ECT-2 Module – Programming (Preliminary)

Overview

The ECT Display Driver comes with programming for one of the "standard" configurations we offer, but the module can be re-programmed with the use of a DB-9F serial cable and a computer equipped with a serial port or a USB to Serial adapter.

Reprogramming can take one of two forms:

1. Loading one of our standard text files to change the module operation. For example, to change an AP1 Stock S2000 module to an AP1 AEM module or to an AP1 Civic module.
2. Editing one of our standard text files for custom temperature displays. This allows you to change the set-point for each segment of the temperature gauge.

NOTE - You can't change an AP1 module to AP2 or vice-versa, because the core software is different for the AP1 and AP2 modules.

Preparation – Things you will need:

1. A Programming Cable – either buy ours or make your own by following the instructions on our web site.
2. A way to power the ECT module – either program it while it's installed in the car or use a 9-volt battery with a battery clip (snap connector with red and black wires).
3. A Windows computer with a serial port or a USB to Serial Adapter. Usually only older (Win XP) computers will have a built-in serial port so most likely you will need the USB Adapter. These can be found at a local computer store for about $10-$15.
4. A program to edit a text file. I use Notepad which comes with every Windows computer. I suggest you DO NOT use Word or other fancy word processing programs because they can leave invisible characters (control codes) embedded in the text file, which will mess up the programming.
5. A way to send the text file to the serial port. This is easy to do by adding a "Generic Text Printer" to your computer. It requires no additional hardware or software and instructions are available on the Internet.

Editing the data file for your custom settings:

Here is part of the file for an AP1 Civic ECT module:

```
[967] millivolts - 2nd bar lights at 160 degrees
[620] millivolts - 3rd bar lights at 175 degrees
[490] millivolts - 4th bar lights at 190 degrees
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The values in the brackets [ ] define the transition point between gauge segments. The first line indicates that the second gauge segment will light when the sensor voltage drops to 967 millivolts (0.967 volts) and will go out if the voltage reverses and rises above 967 millivolts. If the voltage continues to drop to 620mv (or below) the third gauge segment will illuminate. By changing the voltage values in the brackets, you can control when the segments light up.

The text after the brackets and on the same line is a comment and has no effect on the module programming. It is only there to remind you what the settings mean. If you change the voltage

values in the brackets for different temperature settings it's a good practice to edit the comment to indicate the temperature you are using for that value, but it's not required.

Here are some rules for editing the text file:

1. Do not edit or delete any lines above the bracketed [ ] data values.
2. Data values must be enclosed in brackets [ ] and be the same length as the original text file (either 3 or 4 characters). All AP2 modules use 4-character values. AP1 modules will use 3 or 4 characters depending on the software version shown on the module label. Versions 1.x will use 3 characters; version 2.0 and above use 4 characters.
3. If the voltage value you want to use is less than the required number of characters you must use preceding zeros. For example, an AP2 voltage of 85mv should be entered as [0085].
4. The voltage values must always be in ascending order, which is also the order that the segments light.
5. Feel free to add/edit/delete any of the text AFTER the section with the data values.

Programming Steps:

1. Plug the Programming Cable into your serial port and connect the wires to the ECT module GND and PROG pins as identified in the "make your own cable" instructions.
2. Open one of our standard ECT text files with Notepad and edit the voltage values that you need to change. Save the file with a new file name.
3. Make sure the ECT module is powered (LED should be blinking) and "print" the new text file to the Generic Text Printer you previously created.
4. Observe the LED on the ECT module as you click the Print button:
    - The LED should light during the file transfer (3-10 seconds).
    - The LED will go out as the new data is saved into the module's EEPROM memory.
    - The LED will flash 2 slow one-second blinks to indicate the transfer and load were successful.
    - *If you do not see the 2 slow blinks then the programming process did not work.*

Unsuccessful downloads can be caused by:

- Incorrect wiring or wrong Com port – Look for this if the LED does not light steadily while "printing" the text file.
- Invalid text file – usually caused by missing brackets [ ] or deleting lines at the beginning of the file. Look for this if you do not get 2 slow blinks.
- Wrong voltage parameter used in the text file, (not 3 or 4 characters in length). Look for this type of error if the module gives 5 quick blinks after the download.