

# EXHAUST GAS TEMPERATURE MODULE

## INSTRUCTIONS

### Overview:

The EGT Module is designed to eliminate the need for multiple wires running to the main module. It utilizes an analog to digital converter that allows you to run a single wire back to the Main Module and can only accept K-Type Thermocouples. Each EGT Module will have a label designating where each cylinder's probe should be plugged into. There are currently Chevy (1,3,5,7 & 2,4,6,8), Ford or Diesel (1,2,3,4 & 5,6,7,8) modules available, as well as expansion temperatures (9,10,11,12 & 13,14,15,16 & 17,18,19,20).

The EGT Modules are a plug and play module and do not require any additional calibrating as long as you plug the correct sensor into the correct spot on the module. By default, all EGT Modules are calibrated for the 1800 degree K-Type Thermocouple, but if desired can be changed to the 470 degree K-Type Thermocouple for lower range temperatures. You can also change the name of the channels if so desired by going through the calibration process in the software.

### Capabilities:

4 Temperature Probes

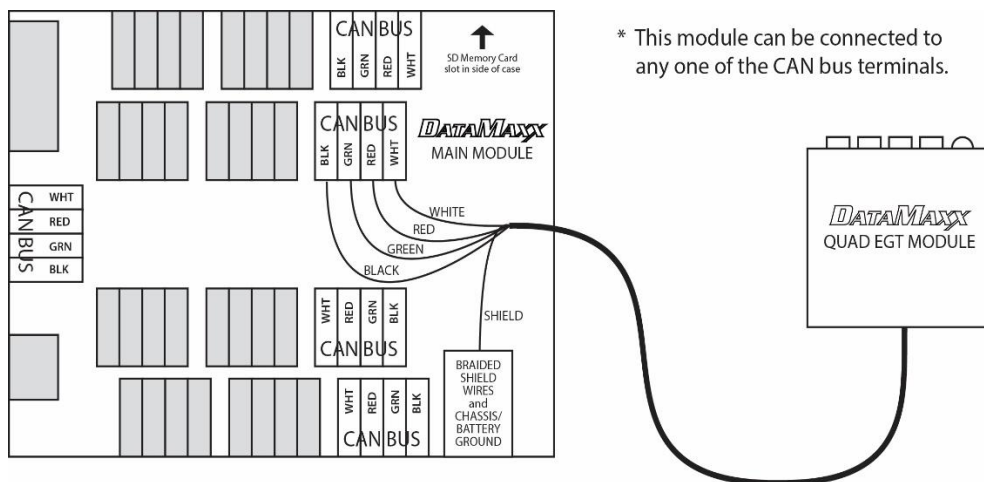
### Installation:

Typically, we always recommend mounting the modules first and then mounting the sensors and running the wires. In the case of the Custom 8 Thermocouple kit, we have to do things a little differently. The first step is to install all of the sensors. Please refer to the "Exhaust Gas Temperature Probes" installation instructions in the Sensors section to correctly install the probes. When installing the probes, be sure to make the probe wires "run away" from the spark plug wires. If you need to cross over a spark plug wire then do so with the probe wire underneath, and have them cross at a 90 degree angle. Then wire tie all of the probe leads together as neatly as possible. If you ordered the correct kit, and installed them correctly, you should wind up with all of the yellow K-Type connectors at the same place.

Go ahead and connect all 4 probes to each EGT Module but do not secure the module to the car just yet. With all of the probes connected to the module you can now move the module around the car and find the most suitable location for the EGT module itself. Keep in mind that we want this as far away from ignition components as possible (we realize that you will ultimately be close to the spark plug wires). Once you have a place in mind that is stable, you can physically mount the EGT Module.

Do NOT mount the EGT module directly to the engine block. Installing the EGT modules can be somewhat tricky as there are no bolt holes. One way that has proven successful is mounting to a flat surface using strong Velcro, or securing via wire ties.

After the module has been mounted, wait until you have all of your other modules and sensors installed before running your wires. Doing this will ensure your wires are taking the most logical, and efficient path together. Once all of the Modules and sensors are installed you can run the wire from the EGT module to the Main module. Keep in mind that we want to avoid any ignition component on our way back to the Main Module, and ideally we will have the ignition wires on one side of the car and the data wires on another. Cut to length, strip back the insulation so the four colored wires can reach a CAN bus port, and so the bare shield wire can be wrapped around one of the four ground posts. Strip a small section of insulation of each of the four colored wires and place into the appropriately colored terminal, then connect the shield wire to a ground post. For more information on wiring, see “How to Wire Correctly” in the Additional Information section.



Light Scheme:

| <b>Blinking Pattern for GREEN LED</b> | <b>Meaning</b>   |
|---------------------------------------|--|
| Normal Green Blink                    | <b>Normal</b>  |
| Any Other Green Blink Pattern         | See EGT Module Troubleshooting.  |
| <b>Blinking Pattern for RED LED</b>   | <b>Meaning</b>   |
| No Red Blinks                         | <b>Normal</b> , everything's great.  |
| Three Red Blinks                      | <b>SD Card Missing.</b> This is a normal condition when there is not currently an SD card in the system. |
| Any Other Red Blink Pattern           | See "EGT Module Troubleshooting".  |

Troubleshooting:

If you are having an issue with your EGT Module, it is recommended that you start off troubleshooting the Main Module as it is the hub of the entire system and can cause issues with other modules. If there are no red lights on the Main module, or the troubleshooting indicates that the problem is the EGT Module, then follow the troubleshooting steps below.

- Channel is Reading 1800 Degrees: If a single channel is reading 1800 degrees, the issue could be either the probe itself or the EGT Module. The first step is to simply swap a good probe with the bad probe, where we plug it into the EGT Module. If the problem follows the probe, then see the "EGT Sensor Troubleshooting" section. If the problem stays on the same channel with a probe that you know was just working, then the issue is either the EGT Module or calibration.

To check the calibration, record a short 5 second test log file, download to the software using the SD button, select Edit then Properties, and find the channel in question and make sure that the calibration says "EGT (1800 degree range using K thermocouple)". If the calibration is wrong, change it, and send the configuration back to the DataMaxx. If the calibration is correct, then you most likely have an issue with your EGT Module itself, please call Computech Tech Support to arrange to have it repaired.

## **DIAGNOSING A CAN BUS ERROR**

The first step of diagnosing a CAN Bus error is to verify that you are in fact getting a CAN Bus error. To do this, simply insert the SD card in the main module with the power on and wait approximately 20 seconds. If you do not see any red lights then you do not have a CAN Bus error. If you see the red light blink in a pattern of either 2 red blinks or 4-7 red blinks then you do in fact have a CAN Bus error.

You can think of the CAN Bus as a large 10 lane highway with traffic moving in both directions. On rare occasion a module can “crash” and cause a pile up on the CAN Bus highway. When this happens it is hard to predict whether the crash will block all lanes and bring traffic to a stand-still, or if it will allow traffic to freely flow in all the other lanes except the one that crashed. Because of these differences, sometimes a CAN Bus failure can cause the entire system to shut down and other times it can cause just the affected module to shut down.

The real question is to determine which module has “crashed” on the CAN Bus. The best way to do this is to divide and conquer. Disconnect a module, then re-power the DataMaxx. If the error goes away then you know that the unit you just disconnected was the one that crashed. Disconnect your modules in the following order (skip over ones you don't have).

- Remote SD Module
- Expansion Analog Module
- LCD Module
- EGT Module

If you find that removing one of the modules gets rid of the CAN Bus error, the next step is to reconnect the module into the system. The most common cause for a CAN Bus wire is faulty wiring, so the mere act of disconnecting and re-connecting the module in question will usually solve the issue. If when you re-connect the module, the CAN Bus error comes back, the next step is to send a factory reset and re-calibrate the system. To do this, please follow the “Factory Reset / Re-Calibration” instructions below. If the “Factory Reset / Re-Calibration” does not resolve the issue then the module that “crashed” will most likely need to be sent back for repair. Please call Computech Tech Support to arrange the repair.