Marksman

Installation Manual

Model: M8a

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.

Installer Warnings!

This remote starter with alarm system 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 vehicles (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 in any forward or reverse gear, regardless of the type of vehicle.
- 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.
- Check behind panels before drilling any holes. Ensure that no wiring harness or other components are located behind the panels that would otherwise be damaged.
- Use conventional crimp lock or bullet type connectors on all 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 it 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 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. Route the valet switch wires to the control module.

LED Status Indicator
The LED indicator status should be mounted in a highly visible area. Leave at least 6mm of space behind the mounting location for LED housing. Once a suitable location is chosen, drill a 1/4" hole. Run the LED wires through the hole then press the 2 pin LED housing into the place. Route the LED wires to the control module.

White 6-Pin Heavy Gauge Connector
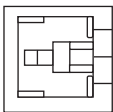
The method that the remote starter uses to start the vehicle is a duplicate of the ignition switch function. Below, is an explanation of the 3 basic functions of the ignition switch. Since this installation will require analysis of the ignition switch functions, it is recommended making the three connections 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 personal injury and property damage.

In all installations, it is the responsibility of the installing technician to test the remote start unit and assure that the vehicle 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.

Note: If a starter disable relay is installed, the connection of the violet wire must be at the starter side of the relay, not the ignition switch side.
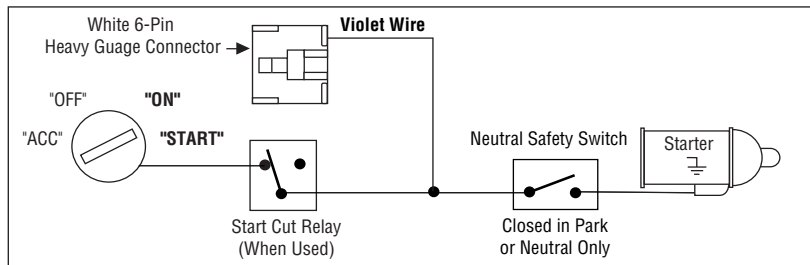
Failure to connect this wire to the ignition switch side of the neutral safety switch can result in personal injury and property damage (see Neutral Start Safety test for further details).

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 voltage for all the circuits the relay harness will energize. They must be connected to a high current source. Since the factory supplies (+) 12V to the key switch that is used to operate the motor, it is recommended that these wires be connected there. **Note:** If the factory supplies two separate (+) 12V feeds to the ignition switch, connect on "Red" wire of the harness to each feed at the switch.

Yellow Wire: (Ignition 1 Output)

Connect the "Yellow" wire to the Ignition 1 wire from the ignition switch. The ignition wire should provide +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 have 0 Volts. **The yellow wire must be connected.**

# 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 a second ignition wire.

Brown Wire: (Accessory Output, Heater/ACC Output)
Connect the "Brown" wire to the accessory wire that powers the climate control system. An accessory wire will provide +12 Volts when the ignition switch is turned to the "ACCESSORY" or "ON" or "RUN" positions. It will have 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.

White 5-Pin Connector
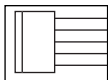
Red Wire with White Stripe: (Parking Light Relay Input)
The "Red/White" wire has already been assembled to work with a +12 volt switched parking light system (most vehicles). For vehicles with ground switched parking light activation, cut this wire at the 3 amp fuse and connect it to ground.

White Wire: (Parking Light Relay Output, +12 V 10A Output)
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 to the vehicle's frame directly.

Brown Wire: (Siren Drive Output - **Factory Default Setting**)
This is the positive (+) output connection for the siren. Current capacity is 2 Amps. Make connection to the (+) red wire from the siren Make the (-) black wire coming from the siren to a good chassis ground.

Optional (+) Low Current Horn Output
(See Set Alarm Feature Programming Part 2).
This wire can be programmed to operate the vehicle's existing horn as the alarm system's audible device. It's a transistorized low current output, and should only be connected to the low current positive (+) output from the vehicle's horn switch.
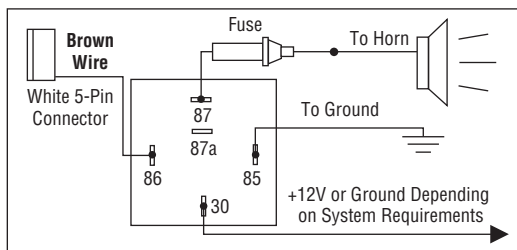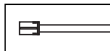
Red Wire: (System Power, +12V Constant)
The "Red" wire supplies power to the system. Connect this wire to a constant +12 volt source.

Vehicles that have a direct connection to the horn will require an additional relay as illustrated above.

Wiring

White 2-Pin Connector

LED Status Indicator:
The LED indicator status should be mounted in a highly visible area such as top of the dashboard, on top of the shifter console or on dashboard face. Leave at least 6mm space behind the mounting location for LED housing. Once a suitable location is chosen, drill a 1/4" hole. Run the LED wires though the hole then press the 2-Pin LED housing into the place. Route the LED wires to the control module.
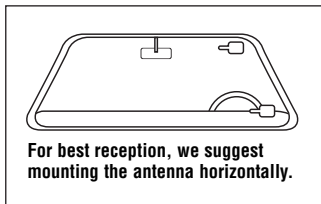
Black 4-Pin Connector
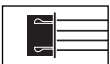
Two-Way Transceiver/Antenna Module:

The two-way transceiver/antenna mounts on the windshield (Inside). We suggest you mount it on the lower left or upper left side of windshield (driver's side). **Warning!** Do not mount in such a manner that it obstructs the drivers view.

For best reception, we suggest mounting the antenna horizontally.

• Remove the protective tape backing.
• Carefully align the two-way transceiver/antenna and apply to windshield.
• Route the black connector wire behind the trim and connect to the two-way transceiver/antenna.
• Connect the other end to the control module.
• Special considerations must be made for windshield glass as some newer vehicles utilize a metallic shielded glass that will inhibit or restrict RF reception. In these vehicles, route the two way transceiver/antenna module as far away as possible from metallic shielded glass.

Brown 3-Pin Connector
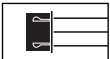
Optional Paging (Knock) Sensor:
The optional paging (knock) sensor can be added on.
1. Clean the bottom left side of the windshield.
2. Remove the protective backing from the adhesive tape or the back of the sensor.
3. Press the sensor firmly into place.
4. Hide the wire by carefully pushing it inside the space of the window's mold trim.
5. To adjust the sensitivity of the sensor, turn the adjustment screw clockwise to increase sensitivity. Turn the adjustment screw counter clockwise to decrease sensitivity.
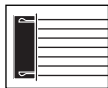
Blue 2-Pin Connector
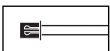
Valet Switch
Select a mounting location for the switch that is easily accessible to the driver of the vehicle. The switch does not have to be concealed. However, concealing the switch is recommended, as this provides an even higher level of security to the vehicle. Route the valet switch wires to the control module.
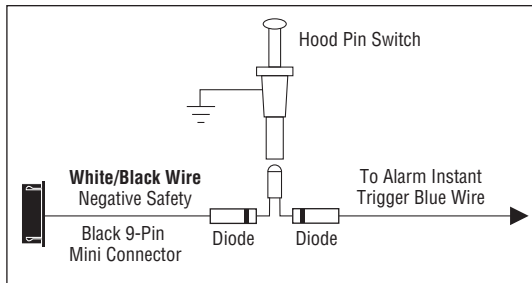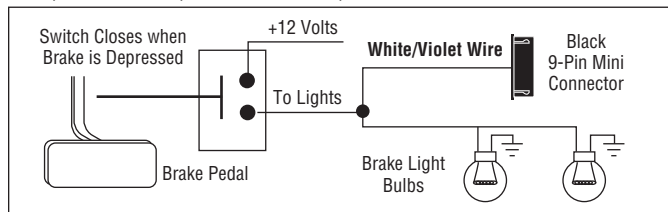
Black 9-Pin Mini Connector

White/Black Wire:
(Negative Safety Shut Down Input)

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

Hood Pin Switch

White/Black Wire Negative Safety

To Alarm Instant Trigger Blue Wire

Black 9-Pin Mini Connector   Diode   Diode

White/Violet Wire: Positive Safety Shut Down Input

This wire provides an instant shutdown signal to the remote start, whenever it gets +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.

Switch Closes when Brake is Depressed

+12 Volts

White/Violet Wire

Black 9-Pin Mini Connector

To Lights

Brake Pedal

Brake Light Bulbs

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 open 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.

Black 9-Pin Mini Connector (continued)

**Blue Wire:** (-) Ground Instant Trigger Input (Zone 2)
This wire is the ground trigger input wire for hood/trunk pin switches.

White/Green Wire: (-) Diesel Wait to Start Input

In diesel vehicles, it is necessary to interface with the wire that activates the "Wait to Start" light in the dashboard. This wire illuminates the bulb until the vehicle's glow plugs are properly heated. When the light goes out the vehicle can be started. This wire is always at the connector leading to the bulb in the dashboard. It can also be found at the Engine Control Module (ECM) in many vehicles. To test and determine the polarity of this wire:

1. Set your Multi-Meter to DC voltage (12V or 20V).
2. Attach the (+) probe of the meter to (+) 12V.
3. Probe the wire that you suspect leads to the bulb with the (-) probe of the meter.
4. Turn the ignition switch to the ON position.
5. If the meter indicates 12 Volts until the light goes out, you have isolated the connect wire and the wire's polarity is negative (Ground while the Bulb is ON).
6. If the meter reads 0 Volts until the light goes out, and then reads 12 Volts, you have isolated the connection wire and the wire's polarity is positive.

Connect this wire to the wire in the vehicle that sends the signal to turn on the "Wait To Start" bulb in the dashboard. In most diesel vehicles the wire is negative (Ground Turns On the Bulb) and this wire can be directly connected to the vehicle. If the vehicle uses a positive wire (12V to Turn the Bulb ON) a relay must be used to change the polarity.

(−) Wait to Start Wire

(+) Wait to Start Wire
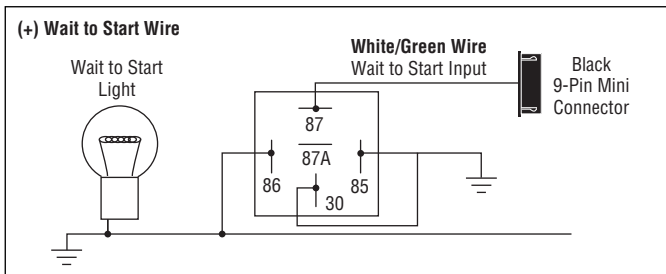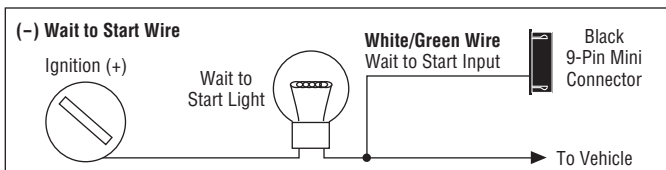
Green Wire: (-) Negative Door Switch Input (Zone 3)
This wire is the ground trigger input wire for a negative door pin switch. Locate the "common wire" that connects the door pin switches, and make the connection of the Green wire here.

Violet Wire: Positive Door Switch Input (Zone 3)
This wire is the positive trigger input wire for a positive door pin switch (typical to Ford Motor Co.). Locate the "common wire" for all door pins and make the connection of the Violet wire here.

Black 9-Pin Mini Connector (continued)

White/Blue Wire: (-) Instant Start & Turn Off Input

This wire activates and turns off the remote starter each time it sees a momentary ground signal. This is normally used for testing during installation or when activating the module from another electronic source. This wire is also programmable (See Alarm Feature Programming Part 3).

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 vehicle 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 2-2 to "Tachometer checking type and teach the system the RPM signal. (See Start Feature 2-3/4 Programming).

To test for a tachometer wire, a multi-meter capable of AC voltage must be used. The tachometer wire will show between 1V and 6V AC at idle, and will increase as engine RPM increases. In 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).
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.

Note: No connection of this wire is required if you use the voltage or timer checking type mode.
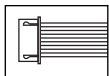
White 4-Pin Mini Connector
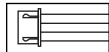
Optional 2 Stage Sensor:

Allows easy connection with quick disconnect ability for other optional devices.
1. Red: +12 Volt Constant Input.
2. Black: Main Sensor Ground.
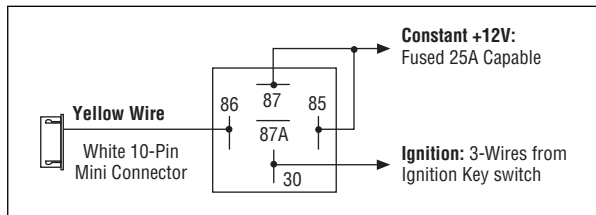3. Green: Warn Away (-) Input.
4. Blue: Instant Trigger (-) Input.

White 10-Pin Mini Connector

Yellow Wire:

(-) 200mA Ignition 3 Output

This wire provides a 200mA (-) ground output that becomes active in 4 seconds before the remote start unit initializes and remains grounded while running. It may also be used for an immobilizer bypass module.

Constant +12V: Fused 25A Capable

Yellow Wire
White 10-Pin Mini Connector

86 87 85
87A
30

Ignition: 3-Wires from Ignition Key switch

White 10-Pin Mini Connector (continued)

Yellow Wire: (continued)

**Transponder Interfacing Using ALA984 Relay** (may also use optional RS-TIM bypass module)**:**
If the vehicle has 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 (30awg) 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 one 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 pin (86) to ignition, connect pin (85) to the yellow wire of the 10-pin mini white connector.

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 an IGN 3 Relay (not supplied) as shown:

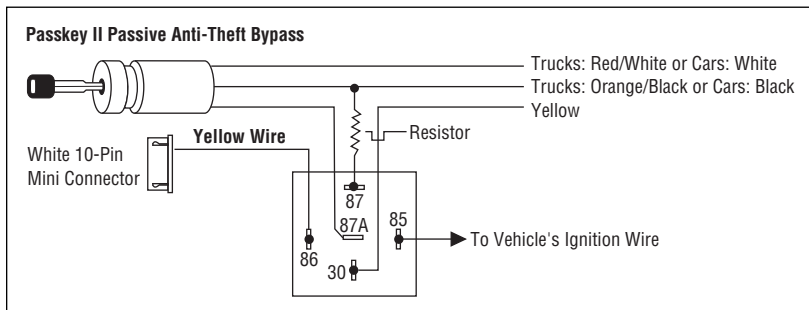**DO NOT CONNECT ANY VEHICLE CIRCUITS TOGETHER, THEY ARE ISOLATED FOR A REASON.**
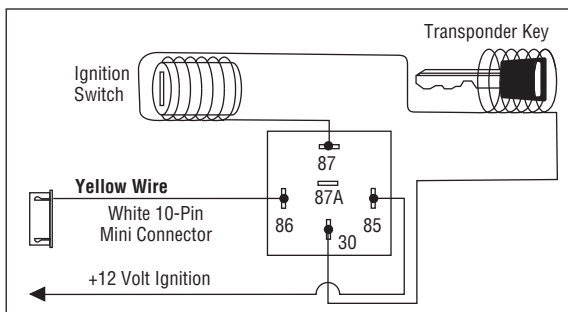
GM VATS Key Override Using ALA984 Relay (may also use optional RS-PLM bypass module)**:**
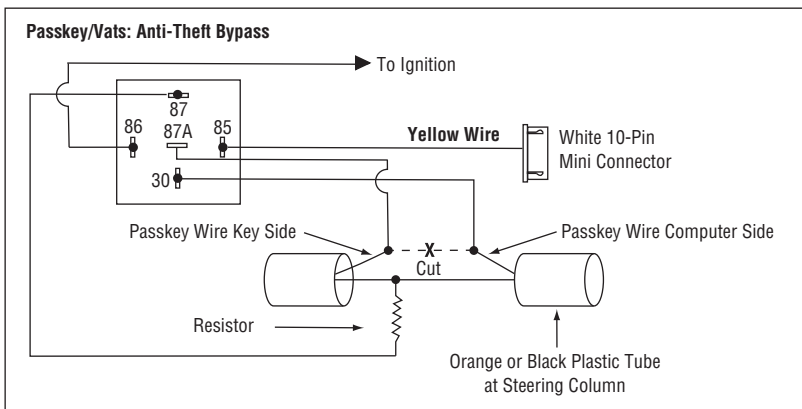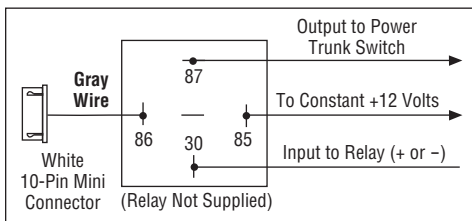
White 10-Pin Mini Connector (continued)

GM VATS Key Override Using ALA985H Relay:

Passkey II Passive Anti-Theft Bypass

Trucks: Red/White or Cars: White
Trucks: Orange/Black or Cars: Black
Yellow

White 10-Pin Mini Connector

Yellow Wire

Resistor

87
87A
86
30
85

To Vehicle's Ignition Wire

Gray Wire: (Pulse Type Programmable)
Channel 3 (Trunk Release) Output

This will become a 1 second pulse ground by activating Channel 3 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.

Output to Power Trunk Switch

Gray Wire

White 10-Pin Mini Connector

87
86   30   85

To Constant +12 Volts

Input to Relay (+ or −)

(Relay Not Supplied)

Orange/White Wire: (-)

200mA Grounded Output when Disarmed - N.O. Disable

This will become grounded when the alarm is disarmed. The current capacity of this wire is 200mA. It can be connected to optional ignition disable relay - ECU disable relay fuel pump disable relay.

IN4003 Diode

White 10-Pin Mini Connector

Orange/White Wire

87
87a
86   85
30

"OFF"   "ON"
"ACC"   "START"   Cut

To Ignition Coil

Yellow Wire

White 6-Pin Heavy Duty Connector
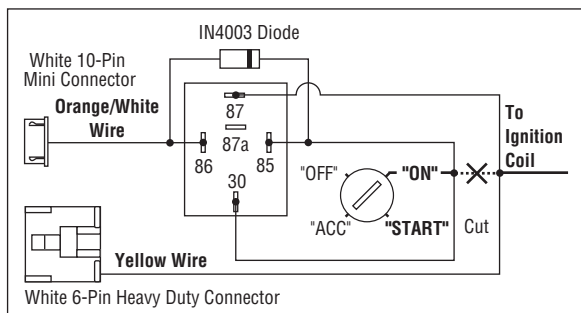
Pink Wire: (-) 200mA Programmable Output (See Alarm Feature Programming Part 3)

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

The 2 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.

White 10-Pin Mini Connector (continued)

Pink Wire: (continued)

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

This wire is designed to bypass an external 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 turn off.

Orange Wire : (-) 500mA

Grounded Output when Armed)

This wire will become grounded when the alarm is armed. The current capacity of this wire is 500mA. This output can control a starter disable relay, when the system is triggered. The vehicle is prevented from any unauthorized starting. Also becomes activated when the engine is remote started.
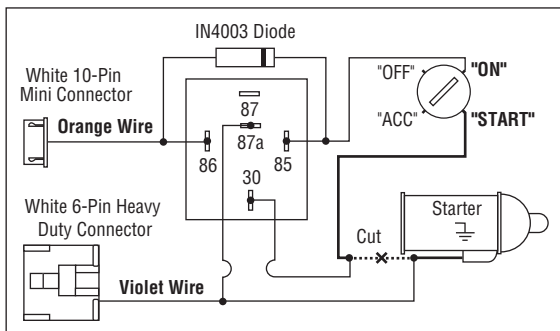
White Wire: (-) 200mA Output

Dome Light Control Output:

This wire becomes grounded when the dome light controls circuit of the alarm 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.
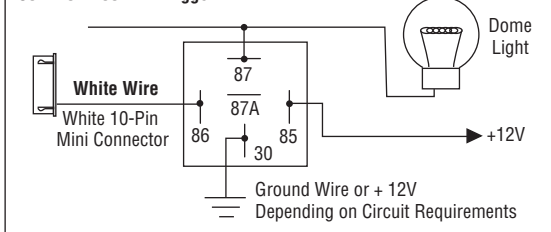
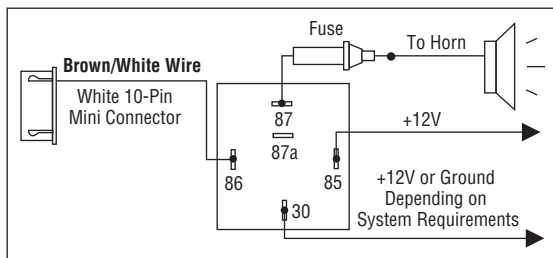## White Mini 10-Pin (continued)

Brown/White Wire: (-) 200mA Programmable Output

Horn Output (See Alarm Feature Programming Part 3):
This wire can be used to activate the existing vehicle's horn as the alarm system's optional warning audible device. It's a transistorized low current output, and should only be connected to the low current ground output from the vehicle's horn switch. When the system is triggered, the horn will sound (depending on the vehicle's requirement an additional relay may be required as shown).

Factory Security Rearm Signal Output (See Alarm Feature Programming Part 3):
This wire can be used to rearm a factory installed security system. This wire will supply a pulse whenever the remote start times out or is shut down using the transmitter and remote door locking.

Brown/White Wire
White 10-Pin Mini Connector
Fuse
To Horn
87
87a
86
85
30
+12V
+12V or Ground Depending on System Requirements

Black/Violet Wire: (-) 200mA Timer Control Channel 6 Output
(See Alarm Feature Programming Part 3) (Factory default setting on momentary ground) This wire is built-in user programmable timer output provides a ground through this wire. You may program the built-in timer to send ground signal for any time interval between 1 second and 2 minutes. For instance, this timer output may be used to turn on the headlights with the remote control. Also, on certain Mercedes Benz, BMW, Jaguar and Volkswagens you can use this unique timed output to allow remote closure of all power windows and sunroof without the need for an external module.

Black/Red Wire: (-) 200mA Timer Control Channel 5 Output
(See Alarm Feature Programming Part 3) (Factory default setting on momentary ground) This wire is built-in user programmable timer output provides a ground through this wire. You may program the built-in timer to send ground signal for any time interval between 1 second and 2 minutes. For instance, this timer output may be used to turn on the headlights with the remote control. Also, on certain Mercedes Benz, BMW, Jaguar and Volkswagens you can use this unique timed output to allow remote closure of all power windows and sunroof without the need for an external module.

Black/Green Wire: (-) 200mA Timer Control Channel 4 Output/Key Sensor Output
(See Alarm Feature Programming Part 3) (Factory default setting on momentary ground) This wire is built-in user programmable timer output provides a ground through this wire. You may program the built-in timer to send ground signal for any time interval between 1 second and 2 minutes. For instance, this timer output may be used to turn on the headlights with the remote control. Also, on certain Mercedes Benz, BMW, Jaguar and Volkswagens you can use this unique timed output to allow remote closure of all power windows and sunroof without the need for an external module.
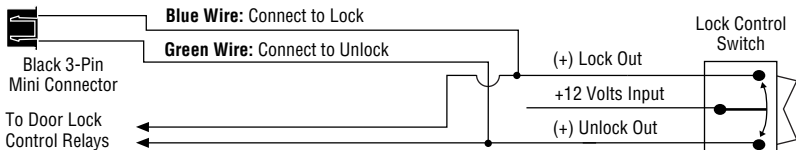
When Used as a Key Sensor Bypass Output:
This output is for a key sense wire bypass that some Chrysler and Toyota vehicles need to activate remote start. This wire activates when the Remote Start is activated and stays on for 20 seconds.
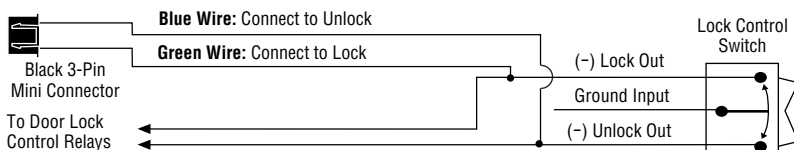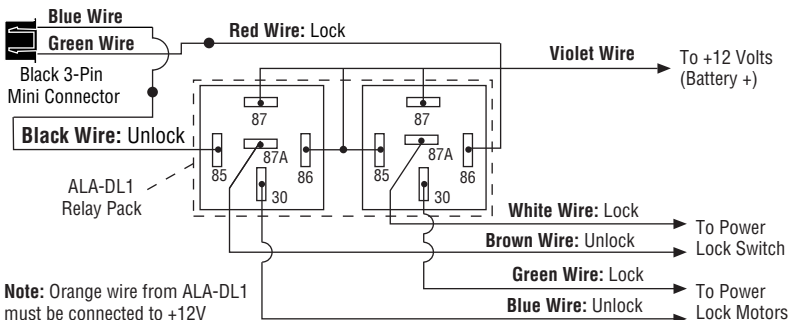
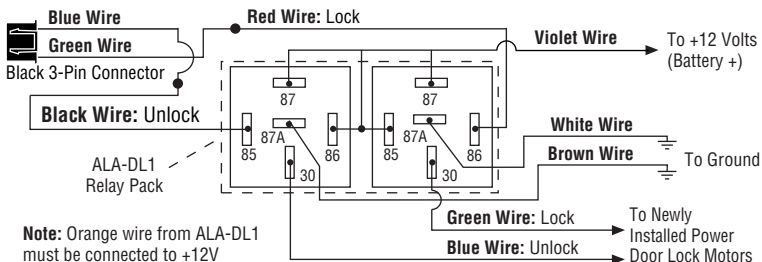## Black 3-Pin Mini Connector

3 Wire Positive Trigger Door Lock System

Blue Wire: Connect to Lock

Green Wire: Connect to Unlock

Black 3-Pin
Mini Connector

To Door Lock
Control Relays

(+) Lock Out

+12 Volts Input

(+) Unlock Out

Lock Control
Switch

---

3 Wire Ground Trigger Door Lock System

Blue Wire: Connect to Unlock

Green Wire: Connect to Lock

Black 3-Pin
Mini Connector

To Door Lock
Control Relays

(−) Lock Out

Ground Input

(−) Unlock Out

Lock Control
Switch

---

5 Wire Ground at Rest Door Locking Systems

Blue Wire

Green Wire

Red Wire: Lock

Black 3-Pin
Mini Connector

Black Wire: Unlock

Violet Wire → To +12 Volts (Battery +)

ALA-DL1
Relay Pack

87
87A
85 86
30

87
87A
85 86
30

White Wire: Lock
Brown Wire: Unlock
} → To Power Lock Switch

Green Wire: Lock
Blue Wire: Unlock
} → To Power Lock Motors

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

Newly Installed Power Door Lock Motors

Blue Wire

Green Wire

Red Wire: Lock

Black 3-Pin Connector

Black Wire: Unlock

Violet Wire → To +12 Volts (Battery +)

ALA-DL1
Relay Pack

87
87A
85 86
30

87
87A
85 86
30

White Wire
Brown Wire
} → To Ground

Green Wire: Lock
Blue Wire: Unlock
} → To Newly Installed Power Door Lock Motors

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

Black 3-Pin Mini Connector (continued)

Mercedes Door Lock Activation

Blue Wire: Unlock
Green Wire: Lock

Black 3-Pin
Mini Connector

Lock

B+   Unlock
Door Lock
Switch
Lock

To +12 Volts
(Battery +)

Green Wire

87   87
87A   87A
85   86   85   86
30

Unlock

Cut

Door Lock
Compressor
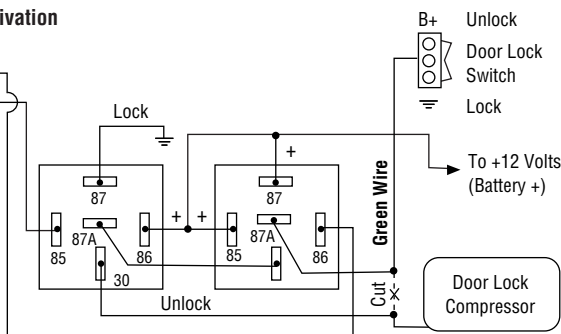
One Wire Multiplexing Door Locking Systems
Some vehicle's (Chrysler, Mazda and Ford Probe and others) use one wire to lock and unlock the doors. Example: When the door lock controller sees a signal thru a resistor it will unlock. If a signal is received without a resistor the doors will lock. Some use 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.

Blue Wire
Green Wire
Red Wire

Black Wire

ALA-DL1

Black 3-Pin
Mini Connector

Lock Fuse 1
Unlock Fuse 2

White Wire Lock
Brown Wire Unlock
To Power
Lock Switch

Green Wire Lock
Blue Wire Unlock
To Power
Lock Motors

Violet Wire To +12 Volts Constant
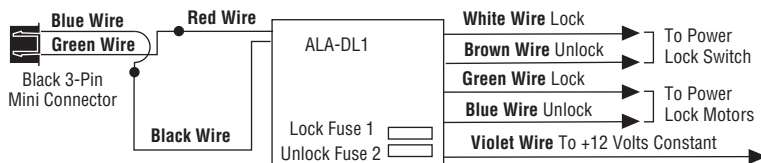
Note: Orange wire from ALA-DL1 must be connected to +12V.

Black 3-Pin Mini Connector (continued)

Unlock Driver's Door First for 3-Wire Negative Door Lock Systems

Blue Wire
Green Wire
Black 3-Pin Mini Connector

87
87A
85   86   +12V
30   ALA984H Relay

Pink Wire
White 10-Pin Mini Connector

Driver's Door Switch
To +12V or Ground
Lock
Unlock

Lock   Unlock
Door Lock Relay Control Module

Passenger's Door Switch
To +12V or Ground

Driver's Door   Unlock Wire   Cut   Passenger's Door

Rear Doors
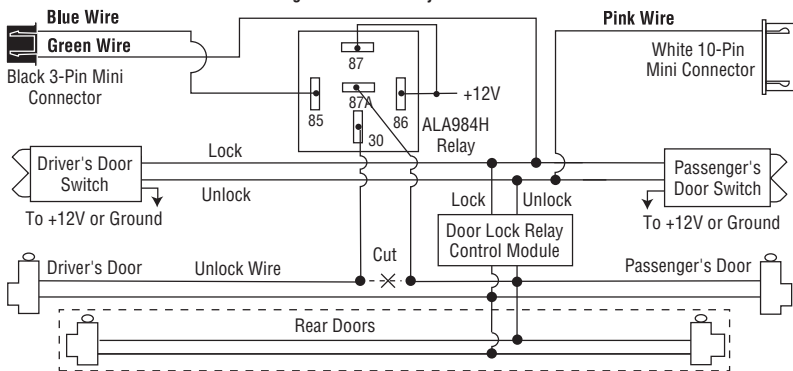
Unlock Driver's Door First Wiring for 3-Wire Positive Door Lock System

Blue Wire
Green Wire
Black 3-Pin Mini Connector

White 10-Pin Mini Connector
Pink Wire

87
85   87A   86
30

87
85   87A   86
30

Driver's Door Motor
+ Unlock   Cut

To +12 Volts (Battery +)

Lock   To Power Door Lock Switch
Unlock   Lock/Unlock Wires
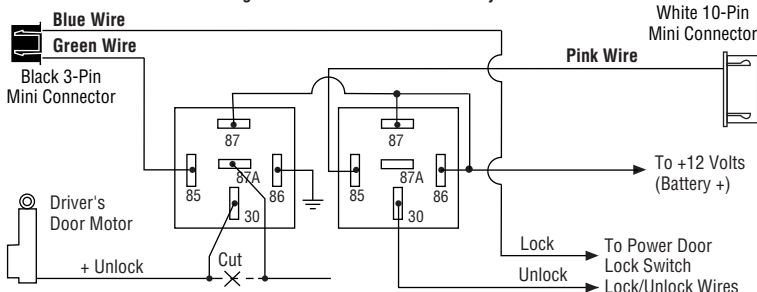
Unlock Driver's Door First Wiring for 5-Wire Ground at Rest Door Locking Systems

White 10-Pin Mini Connecotor

Blue Wire
Green Wire
Black 3-Pin Mini Connector

Pink Wire

To +12 Volts (Battery +)

87
85   87A   86
30

87
85   87A   86
30

87
85   87A   86
30

Driver's Door Motor
+ Unlock   Cut

Lock
Unlock   To Power Lock Switch
Lock
Unlock   To Power Lock Motors
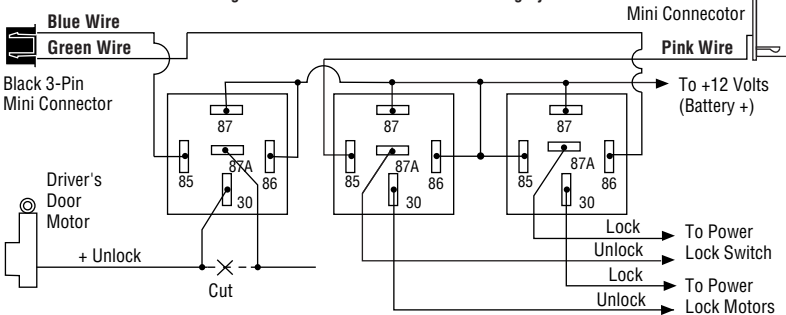
Programming the Remote Transmitter

Important Note: This mode will only retain the last 4 remote transmitters programmed. If the transmitter memory is exceeded, the security system will start deleting transmitters from memory in chronological order.

Step 1

OFF **ON**

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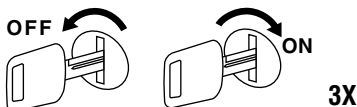
Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the ON position the third time.

Step 2

2X + 1X (Hold)

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

Step 3
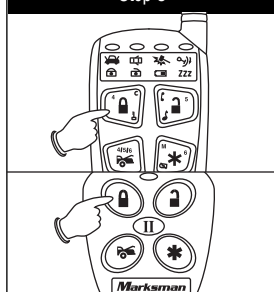
Press the "Lock" button on the first transmitter until you hear a confirmation chirp/beep. The transmitter is now coded into the system.

Step 4
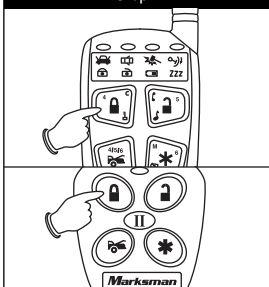
Repeat for each additional transmitter.

Step 5

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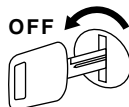
When finished, either turn off the ignition key or wait for 15 seconds to get out of transmitter programming mode. You will hear three (3) long chirp/beeps to indicate you are out of the transmitter programming mode.

Alarm Feature Programming (Part 1)

Examine the 3 different feature charts enclosed and decide which feature will get changed. Circling the feature to be changed will make the programming process much easier to perform.

To get into Alarm Feature Programming Mode (Part 1), repeat the following procedure:

Step 1
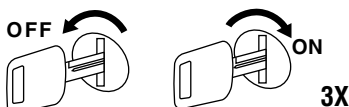
OFF **ON**

3X

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

1X + 1X (Hold)

Before 15 seconds has passed, push and release the valet switch one (1) time then push the valet switch a second time and hold it in on until 1 short and 1 long chirp or beep is heard, then release it. You are now in Alarm Feature Programming Part 1 programming mode.

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
🔒	All Chirps On	Siren Chirp On Only	Horn Chirp On Only	All Chirps Off
🔓	Active Arming	Passive Arming without Passive Door Locking	Passive Arming with Passive Door Locking	
🚗	Automatic Rearm On	Automatic Rearm Off		
✳	Instant Door Ajar Warning	Door Ajar Error Chirp with 30 Second Check Delay		
🔒 + ✳	3 Hour Start Timer	2 Hour Start Timer		
🔓 + ✳	Inactive Car-Jack Mode	Active Car-Jack Mode	Passive Car-Jack Mode	
🚗 + ✳	Panic with Ignition Off	Panic with Ignition On & Off	Panic with Ignition On & Off Panic with No Time Limit	Without Panic Function
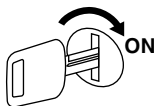
ON

Turn On the Ignition

3 long chirps & 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.

Alarm Feature Programming (Part 2)

To get into Alarm Feature Programming mode (Part 2), repeat the following procedure:
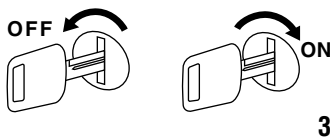
OFF   ON

3X

3X + 1X (Hold)

Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the OFF position the third time.
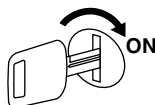
Before 15 seconds has passed, push and release the valet switch three (3) times then push the valet switch a fourth time and hold it down until two (2) short chirps/beeps + one (1) long chirp beep is heard then release it. You are now in part 2 programming mode.

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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
🔒	0.8 Second Door Lock Pulses	3.5 Second Door Lock Pulse	Double Pulse Unlock	Door Lock with "Comfort Feature" See Note Below
🔓	Ignition Controlled Door Lock & Unlock	Ignition Controlled Door Lock Only	Ignition Controlled Door Unlock Only	Without Ignition Controlled Door Lock and Unlock
🚘	Pathway Illumination Feature "Off"	Parking Light "On" for 30-Seconds Upon an Unlock Signal	Parking Light "On" for 30-Seconds Upon an Unlock Signal & 10 Second Upon a Lock Signal	
✱	Brown Wire Constant Siren Output	Brown Wire 5-Second Pulse Siren Output	No Function	Brown Wire Horn Output
🔒 + ✱	Vehicle without Turbo (The system can not be armed with the engine running)	Vehicle with Turbo (The system can be armed with the engine running).		
🔒 + ✱		The shock sensor will by-pass upon engine running (The engine runs by itself after the ignition is turned off).	The shock sensor by-pass three minutes after armed (The engine runs by itself after the ignition is turned off).	Press the 🔒 and ✱ buttons at the same time to control engine running one minute and the shock sensor will by-pass upon engine running.
		Five Chirps = Press the 🔒 and ✱ buttons at the same time to control engine running three minutes and the shock sensor will by-pass upon engine running. **Six Chirps** = Press 🔒 and ✱ buttons at the same time to control engine running five minutes and the shock sensor will by-pass upon engine running.		
🔒 + ✱	Disables the Out-of-Range Check	Enables the Out-of-Range Check		

Note "Comfort Feature": Some vehicles (Mercedes, BMW, VW, Opel, etc.) have a special "Comfort Feature". When you lock the door with the key, you just have to keep on turning the key in the door for about 5 or 7 seconds and the window will close directly.

If your vehicle has "Comfort Feature" and you wish the door being locked and the window being closed automatically at the same time by remote control, you can set the alarm feature with "Comfort Feature".
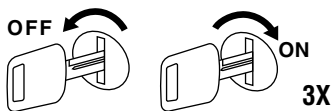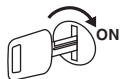
Step 4

ON

Turn On the Ignition

3 long chirps & 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.

Alarm Feature Programming (Part 3)

OFF ON

3X

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

5X + 1X (Hold)

Before 15 seconds has passed, push and release the valet switch five (5) times then push the valet switch a sixth time and hold it down until three (3) short chirp/beeps + one (1) long chirp/beep is heard then release it. You are now in part 3 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
🔒	No Function			
🔓	Pink Wire: Two Step Door Unlock Output	Pink Wire: Factory Security Disarm Signal Output	Pink Wire: Start Status Output (Shock Sensor Bypass)	
🚗	White/Blue Wire: 1 pulse Activate	White/Blue Wire: 2 pulse Activate	White/Blue Wire: 3 pulse Activate	
✳	Brown/White Wire: (-) 200mA Horn Output with Chirp Indicator On	Brown/White Wire: Factory Security Rearm Signal Output	Brown/White Wire: (-) 200mA Horn Output for Trigger Only	
🔓 + ✳	Black/Green Wire: Channel 4 Output Momentary Output	Black/Green Wire: Channel 4 Output Latched Output	Black/Green Wire: Channel 4 Output Latched Output and Reset with Ignition "ON"	Black/Green Wire: Channel 4 Output Timer Programming (See Timer Programming Page 20)
	Five Chirps LED Five Pulses	Black/Green Wire: Ground Output During Remote Start (Crank)		
🔓 + ✳	Black/Red Wire: Channel 5 Output Momentary Output	Black/Red Wire: Channel 5 Output Latched Output	Black/Red Wire: Channel 5 Output Latched Output and Reset with Ignition "ON"	Black/Red Wire: Channel 5 Output Timer Programming (See Timer Programming Page 20)
🚗 + ✳	Black/Violet Wire: Channel 6 Output Momentary Output	Black/Violet Wire: Channel 6 Output Latched Output	Black/Violet Wire: Channel 6 Output Latched Output and Reset with Ignition "ON"	Black/Violet Wire: Channel 6 Output Timer Programming (See Timer Programming Page 20)

Step 4

ON

Turn On the Ignition
3 long chirps & 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.

Alarm Feature Programming (Part 3)

Channel 4/5/6 Timer Control Output Programming:

1. Turn the ignition switch "ON/OFF" three times, stay in the "OFF" position.
2. Push the valet switch six times and hold it until three chirps with a long chirp is heard, then release the valet switch. You are now in Alarm Feature 3 programming mode.

Timer Program:

1A. Press and release the transmitter buttons 🔒 + ✻ for four times. (4) LED flashes, (4) siren/horn chirp indicates you are in feature channel 4 Timer Programming Mode.

1B. Press and release the transmitter buttons 🔒 + ✻ for four times. (4) LED flashes, (4) siren/horn chirp indicates you are in feature channel 5 Timer Programming Mode.

1C. Press and release the transmitter buttons 🔑 + ✻ for four times. (4) LED flashes, (4) siren/horn chirp indicates you are in feature channel 6 Timer Programming Mode.

2. Press and hold the valet switch, the timer will immediately start.
3. When the desired interval has passed, release the valet switch, 1 long chirp will confirm timer feature. (Set to any interval between 1 second and 2 minutes)

Note 1:

If your built in timer controls windows/sunroof closure in your car DO NOT change the timer setting. This requires installer-only programming. Changing the value will adversely effect operation and may cause damage.

Note 2:

Momentary Output: The momentary output selection will output a negative signal from the Channel 4/5/6 output immediately when the channel 4/5/6 button is pressed and will continue until the button is released

Latched Output: The latched output selection will output a negative signal as soon as the channel 4/5/6 button is pressed and will continue until the button is pressed again

Latched Output/Reset with Ignition: The latched/reset with ignition output selection operation just like the latched output but will reset or stop when the ignition is turned on.

Ground Output During Start (Crank): This wire will provide a 200 mA ground output while the starter output of the remote start unit is active. This output can be used to activate the Crank Low/Bulb Test wire found in some GM vehicles. This wire is also referred to as the ECM wake up wire in some vehicles.

Remote Start Operation and Feature Programming (Stage 1)

Examine the two (2) feature charts enclosed and decide which features will get changed. Circling the feature to be changed will make the programming process much easier to perform.

Stage 1: Remote Start Operation Programming
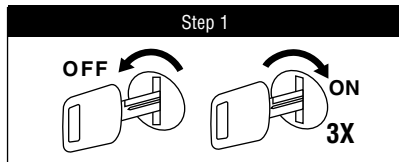
Step 1

OFF **ON**

3X

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

7X + 1X (Hold)
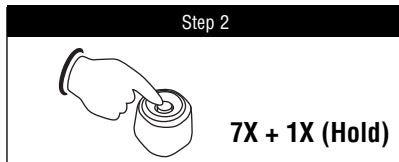
Before 15 seconds has passed, push and release the valet switch seven (7) times then push the valet switch a eighth time and hold it down until four (4) short chirps/beeps + one (1) long chirp beep is heard then release it. You are now in stage 1 remote start feature programming mode.

Remote Start 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 One LED Pulse *(Factory Default Setting)*	Two Chirps LED Two Pulse	Three Chirps LED Three Pulse	Four Chirps LED Four Pulse
🔒 + 🔒	Gasoline Engine / Diesel Engine with Wait-to-Start Light (White/Green Wire Must Be Connected)	Diesel Engine without Wait-To-Start Light 10 Second Warm-up Timer	Diesel Engine without Wait-To-Start Light 15 Second Warm-up Timer	Diesel Engine without Wait-To-Start Light 20 Second Warm-up Timer
🔒	10 min. Run Time	20 min. Run Time	30 min. Run Time	5 min. Run Time
🔓	Factory Alarm Disarm with Channel 3 On	Without this Feature		
🚗	Constant Parking Light Output	Parking Light Flashing Output		
✹	Door Lock Before Start	Door Lock After Shutdown	Door Lock Before Start and Door Lock After Shut Down	Without this Feature
🔒 + ✹	Press ✹ - ✹ Button to Activate Remote Start*	Press 🔒 + ✹ Buttons to Activate Remote Start	Press ✹ Button to Activate Remote Start	
🔒 + ✹	Fahrenheit Display for Temperature	Celsius Display for Temperature		
🚗 + ✹	Temperature Control Starting "Off"	Temperature Control Starting 5° F (-15° C)	Temperature Control Starting -4° F (-20° C)	Temperature Control Starting -22° F (-30° C)
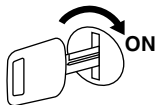
ON

Turn On the Ignition
3 long chirps & 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.

*Safe Start (Child Safety Mode)
Factory defaults setting is to press ✹ button twice to start the vehicle. To lessen the chance of an accidental remote start, program the transmitter to start the vehicle using 🔒 + ✹ buttons.

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Stage 2: Remote Start Operation Programming

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.

Entering Stage 2 Remote Start Operation Programming
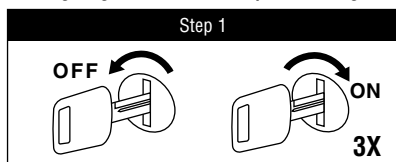
Step 1	Step 2
OFF ← → **ON** **3X**	**9X + 1X (Hold)**

Turn the ignition switch from the OFF position to the ON position 3 times leaving it in the OFF position the third time.
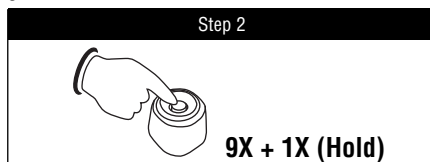
Before 15 seconds has passed, push and release the valet switch nine (9) times then push the valet switch a tenth time and hold it down until five (5) short chirps/beeps + one (1) long chirp beep is heard then release it. You are now in stage 2 remote start feature programming mode.

Step 3

Remote Start 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
🔒	Exit the Programming Mode (3 long chirps and 3 parking light flashes to confirm this exit)			
🔒 + 🔒	Tachometer Checking Type	Voltage Checking Type	Timer Checking Type	
🔒	**RPM Learning Start Timer:** 0.6 second (1 chirp)	0.8 second (2 chirps) 1.4 second (5 chirps) 2.0 second (8 chirps)	1.0 second (3 chirps) 1.6 second (6 chirps) 3.0 second (9 chirps)	1.2 second (4 chirps) 1.8 second (7 chirps) 4.0 second (10 chirps)
🔓	Low Check Level	High Check Level		
✱ - ✱	Start or Stop the System for Testing & Adjusting			
🔒 + ✱	"TEST" Mode for Zone 2 Instant Trigger & Zone 3 Door Trigger	"TEST" Mode for Zone 1 & Zone 4 (2 Stage Shock Sensor)		

Exit: Press the 🔒 button on the transmitter. 3 long chirps and 3 parking light flashes confirms exit.
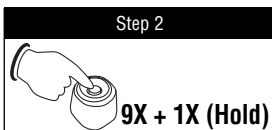
Tachometer Detection Programming

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

Feature 1: RPM Learning
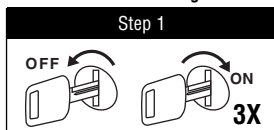
Step 1

OFF ← → ON
3X

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 nine (9) times then push the valet switch a tenth time and hold it down until five (5) short chirps/beeps + one (1) long chirp beep is heard then release it.

Step 3
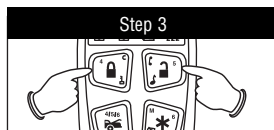
Press and release the (🔒 + 🔒) buttons once. The LED will flash once and you will hear 1 chirp/beep to indicate that you are in "RPM Learning Mode".

Step 4
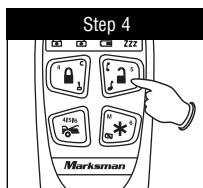
Press unlock button before you turn on the ignition key. 1 chirp and 1 LED flash will indicate you are in Tach Learning mode.

Step 5
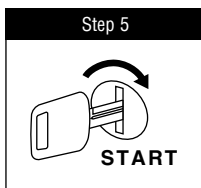
START

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 re-check your tachometer wire connection).

Step 6
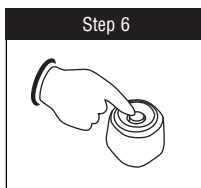
Press and hold the valet switch. When the RPM level is learned, you will hear a long chirp/beep and the LED will be on steady for 2 seconds.

Step 7

OFF ←
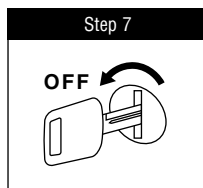
Turn off the ignition to stop the engine. Remember, you are still in programming mode.
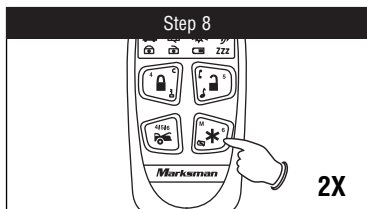
Step 8

2X

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 from running. If a cranking problem is noticed, move to step 9 to adjust the crank detection feature otherwise follow step 8 and get out of the programming mode.

Step 9
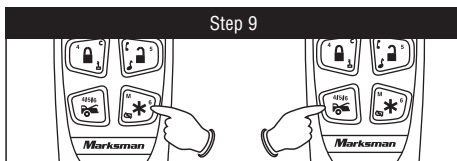
If the engine cranks too long you may need to adjust the crank detection level. Press the (✳) button twice to stop the engine from running. Press the (🔧) button on the transmitter to change the crank detection level from hi to low. You will hear 2 chirp/beeps to indicate the feature has been changed to the low selection.

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Tachometer Detection Programming (continued)

Feature 2: Crank Detection Level Programming

Step 10	Step 11

2X

Press the (✱) button on the transmitter twice to start the engine by remote. Setting the crank detection to low should have solved the over-cranking problem.
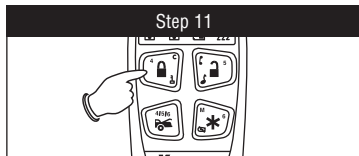
Press the (Lock) button on the transmitter to get out of the programming mode. You will hear three (3) long chirps and get 3 parking light flashes for confirmation.

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

Voltage Detection Test and Additional Programming

If you have previously selected Voltage Detection, you may be required to program 2 additional features as follows.

Feature 1: Crank Detection Level Programming

Step 1	Step 2	Step 3
OFF / ON **3X**	**9X + 1X (Hold)**	**2X**

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 nine (9) times then push the valet switch a tenth time and hold it down until five (5) short chirps/beeps + one (1) long chirp beep is heard then release it.

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.
Note: Let engine run for 10 seconds or more to ensure proper operation.

Step 4	Step 5	Step 6
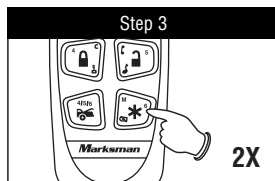
If all things seem correct, press the (✱) button twice to stop the engine running. If a cranking problem is noticed, move to step 6 to adjust the crank detection feature otherwise follow step 5 and get out of the programming mode.
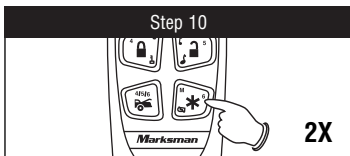
Press the (🔒) button on the transmitter to get out of the programming mode. You will hear three (3) long chirps and get 3 parking light flashes for confirmation.

If the engine shuts down after 10 seconds you may need to adjust the crank detection level. Press the (✂) button on the transmitter to change the crank detection level from hi to low. You will hear 2 chirp/beeps to indicate the feature has been changed to the low selection.

Voltage Detection Additional Programming (continued)

Feature 2: Start Timer Programming

Step 7	Step 8	Step 9

Press the (✻) button on the transmitter twice to start the engine by remote. Setting the crank detection to low should have solved the over-cranking problem.
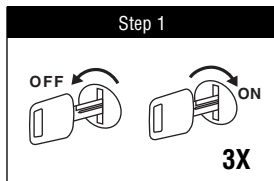**Note:** Let engine run for 10 seconds or more to ensure proper operation. Press the (✻) button twice to stop the engine

If the engine still cranks too long or not long enough, you may need to adjust the start timer. Press the (🔧) button on the transmitter to change the start timer length as shown in the chart. Follow the chart and listen for the different chirp count to select the time you want to use. Restart the engine by remote (✻ x2) to ensure proper operation.

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

Elapsed Timer Additional Programming

If you have selected Elapsed Timer, you may be required to program 1 additional feature as follows.

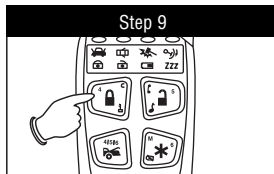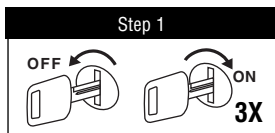| Step 1	Step 2	Step 3
OFF ON **3X**	**9X + 1X (Hold)**	**2X**

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 nine (9) times then push the valet switch a tenth time and hold it down until five (5) short chirps/beeps + one (1) long chirp beep is heard then release it.

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.
Note: Let engine run for 10 seconds or more to ensure proper operation.

Step 4	Step 5	Step 6

If all things seem correct, press the (✻) button twice to stop the engine running. If a cranking problem is noticed, move to step 6 to adjust the start timer feature otherwise follow step 5 and get out of the programming mode.
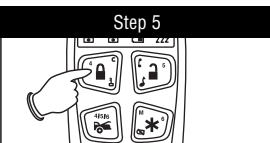
Press the (🔒) button on the transmitter to get out of the programming mode. You will hear three (3) long chirps and get 3 parking light flashes for confirmation.

If the engine cranks too long or not long enough, you may need to adjust the start timer. Press the (🔧) button on the transmitter to change the start timer length as shown in the chart. Follow the chart and listen for the different chirp count to select the time you want to use.

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Elapsed Timer Additional Programming (continued)

Step 7
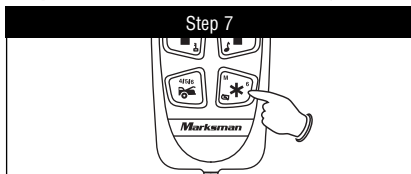
After adjusting the stat timer press the (✹) button twice on the transmitter to start the engine by remote. Listen for an over-run or under-run indication. Re-adjust as needed.
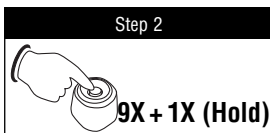

Step 8

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

Returning to Factory (Alarm) Default Settings

Step 1

3X

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

Step 2

12X (Hold)

Push the valet switch 12 times and hold it until six chirps with a long chirp is hearing then release the valet switch. You are now in the "Return To Factory Default Settings" programming mode.
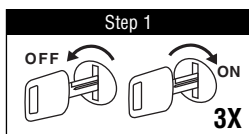

Step 3
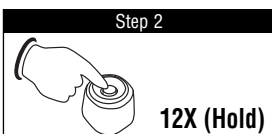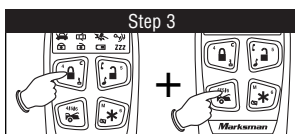
Press the (🔒) and (🔑) button on the transmitter together for 6 seconds. There will be 6 confirmation chirps with 3 long chirps and 3 parking light flashes to confirm the system Alarm Features Programming Part 1, 2 and 3 all returns to factory default setting. Next, go to Step 4 (see below).

Returning to Factory (Remote Start) Default Settings
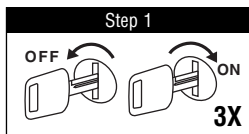
Step 1

3X

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

Step 2

12X (Hold)

Push the valet switch 12 times and hold it until six chirps with a long chirp is hearing then release the valet switch. You are now in the "Return To Factory Default Settings" programming mode.

Step 3
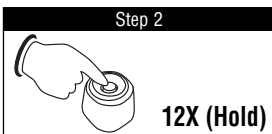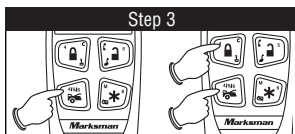
Press the 🔑 button first, then within 3 seconds press and hold the 🔒 and 🔑 buttons at the same time on the transmitter for 6 seconds. There will be six confirmation chirps with 3 long chirps to confirm the system "Start Feature 1 and 2 Programming all returns to factory default setting.
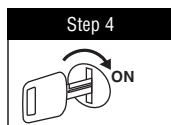
Step 4

Turn On the Ignition
3 long chirps & 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.
1. Turn the Ignition switch to "On" position.
2. Press the ( ) 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)	1. Close the Hood 2. Check White/Black Wire Connection. (9-Pin Mini Black)
2	(+) Safety Shutdown Input (Brake) or Neutral Safety Switch Input Fail	1. Check White/Violet Wire Connection. (9-Pin Mini Black) 2. Move the Enable Toggle Switch to "On" position. (If Installed) 3. Move the gear selector to "Park"/"Neutral" Position. 4. Check Black/White Wire Connection (9-Pin Mini Black)
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	Check tach signal feature programming

Test Mode

In this test mode, this system can test the Zone 2 (Instant Ground Trigger), the Zone 3 (Door Trigger), and the Zone 1 and Zone 4 (Optional Sensor) sensitivity. The installer can save time by testing the optional sensor sensitivity and sensor without using the traditional arming/disarming procedures to test the sensors.
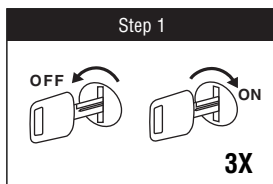
Step 1

OFF ON

3X

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)
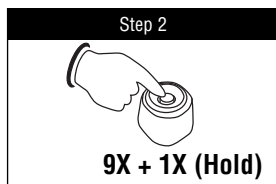
Before 15 seconds has passed, push and release the valet switch nine (9) times then push the valet switch a tenth time and hold it down until five (5) chirps/beeps then release it. You are now in "Test Mode"

Step 3

Marksman + *Marksman*
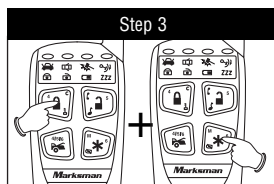
Press the ( ) (✹) button once at the same time. 1 LED flash 1 siren/horn chirp to indicate you are now in Zone 2 - Instant Ground Trigger.

Step 4

Marksman + *Marksman*
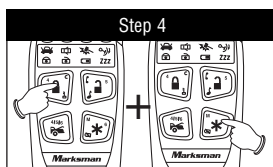
Press the ( ) (✹) button once again. 2 chirp and 2 parking light flashes will confirm you are now in Zone 4 Optional Sensor Test Mode.
1. Activate the warn away: Short Chirp.
2. Activate Full Alarm: Long Chirp.
3. Continue to test the sensor until you reach the proper setting.

Trigger Sensor Flashes	Chirps
Zone 2: Instant Ground Trigger (Blue Wire)	2
Zone 3: Door Trigger (Green or Violet Wire)	3

Remote Start: Testing Your Installation

Caution! The follow 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 part (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 (6-Pin White, 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 Starts Wiring to accommodate this vehicle. The information concerning the Mechanical Neutral Safety Switch provided below will help you to determine if the vehicle you are working on has this type of safety switch and will provide alternate wiring methods to accommodate this situation.

Turbo Timer Mode (Also See Users Manual)

Turbo Timer Mode keeps the engine running after arriving at you destination for a programmable time period of 1, 3 or 5 minutes. This allows the system's time to conveniently cool down the turbo after you have left the vehicle.

To Activate:

1. While the engine is running, set the emergency brake and place the transmission to "Park".
2. Before turning off the engine, press and release 🔒 and ✳ buttons at the same time. The light will flash to indicate the remote start has entered turbo charge mode.
3. Remove the "Ignition Key" from the key cylinder. The engine will keep running.
4. Exit and secure the vehicle. The Engine continues running until the pre-programmed time elapsed.

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 if 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 is 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 7-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.
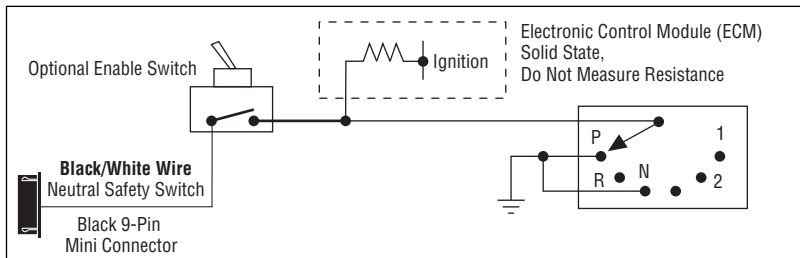
Key in Sensor Circuits:

If the vehicle you ar 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 Ignition switch and the door is left opened, the added relay will be energized causing a 150mA drain on the battery.

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

Remote Start: Testing Your Installation

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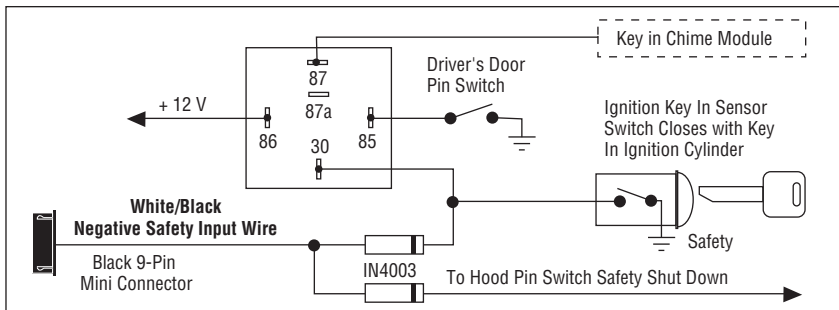
To connect to the key in sensor as shown in Method 1:

A. Locate the control wire that connects the drivers door pin switch to the key in sensor switch.

B. Cut this wire and connect the ignition cylinder side to chassis ground.

C. Locate the key in sensor switch wire that connects the chime module to the ignition cylinder.

D. Cut this wire and connect the ignition cylinder side to terminal 30 of 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.

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 Striped) side must be connect to the WHITE/BLACK wire of the Remote Start Unit. The cathode (Striped) side must be connected to the hood pin switch.

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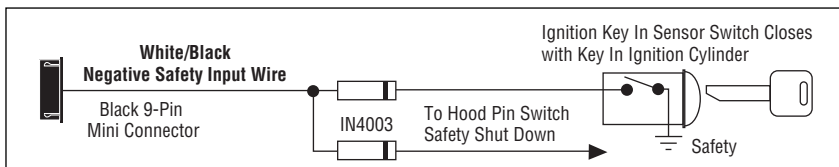
To connect to the key in sensor circuit as shown for Method 2:

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 Striped) side must be connect 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

White/Black Wire: (-) Negative Safety Shut Down Input for Hood Pin Switch

White/Violet Wire: (+) Positive Safety Shut Down Input for Brake Switch

Black/White Wire: (-) Neutral Safety Switch Input &
(-) Remote Start Toggle Switch Input

Blue Wire: Zone 2 - Instant Trigger Ground

White/Green Wire: (-) Diesel Wait to Start Input

Green Wire: Zone 3 - Negative Door Pin Trigger Input

Violet Wire: Zone 3 - Positive Door Pin Trigger

White/Blue Wire: (-) Instant Start and Turn Off Input

White/Red Wire: Tachometer Signal Input

Red/White Wire: Parking Light Relay Power Input

White Wire: Parking Light Relay Output

Black Wire: Ground To Vehicle Frame

Brown Wire: Positive Output to Siren

Optional Pager Knock Sensor

Windshield Receiver/Antenna Module

Cut this Wire and Ground it for Ground Trigger Parking Lights

15A

Red Wire

3A

Red Wire: +12V Input

9-Pin Black **3-Pin Brown** **4-Pin Black** **5-Pin White**

Violet Wire: Starter Output

Red Wire: +12 V Input (Battery)

20A

Red Wire: +12 V Input (Battery)

20A

6-Pin White

Yellow Wire: Ignition 1 Output (Must Connect)

Pink Wire: Ignition 2 Output

3-Pin Black **4-Pin White** **10-Pin White** **2-Pin Blue** **2-Pin White**

Brown Wire: ACC / Heater Output

LED Indicator

Valet Switch

Green Wire: (-) Lock Pulse or (+) Unlock Pulse

Blue Wire: (-) Unlock Pulse or (+) Lock Pulse

Yellow Wire: (-) 200mA Ignition 3 Control Output

Black/Violet Wire: (-) 200mA Channel 6 Programmable Output

Brown/White Wire: (-) 200mA Programmable Output Horn Output (Factory Setting)
or Factory Security Re-arm Signal Output

White Wire: (-) 200mA Dome Light Control Output

Black/Red Wire: (-) 200mA Channel 5 Programmable Output

Black/Green Wire: * 200mA Programmable Output
- Channel 4 Programmable Output
- Ground Out During Start

Gray Wire: (-) 200mA Channel 3 (Trunk) Output

Pink Wire: (-) 200mA Programmable Output 2 Steps Door Unlock Output (Factory Default Setting) or
Factory Security Disarm Signal Output or Start Status (Shock Sensor By-Pass Control) Output

Orange/White Wire: (-) 200mA Grounded Output when Disarmed

Orange Wire: (-) 500mA Grounded Output when Armed

Red Wire: +12V Power

Black Wire: Negative Power

Blue Wire: Zone 4 Ground Trigger

Green Wire: Warn Away Ground Trigger

Shock Sensor

Marksman®