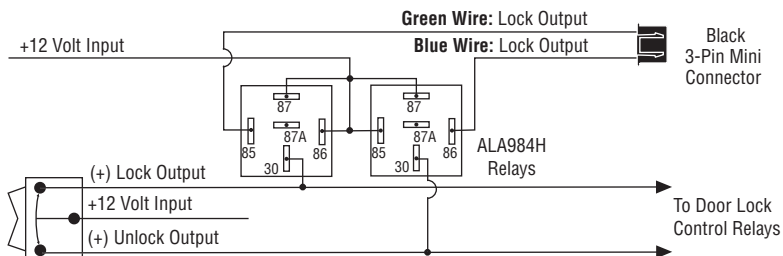
**Note:** No connection of this wire is required if you use the voltage or timer checking type mode.

## Wiring

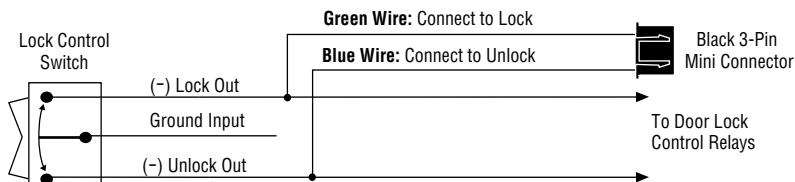
### Harness 6: Black 3-Pin Mini Connector



#### 3 Wire Positive Door Lock System



#### 3 Wire Negative Trigger Door Lock System

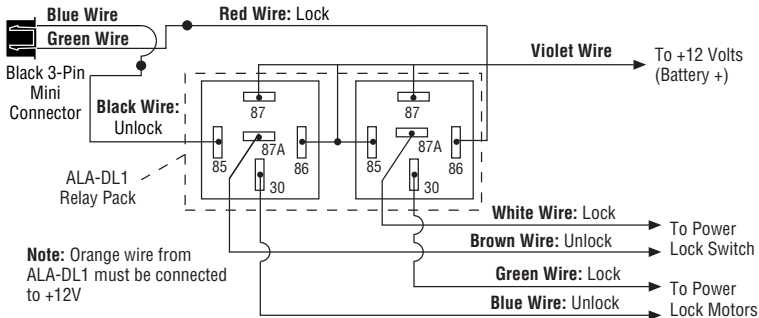




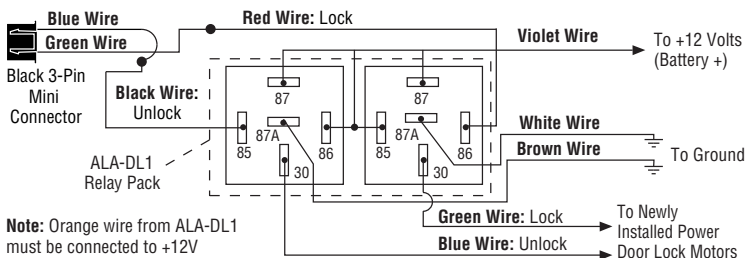
## Wiring

### Harness 6: Black 3-Pin Mini Connector (continued)

#### 5 Wire Ground at Rest Door Locking Systems



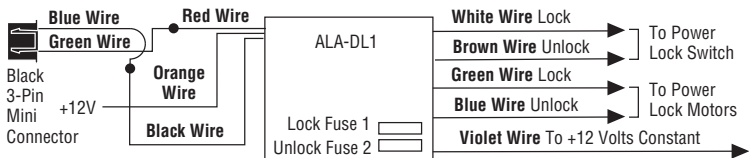
#### Newly Installed Power Door Lock Motors



#### One Wire Multiplexing Door Locking Systems

Some vehicle's (Chrysler, Mazda and Ford Probe and others) use one wire to lock and unlock the doors. Example: When the door lock controller sees a signal thru a resistor it will unlock. If a signal is received without a resistor the doors will lock. Some use 2 resistors. One for lock and one for unlock. We have developed patented plug-in fuse resistors for this application. Simply remove the fuse from our door lock module and replace with correct resistor value fuses that matches the vehicles door lock switch. **Wiring:**

1. Connect both the green (lock) and the blue (unlock) wires to the vehicles one wire lock/unlock wire.
2. Connect our violet polarity input wire to +12v or to ground to match vehicles door lock polarity.
3. The white and the brown wires will not be used.



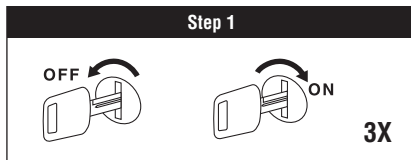
Connect to 3-pin plug on control module for ignition locking.

**Note:** Orange wire from ALA-DL1 must be connected to +12V

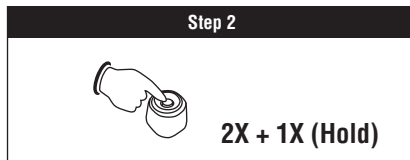
## Programming the Transmitter

- A. The transmitters included with this system have been preprogrammed and should not need reprogramming.
- B. This system will accept codes from four transmitters. If more than four transmitters are programmed, the system will only operate from the most recent four transmitters.
- C. Use the following information to program additional transmitters.

### Enter the Programming Mode

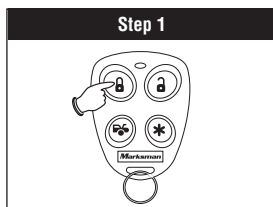


Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the ON position the third time.

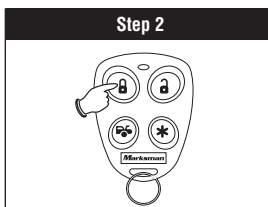


Before 15 seconds has passed, push and release the valet switch 2 times. Then push the valet switch a third time and hold it in until a long chirp/beep is heard, then release it. You are now in transmitter programming mode.

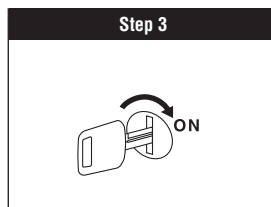
### Programming the Transmitter



Press the LOCK button on the first transmitter until you hear a confirmation chirp/beep. The transmitter is now coded into the system.



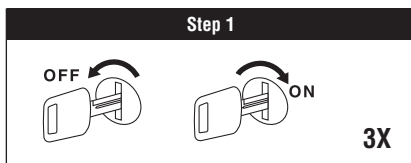
Repeat Step 1 for each additional transmitter.



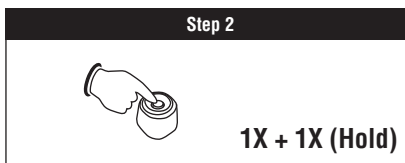
When finished, either turn off the ignition key or wait for 15 seconds to automatically exit transmitter programming mode. You will hear 3 long chirp/beeps to indicate you are out of the transmitter programming mode.

## Keyless Entry Feature Programming (Part 1)

Examine the two different feature charts enclosed and decide which feature to change. Circling the feature to be changed will make the programming process much easier to perform.



Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the OFF position the third time.



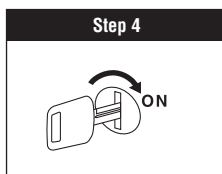
Before 15 seconds has passed, push and release the valet switch 1 time. Then push the valet switch a second time and hold it in until 1 short and 1 long chirp/beep is heard then release it. You are now in transmitter Part 1 programming mode.

### Step 3

#### Remote Feature Programming

Use the transmitter buttons as illustrated to adjust the desired features. Keep repressing the transmitter button that relates to the feature you want to adjust until the correct amount of chirp/beeps are heard. Then move on to the next feature.

Button	One Chirp LED One Pulse <i>(Factory Default Setting)</i>	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse
	Chirps On	Chirps Off	
	Pathway Illumination Feature Off	Parking lights On for 30 seconds after an unlock signal from the transmitter	Parking lights on 10 seconds after a lock signal and 30 seconds after an unlock signal
	Harness 3 - Pink wire 2-step door unlock output On	Harness 3 - Pink Wire Factory security disarm output	Harness 3 - Pink Wire Start Status Output On
	Harness 2 - Brown Wire Horn Honk Output	Harness 2 - Brown Wire Factory security rearm output	
	Harness 3 - White wire Dome Light Illumination Output On	Harness 3 - White Wire Ground Output During Start (Crank)	



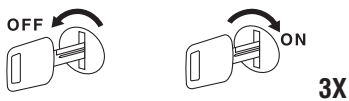
#### Turn On the Ignition

3 long chirps and 3 flashes of the parking lights will confirm exit of the programming mode.

**Note:** Waiting 15 seconds after the last command will also cause the system to automatically exit the programming mode.

## Keyless Entry Feature Programming (Part 2)

### Step 1



Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the OFF position the third time.

### Step 2



**3X + 1X (Hold)**

Before 15 seconds has passed, push and release the valet switch 3 times. Then push the valet switch a fourth time and hold it in until 2 short chirps/beeps and 1 long chirp beep is heard, then release it. You are now in Part 2 programming mode.

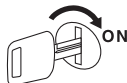
### Step 3

#### Remote Feature Programming

Use the transmitter buttons as illustrated to adjust the desired features. Keep repressing the transmitter button that relates to the feature you want to adjust until the correct amount of chirp/beeps are heard. Then move on to the next feature.

Button	One Chirp LED One Pulse (Factory Default Setting)	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse	Four Chirps LED Four Pulse
	0.8 Seconds Door Lock Pulse	3.5 Second Door Lock Pulse	Double Pulse Unlock	Comfort Feature
	Ignition Controlled Door Locks and Unlocks	Ignition Controlled Door Locks Only	Ignition Controlled Door Unlocks Only	Without this Feature
	Door Locks Before Start	Doors Lock After Shutdown	Doors Lock Before Start and Lock Again After Shutdown	Without this Feature
	Harness 3 - Green Wire 1 AUX Input Pulse to Activate Remote Start	Harness 3 - Green Wire 3 AUX Input Pulses to Activate Remote Start		

### Step 4



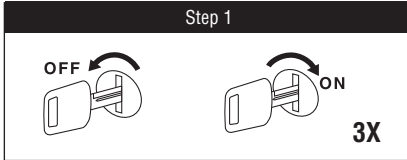
#### Turn On the Ignition

3 long chirps and 3 flashes of the parking lights will confirm exit of the programming mode.

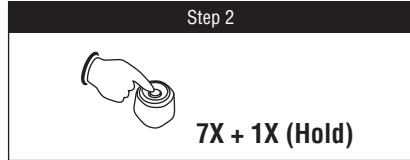
**Note:** Waiting 15 seconds after the last command will also cause the system to automatically exit the programming mode.

## Remote Start Feature Programming Stage 1

Examine the two feature charts enclosed and decide which features to change. Circling the feature to be changed will make the programming process much easier to perform.



Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the OFF position the third time.



Before 15 seconds has passed, push and release the valet switch 7 times then push the valet switch a eighth time and hold it down until 4 short chirps/beeps + 1 long chirp beep is heard then release it. You are now in Stage 1 Remote Start Feature Programming Mode.

### Step 3

#### Remote Feature Programming








Use the transmitter buttons as illustrated to adjust the features required. Keep re-pressing the transmitter button that relates to the feature you want to adjust until the correct amount of chirp/beeps is heard. Then move on to the next feature.

Button	One Chirp LED One Pulse (Factory Default Setting)	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse	Four Chirps LED Four Pulse
	Gasoline Engine	Diesel Engine and 10 Second Warm Up	Diesel Engine and 15 Second Warm Up	Diesel Engine and 20 Second Warm Up
	10 Minute Run Time	20 Minute Run Time	30 Minute Run Time	5 Minute Run Time
	Factory Alarm Disarm with Channel 2 "On"	Without this Feature		
	Constant Parking Light Output	Flashing Parking Light Output		
	Press the (+ - +) Button = Activates Remote Start	Press the (Lock) + (+) Button = Activates Remote Safe Start	Press the (+) Button = Activates Remote Start	
	3 Hour Time Start	2 Hour Time Start		

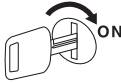
(continued on the next page)



## Remote Start Feature Programming (continued)

Button	One Chirp, LED One Pulse <i>(Factory Default Setting)</i>	Two Chirps, LED Two Pulses	
	Turbo Timer Control Function is Off. The alarm can not be armed while the engine is running.	The vehicle has an aftermarket turbo timer installed. The alarm system can be armed with the engine running. The shock sensor will be bypassed as long as the engine is running.	
	Three Chirps, LED Three Pulses	Four Chirps, LED Four Pulses	Five Chirps, LED Five Pulses
	Built-in Turbo Timer Control is Active Press the (  +  ) buttons before removing the ignition key to activate the <b>1</b> minute Turbo timer control. The alarm system can be armed and the shock sensor will be by-passed.	Built-in Turbo Timer Control is Active Press the (  +  ) buttons before removing the ignition key to activate the <b>3</b> minute Turbo timer control. The alarm system can be armed and the shock sensor will be by-passed.	Built-in Turbo Timer Control is Active Press the (  +  ) buttons before removing the ignition key to activate the <b>5</b> minute Turbo timer control. The alarm system can be armed and the shock sensor will be by-passed.

### Step 4



#### Turn On the Ignition

3 long chirps and 3 flashes of the parking lights will confirm exit of the programming mode.

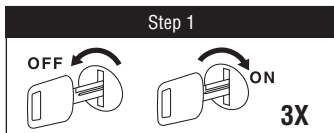
**Note:** Waiting 15 seconds after the last command will also cause the system to automatically exit the programming mode.

## Remote Start Feature Programming Stage 2

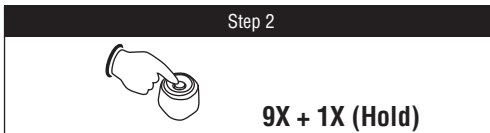
In this mode you will program the type of engine starting detection you want to use in your installation. There are 3 types available:

- 1. Tachometer (RPM) Detection:** (Most reliable and recommended) This type of detection requires a hard wire connection to the vehicles ignition coil.
- 2. Voltage Detection:** This method detects the drop and rise in the battery voltage when the vehicle is started by remote. This type of detection requires a solid main power input connection but it does not require any additional hard wire connections.
- 3. Elapsed Timer:** This method is the easiest for installation but is not always the best method for year round usage (Summer and Winter). To operate this method, you will program a specific time window for the remote start unit to crank the engine. Battery strength, environment and the aging process of the vehicle may require the timer to reset from time to time or season to season.

## Remote Start Feature Programming Stage 2 (continued)



Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the OFF position the third time.



Before 15 seconds has passed, push and release the valet switch 9 times then push the valet switch a tenth time and hold it down until 5 short chirps/beeps + 1 long chirp beep is heard then release it. You are now in Stage 2 Remote Start Feature Programming Mode.

### Step 3

### Remote Feature Programming

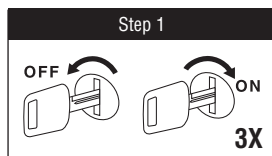
Use the transmitter buttons as illustrated to adjust the features required. Keep re-pressing the transmitter button that relates to the feature you want to adjust until the correct amount of chirp/beeps is heard. Move on to the next feature.

Button	One Chirp LED One Pulse (Factory Default Setting)	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse	Four Chirps LED Four Pulse
	Tachometer Checking Type	Voltage Checking Type	Fixed Crank Mode	
	<b>RPM Learning Start Timer:</b> 0.6 second (1 chirp)	0.8 second (2 chirps) 1.0 second (3 chirps) 1.2 second (4 chirps)	1.4 second (5 chirps) 1.6 second (6 chirps) 1.8 second (7 chirps)	2.0 second (8 chirps) 3.0 second (9 chirps) 4.0 second (10 chirps)
	Low Check Level (Default for Tach Check Type)	Hi Check Level (Default for Voltage Check Type)		
	<b>Exit the programming mode</b> (3 long chirps and 3 parking light flashes to confirm this exit)			

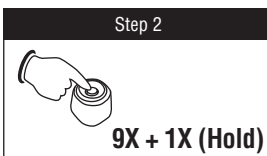
## Tachometer Detection Programming

If you have selected tachometer detection, you are required to program 2 additional features as enclosed.

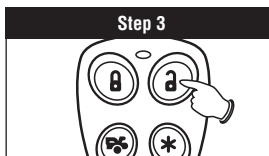
### RPM Learning and Crank Detection Level Programming (if needed):



Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the Off position the third time.



Before 15 seconds has passed, push and release the valet switch 9 times then push the valet switch a tenth time and hold it down until 5 short chirps/beeps + 1 long chirp beep is heard then release it.



Press and release the unlock button one time. 1 chirp to indicate that you are in RPM learning mode.

## Tachometer Detection Programming (continued)

### Step 4



**START**

Start the vehicle's engine with the ignition key (while the engine is running the parking lights and the LED should be flashing). If they are not you need to recheck your tachometer wire connection.

### Step 5



Press and hold the valet switch. When the RPM level is learned, you will hear a long chirp/beep and the LED will be on steady for 2 seconds.

### Step 6



**OFF**

Turn off the ignition to stop the engine.

### Step 7



Press the lock button on the transmitter to get out of the programming mode. You will hear 3 long chirps and will get 3 parking light flashes for confirmation.

### Step 8



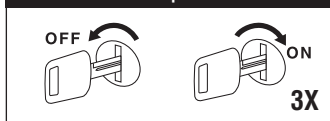
Press the (\*) button on the transmitter twice to start the vehicle. If everything is correct, the engine will crank and fire without over-running or under-running the starter. If all things seem correct, press the (\*) button twice to stop the engine running. If a cranking problem is noticed, you may need to adjust the crank detection feature (follow the procedure on page 20).

## Hi/Lo Crank Detection and Crank Timing Adjustments

### Procedures for Adjusting Crank Timing and Hi/Lo Crank Detection Levels

Note: The Crank Timing Adjustment is for Voltage Checking and Timer Checking Operating Modes Only.  
Hi/Lo Crank Detection Adjustments are for all Operating Modes

#### Step 1






Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the OFF position the third time.

#### Step 2



**9X + 1X (Hold)**

Before 15 seconds has passed, push and release the valet switch 9 times. Then push the valet switch a eighth time and hold it down until 4 short chirps/beeps and 1 long chirp beep is heard, then release it. You are now in Stage 2 remote start feature programming mode. Repeatedly press the transmitter button indicated on the chart to adjust the desired feature. Listen for the correct number of chirps.

Button	One Chirp LED One Pulse (Factory Default Setting)	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse	Four Chirps LED Four Pulse
	<b>Crank Timing:</b> 0.6 second (1 chirp) 0.8 second (2 chirps)	1.0 second (3 chirps) 1.2 second (4 chirps) 1.4 second (5 chirps)	1.6 second (6 chirps) 1.8 second (7 chirps) 2.0 second (8 chirps)	3.0 second (9 chirps) 4.0 second (10 chirps)
	Low Check Level (Default for Tach Check Type)	Hi Check Level (Default for Voltage Check Type)		
	<b>Exit the programming mode</b> (3 long chirps and 3 parking light flashes to confirm exit).			

**Note:** If you reset the crank detection level and the engine still will not start consistently due to a short crank time, it is suggested that you reprogram the unit to use another type of detection (either voltage or timer) to get the engine to start consistently.

## Voltage Detection Additional Programming

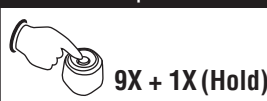
If you have selected Voltage Detection, you may be required to program additional features as enclosed. Press the (\*) button on the transmitter to start the vehicle. If you notice any difficulty in consistent operation, you may need to make adjustments as enclosed. Follow the programming procedures until starting is consistent.

#### Step 1



Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the OFF position the third time.

#### Step 2



Before 15 seconds has passed, push and release the valet switch 9 times. Then push the valet switch a eighth time and hold it down until 4 short chirps/beeps and 1 long chirp beep is heard, then release it.

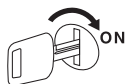
#### Step 3



Press the (Trunk) button on the transmitter to change the crank detection level from Hi to Low. You will hear 1 chirp/beep to indicate the feature has been changed to the Low selection.

## Voltage Detection Additional Programming (continued)

### Step 4



Turn on the ignition switch to get out of the programming mode. You will hear 3 long chirps and get 3 parking light flashes for confirmation.

### Step 5



Press the (\*) button twice to start the vehicle. If everything is correct, the engine will crank and fire without over-running or under-running the starter.

**Note:** Let engine run for more than 10 seconds to insure proper operation.

If the engine still cranks too long or not long enough, you may need to adjust the start timer. Follow the procedures on page 19 to adjust the crank timing and retest the system.

## Elapsed Timer Additional Programming

If you have selected Timer Checking Detection, you may be required to program additional features as enclosed. Press the (\*) button twice on the transmitter to start the vehicle. If you notice any difficulty in consistent operation, you may need to make adjustments as enclosed. Follow the programming procedures until starting is consistent.

### Step 1



Turn the ignition switch from the OFF position to the ON position 3 times, leaving it in the OFF position the third time.

### Step 2



**9X + 1X (Hold)**

Before 15 seconds has passed, push and release the valet switch 9 times. Then push the valet switch a eighth time and hold it down until 4 short chirps/beeps and 1 long chirp beep is heard then release it.

### Step 3



Press the (Trunk) button on the transmitter to change the crank detection level from low to hi. You will hear 2 chirp/beeps to indicate the feature has been changed to the Hi selection.

### Step 4



Turn on the ignition switch to get out of the programming mode. You will hear 3 long chirps and get 3 parking light flashes for confirmation.

### Step 5

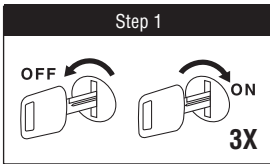


Press the (\*) button twice to start the vehicle. If everything is correct, the engine will crank and fire without over-running or under-running the starter.

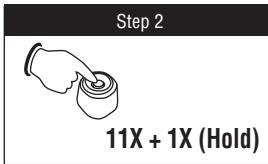
**Note:** Let engine run for more than 10 seconds to insure proper operation.

If the engine still cranks too long or not long enough, you may need to adjust the start timer. Follow the procedures on page 19 to adjust the crank timing and retest the system.

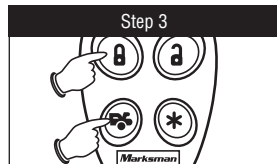
## Returning to Factory Default Settings



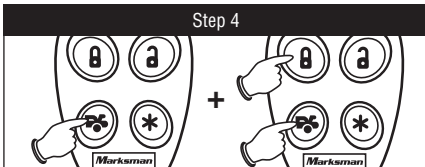
Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the Off position the third time.



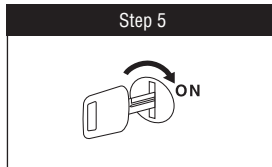
Before 15 seconds has passed, push and release the valet switch 11 times then push the valet switch a twelfth time and hold it down until 6 short chirps/beeps then release it. You are now in the "Return to Factory Default Setting" programming mode.



Press the (Lock) and (Trunk) button on the transmitter together for 6 seconds, there will be a confirmation of six chirps with 3 long chirp and 3 parking light flashes to confirm the system "Keyless Entry Features 1 and 2 Programming" all returns to factory default setting.



Press the (Trunk) button first, then press the (Lock) and (Trunk) buttons on the transmitter for 6 seconds. There will be a confirmation of six chirps with 3 long chirps and 3 parking light flashes to confirm the system "Remote Start Features 1 and 2 Programming" all returns to factory default settings.



**Turn On the Ignition**  
3 long chirps and 3 flashes of the parking lights will confirm exit of the programming mode.

**Note:** Waiting 15 seconds after the last command will also cause the system to automatically exit the programming mode.

## Shutdown Diagnostics

The unit has the ability to report the cause of the last shutdown of the remote start system.  
Enter:

1. Turn the Ignition switch to "On" position.
2. Press the (Trunk) button on the transmitter
3. The LED will now report the last system shutdown by flashing for 3 cycles in the following grouped patterns:

LED Flashes	Shutdown Mode	
1	(-) Safety Shutdown Input (Hood) (+) Safety Shutdown Input (Brake) or Neutral Safety Switch Input Fail	<ol style="list-style-type: none"> <li>1. Close the Hood</li> <li>2. Check White/Black Wire Connection (7-Pin Mini Black)</li> <li>3. Check White/Violet Wire Connection (7-Pin Mini Black)</li> <li>4. Move the Enable Toggle Switch to "On" position (If Installed)</li> <li>5. Move the gear selector to "Park"/"Neutral" Position.</li> <li>6. Check Black/White Wire Connection (7-Pin Mini Black)</li> </ol>
3	No RPM or Low Voltage: Check White/Red wire Connection	Tachometer Checking Type:  Voltage Checking Type: Program the "Check Level" from "Hi Check Level" to "Low Check Level"
5	Over-Rev	
6	System Timed Out	
7	Transmitter	
8	Tach. Signal has not been learned	Re-learning the RPM

## Testing Your Installation

**Caution!** The following procedure must be performed after the installation of the 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.

1. Test the "Brake" shutdown circuit: With the vehicle in Park (P), start the vehicle using the remote transmitter. Once the engine is running, press the brake pedal. The vehicle should shut down immediately. If the vehicle continues to run, check the brake circuit "White/Violet" wire.
2. Test the "Hood Pin" shutdown circuit: Start the vehicle using the remote transmitter. Once the engine is running, pull the hood release and raise the hood. The vehicle should shut down immediately. If the vehicle continues to run, check the hood pin "White/Black" wire connection.
3. Neutral Start Safety Test:
  - A. Set the vehicle parking brake.
  - B. Block the drive wheels to prevent vehicle movement.
  - C. Sitting in the vehicle, turn the ignition switch "On" or "Run" position. But do not start the engine.
  - D. Step on the brake pedal and shift the gear selector into "Drive" (D).
  - E. Put you foot over the brake pedal but do not press down on it. Be ready to step on the brake to shut down the Remote Start Device.
- F. Start the vehicle using remote transmitter.
  - a. If the starter does not engage, the test is complete.
  - b. If the starter engages, immediately step on the brake pedal to shut down the system, recheck your "Violet" wire (White 6-Pin, Starter Output) connection. The heavy gauge "Violet" 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 Start's 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.

## 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 selector position.

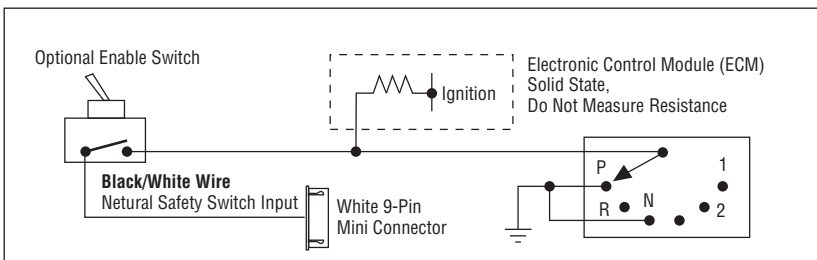
### Park Neutral ECM Input:

The Park/Neutral ECM input is the preferred method of installation. This not only maintains the integrity of the factory circuit, it is also the easiest to install, providing the vehicle you are working on has this ECM input. The installation required for this application (shown), indicates in the slight reconfiguration of the control switch wiring. Shown is a typical GM Park/Neutral ECM input circuit. To connect the Remote Start unit to the GM Park/Neutral ECM input:

1. Locate the Orange/Black reference wire in the "C2" connector found at the ECM in GM B Body vehicles or, locate the equivalent reference wire in the vehicle you are installing the Remote Start Unit in.
2. Connect the Black/White Neutral Safety Switch Wire from the black 9-pin mini connector to this reference wire.

**Note:** If the optional remote starts enable toggle switch is installed, connect the one side the enable switch to this reference wire and connect the other side of the enable switch to the "Black/White" Neutral Safety Switch wire of the Remote Start unit. The reference diagram below shows a typical GM B Body ECM reference wire and how it is to be connected to the Remote Start Unit.

## Testing Your Installation



### 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. We advise that you maintain the factory circuit whenever possible. The following two circuits may be used only if the above circuit is not available.

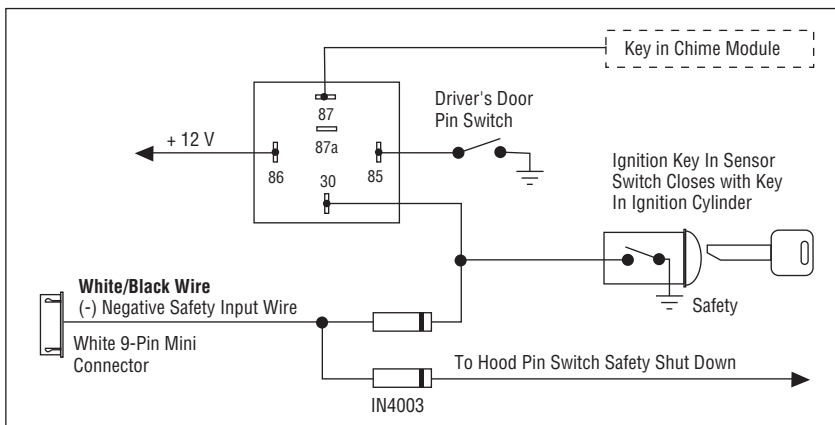
**Note:** When completing an installation using either of the following key-in sensor circuits, if the operator inserts the ignition key while the vehicle is running under the control of the remote start, the vehicle will shut down. This must be explained to the operator as it is in contrast to the normal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

**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



**Method 2:** Will allow the safety required for the remote start unit and prevent the vehicles 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 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.

## Method 1

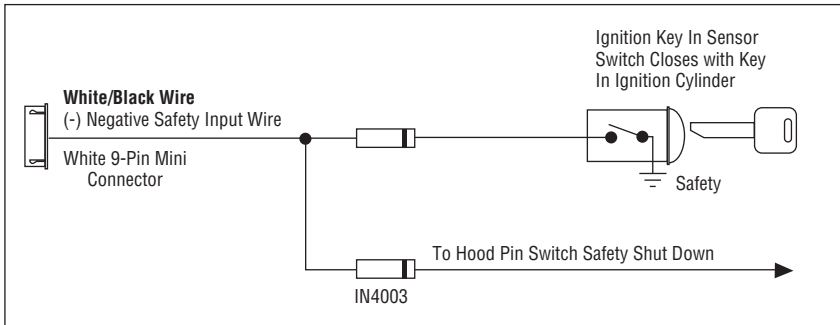


- A.** Locate the control wire that connects the drivers door pin switch to the key in sensor switch.
- B.** Cut this wire and connect the ignition cylinder side to chassis ground.
- C.** Locate the key in sensor switch wire that connects the chime module to the ignition cylinder.
- D.** Cut this wire and connect the ignition cylinder side to terminal 30 of P&B VF45F11 or equivalent relay.
- E.** Connect the cathode (striped) side of a 4003 series diode to this same wire, and connect the (non striped) side to the negative safety input wire (White/Black of the 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 Driver's Door side of the pin switch wire previously cut in Step B.

25

## Testing Your Installation

### Method 2



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

- A.** Locate the control wire that connects the driver's 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 WHITE/BLACK, using a 4003 series diode as shown above.

**Note:** A second 4003 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 Stripped) side must be connected to the WHITE/BLACK wire of the Remote Start Unit. The cathode (Striped) side must be connected to the hood pin 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 NEUTRAL START SAFETY TEST shown in this manual.

# Wiring Diagram

