

SymTech FCD Installation Instructions (Universal):

Locate the MAP/MAS sensor on your vehicle. MAP sensors are usually mounted on the intake manifold, while MAS/MAF sensors are usually somewhere along the intake tract. There should be three wires coming from the sensor; a Vref, a ground, and a signal wire. The ground is usually black, however, the other wires' colors will vary depending on the manufacturer of the vehicle. The ground and Vref will need to be tapped, while the signal wire will need to be cut, and spliced. You can identify which wire is which by temporarily unplugging the sensor, and using a multimeter to test the output voltages from each wire. If the ground is assumed to be black, then one of the wires should put out a constant +5V: that's the Vref. All that's left is the signal wire. Make a note of which wire is which.

You will also need to locate a switched +12V source; wires for this can be found throughout the engine bay and interior - where you tap into this depends on where the FCD will permanently be mounted. If you're in doubt when choosing a wire, grab a multimeter and start testing voltages.

The wire connections are fairly straight forward. Crimp style and blade-type connections will work fine, but solder and heat shrink tubing is better.

Begin by cutting that signal wire from the MAP/MAS sensor. Now, connect the green wire on the FCD, labeled "IN," to the side of the signal wire closest to the MAP sensor. The green wire labeled "OUT" connects to the side of the signal wire leading to the ECU. The black wire (ground) needs to tap into the black wire from the MAP/MAS sensor. The red wire labeled "Vref +5V" taps into the Vref wire coming from the MAP and, finally, the red wire labeled "+12V" taps into the nearest switched 12V source.

Keep the FCD unit as far away from engine heat as possible: a cooler spot of the engine bay will work, but the interior of the car would be ideal. The potentiometer is slightly temperature sensitive, and so extreme heat may compromise precision. The unit will resist engine chemicals and fluids, and mild heat.

After you have the FCD installed and situated, you may choose to fine tune it. Remove the cover on the FCD, and you will find a small trimmer on the board that can be adjusted using an electronics screwdriver or otherwise. There is no special formula for tuning the FCD, as each car is different and each owner may want to set the maximum MAP voltage to different levels.

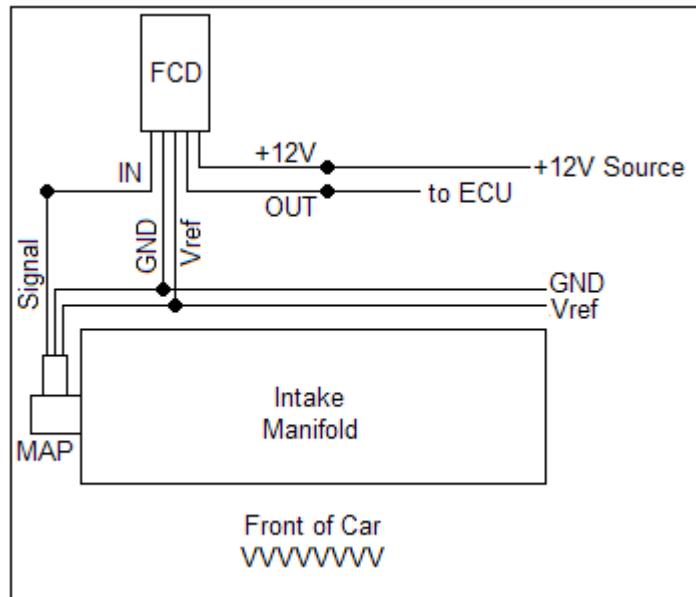
There are two methods for this, however. The first is to turn the key to the "on" position, while the car is off. You will need to pressurize the intake manifold/tract somehow to at least 1-2 psi. A homemade boost leak tester and bicycle pump will suffice for these purposes. Using a multimeter (with the + lead connected to the FCD output and the - lead connected to ground), measure the output voltage. Adjust the trimmer until the voltage reads 4.7V (this value may vary) or lower.

Another potential method is to pressurize just the MAP sensor by removing it from the intake manifold and blowing on the opening by mouth.

You can also do this a little more "hit or miss." If you can't get a hold of a boost leak tester, you can also drive the car around and adjust the trimmer until you've eliminated all fuel cut. This isn't as accurate, though, and you won't know what the maximum output voltage is - as with the first method.

The CEL may or may not pop up. If you live in a state that does emissions testing, you can temporarily bypass the FCD to stop the suppress the CEL. To bypass the FCD, simply run a jumper wire (gauge 22 wire or larger) between the two green wires of the FCD. This will effectively take the FCD out of the MAP/ECU signal loop, and it should prevent any CEL codes from recurring after resetting your ECU.

Sample Installation Diagram



WARNING

The addition of an FCD, while necessary for serious performance enthusiasts, removes protection from overboost. It is recommended that the air/fuel ratio be carefully monitored before and after the installation of an FCD. Serious engine damage can occur if the set boost pressure exceeds that of the engine's or turbocharger's capabilities. SymTech Laboratories assumes no responsibility for losses or damages due to installation of this product.

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