



Resetting the TPS

This document explains in detail how to reset the TPS on a Buell using the Direct-Link Race Performance software for 1999 through 2007 Buell Fuel Injected motorcycles. This guide is not a comprehensive manual for this software program, and it assumes that you have successfully installed the SW and are capable of communicating with the ECM.

Note: 2008+ Buells do not use this SW to reset the TPS. The function can be done upon bike startup with no external program. See the notes at the end of this document for 08+ models.

The Direct-Link Race Performance has a three different View modes, Gauges/Meters, Strip Chart and Active Setting mode. Go to Gauges/Meters mode. Put the ignition key and run switch in the run position, click the connect icon , and the ECM will connect and start communicating. Connection status is displayed at the bottom of the screen, and the gauges will update to current status.

Select Channels/Mode  icon at the top of the screen and configure three of the channels to display Throttle Position, Throttle (Volt), and Throttle (%).

Connect with the ECM, and you should be able to see the throttle position responding to your opening and closing of the throttle.

Some notes about what you are seeing. Throttle (volt) is an absolute reading. There is a Throttle Position Sensor (TPS) potentiometer (pot) on the end of the throttle “butterfly” shaft, and the ECM is reading a voltage that varies depending upon the position of that pot. Depending upon how the shaft is attached to the pot, and the calibration of the pot itself, every throttle body will display a slightly different voltage when the butterfly is at any given position. This is why a TPS reset is mandatory any time the throttle body or Throttle Position Sensor is removed or changed.

Throttle position and Throttle (%) are positions relative to the zero point for the throttle butterfly. The purpose of a TPS reset is to tell the ECM what voltage is at the pot when the butterfly is completely closed (i.e., 0% open). The ECM is then capable of calculating the exact throttle position based on the offset voltage from the absolute voltage reading that it read when the butterfly was fully closed. Throttle position is the measure of the angle (degrees) that the throttle butterfly open between 0 and 85.

Now select the Active Setting View Mode. You will see a button that performs the TPS reset function. Before you actually reset your TPS to zero, I recommend that you perform a test of the TPS reset procedure in order to confirm that the TPS reset is working properly. This is optional but may save some headaches if things don't seem to be working right later. Hold the throttle in the 1/3 open position, and then execute a TPS reset in the Active Setting mode with it held steady there. The throttle should be held steady while the duration counts decrements. Once you get a PASSED message, go back to Gauges/Meters mode, connect, and slowly open the throttle. If the Throttle Position bar graph remains stationary until you cross the threshold position that you held the throttle at (i.e., 1/3 throttle) and only then starts climbing, THEN you know that both communication modes are working correctly and that you have successfully set the TPS.

If that worked correctly, you're ready to properly reset the TPS. The first step of performing a TPS reset is to back the throttle stop screw off (i.e. the idle speed adjustment screw) until it no longer is touching the stop on the butterfly shaft. The easiest way to check if the throttle stop is no longer engaged is to turn the throttle grip to zero and force it there gently. If when you start to open it, you can feel it gently sticking, this means that the butterfly is wedging in the throttle body and you have achieved absolute closure.

Select the Gauge s/Meters view mode, and connect as above. With the throttle screw backed off completely, force the throttle closed so that it gently sticks as described above. Note the Throttle (volt) value each time. It should be within .01 volts each time you do this. If not, there is something wrong with the throttle body or Throttle Position Sensor.

Execute a TPS reset in the Active Setting mode by pushing the button and getting the PASSED message. Go to the Guages/Meters mode and connect. Rotate the throttle to un-stick it in the bore. Slowly turn the throttle stop screw (Idle speed adjuster) clockwise until you get a Throttle Position Reading of 5.1. Start the engine, let it warm up until an indicated temperature of 320F, and adjust the idle to 1050 RPM and you're done. It is EXTREMELY important that the throttle plate is fully closed when the TPS is performed. Even slightly open will make the bike run poorly. The throttle butterfly must be made to gently stick in the closed position when the TPS is reset or you will not get proper engine operation.

Resetting the TPS on 08+ Buells

Resetting the TPS on 08+ Buells does not require external Software to perform a TPS reset, but DirectLink can be used to confirm that it is set correctly. The 08+ Buells are equipped with Idle Air Control logic, and the idle air and speed is under ECM control. The fully closed butterfly position is set by a stop that is cast into the throttle body, and there is no external throttle position stop screw.

To reset an 08+ Buell, do the following:

1. Turn on the key.
2. Set the kill switch to the run position.
3. Don't start the engine. Rotate the throttle from fully closed (gently forced closed) to fully open (gently held open), and then back again to closed (gently forced closed).
4. Repeat 3 times. Hold each position (fully open, fully closed) for 1 full second.
5. Turn the key off and on.
6. If you connect to Directlink, a fully closed throttle should indicate 3.7 to 4.2 degrees. If it doesn't, repeat the above steps.