

INTRODUCTION

The Crimestopper passive window control modules are designed to automatically operate power windows through the use of a remote controlled security system, adding extra convenience and security for the owner.

The CS5101 is a two circuit unit which will roll two windows UP or DOWN when activated.

The CS5201 is a four circuit module which will roll two windows UP and DOWN when interfaced with a security system that provides an auxiliary remote output. It can also be used to roll four windows UP or DOWN.

NOTE: As you can see from the description, one CS5201 is equivalent to two CS5101's. For this reason, this manual is used to cover the installation of both modules.

Before beginning installation, it is important to note that both window control modules include a provision to inform your customer if a window mechanism in their vehicle is starting to bind or jam.

As a window goes up or down, it is monitored in 1/4-second intervals. If current draw while rolling up or down exceeds 25 amps or increases enough to equal the current being drawn when the window reaches the end of its travel, the module will sense this and shut off. The result may be that a window shuts off before it has fully closed. If this occurs, lubricate with dry silicon spray and/or adjust the window mechanism. If lubrication or adjustment does not solve the problem, then that window may be drawing far too much current for safety, which will eventually cause premature failure of the window mechanism. To determine if this is the case, an ammeter in-line with the window motor will indicate if current draw is too high.

NOTE: Most '89 and newer 5 and 7 series BMWs and '89 and newer XJ6 Jaguar are factory equipped with a central window closing control module. This module is activated through the door's key lock when this is held in the lock position for more than four seconds. A special interface unit is available just for these vehicles; CS-6200 for Jaguars and the CS-6300 for BMWs.

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SPECIFICATIONS:

POWER: 12 volts DC negative ground

POWER DRAIN @ IDLE: 7 milliamps (CS-5101)
14 milliamps (CS-5201)

OUTPUT SWITCHING CURRENT: 30 amps per circuit.

SWITCHING DURATION: Each circuit individually functions as needed; independent load-sensing shut-off.

ACTIVATION OF ROLL TRIGGERS: Positive or negative signal, either momentary or latching.

PLANNING THE INSTALLATION

Installation of this module is not a difficult procedure. Crimestopper strongly recommends, however, that you take the time to plan out the installation and carefully read the instruction manual prior to starting your work.

We suggest, for example, that you first determine all of your connection points and then proceed to disconnect the negative side of the car battery to avoid any possible shorts and to keep the battery from discharging while wiring the module.

You can solder the connections or use the crimp connectors we have included. You MUST do one or the other to assure a trouble-free installation as well as operation.

MOUNTING CONTROL MODULE

It is important to select the proper location for the control module to avoid lengthening of the wiring harness.

We recommend the following locations:

- 1) Near the driver's kick panel if the power window switches are located on the driver's door panel.
- 2) As close as possible to the center console if switches are located in this area.

NOTE: Do not mount this module inside the doors. Malfunction of unit may result due to the excessive vibration and/or water to which vehicle's doors are continuously exposed.

WIRING COLOR CODE CS-5101

(from right to left)

5 PIN PLUG -22 GAUGE-

GREEN:	Negative output (300 milliamps) throughout operation of any of the four circuits.
GRAY:	Negative roll trigger for power plug #1, momentary or latching.
YELLOW:	Positive output (300 milliamps) throughout operation of any of the four circuits.
GRAY/WHITE:	Positive roll trigger for power plug #1, momentary or latching.
BLACK:	Chassis ground.

5 PIN 14 GAUGE POWER PLUG #1

BLACK:	To switch side of circuit #1. Normally closed in reference to BLACK/WHITE wire.
RED/WHITE:	Constant +12 Volt source.
BLACK/WHITE:	To motor side of circuit #1.
GRAY:	To switch side of circuit #2. Normally closed in reference to GRAY/WHITE wire.
GRAY/WHITE:	To motor side of circuit #2.

WARNING: SERIOUS DAMAGE MAY OCCUR
DO NOT CONNECT +12 VOLT POWER IF 22-GAUGE WIRE HARNESS IS DISCONNECTED OR MODULE IS UNGROUNDED.
DO NOT DISCONNECT GROUND OR 22-GAUGE WIRE HARNESS UNTILL ALL FUSES ARE REMOVED OR POWER IS DISCONNECTED.

WIRING COLOR CODE CS 5201

5 PIN 14 GAUGE POWER PLUG #1 (5201)

- BLACK:** To switch side of circuit #1. Normally closed in reference to BLACK/WHITE wire.
- RED/WHITE:** Constant +12 Volt source.
- BLACK/WHITE:** To motor side of circuit #1.
- GRAY:** To switch side of circuit #2. Normally closed in reference to GRAY/WHITE wire.
- GRAY/WHITE:** To motor side of circuit #2.

5 PIN 14 GAUGE POWER PLUG #2

- BROWN:** To switch side of circuit #3. Normally closed in reference to BROWN/WHITE wire.
- RED:** Constant +12 Volt source.
- BROWN/WHITE:** To motor side of circuit #3.
- BLUE:** To switch side of circuit #4. Normally closed in reference to BLUE/WHITE wire.
- BLUE/WHITE:** To motor side of circuit #4.

7 PIN PLUG - 22 GAUGE

- GRAY:** Negative roll trigger for power plug #1, momentary or latching.
- GRAY/WHITE:** Positive roll trigger for power plug #1, momentary or latching.
- BLACK:** Chassis ground.
- GREEN:** Negative output (300 milliamps) throughout operation of any of four circuits.
- YELLOW:** Positive output (300 milliamps) throughout operation of any of the four circuits.
- BLUE/RED:** Positive roll trigger for Power Plug #2, momentary or latching.
- BLUE:** Negative roll trigger for Power Plug #2, momentary or latching.

ACTIVATION OF ROLL TRIGGERS

The CS-5101 and CS-5201 modules are designed to be activated with a negative or positive trigger. This trigger can be momentary (door lock output) or latched. Only one method of activation is necessary.

ACTIVATION OF PLUG #1(CS-5101/5201)

- A) NEGATIVE TRIGGER ACTIVATION:** The 22ga gray wire activates the CS-5101 power plug (plug #1 on the CS-5201) when it is connected to ground. The most common way of supplying this trigger signal is by using the negative door lock output or the starter disable output. See figure #1.
- B) 12 VOLT TRIGGER ACTIVATION:** The 22ga gray/white wire activates the CS-5101 power plug (plug #1 on the CS-5201) when it is connected to +12 volts. If using the positive door lock trigger refer to figure #2.

FIGURE #1
Negative Trigger Activation.

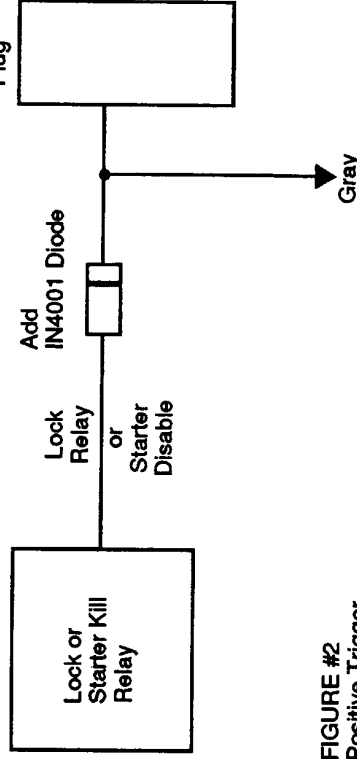
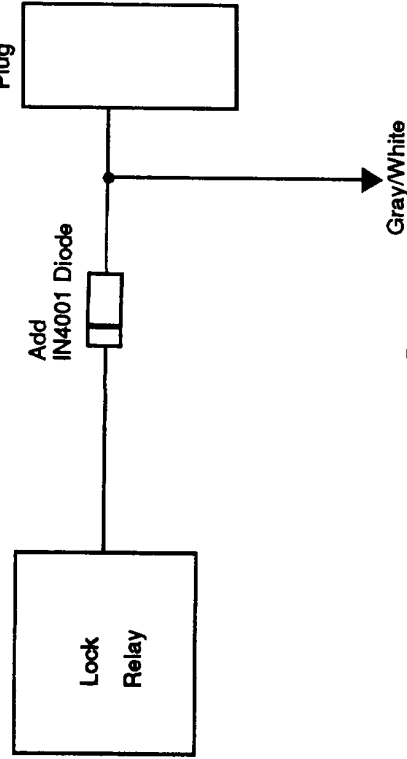


FIGURE #2
Positive Trigger Activation



ACTIVATION OF PLUG #2 (CS-5201)

- A) **NEGATIVE TRIGGER ACTIVATION:** The 22 ga blue wire activates power plug #2 when it is connected to ground.
- B) **12 VOLT TRIGGER ACTIVATION:** The 22ga blue/white wire activates plug #2 when it is connected to +12 volts.

TWO WINDOWS UP AND DOWN TRIGGER ACTIVATION

If power plug #2 is being used to roll two windows down, the alarm system being used must have a positive or a negative output that operates independently from the arm/disarm channel (aux. remote output).

You must be aware that when using aux channel output to activate roll-down trigger wire on window module, you will not be able to utilize that channel for a trunk release or anything else unless using a selector SPDT toggle switch.

NOTE: You may use two of the CS-5101 to roll windows up and down if no CS-5201 is available.

ROLLING FOUR WINDOWS UP

If CS5201 is used to roll four windows up only, positive or negative roll triggers for Power Plug #1 and Power Plug #2 may be joined together and connected to same trigger source.

POWER AND GROUND

- 1) Connect Red/White wire from power plug #/1 (CS5101 & CS5201) directly to the positive terminal of the battery using a 30 amp in-line fuse.
 - 2) Connect Red from power plug #2 (CS5201 only) also to the positive terminal of the battery using a second 30 amp fuse.
- NOTE:** When rolling two windows UP and DOWN, you may use one 12-14 ga. power wire and fuse for both power plugs.

- 3) Connect the 22 gauge black wire to a clean, paint-free chassis ground.

WARNING: Do not connect power wires to any source other than DIRECTLY to the battery. This prevents damage to factory fusible links or circuit breakers.

POWER WINDOW INTERFACE GENERAL INFORMATION

Before beginning connections, it is important to determine what type of motor/switch circuitry exists in the vehicle. In order to do this you must gain access to the window motor wires which are located behind the window switches.

If switches are door-mounted, you must go into the driver's door to wire the driver's window. Passenger side motor can also be wired at this point or at the kick panel. If switches are mounted in the center console, then both windows can be wired at this point.

There are three common types of power window systems which are the most widely used by car manufactures today; A) Normally Grounded, B) Normally Powered, and C) Normally Open. The basic operation of each one of these three systems is as follows:

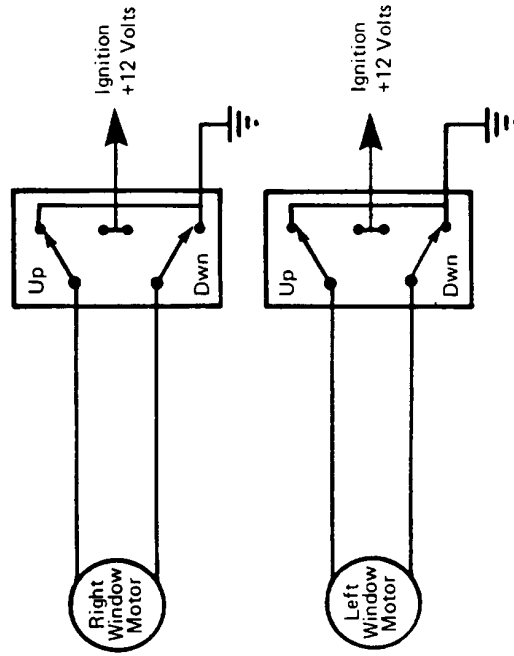
WARNING: BE CAREFUL when connecting window motor wires to the module power plug, the STRIPED WIRE always goes TOWARDS the motor. If reversed, the module or factory switch may be DAMAGED permanently and NOT covered under warranty.

SYSTEM "A": NORMALLY GROUNDED SWITCHING POWER

DESCRIPTION

Normally Grounded Systems can be identified by determining if the motor leads (output of switch) rest at GROUND (-) when the ignition key is ON and the window switch is in the normal (relaxed) position. This system is the most common, and it is normally used in most American (except Camaros and Firebird) and Japanese vehicles. See figure #3.

FIGURE #3

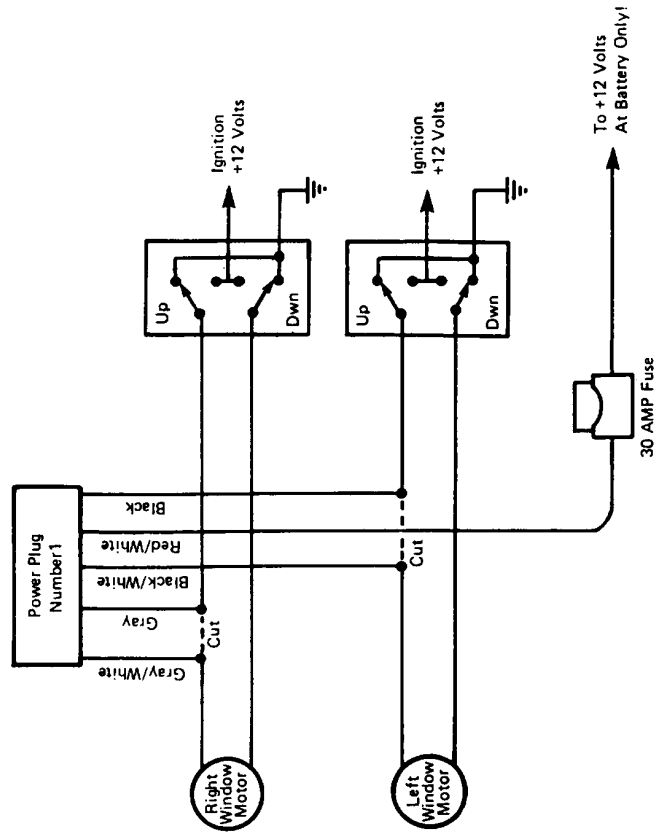


As you can see in the above diagram, when the window switch is pressed to the up or down position, it switches one of the motor leads from ground to +12 volts to make the window roll up or down. The other lead remains grounded. This is exactly what the CS-5101 or CS-5201 module accomplishes. It temporarily disconnects the up wire and supplies +12 volts to the motor side causing the window motor to rotate in the UP direction (or in the DOWN direction if connected to the down wire).

NORMALLY GROUNDED SYSTEM: TWO WINDOWS UP (CS-5101/5201)

When rolling windows UP, simply locate and cut the motor wires that show +12 volts while the window is going UP and grounded while the switch is in the normal (relaxed) position. Connect cut wire ends to power plug #1 according to figure #4. REMEMBER that the wire with the white stripe goes toward the motor!

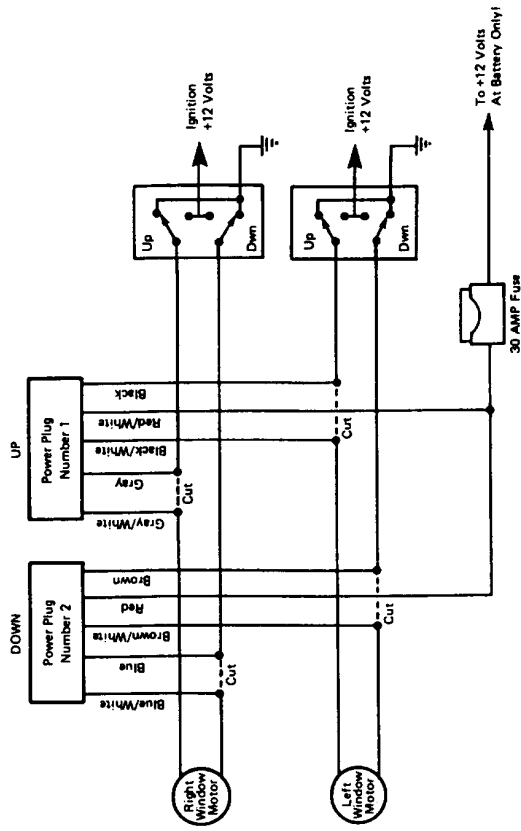
FIGURE #4



**NORMALLY GROUNDED SYSTEM:
TWO WINDOWS UP AND DOWN (CS-5201)**

- A) Rollup - Follow the "NORMALLY GROUNDED SYSTEM; TWO WINDOWS UP" section using power plug #1. Power plug #2 will be used for rolldown.
- B) Rolldown - Locate and cut the motor wire - at each window switch - that shows +12 volts while the desired window is going DOWN and is at ground while the switch is in the normal (relaxed) position. Wire cut ends to power plug #2 according to figure #5. REMEMBER that the wire with the white stripe goes toward the motor!

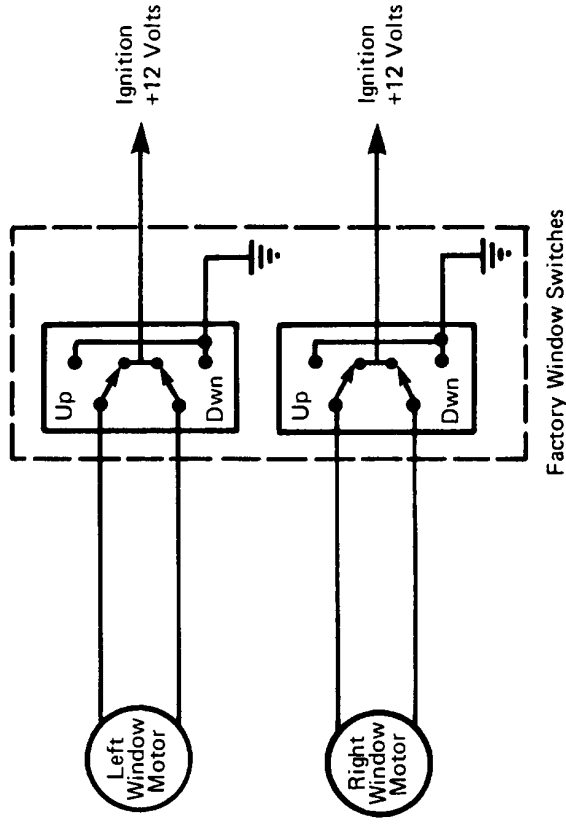
FIGURE #5



**SYSTEM "B": NORMALLY POWERED
(+12 VOLTS) SWITCHING GROUND**

Normally Powered Systems can be identified by determining if the motor leads (output of switch) rest at +12 VOLT (+) when the ignition key is ON and the window switch is in the normal (relaxed) position. This type of system is usually found in most European vehicles such as: Mercedes, Audi, Jaguar and some Porsche and VW models. Figure #6 illustrates a basic setup on this kind of system.

FIGURE #6



NORMALLY POWERED SYSTEM: TWO WINDOWS UP (CS-5101/5201)

Locate the positive UP wire on each window switch. This wire will remain at +12 volts while the window is going UP and go to ground while the window is being lowered. Cut each wire and connect cut ends into window module power plug #1 as shown in figure #7. REMEMBER that the wire with the white stripe goes toward the motor!

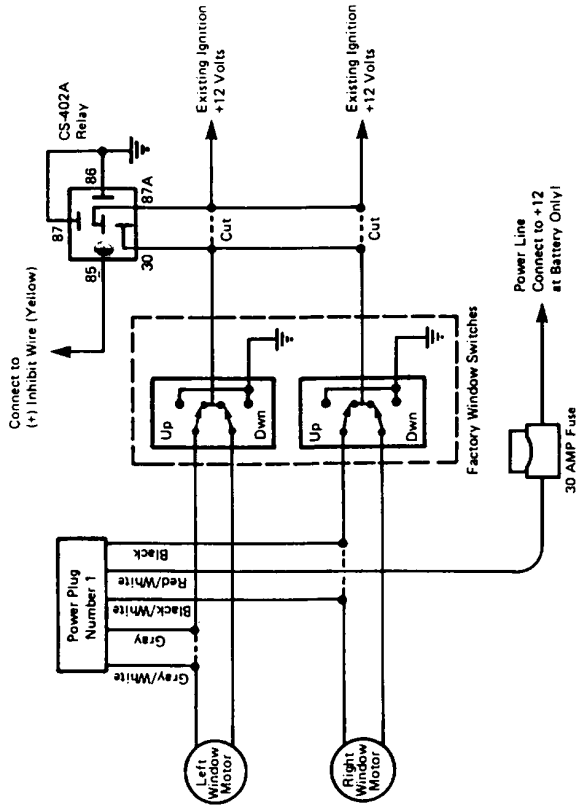
When interfacing our module with this system, you must add an SPDT relay to change the circuit to a normally grounded system while the module is in operation. This is accomplished as follows:

Locate and cut the wire(s) feeding +12 volts to the window switches. Connect the switch end(s) to terminal #30 of the relay. The remaining end(s) connects to terminal #87a. Terminal #87 and #86 go to ground, and terminal #85 connects to the YELLOW inhibit wire located in the small plug on the window module. Refer to figure #7.

NOTES:

- Relay must be connected at window switches only!
- Use 14 GA wire for terminals #30, #87a and #87.
- Use one relay for every two windows.

FIGURE #7

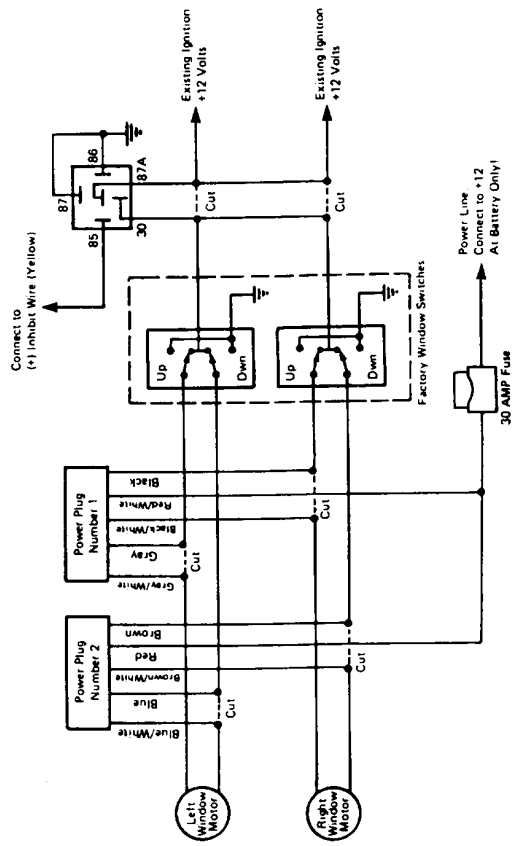


NORMALLY POWERED SYSTEM: TWO WINDOWS UP AND DOWN (CS-5201)

A) Rollup - Follow the "NORMALLY POWERED SYSTEM; TWO WINDOWS UP" section using power plug #1. Power plug #2 will be used for rollout.

B) Rolldown - Locate the positive DOWN wire on each window switch. This wire will remain at +12 volts while the window is going DOWN and go to ground while the window is being raised. Cut each wire and connect cut ends into window module power plug #2 as shown in figure #8. REMEMBER that the wire with the white stripe goes toward the motor!

FIGURE #8

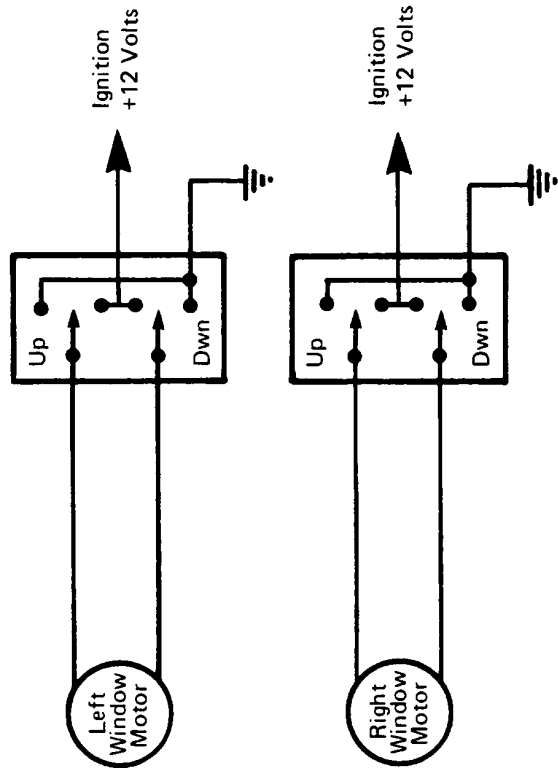


**SYSTEM "C":
NORMALLY OPEN SYSTEMS;
SWITCHING POWER & GROUND**

DESCRIPTION

This type of window system is normally found in Camaros and Firebirds. It is referred to as a normally open system because the motor leads rest at ground when the switch is in the normal (relaxed) position. See Figure #9.

FIGURE #9



NORMALLY OPEN SYSTEMS: TWO WINDOWS UP

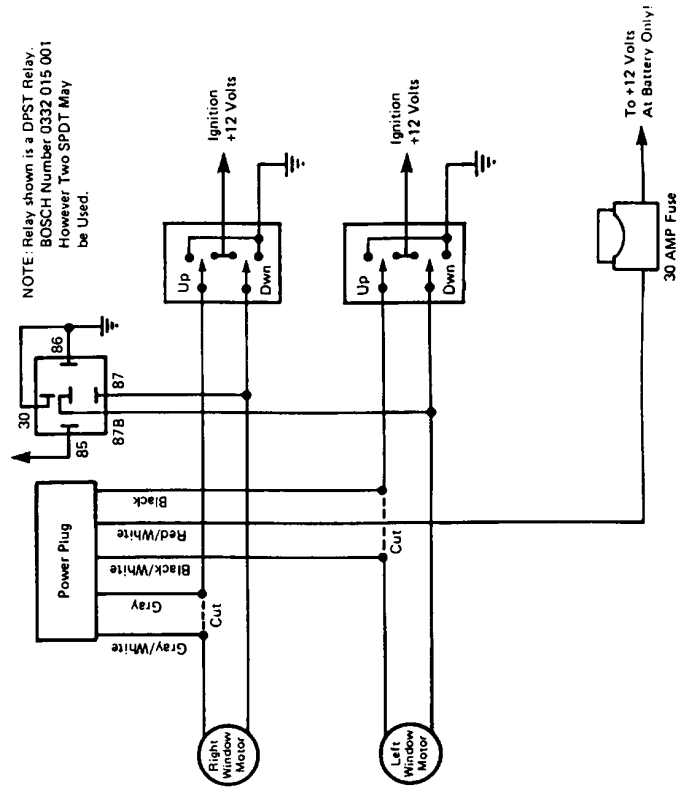
DESCRIPTION

Simply locate the motor wire, at each switch, that has +12 volts while the window is going UP. Cut each wire and connect cut ends into window module power plug as shown in figure #10. REMEMBER that the wire with the white stripe goes toward the motor!

Since this is an open system, a DPST relay must be wired to the supply ground to the other side of the motor. The wiring for this relay is shown in figure #10.

IMPORTANT: The relay being used is a DPST type (BOSCH part #0332 015 001). If no DPST relay is available, two SPDT relays may be used instead. Do not use the normally closed contact (87a) in this case.

FIGURE #10



NORMALLY OPEN SYSTEMS: TWO WINDOWS UP AND DOWN (CS5201)

- A) Rollup -
Follow the "NORMALLY OPEN SYSTEM; TWO WINDOWS UP" section using power plug #1. Power plug #2 will be used for rolldown.
- B) Rolldown -
Locate and cut the motor wire - at each window switch - that shows +12 volts while the desired window is going DOWN and is open while the switch is in the normal (relaxed) position. Connect cut ends to power plug #2 according to figure #11. REMEMBER that the wire with the white stripe goes toward the motor!
- C) Since this is an open system, a second DPST relay (BOSCH part #0332 015 001) must be wired to supply ground to the other side of the motor while the window is rolled down by the module. The wiring for this relay is shown in figure #11.

Be sure to connect relays' outputs (#87 & 87B) in between the switch and the window module ONLY.

NOTE: If no DPST relays are available, four SPDT relays may be used instead; do not use the normally closed contact (87a) in this case. Furthermore, two of these relays MUST be activated with the negative inhibit wire (GREEN) as the positive inhibit wire (YELLOW) only puts out 300 milliamps. We recommend that the proper DPST relays (CS-402b) be used.

NORMALLY OPEN SYSTEMS: TWO WINDOWS UP AND DOWN (CS5201)

