SILENCER®
SECURITY SYSTEMS
PROFESSIONAL SERIES

INSTALLATION MANUAL

SL-52FM

Two Way 3-Channel 915 MHz Extended Range Remote Start Keyless Entry System

This unit is designed for professional installation only and must be installed by an authorized Silencer dealer.

For Warranty information:
Please visit our website at ***www.silencer.com***

Magnadyne Corporation 1111 W. Victoria Street, Compton CA 90220 (800) 340-3200

Precautions: Please read carefully

This Remote Starter with Alarm and Keyless Entry System has been designed to be installed BY PROFESSIONAL INSTALLERS 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.
- 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 operation manual for operating.
- 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 a possibility that this system cannot 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 beginning work on the vehicle.
- 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.
- Do not 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. We suggest soldering all connection points.
- Install the wiring neatly under carpets or behind trim to prevent possible damage to wires.

WARNINGS:

As with any product that performs automatic functions, there are certain safety precautions that you must practice and be aware of.

1 Keep the transmitter out of children's reach.

2. Do not leave anyone in the vehicle while running on remote control.

3. Alert servicing personnel that the vehicle can be started automatically.

4. Do not start the vehicle by remote while it's in an enclosed area or garage.

5. Always apply the parking brake and lock the vehicle as you exit the vehicle.

6. The vehicle windows must be rolled up.

7. Should the unit malfunction, disconnect the fuse until the problem is corrected.

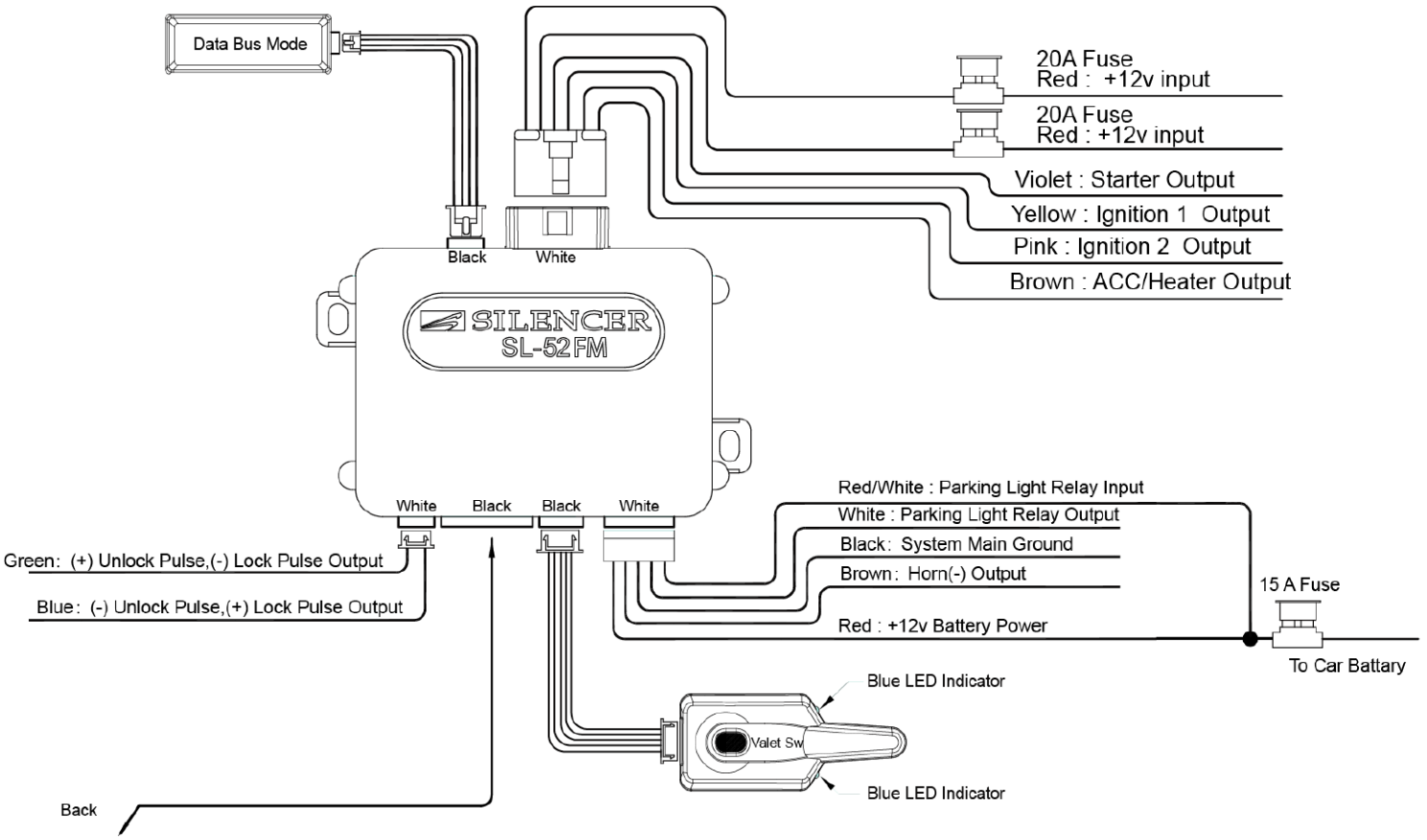
8. The use and operations of this system is the sole responsibility of the operator.

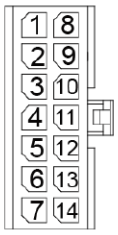
9. Some areas may have local ordinances that prohibit leaving a vehicle running on public streets.

10. It is not safe to remote start the vehicle if the vehicle is parked on a steep incline.

Do not start the vehicle by remote while it's in an enclosed area or garage.

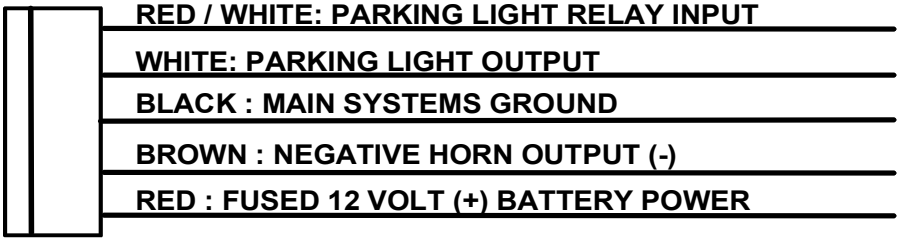
INSTALLATION DIAGRAM





Pin	Color	Funtion	Pin	Color	Funtion
1	White/Violet	(+) Brake Switch Shutdown Input	8	White/Blue	Instant Start And Turn Off Input
2	White/Black	(-)Negative Hood Pin Safety Shutdown	9	Black/White	Neutral Safety Switch Input
3	Yellow	Ignition 3 Control Output	10	Gray	Channel 3(Trunk) Output
4	Blue/Black	Accessory 2 Control Output	11	Brown/White	Dome Light Control Output
5	Gray/Black	Second Starter Output	12	Pink	2-Step Unlock/Factory Disarm/Sensor By-pass
6			13	BrownBlack	Ground Output While Running
7	Orange	Ground Output When Armed	14	White/Red	Tachometer Signal Input

MAIN POWER CONNECTOR



5 PIN MAIN POWER WIRE HARNESS:

RED / WHITE WIRE –PARKING LIGHT RELAY INPUT —

The RED/WHITE wire is the input to the flashing parking light relay. The connection of the RED/WHITE wire will determine the output polarity of the flashing parking light relay.

If the vehicle you are working on has +12volt switched parking lights, you don't need connect this wire. This wire is already connected to +12volt.

If the vehicle's parking lights are ground switched, cut the RED/WHITE wire, connect the RED/WHITE wire to chassis 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 the 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.

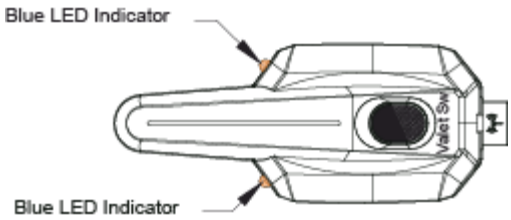
BROWN WIRE – (-) HORN OUTPUT –

This wire is provides a ground output to be connected to the horn of the vehicle. A relay must be used if the horn requires a positive input. This output is only capable of 500 mA output

RED WIRE — SYSTEM POWER (+12V CONSTANT) —

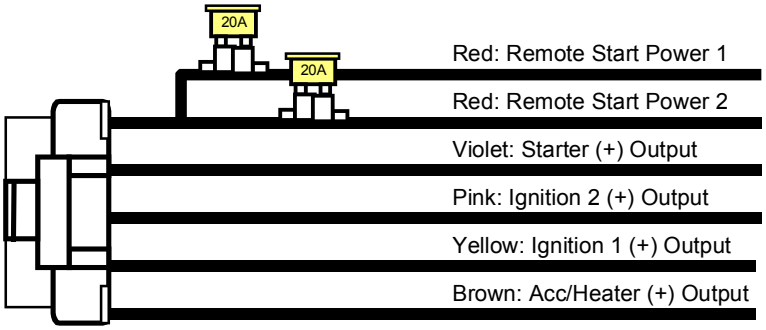
The RED wire supplies power to the system. Connect this wire to a stable constant +12 volt source.

4 PIN ANTENNA, LED AND VALET SWITCH CONNECTOR:



The antenna should be mounted to the front windshield of the vehicle facing down. It should be clear of any metallic objects or tinting and as close to the center as possible. The Valet switch and LED are mounted within this unit and are connected with the ribbon cable.

6 PIN HEAVY GAUGE WIRE HARNESS



Keep wiring away from moving engine parts, exhaust pipes and high-tension cable. Be sure to tape wires that pass through holes on the firewall to prevent fraying.

CAUTION: Do not connect the wire harness to the control module until all wiring to vehicle is complete.

6 PIN HEAVY GAUGE WIRING CONNECTIONS:

Remember that what the system does to start a vehicle is to duplicate the functions of the ignition key switch! Below, we will explain the three basic functions of the ignition switch. Since this installation will require analysis of the ignition switch functions, we recommend making the three connections below at the ignition switch harness directly.

VIOLET WIRE—STARTER OUTPUT

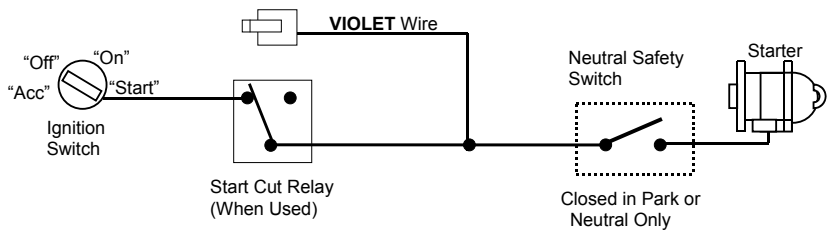
Careful consideration for the connection of this wire must be made to prevent the vehicle from starting while in gear. Understanding the difference between a mechanical and an electrical Neutral Start Switch will allow you to properly identify the circuit and select the correct installation method. In 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 cannot start via RF control in any gear selection other than park or neutral.

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

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



RED WIRE (2) — +12V POWER INPUT

Remove the two 20A fuses prior to connecting these wires and do not replace them until the satellite has been plugged into the control module. These wires are the source of current for all the circuits the relay satellite 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 one RED wire of the satellite 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 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.

PINK WIRE – IGNITION 2 OUTPUT

Some vehicles have [2] ignition wires that must be power. Connect the PINK wire to the ignition 2 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. If the PINK wire is not used, cap the end of the wire.

BROWN WIRE –ACCESSORY OUTPUT (HEATER /AC OUTPUT)

Connect the BROWN wire to the accessory wire in the vehicle that powers the climate control system.

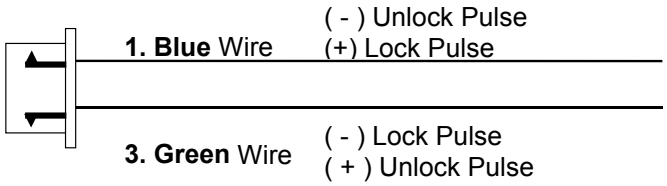
An accessory wire will show + 12 volts when the ignition switch is turned to the “ACCESSORY” or “ON” and “RUN” positions, and will show 0 Volts when the key is turned to the “OFF” and “START” or “CRANK” position. There will often be more than one accessory wire in the ignition harness. The correct accessory wire will provide power to 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.

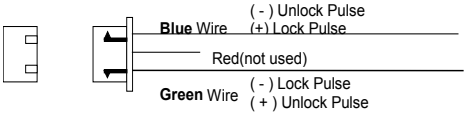
RS232 TWO WAY SERIAL DATA PORT CONNECTION:

This connector is to be used for Serial Data communications with Fortin and idatalink modules only! DO NOT CONNECT THIS TO ANY OTHER WIRING!

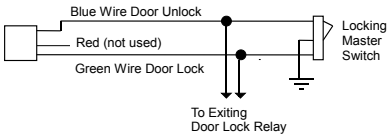
<u>This port will only operate correctly with Fortin or idatalink Modules.</u>

3 PIN, DOOR LOCK CONNECTOR (500 MA OUTPUT)

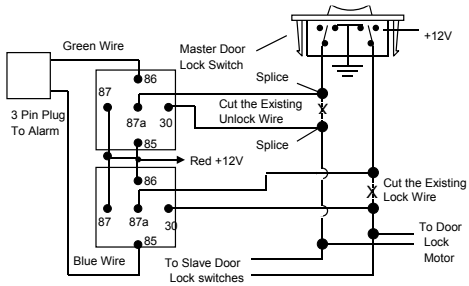




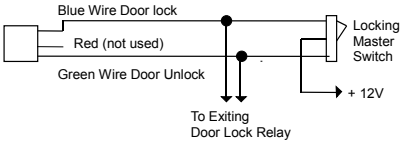
NEGATIVE TRIGGER DOOR LOCK SYSTEM



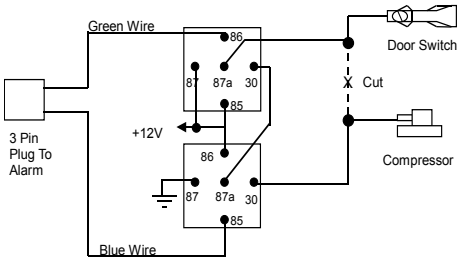
5-WIRE ALTERNATING DOOR LOCK



POSITIVE TRIGGER DOOR LOCK SYSTEM



VACUUM OPERATED CENTRAL LOCKING

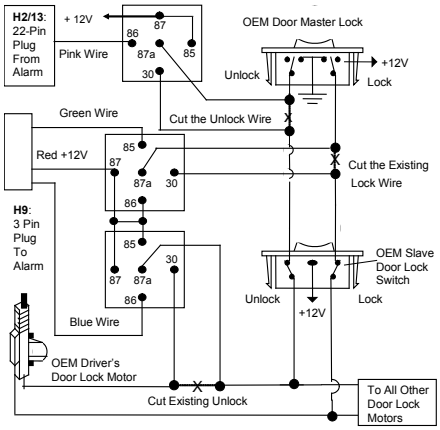


VACUUM OPERATED DOOR LOCKING SYSTEM:

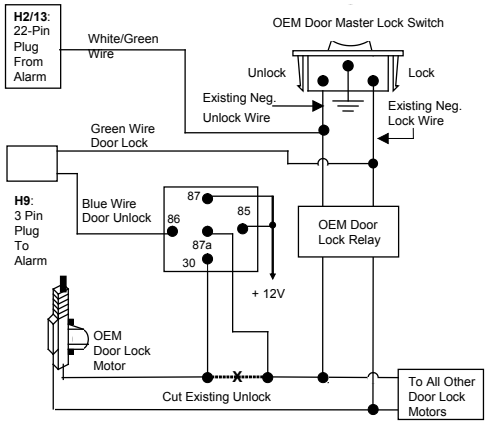
TYPICAL OF MERCEDES BENZ AND AUDI.

Locate the wire under the driver's kick panel. Use the voltmeter connecting to ground, verify that you have the correct wire with the doors unlocked, the voltmeter will receive "12 volts". Lock the doors and the voltmeter will read "0 volt". Move the alligator clip to +12V and the voltmeter will receive "12 volts". Cut this wire and make connections. Be sure to program door lock timer to 3.5 seconds.

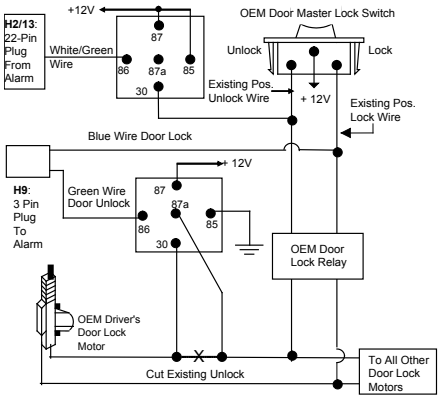
2 STEP DOOR UNLOCK WIRE CONNECTION FOR 5 WIRE ALTERNATING DOOR LOCKS



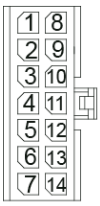
2 STEP DOOR UNLOCK WIRE CONNECTION FOR GROUND SWITCHED DOOR LOCKS



2 STEP DOOR UNLOCK WIRE CONNECTION FOR POSITIVE SWITCHED DOOR LOCKS



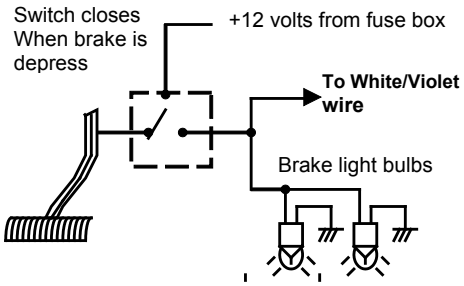
14 PIN ACCESSORY CONNECTOR



Pin	Color	Funtion	Pin	Color	Funtion
1	White/Violet	(+) Brake Switch Shutdown Input	8	White/Blue	Instant Start And Turn Off Input
2	White/Black	(-)Negative Hood Pin Safety Shutdown	9	Black/White	Neutral Safety Switch Input
3	Yellow	Ignition 3 Control Output	10	Gray	Channel 3(Trunk) Output
4	Blue/Black	Accessory 2 Control Output	11	Brown/White	Dome Light Control Output
5	Gray/Black	Second Starter Output	12	Pink	2-Step Unlock/Factory Disarm/Sensor By-pass
6			13	BrownBlack	Ground Output While Running
7	Orange	Ground Output When Armed	14	White/Red	Tachometer Signal Input

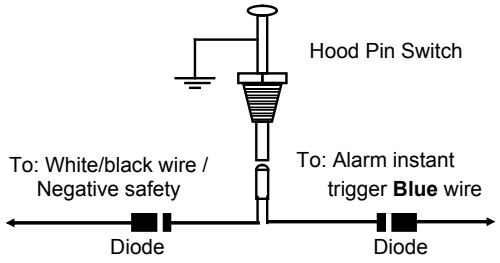
WHITE / VIOLET WIRE – POSITIVE SAFETY SHUT DOWN INPUT – MUST BE INSTALLED

This wire provides an instant shutdown for the remote start, whenever it gets +12volts. 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 gear, the brake pedal must be depressed. The brake input will in turn cause the remote start unit to shut off. See diagram.



WHITE / BLACK WIRE – NEGATIVE SAFETY SHUT DOWN INPUT & HOOD TRIGGER

The **White Black** 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 though 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.

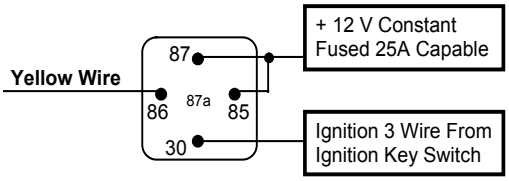


Important! This connection is a safety wire and must be connected as shown and tested as specified. Failure to do so may result in personal injury or property damage. See detail of wiring in the following diagram. This wire may also be used if the vehicle brake light circuit switches ground to the brake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

YELLOW WIRE – (-) 200MA IGNITION 3 OUTPUT –

This wire provides a 200mA (-) ground output that becomes active 2 seconds before the remote start unit initialize, and remains grounded while running.

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 below: Do not connect any vehicle circuits together, they are isolated for a reason.

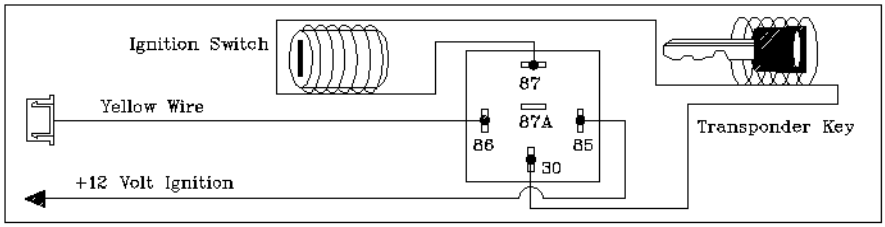


TRANSPONDER INTERFACING USING RELAY:

If the vehicle has a transponder system installed, you will need to by-pass the system while the vehicle is operating under the control of the Remote Start Unit.

To do this:

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 (28 - 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.
    1. Connect on end of the (28 - 30awg) wire to pin (87) of the relay module.
    2. Connect the other end of the loop wire to Pin (30) of relay module.
    3. Connect the pin (86) of the relay module to the ignition wire from the ignition switch.
    4. Connect the pin (85) of the relay module to the yellow wire of 20-pin connector.



GM VATS KEY OVERRIDE:

If the vehicle has the General Motor VATS system installed, you will need to by-pass the system while the vehicle is operating under the control of the Remote Start Unit. To do this:

1. Measure the resistance of the resistor pellet on the ignition key then select a resistor within 5% of the key's value.
2. Locate the pair of VATS wires in the vehicle, usually a pair of thin gauge wires running from the ignition switch to the VATS control module.
3. Connect the YELLOW wire from Remote Start Unit to TERMINAL #85 of an external relay. Connect terminal #86 of the relay to a fused +12 volt.
4. Cut (#1) wire (as shown), and connect the ignition switch side of the cut wire to terminal #87a of the relay. Connect the other side of the (#1) wire to terminal #30.
5. Connect the previously selected resistor from terminal #87 to the second(#2) wire (as shown).

BLUE/BLACK WIRE – (-) 200 MA ACCESSORY 2 OUTPUT –

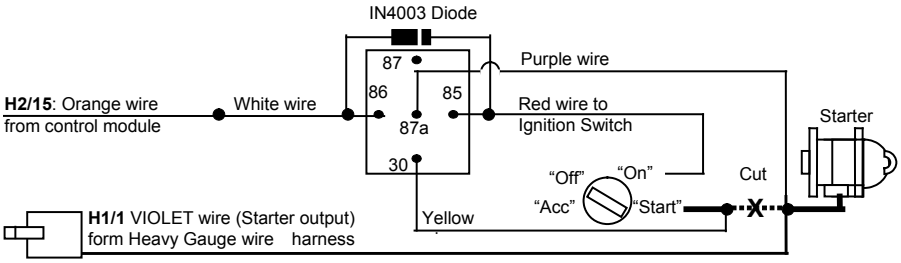
This wire provides a 200mA (-) ground output. This output will energize when the remote start is activated, go away while the starter is cranking, and then come back on when the vehicle has started successfully.

GRAY / BLACK WIRE: 200 MA (-) SECOND STARTER OUTPUT.

This line can be used if a second starter line is needed. Some vehicles require a two-starter line to remote start. This wire provides a negative output that will work the same way as the Violet starter line in connector H1.

ORANGE WIRE – (-) 200MA GROUNDED OUTPUT WHEN ARMED –

This wire will become grounded when the alarm is armed. The current capacity of this wire is 200mA. This output can control starter disable, when an intrusion is detected and the system is triggered. The vehicles prevent from any unauthorized starting.



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. Normally used for testing during installation or when activating the module from an after-market system.

BLACK/WHITE WIRE – (-) NEUTRAL SAFETY SWITCH INPUT OR (-) ENABLE 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. The 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 the TESTING YOUR INSTALLATION GUIDE)

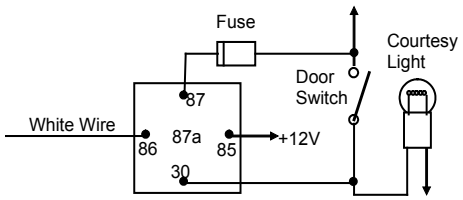
IMPORTANT NOTE: This wire must have a "GROUND" to operate remote start.

GRAY WIRE – (-) 200MA CHANNEL 3 (TRUNK) OUTPUT –

This will become a 1 second pulse ground by activate (button 3) on transmitter for two seconds, the current capacity of this wire is 200 mA. This feature allows you to remote control trunk release or other electric device.
(Relay may be required).

BROWN / WHITE WIRE WIRE – (-) DOME LIGHT OUTPUT –

This wire becomes grounded when the dome light controls circuit active. The current capacity of this wire is 200mA. This wire can control the operation of the interior lights. An optional 10 Amps relay can be used to this system for interior lights operation.



a). Upon disarming, the interior lights will remain on for 30 seconds.

b). If the alarm is triggered, the interior light will flash for the same duration as the siren.

PINK WIRE – (-) 200MA PROGRAMMABLE OUTPUT 2 STEPS UNLOCK OUTPUT

(Factory default setting) (See Alarm Feature Programming)

The 2 steps 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 vehicle's doors. When wired for this feature, press the disarm (or unlock) button one time will disarm the alarm and unlock the driver's door only. If, 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 is designed to disarm a factory installed security system. This wire sends a negative (-) 1 seconds pulse upon a remote start and remote door unlocking. 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 By-Pass Control) Output–

This wire is designed to by-pass 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.

Key Sensor By-Pass Output –

This output is for a Key Sense wire by-pass that some Chrysler and Toyota vehicles need to activate remote start. This wire comes on when remote start is activated and stays on for 20 seconds.

BROWN/BLACK WIRE: 200 MA (-) GROUND OUTPUT WHEN RUNNING.

This wire provides a negative output during the remote start process. It can be used to operate by-pass modules that may be required in your installation. This wire will provide ground once the remote start process has been initiated and will remain grounded while the engine is running

WHITE / RED WIRE – TACHOMETER SIGNAL CONNECTION –

Note: You should connect this wire if you program the Start Feature D – 2 to “Tachometer checking type”, otherwise do not connect this wire and tape the end.

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

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 system locating a proper signal may be more difficult. Once connected,

To test for a tachometer wire, a multi-meter capable of test 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 learn individual coil wire. Individual coil wires in a multi-coil ignition system will register lower amounts of AC voltage. Also, if necessary, the system can use a fuel injector control wire for engine speed sensing. 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. The vehicle will be damaged.

How to find a tachometer wire with your multi-meter

1. Set the ACV or AC voltage (12V 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.

IMPORTANT NOTE: No initial programming necessary. Default = voltage sensing mode

TRANSMITTER PROGRAMMING

Enter:

1. Turn the Ignition ‘switch **‘OFF/ON’ 3 TIMES** and stay in **ON** position. Within 15 seconds.
2. Push the Valet switch **3 times and hold** in on the **3rd** push, when a long chirp is heard then release the valet switch. You are now in the Transmitter programming mode.

Program:

1. Press any button on transmitter 1 until the siren responds with a confirming chirp; the first transmitter is now programmed.
2. Press any button on the second transmitter until the siren responds with a confirming chirp; the second transmitter is now programmed.
3. Apply the same procedure to program 3rd and 4th transmitters.

Exit:

Turn Ignition to ‘OFF’ position, or leave it for 15 seconds. 3 long chirps and 3 parking light flashes will confirm exit.
Note: If more than 4 transmitters programmed, the system will only keep the last four.

FEATURE “A” PROGRAMMING:

1. Turn the Ignition ‘switch **‘ON/OFF’ 3 Times** and stay in the ‘OFF’ position.
2. Push the Programming switch **3 times** (holding in on the 3rd push) until ***a long chirp is heard;*** then release the Programming switch. You are now in the feature **‘A’** programming mode.
3. Press and release the transmitter button with the Icon corresponding to the feature with the icon you want to program.
   a. The (optional) horn chirps and the LED will flash then pause indicating a previous setting.
   b. The factory default settings are always [1] LED flash, [1] horn chirp.
4. Depress the transmitter button icon again to change the feature. Simply keep re-depressing the transmitter button icon again until the module advances to your desired setting.
5. Depress the next desired transmitter icon button corresponding to the feature you want to program.

(*) The Horn must be connected to hear the programming chirps.

Press Transmitter Button	One Chirp / LED one pulse **Factory Default Setting**	Two Chirps / LED two pulse	Three Chirps / LED three pulse	Four Chirps / LED four pulse
1 🔒	**Pathway illumination feature “off:**	Parking lights turn “on for 30-seconds upon disarm	Parking lights turn on for 30-seconds upon disarm & 10 sec. upon arm	
2 🔓	**Brown wire =Horn, Brown/White wire = Dome light , Gray wire = 2nd channel**	Brown wire =Factory Rearm, Brown/White wire = Dome light , Gray wire = 2nd channel	Brown wire =Horn, Brown/White wire = Factory Rearm , Gray wire = 2nd channel	Brown wire =Horn, Brown/ White wire = Dome light , Gray wire = Factory Rearm
3	**Pink Wire= 2 Step Unlock**	Pink Wire= Factory Disarm	Pink Wire= Sensor by-pass	Pink Wire= Sensor by-pass 20 sec
4 ✱	**Confirmation Chirps “ON”**	Confirmation Chirps **“Off”**		
5 🔒 + ✱	**Lock/Arm & Unlock/Disarm Confirmation Chirps**	Lock/Arm Confirmation Chirp Only		
6. 🔒 +	**Horn chirp Duration Standard**	Horn chirp Duration 50 mS	Horn chirp Duration 30 mS	Horn chirp duration 10 mS

Exit: Turn Ignition to the ‘ON’ position, or leave it for 15 seconds. 3 long chirps & 3 parking light flashes will confirm exit.

FEATURE “B” PROGRAMMING:

1. Turn the Ignition ‘switch ‘ON/OFF’ 3 TIMES and stay in OFF position.
2. Push the Valet switch **4** times (holding in on the 4th push) until a long chirp is heard then release the valet switch. You are now in the Alarm feature **‘B’** programming mode.

Press and release the transmitter button corresponding to the feature you want to program.

Press Transmitter Button	One Chirp / LED one pulse **Factory Default Setting**	Two Chirps / LED two pulse	Three Chirps / LED three pulse	Four Chirps / LED four pulse
1 🔒	**Door Lock before start**	Door Lock after start	Door Lock before & after start	Without this feature
2 🔓	**Ignition controlled door locks & unlocks**	With ignition controlled door locks Only	With ignition controlled door Unlocks Only	Without ignition controlled door locks & unlocks
3 🚗	0.8 second door lock & unlock	3.5 second door lock & Unlock	0.8 second Lock, 0.35 second Unlock	0.8 sec. dbl Lock, 0.8 sec. dbl Unlock
	Five Chirps = 0.8 second Lock, double 0.8 second. Unlock **Six Chirps** = Double 0.8 second Lock, 0.8 second Unlock **Seven Chirps** = Door lock with “Comfort Feature” **Eight Chirps =** DBI Two-step unlock (DBI ONLY **)**** **Nine chirps =** DBI Unlock ALL doors (DBI Only)** ******Select either of these options when using Two Way Data Bus Interface Only. For use with FORTIN & ADS Compatible data modules and/or Telematics Module.			
4 ✱	**White/Blue= 1 Pulse Start (-) Trigger input**	White/Blue= 2 Pulse start (-) Trigger input	White/Blue= 3 Pulse start (-) trigger input	
5 🔒 + 🔓	**ADS DBI Data protocol**	Fortin DBI Protocol		
6 🔒 + 🚗	**Press ✱ button = Activate Remote Start.**	Press✱ - ✱ button twice = Activate Remote Start.		

Exit: Turn Ignition to ‘ON’ position, or leave it for 15 seconds. 3 long chirps & 3 parking light flashes will confirm exit.

FEATURE “C” PROGRAMMING:

1. Turn the Ignition ‘switch ‘ON/OFF’ 3 TIMES and stay in OFF position.
2. Push the Valet switch **5** times (holding in on the 5th push) until a long chirp is heard then release the valet switch. You are now in the Start feature **‘C’** programming mode.

Press and release the transmitter button corresponding to the feature you want to program.

Press Transmitter Button	One Chirp / LED one pulse **Factory Default Setting**	Two Chirps / LED two pulse	Three Chirps / LED three pulse	Four Chirps / LED four pulse
1 🔒	**3 Hours Timer Start**	2 Hours Timer Start		
2 🔓	**Gasoline Engine**	Diesel Engine Wait-To-Start Light 10 sec warm-up	Diesel Engine Wait-To-Start Light 15 sec warm-up	Diesel Engine Wait-To-Start Light 20 sec warm-up
3	**20 minutes run time**	30 minutes run time	10 minutes run time	5 minutes run time
4 ✱	**Factory alarm disarm with channel 2 on**	Without this feature		
5 🔒 + ✱	**Constant parking light output upon Remote Start**	Flashing parking light output upon Remote Start		
6 + ✱	**Vehicle without Turbo (The system Cannot Arm with the engine running)**	Vehicle with Turbo (The system Can be Armed with the engine running and the engine will run by itself after the ignition is turned off)	Press 🔓 and ✱ buttons at the same time to control Engine run time for **1 minute**	Press 🔓 and ✱ buttons at the same time to control Engine run time for **3 minutes**
		Five chirps = Press 🔓 and ✱ buttons at the same time to control Engine run time for **5 minutes**		

Exit: Turn Ignition to ‘ON’ position, or leave it for 15 seconds. 3 long chirps & 3 parking light flashes will confirm exit.

START FEATURE “D” PROGRAMMING:

1. Turn the Ignition switch ‘ON/OFF’ 3 TIMES and stay in OFF position.
2. Push the Valet switch **6** times (holding in on the 6TH push) until a long chirp is heard then release the valet switch. You are now in the Start feature **‘D’** programming mode.
3. Press and release the transmitter button corresponding to the feature you want to program.

Press Transmitter Button	One Chirp / LED one pulse **Factory Default Setting**	Two Chirps / LED two pulse	Three Chirps / LED three pulse	Four Chirps / LED four pulse
1 🔒	Exit the programming mode. (3 long chirp & 3 parking light flashes to confirm this exit.)			
2 🔓	**A> RPM learning – see RPM Learning page 17**			
	B> Start Crank Time: **0.6-second**	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),		
3	Low check level	Hi check level		
4 ✱	Start or Stop the system for TESTING & ADJUSTMENT			
5 🔒 + 🔓	**Voltage check type**	Tachometer Check type	Timer checking type	Data Bus Interface Mode**
6. 🔓 + ✱	**THICK Pink = Ignition 2**	THICK Pink = Start 2	THICK Pink = ACC 2	
7. 🔒 +	**No function**	Pulse ignition 1 before unlock. Wake BCM		
8 🔓 +	**+ 50 RPM DBI ONLY**	No RPM learning		
9 + ✱	**- 50 RPM DBI ONLY**	No RPM Learning or < 50 RPM		

Exit: Press the 🔒 button on the transmitter. 3 long chirps & 3 parking light flashes will confirm exit.

**** This will be used when the DBI is connected to a ADS or Fortin compatible Two-way data module that will recognize the tach signal from the vehicle. If this learned value needs to be adjusted, this signal will need to be learned in the same manner as the analog tachometer wire.**

RPM LEARNING:

While the system is in Start Feature **"D"** programming mode,

1. Press and release the transmitter button once, **[1]** LED flash, **[1]** horn chirp to indicate you are in features "RPM Learning mode".
2. Start the vehicle with the key. (While the engine is running, the parking light & LED will flash, if not, please check the tachometer White/Red wire connection.
3. Press and hold the valet switch for 2 seconds until a long chirp and the LED light is constant for two seconds. The RPM signal is learned.
4. Once you complete step 3, you can adjust and test "Check Level" **Exit:** Press the button on the transmitter.

RETURN TO START FEATURE FACTORY DEFAULT SETTING:

Press the button first within 3 seconds, then press the + button on the transmitter together for 6 seconds, there will be a confirmation six chirp with 3 long chirp and parking light flash 3 times to confirming the system "Start Feature C & D Programming all returns to factory default setting.

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 button on the transmitter.
3. The LED will now report the last system shutdown by flashing for one minute in the following grouped patterns:

LED Flashes	Shutdown Mode	
1	(-) Safety Shutdown input (Hood)	1. Close the hood. 2. Check White / Black wire connection.
2	(+) Safety Shutdown input (Brake) or Neutral Safety Switch input fail.	1. Check White/ Violet wire connection. 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.
3	No RPM or Low Voltage.	Tachometer Checking Type: Check White/Red wire connection 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 (Start Feature D – 2 / 3)

TROUBLE SHOOTING

- **There are 5 reasons why the remote start ✱ button will not respond from the transmitter.**
- **The Black/White Neutral Safety wire is not grounded. Must be grounded to start.**
- **Hood Pin switch White/Black wire has a ground present. Must not show ground to start.**
- **Brake pedal switch White/Violet has 12 volt present. Must not show 12 volt to start.**
- **The system is in Valet mode.**
- **The remote start feature programming has not been programmed to start the vehicle. The remote start must be programmed how to start the vehicle.**

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 🔓 button on the transmitter.
3. The LED will now report the last system shutdown by flashing for one minute in the following grouped patterns:

LED Flashes	Shutdown Mode	
1	(-) Safety Shutdown input (Hood)	1. Close the hood. 2. Check H2/13 White/Black wire connection.
2	(+) Safety Shutdown input (Brake) or Neutral Safety Switch input fail.	1. Check H2/15 White/Violet wire connection. 2. Move the Enable Toggle Switch to "ON" position. (If installed.) 3. Move the gear selector to "Park"/ "NEUTRAL" position.
3	No RPM or Low Voltage.	Tachometer Checking Type: Check H2/4 White/Red wire connection Voltage Checking Type: Program the "CHECK LEVEL" from "Hi Check Level" to "Low Check Level"
4	Wait-to-Start time out	Please check H2/20 White/Green wire connection
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 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 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 connection.

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 Blue wire connection.

3. **NEUTRAL START SAFETY TEST:**

    1. Set the vehicle parking brake.

    2. Block the drive wheels to prevent vehicle movement.

    3. Sitting in the vehicle, turn the ignition switch to “ON” or “RUN” position. But do not start the engine.

    4. Step on the brake pedal and shift the gear selector into “DRIVE” (D).

    5. Put your 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.

    6. 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 (starter output wire) 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 alternative 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.

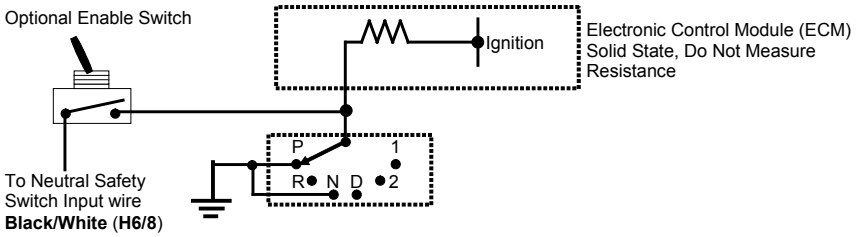
PARK/NEUTRAL ECM INPUT:

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, provide the vehicle you are working on has this ECM input.

The installation required for this application (shown below), 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 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 **(H2/8)** of the Remote Start unit. The reference diagram on the next page 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 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 a vehicle utilizing an electrical neutral start switch and is inconsistent with the operation manual.

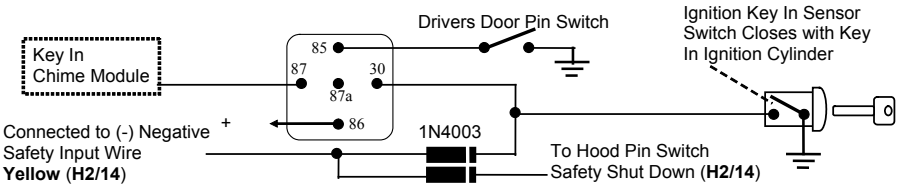
Additional information concerning Key in Sensor methods 1 & 2 are listed below and should be reviewed before considering either alternative.

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

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



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

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 terminal 30 of a 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 safely input wire (WHITE/ BLACK) of the Remote Start Unit.

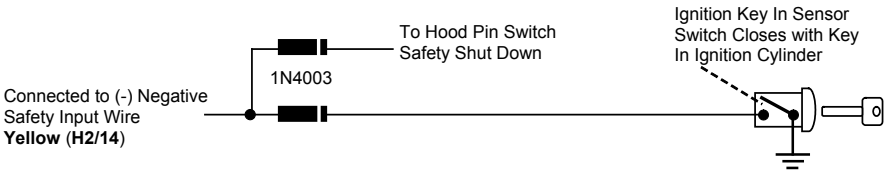
F. Connect terminal 86 of the relay to a fused + 12 volt constant battery source.

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 Drivers 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 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. If the hood pin switch is also used for an alarm trigger input, be certain to use the dual diode assembly packaged with the Remote Start Unit as shown in this installation guide.

METHOD 2



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

1. Locate the control wire that connects the driver's door pin switch to the key in sensor switch.
2. Cut this wire and connect the ignition cylinder side to chassis ground.
3. Locate the key in sensor switch wire that connects the chime module to the ignition cylinder.
4. Cut this wire and connect the ignition cylinder side to the Remote Start Negative Safety Shut down wire Yellow , 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 connected to the Yellow of the Remote Start Unit. The cathode (Striped) side must be connected to the hood pin switch. If the hood pin switch is also used for an alarm trigger input, be certain to use the dual diode assembly packaged with the Remote Start Unit as shown in this installation guide.

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

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

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Please visit our website at **www.silencer.com**