

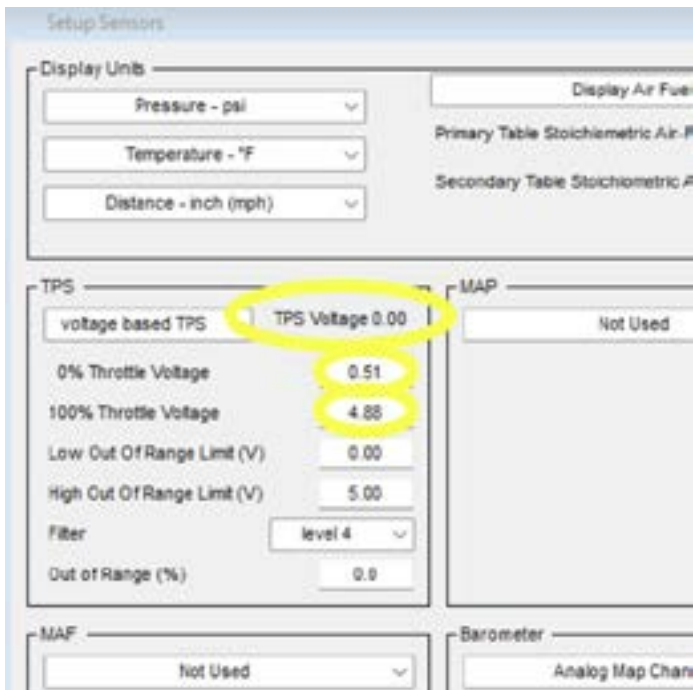
To install a new map file into the ECU:

You will need a computer with an ethernet cable port or an adapter.

- Install the PE3 version 3.04.59
- Connect the orange ethernet cable from the computer to the ECU
- Power up the ECU (turn the ignition switch on) and I like to unplug the fuel pump so it is not screaming the whole time.
- Start the software on the computer. Click the Search for ECU, Direct.
- It should then say **ECU Connected!** If it does not, go up to Engine/Quick Find ECU. It should then say **ECU Found!**
- At this point when it connects it will automatically call up the map that is inside the ECU.
- Now we are going to load the new map into the ECU
- Go to File/Open Tuning File From Computer
- Browse to where you have the file downloaded to, click on it, and hit Open
- Once open, the software will ask if you want to send this file to the ECU, click Yes.
- Next, in the far upper right of the software window, click on Save Setting to the ECU. This will permanently write the new settings to the ECU. Note: just sending the new map to the ECU does not save it to the ECU, it only stores it in the ECU flash memory, not the permanent ROM.
- That's it, now you're finished!
- There is a PDF manual to the software under the Help section if you want to really dig into it.

Set the PE3 TPS:

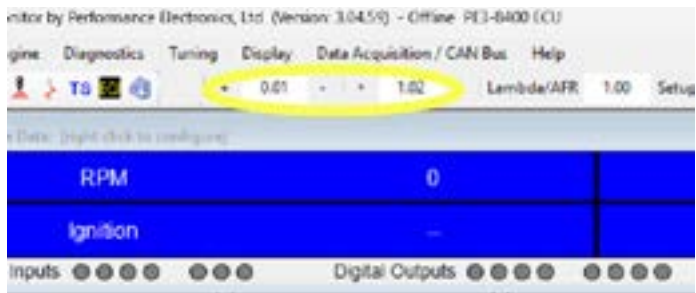
Go to **Engine/Setup Sensors**. With the ignition on (engine not running) and the computer connected, read the value in the **TPS Voltage** field. Then type that number plus .05 volts into the 0% box. Then have someone hold it at full throttle, note the voltage in the **TPS Voltage** field, and enter that number minus .05 volts into the 100% box. We add and subtract the .05 so that we are sure we are always getting to 0 and 100 as the supply voltage may vary slightly.



Our map may not be perfect for your engine and pipes. They all vary, but you can tune the idle yourself pretty easily.

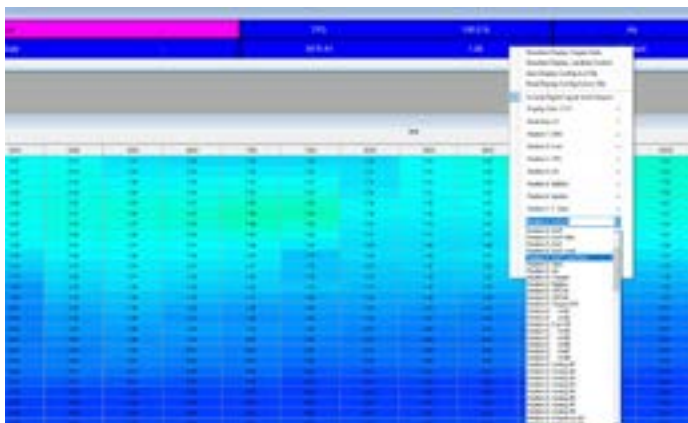
We will make changes to the Fuel map in the Fuel Table by making the numbers bigger to add fuel or smaller to take away fuel.

Set these numbers up in the top part of the program:



This will enable us to click in one of the fields (or click and drag to select multiple fields) in the fuel table and change the value. For the small numbers like at idle, I like to press CTRL + or CTRL - to change the field values. This will increment the value up or down the smallest amount the program will allow. For the larger numbers I like to use CTRL- * and CTRL-/ to change the number by 2% (1.02). You can also cut and paste numbers from other cells, or type the number in.

Start the engine and note what the AFR is. At idle, we want it to be around 12.0 to 12.8. If you don't see AFR on your live engine data display, right click in the window and change MAP to AFR #1.



There ya go! Now you're a tuner. This is really cool because you can download the data after the race, see where you are lean or rich, go into that part of the map and make changes. Generally 2% will change the AFR by about .2

AFR will display the "Gasoline" ratio which is just a multiplier of Lambda (14.7). A lambda of 1 is equal to 14.7 in AFR.

The changes you make to the fuel map are live and you will see the AFR change as you go up or down on the fuel table number. You must click the Save Setting to ECU button in the upper right for it to be saved permanently. Then save the map file to your computer by clicking on the Save Disk Icon on the upper left.

Getting data after racing:

- With the ECU on and the computer plugged in, go up to Data Acquisition / CAN Bus, drop down the list and click on Setup and Control.
- Under the Length of file to download section, click on 10 min. Then click Get file.
- Put the file on your desktop. It will take about 5 minutes to pull it all out. You have now created a file that you can send to your engine tuner.

As with anything, if you need any assistance or have any questions don't hesitate to give us a call!

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