



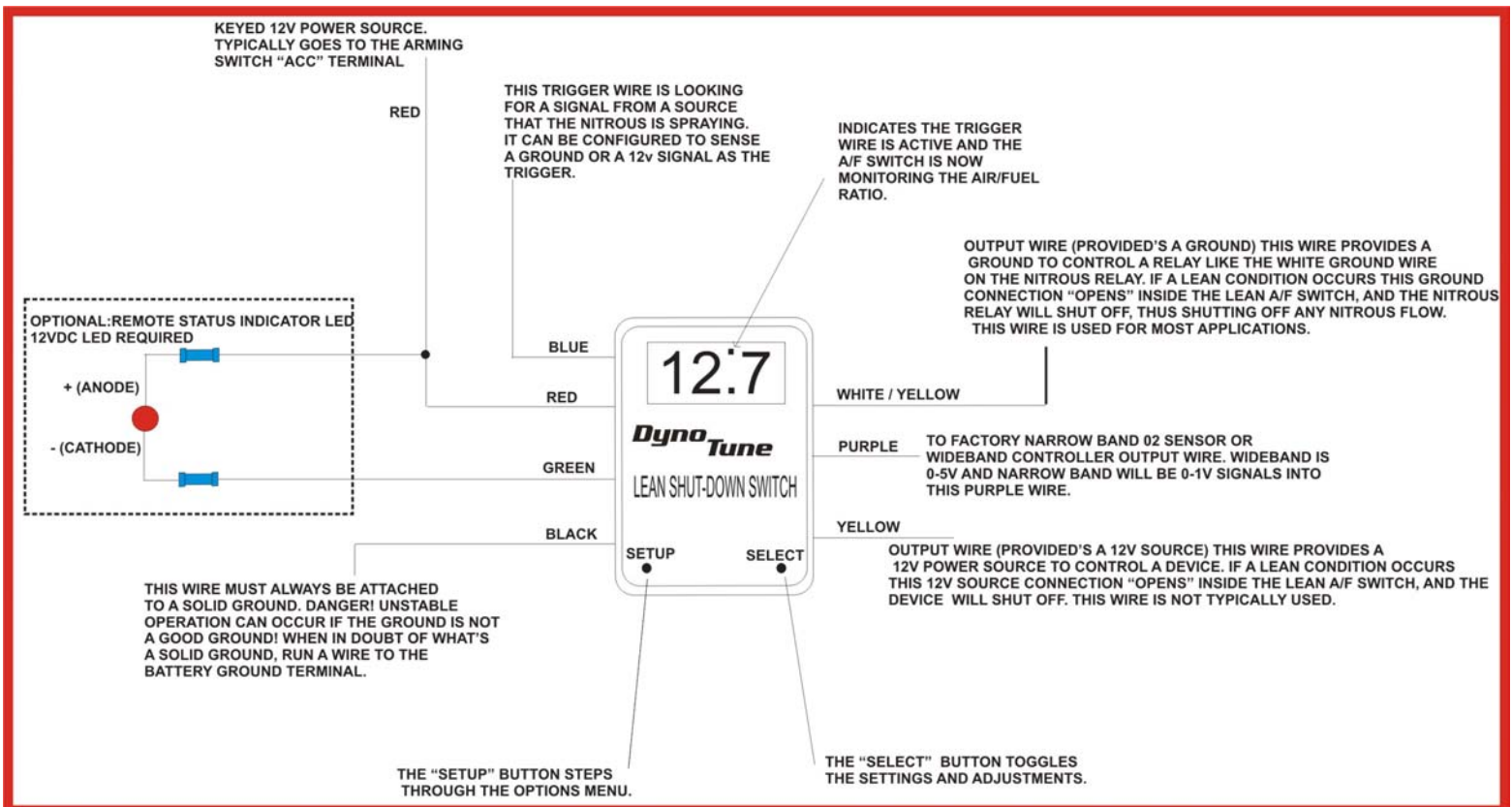
## Air/Fuel Lean Switch

Overview: The Air/Fuel Lean switch is a device that will shut off your nitrous system if it runs lean during a nitrous run. It can also be used for boost control if you run lean during heavy boost. The Air/Fuel ratio is always displayed so this device can double as a basic Narrow or Wideband air fuel Display. Follow all the directions and warnings in this document.

### Installation:

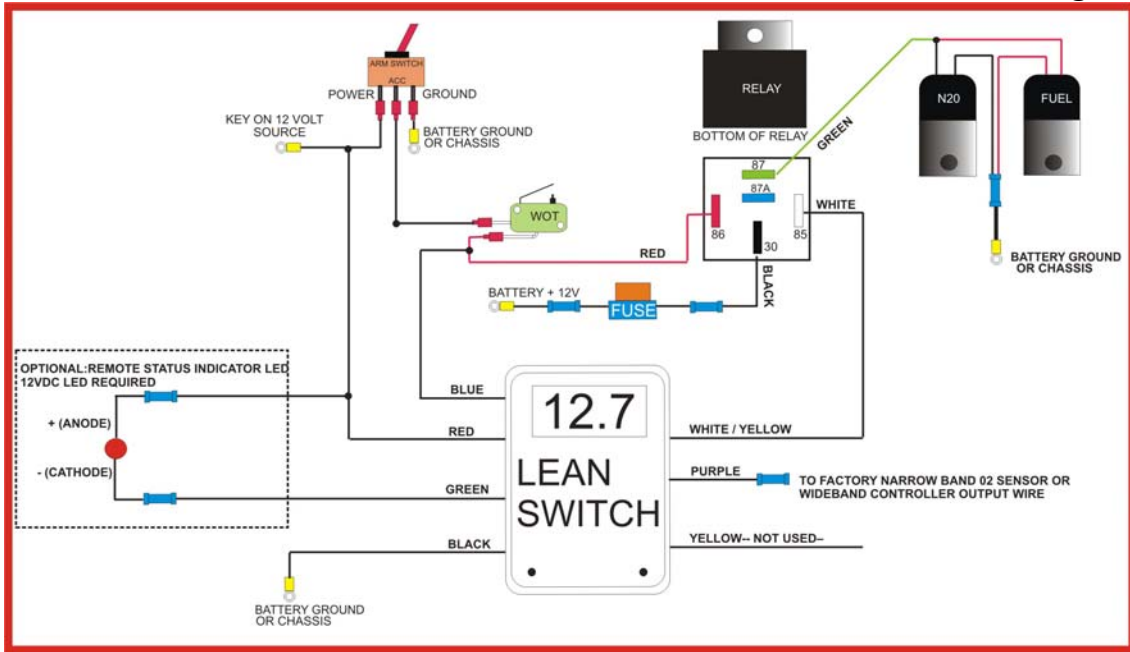
- 1) Use the diagram that best fits your application. Wire it exactly as shown in your diagram!
- 2) Wires on A/F Lean Switch:
  - a. **Red**--- Powers the A/F switch, use a switched 12V power source like from the fuse box.
  - b. **Black**---Ground, Connect to a solid chassis or battery ground.
  - c. **Blue**---Trigger wire, this trigger wire is looking for a signal from a source only when the nitrous is spraying. It can be configured to detect a 12V signal (High) or a Ground signal (Low).
  - d. **Yellow**---This wire sends out a 12V signal (High) all the time. If a lean A/F is detected then the 12V (High) signal is removed or stopped.
  - e. **White/Yellow**--- This wire sends out a Ground signal (Low) all the time. If a lean A/F is detected then the Ground (Low) signal is removed or stopped.
  - f. **Purple**---This wire will go to your factory narrow band or wideband o2 sensor. Factory Narrow band o2 sensors work on an output voltage of 0-1v while Wideband o2 sensors need a microprocessor to make it work and it works on an output voltage of 0-5V being much more accurate.
  - g. **Green**---This wire is used to ground a remote LED status indicator. When the LED is Lit you know a lean condition occurred and the system shut down.
- 3) Configuration:
  - a. To enter the configuration menu, press and hold both the “Set-up” and “Select” buttons until you see “pro” on the display then release the buttons.
  - b. Pressing the left “set-up” button steps through the options, pressing the “Select” button changes the settings. Configure the A/F switch as required per your need.
    - i. Trigger Mode 0=Ground (Low) used as trigger                      1=12V (High) used as a trigger  
(Use Mode 0 for drawings 2,3,4,5)    (Use Mode 1 for drawings 1,6,7,8,9)
    - ii. WB Mode 0=Narrow band input(a display reading of 0=lean 1=Rich) Factory O2 sensors  
Wideband Mode 1=Wideband input(a display of 10.0=Rich 20.0=Lean) Special O2
    - iii. Air/Fuel ratio trip point:
      1. For narrow band o2 sensors it will display in Volts. If running a narrow band o2 sensor, use .800v as an initial setting. .500v is 14.7:1 A/F so .800 is a good starting point. At some point you could set this to .999V to make sure you're A/F switch is working...Any reading lower(leaner) than your trip point, in this case .999 would shut down the nitrous. Normal engines will have about .800-.950 while using Nitrous.
      2. For wideband o2 sensors it will display in A/F ratio. If running a Wideband band o2 sensor system, use 13.0 A/F as an initial setting as a good starting point. At some point you could set this to 10.0 A/F to make sure you're A/F switch is working...Any reading higher (leaner) than your trip point, in this case 10.0 A/F would shut down the nitrous. Normal engines will have about 11.0-13.0 A/F while using Nitrous.

- iv. Air/Fuel Ratio “Monitor” Delay. This feature allows you to custom adjust the delay before the A/F switch will start monitoring the A/F. In some Nitrous kits there can be a small lean spike in the Air/Fuel ratio during the initial Nitrous turning on. Initial setting would be about .6 seconds. You can keep reducing it if you don’t have any lean spikes. These spikes happen fast and you probably will not see it on the display.
  - v. Some basic operating notes:
    1. During power up the unit will slowly flash the “Optional” status indicator LED for 5 seconds.
    2. In narrow-Band mode the unit will display the o2 sensors output voltage.
    3. In wideband mode the unit will display Air Fuel Ratio
    4. When the A/F switch shuts the nitrous off the “Optional” status indicator will illuminate for 20 seconds and will the display will show “LLL” letting you know it ran lean and shut down the nitrous. The A/F Switch will automatically re-set and be ready to go again after the 20 seconds.
    5. While the A/F switch is actively monitoring the A/F ratio the upper Dot will be lit. This also means the trigger input is active and seeing a signal.
    6. While triggered, the unit logs the leanest and richest A/F or Voltage during the last run. It can be re-called by pressing buttons “Left=leanest” “Right=Richest” Hold both buttons for 2 seconds to clear the memory before the next run. Note: you can not reset or read what’s in memory if the A/F switch is actively monitoring!
- 4) If you have problems with the A/F switch shutting the nitrous down, make sure your settings are correct also lengthen the delay time as there may be a lean spike present. If the spike is excessive you should repair the spike issue.



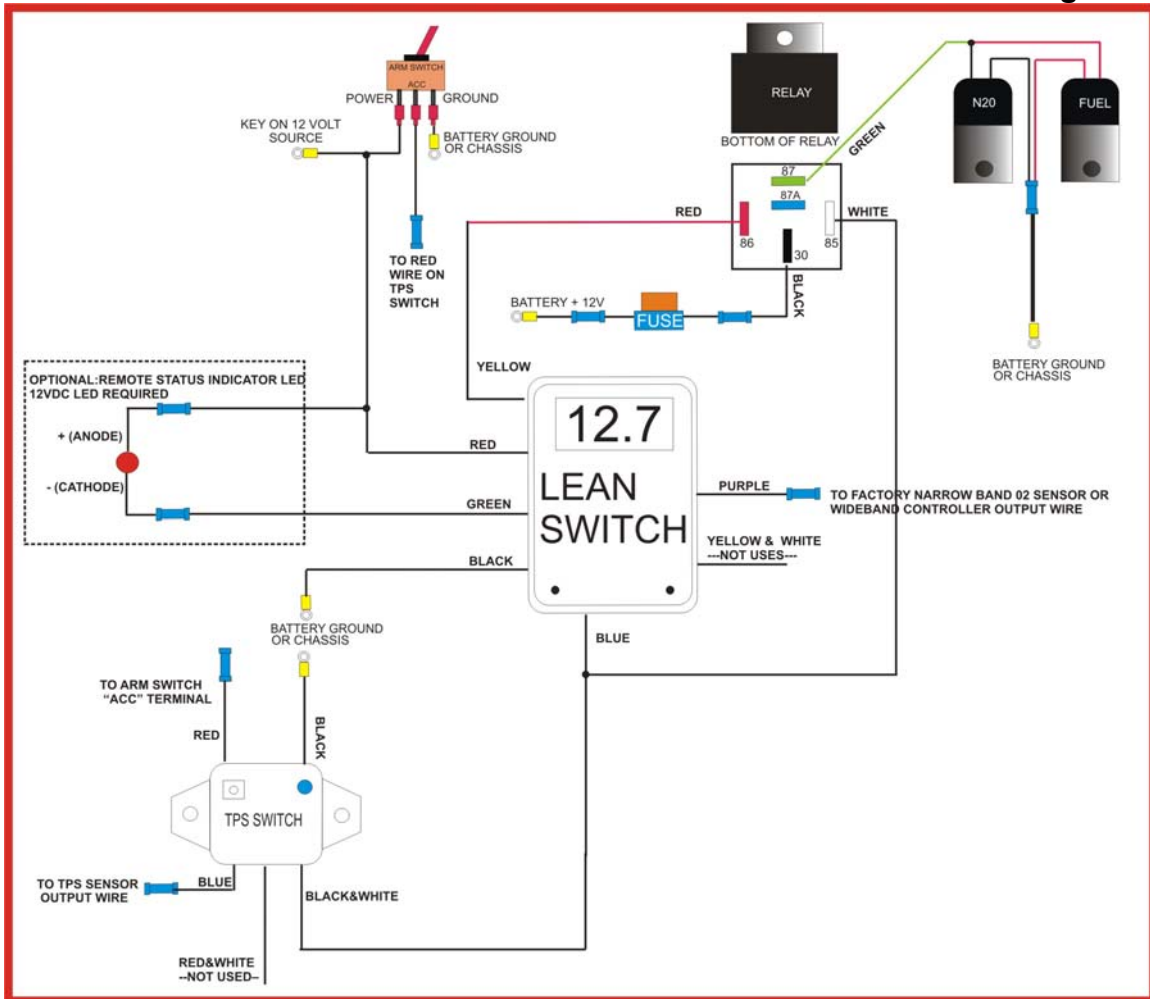
# BASIC WIRING

# Drawing #1



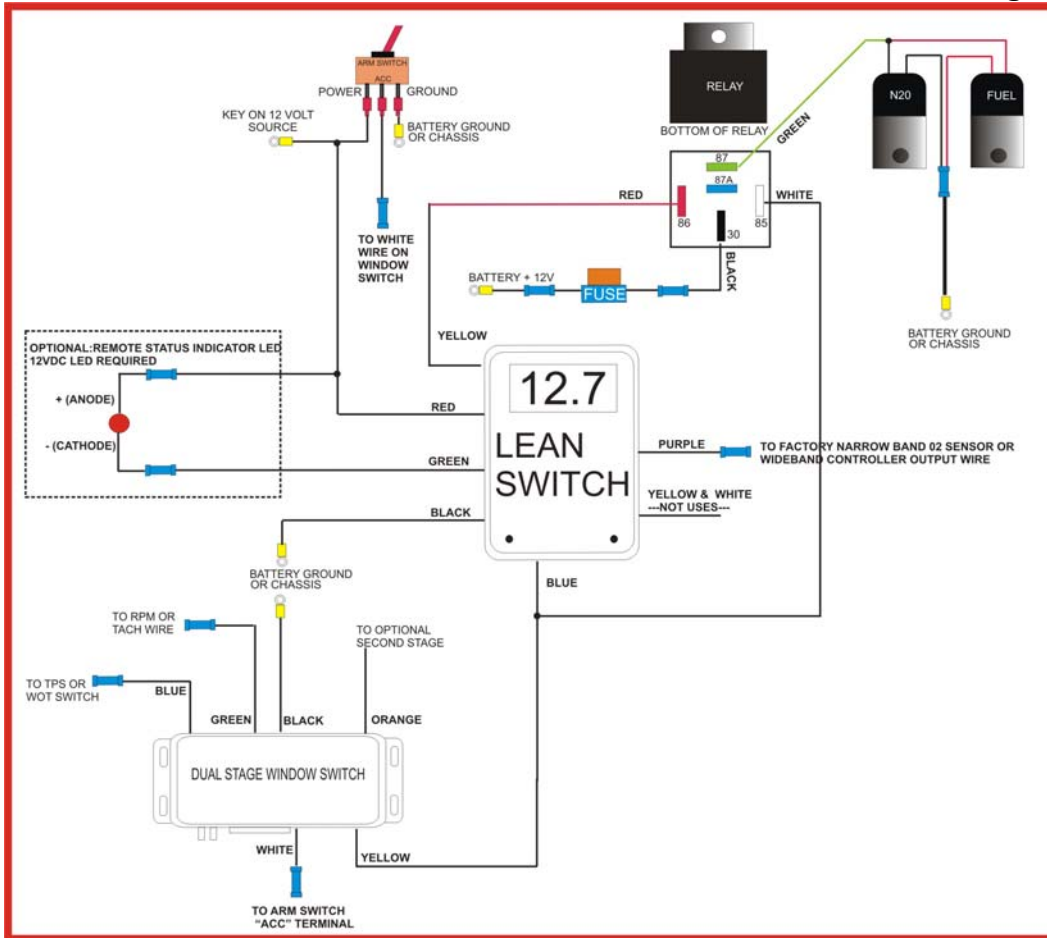
# BASIC WITH TPS

# Drawing #2



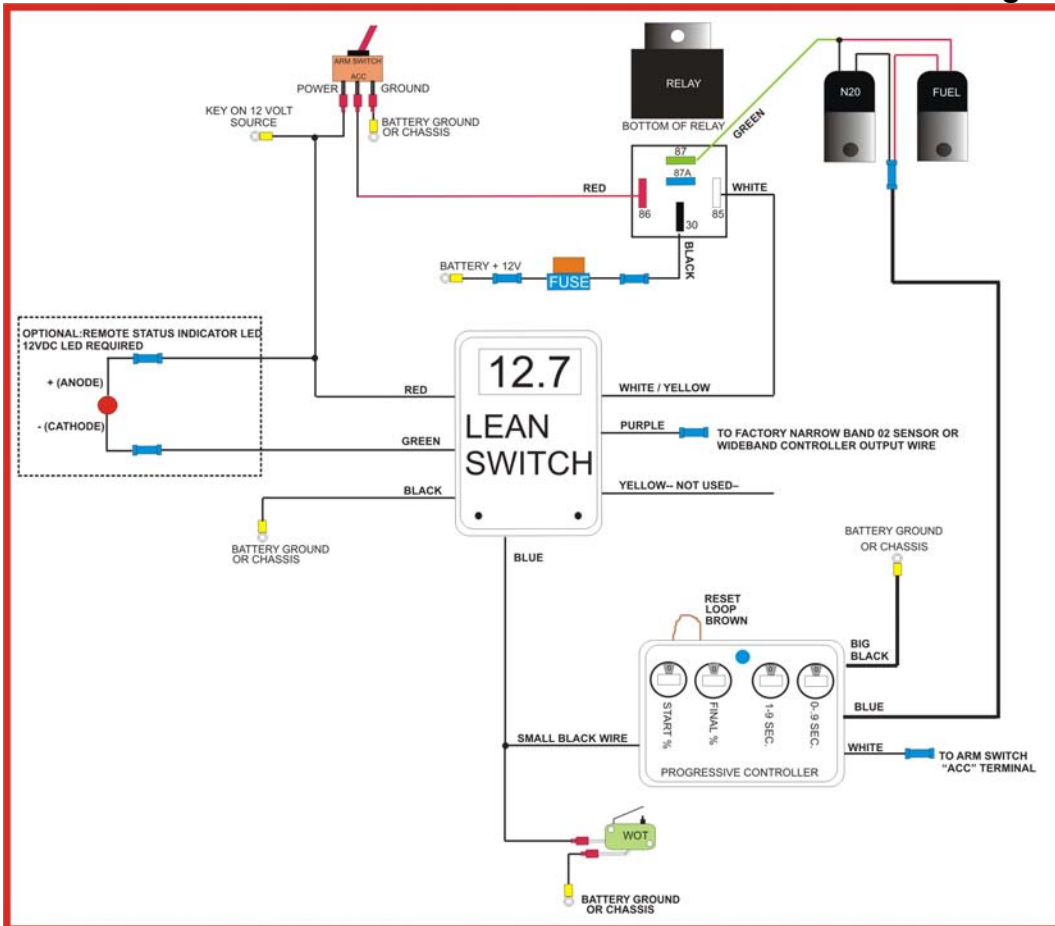
### BASIC WITH RPM WINDOW SWITCH

Drawing #3



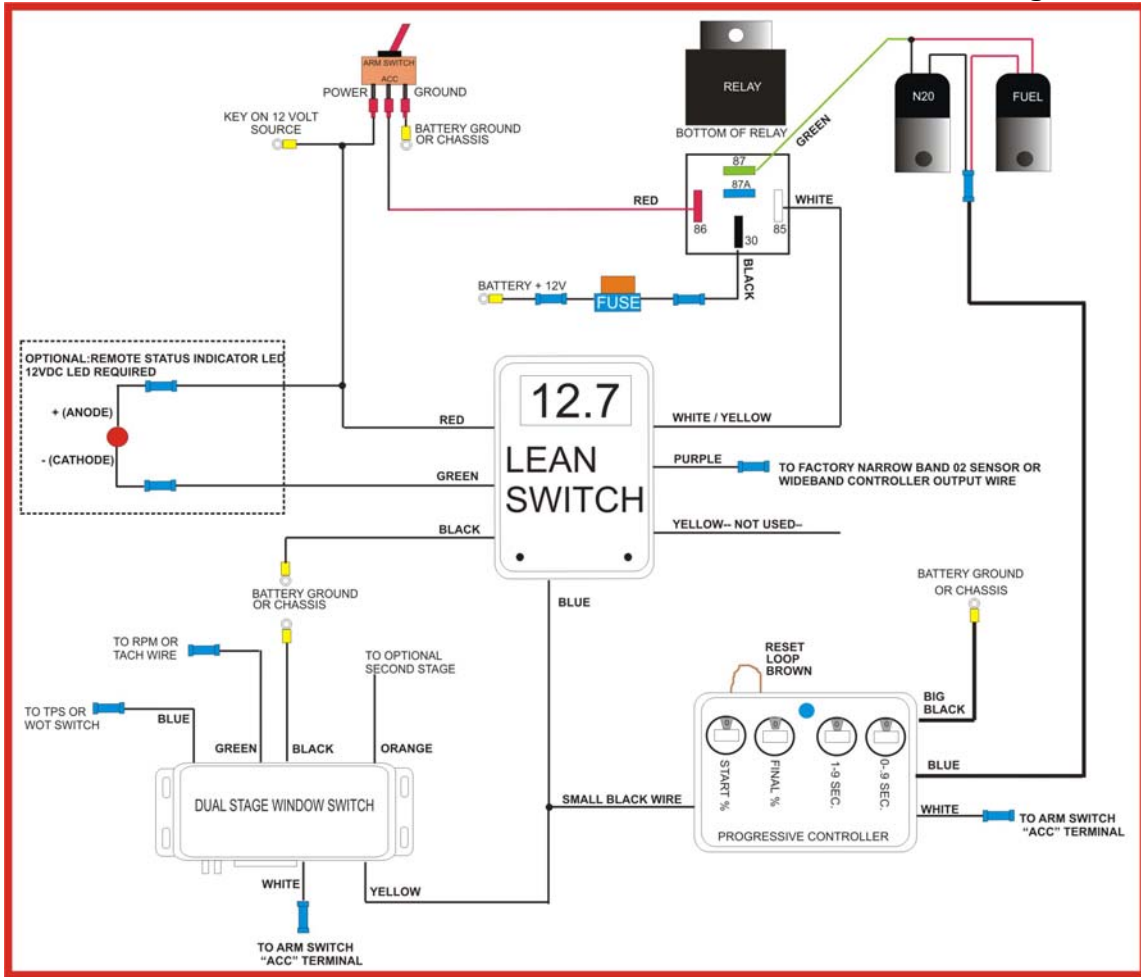
### BASIC WITH PROGRESSIVE CONTROLLER

Drawing #4



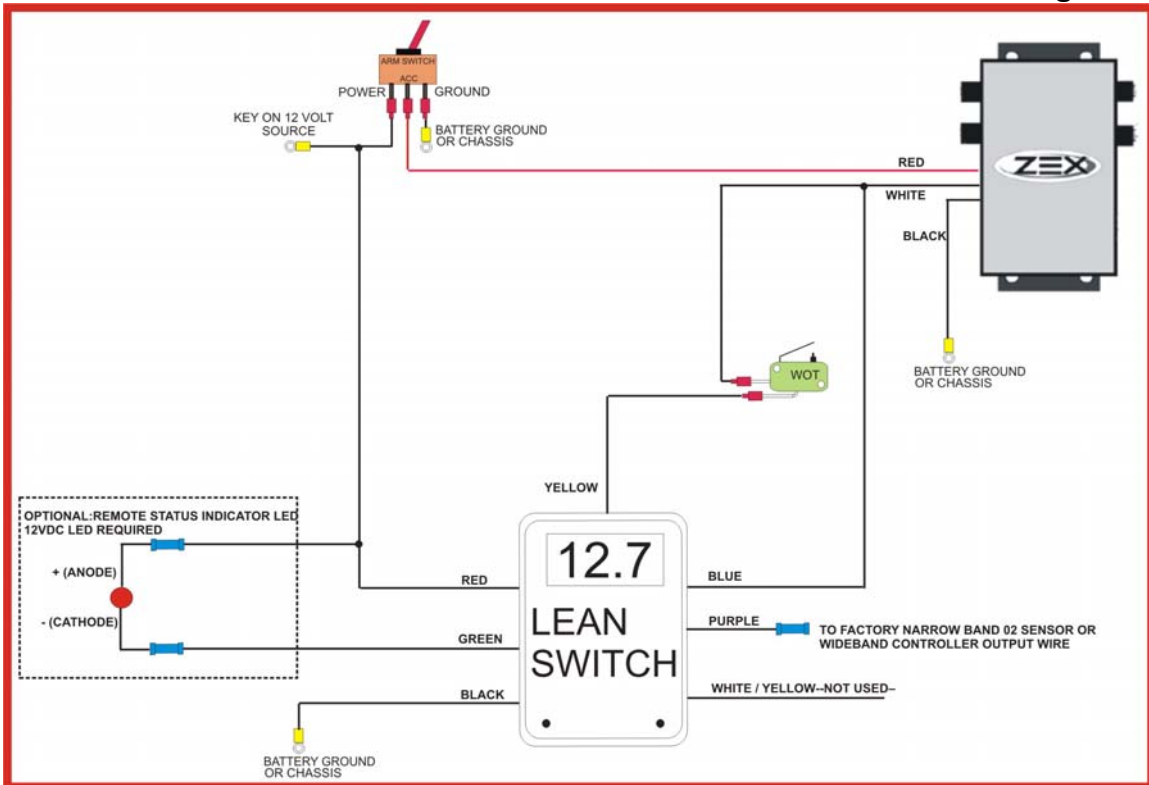
**PROGRESSIVE WITH RPM WINDOW SWITCH**

**Drawing #5**



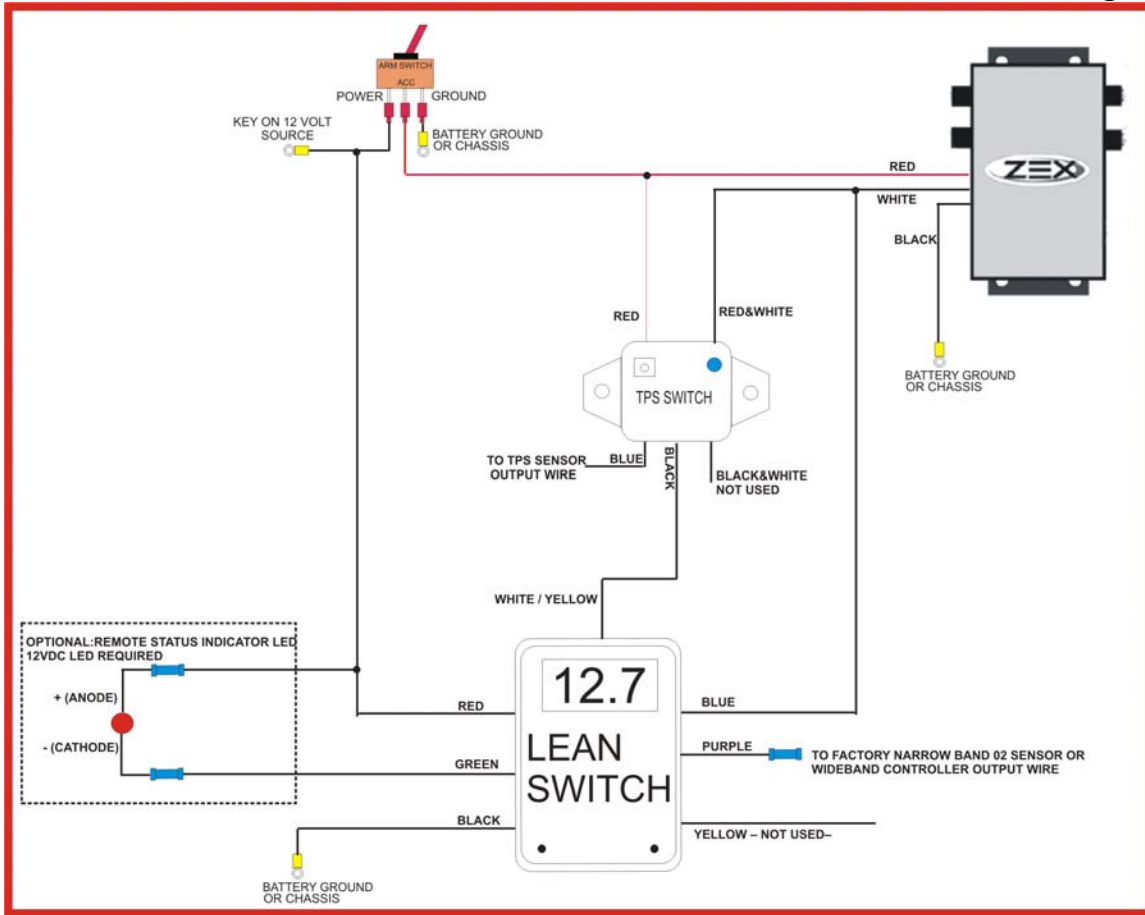
**ZEX WITH WOT**

**Drawing #6**



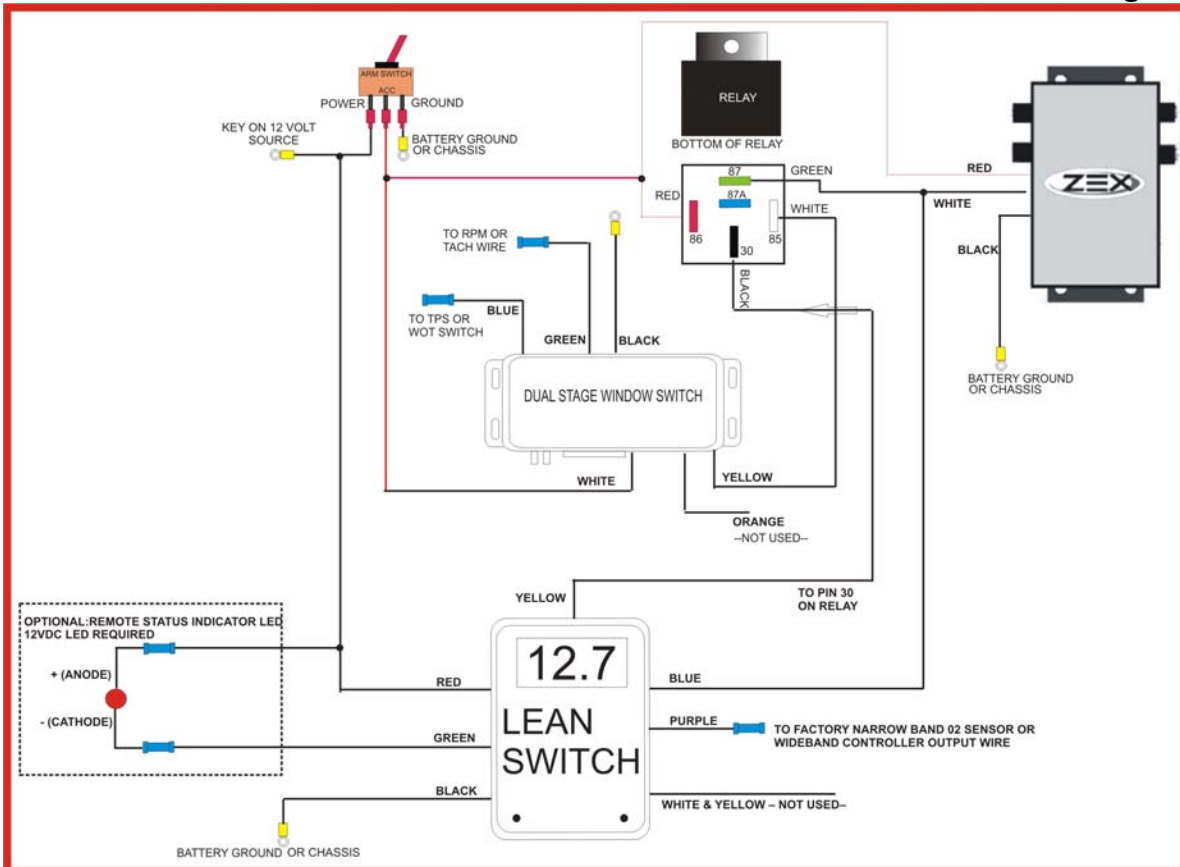
# ZEX WITH DYNOTUNE TPS SWITCH

Drawing #7



# ZEX WITH DYNOTUNE RPM WINDOW SWITCH

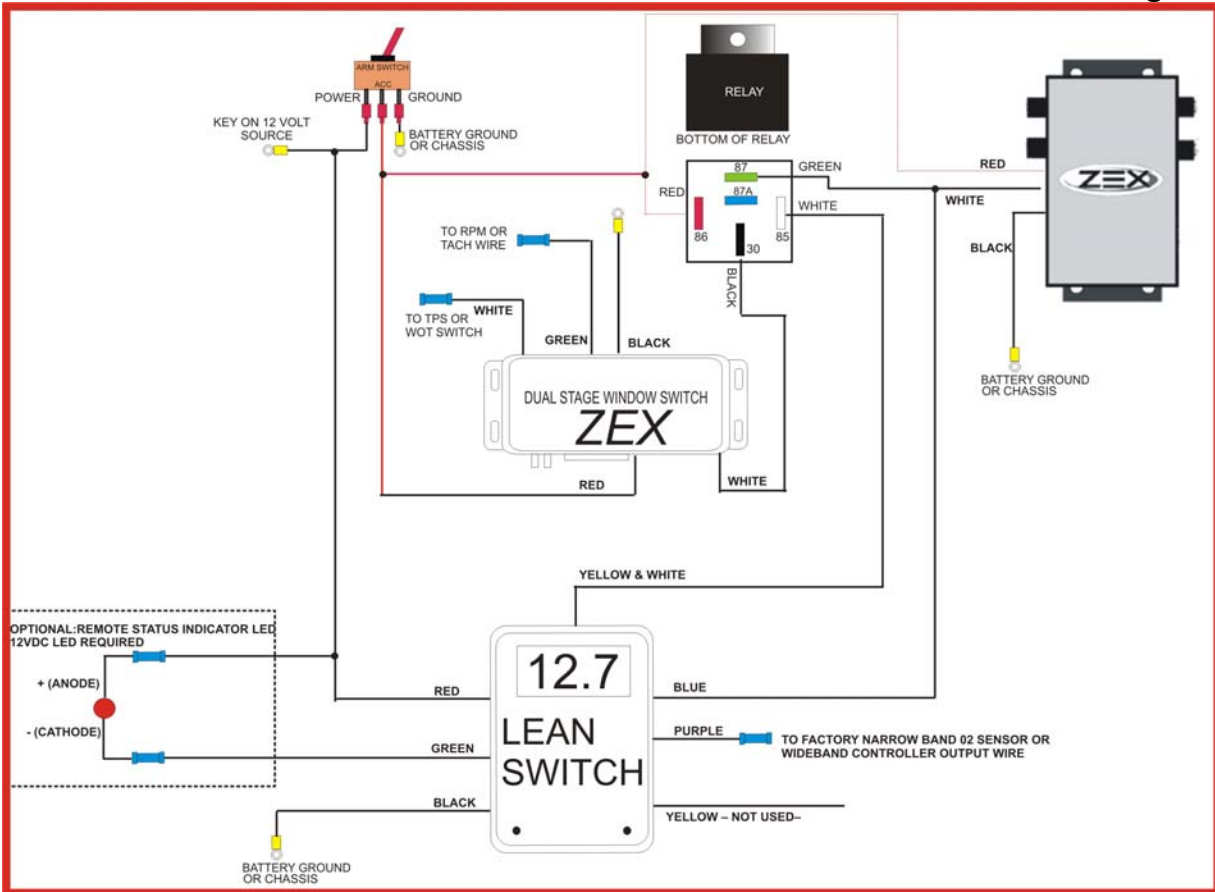
Drawing #8





# ZEX WITH ZEX RPM WINDOW SWITCH

Drawing #9



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