

2007-2013 Corvette Steering Wheel Radio Button Box

Installation Guide

Rev. 1.2

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Thank you for purchasing the Accutach Co. 07-13 Corvette Steering Wheel Radio Button Box. It is designed to allow you to repurpose the radio control buttons on your stock 2007-2013 Chevrolet Corvette steering wheel to control other accessories. Not all Corvettes will have the buttons on the left.



WARNINGS and DISCLAIMERS:

You use this product at your own risk. Accutach Company is not responsible for personal injury or property damage through the use of this product. While it is possible to use an DPDT switch in the Corvette's steering wheel control wire to switch the radio control button function from radio control to accessory control and back again, Accutach Company strongly recommends that users permanently change the button functions from radio control to control of your accessory. If you choose to use a switch against our recommendations be careful make sure you know how the switch is set prior to pressing the button. You'd hate to activate a line lock at speed while trying to adjust the radio.

Do not touch the air bag wiring as you modify the radio control wiring near the steering column. Make sure you disconnect the battery before doing any electrical work described in this installation guide and follow the air bag safety recommendations in the Chevrolet shop manual.

We strongly recommend making wire connections with solder & shrink tubing, although properly made crimp splices can also be reliable. We do not recommend using "Scotch Lock" style connections for our products. Do not use the "twist & tape" method of connecting wires.

Before you begin:

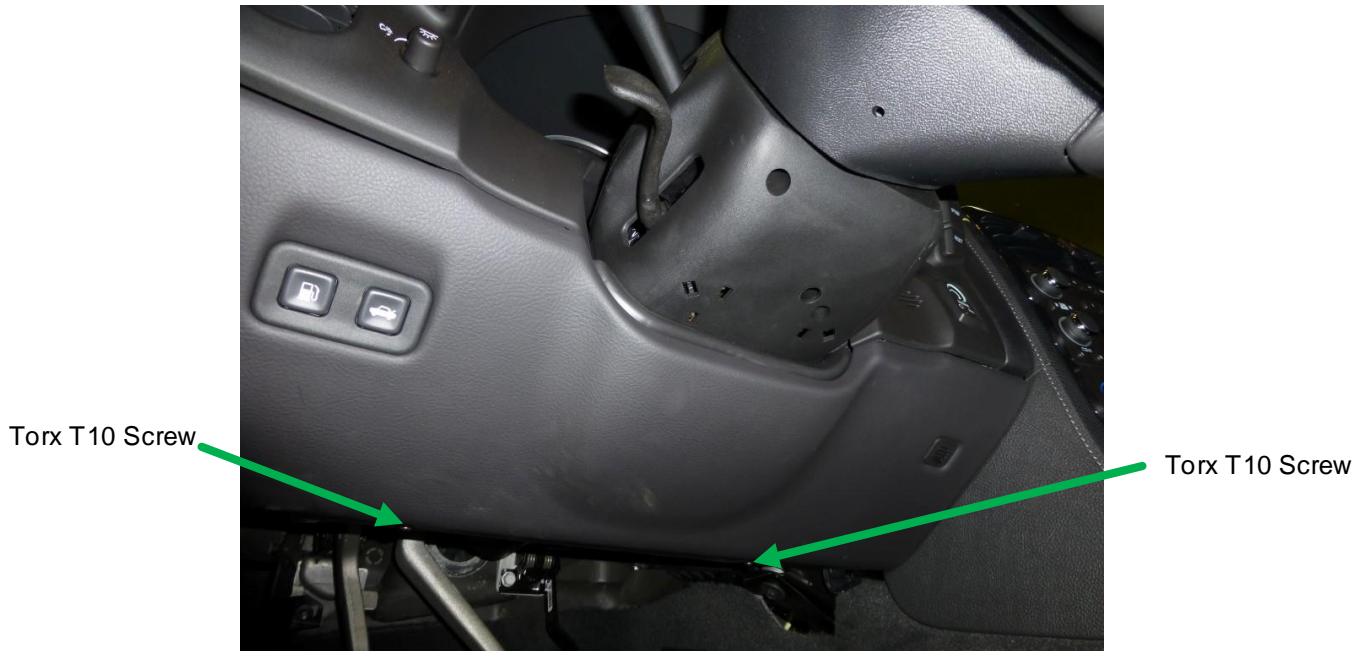
You will need to identify a switched battery voltage power supply wire to splice into for power for the Corvette Steering Wheel Button Box, and you will need a good chassis ground to ground the unit.

You will also need to locate a suitable place to install the unit inside of the vehicle's cabin, most likely under the dash or in the console near the shifter. It is not intended for use in the engine compartment or anywhere outside of the vehicle. If you wish to create a custom mounting bracket out of ABS plastic you can glue it to the ABS box with standard ABS cement from a hardware store.

Locating the Radio Control Signal Wires

You will need to remove the plastic cover under the drivers side dash to gain access to the wiring in the steering column.

The plastic cover under the driver's side dash is held in place with two screws, four clips and two hooks. Remove the two screws using a Torx T10 driver:



Carefully pull the plastic cover down from the bottom so that it can pivot on the hooks at the top of the panel as the clips disengage. Here is a picture of the clips:

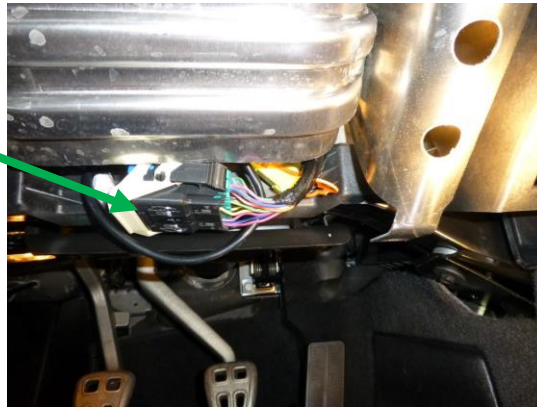


Here is a photo with the panel removed:



Find connector C231 behind the metal panel. Slide it left to release it in order to get access to the steering wheel control signal wire. It should look like this:

Connector
C231

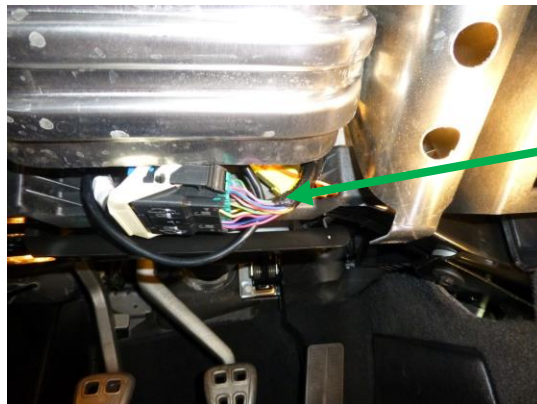


Make sure you DO NOT expose the air bag connector instead.

Once the Corvette Steering Wheel Button Box has been installed, reassembly is the reverse of the disassembly.

Installing the Accutach Corvette Steering Wheel Button Box

Carefully get access to the Dark Blue Steering Wheel Control Signal and Purple Remote Radio Control Supply Voltage wires.



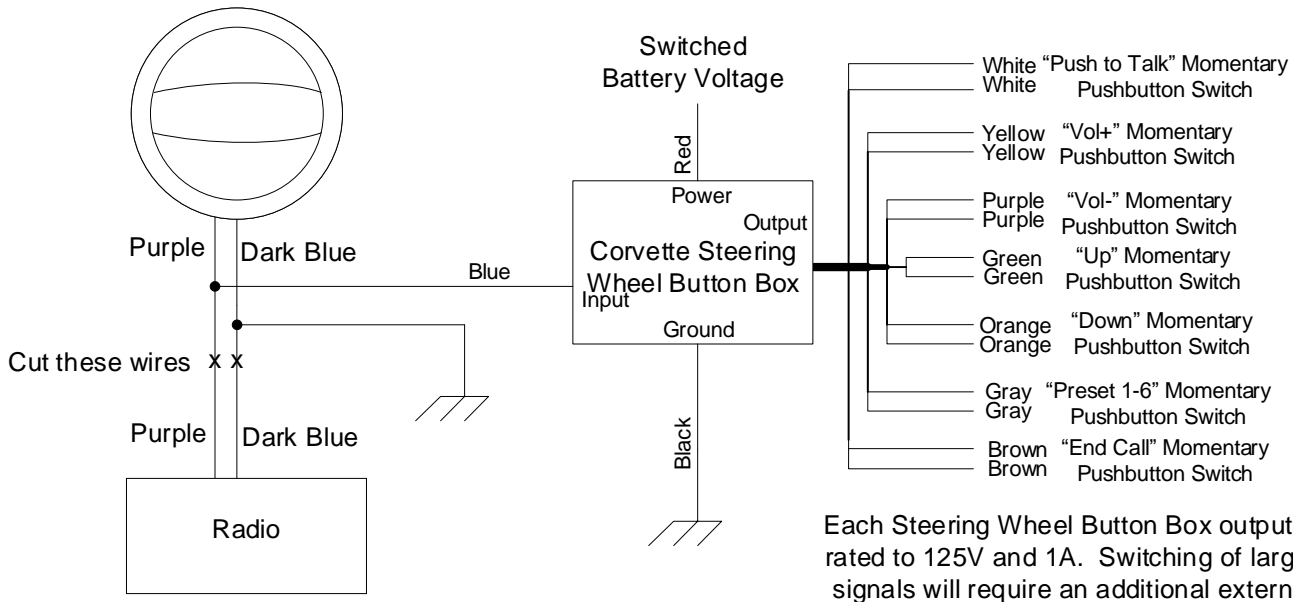
Find the Dark
Blue Steering
Wheel Control
Signal wire
and the
Purple Remote
Radio Control
Supply Voltage
wire

Cut the Dark Blue Steering Wheel Control Signal wire, and locate the side of that wire that runs up into the steering wheel clockspring mechanism. Splice that Dark Blue wire to a wire that you run to the same ground you use for the Steering Wheel Box ground. Cut the Purple Remote Radio Control Supply voltage wire, and locate the side of that wire that runs up into the steering wheel clockspring mechanism. Splice the blue wire from the Accutach Corvette Steering Wheel Button Box to that Purple wire. Use shrink tubing to insulate the other side of the light blue wire that goes to the radio. Do not leave the OEM radio in the circuit or the Steering Wheel Button Box will not work.

If you choose to use a switch to retain the use of the radio control function of your vehicle (against our recommendations), then wire a DPDP switch's common connections to the dark blue and purple wires going to the steering wheel, and run the other dark blue and purple wires to one side of the DPDT switch. Run the Accutach Corvette Steering Wheel Button Box blue wire to the other side of the DPDT switch that the Purple wires are run to. Run a ground wire to the other side of the DPDT switch that the Dark Blue wires are run to. This will allow you to switch between using the steering wheel buttons for radio control or accessory control.

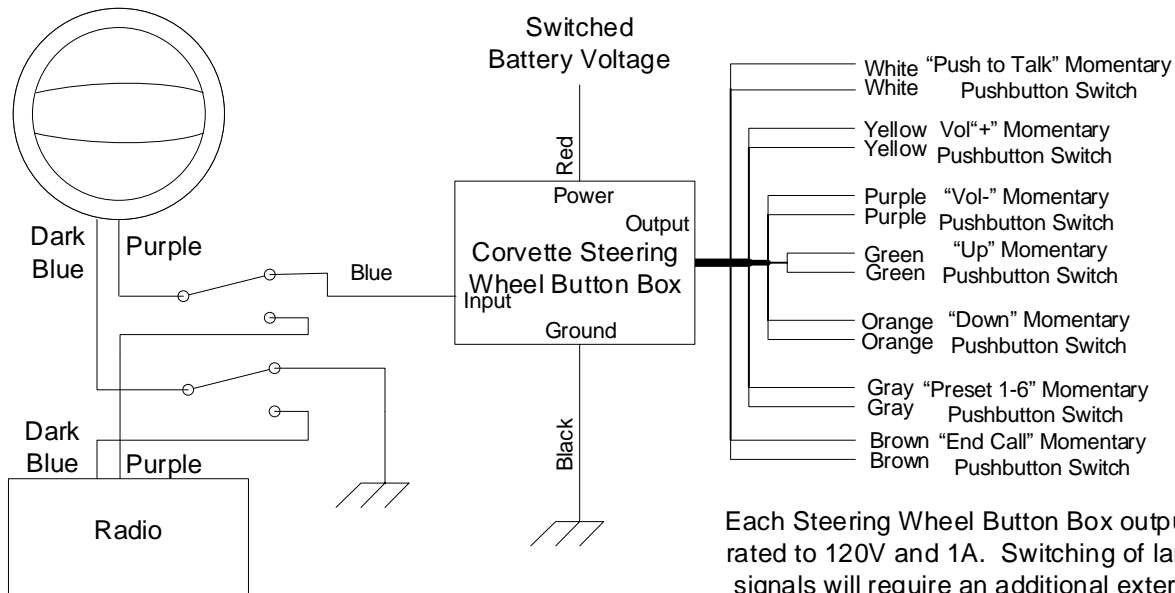
Connect the red wire from the Accutach Corvette Steering Wheel Button Box to your switched power source, and connect the black wire from the Accutach Corvette Steering Wheel Button Box to your chassis ground. At this point it is a good idea to test your unit. Please see the testing procedure at the end of this document.

Here is a schematic diagram of how to connect the Accutach Corvette Steering Wheel Button Box to the vehicle without an DPDT Switch:



Each Steering Wheel Button Box output is rated to 125V and 1A. Switching of larger signals will require an additional external relay

And with a DPDT switch:



Each Steering Wheel Button Box output is rated to 120V and 1A. Switching of larger signals will require an additional external relay

Connect any of the colored wire pairs to whatever accessory you want controlled by the corresponding cruise control momentary pushbutton switch. Each momentary pushbutton switch output is rated to 120V and 1A. Higher rated signals must be controlled by an external automotive relay.

The Corvette Steering Wheel Button Box typically draws less than 20mA quiescent and less than 70mA when a button is pressed.

Pressing Multiple Buttons at Once

Don't push multiple radio control buttons at the same time. Only one of the button functions will be activated. The following table describes which buttons will be activated if you accidentally press combinations of switches:

Push to Talk AND Vol+:	Vol+	
Push to Talk AND Vol-:	Vol-	
Push to Talk AND Up:	Up	
Push to Talk AND Down:	Down	
Push to Talk AND Preset 1-6:	Preset 1-6	
Push to Talk AND End Call:	End Call	
Vol+ AND Vol-:	Vol+	
Vol+ AND Up:	Vol+	
Vol+ AND Down:	Vol+	
Vol+ AND Preset 1-6:	Vol+	
Vol+ AND End Call:	Vol+	
Vol- AND Up:	Vol-	
Vol- AND Down:	Vol-	
Vol- AND Preset 1-6:	Vol-	
Vol- AND End Call:	Vol-	
Up AND Down:	Up	
Up AND Preset 1-6:	Up	
Up AND End Call:	Up	
Down AND Preset 1-6:	Down	
Down AND End Call:	Down	
Preset 1-6 AND End Call:	Preset 1-6	
Push to Talk AND Vol+ AND Vol-:	Vol+	
Push to Talk AND Vol+ AND Up:	Vol+	
Push to Talk AND Vol+ AND Down:	Vol+	
Push to Talk AND Vol+ AND Preset 1-6:	Vol+	
Push to Talk AND Vol- AND Up:	Vol-	
Push to Talk AND Vol- AND Down:	Vol-	
Push to Talk AND Vol- AND Preset 1-6:	Vol-	
Push to Talk AND Up AND Down:	Up	
Push to Talk AND Up AND Preset 1-6:	Up	
Push to Talk AND Down AND Preset 1-6:	Down	
Push to Talk AND Vol+ AND Vol- AND Up:	Vol+	
Push to Talk AND Vol+ AND Vol- AND Down:	Vol+	
Push to Talk AND Vol+ AND Vol- AND Preset 1-6:	Vol+	
Push to Talk AND Vol+ AND Vol- AND End Call:	Vol+	
Push to Talk AND Vol+ AND Up AND Down:	Vol+	
Push to Talk AND Vol+ AND Up AND Preset 1-6:	Vol+	
Push to Talk AND Vol+ AND Up AND End Call:	Vol+	
Push to Talk AND Vol+ AND Down AND Preset 1-6:	Vol+	
Push to Talk AND Vol+ AND Down AND End Call:	Vol+	
Push to Talk AND Vol- AND Up AND Down:	Vol-	
Push to Talk AND Vol- AND Up AND Preset 1-6:	Vol-	
Push to Talk AND Vol- AND Up AND End Call:	Vol-	
Push to Talk AND Up AND Down AND Preset 1-6:	Up	
Push to Talk AND Up AND Down AND End Call:	Up	
Push to Talk AND Vol+ AND Vol- AND Up AND Down AND Preset 1-6:	Vol+	
Push to Talk AND Vol+ AND Vol- AND Up AND Down AND End Call:	Vol+	
Push to Talk AND Vol+ AND Vol- AND Up AND Down And Preset 1-6 AND End Call:	Vol+	

Auxiliary Switch Units

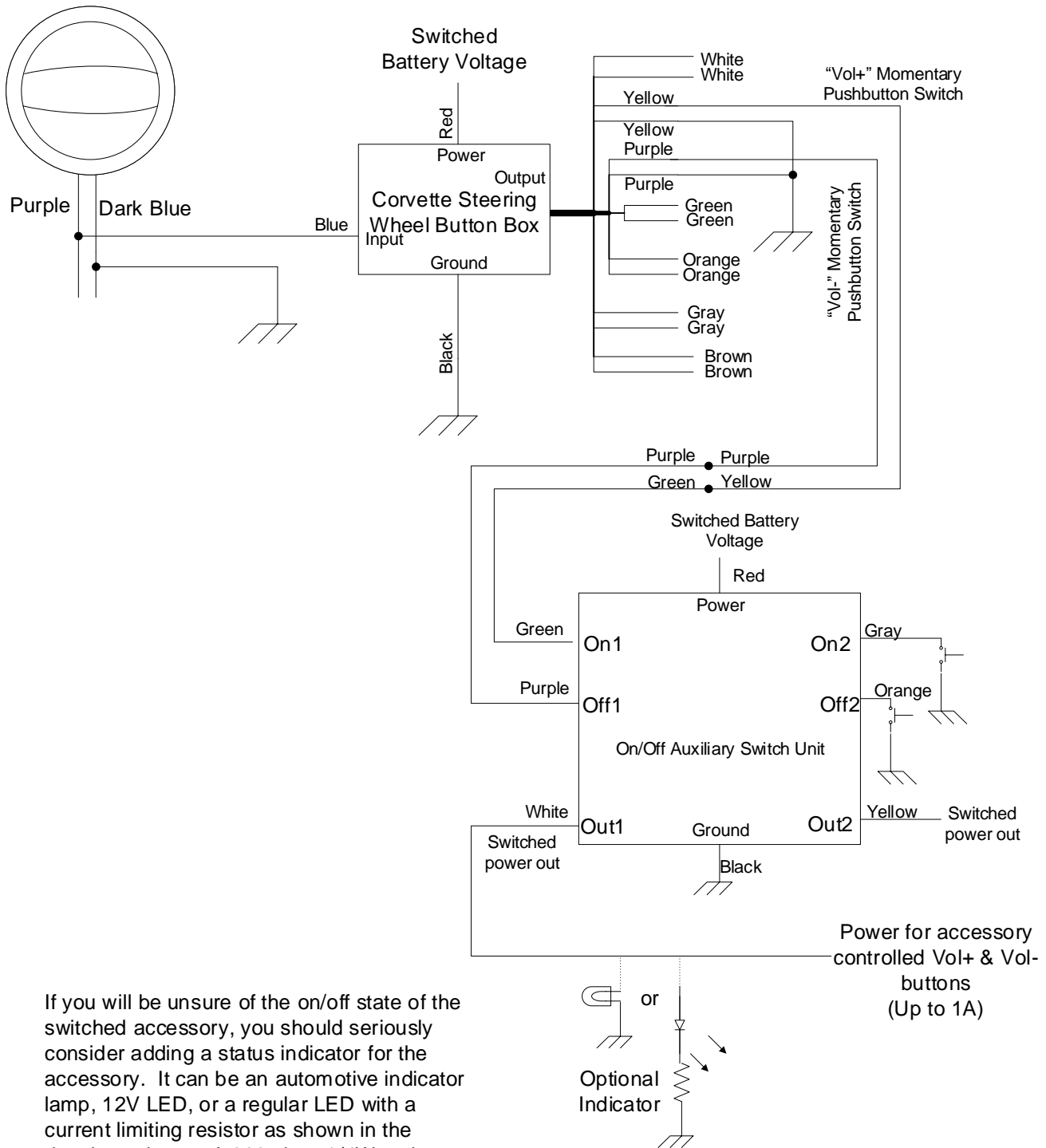
All of the Corvette Steering Wheel buttons function as momentary on pushbutton switches. Some applications require switches that function as a toggle rather than ones that are only momentarily on. Accutach Co. has developed two different auxiliary switch units which can be used in conjunction with any momentary switch (ideal for use with Accutach's Steering Wheel Button Box) to operate devices which normally use a toggle switch (typical on/off function). These two different devices cover just about any application. The Accutach Co. auxiliary switch units can switch circuits up to 120V, 1A. Switching higher voltage and/or current signals will require the use of an external relay. The Accutach Co "On/Off Auxiliary Switch Unit" and the "Toggle Auxiliary Switch Unit" are described below.

On/Off Auxiliary Switch Unit

Some people will prefer to turn an accessory on with one momentary pushbutton switch and off with another momentary pushbutton switch. The Accutach Co. On/Off Auxiliary Switch Unit provides two such circuits in one small box. For example, the Corvette Steering Wheel Vol+ and Vol- buttons could be used to turn one accessory on and off and the Up and Down buttons could be used to turn another accessory on and off.

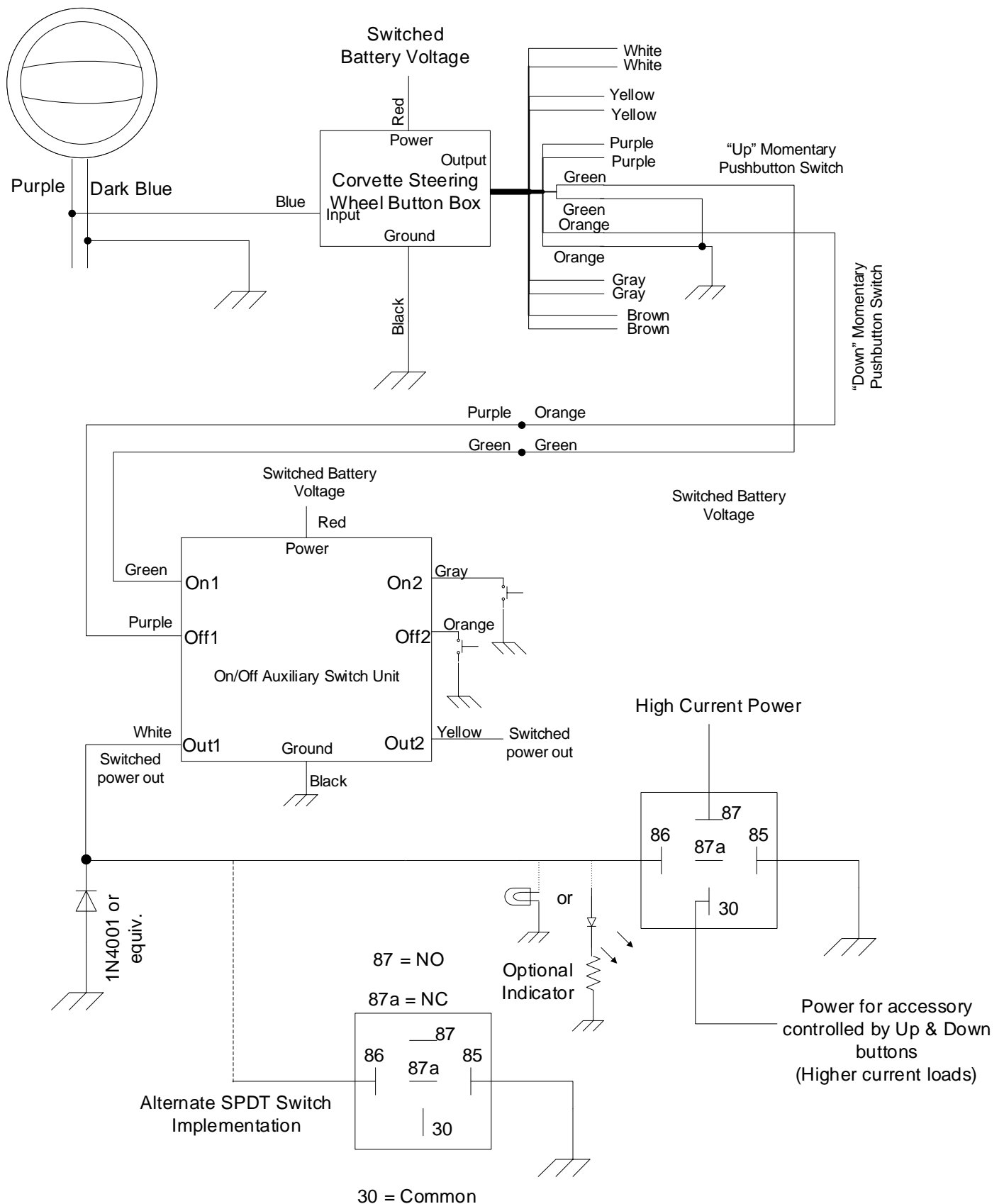
For example, the Corvette Steering Wheel Vol+ button could be used to Arm a nitrous system and the Vol- button could be used to disarm it. The Up button could be used to turn on a bottle warmer and the Down button could be used to turn the bottle warmer off. Then the Preset 1-6 button could be used as a purge pushbutton. The Push to Talk button could be used to control a 2-Step and transbrake together and the End Call button could be used for a Line Lock unit.

Here is an example of how to use the Corvette Steering Wheel Vol+ and Vol- buttons to power an accessory that uses up to 1A of current:



If you will be unsure of the on/off state of the switched accessory, you should seriously consider adding a status indicator for the accessory. It can be an automotive indicator lamp, 12V LED, or a regular LED with a current limiting resistor as shown in the drawings above. A 680 ohm, 1/4W resistor is a good value for a 20mA LED

Here is an example of how to use the Corvette Up and Down buttons to power an accessory that uses over 1A of current:

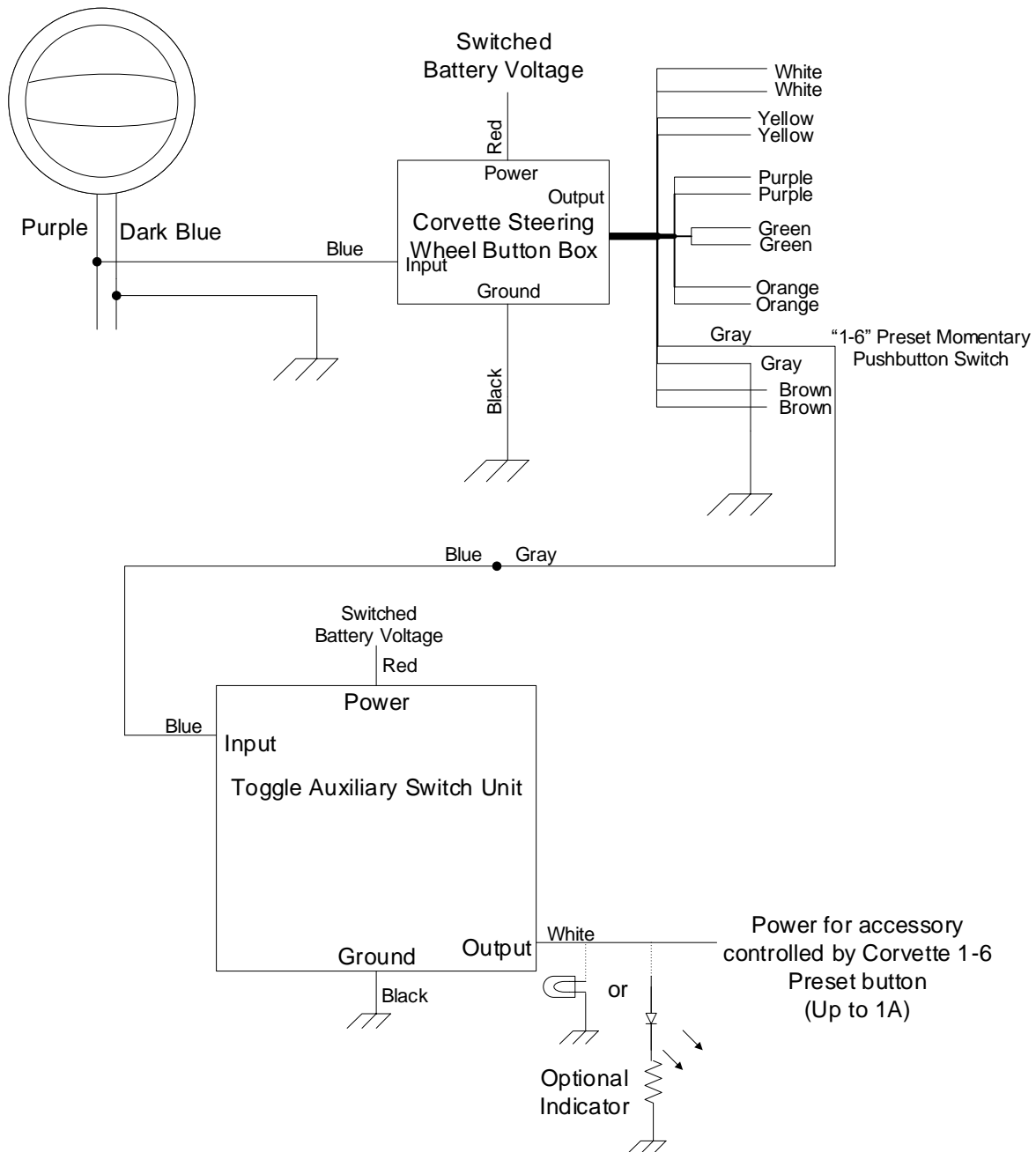


Toggle Auxiliary Switch Unit

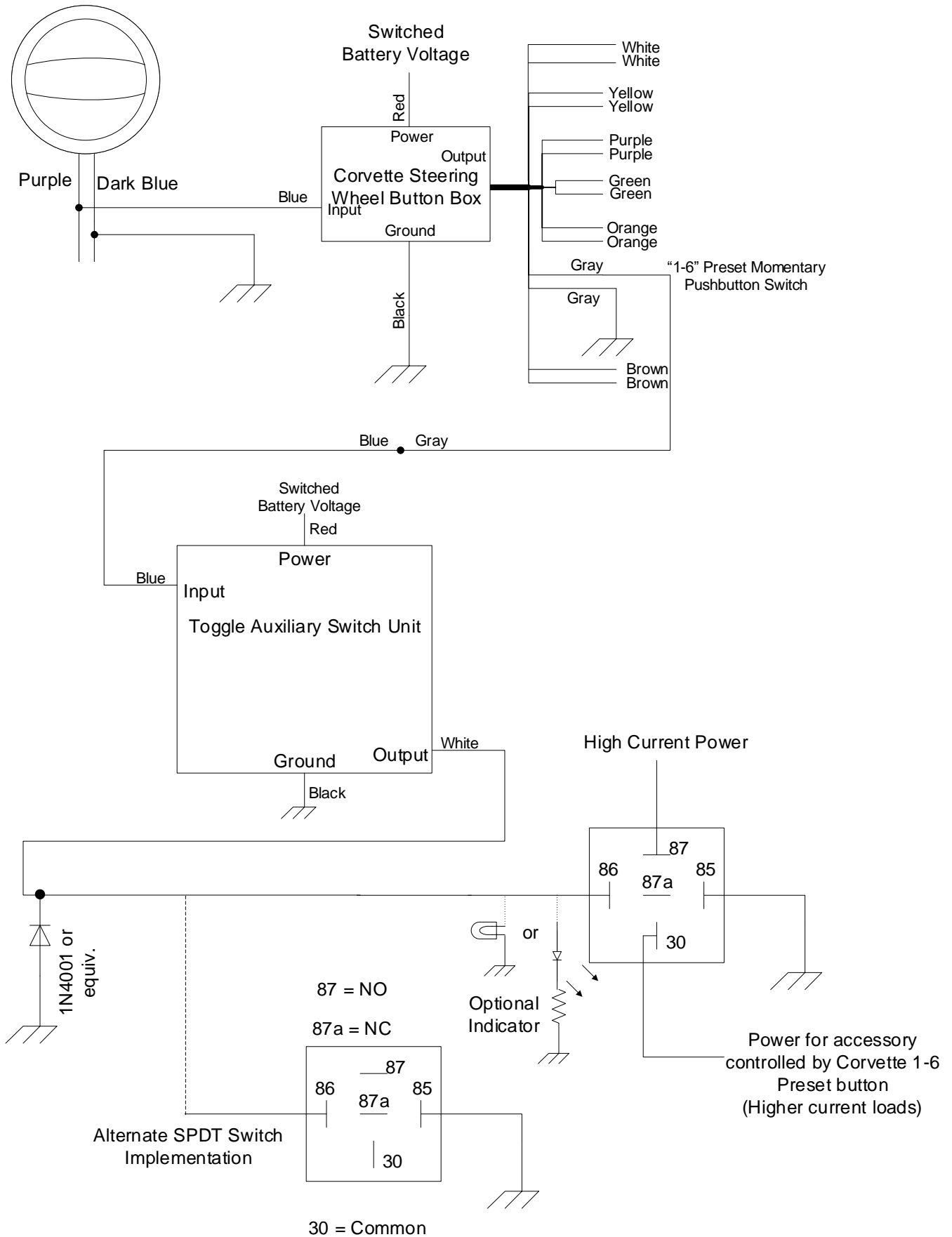
Some people will prefer to turn an accessory on with one momentary pushbutton switch and then off again with the same momentary pushbutton switch. The Accutach Co. Toggle Auxiliary Switch Unit provides one such unit in a small box. One of these boxes will be required for each pushbutton that is to be turned into a toggle switch.

For example, the Corvette steering wheel 1-6 Preset button could be used in conjunction with a Toggle Auxiliary Switch Unit to power a brake line-lock unit during a tire-heating burnout. The driver would press the 1-6 Preset button once to engage the line lock and once again to disengage it.

Here is an example of how to use the radio control Preset button to power an accessory that uses up to 1A of current:



Here is an example of how to use the Corvette 1-6 Preset button to power an accessory that uses over 1A of current (or alternatively, an SPDT implementation):



Troubleshooting:

With battery power (around 12V) and ground applied to the Steering Wheel Button box, and no button pressed the voltage on the blue wire should be somewhere in the neighborhood of 5 volts. If it is not near 5 volts, disconnect it from the OEM Purple wire and check again. If it is not near 5 volts when disconnected, contact Acutach Co. to return the defective unit. If it is near 5 volts when disconnected from the car, check the OEM Purple wire to make sure the OEM radio unit is not still connected to the circuit.

To test your radio control buttons on your steering wheel, make sure the blue wire is NOT connected to the OEM Purple wire. With the key off and an ohm meter across the OEM Purple wire and the OEM Dark Blue grounded wire, you should see infinite resistance with no button pressed.

With the Vol+ button pressed, you should see near 1270 ohms. With the Vol- button pressed, you should see about 1564 Ohms. With the Up button pressed, you should see about 1912 Ohms. With the Down button pressed, you should see about 2387 Ohms. With the Preset 1-6 button pressed, you should see about 3102 Ohms. With the Push to Talk button pressed, you should see about 4282 Ohms. With the End Call button pressed, you should see about 6652 Ohms.

To test your cruise button box, connect the power ground and connect the blue input wire to the OEM Purple wire as specified previously in this document. Do not connect any of the colored wire pairs. Turn the key on. With an Ohm meter, test all of the colored wire pairs coming from the unit. With no button pressed, all of the wire pairs should show infinite resistance. With the press of each button, the one wire pair listed below should show a near zero resistance. All of the other wires should show infinite resistance.

Pressed Button	Near 0 Ohms
Vol+	Yellow pair
Vol-	Purple pair
Up	Green pair
Down	Orange pair
Preset 1-6	Gray Pair
Push to Talk	White Pair
End Call	Brown Pair

If you do not get these results, make sure that the Purple wire in the steering column is cut, and the Steering Wheel Button Box blue wire has a good connection to the Purple wire that goes up to the steering wheel, not down to the radio. If the Purple wire is not cut, the radio will load the wire so the cruise button box will not work. Also make sure the Dark Blue wire is cut and the side that goes up to the steering wheel is grounded to the same ground that the Accutach Co Steering Wheel Button Box uses.

If the blue wire is wired correctly, make sure that the voltage on the red wire is very close to battery voltage. If it is not very close to battery voltage, make sure the connection to power is a good connection. Also, make sure that you have a very good ground connection.

Feel free to contact Accutach company if you have any questions or issues with the Steering Wheel Button Box