AUTOPAGE®

Power Window Roll Up/Roll Down Interface

INSTALLATION AND OPERATION MANUAL

Model: AC-78

Introduction

The AC-78 is a microcomputer controlled power window activation module. It can control 2 windows to roll up automatically when the alarm system is armed. In addition, the AC-78 can be used to vent closed windows and Roll down the windows upon disarming the alarm system. The AC-78 also adds One-Touch roll up and roll down control to the existing power window system.

Alarm Requirement:

1.The alarm system must provide a grounded output wire when the alarm is armed. This wire is traditionally used for starter disable. Note: If a starter disable relay is part of the installation, the starter disable relay must have a diode across the 85 and 86 terminals to polarize it.

2.The alarm system must provide a pulsed ground channel 2 or channel 3 output to control the ventilation and roll down functions. Alarms Without channel 2/3 output can only roll up the window.

Precautions:

1. Connect this device to automotive power window systems only. Low current linear actuator and sunroofs are not recommended.

2. Identify the power window system type before starting the installation.

3. DO NOT MOUNT THE AC-78 MODULE INSIDE THE DOOR CAVITY. IT WILL FAIL OVER TIME DUE TO MOISTURE AND THIS IS NOT COVERED BY ANY WARRANTY.

WARNING! USE A TEST LIGHT OR VOLT METER TO IDENTIFY THE POWER WINDOW SYSTEM TYPE BEFORE INSTALLATION BEGINS!

There are basically three types of power window systems used in automobiles at this time. The differences between the three are as follows.

Type A:

The power window control switches for a type A window system never change polarity when the ignition key is turned on. The switches in a type A system either rest at ground or rest open (no connection). The switches in a type A system will either switch +12 volts and ground at the same time to achieve up or down window motor polarity, or both wires will be resting at ground and when the window switch is activated, one wire will switch to +12 volts while the second wire will remain grounded (Same as a 5 wire power door lock system). In all variations of the type A system, the power window control switches always provide +12 volt output to operate the window motors.

Type B:

The power window control switches in a type B system change polarity when the ignition key is turned on. The wires in a type B system will rest at ground until the ignition key is turned on. Once the ignition key is turned on, the wires will be resting at +12 volts. When the ignition key is turned on and the window switch is activated, the window switch will provide a ground signal to the window motor. (Just the reverse of a type A system). For the type B system, two additional relays must be added to reverse the polarity of the switched ground output wires.

Type C:

The power window control switches in a type C system are the same as in a type A system with one exception. The window motors in a type C system are grounded by the motor housing and use two different coil windings to run the window motor up and down. Type C window systems are rare but it is important to make a simple test to insure that the vehicle you are working on does not use the type C window system.

Installation

Repeat the following steps to properly install the AC-78

1. Locate the power window control switches. Most all-foreign and domestic automobiles have the power window control switches located on the driver's door or in the middle of the floor console. Remove all materials to gain access to the switches and wiring.

2A. If the window control switches are located in the drivers door, it will be necessary to run the wiring from the AC-78 through the door jamb boot and into the driver's door cavity. Care must be taken not to allow the AC-78 wires to interfere with power window mechanism or any other mechanical device located in the vicinity of the new wires.

The AC-78 must be mounted inside the passenger compartment. Locating the AC-78 control module inside the door cavity will eventually damage the module, as it is not water resistant. Water damage will automatically void the warranty.

2B. If the window control switches are located in the center console, there should be plenty of room to locate the control module and there should be plenty of wire to reach the switches.

3. Using a test light or a voltmeter, test and locate the Up + and Down + wires provided by the window control switches for both the drivers and passengers window.

Note 1: To test for a type B window system, turn on the ignition key and Up and Down wires will show ground when the control switch is activated.

Note 2: If the system you are working with tests like a type A system, make another test to make sure it is not a type C system. After you have located the Up + and Down + wires for one of the windows, pull the wire plug off the window switch and test the same Up + and Down + wires to see if they are GROUNDED. If the Up + and Down + wires are GROUNDED when the plug is pulled from the switch, this is a Type C System. Follow the wiring for the Type C System.

4. Follow the enclosed wiring diagram for the type system you are working with.

Wiring (Type A system as reference)

Brown and Blue wires:

1. Locate the + Up wire for window #1 and cut the wire in half.
2. Connect the Brown wire to the + Up wire that is connected to the window control switch.
3. Connect the Blue wire to the remaining + Up wire.

White and Green wires:

1. Locate the + Down wire for window #1 and cut the wire in half.
2. Connect the White wire to the + Down wire that is connected to the window control switch.
3. Connect the Green wire to the remaining + Down wire.

Purple wire:

For type A and B systems, connect the Purple wire to the frame of the vehicle.

For type C system, Do Not connect the Purple wire. Tape the Purple wire and make sure it cannot make any connection to ground.

Brown/Black and Blue/Black wires:

1. Locate the + Up wire for window #2 and cut the wire in half.
2. Connect the Brown/Black wire to the + Up wire that is connected to the window control switch.
3. Connect the Blue/Black wire to the remaining + Up wire.

White/Black and Green/Black wires:

1. Locate the + Down wire for window #2 and cut the wire in half.
2. Connect the White/Black wire to the + Down wire that is connected to the window control switch.
3. Connect the Green/Black wire to the remaining + Down wire.

Purple/Black wire:

For type A and B systems, connect the Purple/Black wire to the frame of the vehicle.

For type C system, Do Not connect the Purple/Black wire. Tape the Purple wire and make sure it cannot make any connection to ground.

Red wire:

Connect the Red wire to a constant source of +12 volts. The connection point must be able to deliver a minimum of 30 amp of current. It is strongly recommended to connect to the Red wire to the + post of the battery.

Orange wire:

Connect the Orange wire to the grounded when armed wire provided by the alarm control box. This grounded wire must remain on as long as the alarm is in an armed state. When the alarm is disarmed, this wire will not be grounded.

Note: The correct wire on the alarm is normally the wire specified to operate the starter disable relay.

Black wire:

Connect the Black wire directly to the frame of the vehicle. Use a ring terminal and a bolt to secure the Black wire to ground.

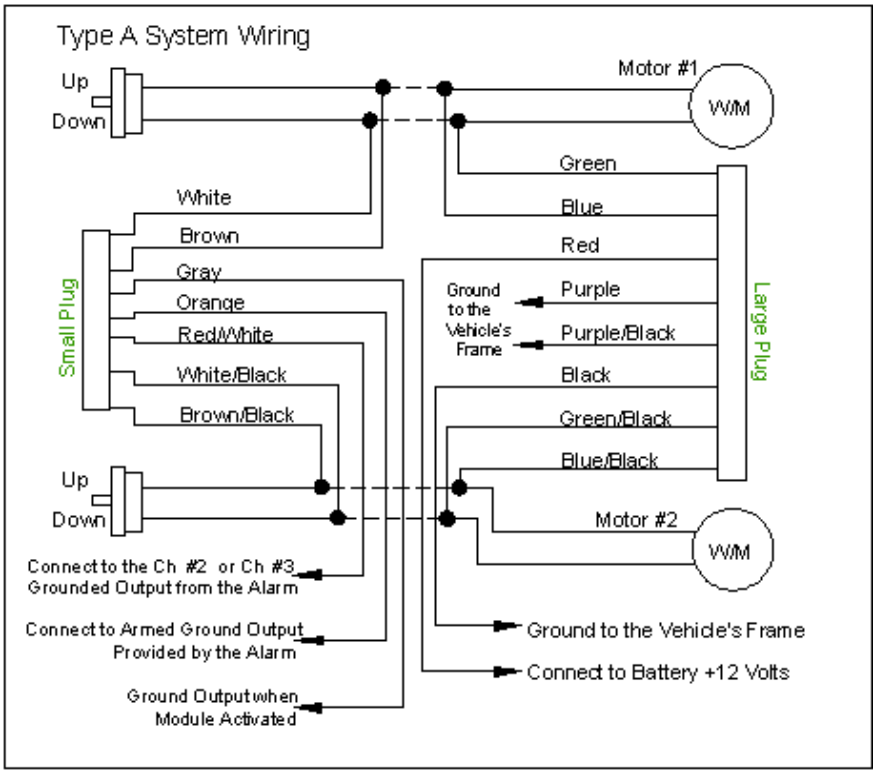
Red / White wire:

Connect the Red/White wire to the channel #2 or channel #3 output of the alarm system depending on the manner you want the alarm to activate the roll down and ventilation functions.

Wiring (Continued)

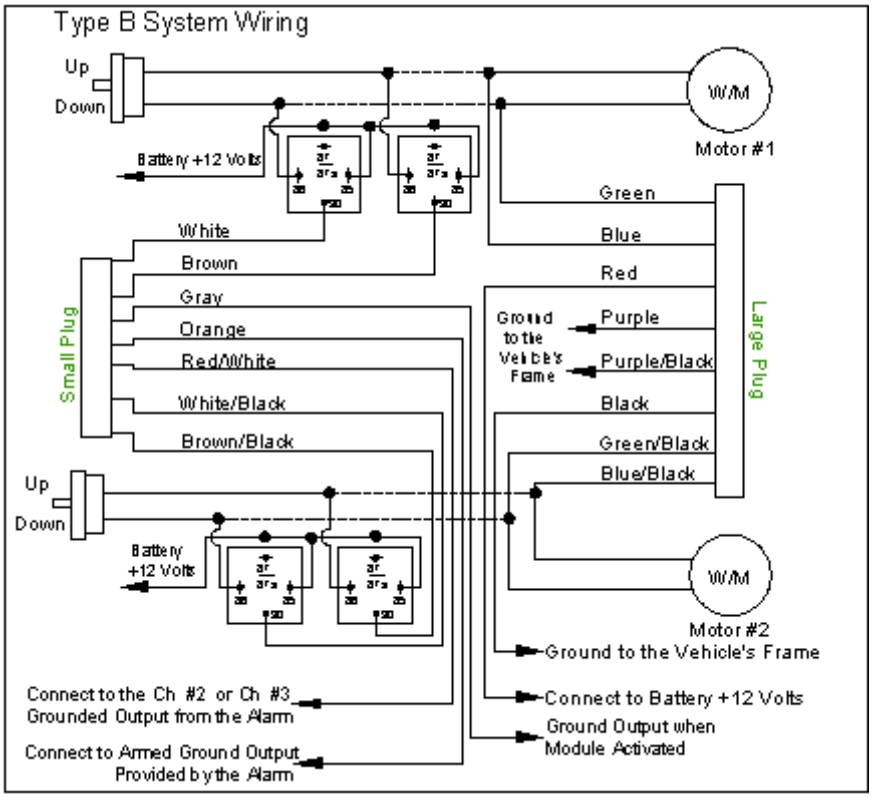
Gray wire:

The gray wire provides a grounded output when the AC-78 is rolling up the windows. This wire could be connected to a relay to interrupt a ground feed signal to the alarm system. Some shock sensors could be triggered by the window rolling up and prematurely set off the alarm moments after it is set. Use this wire as needed. Tape off or remove this wire from the harness if it will not be used.



Note: The wire positions shown the diagram above do not match the actual wire positions on the plugs.

Wiring



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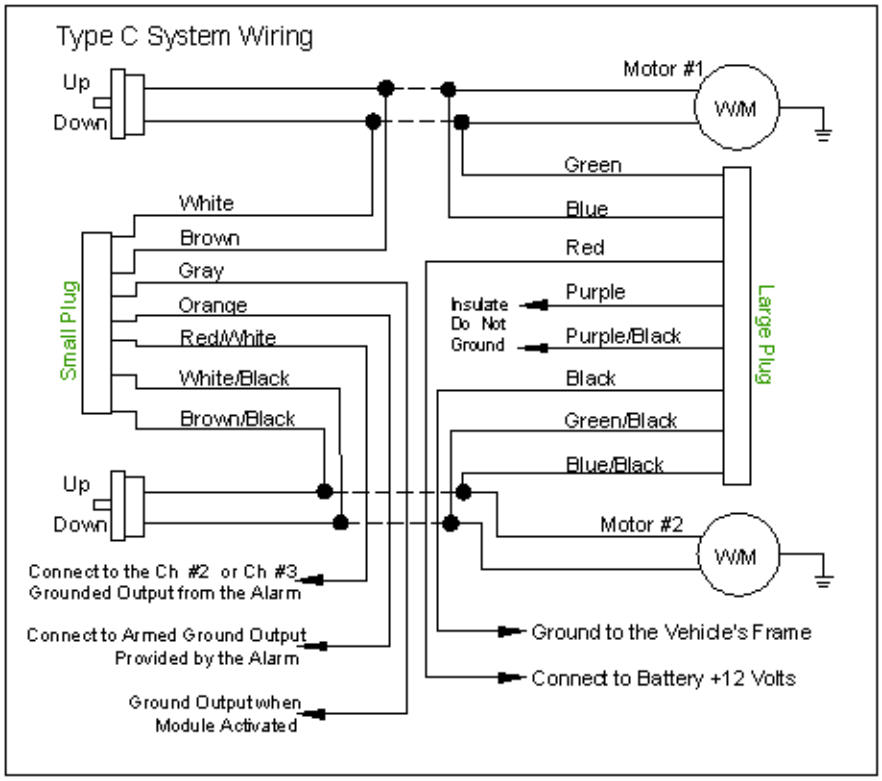
Wiring



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Setting the load switches:

There are (4) load control dipswitches located on the side of the control housing. These switches adjust the sensitivity of the load stop safety system built into the AC-78. There are (4) load settings available for each window. A HIGH setting is for windows that demand high current to toll up or down. A low setting are for window that require less current to roll up and down. The default setting is “LOW +”. This setting should be sufficient for most new vehicle power window systems. Adjust the settings as needed to accommodate the window system you are working with. If none of the settings are sufficient, you window may be binding and need adjustment.

Dip Switches	SW1	SW2	SW3	SW4
HIGH	OFF	OFF	OFF	OFF
MEDIUM	ON	OFF	ON	OFF
LOW+	OFF	ON	OFF	ON
LOW	ON	ON	ON	ON
	MOTOR 1		MOTOR 2	

Operation

When properly connected, the AC-78 will operate in the following manner:

Auto Roll Up:

When the alarm is armed, the 2 windows connected to the AC-78 will roll all the way p and then stop.

Auto Roll Down:

Activate channel #2 or channel #3 of the alarm system within 30 seconds after the alarm has been disarmed. Both windows connected to the AC-78 will roll all the way down and then stop.

Ventilation:

Activate channel #2 or channel #3 within 30 seconds after arming the alarm. Once the windows reach a full up position, they will roll back down about 1/2”. If more ventilation is desired, activate channel #2 or #3 a second and third time to lower the windows in increments of approximately 1/2”.

Window roll up bypass:

Activate channel #2 or channel #3 before arming the alarm and the windows will not roll up.

Quick Stop:

Disarming the alarm system before the windows have reached full roll up position will stop the roll up function. Re-arming the alarm will allow the windows to reach the full roll up position.

One Touch Roll Up and Roll Down from the Window Control Switch:

Once installed, the AC-78 will add one touch roll up and roll down function to your window control switches. The new operation will be as follows.

1.Quickly press the window control switch to the roll up position and release it. The window will roll all the way up on its own and stop when fully up.

2.Quickly press the window control switch to the roll down position and release it. The window will roll all the way down on its own and stop when fully down.

3.Normal roll up and down control is not eliminated. Press the window control switch to the up or down position and hold it. The window will begin to move in the direction you have selected. Release the switch and the window will stop as normal.

4.When the window is rolling up or down by the one touch function, quickly press the switch in the same direction (up or down) and release it. The window will stop moving.

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