



CompuStar 2000AS





Installation Guide

by Firstech, Inc.

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1. Installation Tips and Recommendations

-  Remove all the fuses from the CompuStar before beginning the installation. Do not replace them until all of the connections have been soldered and covered.
-  **Very Important!** Use a Digital Multimeter for all testing of wires in the vehicle. This should be done on all wires even if you feel that you know exactly what they are and how they should test. There have been many cases where wiring color schemes have changed from a vehicle even in the same model year. Before soldering on a wire that you are not sure of or it does not test right, please contact the Technical Support Department for help.
-  We, at Firstech, recommend soldering all wire connections to the vehicles wiring. Soldering is needed for permanent connections that you want to last. Soldering also increases the performance of a connection and the longevity of it as well.
-  **Warning!** If you connect any of the negative pulse wires directly to the power source, you will burn the brain circuit and/or fuses.

2. Wiring Chart

Important! Please see attached page that comes with this installation manual for the wiring chart.

3. Dip Switch Settings

Dip Switch	#1	#2	#3	#4
Off	2 nd Ignition	15 min run time (25 min diesel)	Alternator Sensing	Manual Transmission
On	2 nd Starter	25 min run time (45 min diesel)	Tach Sensing	Automatic Transmission


Switch 1: This switch is used to determine the function of main harness **#8 wire (Green/White)**.


Switch 2: This switch is used to determine the engine run time for the vehicle during remote start. If the switch is set in the **off** position the run time will be 15 minutes for gas engines and 25 minutes for diesel engines. If the switch is in the **on** position, the run time will be 25 minutes for gas engines and 45 minutes for diesel engines.

Switch 3: This switch is used to determine the method of tachometer or voltage alternator sensing. If this switch is in the **off** position, the unit will be set for alternator sensing. If the switch is set in the **on** position, the unit will be set for tachometer sensing.

Switch 4: This switch is used to determine if the vehicle has a manual or an automatic transmission. If the switch is set to the **off** position you are using the module in a manual transmission setting and the **light blue** wire must be connected to the emergency brake wire.

Important! Do not set the manual transmission mode until you read the user's manual for remote starting instructions for manual transmission vehicles.

 Automatic transmission vehicles without a neutral safety switch: The installer must make sure that the vehicle starts **ONLY** in the neutral position with the key. If the vehicle starts in any other position, **dip switch #4** must be set to the **off** position for manual transmission.

 Clutch Overriding (manual transmissions): In most manual transmission vehicles the clutch must be depressed in order for the vehicle to start. If

this is the case, you must simulate the factory clutch switch during remote starting. Please call Technical Support for any questions.

4. Adjusting the Shock Sensor & siren volume

Adjusting the Car Siren Volume: In order to increase the chirping volume of the siren, cut the loop located on the siren.

Adjusting the Shock Sensor Sensitivity: In order to the shock sensor sensitivity, turn the screw located on the sensor clockwise. In order to decrease the sensitivity, turn the screw located on the sensor counter-clockwise. Turning the screw just a small amount can make a big difference so make sure you recheck the sensitivity after each adjustment.

5. Transmitter/Receiver Learn Routine

Your remote-pager has been programmed for your specific CompuStar brain at the time of installation. In order to add an additional remote-pager, you must erase the CompuStar brain purging the memory of all learned transmitters. Hence, you must reprogram each remote-pager to "learn" the CompuStar brain. Since the brain memory is erased, you must program all existing remote-pagers as well as the new remote-pager(s) that you are adding. If you replace or add an additional remote-pager, please perform the following:

Step 1: Activate Valet/Programming mode by manually turning the ignition on and off five times with car key within a 10 second period which is the technically similar to giving the **Green** wire 12V pulse five times. The parking light will flash once with successful completion of this step.


Step 2: Within a 6 second period after cycling the ignition for the 5th time, press Button I for a ½ second for each remote-pager you want to program. The car parking lights will flash once to confirm that the transmitter has been programmed.


Important! Note that you can program up to three remote-pager units for a single CompuStar brain. Adding any additional remote-pager units that are programmed for a specific CompuStar brain will erase any previous remotes that were learned.

6. Programming Options with the Remote-Pager

The features of your CompuStar 2000AS system can be changed by utilizing the programming options with your remote-pager. Changing of these programming options is intended be performed by your local authorized CompuStar dealer.

- Step 1:** For Programming menu 1: Press Buttons **(I+II)** for 2 seconds.
For Programming menu 2: Press Buttons **(I+III)** for 2 seconds. The car will chirp once indicating that you are in programming mode.
- Step 2:** Within a 2 second period after choosing your programming menu, press Button **IV** the number of times to go to the option number you want to change. You will hear a chirp and see the parking lights flash each time you press Button **IV**.
- Step 3:** Wait a few seconds. You will hear a number of chirps and see a number of parking light flashes corresponding to the option number you want to change. If the number of chirps or flashes is not what you want, go back to Step 1.
- Step 4:** Press Button **I** for the default factory settings and your car will respond by one chirp and one flash. Press Button **II** for the optional setting and your car will respond by two chirps and two parking flashes.

 **If you hear a long chirp, you are going out of programming mode, please go back to Step 1.**

 **If you want to change more options, go back to Step 1.**

Resetting the Programming Options to the factory default settings.

- Step 1:** Press Buttons **(I+II)** simultaneously or Buttons **(I+III)** simultaneously for 2 seconds. Step 1 is confirmed by a car chirp and a one-time flashing of the parking light.
- Step 2:** Press Button **III** three times. This is confirmed by a car chirp and parking light flash each time you press Button **III**. Hence, your car will chirp and parking light flash three times by pressing Button **III** three times. Your car is now set to the original factory default settings.

Remote-Pager Programming Menu Options

Programming Menu #1 (Auto-Start and Door Lock Options)

	Feature	Factory Default Setting – Button I	Optional Setting – Button II
1-1	Unlock Before, Lock After Starting	OFF	ON
1-2	Door Lock / Unlock Pulse Duration	0.5 sec	2.0 sec
1-3	Min. Crank Time for the Alternator	0.8 sec	1.0 sec
1-4	Driver's Priority Unlock	OFF	ON
1-5	Double Pulse Unlock	OFF	ON
1-6	Dome Light Factory Rearm	OFF	ON
1-7	Temp Sensor for Activation Input	OFF	ON

Programming Menu #2 (Security Options)

	Feature	Factory Default Setting – Button I	Optional Setting – Button II
2-1	Passive Arming / Active Locking	OFF	ON
2-2	Passive Arming / Passive Locking	OFF	ON
2-3	Aux #1 Output Pulse Duration	0.5 sec	Latch
2-4	Aux #2 Output Pulse Duration	0.5 sec	Latch
2-5	Ignition Controlled Door Lock	OFF	ON
2-6	Siren Duration	30 sec	60 sec
2-7	Arming and Locking upon Reservation	Immediately after closing car doors	Active – must use the transmitter

7. Programming Menu & Option Feature Descriptions

Programming Menu #1 (Auto-start and Door Lock Options)

1-1 Unlock Before, Lock After Starting OFF/ON: Some vehicles such as Mercedes-Benz and the Lexus ES300 require you to unlock the car to disarm the factory alarm before remote starting the vehicle. Activating this feature will unlock the vehicle for a brief second in order to disarm the factory alarm before auto-starting the vehicle remotely then lock after starting.

1-2 Door Lock Pulse Duration: Some European vehicles such as Mercedes-Benz and Audi require longer lock and unlock pulses to operate the vacuum pump. Programming the system to provide 2.0 second pulses will accommodate the door lock interface in these vehicles. The default setting is 0.5 second door lock pulses.

1-3 Minimum Crank Time for the Alternator: If the CompuStar is programmed to voltage alternator sensing in order to remote-start the vehicle, the minimum alternator crank time must be set to the appropriate duration. In the default setting, the alternator will crank for a minimum of 0.8 second on the 1st attempt, 0.9 seconds on the 2nd attempt and 1.0 second with the 3rd attempt.

A small minority of cars such as older model and diesel vehicle will need longer alternator crank times. With optional longer alternator crank time, the alternator will crank for a minimum of 1.0 second on the 1st attempt, 1.1 second on the 2nd attempt, and 1.2 second with the 3rd attempt.

1-4 Driver's Priority Unlock OFF/ON: This feature unlocks the driver's side door lock with the first unlock pulse. A second unlock pulse is need to unlock the rest of the car doors.

Important! In order for this feature to operate, the installer must hard-wire this feature into the factory door lock relays.

1-5 Double Pulse Unlock OFF/ON: Some vehicles require two pulses on a single wire to unlock the doors. In the optional setting, the double pulse feature is turned ON and two negative and positive pulses instead of a single pulse will be applied.

1-6 Dome Light Factory Rearm: This optional setting is used to rearm many factory security systems using a dome light on, door lock on, dome light off sequence after the vehicle is remote-started.

1-7 Temperature Sensor for Activation Input: In the default factory setting, the remote-start activation input is the starter wire for the vehicle. Programming with the optional setting, will allow you to add a temperature sensor. The CompuStar brain will ignore remote-start pulses sent by the temperature sensor for up to 1.5 hours. Thus, when the temperature dips below a certain degree, the car will only be remote-started every 1.5 hours in order to keep the engine warm.

Programming Menu #2 (Security Options)

2-1 Passive Arming / Active Locking: When set to passive arming, the system will arm automatically 30 seconds after the all car doors are closed. With passive arming, the car siren will chirp every 10 seconds until the car is armed on the third chirp.

Active locking means the doors will not lock when the system passively arms. In the default setting, the system is armed/locked actively which means the system will only arm/lock when the transmitter is utilized.

2-2 Passive Arming / Passive Locking: When set to passive arming, the system will arm automatically 30 seconds after the all car doors are closed. With passive arming, the car siren will chirp every 10 seconds until the car is armed on the third chirp.

Passive locking means the door will lock when the system passively arms. In the default setting, the system is armed/locked actively which means the system will only arm/lock when the transmitter is utilized.

2-3 Auxiliary Output #1 Pulse Duration: Programming the system will provide a latch pulse duration to the auxiliary output #1. The default setting is a 0.5 second pulse duration to auxiliary output #1. If the optional latch setting is programmed, the pulse continues until the Auxiliary Output Button is pressed again.

2-4 Auxiliary Output #2 Pulse Duration: Programming the system will provide a latch pulse duration to the auxiliary output #2. The default setting is a 0.5 second pulse duration to auxiliary output #2. If the optional latch setting is programmed, the pulse continues until the Auxiliary Output Button is pressed again.

2-5 Ignition Controlled Door Lock OFF/ON: When turned on, the doors will lock 1-2 seconds after the ignition is turned on and unlock when the ignition is turned off.

2-6 Siren Duration: In the default setting, the car siren duration will last 30 seconds for panic, alarm, and shock sensor modes. In the optional setting, the system can be programmed for a 60 second siren duration.

2-7 Arming and Locking upon Reservation: After reservation mode is set, this feature will allow the user to actively arm and lock the system by using the

transmitter. The factory default setting for arming/lock automatically arms and locks the vehicle immediate after all car doors are closed. With the optional active arming and locking, the system is armed/locked actively which means the system will only arm/lock when the transmitter is utilized.

8. Diagnosing problems with Auto-Start

If there is a problem in auto-starting your car, you will hear three chirps when you attempt to auto-start the car. Wait for 2 seconds and the cause for the error will be indicated by the number of times the car chirps and parking lights flash.

Error Number (# of times the car chirps & parking lights flash)	Error Reason
1	Engine On
2	Key On
3	Door Open
4	Trunk Open
5	Brake On
6	Hood Open
7	Reservation Off (Manual Transmission Only)

9. Diagnosing Tach Learning Error

If the car siren chirps 3 times, there is a problem with the tachometer learning by the CompuStar brain. Wait for 2 seconds and the cause for the error will be indicated by the number of times the car siren chirps and parking lights flash.

Error Number (# of times car chirps & parking lights flash)	Tach Learning Error Diagnosis
1	Dip Switch #3 is on alternator sensing.
2	Manual Car Key is in the off position.
3	No signal or the signal is not fast enough. Find a different wire.

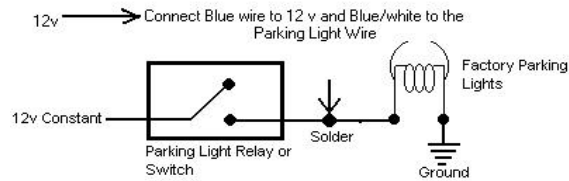
10. Wire Connections Guide

9.1 - Parking Light Connector: 2 Pin White Connector

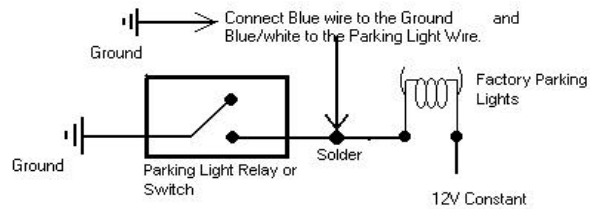
#1 Blue is for the power source of the Parking Lights.

#2 Blue/White is for the output to the parking light circuit. Solder this wire to the parking light wire on the vehicle.

Positive Parking Light



Negative Parking Light



9.2 - Main Connector: 8 Pin White Connector

#1 Green/White is for 2nd Ignition output or 2nd Starter output depending on the **dip switch #1** setting.

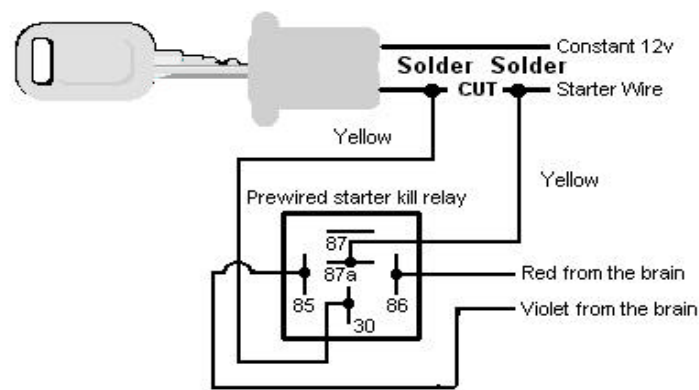
#2 Red is for 12V Input: Solder this wire to the vehicles 12V constant. This wire must be supplied power all of the time and must be able to withstand high current draw. The 12V wire at the ignition switch is what runs the vehicle in most situations so we recommend going there to get power.

#3 White is for 12V Accessory Output during Remote Starting: Solder this wire to the vehicle's accessory wire coming from the ignition switch. This wire will test **(using your digital multi-meter)** open with the key off and 12V with the key in the accessory or on position. The Accessory wire will usually drop out during cranking. This wire supplies 12V to climate control and other accessories in the vehicle and is capable of supplying up to 30 to 40 Amps.

#4 Red/White is for 12V Input for Starter & Accessory. Some vehicles you will find more then one 12V constant wire. Utilize the other 12V wire.

#5 Yellow is for 12V Starter Output: This is prewired to the starter-kill relay. This wire will test **(using your digital multi-meter)** 12V when the key is in the crank position.

#6 Violet supplies a negative 200mA output when the system is armed or engine is running. **This wire is connected to the pre-wired starter kill/anti-grind relay.**



#7 Black is for the Chassis Ground Input. Connect this wire to bare metal of the vehicle. We do not recommend using the steering column for a grounding point. Make sure you strip the paint or use a factory grounding point. Bad grounding on this wire will be the beginning of future troubles.

What is a bad ground? A bad ground means there is resistance between the ground and the battery ground. This means that the CompuStar brain will have less the 12V or 14V if the vehicle is running.

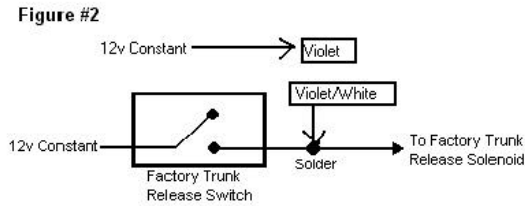
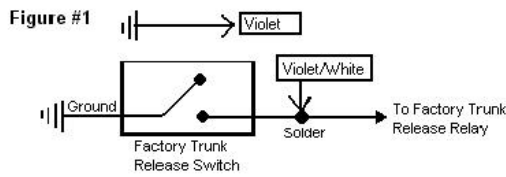
#8 Green is for 12V Ignition Output During Remote Starting. Solder this wire to the vehicle's ignition wire coming from the ignition switch. This wire will test (**using your digital multi-meter**) open with the key off and 12V with the key in the on or run position. The ignition wire will NOT drop out during cranking of the vehicle. This wire supplies 12V to the ignition coil and other electrical systems needed for the vehicle to run properly. Some vehicles require more than one ignition wire to be powered up for all of the electrical systems to operate and for the vehicle to stay running.

9.3 - 5 Pin Connector

#1 Violet is for the power source for the trunk release motor. There are two types of trunk release systems namely negative trigger and positive trigger.

?? **Figure #1: Negative Trigger.** This wire should test (**using your digital multi-meter**) either open or at 12V until the trunk release button is pressed and then it will test as ground when the trunk release button is pressed.

?? **Figure #2: Positive Trigger.** If the switching wire is resting at ground or open and then switches to 12V when the release switch is pressed, you must add a relay.



#2 Violet/White is for the Trunk Output. Since this wire is a low amperage output wire, you need to add a relay. Connect this wire as shown above.

#3 Brown is for the 12V output to the car siren. This wire is to be soldered to the brown wire at the siren. The black wire on the siren needs to be connected to a chassis ground.

#4 Red is for the Door Trigger Input. Solder this wire to the wire that usually goes to the domelight. Then, select the polarity of the trigger wire with the **#5 Red/White** wire.

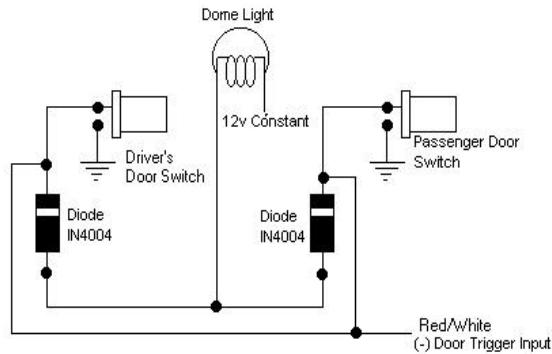
#5 Red/White wire is to determine the polarity of the door trigger.

Positive Door Trigger: The door trigger wire will test as a positive signal when the doors are opened. The wire will rest at ground or open when the door is closed.

Negative Door Trigger: The door trigger wire will test as a positive signal when the doors are closed. This wire will test as a negative signal when the doors are opened. The wire will rest at 12V or open when the door is closed.

Note: If you are installing the unit in a manual transmission vehicle than you will need to hook up the door trigger. Some vehicles have separate door triggers, in that case you will need to get each one and diode isolate each wire.

Note: If the vehicle has a dome light delay circuit, you must use the latch wires that are normally found as a negative trigger. This usually requires that two wires will be used. Diodes will be needed to isolate the wires.



Dome Light Supervision - Automatic Transmission Only: #5 Red/White also provides power to the dome light circuit for **Dome Light Supervision**. If you connect this wire to wrong polarity, the dome light fuse of the vehicle will blow.

Positive Door Trigger: #5 Red/White wire will send power to the door trigger wire when disarm (unlock) signal is received by the brain for 1.0 minute or less until ignition is turned on or arm (lock) signal is received by the brain within the 1 minute period.

Negative Door Trigger: #5 Red/White wire will send ground to the door trigger wire when disarm(unlock) signal is received by the brain for 1.0 minute or less until ignition is turned on or arm(lock) signal is received by the brain within the 1 minute period.

Factory Rearm with Dome Light Pulse - Automatic Transmission only:

If Programming Menu #1, Option #6 is selected, #5 Red/White will send a pulse to the door trigger wire a ½ second before the door lock pulses. The sequence will be Dome light on, Lock, then Dome light off. This wire engages the same sequence after remote starting is over. The sequence will be Remote Start off, Dome Light on, Lock then Dome Light off. This simulates the factory arming sequence of GM vehicles which is Door open, Lock and then Door closed.

9.4 - 6 Pin Connector

#1 Yellow is (-) 200mA Aux. Output Pulse (Channel 2) when Button **II** is pressed for a ½ seconds. This can be used to add functionality to the car such as power control windows, power control sunroof, or a power control garage door module. This output should only be used in conjunction with a module or a relay and never taken to a motor lead or anything with a high current draw.

#2 Yellow/White is a (-) 200mA Aux. Output Pulse (Channel 3) when Button **III** is pressed for a ½ second. This can be used to add functionality to the car such as power control windows, power control sunroof, or a power control garage door module. This output should only be used in conjunction with a module or a relay and never taken to a motor lead or anything with a high current draw.

The two Aux pulse outputs above can be programmed to Latch output under the Programming Menu 2, Option #3 and Option #4. If Latch is programmed, the pulse continues until the Auxiliary Output Button is pressed again.

#3 Orange is the (-) 200mA Output to the Factory Security System Rearm Wire. The sequence for the rearm pulse: (1) pulse when armed (locked), (2) pulse after remote starting.

#4 Orange/White is the (-) 200mA Output to the Factory Security Disarm Wire. The sequence for the disarm pulse: (1) pulse when disarmed (unlocked), (2) pulse before remote starting.

Also, you may utilize Programming Menu 1, Option #1 or Option #6 for factory disarm/rearm. You cannot select both optional setting.

#5 White is a horn output that sends 2 pulses per second for the same duration with the siren output.

#6 Green is the negative ignition output for the relay operation.

9.5 - 10 Pin Connector

#1 Light Blue Manual Transmissions: When you are in this mode, you need to tie this wire into the emergency brake. Most emergency brake wires will show 12V at rest when the ignition is on or ground when you set the brake.

#2 Light Blue/White is remote starting activation and deactivation input. One second ground pulse to this wire will start or stop the remote starting. This wire is to interface with Motorola pager system.

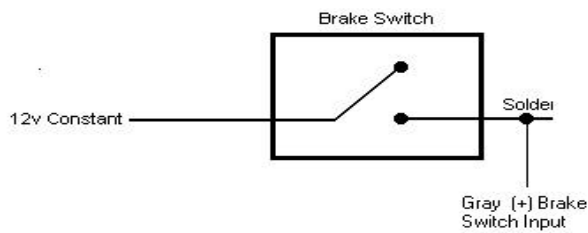
#3 Black/White is for the 2nd stage motion sensor or other optional sensors. If this wire is triggered, the result will be as if the second stage shock sensor had been triggered.

#4 Gray/White is for the 1st stage motion sensor or other optional sensors. If this wire is triggered, the result will be same as if the first stage shock sensor had been triggered.

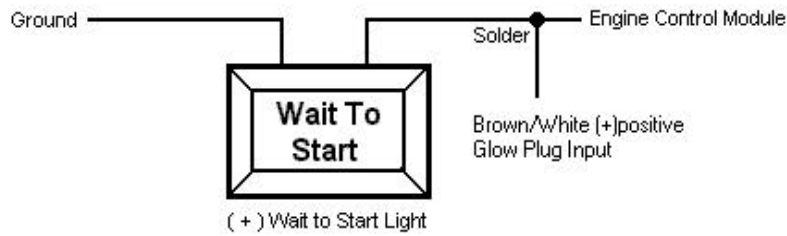
#5 Violet/Black is for the Trunk Trigger input. If this wire is triggered, the siren will go off, the remote will be paged, and the trunk icon in the LCD monitor of the remote-pager unit will flash.

#6 Gray/Black is a hood input wire. This wire is to be used as a negative shutdown for the remote starter. Use the provided hood pin, or in some cases the vehicle may already have a factory hood pin. This wire is very important, because it prevents the vehicle from starting with the hood raised. If this wire is grounded while the vehicle is armed, the result is the same as the door trigger wire been grounded.

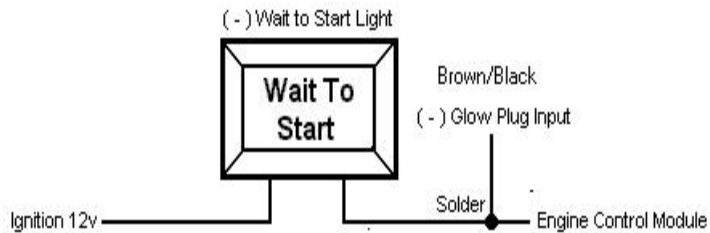
#7 Gray is a brake input wire (for both automatics and manual). This wire is a (+) shutdown wire that needs to be soldered into the brake wire lead that switches to 12V when the brake is pressed. This wire will rest at ground until the brake is pressed.







#8 Brown/White is positive Glow Plug input. This wire is used for the glow plug wire in the dash. This wire will test (+) when the key is place in the run position. This wire will test open or ground, until the key is in the run position. There is no programming for diesel mode. It is automatic once this wire is used.




#9 Brown/Black is for negative Glow Plug input. This wire is used for the glow plug wire in the dash. This wire will test (-) when the key is placed in the run position. This wire will test open or positive, until the key is turned to the run position. There is no programming for diesel mode, it is automatic.



#10 Yellow Black is the Alternator/Tach sensing input.

-  Tach Learning/Injector Wire Learning: The CompuStar brain will learn either the signals from Techometer or Injector Wire. The injector wire is easy to find but less consistent in determining correct cranking time because the injector pulse is not fast enough. Testing for tach or injector must be done with a Digital Multimeter. When you find the right tach/injector wire with your meter, the wire should read between 1V to 6V (AC) and should fluctuate with the idle of the engine. There are certain vehicles such as Fords and Chevys that will read anywhere from 2V to 8V, These are also good tach wires. If you cannot find the tach wire, call Technical Support.
-  Learning Tach/Injector Wire: Start the vehicle with the manual key and let the engine idle down. The next step is to press the black tachometer button located right next to the white dip switches for one second. The car siren will chirp 1 to 2 times to confirm the tach was learned. If the siren chirps 3 times, you have the wrong tach wire.
-  Important Note: If the cranking time is not long enough, repeat the tach learning procedure with higher RPM then try again at the normal idling RPM. Increase the RPM a little (about 5%) till you get a satisfactory result. The CompuStar will release the vehicle's starter when the RPM exceeds 75% of what was learned during the process.
-  Tach Learning Error List: The siren will chirp 3 times. Wait 2 seconds and the cause for the error will be indicated by the number of times the car chirps and parking lights flash.

Error Number (# of times car chirps & parking lights flash)	Tach Learning Error Diagnosis
1	Dip Switch #3 is on alternator sensing.
2	Manual Car Key is in the off position.
3	No signal or the signal is not fast enough. Find a different wire.

 **Alternator Sensing:** Locate the small gauge wire from the alternator. When tested with your meter, it should show you less than 5V when the key is on and the vehicle is not started. When the vehicle is started, the wire should read between 9V to 14V.

9.6 - 7 Pin Door Module Connector

This connector is for the Optional Door Module. #1, #2, #3 and #7 wires are for the door module.

#4 Blue is for (-) Lock Output and (+) Unlock Output. This wire puts out a negative pulse when locking (arming) the vehicle and a positive pulse when unlocking (disarming). This wire is used when the vehicle either has a negative, positive or reverse polarity door lock system. In some vehicles, the door lock module does not operate properly when connected to the #4 Blue wire. If this is the case, there is a different door lock system such as a vacuum in the vehicle.

#5 Blue/Black is for (-) unlock output, (+) lock output. This wire is a reversing trigger wire. You can use this wire for either a positive triggered system or a negative triggered system.

9.7 - Factory Security Interface Connector

This connector is for different types of Factory Security Bypass modules such as pass locks and transponders.

#1 Green Black is the 12V ignition input. This wire will show positive only during remote starting.


#2 Black is the ground output.

#3 Green/White is for the negative ignition output. This wire will show negative only during remote starting.

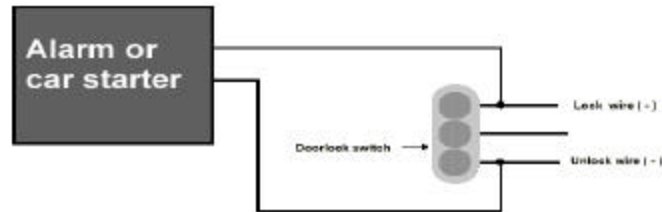
#4 Red/Black is for the negative starter output. This wire will show negative only during starter cranking.

#5 White/Black is for the negative accessory output. This wire will show negative only during remote starting except while cranking.


10. Different Types of Lock Systems

 **Type 1:** Negative Doorlock systems are characterized by (-) negative pulses from the switch to the factory relays. This system is common in many Toyota, Nissan, Honda, and Saturn models as well as Fords with keyless-entry systems. You can tie the orange and blue wires directly into these wires, because the vehicle already has factory relays to run the locks. Some vehicles such as the Honda CRV may require relays for door locks because they need high current triggers.

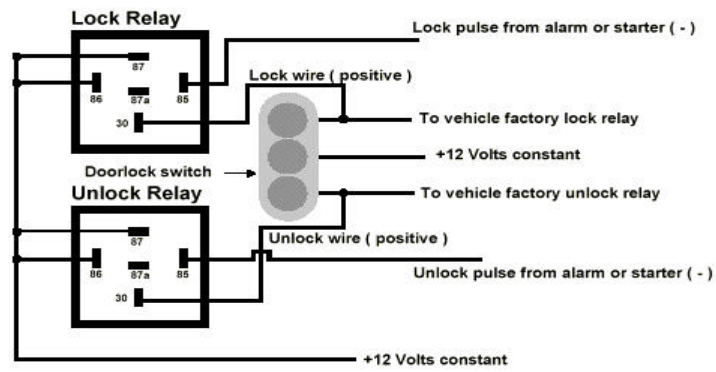
NEGATIVE DOORLOCK SYSTEMS



The doorlock wires can usually be located in the vehicle's kick panel and will show ground when the doorlock switch is toggled from lock to unlock.

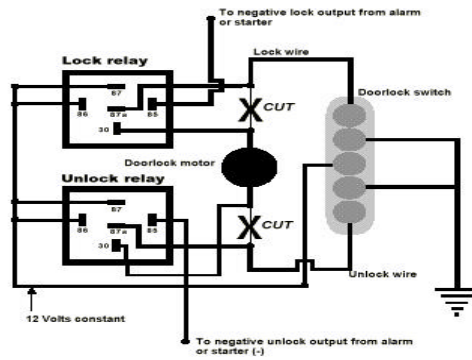
 **Type 2:** Positive doorlock systems are characterized by (+) 12V pulses from the switch to the factory relays. You can tie the orange and blue wires directly into these wires because the vehicle already has the factory relays to run the locks. Note, vehicles will usually have more than two doors and also may have keyless entry.

POSITIVE DOORLOCK SYSTEMS



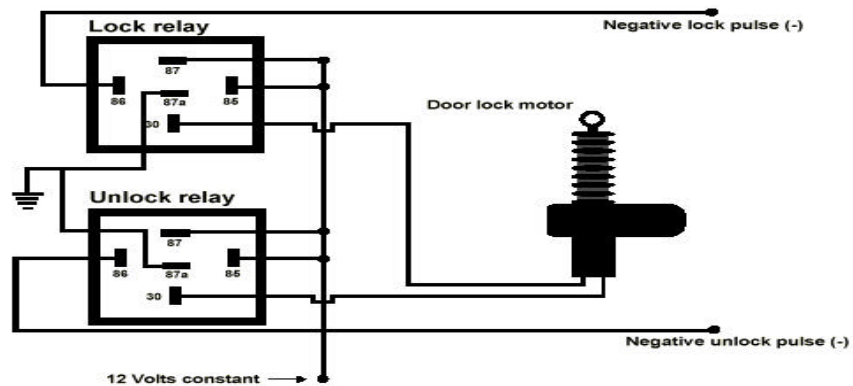
Type 3: Reversing Polarity doorlock systems are usually found in vehicles without a relay system. Generally, cars with two doors have these reversing polarity systems and the driver's door switch is the main switch for the system. When you encounter this type of system, you will have to add relays. Do not use the orange and blue wires directly since these are 200mA output only.

REVERSE POLARITY DOORLOCK SYSTEMS



Type 4: Aftermarket Actuators are needed for vehicles without factory power door locks requiring one door lock actuator per door. Therefore, you will need to add relays.

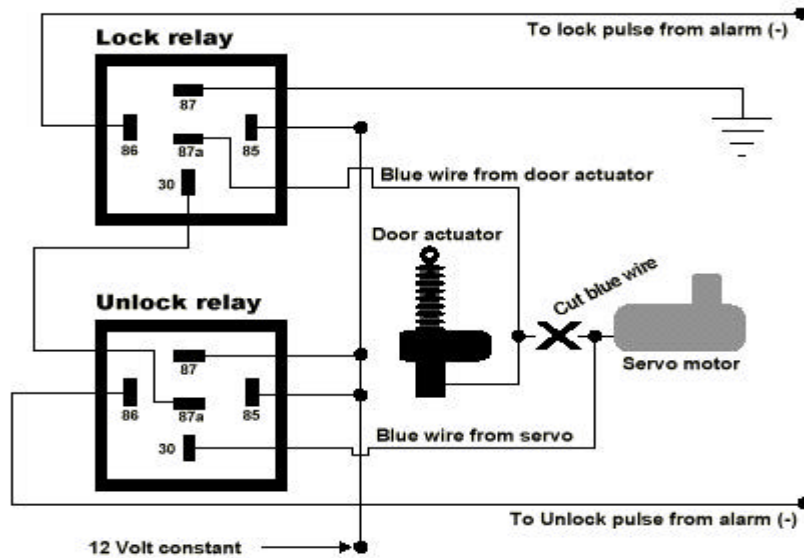
ADDING DOORLOCK ACTUATORS




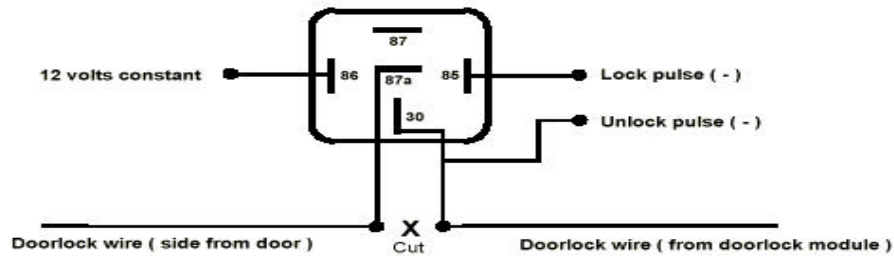
Type 5: Vacuum doorlock systems such as Audi and Mercedes-Benz are controlled by a vacuum type system. If this is the case, the wire usually can be found in either kick panel, the control wire will show 12V when

doors are unlocked and ground when the doors are locked. To integrate with the system, you will need to install relays and set the CompuStar brain for a two-second lock and unlock pulse duration. In some cases, you may also find a **type 4 system** in a Mercedes-Benz vehicle. Test to see if you have a type 4 system by locking the car from the passenger door cylinder. If all the doors lock, you can use that system.

MERCEDES VACUUM DOORLOCK SYSTEMS



 **Type 6:** One-Wire systems usually need a negative pulse to unlock and break the same wire for the lock. This system is found commonly in Volvos, late model Nissan vehicles, and some Mazda vehicles as well.



11. Troubleshooting

How do I learn tach for a manual transmission car?

Learn tach as you would for an automatic transmission car by starting the vehicle with the manual key and let the engine idle down. The next step is to press the black tachometer located right next to the white dip switches for one second. The car siren will chirp and flash 1-2 times confirming that tach has been learned. The final step requires that you turn **dip switch #4** to the OFF position which is manual transmission mode after tach has been learned.

Does the trunk release require a relay? YES, it does!

Why isn't the CompuStar brain responding? I hit the remote-pager buttons and nothing happens!

First, check to see if you have enough battery life in remote-pager unit by looking at the battery life indicator icon in the bottom right hand corner of your CompuGLO LCD screen. Replace your battery if indicated. A standard AAA battery will last 3 to 6 months depending on usage and the make and model of your car. You will notice a loss of transmitting distance and back-light function with declining battery life.

Another explanation maybe that you are trying to operate your primary car while the remote-pager unit is in 2nd Car Mode. Check to see if the red-border indicator box labeled 2nd on the upper left hand corner of your CompuGLO LCD screen is darkened indicating that 2nd car mode is activated. Deactivate 2nd Car Mode by pressing Buttons **(III+IV)** for a ½ second.

Also, check to see if the following 3 conditions have been met:

- 1) Do you have a good chassis ground?
- 2) Did you energize both the red and the red/white wire?
- 3) Is the unit in Valet Mode?

Otherwise, the most likely cause is that the crystal mechanism inside your remote-pager that transmits the 447 MHz frequency is damaged. Physical damage such as dropping the remote-pager is usually the cause of the crystal not working. In this case, you must get a new remote-pager by contacting your nearest CompuStar authorized dealer for a replacement.

Do I have to hook up both wires (red and red/white wires) for the door trigger?

YES! This is because these wires determine the polarity of the door trigger and dome light supervision.

Why does the brain chirp at me three times when I try to learn tach?

If the car siren chirps 3 times, there is a problem with the tachometer learning by the CompuStar brain. Wait for 2 seconds and the cause for the error will be indicated by the number of times the car siren chirps and parking lights flash.

Error Number (# of times car chirps & parking lights flash)	Tach Learning Error Diagnosis
1	Dip Switch #3 is on alternator sensing.
2	Manual Car Key is in the off position.
3	No signal or the signal is not fast enough. Find a different wire.

Also, check to see if the following three conditions have been met which may affect tach learning:

- 1) Did you solder your connection?
- 2) Did you measure AC voltage?
- 3) Is the ten-pin plug inserted correctly?