POWER WINDOWS

1998 Pontiac Bonneville

1998 ACCESSORIES & EQUIPMENT
General Motors Corp. - Power Windows

Buick; LeSabre
Oldsmobile; Eighty Eight, LSS & Regency
Pontiac; Bonneville

DESCRIPTION

Power window system uses a permanent magnet motor to operate each window. Motor operation is controlled by a master switch assembly alone or in combination with individual window switches. Window is raised or lowered depending on polarity of current applied to window motor.

Models use a control module to access an express mode of operation. When left front window switch pushed to first detent or is held in down position for .3 second, module activates relay to apply full battery voltage to window motor. This provides current to quickly and fully open window.

OPERATION

When ignition switch is in RUN position, power for window system is supplied to master switch assembly through fuse block circuit breaker. When any master switch is operated, power is applied through single window switch to motor, driving window motor in either direction to either raise or lower window. Each motor is protected by an internal circuit breaker which will reset after switch is released (voltage removed).

COMPONENT LOCATIONS

COMPONENT LOCATIONS TABLE

Component	Location
Express Down Module	Lower Center Of Left Front Door, Behind Door Trim Panel
Instrument Panel Fuse Block (Bonneville & Eighty-Eight)	Left End Of Instrument Panel Carrier
Instrument Panel Fuse Block (LeSabre, LSS & Regency)	Under Left Side Of Instrument Panel, On Sound Insulator
Instrument Panel Junction Block	Under Right Side Of Instrument Panel, Near Rear Of Glove Box

ADJUSTMENTS

WINDOWS

Front & Rear

1) On rear door, ensure window does not come out of run channel during adjustment. Ensure window is in full up position. Remove door trim panel and water deflector.

2) Tighten front run channel in center of slot. Loosen window-to-module sash nuts.

3) Lower glass down 3 inches (76.2 mm). Slide glass rearward in sash slots. Raise glass up.

4) Pry glass up with large screwdriver. Tighten window-to-sash nuts.

5) Cycle window up and down to verify operation. Install water deflector and door trim panel.

DOORS

Door adjustments are provided through use of floating anchor plates in door and front body hinge pillars. Door adjustments should be made in order of up and down, forward and rearward then in and out. Before any alignments are made, door lock striker should be removed to allow door to hang freely on it hinges. Door lock striker should not be used to force door into alignment. Tighten bolts to specification. See TORQUE SPECIFICATIONS.

TROUBLE SHOOTING

NOTE: To prevent misdiagnosis, ensure no Diagnostic Trouble Codes (DTCs) exist. See article in BODY CONTROL MODULE article.

1) Check terminal contact before replacing any component. If power windows, check window circuit breaker, located in fuse block. If circuit breaker is tripped, check for short to ground in Brown wire between fuse block and master window switch.

2) If windows move slowly, ensure window are free of mechanical binding, battery is fully charged and ground is clean and tight.

3) If power windows do not operate for about 10 minutes or until door is opened after ignition is turned off, see Retained Accessory Power wiring diagram in POWER DISTRIBUTION article.

4) Check for broken or partially broken wire inside of insulation which may cause system failure but test okay in continuity and voltage check.

5) Check after market electronic equipment that may affect other systems for proper installation.

SYSTEM CHECK

1) With all windows closed, turn ignition switch to RUN position. Briefly (less than .3 second) press master window switch down. Window should descend a small distance, then stop.

2) Press left front window switch down and release (more than .3 second). Window should descend completely (express mode).

3) Press left front window switch up. Window should raise as long as switch is held up, then stop when switch is released (no express). Repeat step 2). While window is moving down in express mode, press switch upward. Window should stop express decent.

4) Lower and raise other windows from master switch. All windows should operate quietly and smoothly through full range of travel.

5) Lower and raise each window from window switches. All windows should operate quietly and smoothly through full range of travel. Note any symptoms and proceed to appropriate test.

6) Place window lockout switch in LOCK position (if

equipped). Rear windows should not operate from individual switches, but operate normally from master switch.

SYSTEM TESTS

NOTE: Left front window switch is referred to as master window switch.

NOTE: Connector Test Adaptor Kit (J 35616-A) must be used whenever a diagnostic procedure requires checking or probing a terminal to prevent damage to terminal. To locate and identify terminals, see WIRING DIAGRAMS.

ALL WINDOWS INOPERATIVE

1) Turn ignition switch to RUN position. Using a test light, backprobe between ground and Brown wire terminal at master window switch connector. If test light illuminates, go to next step. If test light does not illuminate, repair open in Brown wire between power window 30-amp circuit breaker and master window switch.

2) Backprobe between Brown wire and Black wire terminals (ground) of master window switch harness connector. If test light illuminates, check for poor connection at master window switch connector. If connection is okay, replace master window switch. If test light does not illuminate, check for poor connection at ground point. If connection is okay, repair open in Black wire between master window switch and ground connection.

LEFT FRONT WINDOW DOES NOT OPERATE

1) Disconnect express down module connector, located at front of left front door. Turn ignition switch to RUN position. Connect test light between ground and express down module connector terminal "A" (Brown wire). If test light illuminates, go to next step. If test light does not illuminate, repair open in circuit No. 141 (Brown wire) between power window 25-amp circuit breaker and express down module.

2) Connect test light between express down module connector terminals "B" (Gray wire) and "C" (Dark Blue wire). Press left front window switch to UP and DOWN positions. If test light illuminates in both switch positions, go to next step. If test light does not illuminate in both switch positions, check circuits No. 1136 (Gray wire) and No. 164 (Dark Blue wire) between express down module and master switch. If circuits and connector contact is okay, replace master window switch.

3) Disconnect left front window motor connector. Connect test light between ground and left front window motor connector terminal "B" (Dark Blue wire). Press left front window switch at master window switch to UP position. If test light illuminates, go to next step. If test light does not illuminate, repair open in circuit No. 164 (Dark Blue wire) between left front window motor and splice S500.

4) Reconnect left front window motor connector. Connect a fused jumper between express down module connector terminals "A" (Brown wire) and "D" (Brown wire). If left front window motor operates, go to next step. If left front window motor does not operate, repair open in circuit No. 165 (Brown wire) between express down module and left front window motor. If wire and connector contact at left front motor are okay, replace motor.

5) Connect a fused jumper between ground and express down module harness connector terminal "D" (Brown wire). Press left front window switch on master window switch to UP position. If left front window motor does not operate, check for proper terminal contact at left front window motor. If terminal contact is okay, replace motor.

If left front window motor operates, check express down module harness connector for poor terminal contact. If okay, replace express down module.

MASTER SWITCH INOPERATIVE, INDIVIDUAL SWITCHES ARE OPERATIVE

1) Disconnect master window switch 10-pin connector C1. Turn ignition switch to RUN position. Using a test light connected to ground, backprobe master switch connector terminal "F" (Brown wire). If test light is on, go to next step. If test light is off, repair open in circuit No. 141 (Brown wire) between master switch and power window 30-amp circuit breaker.

2) Reconnect master window switch connector. Leave ignition switch in RUN position. Using test light, backprobe between master switch connector C1 terminals "B" (Tan wire) and "A" (Light Blue wire). Press right front window switch at master switch to UP and DOWN position. If test light does not illuminate in both positions, check for poor connection at master switch connector. Repair as necessary. If connection is okay, replace master switch.

ONE WINDOW IS INOPERATIVE FROM INDIVIDUAL SWITCH OPERATES FROM MASTER SWITCH

1) Disconnect inoperative window switch connector. Turn ignition switch to RUN position. Using a test light connected to ground, probe inoperative window switch connector terminal "A" (Brown wire on Bonneville or Dark Blue wire on all others). If test light illuminates, go to next step. If test light does not illuminate, repair open in Dark Blue wire between inoperative window switch and master window switch (except Bonneville). On Bonneville, repair open Brown wire between inoperative window switch and splice 501 (located in driver's door near master window switch connector).

2) Check inoperative window switch for poor connections. Repair as necessary. If connection is okay, replace inoperative window switch.

ONE WINDOW (EXCEPT LEFT FRONT) INOPERATIVE FROM MASTER & INDIVIDUAL SWITCH, ALL OTHERS OPERATE

1) Disconnect inoperative window switch connector. Disconnect master switch connector. Turn ignition switch to RUN position. Connect fused jumper between master window switch connector Brown wire terminal (from relay) and inoperative window switch connector Dark Blue wire terminal. Connect second fused jumper between ground and inoperative window switch connector Brown wire terminal (to motor). See WIRING DIAGRAMS. Note results.

Connect fused jumper between master window switch connector Brown wire terminal (from power) and inoperative window switch connector Brown wire terminal (to motor). Connect second fused jumper between ground and inoperative window switch connector Dark Blue wire terminal. See WIRING DIAGRAMS. Note results.

If window motor operates in both cases go to step 3). If window motor does not operate in both cases, go to next step.

2) Check inoperative window motor connector for proper terminal contact. Check for open circuit in Dark Blue wire and/or Brown wire between motor and switch of inoperative window. If connection and/or circuits are okay, replace inoperative window motor.

3) Reconnect master window switch connector. Disconnect inoperative window switch. Connect test light between ground and inoperative window switch connector terminal "E" (Light Green wire if right rear, Dark Green wire if left rear or Light Blue wire if right front). Press inoperative window switch on master switch to UP position. If test light illuminates, go to step 5). If test light does

not illuminate, go to next step.

4) Check for open circuit in Light Green wire (right rear window), Dark Green wire (left rear window) or Light Blue wire (right front window) between master window switch and inoperative power window. If okay, replace master window switch. Recheck system operation.

5) If left or right rear window is inoperative, connect test light between ground and inoperative window switch connector Purple wire terminal "B". If right front window is inoperative, connect test light between ground and Tan wire terminal. Press inoperative window switch on master switch to DOWN position. If test light illuminates, go to step 7). If test light does not illuminate, go to next step.

6) Check for open circuit in Purple wire (left or right rear window) or Tan wire (right front window). If okay replace inoperative window switch. Recheck system operation.

7) Check inoperative window switch connector for proper terminal contact. If okay, replace inoperative window switch. Recheck system operation.

RIGHT FRONT, LEFT REAR OR RIGHT REAR INOPERATIVE FORM MASTER WINDOW SWITCH; ALL OPERATE NORMALLY FROM INDIVIDUAL SWITCH

1) Disconnect master window switch connector C1. Turn ignition switch to RUN position. Using a test light connected to ground, backprobe master switch connector terminal "F" (Brown wire). If test light is on, go to next step. If test light is off, repair open in circuit No. 141 (Brown wire) between master switch and power window 30-amp circuit breaker.

2) Check for poor connection at master switch connector. Repair as necessary. If connection is okay, replace master switch.

EXPRESS DOWN DOES NOT OPERATE

NOTE: Improper operation of express down function may occur if excessive effort is necessary to move window up and down. This may be caused by an improperly wound window regulator spring or worn or misadjusted regulator.

Check for open in Dark Blue wire between master switch and express down module (located in center of left front door). Repair wire if necessary. If wire is okay, check for poor connections at express down module connector Brown wire or Dark Blue wire terminals. If connections are okay, replace express down module.

REMOVAL & INSTALLATION

* PLEASE READ THIS FIRST *

WARNING: Ensure power window switch has been disconnected when working inside driver's door. If activated, express down feature allows window to drop down very quickly without stopping which could cause personal injury.

WINDOW MOTOR (ACTUATOR)

CAUTION: If motor removal from vehicle is necessary, relieve tension from actuator spring. Failure to relieve tension on actuator spring could cause cross arm assembly to suddenly spring closed when removing window actuator which may cause personal injury.

Removal & Installation

Lower window one inch (2.54 cm) below full up position. Disconnect negative battery cable. Remove necessary screws, fasteners and electrical connectors to remove door trim panel and water shield. Remove window regulator actuator (motor) nuts and actuator. To install, reverse removal procedure.

EXPRESS DOWN WINDOW MODULE

Removal & Installation

Remove door trim panel covering and water deflector. Release retaining clip. remove express module. To install, reverse removal procedure.

WINDOW SWITCH

Removal & Installation

Using a thin-blade screwdriver, pry between switch and door panel for spring clip (if equipped). Press down on clip to release switch and pry outward. Disconnect electrical connector and remove switch. To install, reverse removal procedure.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Application	Ft. Lbs. (N.m)
Door Hinge Bolts	35 (47)
Striker Bolts	18 (24)
	INCH lbs. (N.m)
Glass Retaining Bolts	72 (9)

WIRING DIAGRAMS

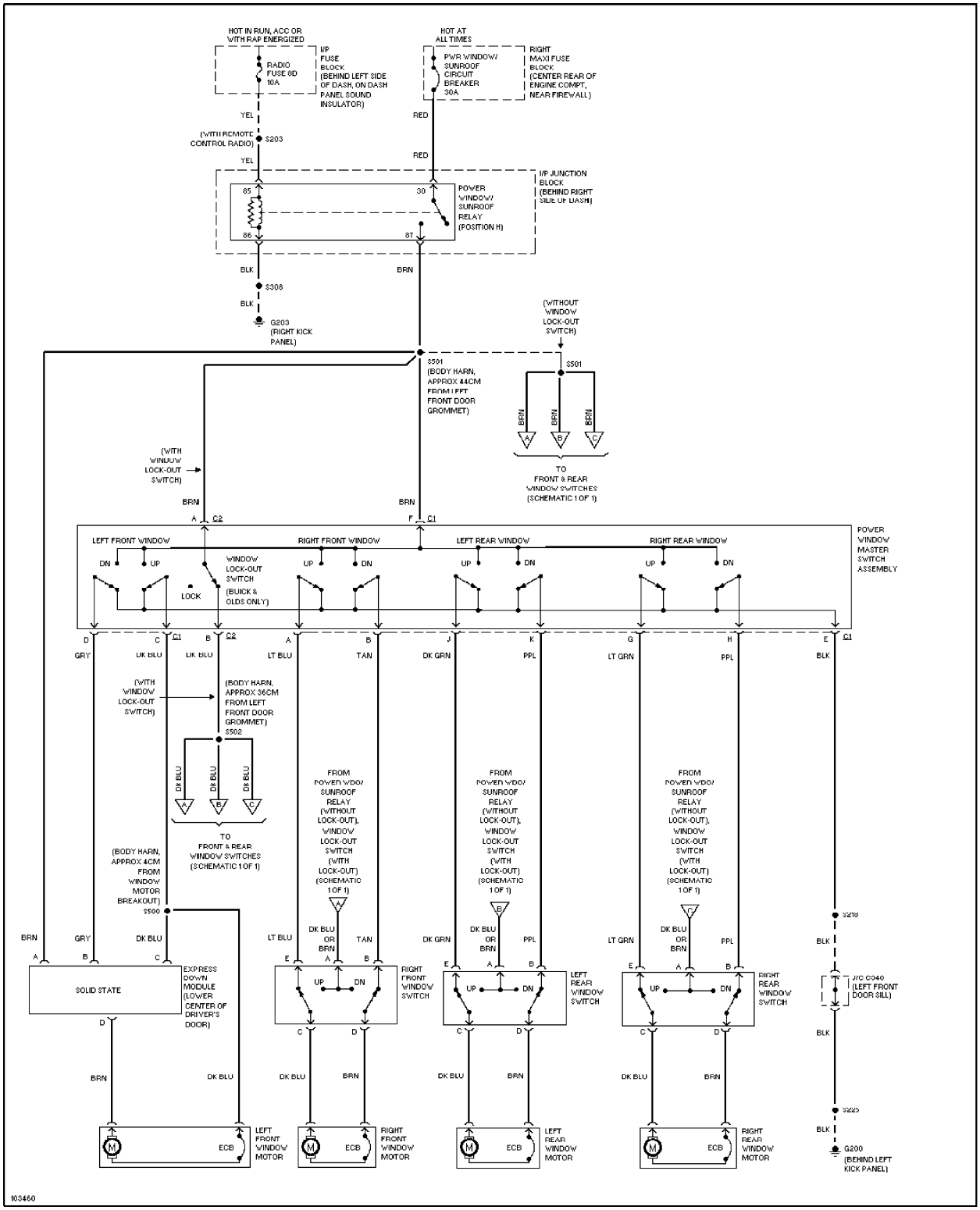

Fig. 1: Power Window System Wiring Diagram