

**RS900ERII/RS901II**  
**SERIES II**  
**REMOTE ENGINE STARTING SYSTEM**  
**INSTALLATION INSTRUCTIONS**

This Remote Start Module provides the following features:

**SELECTABLE ENGINE SPEED SENSING:**

- Tach & “Smart Tachless” Modes

**DYNAMIC CODE:**

- Anti-Code Grabbing Protection

**PROGRAMMABLE RUN TIME:**

- 12, 24, 36, or 48 minutes

**VALET MODE / OVERRIDE**

**4 ON-BOARD RELAYS:**

- Main Ignition (IGN1)
- IGN2 / Accessory
- Starter
- Parking Light

**REMOTE KEYLESS ENTRY:**

- Controls power door locks

**CODE / TACH LEARNING CIRCUITRY**

**DEDICATED OUTPUTS FOR:**

- OEM Factory Alarm Disarm
- OEM Factory Alarm Re-Arm
- Starter Disable / Anti-Grind Output
- Aux. Output (Trunk pop)

**433Mhz TRANSMITTER FREQUENCY**

- Better range / Less RF interference

**HOST ALARM ACTIVATION:**

- Lets an Alarm AUX trigger a remote start

**DIESEL START COMPATIBILITY**

**SECURITY STARTER DISABLE**

**HOOD / BRAKE SAFETY CIRCUITRY**

**\*\*Some of the features listed above are optional connections, and may require additional parts and labor.\*\***

## INSTALLATION CONSIDERATIONS / WARNINGS

### **TECHNICAL SUPPORT: 1-800-998-6880**

Monday - Friday 8:00am - 4:30pm Pacific Time

Web Site: [www.crimestopper.com](http://www.crimestopper.com)

E-mail: [tech-support@crimestopper.com](mailto:tech-support@crimestopper.com)

**CRIMESTOPPER SECURITY PRODUCTS, INC.**  
1770 S. TAPO STREET, SIMI VALLEY, CA. 93063

This device complies with FCC Rules part 15. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference that may be received, including interference that may cause undesired operation. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modification could void the user's authority to use the equipment.

To ease and reduce installation time, we suggest you consider the following points before starting.

1. Determine most suitable locations for all components to be placed. These components include: the module itself, override / programming switches, and possible relays.
2. Use a Volt-Ohm meter to test and locate all connections.
3. Record all color codes of vehicle wiring to be used for reference. This will save time by not having to re-test the same wires over again.
4. Allow enough wire to create a service loop with strain relief, should servicing be required. This will also allow easier access and mounting.

**\*\*FOR SAFETY REASONS, DO NOT INSTALL RS900/901 in vehicles with MANUAL TRANSMISSIONS.\*\*** If accidentally left in gear, a remote started vehicle could become a self-propelled threat to life and property.

**DO NOT** extend the RS-900 Remote start ignition harness length. Mount the module so that main harness reaches all ignition switch wiring. Extending these wires could result in poor performance.

**DO NOT** route any wiring that may become entangled with brake, and gas pedals, steering column, or any other moving parts in the vehicle.

**DO NOT** exceed the rated output current of any circuit on the Remote start module. Failure to observe this warning will result in damage to the unit.

**DO NOT** remote start the vehicle in a closed garage. Make sure that the garage door is open or there is adequate ventilation. Failure to observe this rule could result in injury or death from poisonous Carbon Monoxide fumes.

**Warning:** This system DOES NOT HAVE engine over-rev protection. Make certain vehicle throttle linkage operates properly and does not stick. A stuck throttle will

## WIRING INSTRUCTIONS

## PROGRAM/OVERRIDE SWITCH: 2 PIN PLUG

This switch is used primarily for programming features of the RS900/901. However, if the Anti-Grind/Starter disable feature is installed, you **MUST INSTALL** this switch. This switch will allow the user to override the starter disable in the event of a non-operating remote control.

## LED: 2 PIN PLUG

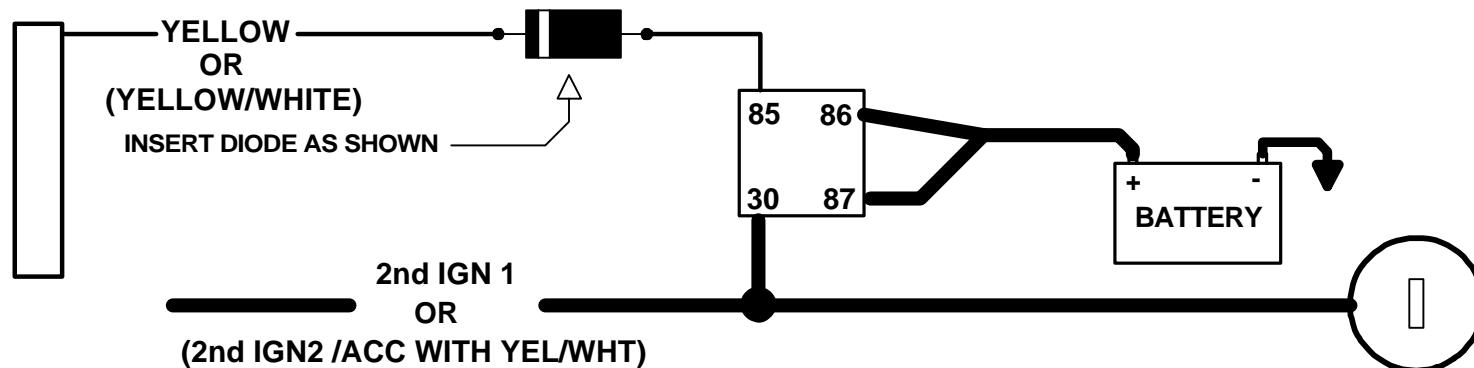
The LED is only used as a VALET/PROGRAMMING indicator. The LED comes on solid when the unit is in valet or programming mode. The LED is not a mandatory installation item.

## 12 PIN PLUG:

**PIN 1: YELLOW: (-) IGNITION 1 OUTPUT (FOR RELAY)**

## **PIN 2: YELLOW/WHITE: (-) IGN2/ACC OUTPUT (FOR RELAY)**

Use these wires when the vehicle requires a second IGNITION 1, IGNITION 2, or ACCESSORY wire to be activated. This occurs commonly in Toyota, and late model GM cars. See diagram below:



### **PIN 3: BLACK: MAIN SYSTEM GROUND**

Connect to chassis metal of the vehicle. An existing bolt or screw MAY provide an adequate ground, or drill a small hole, scrape away paint and attach using a sheet metal screw & star washer. If this wire is not connected OR connected to a point on the vehicle that provides a poor ground, undesirable and inconsistent operation will occur.

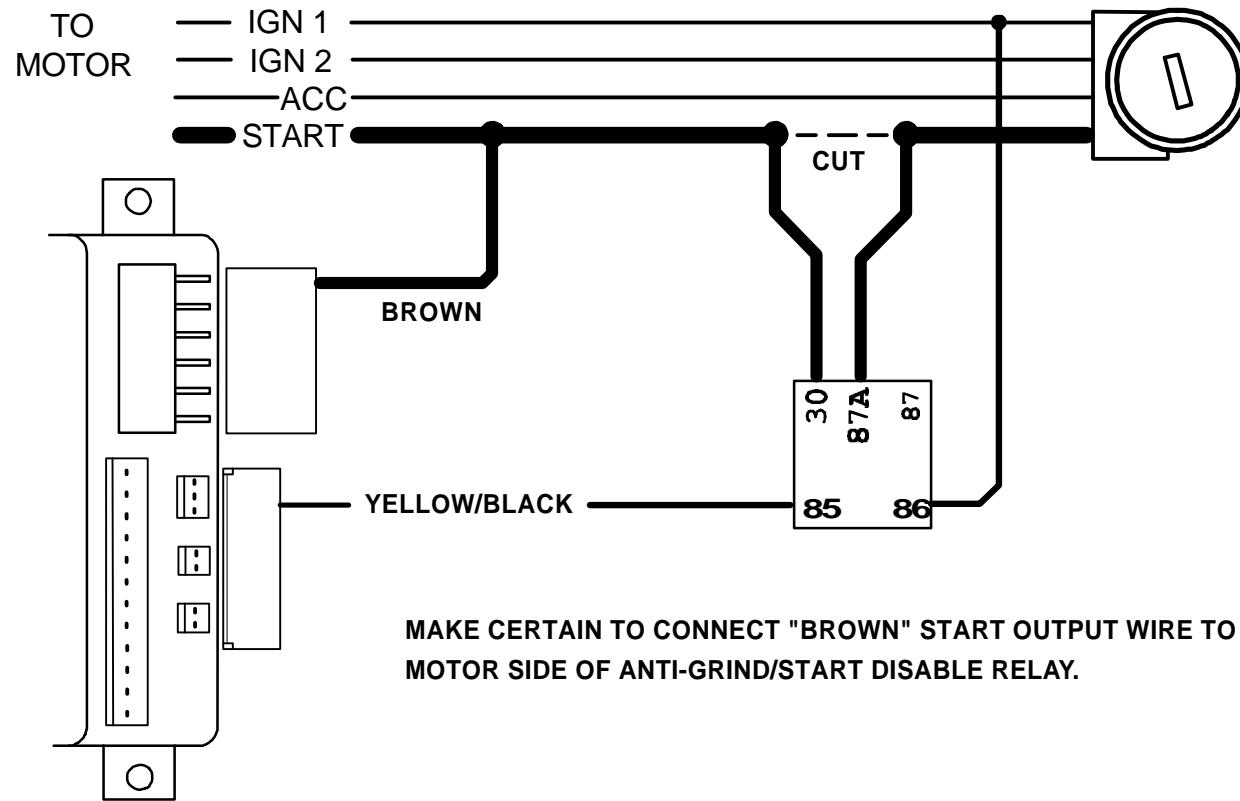
This is a mandatory connection.

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## WIRING INSTRUCTIONS

### PIN 4: YELLOW/BLACK: (-) ANTI-GRIND/STARTER KILL OUTPUT

Use this wire for the negative side of the Anti-Grind/Starter Disable relay. It can also be used for the sensor disable circuit for a host alarm for RS901. This output activates whenever a remote start is requested, and when the vehicle is remotely locked with the transmitter. See diagram below.



### PIN 5: TAN: (-) AUX OUTPUT (TRUNK POP)

This output will provide a ground pulse when button #3 on the remote transmitter is pushed to activate a factory electric trunk release or other optional accessory. Note: this is a momentary output that will stay on as long as the remote button is pressed.

## **PIN 6: GREEN: (-) START ACTIVATION TRIGGER**

This wire allows a host alarm (-) Negative Auxiliary Channel Output to activate a Remote Start. A one second ground pulse on this wire will trigger a remote start or turn off a remote started engine.

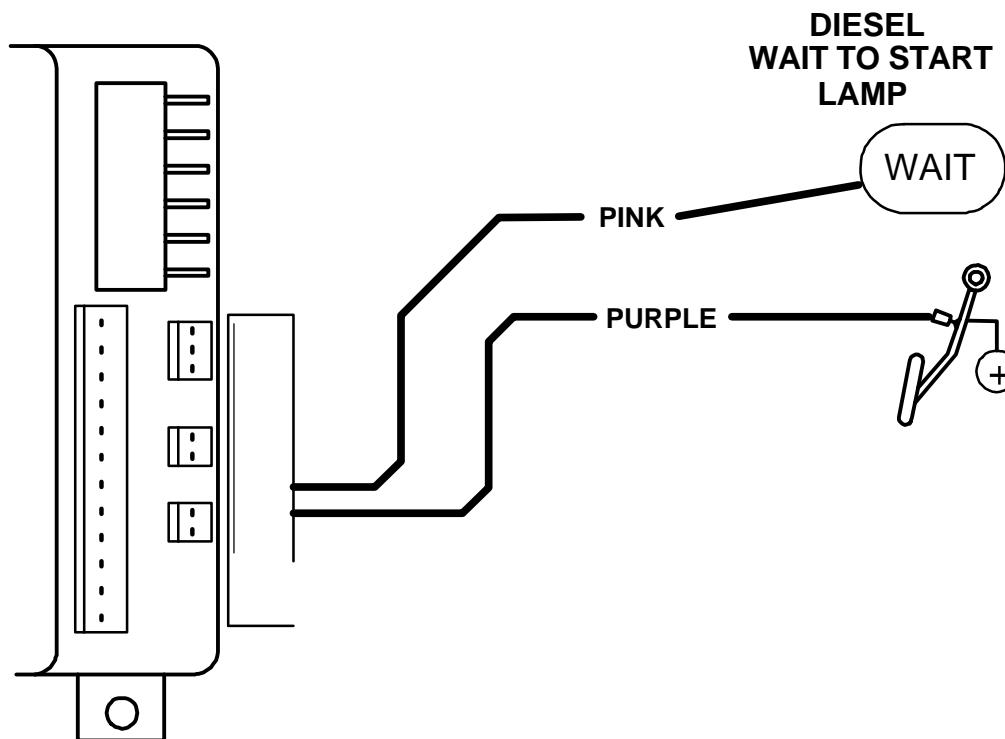
## **WIRING INSTRUCTIONS**

### **PIN 7: GRAY: (-) HOOD SWITCH**

Connect the Gray wire to a switch that is at ground when the hood is open. If an existing switch is not available, then one must be installed. When this wire is grounded, the remote start is inhibited. If hood is opened on a remote started engine, the unit will immediately shut the motor off. This is a mandatory connection!

### **PIN 8: PINK: (+12V) DIESEL GLOW PLUG INPUT**

Connect Pink wire to indicator circuit that shows +12 volts while the “WAIT TO START LAMP” is on. When this wire is used, the RS900 will wait until light turns off before attempting a remote start. Note: a relay may be required for vehicles that have a Negative Wait to Start lamp. See Diagram Below.



### **PIN 9: PURPLE: (+12V) BRAKE RESET**

Connect the Purple wire to the side of brake pedal switch that shows +12 volts ONLY when pedal is depressed.

This will turn off the remote start if someone attempts to drive the car without the keys or if the Ignition key is not turned on all the way. See diagram above.

## WIRING INSTRUCTIONS

### **PIN 10: TAN: (-) OEM DISARM OUTPUT**

This wire provides a ground pulse to disarm the vehicles' FACTORY anti-theft system prior to Remote Start. Connect this wire to the vehicles' anti-theft disarm wire. This wire is may found coming off the Driver's door key switch or the Factory Anti-theft control module. This wire may not be needed if Factory Security only requires a door unlock pulse.

### **PIN 11: TAN: (-) OEM REARM OUTPUT**

This wire provides a ground pulse to rearm the vehicles' FACTORY anti-theft system after remote start, along with door lock pulse, and after an aborted Remote Start. Connect this wire to the vehicles' anti-theft rearm wire or to the door pin circuit depending on your requirements.

### **PIN 12: RED/WHITE: TACHOMETER INPUT**

When installing the RS900 Series II in CONVENTIONAL TACH mode, this wire must be connected to a valid source of AC voltage. This wire allows the RS900 to sense the engine and control the starter motor.

## TACH MODE

**Tach Mode:** The Tach mode is the most reliable and consistent method of engine speed sensing. When using this mode, the WHITE/RED wire provides the input for the pulsing signal that is created by a running engine to monitor and control the starter motor. Most modern engines include various points where this proper signal may be obtained. **TACH SENSE EXAMPLES:** Negative (-) side of ignition coil, Distributor, Ignition Module, Coil Pack, Engine Computer, or Crankshaft Sensor. Sometimes Fuel injection solenoids, and Alternator stator pins can be used if necessary.

***Note: The locations above are provided as a guide, your vehicle may differ. Some locations will NOT be a good location for Tach source. Some of the locations given may be too noisy for the system to detect a clean signal and/or the vehicle uses a Multi-spark ignition system that varies the spark. (Noisy meaning Electrical or RF interference) Call Crimestopper for Tech Support when you cannot locate a proper tach source for your vehicle.***

**TACH SOURCE PROGRAMMING:**

1. Open hood
2. Connect WHITE/RED wire to Ignition coil or RPM source.
3. Start engine with key.
4. Press program button 5 times, then wait for 5 light flashes.
5. Wait at least one second then push program button slowly (4) times, you should get a light flash after each button press. This unit is now at option #4-Tach Learning.
6. Press Button #1 on the transmitter and the unit will read the Tach source and flash the lights twice for confirmation.

***NOTE: THE RS900 II is Factory Set in “Smart Tachless” Mode by default. When using Standard Tach Mode, programming the tach pulses automatically takes the unit out of “Smart Tachless” Mode. See below for “Smart Tachless mode information.***

**FAIL SAFE PROTECTION:**

If the WHITE/RED TACH input wire becomes disconnected due to wear and tear or when the vehicle is serviced, the RS900 will automatically go into “Smart Tachless” mode to allow the unit to continue starting the engine

**“SMART TACHLESS” MODE**

**Smart Tachless Mode-** This RS900 Series II includes custom vehicle monitoring circuitry that allows it to start an engine with optimum efficiency and consistency every time. When in Smart Tachless Mode no tach wire is required. The system actively monitors the vehicle over the life of the installation regardless of weather or battery conditions. This allows the Remote Start System to compensate for a fading battery or harsh environmental conditions and adjusts itself as needed for optimum starting capability.

**TO SET SMART TACHLESS MODE: (No Tach Wire Required)**

- 1) Turn on headlights about 20 seconds to drain off surface charge of the vehicle battery. This step is not needed if the vehicle has been sitting for 2 hours or more.

- 2) Connect the +12V input wires to the RS900 Series II.
- 3) The unit will automatically read and program itself for your vehicle when 12 volts is applied.

### **SMART TACH JUMPERS: (Remove Access Door on top of module)**

The purpose of the jumpers is to reduce the cranking time of starter crank when in “Smart Tachless” mode only.

**PIN ORIENTATION:** Looking at remote start upright with harnesses facing down (or towards you).

To shorten the crank time adjustment one level, remove the jumper at the far right. Test the unit and see if the decrease is correct. If a shorter crank time is still required, then remove the middle jumper. Test the unit and see if the decrease is correct. There are only (2) adjustments. Removing the third jumper will not make any change to the crank time. These (2) setting should correct most cranking times when in Smart Tachless mode.

**NOTE: (1) If you connected the 12 volts lines early in the install before connecting the input and output wires, the RS900 may not have the correct reference for your vehicle. If this is the case, power down the unit and perform the steps under “Smart Tachless” mode again.**

**(2) If you have changed battery in the vehicle, wait 2 hours before attempting a remote start or wait for 2 hours after the vehicle has been driven to allow the unit to update itself to the new battery.**

## **TACH WIRE TROUBLESHOOTING-TACH MODE**

TACH wire trouble shooting applies to installations using Tach learning mode, not “Smart Tachless”. If all remote start wiring has been completed, attempt a remote start. If engine starts, and starter disengages quickly, and engine continues to run, the tach wire has been properly connected.

\*\* If system does not remote start properly, you will have to locate a different tach wire and reprogram.

**AN INADEQUATE TACH SOURCE WILL PRESENT ANY VARIETY OF THE FOLLOWING PROBLEMS:**

- Starter stays engaged after engine starts.
- Starter releases properly when engine starts, but engine then stalls BEFORE the time out. System may re-start.
- Starter releases properly, and engine runs, but then starter re-engages. (This makes a terrible grinding noise and the system must be shut off as quickly as possible to prevent damage to starter and flywheel).



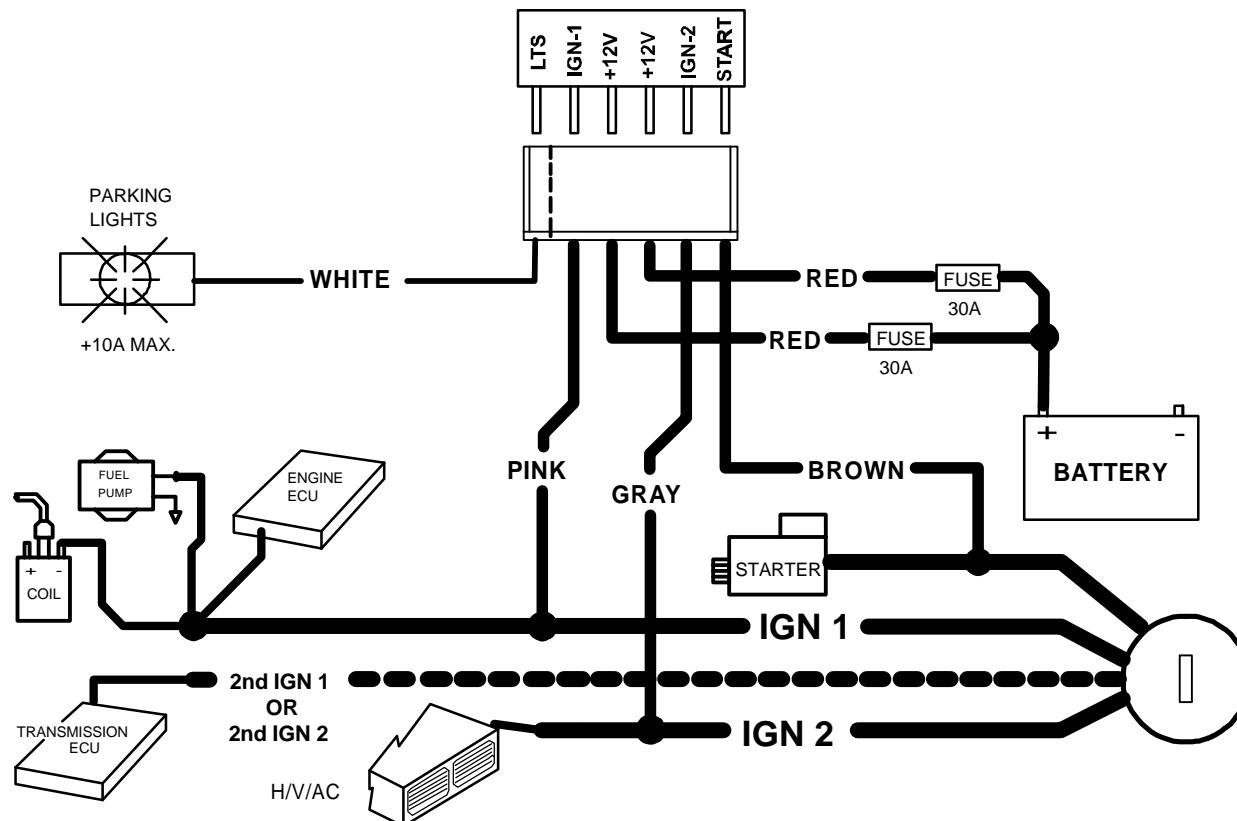
# IGNITION SWITCH WIRING

## 5 OR 6\* PIN HIGH-CURRENT CONNECTORS:

(\*Some units may be shipped with a 5-pin connector and a separate spade connector for the White parking lamp wire or the unit may have 6 pin for all the High-Current spades. There is no difference between the two.) See diagram for typical connections.

**PIN 1: BROWN 14 GA. : STARTER OUTPUT (30A)**  
**PIN 2: GRAY 14 GA. : IGNITION 2 / ACC (30A)**  
**PIN 3: RED 14 GA. : BATTERY CONSTANT FUSED (30A)**  
**PIN 4: RED 14 GA. : BATTERY CONSTANT FUSED (30A)**  
**PIN 5: PINK 14 GA. : IGNITION 1 (30A)**  
**PIN 6: WHITE 18 GA. : (+) PARKING LIGHTS (10A)**

**NOTE:** Heavy duty Ignition circuits (greater than 30 AMPS) require high-current relays. Do not use the outputs of the RS900 Series II for High-Current systems or you will risk damaging the unit. Use Crimestopper Part #CS-403 relays for circuits up to 70 amps.



## POWER DOOR LOCK WIRING

## 3 PIN DOOR LOCK PLUG:

**PIN 1: GREEN: (-) Negative pulse for LOCK**

**PIN 2: RED: +12V Coil Power for external relays TERM 86.**

**PIN 3: BLUE:** (-) Negative pulse for UNLOCK

**DETERMINING DOOR LOCK TYPE:** We recommend determining the type of locking system the vehicle has before connecting any wires. Incorrect connection will result in damage to the remote start and/or vehicle locking system. There are several types of door lock systems in vehicles today. Below is listed the many types of common locking systems:

**Negative trigger:** Most Japanese; Ford, New GM

**Positive trigger:** Many GM; Some Chrysler

**One wire dual voltage:** Newer /Chrys/Dodg/Plym; Ford Probe

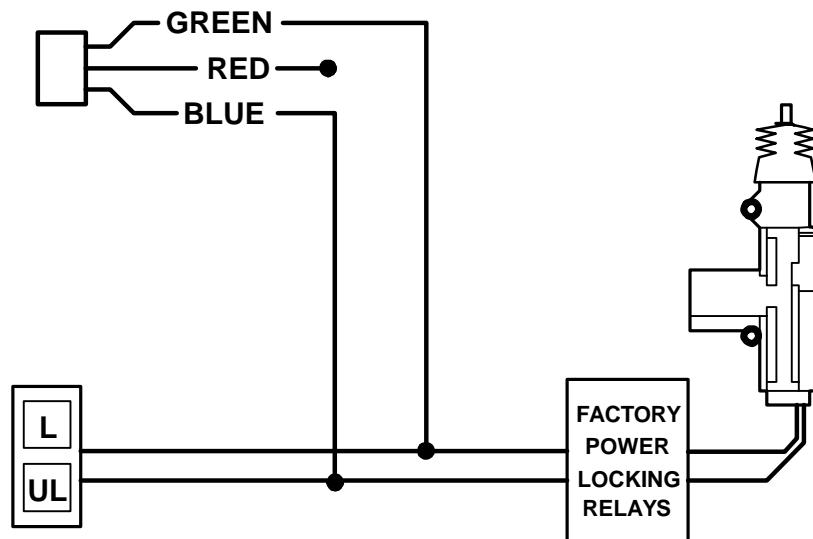
**Ground/open:** Some Nissan; Subaru

**Reverse Polarity:** Chrys/Dodg/Plym; GM; Ford

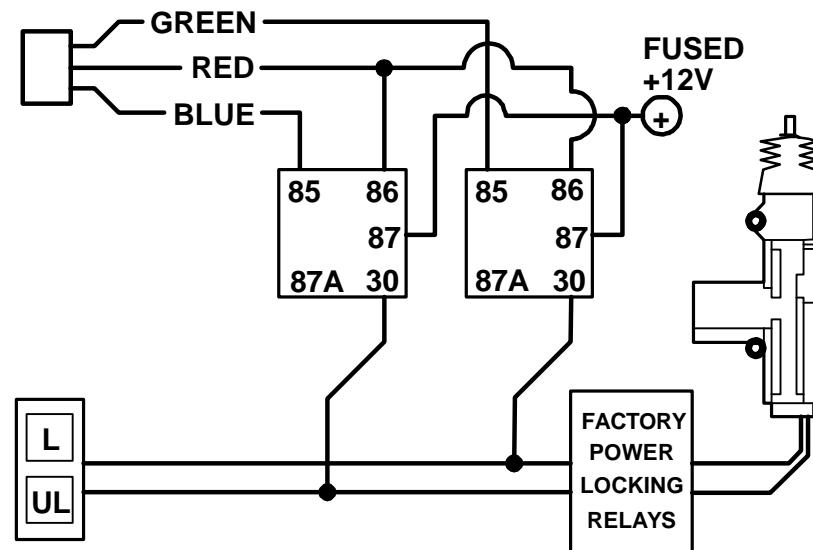
## **Electric vacuum pump: Pre-'95 Mercedes-Benz**

## DOOR LOCK DIAGRAMS

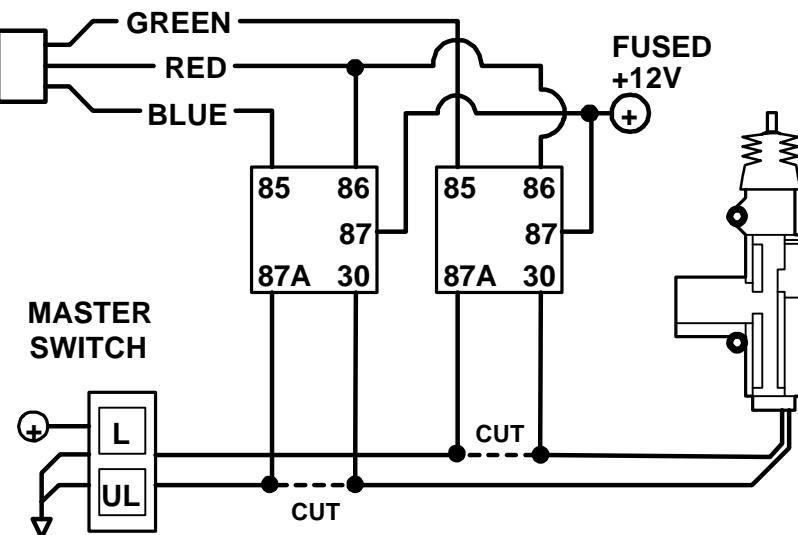
## NEGATIVE TRIGGER DOORLOCK WIRING



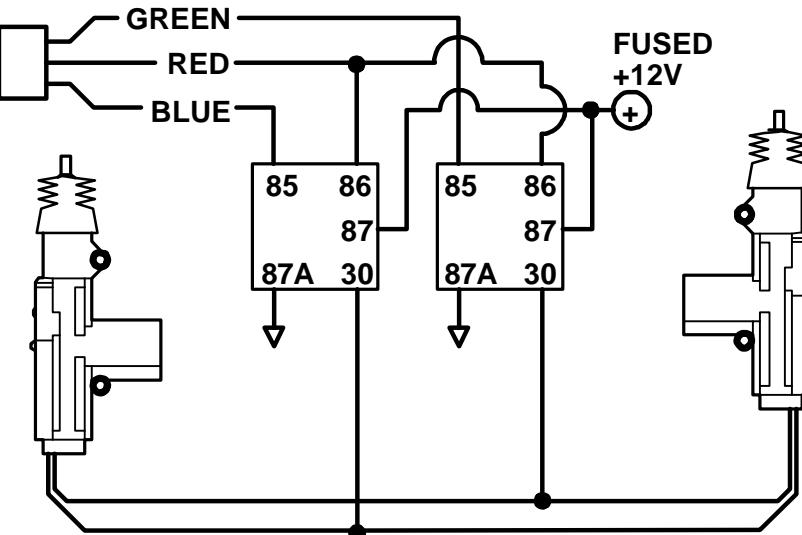
## POSITIVE TRIGGER DOORLOCK WIRING



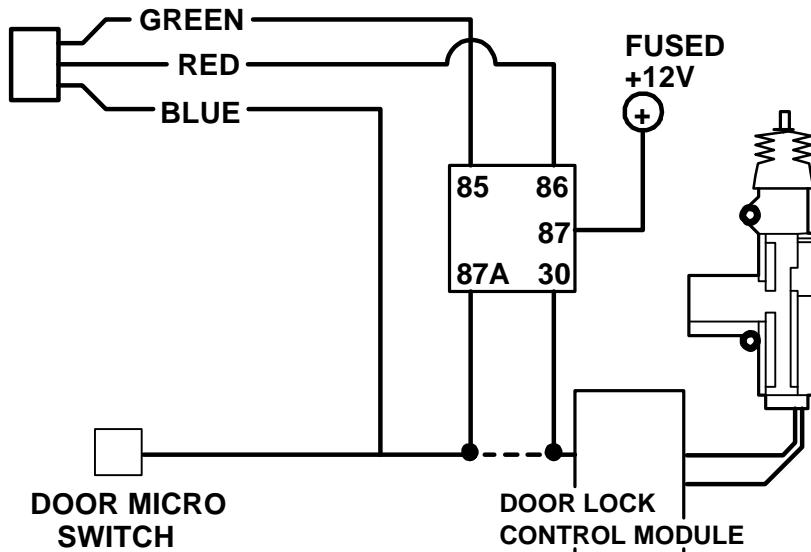
### REVERSE POLARITY DOOR LOCK WIRING



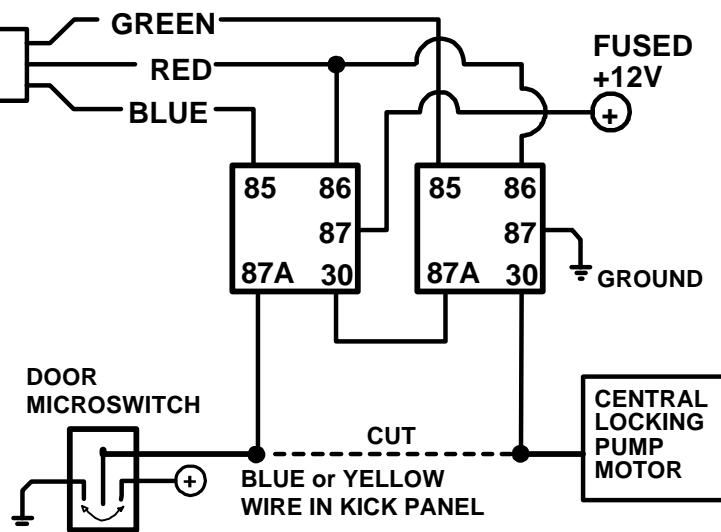
### AFTERMARKET MOTOR/DOOR LOCK WIRING



### GROUND/OPEN LOCKING SYSTEM



### MERCEDES-BENZ VACUUM SYSTEM



## TRANSMITTER PROGRAMMING

### Transmitter Code Learning: (Excludes RS901)

**Note: All transmitter codes must be learned at time of programming!! The RS900 allows storage of up to 4 different transmitter codes.**

1. Open Hood. (Ground Gray wire.)
2. Turn key to the ON position. (Doors will lock if Autolock is programmed)
3. Press Programming button 4 times, then after a few seconds the unit will flash the parking lights 4 times.
4. Press button #1 of the transmitter to be coded. You should get light flashes with each code learned. If all 4 code locations are learned, the unit will automatically exit code learning mode, otherwise turn key off and close hood.

## OPTION PROGRAMMING

This system has several installer programmable features. See chart below for features.

### Options Programming:

1. Open hood
2. Turn Key to the ON position
3. Press program button 5 times, after a few seconds the unit will flash the lights 5 times.
4. Slowly push the program button the number of times that corresponds to the option number desired. You should get a light flash after each button press.
5. When you reach the desired programming level, Press button #1(LOCK) on the transmitter to change the option from the factory default or Press button #2 (UNLOCK) to return the option back to default (except for the Run Time option.) See chart below.

**PROGRAMMING OPTIONS CHART**

Option #	Option Description	Option Values	Fac. Pre-set
1	Autolock with Ignition	On or Off.	ON
2	Door Lock Pulse Time	.075 or 3.0 sec.	.075
3	Double Unlock Pulse	On or Off	OFF
4	Tach Learning	N/A	N/A
5	Remote Start Run Time	Button #1 = 12 min. Button #2 = 24 min. Button #3 = 36 min. Button #4 = 48 min.	24 min
6	Option reset	Button #2	N/A