AF1-100       Air Fuel Display Module
ET2-200        Engine Temperature Display
MP3-300        Manifold Pressure Display
TA5-500        Throttle Angle Display

Installation Manual

Venom™
8625 Central Ave.
Stanton, CA 90680

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Manual Revision 2.0
Product Warranty

The Venom Display Module is a high technology device that has been precision engineered. Every module is tested at the factory prior to boxing to ensure it is within our exacting specifications. Venom™ warrants this unit to be free from manufacturers defects for a period of 12 months from the date of purchase. Please note there is a difference between “defects” and “damage” as used in this warranty. During this period if your Venom™ product is found to be defective by Venom™, we at our option will repair or replace the unit sent to us for warranty service. No allowances will be made for labor or installation charges. Consequential damages are not covered. Damage caused by improper installation, misuse, abuse or using the module for which it was not intended is not covered under this warranty. Proof of purchase date is required for all warranty claims.

Conditions That Will Void Warranty

The following conditions will void the warranty:

- Installation on a vehicle for which the particular part number was not designed.
- Opening the Venom™ case or performing unauthorized modifications.
- Damaged caused by heat, water, improper electrical connection, physical damage or improper installation.
- Cutting or modifying the supplied wiring harnesses.

What Is Included

The Venom™ Display Module
Installation Manual
Venom™ Stickers
Wire Ties
Adhesive Mount Bases
Splice Connections

Installation Requirements

Although the installation of the Venom™ Display Module is not technically difficult you should be familiar with how to use basic hand tools. In some cases it is necessary to use a Digital Multi-Meter to measure voltage or resistance. If you are unfamiliar with this type of equipment it is recommended you seek professional assistance or installation.

Technical Assistance

Venom™ is committed to providing the highest quality of technical support available. We encourage you to call if you have questions or need assistance during the installation process. You may reach technical support by calling our Toll Free number at 1-888-974-2133. Telephone Support is available between 8 A.M. to 5 P.M. Pacific Standard Time. Technical assistance is also available via the Internet at http://www.Venom-Performance.com. You should check our web site for the latest technical information.
Precautions and Warnings

Observe the following precautions while installing the Venom™ Display Module:

Never work under the hood of a vehicle with the key on or engine running.
Some engine parts become extremely hot. This is especially true with the parts associated with the exhaust system such as the exhaust manifold and Oxygen Sensor.
Read over the entire instruction manual prior to starting the installation. Familiarize yourself with the procedure. Installation is easy if the procedures are followed.

Installation Steps

Installing the Display Module consist of the following steps:

Connecting the power cable
Connecting the sensor cable to the vehicle's Oxygen Sensor

Connecting Power & Ground

Ground Wire Connection

Connect the BLACK wire with the round terminal from the module to the vehicle's negative battery terminal or other suitable ground.

Hint: It is not necessary to disconnect the battery terminal to connect the wire lug. Disconnecting the battery terminal will reset your vehicle's electronics, such as the clock, radio presets etc. To prevent this simply remove the nut on the terminal bolt. Without removing the terminal, slide the eyelet of the Venom harness over the stud. Reinstall and tighten the nut.

Power Wire Connection

The RED wire with the Blue terminal must be connected to an ignition switched power. This allows the display module to be powered on when the ignition is turned on and turned off when the vehicle is off. This prevents the module from drawing the battery down when the vehicle is off. You may connect the red wire directly to the battery through a switch (not provided). However, if the switch is left on the module will likely drain the battery overnight.

Locate a switched power using a test light or voltmeter. Using the supplied blue splice connector wrap the blue splice around the wire and snap it together. This taps into the wire. Slide the RED wire onto the blue splice all the way until it is all the way against the large portion of the blue splice.

Connecting The Sensor Wire

The Display Module must be connected to the sensor that will be monitored. Depending on the module, the sensor wire will be connected to one of the following vehicle sensor(s):
AF1-100 - Sensor Wire to Vehicles Oxygen Sensor
ET2-200 - Sensor Wire to Vehicles Engine Coolant Temperature Sensor
MP3-300 - Sensor Wire to Vehicles Manifold Absolute Pressure Sensor
TA5-500 - Sensor Wire to Vehicles Throttle Position Sensor

The sensor wire (Gray wire with blue terminal) from the module will be connected to the OUTPUT of the applicable sensor.

Note: Some sensors use Shielded cable, similar to coaxial cable. If you splice into the cable with the blue splice connector you will short the signal to the outer shielding causing damage to the wiring harness. A shielded cable is usually larger in diameter than the other wires connected to the sensor. If this is the case you will need to trim the shielding back with a razor blade in order to gain access and splice into the inner wire.

Black Wire Connected To Vehicle Ground.

AF1-100 - Oxygen Sensor (Air Fuel Monitor)

The sensor wire is connected to the output wire of the vehicle's Oxygen Sensor. The vehicle may have one or more Oxygen Sensors depending on the vehicle year and model. The module must be connected to the oxygen sensor upstream (before) the catalytic converter.
Oxygen sensors may have multiple wires. In this case you will need to use a digital volt meter to determine which wire is the output of the oxygen sensor. The output voltage will oscillate between .1 and 1.0 volts. The other wires may have 0 volts (ground) or 12 volts present. Do not connect to these wires.

**MP3-300 - Manifold Pressure Sensor (Manifold Pressure Monitor)**

The sensor wire is connected to the output wire of the vehicles Manifold Absolute Pressure (MAP) Sensor. The sensor usually has a three-wire connector and is either mounted directly to the Intake Manifold or has a vacuum hose that connects to the Intake Manifold. Using a digital volt meter probe each wire with the engine idling. The voltages should be similar to below:

<table>
<thead>
<tr>
<th>Wire Type</th>
<th>Voltage Range</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Wire</td>
<td>0 Volts – NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>Output Wire</td>
<td>.25-1.5 Volts – CONNECT TO THIS WIRE</td>
<td></td>
</tr>
<tr>
<td>Reference Wire</td>
<td>4.5-5.0 Volts – NO CONNECTION</td>
<td></td>
</tr>
</tbody>
</table>

**TA5-500 - Throttle Position Sensor (Throttle Angle Monitor)**

The Throttle Angle Monitor displays the throttle angle by reading the output of the vehicles Throttle Position Sensor. The Throttle Position Sensor is located on the throttle body opposite of throttle control linkage. Using a digital volt meter probe each wire with the engine idling. The voltages should be similar to below:

<table>
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<tr>
<th>Wire Type</th>
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<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Wire</td>
<td>0 Volts – NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>Output Wire</td>
<td>.25-1.5 Volts – CONNECT TO THIS WIRE</td>
<td></td>
</tr>
<tr>
<td>Reference Wire</td>
<td>4.5-5.0 Volts – NO CONNECTION</td>
<td></td>
</tr>
</tbody>
</table>

**Engine Coolant Temperature Sensor (Engine Temperature Monitor)**

The Engine Temperature Monitor displays the engine temperature by reading the output of the vehicles Engine Coolant Temperature Sensor (ECT). The ECT is usually a two wire sensor that is located some where in the coolant jacket, usually on the intake manifold or engine block. Although there is usually a sensor located in the radiator this is not the engine coolant temperature sensor and is usually the electric cooling fan switch. Using a digital volt meter probe each wire with the engine idling. The voltages should be similar to below:

<table>
<thead>
<tr>
<th>Wire Type</th>
<th>Voltage Range</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Wire</td>
<td>0 Volts – NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>Output Wire</td>
<td>.25-4.25 Volts – CONNECT TO THIS WIRE</td>
<td></td>
</tr>
</tbody>
</table>