

EZ-45DP/55DP 1 WAY SYSTEMS

EZ-95FM 2-WAY SYSTEM

DP SERIES II (Data port)



REMOTE ENGINE STARTING SYSTEM

INSTALLATION INSTRUCTIONS

INTRODUCTION

CONGRATULATIONS on your choice of a “EZEE Start” System by Crimestopper Security Products Inc. This booklet contains the information necessary for installing your remote starter system. If any questions arise, contact your installation dealer or Crimestopper Security Products Inc. at the Tech Support number below.

DISCLAIMER:

This installation book is designed for the installer or individual with an existing understanding of automotive electrical systems, along with the ability to test and connect wires for proper operation. To ease installation, we suggest that you READ THIS MANUAL before beginning your installation. This book is provided as a GENERAL GUIDELINE and the information contained herein may differ from your vehicle. Crimestopper Security Products, Inc. and its' vendors shall not be liable for any accident resulting from the use of this product. This system is designed to be professionally installed into a vehicle in which all systems and associated components are in perfect working condition.

TECHNICAL SUPPORT: (800) 998-6880

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CRIMESTOPPER SECURITY PRODUCTS, INC.

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REV C 09.2006

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.

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PRE-INSTALLATION CONSIDERATIONS

BEFORE BEGINNING, check all vehicle manufacturer cautions and warnings regarding electrical service (AIR BAGS, ABS BRAKES, ENGINE / BODY COMPUTER AND BATTERY).

PLAN OUT YOUR INSTALLATION and determine most suitable locations for all components to be placed. These components include: the module itself, valet/program button, possible relays, and antenna/receiver. Allow enough wire to create a service loop with strain relief, should servicing be required. This will also allow easier access and mounting.

DAMAGE to the EZEESTART unit resulting from incorrect installation or failure to follow guidelines stated in this book will not be covered under warranty and will be subject to repair or replacement charges.

USE A VOLT/OHM METER to test and locate all connections. Test Lights can damage a vehicle’s computer systems.

ADDITIONAL PARTS, which are not included with this unit, may be needed for your particular vehicle. These items may include extra relays or Anti-Theft System Bypass modules.

INSTALLATION CAUTIONS & WARNINGS

****FOR SAFETY REASONS, DO NOT INSTALL 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 Remote start ignition harness length. Mount the module so that main harness reaches all ignition switch wiring. Extending these wires could result in poor or improper performance.

DO NOT route any wiring that may become entangled with brake, 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 not covered under warranty.

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.

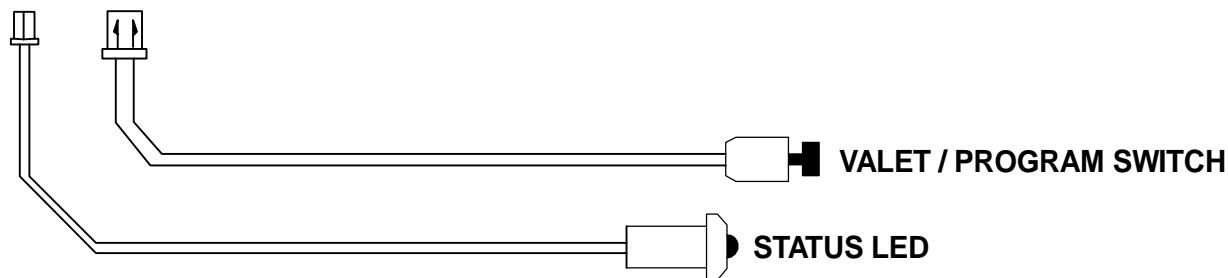
PROGRAM/OVERRIDE SWITCH AND LED

PROGRAM/OVERRIDE SWITCH: 2 PIN PLUG (REQUIRED FOR PROGRAMMING & LEARNING REMOTES)

This switch is used for programming features, transmitters, valet mode, and to override the optional starter disable (if installed) in the event of a non-operating remote control.

LED: 2 PIN PLUG (OPTIONAL)

The LED is used as a VALET/PROGRAMMING indicator and it will also FLASH for use as security deterrent when Remotely Locking the door.



WIRING: 3-Pin (EZ-45DP II) and 5-PIN (EZ-55DP II/95FM II) Connector

PIN 1: White: (+12V) Brake Reset

Connect the White 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.

PIN 2: Pink: (+12V) +/- Diesel Glow Plug Input or Car Jack Input (Programmable Input Wire)

+/- Glow Plug Input (Diesel Vehicles Only)

Connect Pink wire to indicator circuit that shows a (- or +) Signal while the "WAIT TO START LAMP" is on. When this wire is used, the system will wait until light turns off before attempting a remote start. Note: This input is jumper selectable for Positive or Negative type signals. See Jumper Pin diagram (Pg. 26) for jumper configuration.

PIN 3: Blue: (-) NEGATIVE HOOD PIN SWITCH (REQUIRED FOR PROGRAMMING)

Connect the Blue wire to a switch that is at ground when the hood is open. If an existing switch is not available, then we recommend one 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. The unit will not attempt to start if hood is open. The hood pin is also used for remote transmitter programming.

PIN 4/5 FOR EZ-55DP II/95FM II ONLY

PIN 4: Violet: (-) Aux #3 FOR EZ-55DP II AND EZ-95FM II ONLY

The Violet/White wire for a negative output for a Momentary, Pulse, Timed or Latched output, depending on option used. Option #26 and 27 controls these functions.

PIN 5: Violet/White: (-) Aux #4 FOR EZ-55DP II AND EZ-95FM II ONLY

The Violet/White wire for a negative output for a Momentary, Pulse, Timed or Latched output, depending on option used. Option #26 and 27 controls these functions.

POWER DOOR LOCK WIRING CONNECTOR

PIN 1: BLUE/WHITE: (-) Passenger unlock (FOR EZ-55DP II AND EZ-95FM II ONLY)

PIN 2: BLUE: (-) Negative pulse for UNLOCK

PIN 3: RED: +12V When using external relays (TERM 86)

PIN 4: GREEN: (-) Negative pulse for LOCK

DETERMINING DOOR LOCK TYPE: We recommend determining the type of locking system the vehicle has before connecting any wires. Incorrect connection may result in damage to the alarm and/or vehicle locking system. Door lock information is provided as a guide. Your vehicle may differ.

Crimestopper Door Lock Accessories:

CS-6600DLM: Dual-relay plug-in module for Reverse Polarity, Positive, or Aftermarket Motors.

CS-6500DLI: Plug-in pulse inverter that converts the Negative outputs of the system to Positive type for Positive Door Lock systems.

CS-610S1: Aftermarket door lock actuator (motor).

POWER DOOR LOCK WIRING Cont.

Negative Trigger (-): Many Imports; Late model Ford & General Motors

Negative trigger door lock systems send a Negative (Ground) pulse to existing factory relays to lock and unlock the vehicle doors.

Positive Trigger (+): Many General Motors; Chrysler / Dodge / Plymouth

Positive trigger door lock systems send a Positive (+12V) pulse to existing factory relays to lock and unlock the vehicle doors.

Reverse Polarity: Many Ford/Lincoln/Mercury/Dodge/Chrysler/Plymouth and early 90's GM Trucks

The door lock/unlock motors are controlled directly from the lock and unlock switches in the door. The lock and unlock wires rest at Negative Ground when not in use. When the lock or unlock button is pressed, one of the circuits is "Lifted" and replaced with +12V causing a lock or unlock to occur.

Single Wire (Dual Voltage): Late model Chrysler/Dodge/Plymouth Vehicles, some 2000-UP GM

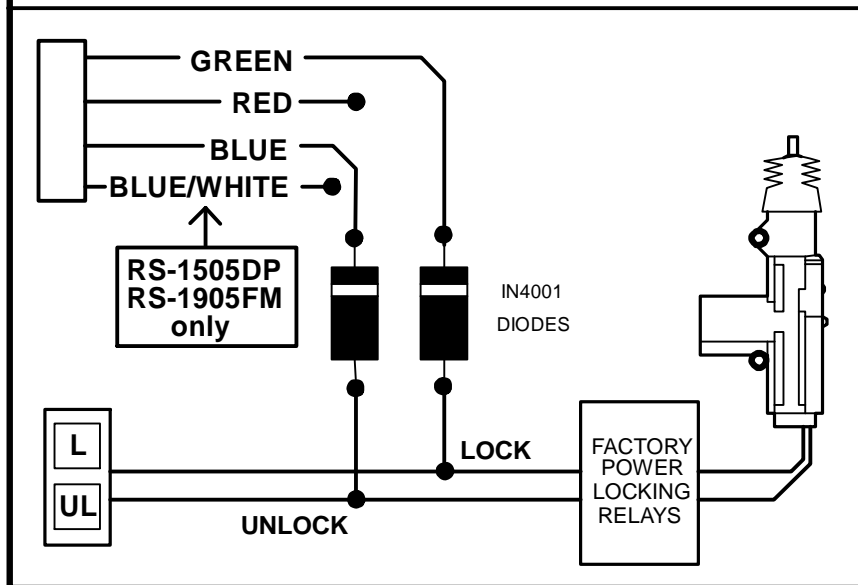
Dual Voltage systems have lock/unlock switches that send varying levels of Positive voltage OR Negative ground current to the SAME wire for both lock and unlock. When the vehicle's Body Computer Module (BCM) or door lock module senses different voltages on this wire, the system will either lock or unlock. Single wire door lock systems require relays and resistors.

Databus Systems 2003-UP GM Trucks & SUV's, '96-04 Jeep Grand Cherokee

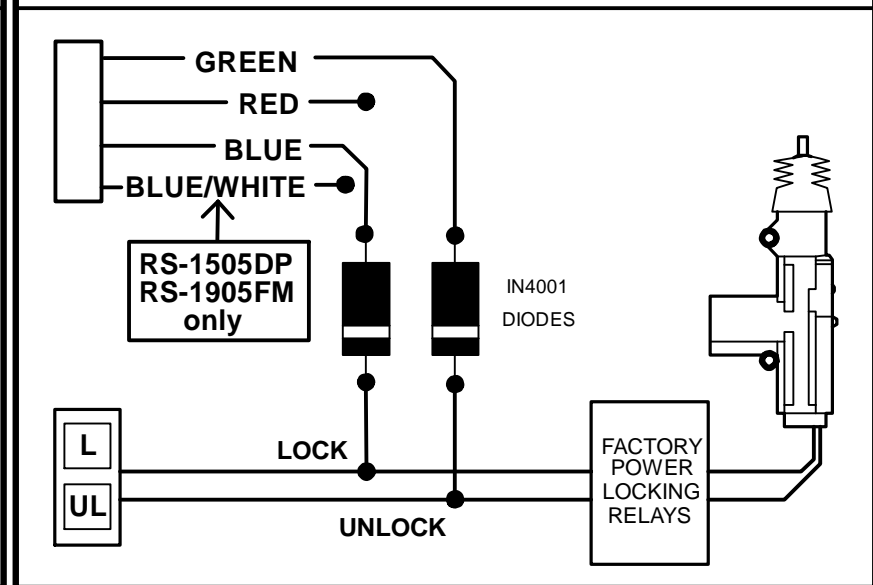
Databus systems send low current "Data messages" to the door lock controllers on a network in order to lock and unlock the vehicle. To install aftermarket systems in these vehicles, an interface module is required that converts the regular lock/unlock pulses into "Data messages" to allow locking & unlocking. Interface modules are sold separately.

BASIC DOOR LOCK DIAGRAMS

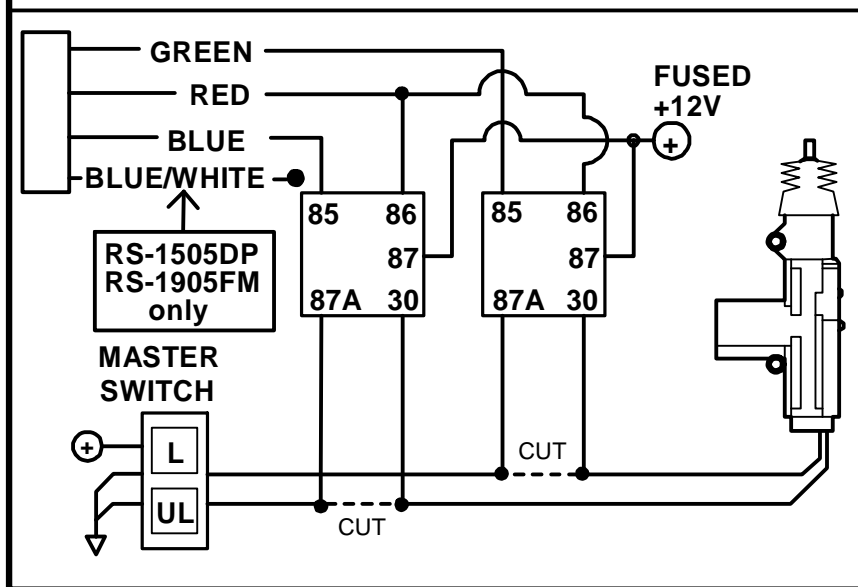
NEGATIVE TRIGGER DOORLOCK WIRING



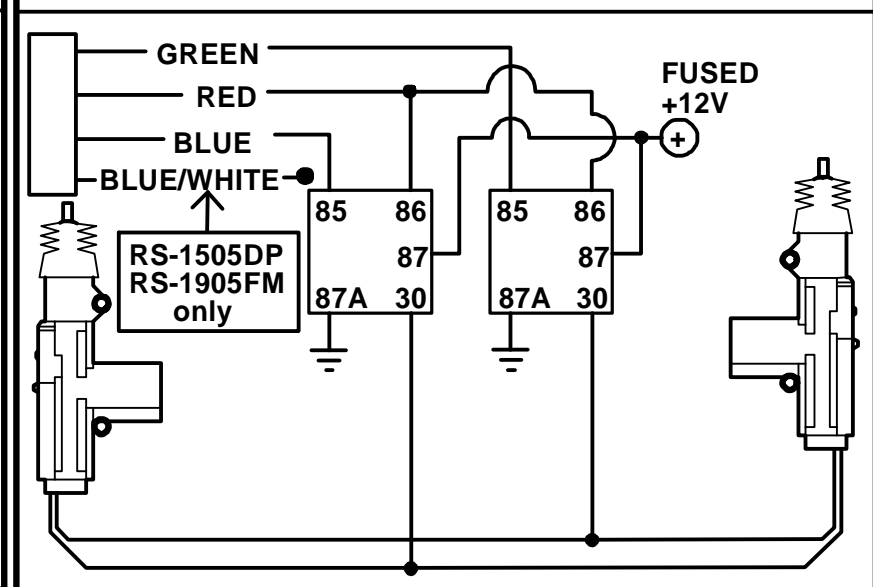
POSITIVE TRIGGER DOORLOCK WIRING



REVERSE POLARITY DOOR LOCK WIRING

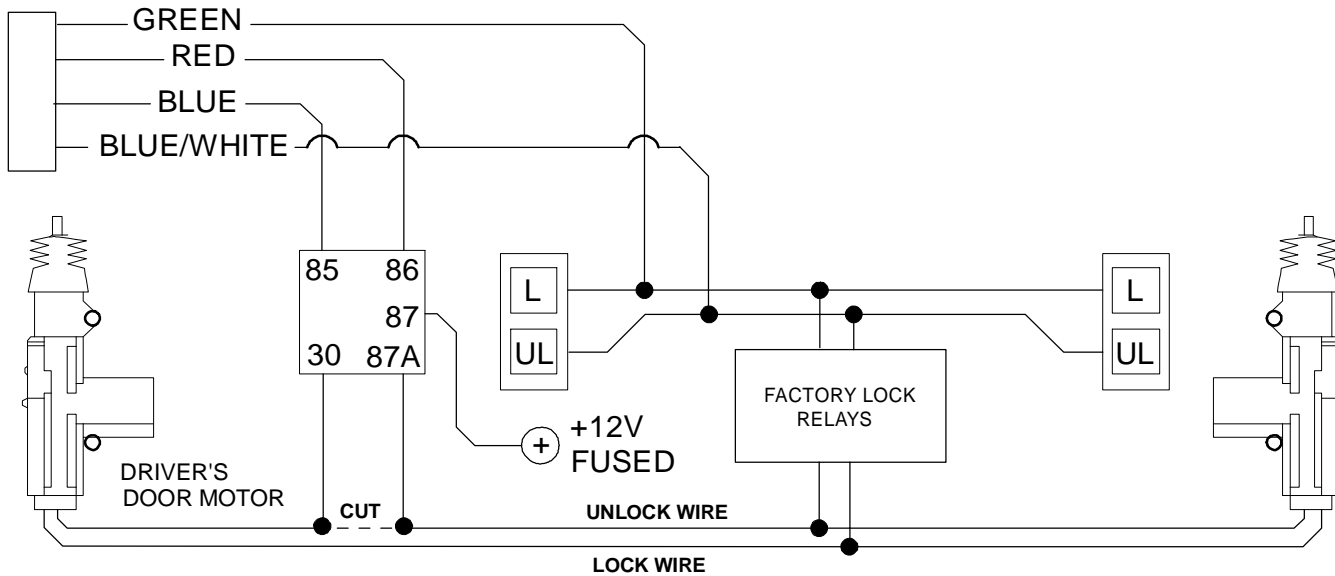


AFTERMARKET MOTOR/DOOR LOCK WIRING

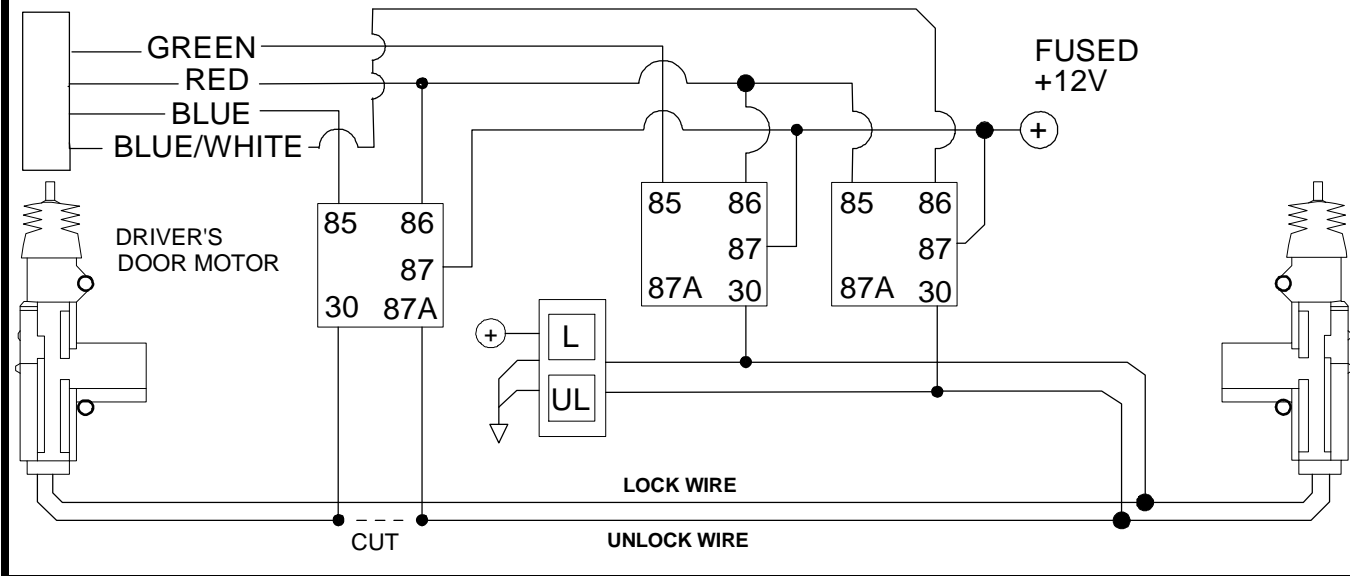


PRIORITY DOOR LOCK DIAGRAMS (For EZ-55DP II/EZ-95FM II only)

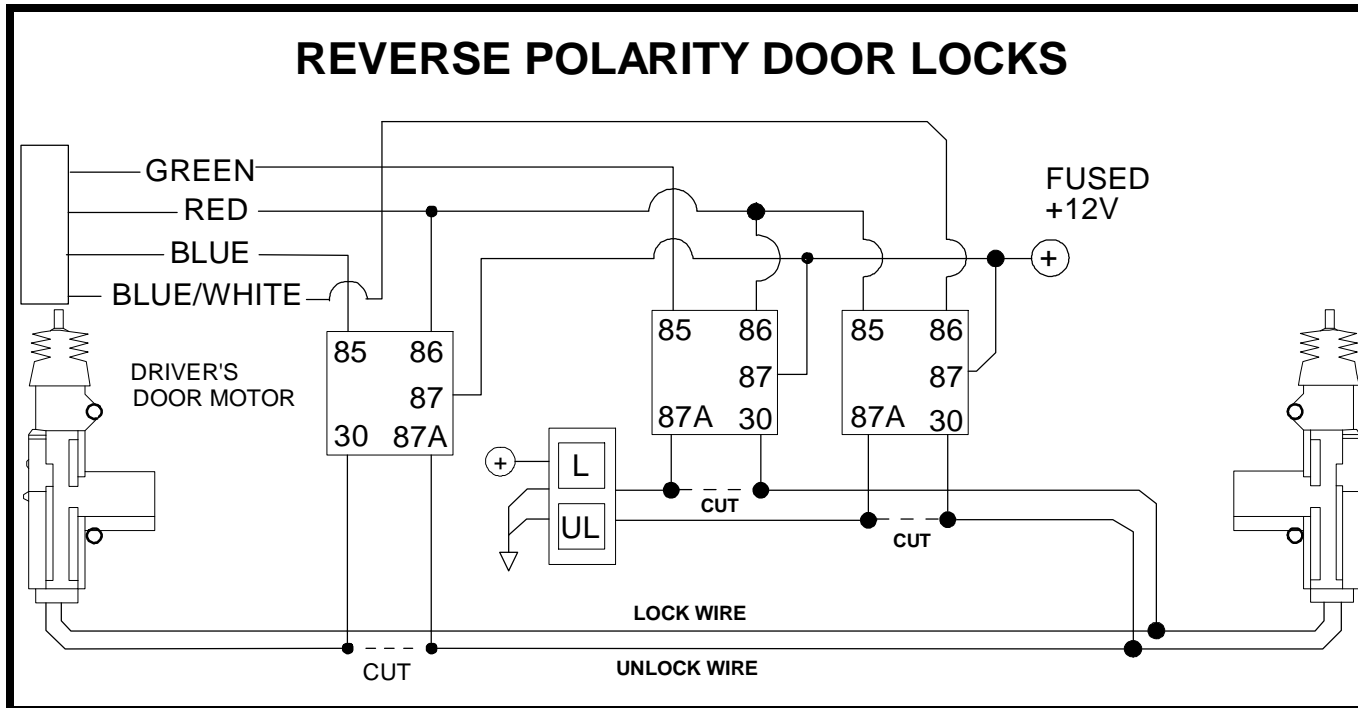
NEGATIVE TRIGGER DOOR LOCKS



POSITIVE TRIGGER DOOR LOCKS



PRIORITY DOOR LOCK DIAGRAMS Cont. (For EZ-55DP II/EZ-95FM II only)



Reverse Polarity: Many Ford/Lincoln/Mercury/Dodge/Chrysler/Plymouth and early 90's GM Trucks

The door lock/unlock motors are controlled directly from the lock and unlock switches in the door. The lock and unlock wires rest at Negative Ground when not in use. When the lock or unlock button is pressed, one of the circuits is "Lifted" and replaced with +12V causing a lock or unlock to occur.

WIRING

PIN 1: GREEN/RED: (-) AUX#1 OUTPUT (TRUNK POP) or DOME LIGHT ILLUMINATION OUTPUT

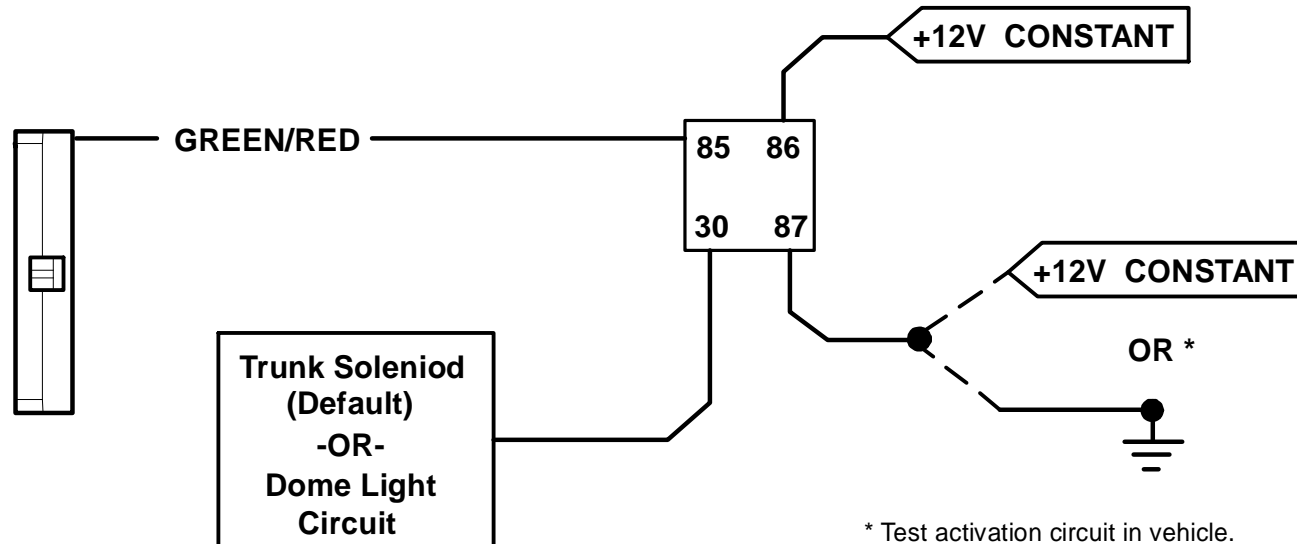
This output is programmable for two modes of operation. See Programming Option Section.

Mode (1) DEFAULTS: Provides a Ground pulse when button #3 (Trunk) on the remote transmitter is pushed to activate a factory electric trunk release or other optional accessory.

Mode (2) ALTERNATE: Provides a Ground output for 30 seconds when the unlock button is pressed for use as a dome light illumination output.

Note when using the GREEN/RED wire as a Trunk Pop, you may also need or want to program option #14 so the system also provides an Unlock signal when the trunk pop is activated. This may help to prevent unnecessary triggering of Factory Alarm systems or you may want the convenience of having the door unlock at the same time.

GREEN/RED WIRE: TRUNK OUTPUT or DOME LIGHT



* Test activation circuit in vehicle.

Connect to +12V for Positive circuits
or Ground for Negative circuits. Relay
not included.

PIN 2: BLUE/BLACK: (-) AUX#2 OUTPUT

Provides a Ground pulse when button #5 (Star button) is pressed, then press button #1 (Lock) within 2 seconds on the remote transmitter. The LED flashes orange when the Star button is pressed (2nd function mode).

WIRING Cont.

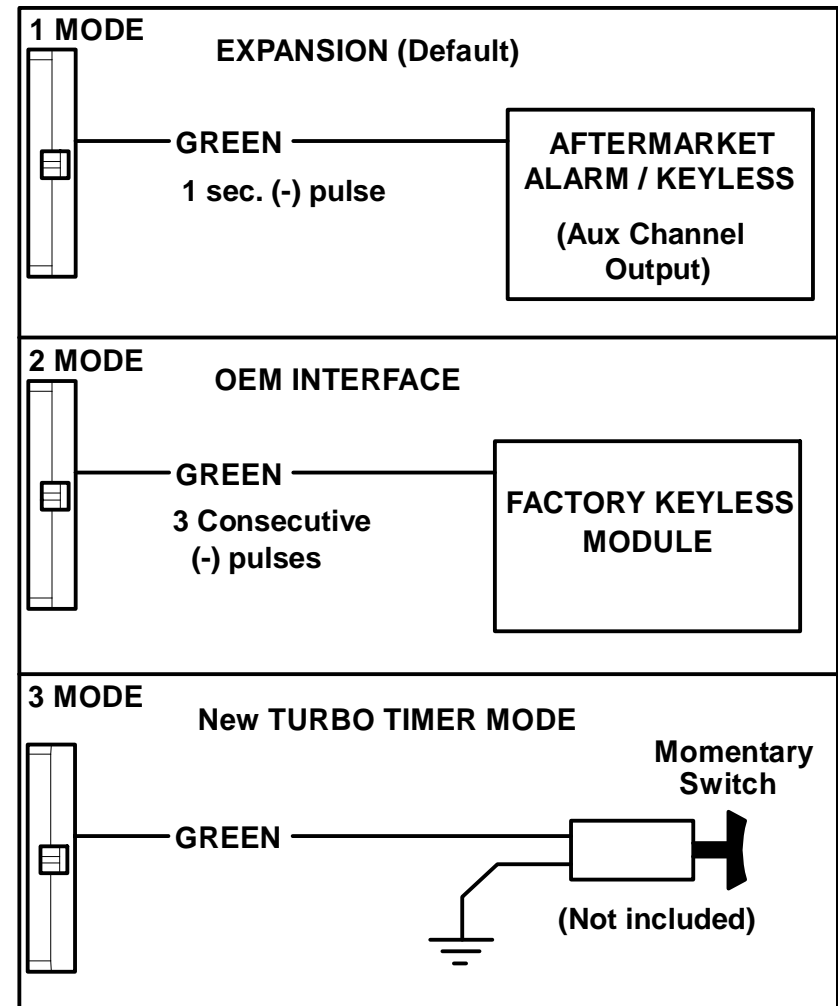
PIN 3: GREEN: (-) START ACTIVATION INPUT, OEM INTERFACE or TURBO TIMER INPUT

See descriptions & diagrams below.

Mode (1) [Default (-) Neg. Start Activation] This wire allows a host (or parent) alarm's or keyless entry system to activate a Remote Start by sending a 1-Second Negative signal to the Green input wire to trigger a remote engine start or stop. Connect the Green wire to the host system's Auxiliary channel output wire.

Mode (2) [Alternate OEM Interface] This mode allows the system to Remote Start or Stop when 3 successive Negative pulses are sent to the Green input wire. Connect the Green input wire to the Negative lock signal wire of the factory system. If your Factory OEM system does not have this type of signal, then a relay is required.

Mode (3) [TURBO TIMER INPUT [No programming required] this wire allows the system to keep a vehicle running for 1-5 minutes [selectively] after removing the key. This mode requires the use of a momentary switch that is not included with the kit. Connect a 2-pole momentary switch with one side to chassis Ground and the other side to the Green input wire. If you own a turbo or turbo diesel vehicle, you can now allow the EZEESTART system to keep your engine running for 1-5 minutes after exiting/locking your vehicle to cool-down without the need for an external "Turbo Timer".



NOTE: The turbo timer button will also trigger a remote start if it is inadvertently pressed when the vehicle is not running. Please note this when installing the button and choose a location out of harm's way.

WIRING Cont.

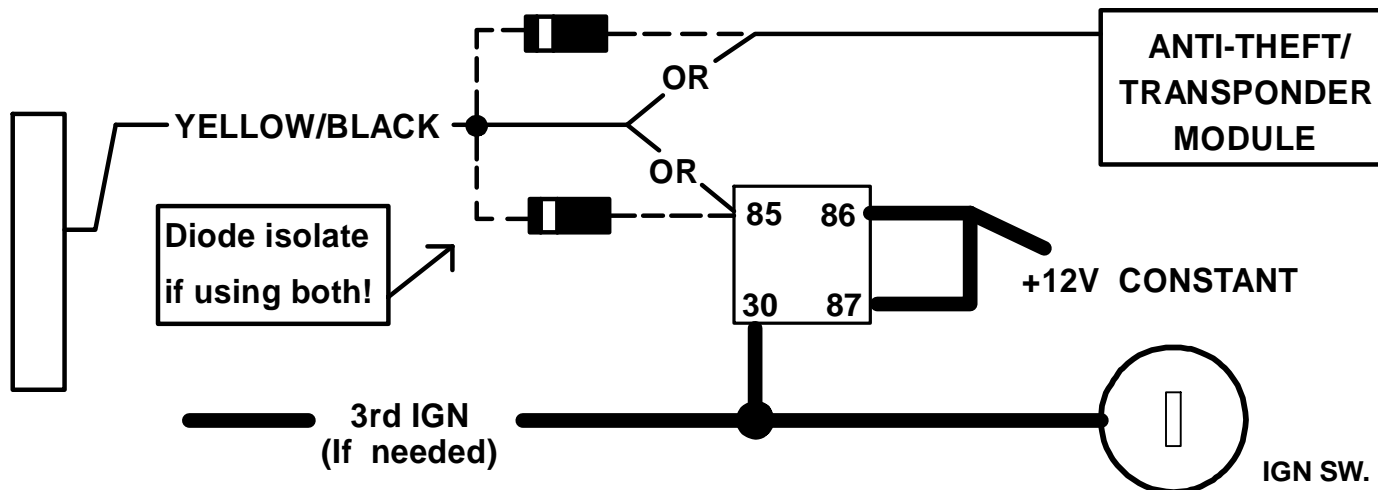
PIN 4: BROWN/WHITE: (-) HORN CHIRP/HONK OUTPUT

Connect to the LOW CURRENT Negative Horn Trigger wire usually located near the steering column. If the vehicle horn circuit requires +12V, then a relay is required. RELAY WIRING: Connect the Yellow/White wire to terminal #85, connect relay terminals #86 and #87 to +12V constant power. Connect terminal #30 to the +12V positive Horn activation wire.

PIN 5: YELLOW/BLACK: (-) IGNITION OUTPUT -or- ANTI-GRIND/STARTER DISABLE OUTPUT

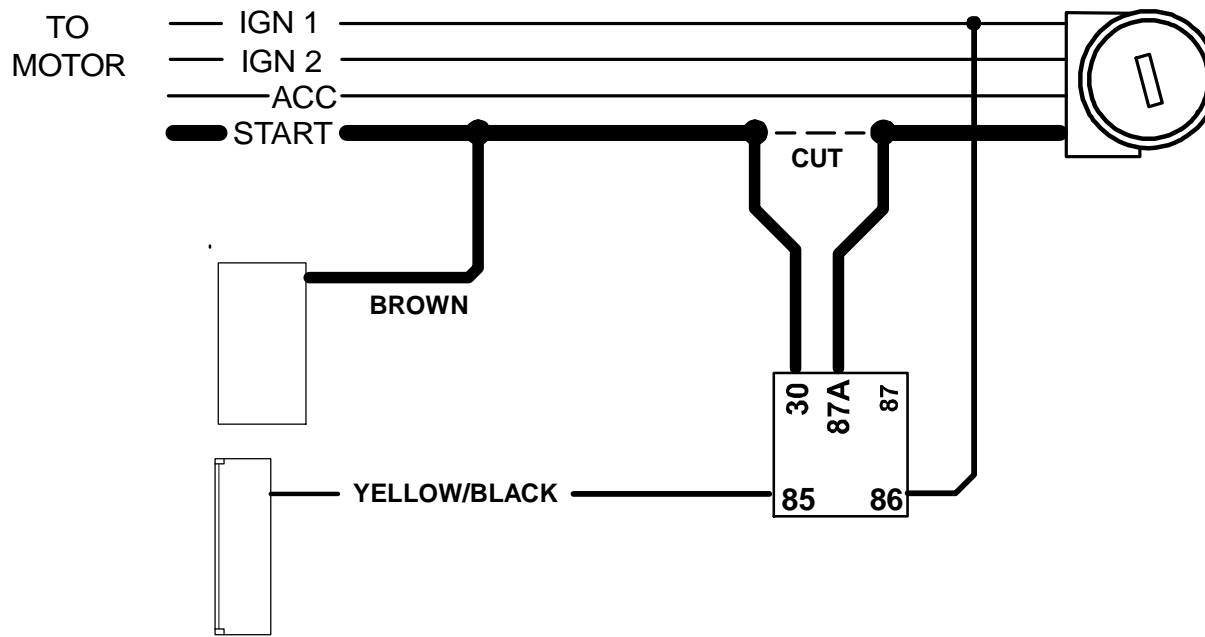
This negative output wire is programmable and can function two different ways. It can be used as a Negative Ignition output for GM Anti-theft and Transponder Bypass modules, or it can be programmed to function as an Anti grind/Starter Disable output. As a Negative Ignition wire, this wire turns on when the remote start button is pressed and stays on through the duration of the remote start. As an Anti grind/Starter disable this wire activates when the Lock button on the remote is pressed and during remote start. When using this wire for an Anti grind/Starter disable, an optional Relay is needed to interrupt the Starter circuit. The starter disable circuit adds an anti-theft feature to this remote start system and prevents accidental grinding of the starter if key is turned too far after a remote start. See diagrams on BELOW.

YELLOW/BLACK IGNITION OUTPUT/ANTI-THEFT (Relay and/or Module not included)



WIRING Cont.

PIN 5: YELLOW/BLACK: FOR ANTI-GRIND/STARTER DISABLE OUTPUT: (Relay not included)



MAKE CERTAIN TO CONNECT "BROWN" START OUTPUT WIRE TO MOTOR SIDE OF ANTI-GRIND/STARTER DISABLE RELAY.

MAKE SURE 86 TERMINAL HAS POWER WITH IGNITION ON AND CRANK

PIN 6: BLUE/WHITE: (-) STARTER #3

This wire provides a ground output for vehicle that requires a third starter wire to remote start.

PIN 7: ORANGE: (-) OEM REARM OUTPUT

This wire provides a ground pulse to rearm the vehicles' FACTORY anti-theft system after a timed-out or aborted remote start. Connect this wire to the vehicles' anti-theft rearm wire or to the door pin circuit depending on your requirements. This wire may be needed to pulse the door pin circuit on vehicles with retained accessory power.

PIN 8: ORANGE/BLACK: (-) OEM DISARM OUTPUT

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

WIRING: 3-PIN CONNECTOR

PIN 1: WHITE/RED: TACHOMETER INPUT

When installing the system in Tach mode, this wire must be connected to a valid source of AC voltage. This wire allows the unit to sense the engine running and control the starter motor. See TACH REFERENCE MODE.

PIN 2: 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. This wire must be connected to a proper ground or undesirable and inconsistent operation will occur. Do not use Factory ground locations.

PIN 3: WHITE: +12V or (-) NEGATIVE PARKING LIGHT OUTPUT:

Connect to vehicle parking light circuit at the back of light switch or if this is not possible, connect directly to one of the parking lights at the front of the vehicle. If your vehicle has a multiplex lighting system that requires a (-) Negative parking light output, then open the access door on the top of the module and move the jumper. See Jumper Pin section. Some European vehicles require separate left and right circuits. Use a dual relay or diodes to isolate the output. Note the current limit on the Negative parking light output. You may require an external relay to prevent damage to the unit.

(1) Default parking light output is +12 volts.

(2) Use an external relay for vehicles that draw excess current from extra running lights, light bars, or trailers. Parking light output is limited to (+) 10 amps or (-) 500 mA only.

WIRING: 6-PIN HIGH-CURRENT CONNECTOR

BROWN: +12V STARTER OUTPUT 30A:

Connect to circuit in the vehicle that has power ONLY while the STARTER MOTOR is CRANKING.

GRAY: +12V ACCESSORY OUTPUT 30A:

Connect to circuit in the vehicle that provides Accessory Power for systems such as HEAT and A/C. Typically, this wire turns ON with the first position of the key, DROPS OUT WHEN CRANKING, then returns as the engine starts and runs.

(2) RED: +12V POWER INPUT WIRES (30A Fused):

Connect to both of these leads to +12V Constant Power. We recommend the BATTERY POSTIVE TERMINAL.

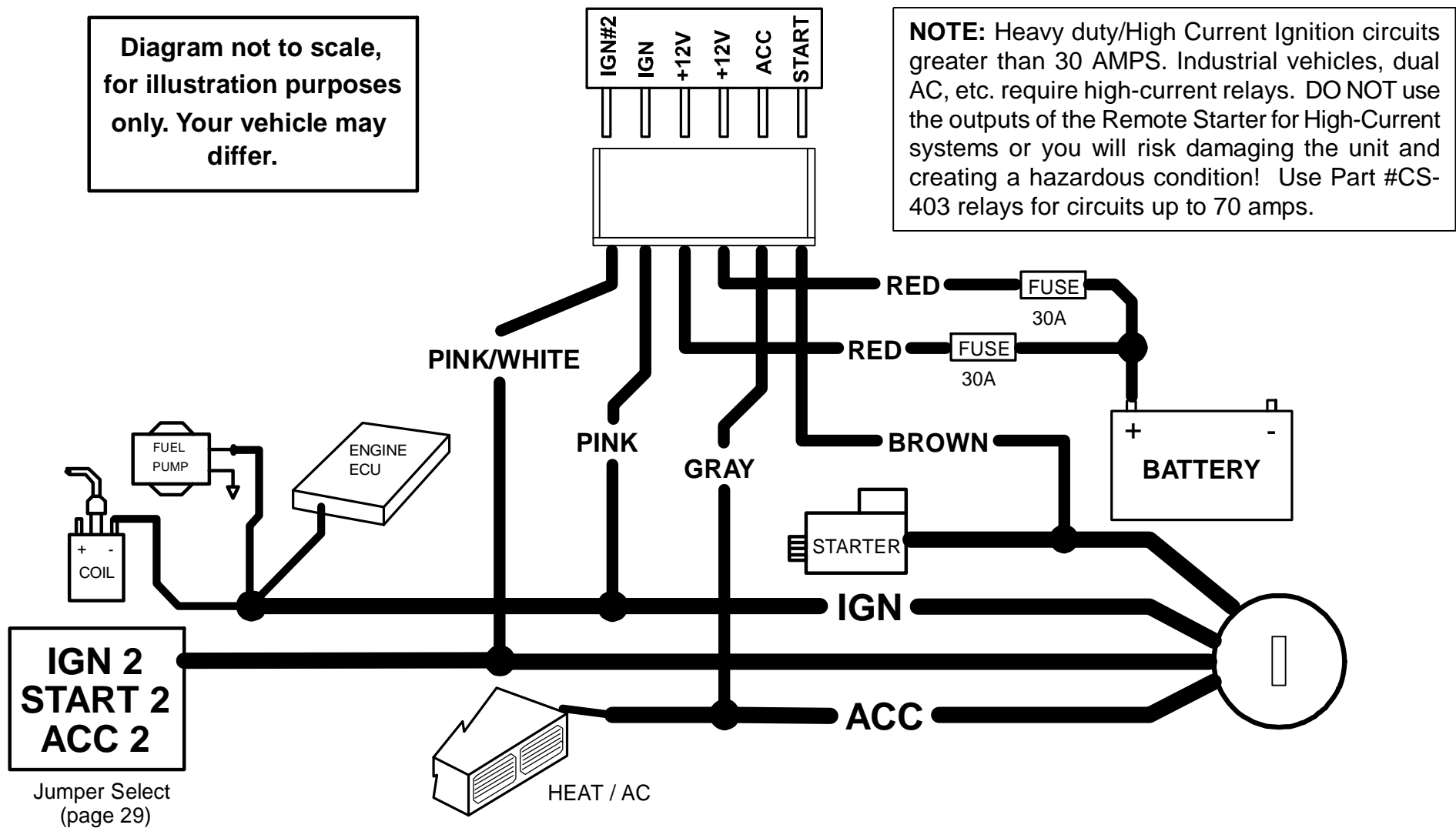
PINK: +12V IGNITION OUTPUT 30A:

Connect to circuit in the vehicle that provides true Ignition Power for systems such as Spark and Fuel. Typically, this wire turns ON with the second position of the key, STAYS ON WHEN CRANKING, and continues ON as the vehicle runs.

WIRING: 6-PIN HIGH-CURRENT CONNECTOR

PINK/WHITE: +12V MULTI-FUNCTION OUTPUT 30A (JUMPER SELECTABLE page 29):

This is an optional multi-function output wire that can be configured as a Second IGN, ACC or STARTER output. Some vehicles require more than just one IGN, ACC, or STARTER wire in order to start and run successfully. If this is the case for your particular vehicle, then use the jumper pin located under the access panel on the top of the EZEESTART control module to configure this wire to suit your needs. The DEFAULT setting is IGNITION. See Jumper Pin Diagram.



“SMART TACHLESS” MODE

Your EZEESTART system includes a unique voltage monitor called “Smart Tachless” mode. This mode allows this unit to efficiently start an engine without the use of a tach signal wire. These modules actively monitor the voltage level of the vehicle to control the starter motor each time a remote start is requested.

IMPORTANT NOTES:

- (1) SETUP may be required for the EZEESTART “Smart Tachless” Mode. If your vehicle has not been at rest for a period of time (Hot engine), then you must drain the surface charge from the battery. Unplug main power harness from unit, turn HEADLIGHTS ON for 4 minutes to drain off excess surface charge on vehicle’s battery then reconnect.
- (2) On the rare occasion that “Smart Tachless” mode does not operate satisfactorily, change the voltage reference level as described below, or use a different mode such as “Tach” mode, or “Timed Crank” mode.

“SMART TACHLESS” ADJUSTMENT:

In the event “Smart Tachless” over-cranks or under-cranks your starter, the settings can be changed. The purpose of adjusting the “Smart Tachless” Mode is to raise or lower the voltage reference threshold from the 93% default point. Raising or lowering this 93% point should increase or decrease your cranking time respectively. The adjustment range is from 79% to 100% in one percent increments. Follow steps below to adjust the reference level.

1. Open hood (or ground Blue wire if no hood pin is installed)
2. Turn the key to the ON position (Pink wire must be connected!)
3. Press program button 5 times, after a few seconds the unit will flash the lights and/or honk horn 5 times.
4. Carefully press the program button 21 times to get to option level 21. You must get a light flash and/or horn honk after each press. If the lights didn’t flash and/or horn does not honk, then the unit did not register your button press. Only count the light flash and/or horn honk.
5. Press the Lock Button #1 on the remote to decrease by 1% (lights will flash and and/or horn honk 1X for each press); Press the Unlock Button #2 to increase by 1% (lights will flash and/or honk horn 2X for each press); Press the Trunk Button #3 to reset to 93% (lights will flash 3X). The unit will stop providing light flashes when you reach the bottom (79%) or the top (100%) of the adjustment range. If you lost track, then just press Button #3 to reset back to 93% and begin raising or lower again.
6. Turn Ignition OFF, Close hood (or un-ground the Blue wire) and check operation.

TACH FINDER & USEFUL TIPS

TACH FINDER MODE:

This Tach Finder mode can assist in locating a Tach source for your installation. When following the steps, the unit will begin to flash the parking lights if you have the WHITE/RED wire connected to a tach source. If lights do not flash, then try another wire until you locate a tach signal that will cause the Parking lights to flash. NOTE: On some vehicles equipped with daytime running lights, it may be difficult to see any flashing parking lights. In this case your only notification will be the slight “ticking” sound coming from the module’s flashing light relay.

TACH FINDER STEPS:

1. Open hood (or ground Blue hood pin wire if no hood pin is installed)
2. Start Engine with the key. (Pink wire must be connected!)
3. Press the Program button for 2 seconds
4. Lights will begin flashing if the WHITE/RED wire is connected to a valid tach source. If not try a different tach wire.
5. Once Tach is located then turn off engine and close hood to abort (Remove Blue wire from ground).
6. Now follow the Tach Programming steps.

TACH FINDER TIP: Cold Weather / High Idle Simulation:

The tach finder mode can also be used to help determine how your EZEESTART system may operate in a cold weather situation. Once you have a valid tach source programmed into your system, follow test steps below.

1. Go back into the tach finder mode.
2. You should have a consistent light flash (like directional or emergency flashers).
3. Slowly raise the RPM level on your vehicle to simulate a “warm-up idle” that is higher than the normal idle level. If and when the lights STOP flashing. Means that this is the point at which the tach signal is out of range of the system.
4. We recommend that you bring the RPM level up to between 1000 and 1500 RPMs to simulate a cold morning idle.
5. If the lights stop flashing too quickly, then we recommend using another tach source. This may help prevent the engine from starting and stalling in the morning or cold weather.

TACH PROGRAMMING & TACH SIGNALS

INTRODUCTION

Tach signals will vary in levels and frequencies depending on many factors including the type of vehicle and the source of the signal. The signals from a vehicle's injector wire and coil pack wire can vary greatly even on the same engine. The tach signal from an engine can also be affected by other sources such as electronic noise from the ignition or computer modules. Recent improvements have been made to the circuitry to allow this EZEESTART system to sense a wider range of tach signals than previous models.

TACH MODE

The Tach mode provides reliable remote starting performance through engine speed (RPM) sensing. When using Tach Reference Mode, the WHITE/RED wire is used for Tach signal [Engine RPM] input. Most modern engines include various points where the Engine Speed [Tach] or A/C signal may be obtained. Tach Signal examples: Negative (-) side of ignition coil, at the Distributor or Ignition Control Module, Coil Pack, Engine Computer, or Crankshaft Sensor. Sometimes Fuel injectors and Alternator stator pins can be used. *These Tach Signal locations mentioned are provided as a guide. Your vehicle may differ. Some locations will NOT be a good location for Tach source due to RF noise or Computer Data.*

TACH PROGRAMMING:

1. Open hood (or ground Blue hood pin wire if no hood pin is installed.)
2. WHITE/RED wire should be connected to a valid Tach source.
3. Start engine with key. (Pink wire must be connected!)
4. Press program button 5 times, then wait for 5 light flashes and/or 5 horn honks.
5. Push program button more once. (You must get one light flash and/or honk after button is pressed.) This unit is now at option #1-Tach Learning.
6. Press the #1 Lock Button on remote transmitter. The unit will read the Tach source and flash the lights and or honk once for program confirmation. (On EZ1300DP models without remote transmitters, press the brake pedal in this step.)
7. If lights do not flash for confirmation, then try another tach source or try the tach finder to locate another wire

EXAMINING THE TACH FREQUENCY WITH A DIGITAL MULTI-METER

If you own a Digital Multi-Meter meter with a frequency counter setting, it can be helpful to measure and research the range of tach signal from your particular engine. When probing your chosen tach wire, observe the frequency reading from the meter at both the warm/low engine idle and cold/high engine idle points. Tach signals ranging between 70Hz and 700Hz are desired. If your tach wire has readings that are not in this range, the unit may not operate properly. The frequency of the tach wire in this range does not guarantee operation. If you cannot locate a good tach source from your engine, then you can switch your EZEESTART system to the "Smart Tachless" or "Timed Crank".

TIMED CRANK MODE

This feature provides an easy method of starting the vehicle without locating an exact tach wire. The system uses a timed cranking output combined with the use of the WHITE/RED tach wire as an engine ON/OFF monitor. The WHITE/RED Tach wire must still be used in this mode of operation. **THIS FEATURE MUST BE PROGRAMMED BEFORE USE!** THERE ARE 2 LEVELS of programming required: First, set the system for "Timed Crank" operation, and secondly you may need to adjust the amount of cranking time. There are 4 different crank times available for use. SEE OPTION PROGRAMMING CHART ON PAGE 20-21 FOR SETTINGS.

HOW TO USE THIS FEATURE:

1. Go to the "Programmable Options" section of this manual, and turn "ON" Option #15 "Timed Crank". (It is normally on Tach Monitor)
2. With "Timed Crank" turned ON, you will STILL have to connect the WHITE/RED Tach wire to a tach source on the engine. The WHITE/RED Tach wire becomes a simple "Engine Monitor". Although the unit will not be using the WHITE/RED wire to start the motor, it will be using this wire to determine whether the motor is running or not. This is a mandatory connection. A "crude" or "less exact" tach source can be used only when in "Time Crank" mode.
3. Using the vehicle key, start the engine a few times to get a "feel" of how long the cranking time is. Once the "Timed Crank" mode is turned on, the default cranking time is set to a default of 0.50 seconds. We recommend beginning with this setting. Try a remote start and see if the cranking is appropriate for your vehicle
4. If 0.50 seconds is not an appropriate starter cranking time, then go to Programming Option #18 and change the crank time setting to a longer value. The values are as follows: 0.5, 0.75, 1.0, and 1.5 seconds.

WARNING: This method of starting the vehicle is not as reliable as using regular "Tach" or Smart Tachless modes. This method should be used only in the event that a tach wire cannot be located using the normal tach programming and tach finder. When using this method, there may be certain operating anomalies requiring seasonal adjustments. These are, but not limited to:

- Starter may under-crank in extreme cold weather. Vehicle may not start on 1st attempt and may require a 2nd or 3rd try.
- In warm weather when your vehicle may start very quickly, "Timed Crank" mode may tend to over-crank the starter.
- The only ways to correct the above issues are to go to Option #18 and adjust the cranking time.
- When in "Timed Crank" mode, the cranking time can only be adjusted manually through option #18. When the system is in Tach or Smart Tachless modes the cranking time is controlled automatically by the microprocessor.

DIESEL GLOW PLUG DELAY

This feature provides a solution for diesel vehicles without having to connect to the Glow Plug-“Wait to Start Circuit”. This may be needed for various reasons. If your vehicle does not have a viable “Wait to Start Circuit”, or you cannot locate and identify the circuit, then change your system to “Diesel Glow Plug Delay” mode. You can choose from a selection of “pre-cranking” delay times. Once this mode is activated, the system will NO LONGER monitor the PINK glow plug input wire and will use a delay setting chosen by the installer in the option chart.

NOTES: This feature is OFF by default and must be programmed before use. Once this feature is turned ON, the Pink Glow plug input wire is not used. The Remote start unit will always wait the programmed time before cranking EVEN IF the glow plug warms up first. There are 3 different Delay times available for use: 10, 20, or 30 seconds. SEE OPTION PROGRAMMING CHART on Pages 20-21.

HOW TO USE THIS FEATURE:

1. See the “Option Programming” section on Pages 20-21 and change Option #19 from "Monitor Glow Plug Light" to one of the delayed time values. (Default setting is to always monitor the PINK Glow Plug input wire.)
2. Once this option has changed, the system will wait for the selected time before cranking.

OPTIONS PROGRAMMING

This EZEESTART unit has 24 or 28 programmable control options depending on model to customize the system for various operating features and installer preferences. Examine the chart on the pages 20-22 along with reading the descriptions that follow on pages 20-25. You may change one option at a time, or program multiple options in one session. If you start with the lowest option and continue on to higher options, you do not need to repeat steps #1-3 each time. For example, you can change Option #2 to “ON”, then you can continue pressing the program button to get to a higher number option and change it as well. You can only go from low to higher options numbers in one session.

OPTION PROGRAMMING CHART BEGINS ON NEXT PAGE

OPTIONS PROGRAMMING Cont.

To Engage Option Programming:

1. Open hood (If no hood pin switch is installed, then ground the Blue wire)
2. Turn Key to the ON position. (Do not start vehicle) *Pink wire must be connected!*
3. Press the program / valet button 5 times. Wait for the unit to flash the lights and/or horn honk 5 times.
4. Push the valet/program button the number of times that corresponds to the option number desired (1-22X). You must get a light flash and/or honk after each button press. If the system did not flash the lights and/or honk, then it did not register your press. Press carefully and do not lose count.
5. When you reach the desired option #, Press button #1(Lock) or #2 (Unlock) to change the option. (Some option numbers use ALL 4 remote buttons to select settings)
6. When finished, turn Ignition OFF, close hood (or un-ground Blue wire) and check for changed features.

OPTION PROGRAMMING TABLE

Option Number	Option Description	TX Button #1	TX Button #2	TX Button #3	TX Button #4
1	Engine Monitoring	Learn Tach	*Tachless*		
2	Auto Lock with RPM/Ignition	OFF	*ON*		
3	Door Lock Pulse Time	3 Sec.	*0.75 Sec.*		
4	Double Unlock Pulse	2 Pulse	*1 Pulse*		
5	Data Port Protocol: OFA = 1-Way / SL = 2-Way	1-Way	*2-Way*		
6	Double button press for Remote Start and Trunk pop	ON	*OFF*		
7	Horn Chirps on Remote Start	ON	*OFF*		
8	Lock After Remote Start/Abort	OFF	*ON*		
9	Green/red wire function	Dome Light	*Trunk pop*		
10	"Wake Up" pulse on Unlock (1-sec. +12V to IGN)	ON	*OFF*		
11	N/A - Not used				

OPTION PROGRAMMING Cont.

Option Number	Option Description	TX Button #1	TX Button #2	TX Button #3	TX Button #4
12	Yellow/black wire function	Anti-Grind	*Ignition output*		
13	Horn Chirp Confirmation	1 Press	*2 Press*		
14	Unlock with Trunk pop	Unlock/Trunk pop	*Trunk pop only*		
15	Timed Crank or Tach Monitor	Pre-Set	*Tach Monitor*		
16	Horn Pulse (Chirp)	Long 0.04 Sec.	*Short 0.02 Sec.*		
17	OEM Interface Green input wire	3 Pulse	*1 Pulse*		
18	Starter Cranking Time (Option #15 is set to Timed Crank)	0.75 Sec.	*0.5 Sec.*	1.0 Sec.	1.5 Sec.
19	Diesel Glow Plug Delay	10 Seconds	*Monitor Glow Plug*	20 Seconds	30 Seconds
20	Remote Start Engine Run Time	12 Minutes	*24 Minutes*	36 Minutes	48 Minutes
21	Smart Tachless Voltage Adjustment 80-100%	-1%	+1%	Set to 93% default	
22	Aux # 2	-1 Second	+1 Second		
23	Aux # 2 Time : 1 to 255 sec.	Steady Momentary	Momentary	Timed	Latch On/Off
24	Reset Options to default (*)	45 Series Only	*Reset All Options*	45 Series Only	45 Series Only

FOR EZ-55DP II AND EZ-95FM II SERIES ONLY

24	Aux # 3	Steady Momentary	Momentary	Timed	Latch On/Off
25	Aux # 3 Time : 1 to 255 sec.	-1 Second	+1 Second		
26	Aux # 4	Steady Momentary	Momentary	Timed	Latch On/Off
27	Aux # 4 Time : 1 to 255 sec.	-1 Second	+1 Second		
28	Reset Options to default (*)		*Reset All Options*		

OPTION DESCRIPTIONS:

1. Engine Monitoring:

This option sets how the unit monitors your engine. You can program either for Tach mode in which the unit uses a Tach signal (RPM) or for Tachless mode that monitors voltage level. See pages 15-17 for more information and additional steps for actual Tach learning and Tach finder modes.

2. Auto Lock/Unlock (Improved):

The option controls whether the doors will automatically lock/unlock on your vehicle when driving or with turning the Ignition ON/OFF. If the Auto Lock feature is turned on, and the system is in Tach mode, then the doors will lock as the engine RPM's increase (driving). If the Auto Lock feature is turned on, and the system is in Smart Tachless mode, then the doors will lock when the Ignition is turned on. When the Auto Lock feature is turned on, the system will unlock the doors when the Ignition is turned off. With this feature OFF, the system will not automatically lock or unlock the vehicle.

3. Door Lock Pulse Time:

Controls the amount of time for lock/unlock pulse. The standard setting is 0.75 for most vehicles. A 3 sec. setting is required for 1980's/90's European Vacuum or Pneumatic door lock systems.

4. Double Unlock Pulse:

The unit will send 2 unlock pulses when the #2 Unlock button is pressed. This feature may be required for interfacing this alarm with an existing Factory Keyless Entry or Alarm system in a vehicle. These systems are found on some Nissan, VW, Toyota, and Lexus vehicles.

5. Data Port Protocol:

This option controls the Data Port Protocol for 1-Way (OFA modules) or 2-Way (SL modules). The default is set for 2-Way Protocol. This option has no effect on conventional wiring of Bypass modules.

6. Double Button Press for Remote start and Trunk release:

This option will allow you to change whether the Remote starter and Trunk release activate by a single ½ second press or a double button ½ second press.

OPTIONS PROGRAMMING Cont.

7. Horn Chirps on Remote Start:

This option allows the unit to provide 3 short chirps for audible confirmation of a remote start. The horn output wire must be connected for this feature.

8. Lock During/After Remote Start:

This option controls whether the unit will automatically lock during and after a remote Start abort or time-out.

9. GREEN/RED Output Wire Function: Trunk Pop or Dome Light Output

This option controls how the Brown output wire of the unit functions, either for Trunk pop or for Dome light illumination.

10. +12V “Wake up” Pulse:

This option allows the unit to provide a 1-second pulse on the Pink main ignition output when unlocking. The Ignition pulse serves to “Wake up” vehicle control modules or body computers that “time out” or go into power saving mode. This is required on many late model Ford vehicles with a “Slam” lock system in order to actually unlock the vehicle after it has been shut down for a short period of time.

11. Not used

12. Yellow/Black Wire Function: (-) Negative IGN or ANTI-GRIND / Starter Kill Output

This option controls the units Negative multi-function output. Default: Negative IGN output that turns ON and stays on for the duration of the remote start. Use this wire to turn on Anti-theft bypass adapters for GM or Transponder systems. When changed to an Anti-Grind, this output activates when the Lock button on the remote is pressed and activates during a remote start. Anti-Grind is designed for use with an optional Starter disable relay (Not included).

13. Horn Chirp with Lock and Unlock- 1 or 2 Button Press (When Optional Horn Output installed):

This option allows the system to chirp the vehicle horn for Lock/Unlock confirmation on 1 button press or a 2nd press within 3 seconds. The horn output must be connected to use this feature.

14. Unlock With Trunk Pop or Trunk Pop Only:

This option controls whether the system will provide an Unlock/Disarm pulse when the Trunk release is activated from the remote control. This may be required to prevent unnecessary triggering of a factory alarm on some vehicles.

15. Timed Crank Mode or Tach Monitor:

This option controls whether the system uses a tach wire to control the starter or uses a pre-set starter cranking time.

16. Adjustable Horn Pulse:

Some vehicles require an extended horn pulse to activate the Factory horn. Use this option #16 to EXTEND the horn pulse slightly.

OPTIONS PROGRAMMING Cont.

17. OEM Interface (EZ-45DP II and EZ-55DP II Add-on Model):

This option controls the input selection for the Green Negative Start Trigger Wire. When using an Aftermarket Host Alarm or Keyless Entry System: Leave the setting as “1 pulse” and connect the Green wire to the (-) Auxiliary output wire of the Alarm or Keyless Entry System. For Factory Keyless entry systems (without a (-) Negative auxiliary output), change the option to “3 Pulse” and tap the green wire into a Negative signal wire on the vehicle such as a Negative door lock wire. Pressing the Factory remote lock button 3 times will produce 3 short negative signals to trigger a remote start.

18. Pre-Set Starter Cranking Time: (Requires Option #15 to be set to “Timed Crank”)

This option controls the starter output cranking time. Choices are 0.5, 0.75, 1, or 1.5 seconds.

19. Diesel Glow Plug Delay:

This option controls the system’s Diesel vehicle interface. Using this option you can control whether the unit monitors the vehicle’s glow plug circuit using the Pink input wire (Default), or you may select a specific delay time before cranking. This option is helpful if you are unable to locate a glow plug signal. Just select a delay time and do not connect the Pink Glow Plug wire. Selections: 10, 20, 30 seconds, or Monitor Pink Wire (Default).

20. Remote Start Run Time:

This option controls the engine run time for remote start. Use the buttons on the remote control to set a choice of 12, 24, 36, or 48 minutes. The default setting is 24 minutes.

21. Smart Tachless Voltage Adjustment:

This option controls the voltage reference point when using smart Tachless mode. Pressing the Lock or Unlock buttons on the remote raises or lowers the reference level in 1% increments from 79%-100%. Button #3 resets the unit to the factory default reference point of 93%. The default 93% setting works for most vehicles. See page 15 for additional Smart Tachless mode information.

22. Aux #2:

This option controls the function of the Blue/Black wire for a negative output for a Momentary, Pulse, Timed or Latched output, depending on option used. Option #23 controls the length of time output.

23. Aux #2 Time control: (1 sec. to 255 sec.) Default = 12 seconds

This option determines to length of output time of Aux #2 (Blue/Black wire). Pressing the Lock or Unlock buttons on the remote raises or lowers the time by one second.

OPTIONS PROGRAMMING Cont.

24. Option Reset: **(RESTORE TO DEFAULT FOR EZ-45DP II ONLY)** on pages 20-21

This option allows you to restore all programmable options to factory default values. Go to the option 24 and press the Unlock Button #2 on the remote. The lights flash 2 times and all values will be reset to factory original settings.

OPTIONS PROGRAMMING FOR EZ-55 AND EZ-95 ONLY

FOR EZ-55 AND EZ-95 ONLY

24. Aux #3:

This option controls the function of the Violet wire for a negative output for a Momentary, Pulse, Timed or Latched output, depending on option used. Option #25 controls the length of time output.

25. Aux #3 Time control: (1 sec. to 255 sec.) Default = 12 seconds

This option determines to length of time that is outputted from Aux #3 (Violet wire). Pressing the Lock or Unlock buttons on the remote raises or lowers the time by one second.

26. Aux #4:

This option controls the function of the Violet/White wire for a negative output for a Momentary, Pulse, Timed or Latched output, depending on option used. Option #27 controls the length of time output.

27. Aux #4 Time control: (1 sec. to 255 sec.) Default = 12 seconds

This option determines to length of time that is outputted from Aux #4 (Violet/White wire). Pressing the Lock or Unlock buttons on the remote raises or lowers the time by one second.

28. Option Reset: **(RESTORE TO DEFAULT FOR EZ-55 AND EZ-95)** on pages 20-21

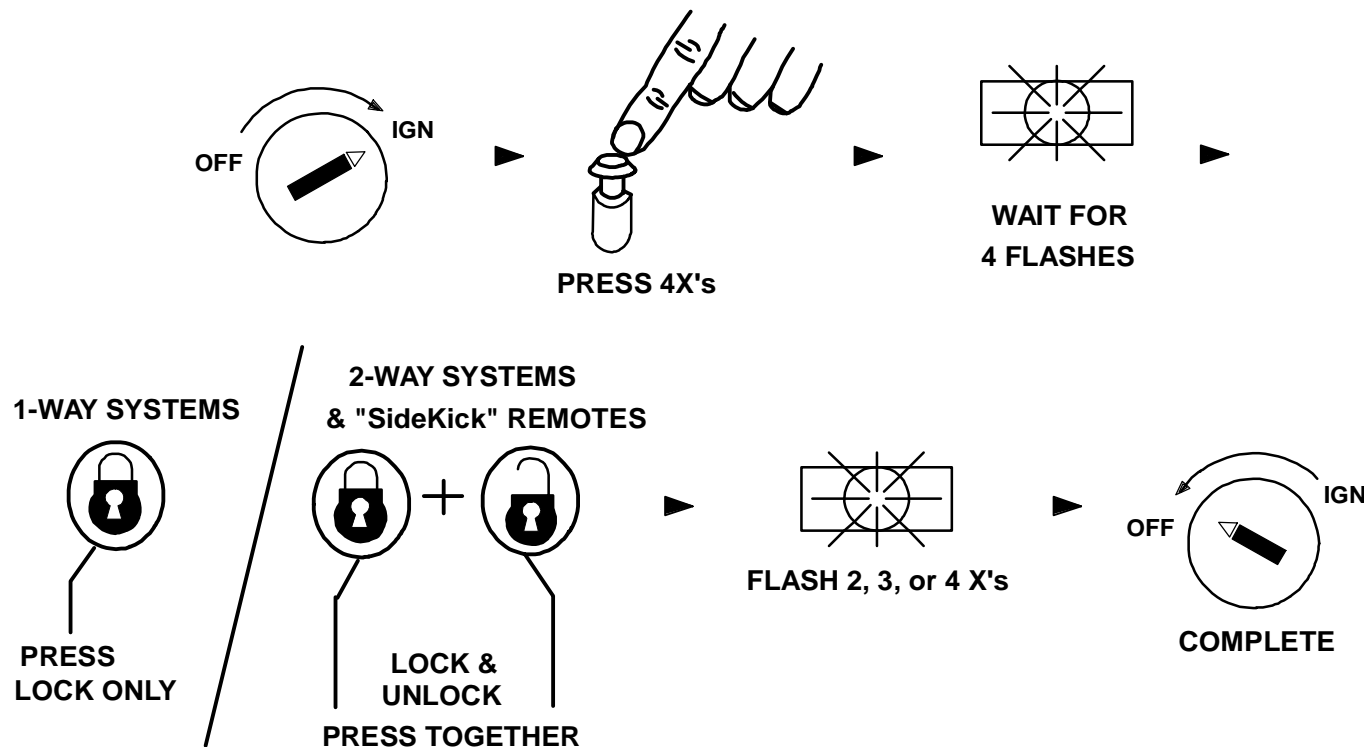
This option allows you to restore all programmable options to factory default values. Go to the option 28 and press the Unlock Button #2 on the remote. The lights flash 2 times and all values will be reset to factory original settings. Default values are marked with asterisks in the chart on pages 20-21.

TRANSMITTER PROGRAMMING

Transmitter Programming:

Notes: Remote Transmitters/Transceivers come pre-programmed from the Factory. When re-learning remotes or adding remotes, ALL your system's remote codes must be learned at time of programming!! These systems allow storage of up to 4 different remote codes in memory. The "Sidekick" transmitters for the TW1/TW2 and FM systems are a special model that is not compatible with each other.

1. Turn key to the ON position. (Do not start vehicle) *Pink wire must be connected!*
2. Press Program/Valet button 4 times. Wait for the unit to flash the parking lights and/or honk horn exactly 4 times.
3. 1-Way systems: Press Button #1 (Lock) of the transmitter to be learned. 2-Way systems: Both the *Lock & Unlock* buttons must be pressed. You should get 2 light flashes and 2 horn honks indicating the code-learn. Now the unit is waiting for a 2nd code, so repeat this step as needed with up to 3 additional remotes. The unit will flash the lights in succession after each code learned for up to 4 codes. (3 flashes for the 2nd code, 4 flashes for the 3rd code and 0 for 4th code.) If all 4 codes are learned, the unit will automatically exit code learning mode, otherwise turn key OFF.



2-VEHICLE OPERATION

The *EZ-45DP II*, *EZ-55DP II* and *EZ-95FM II* can be used for 2 vehicle operation. A single remote can control two independent vehicles with identical systems installed.

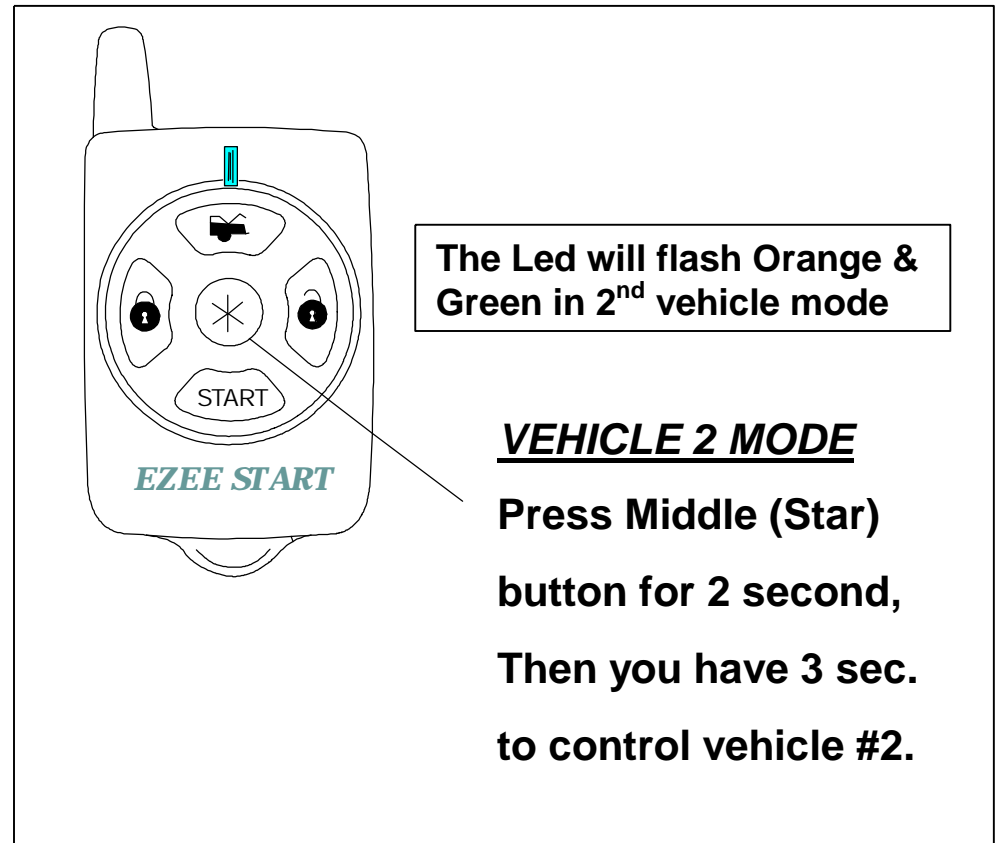
See diagram below on how to switch your remote(s) to vehicle #2 operation. To set up the 2-Vehicle operation you must first program your remotes to Vehicle #2. Follow the "Transmitter Programming" steps at the second vehicle and learn YOUR remote, along with vehicle #2's existing remotes.

1 Way 5 button sidekick remote

In step #4 of transmitter programming (see page 27) press and hold middle button #5 for 2 sec., then press lock for 1 way system or lock and unlock at the same time 2 way systems, parking light will flash indicating the remote is programming.

Operation:

Press vehicle #2 button (middle button) for 2 sec. and within 3 seconds press any of the 4 function buttons on your remote. You can keep pressing function buttons to control car #2 as long as it is within the 3-second window. After 3 seconds have elapsed, the remote will revert back to Car #1 operation.



TROUBLESHOOTING: "BEFORE YOU CALL" SECTION

UNIT WILL NOT ATTEMPT TO START (KEYLESS ENTRY FUNCTIONS NORMALLY):

The unit is in Valet mode. Turn IGN ON, press and hold valet/programming button for 5-6 seconds then turn key off. Unit is now out of valet mode and should remote start. If optional LED is installed, then it will be on solid when in Valet.

SYSTEM IS UNSUCCESSFUL AT REMOTE START DURING EXTREME COLD CONDITIONS:

Please be aware that during sub-freezing conditions your remote starter may take more than one attempt to start or it may not successfully start the vehicle after 3 attempts. During these conditions the vehicle may not properly start even using the key; therefore trying to start by the remote would also be unsuccessful.

UNIT FLASHES LIGHTS ONCE AND WILL NOT ATTEMPT A START:

The unit senses a fault at the Brake (Purple wire is active) or the Hood is OPEN (Blue wire grounded). This is a safety feature of the unit. Check installation for faults and make sure hood is closed and latched and brake wire is not active.

UNIT CRANKS VEHICLE BUT ENGINE NEVER STARTS: (2 parts)

1. In some vehicles, there may be a Factory anti-theft system that will not allow the engine to run without the key in the ignition. These systems may include Factory Security Modules, GM Passkey®/Passlock®, and RF Transponder systems (Ford P.A.T.S. ®). Many late 1990's through 2006 vehicles include some type of Anti-Theft system which may require a bypass module.
2. The vehicle may have more than one Ignition/or Accessory circuit that requires power for the vehicle to start. This is common on some GM/Toyota vehicles.

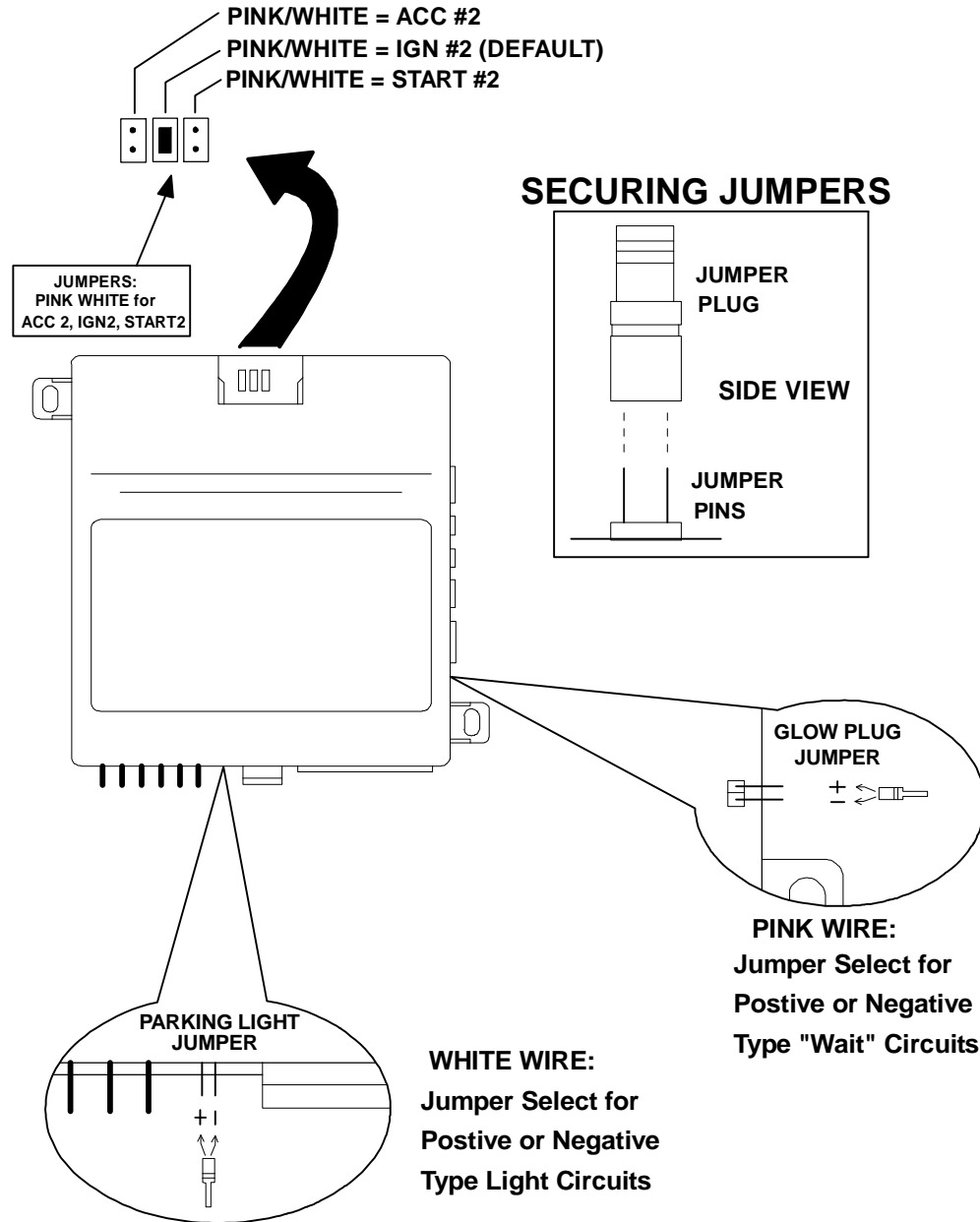
VEHICLE STARTS BUT CHECK ENGINE LIGHT COMES ON OR ENGINE RUNS BADLY: (2 parts)

1. Many 1995-UP General Motors cars/trucks require a secondary ignition circuit for the Transmission computer and other on board systems. If the vehicle is started without this wire energized, there may be a "Check Engine" or "Service Engine" light on the dash. This may cause damage if the vehicle is driven in this condition. Be sure to check for an additional WHITE (or sometimes GREEN) Ignition wire on GM cars and trucks. Connect the Pink/White IGN#2 wire to this circuit in the vehicle.
2. Some Vehicles (Commonly Nissan) require 2 Start (Cranking) circuits for the vehicle to run properly. If this is the case, then use the PINK/WHITE output of this system to power the Starter #2 circuit of the vehicle. See Jumper pin diagram for configuration. Note that the secondary starter wire may be a smaller gauge wire than the primary starter wire.

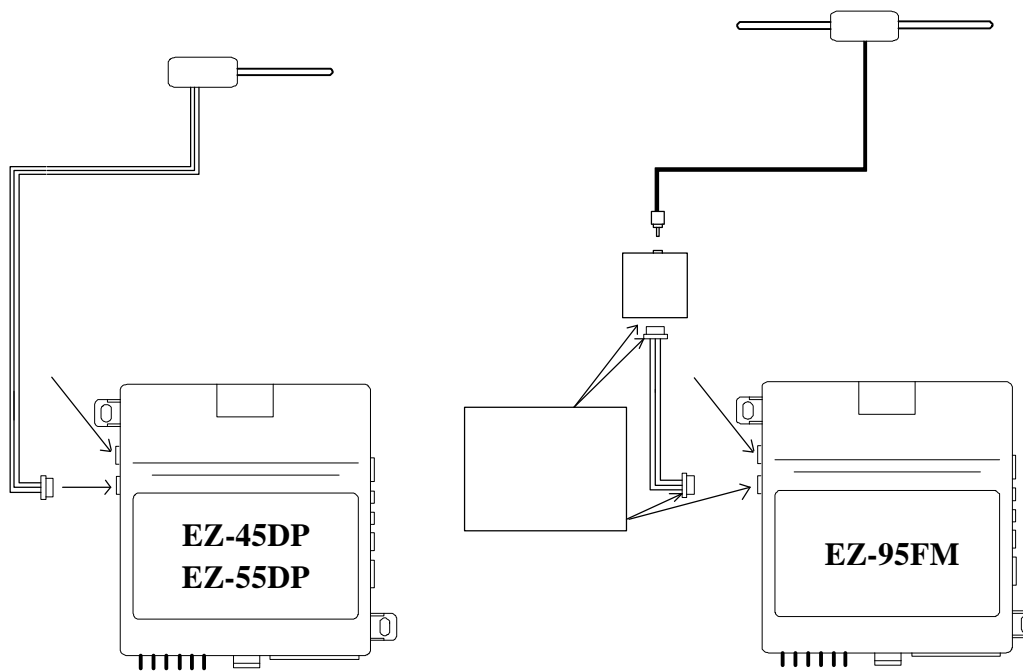
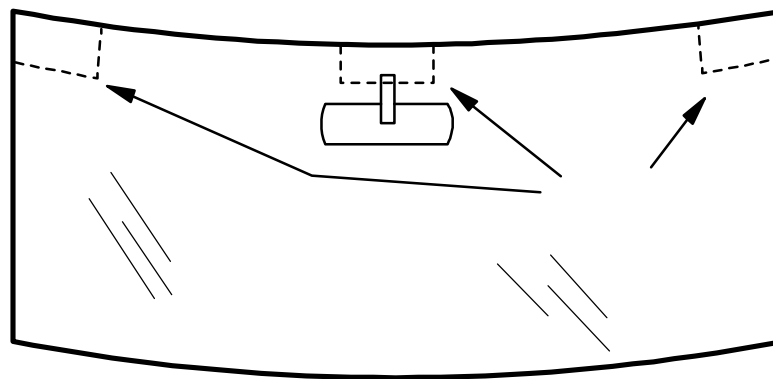
NO RESPONSE FROM REMOTE TRANSMITTER:

1. Check antenna connection: Antenna must be plugged in (3 pin black plug on side of module).
2. Repress remote control Lock or Unlock button several times in succession.
3. Verify if remotes are programmed to module; otherwise perform transmitter learning steps on page 26.

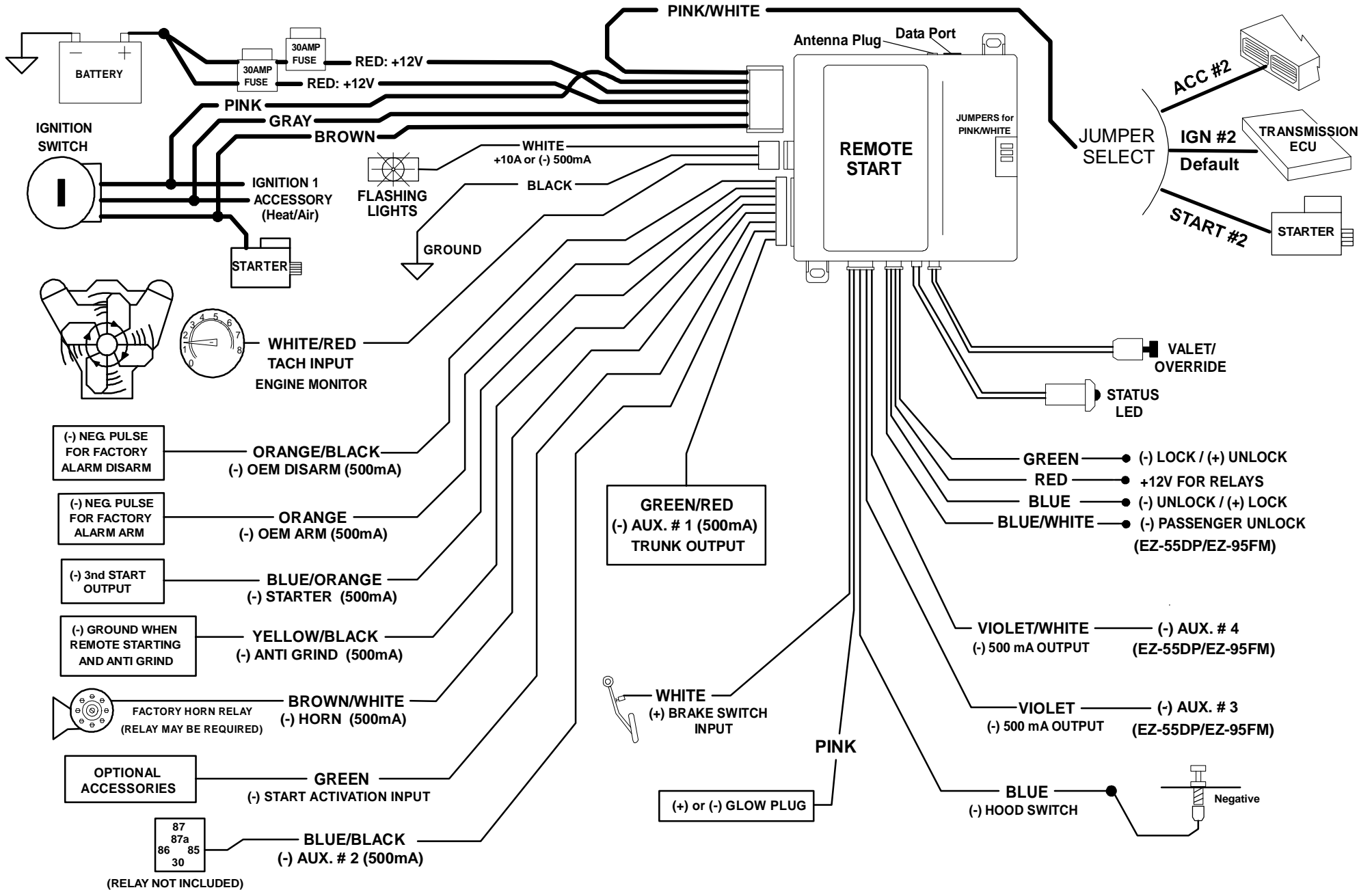
JUMPER PIN DIAGRAMS



ANTENNA DIAGRAM

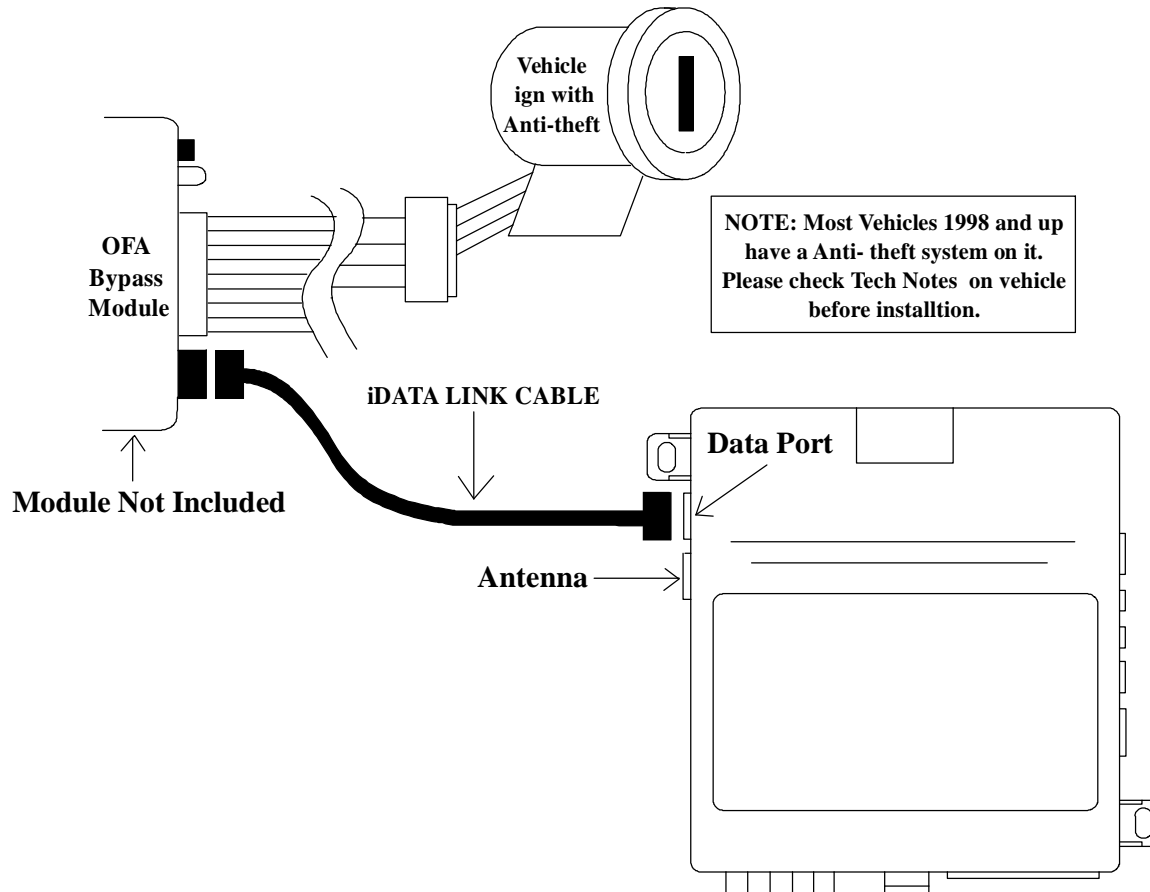


WIRING DIAGRAM



DATA PORT DIAGRAM

This unit includes DP Technology that will allow you to directly Plug-In our Data Port Bypass Modules. They're 2 types of Protocol, 1-Way (OFA modules) or 2-Way (SL modules). The default is set for 2-Way Protocol. This is controlled by option # 5 in the programming table on page # 20. Please refer to Databus manual for detailed instructions.



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