

## ATOMIC Throttle Body Installation for CARB Compliance

### Parts Required, Not Supplied

1 – PN 2939 Throttle Position Sensor Module

The Atomic Throttle Body EFI systems, PN 2900 and PN 2910, have been granted Executive Order number D-722 from the California Air Resources Board. This E.O. number permits the installation of the Atomic TBI system on 1987 and older GM passenger cars and trucks with a V8 gasoline powered engine originally equipped with a carburetor. Other vehicles and manufacturers are pending approval.

The following installation steps, components and programs must be followed when installing the Atomic TBI in accordance with CARB compliance. It is important to note that all of the original control components must be retained including the catalytic converter, EST distributor, AIR pump, EGR, Oxygen Sensor, etc.

### OXYGEN SENSOR

The OEM Oxygen sensor must remain in place and connected to the factory wiring. The Atomic is supplied with a Wide-Band O2 sensor that must be installed in addition to the original sensor. The original sensor will continue to send a signal to the factory ECU. Installation position and the procedure to install the MSD O2 sensor are detailed in the supplied instruction booklet.

### SOFTWARE UPDATE

The Atomic TBI must have version 1.2.3 (or later) of the ECU software as well as version 2.0.6 of the Dash software. You can determine these versions by going to Display Setup on the Handheld Monitor and selecting Firmware Versions. The screen will show you the versions that your Atomic system is running on. If software needs to be updated, go to [www.atomicEFI.com](http://www.atomicEFI.com) to download the latest version and install the upgrade with a micro-SD card on the Handheld.

### AIR PUMP

**Important:** If your AIR system only puts air into the exhaust manifolds, the Atomic system CANNOT be installed. The fresh air being introduced to the exhaust will cause false readings to the WB02 sensor.

If your vehicle is equipped with an air pump, close attention must be paid to the air injection lines. GM used multiple types of air injection control from the 1960's to the 1980's. All of the systems used a belt driven air pump that delivers clean air into the exhaust system. Some of these systems used a diverter valve to change where the air pump sent fresh air. Early systems with a diverter valve used a thermostatic control valve (TCV) that diverted the air to the converter at 160°F coolant temperature. In later years, the TCV was replaced by an ECU, which did the same job.

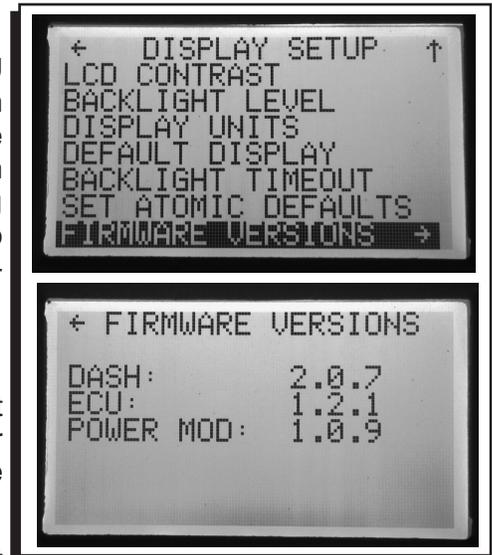


Figure 1 Software Requirements

# MSD ADDENDUM

During the initial setup of the Atomic, there is a selection for 'Air Pump Equipped' (Figure 2). This must be answered to 'Yes' if your vehicle is equipped with an air pump (the default is 'No'). This will make the closed loop function of the Atomic turn on at a higher temperature to ensure that the diverter valve has switched and is sending air to the converter. This way, the WB02 will receive the true values of the exhaust gasses for the correct operation of the Atomic's self-learning and target air-fuel ratio.

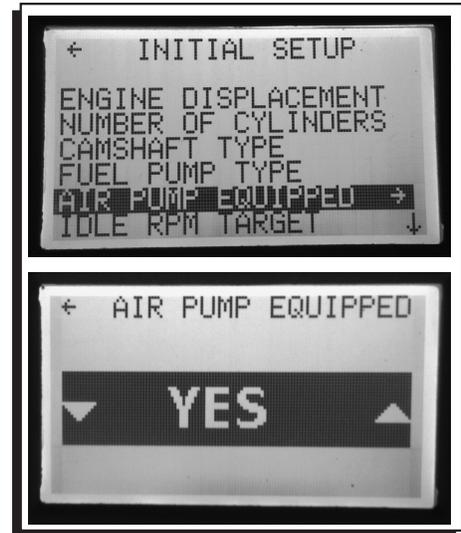


Figure 2 Air Pump Equipped Setting.

## TPS MODULE

A Throttle Position Sensor (TPS) signal will also be required for the factory ECU. MSD offers a plug-in module, PN 2939, which will provide the Atomic's TPS signal to the original ECU. This module outputs a voltage signal from 0.5-4.5 volts. It will connect to the original ground and signal wires of the factory ECU (Figure 3).

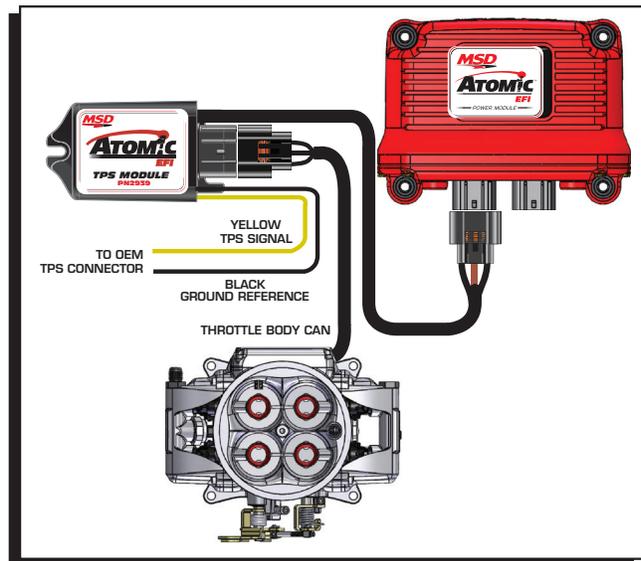


Figure 3 TPS Module Wiring.

## MIXTURE CONTROL SOLENOID

The original carburetor that was removed may have used a mixture control solenoid to alter the fuel mixture at the command of the factory ECU. If so, this solenoid must be taken out of the OEM carburetor and plugged into the factory harness to provide a feedback signal to the OEM ECU. It can be removed from the carburetor, connected to the original wiring and retained out of the way.



Figure 4 Remove the Mixture Control Solenoid.