

Limited Warranty Statement

GNU COMMANDO LINE WARRANTY STATEMENT

GNU warrants this product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchase, and not more than two (2) years from the date of manufacture. **GNU** will repair this product free of charge if, in the judgment of **GNU**, it has been proven defective within the warranty period. The product should be returned, at the customer expense, to **GNU INDUSTRIES INC., 10140 NW 53rd STREET, SUNRISE, FL 33351**. This warranty does not cover any expenses incurred in the removal and/or reinstallation of the product.

This warranty does not apply to any product damaged by improper installation, accident, misuse, abuse, improper line voltage, fire, flood, lightning, other acts of God, or a product altered or repaired by anyone other than **GNU**.

This warranty is in lieu of other warranties, expressed or implied, including any implied warranty of merchantability. No person is authorized to assume for **GNU** any other liability concerning the sale of this product.

IMPORTANT — KEEP YOUR INVOICE WITH THIS WARRANTY STATEMENT !



Commando *Pro-Start*

REMOTE CONTROL ENGINE STARTER WITH ALARM SYSTEM

Tach Learning, Quick Stop, Anti-Freeze Mode

MODEL: 2300

Important: THIS PRODUCT IS DESIGNED FOR USE IN VEHICLES EQUIPPED WITH FUEL INJECTION AND AUTOMATIC TRANSMISSIONS ONLY!

Note: READ THIS INSTRUCTION MANUAL THOROUGHLY BEFORE INSTALLATION

TECH SUPPORT: 1-888-754-2340

EACH COMMANDO Pro-Start 2300 INCLUDES THE FOLLOWING COMPONENTS:

- (1) Starter Control Module
- (1) 10-Pin Wiring Harness
- (1) Three-Pin Wiring Harness
- (1) Four-Pin Wiring Harness
- (1) Hood Pin Switch
- (6) Heavy-Gauge Single-Pin Wire Harness
- (1) Receiver/Antenna Module*
- (1) Receiver/Antenna Cable*
- (1) Status LED
- (1) Program/Override Switch
- (2) 4 Button RF Transmitters*

* 2300 Only

INTERFACING TO GM VATS / PASS KEY SYSTEM

NOTES:

If the ignition key does not have a resistor pellet, the vehicle does not have the GM VATS System.

We do not recommend disabling the VATS System as a short cut.

Do not confuse VATS wires with the labeled air bag restraint wiring.

INSTRUCTIONS:

On vehicles with the VATS System, the ignition key has a resistor pellet that operates the pass key decoder module. When the ignition key is inserted, the decoder reads the pellet. If the reading is not correct, the starter and fuel pump will be disabled for approximately 4 minutes. To allow remote starting you will have to emulate the key being inserted in the ignition.

Do not make any connections to the VATS System wiring until the remote starter is installed and working properly. To allow temporary remote starting before making any connections insert the ignition key fully into the lock cylinder. (You do not need to turn the key)

These connections operate the pass key decoder while the vehicle is in remote control status only and does not interfere with the normal operation of the VATS System.

Using an Ohm Meter, connect one test probe to each side of the ignition key pellet on the silver tabs.

Record the reading.

Purchase a ¼ or ½ watt resistor within 5% of the recorded value.

Locate the two small 22 AWG VATS wires on the lower side of the steering column. The pass key wires connect to ignition lock cylinder.

Connect terminal 87 of the relay to the resistor, and connect the other side of the resistor to either of the Pass Key Decoder wires.

Cut the other Pass Key decoder wire.

Verify that the vehicle will not start with the ignition key.

Connect the ignition switch side of the cut wire to terminal 87A

Connect the remaining cut wire (decoder side) to terminal 30.

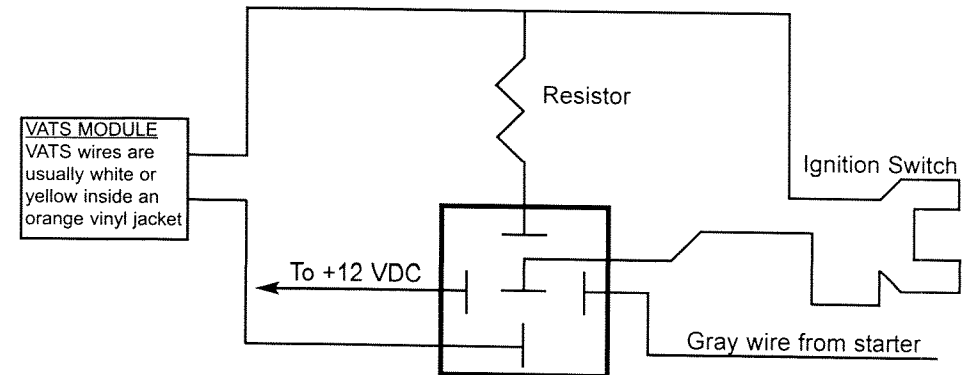
Connect the gray wire from the COMMANDO Pro-Start Remote Start Module to terminal 85.

Connect terminal 86 to constant +12 vdc.

GM Resistor Values

1. 392 ohm	6. 1.47 K ohm	11. 4.75 K ohm
2. 523 ohm	7. 1.87 K ohm	12. 6.04 K ohm
3. 681 ohm	8. 2.37 K ohm	13. 7.50 K ohm
4. 887 ohm	9. 3.01 K ohm	14. 9.53 K ohm
5. 1.13 K ohm	10. 3.47 K ohm	15. 11.80 K ohm

GM VATS Wiring Diagram



2300 Stand-Alone Module

TO LOCK DOORS - Press *Button #1*, doors will lock, parking lights will flash one time and status LED will flash at a slow rate. (If vehicle is equipped with power door locks.)

TO UNLOCK DOORS - Press *Button #2*, doors will unlock, parking lights will flash two times and status LED will be off. (If vehicle is equipped with power door locks.)

AUXILIARY OUTPUT - Press *Button #3* (trunk / auxiliary) for approximately three seconds. This will provide a 250 ma continuous ground output if button is held, or a one second ground pulse if released. Applications include remote power trunk/hatch release, power window roll up/down, etc. (Will require additional parts and labor.)

START MODE - Press *Button #4* (*) momentarily, parking lights will turn on, flash once in starter cranking stage and stay on or flash (as programmed) while the vehicle is running in remote start mode. Status LED will flash at a fast rate. The run time for the starter is approximately 12 or 24 minutes (as programmed). If the parking lights flash one time and vehicle does not crank, the remote starter has detected a faulty zone (see below).

NORMAL OPERATION - (1) Enter the vehicle and turn the ignition key to the "run" position. (2) Step on brake pedal. The remote starter will shut down, the status LED will stop flashing, and the parking lights will shut off. The vehicle will now be running normally, allowing it to be driven or turned off as usual.

Do not turn the ignition key to the crank position. The starter will grind.

FAULTY ZONE SENSING - The engine will not start and the parking lights will flash one time. (1) Check if the hood is open, (2) or if the brake pedal is depressed.

TO CANCEL START MODE - (1) Press *Button #4* (*) momentarily, (2) press on brake pedal in vehicle or (3) open the vehicle's engine compartment hood. One of the previous will cancel start mode and the vehicle will shut down, status LED will stop flashing and the doors will lock. (If vehicle is equipped with power door locks.)

STOP & GO FEATURE - Provides the ability to remove the ignition key, exit the vehicle and allow the engine to remain running.

While the vehicle is running depress the brake pedal. Press *Button #4* (*) on the transmitter while continuing to depress the brake pedal. The status LED will flash and the parking lights will switch on. At this time the ignition key can be turned off and removed and the engine will continue running.

To exit this feature, put key back into the ignition, turn to the "ON" position and depress the brake pedal. The status LED will stop blinking and parking light will turn off.

ANTI-FREEZE MODE - Engine starts every two hours for 12 cycles.

Hold the valet switch and *Button # 2* (unlock) together for five seconds, the status LED and parking lights will flash five times.

The engine will start and run for 30 seconds to acknowledge activation. Once the feature is activated, it will start the vehicle approximately every two hours for 12 cycles.

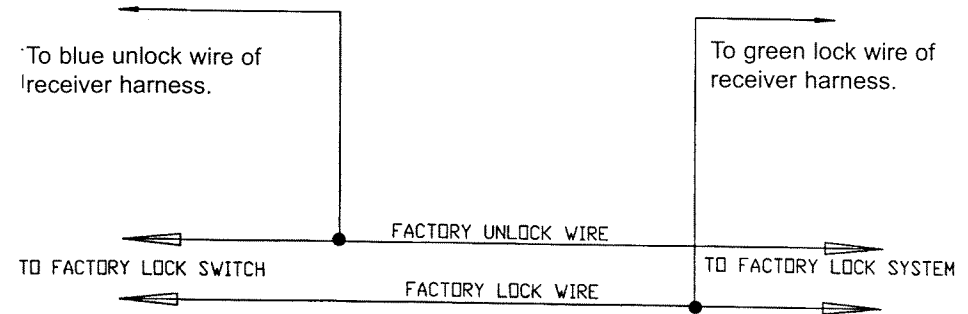
The engine will run for 12 or 24 minutes (as programmed), and shut off. The status LED will flash twice and pause continuously while in Anti-Freeze Mode. To cancel Anti-Freeze Mode during a cycle, repeat step one. Parking lights will then flash 10 times to confirm.

1300 Add-On Module

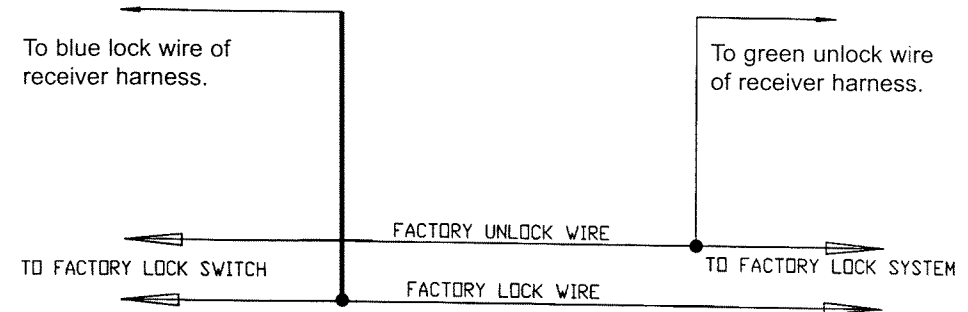
START MODE - Press the correct transmitter button on your keyless/alarm system. This will activate the remote starter and the parking lights will turn on and stay on while the remote starter is controlling the vehicle. The car will then start if none of the disable triggers are active. The runtime for the starter is approximately 12/24 minutes (as programmed). Normal operation is the same as above.

TO CANCEL START MODE - (1) Press the correct transmitter button on your keyless/alarm system, (2) Step on the brake pedal of the vehicle or (3) open and lift the engine compartment hood. One of the previous will cancel start mode and the vehicle will shut down, the status LED will stop flashing and the doors will lock. (If equipped)

LOCK WIRING DIAGRAMS



Three-Wire Negative Trigger Door Lock System



Three-Wire Positive Trigger Door Lock System

PASSLOCK / VATS BYPASS

For ease of installation we have available the IPMME and PLDATA transponders. (See the Vehicle-Specific Transponders section for more information). It has all resistor values and three on-board relays for easy and convenient interfacing to GM Pass Lock and VATS systems with our remote starter systems.

If you do not have the IPMME or PLDATA module, the remote starter can be integrated by the following the diagrams.

Passlock Bypass Instructions for COMMANDO Pro-Start Remote Starters

Many late-model GM SUVs and trucks have a new Passlock system which is very similar to the old type VATS system with the resistor in the key. In order to bypass this system you will need to follow the following steps:

Find three small wires coming from the ignition switch. They will be red/white, orange/black and yellow.

Start the vehicle with the switch.

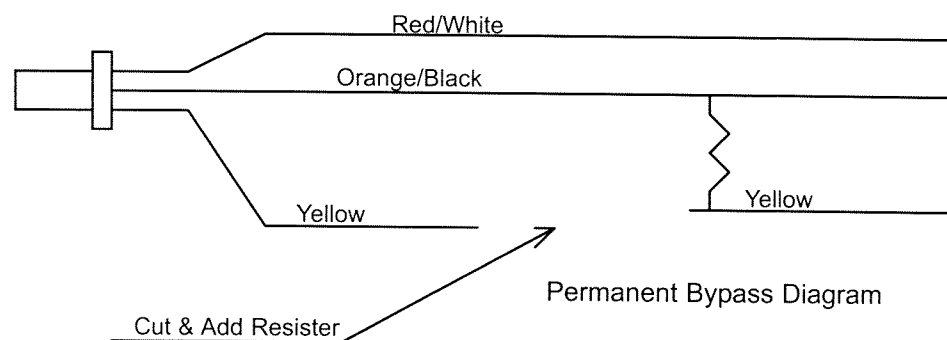
Cut the thin yellow wire in half.

Strip back the insulation on the orange/black wire.

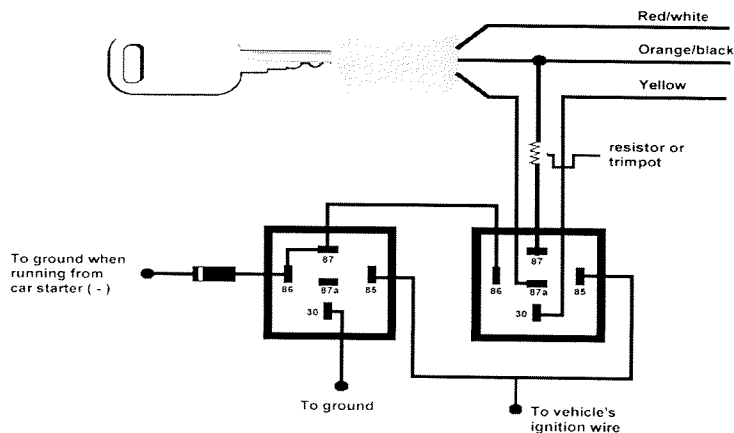
Measure the resistance between the key side of the yellow wire and the key side of the orange/black wire.

Once that is done, purchase a resistor within 5% of the measured value.

The final step is to install the resistor per one of the two diagrams below.



GM PASSLOCK II SECURITY SYSTEMS



COMMANDO Pro-Start REMOTE CONTROL ENGINE STARTER with Quick Stop and Anti-Freeze modes, Transponder Application Guide and PASSLOCK and VATS installation diagrams

IMPORTANT: Unplug the wiring harnesses from the control module until ALL required wiring to the vehicle is complete.

DO NOT DISCONNECT THE BATTERY ON VEHICLES EQUIPPED WITH ANTI-THEFT RADIOS OR COMPUTERS.

SAFETY TEST: Safe operation is dependent on the proper function of the vehicle's neutral safety switch, which prevents the vehicle from starting when the transmission shift lever is in any position other than park or neutral ("in gear"). To test the neutral safety switch try to start the vehicle "in gear." If the vehicle does not start, the switch is functioning properly. Repeat the previous step for all gears other than park and neutral. If the vehicle starts when performing the above test, **DO NOT** install the remote starter unit. Contact your dealer to repair the neutral safety switch.

MOUNTING THE STARTER CONTROL MODULE

DO NOT INSTALL THE STARTER CONTROL MODULE IN THE ENGINE

COMPARTMENT! Choose a location under the dash that allows easy access to the ignition switch. Once the mounting location has been selected, secure the starter control module.

TESTING WIRES: When checking wires for voltage it is imperative that you use a **diode protected** test light. When you buy the item it will say computer safe. The best test equipment to have is a diode-protected digital multi-meter you can buy these items for under \$50.00 and the meter will be a great add-on for your tool collection.

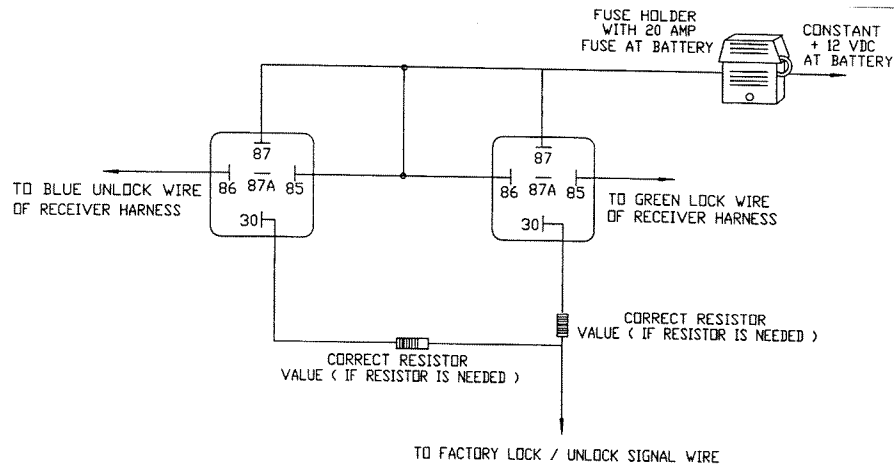
RECEIVER/ANTENNA POSITIONING: Route the cable along the front windshield molding and position the antenna high at the top of the windshield. **DO NOT** obstruct the antenna by metal. Avoid kinking the cable. Connect the male connector to the female connector on the starter control module. **DO NOT GROUND ANTENNA!**

STATUS LED INSTALLATION: Choose a location on the dashboard, which is visible from the outside of the vehicle. Using a 3/8" drill bit, drill a hole for mounting.

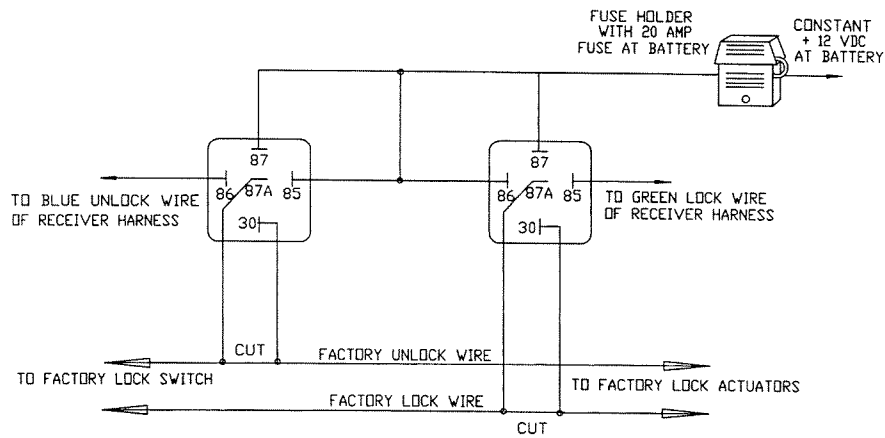
PROGRAM/OVERRIDE SWITCH INSTALLATION: Choose a location underneath the dashboard, which is inconspicuous, well hidden and not visible from the outside of the vehicle. Using a 1/4" drill bit, drill a hole for mounting.

HOOD PIN SWITCH: It is important to install the pin switch in the engine compartment for safety purposes. This will eliminate an accidental start by remote while the car is being serviced with the hood open.

LOCK WIRING DIAGRAMS



Variable Voltage Door Lock System



Five-Wire "Rest at Ground" Door Lock System

TO PROGRAM ADDITIONAL TRANSMITTERS (2300 Only):

Turn ignition key: on/off, on/off, and then turn on, and leave in the "ON" position. The parking lights will flash once. Then press and hold the valet switch down for two (2) seconds (the parking lights will flash three times). Press Button #1 (lock) once on each of the new transmitters (up to three different codes can be learned into the system). The new transmitter is now learned into the system.

TO ENTER PROGRAMMING MODE:

Turn the ignition switch "ON." Within 10 seconds, press the valet switch five (5) times. The parking lights will flash once, and the status LED will flash five times to confirm programming mode.

TO PROGRAM:

Press the valet switch the number of times equal to the function location. Press Button #1 (lock) on the transmitter to select the *first option* in each location. (Parking lights will flash once.) Press Button #2 (unlock) on the transmitter to select the *second option* in each location. (Parking lights will flash twice.) The status LED will flash to confirm what location was programmed. Turn the ignition key off. Status LED should be off.

Location	Button #1 (first option)	Button #2 (second option)
1	Second Ignition	Second Accessory
2	12 minutes run time	24 minutes run time
3	.8 second lock/unlock pulse	Three second lock/unlock pulse
4	Single door unlock pulse	Double door unlock pulse
5	Single pulse input on orange wire	Triple pulse input on orange wire
6	Ignition controlled door locks on	Ignition controlled door locks off
7	Parking lights flash on start up	Parking lights constant on start up

NOTE: Programming mode must be initiated for every feature change.

TO RESET TO DEFAULT SETTINGS:

Enter program mode and then press Buttons #1 & #2 (lock & unlock) together for five (5) seconds. The parking lights will flash three times to confirm.

TACH LEARNING SYSTEM

The tach wire is essential to the installation of the COMMANDO Pro-Start Remote Starter. The tach wire or a fuel injection wire must be used for to ensure proper instillation.

LOCATING THE TACH WIRE:

Tach wire can generally be found at the coil. To test for correct wire, use a digital or analog meter. Set your meter at AC voltage. Ground the black lead and use the red lead to test for a tach signal. The tach signal usually falls between 1 and 6 Volt AC voltage. The voltage should increase when the accelerator is depressed.

If tach wire is not accessible or cannot be found, fuel injector wire can also be used. To use the fuel injector wire, (1) locate the wires off the fuel injector. (2) Use the wire opposite of the common wire.

TACH LEARNING PROCEDURE:

1. Make sure the gray wire is securely connected to the tach wire. Soldering the two wires together is the best method.
2. Using the ignition key, start the engine.
3. Depress and hold the brake pedal.
4. Push the valet switch five (5) times. The LED and parking lights will be on constant.
5. Release the brake. LED will stay on constant, the parking lights will flash three (3) times and the LED will remain on constant. The tach learning is complete.

TEN-PIN CONNECTOR COLOR CODES

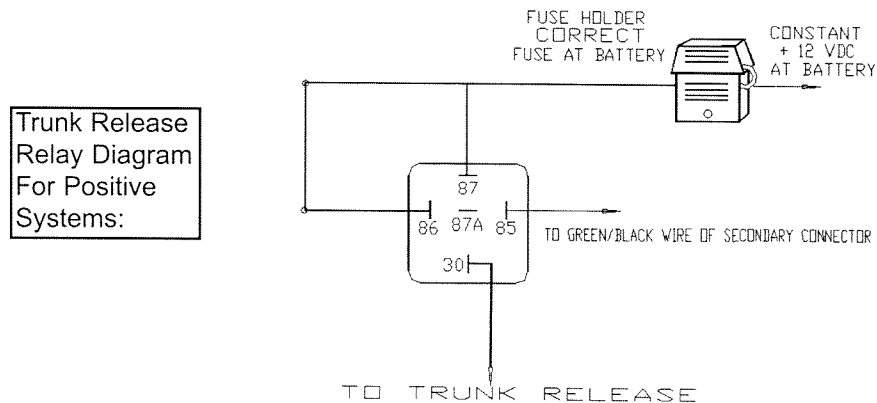
- Blue:** Connect to the hood pin switch (included) under the hood.
- Orange:** Ground out when running. (For additional features, VATS, anti-grind relay, etc.)
- Yellow:** Connect to the (+) brake light switch (make connection to the wire that only has power when the brake pedal is pressed).
- Green:** Negative input wire (*1300 only: Connect to the second negative output from alarm or keyless entry module.*)
- Gray:** Tach sense input.
- Violet:** Not used.
- White:** Connect to the (+) side of the parking lights.
- Black:** Connect to chassis ground.
- Brown:** Not used.
- Red:** Connect to (+12 VDC) constant supply for control module

SINGLE-PIN CONNECTOR COLOR CODES

- Red:** 12 Volt Input - Connect to the ignition switch (or battery) constant power 12 VDC (Fuse protected 30 Amp)
- Red:** See above.
- Brown:** Ignition 2 Output - Connect to the secondary ignition/accessory circuit wire at the ignition switch if required
- Yellow:** Ignition 1 Output - Connect to the ignition circuit wire at the ignition switch, which has power present ONLY in the "RUN" and "START" POSITION. This wire supplies power to the vehicle ignition system.
- Orange:** Accessory Output - Connect to the accessory circuit wire at the ignition switch, which has power present ONLY in the "RUN" POSITION.
- Violet:** Starter Output - Connect to the starter wire at the ignition switch, which has power present ONLY when in the "START" POSITION.

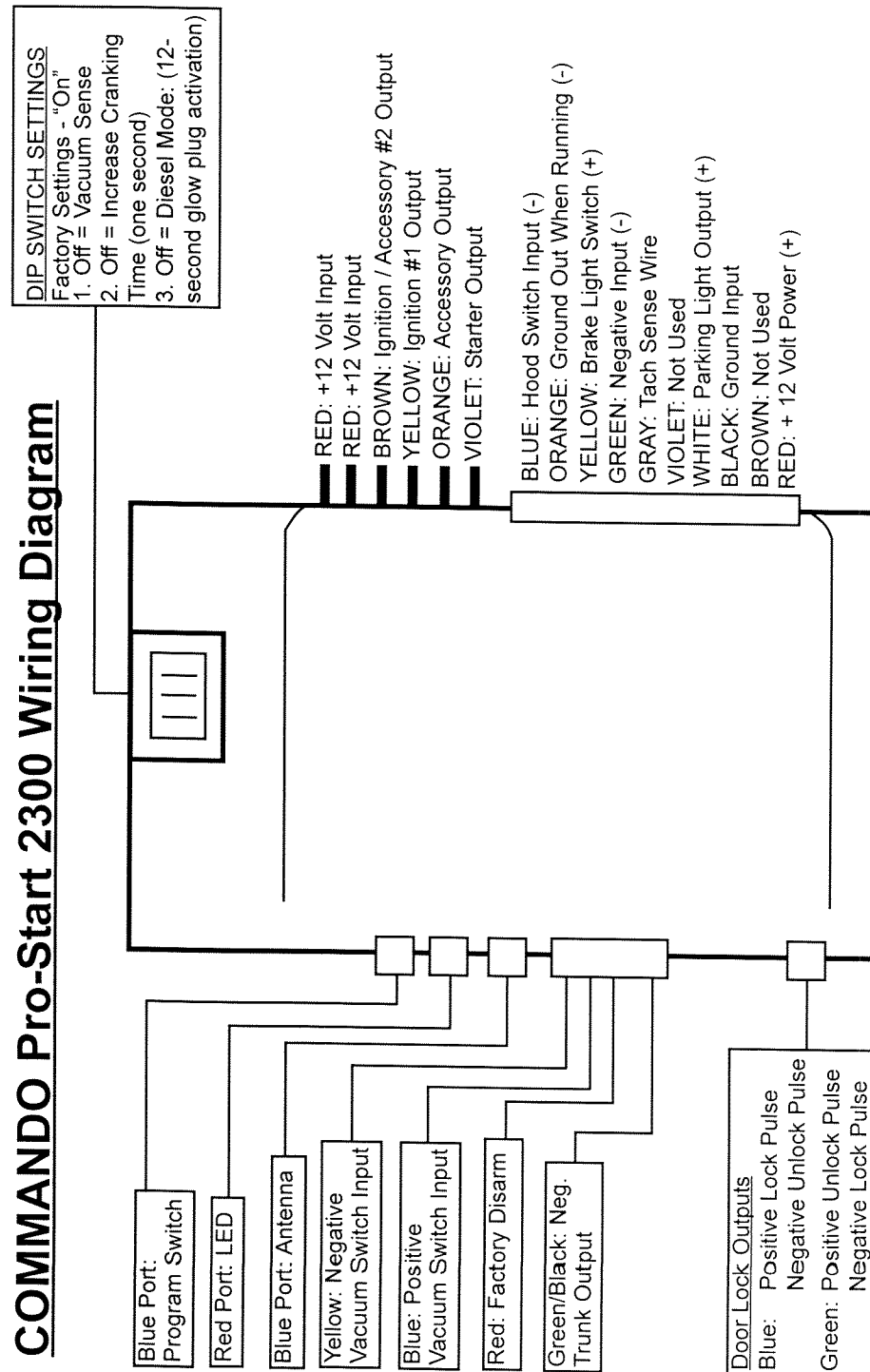
SECONDARY CONNECTORS

- Receiver/Antenna:** Connect the antenna's plug to the module and position the other end to the windshield using the double-sided tape. (*2300 only*)
- Program Switch:** Connect to the blue two-pin female housing on the control module
- Status LED:** Connect to the red two-pin female housing on the control module
- Vacuum - Yellow:** *OPTIONAL* Connect to one of the normally closed negative triggers from the optional vacuum kit.
- Vacuum - Blue:** *OPTIONAL* Connect to one of the normally closed positive triggers from the optional vacuum kit.
- Disarm - Red:** *OPTIONAL* Connect to the factory disarm wire (-) of the automobile
- Trunk-Green/Black:** *OPTIONAL* Connect this wire to negative trunk trigger wire of the factory release relay or aftermarket release relay (-500 ma output). See below diagram.
- Door Lock Plug:** *To be used with 2300 only.* Blue: Lock - negative, Unlock - positive. Green: Unlock - negative, Lock - positive.



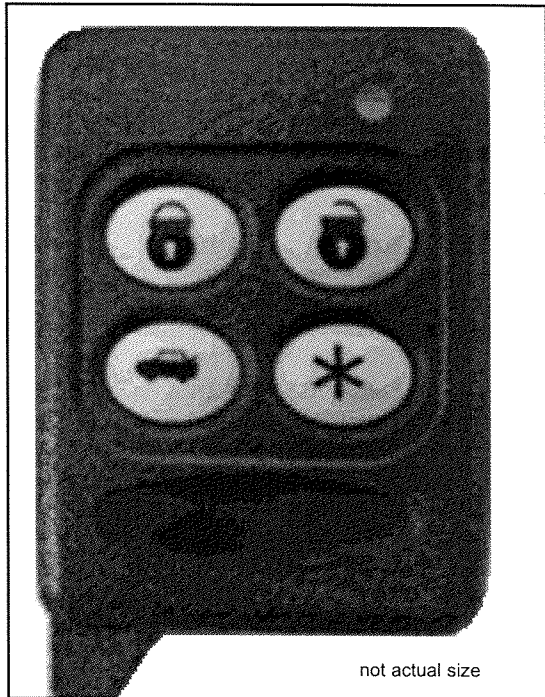
Trunk Release
Relay Diagram
For Positive
Systems:

COMMANDO Pro-Start 2300 Wiring Diagram



COMMANDO Pro-Start 2300

Remote Starter Transmitter



COMMANDO Pro-Start 2300 REMOTE STARTER

REMOTE TRANSMITTER

Above is the remote transmitter standard with the COMMANDO Pro-Start 2300 module.

Button Descriptions:

- Button 1 (Top Left): Lock
- Button 2 (Top Right): Unlock
- Button 3 (Bottom Left): Trunk Release / Auxiliary *
- Button 4 (Bottom Right): Remote Start

DOOR LOCK DATABUS INTERFACE KITS

COMMANDO Pro-Start also offers door lock modules that tie directly into the diagnostic plug under the dash. Makes installation and integration into these vehicles a simple and worry-free process, saves installation time and removal of the door panels is unnecessary. GM and Jeep models only.

GM Door Lock/Alarm Databus Interface Kits

Unit ties into the databus wire found on the diagnostic plug under the dash. Makes installation and integration into these vehicles a simple worry-free process, saves installation time and the removal of the door panels is unnecessary.

GM SUV Databus Interface Kit

Model – GMDL1

Wires directly into the COMMANDO Pro-Start module or aftermarket alarm and then directly to the databus under the dash.

<u>Model</u>	<u>Year</u>	<u>Information</u>
Envoy	2002	Disarm, unlock driver & all, lock and arm
Trailblazer	2002	Disarm, unlock driver & all, lock & arm without keyless entry (LS)
Bravada	2002	Disarm, unlock driver & all, lock and arm

GM Sedan Databus Interface Kit

Model – GMDL2

Wires directly into the COMMANDO Pro-Start module or aftermarket alarm and then directly to the databus under the dash.

<u>Model</u>	<u>Year</u>	<u>Information</u>
Malibu	2002	Unlock driver & all, lock, trunk *
Bonneville	2002	Disarm, unlock driver & all, lock and arm, trunk
Le Sabre	2002	Unlock driver & all, lock, trunk
Grand Am	1999+	Unlock driver & all, lock, trunk *

(* with keyless entry only)

GM Park Avenue Databus Interface Kit

Model – GMDL3

Wires directly into the COMMANDO Pro-Start module or aftermarket alarm and then directly to the databus under the dash.

<u>Model</u>	<u>Year</u>	<u>Information</u>
Park Avenue	2002	All+Driver+Lock

Jeep Grand Cherokee Databus Interface Kit

Model – JDL

Wires directly into the COMMANDO Pro-Start module or aftermarket alarm and then directly to the databus under the dash.

<u>Model</u>	<u>Year</u>	<u>Information</u>
Grand Cherokee	1999+	Disarm, unlock, driver & all, lock & arm

As testing continues, Commando will add to the transponder interface kits.

VEHICLE-SPECIFIC TRANSPONDERS

COMMANDO Pro-Start also offers vehicle-specific transponders that do not require the use of an extra key, or measuring resistor values for installation. Programming the transponders can be as easy as turning the ignition key or opening and closing the driver's door.

Below is a listing of each transponder with compatible vehicle models. New models are added frequently, please call 800-454-7725 for vehicle updates.

Ford PATS Transponder Bypass Kit

Model – PKF

Does not require an additional key (unit learns in to the factory anti-theft module).

EXCURSION 2000-2001	EXPEDITION 1999-2001	NAVIGATOR 1999-2001
EXPLORER 1999-2001*	RANGER 1999-2001*	F-150 - 1999-2001
MOUNTAINEER 1999-2001*	WINDSTAR 1999-2001*	CONTOUR 1999-2000
MYSTIQUE 1999-2000	MUSTANG 1999-2001	TAURUS 1999
MERCURY SABLE 1999	COUGAR 1999-2001	TOWN CAR 1999-2001
CROWN VICTORIA 1999-2001	CONTINENTAL 1999-2001	
GRAND MARQUIS 1999-2001	HEAVY TRUCK 2000-2001	
MAZDA B3000 & B4000 1999-2000 (Mazda Pickup)		

* These 2001 vehicles are compatible with the PKF transponder if the manufacture date of the vehicle is before July 24, 2000. (MFG date is found on the "Skid Sticker" on the interior frame of the driver's door.

GM Passkey 3 Transponder Bypass Kit

Model – PKG4

Does not require an additional key (unit learns in to the factory anti-theft module).

VENTURE 1999-2001	SILHOUETTE 1999-2001	AURORA 2001
MONTANA 1999-2001	GRAND PRIX 2000-2001	RENDEZVOUS 2002
BONNEVILLE 2000-2001	PARK AVENUE 1998-2001	AZTEK 2001
LE SABRE 2000-2001	SEVILLE ** 1998-2001	DE VILLE ** 2000-2001

** Installation on these model vehicles has been successful but level of difficulty has been high.

Honda Transponder Bypass Kit

Model – PKH2

Does not require an additional key (unit learns in to the factory anti-theft module).

ACCORD 1999-2001	ODYSSEY 1999-2001	MDX 2001
ACURA CL, EL, TL 1998-2001		INTEGRA 2000-2001

Honda Transponder Bypass Kit

Model – PKH3

Does not require an additional key (unit learns in to the factory anti-theft module).

ACURA 1.7 EL 2001	CIVIC 2001
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Toyota/Lexus Transponder Bypass Kit

Model – HPKT

Does not require an additional key (unit learns in to the factory anti-theft module).

TOYOTA 1997-2002 All models	LEXUS 1997-2002 All models
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GM Passlock I & VATS Bypass Kit

Model – IPMME

Auto learning no need to measure resistance or chance accidentally setting codes in the ECM.

All GM Passlock I 1996+	All GM VATS 1994+
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GM Passlock II Four-Wire Bypass Kit

Model – PLDATA

Bypass the GM Passlock II (1998+) with only four wires. No spare key or resistance testing required. Tame the challenging GM Passlock II with our most painless install yet.

All GM Passlock II 1998+

General Transponder Bypass Kit

Model – HTBK2

Transponder bypass perfect for any vehicle with a transponder. Model is not vehicle specific. Note: Spare key required for installation. Works best with Chrysler and Mitsubishi vehicles. Also works with Ford, Honda, Nissan, Toyota and GM Passkey III vehicles.

COMMANDO Pro-Start TROUBLE SHOOTING GUIDE

Engine will not start

Check DIP switches for correct settings:

1. DIP Switch 1 *ON* for tach sense, *OFF* for vacuum sense
2. DIP Switch 3 *ON* for for gas engine, *OFF* for diesel engine

Parking lights flash, but engine will not run.

1. Hood is open.
2. Blue wire is grounded
3. Bad ground in the vacuum switch
4. Ignition key is at "ON" position.

Engine cranks but does not start.

1. Poor connection on the yellow 12-gauge wire (Ignition #1 Output Wire).
2. Second ignition wire may be required on certain models.

Starter does not disengage.

1. Tach learn procedure not complete.
2. Vacuum switch not connected to manifold system.

Engine starts and then dies after five seconds.

1. Tach wire not detected.
2. Double-check tach signal with digital meter and perform tach learn procedure again.
3. Tach wire not learned into the system.
4. Vehicle equipped with immobilizer system. Transponder needed or not installed correctly.
5. Use appropriate bypass system. See the "VEHICLE SPECIFIC TRANSPONDERS" section to locate the proper transponder.