

ANALOG MODULE INSTRUCTIONS

Overview:

The Analog Module allows you to expand your system capabilities by adding 4 analog channels. The analog channels would include things like pressures, temperature, shock travel, and accelerometer sensors. You can continue to add the expansion module as your need for sensors arise. This allows you to not spend additional money on extra capacity until you actually need it.

The Expansion Analog Modules are labeled alphabetically in order to distinguish them apart (Analog A, Analog B, Analog C, etc.). If you would like to order an expansion Analog Module and already have one, please specify with our sales reps that you would need the next Module. There is no limit on how many expansion modules you can add to your system so you will never run out of capacity.

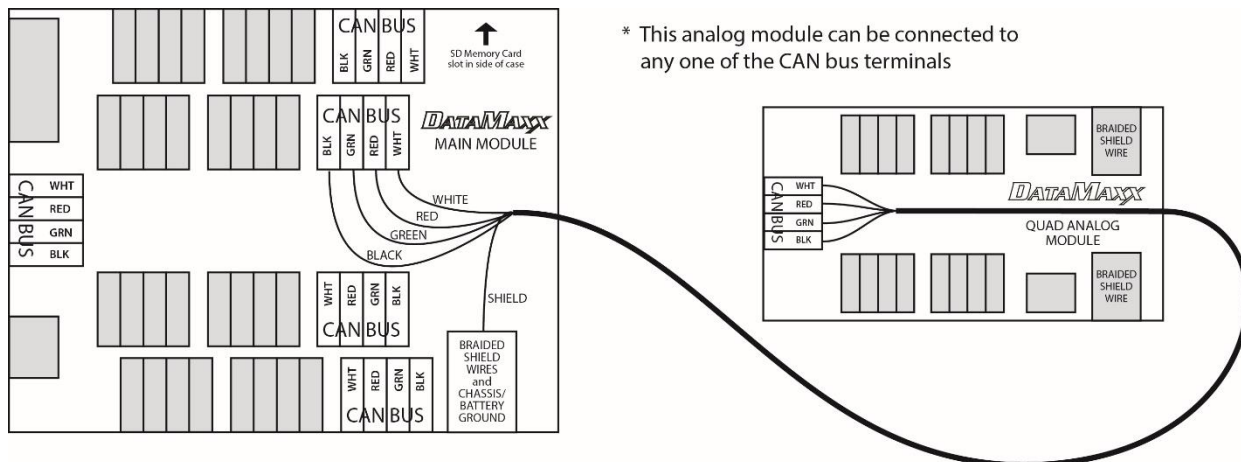
Capabilities:

4 Analog Channels
1 CAN Bus Connection

Installation:

Install the module in a convenient place away from ignition components and connect your supplied CAN Bus cable from the Analog CAN Bus to any Main module CAN Bus terminal. When connection to the Main Module, you can use any of the five CAN Bus terminals available. If you have multiple Expansion Analog Modules, it is possible to piggyback the wires on the CAN Bus system to minimize the amount of wires running. For instance, if you have an Analog A and an Analog B, you can run a CAN Bus wire from Analog B to Analog A. You can then have a single wire going from the Analog A CAN Bus to the Main Module, and everything will work appropriately.

When terminating the wires, you only want to have the shield wire connected at the Main Module as this is the primary ignition noise drain location. Connecting the shield wire in both the Expansion Analog Module, as well as the Main Module will result in no ignition noise drainage and may lead to noisier signals.



Light Scheme:

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

Default Dip Switch Settings:

A: A2 RTD OFF
 B: A2 GND ON
 C: A1 RTD OFF
 D: A1 GND ON
 E: A3 RTD OFF
 F: A3 GND ON
 G: A4 RTD OFF
 H: A4 GND ON

Additional Information:

Multiple Analog Modules: If you have chosen to expand your capability to multiple Analog modules, then you will notice that the serial number of your primary analog will start

with an 'A' and your secondary will start with a 'B' (Serial numbers can be found on the underside of the case, or below the retaining bar where the wires enter the case).

Troubleshooting:

If you are having an issue with your Analog 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 Analog Module, then follow the troubleshooting steps below.

- 2 Red Blinks: You are getting a generic CAN Bus error. Please see “Diagnosing a CAN Bus Error” in the Troubleshooting section.
- 3 Red Blinks: This is a typical error message letting you know that there is no SD card in the system and it cannot record until there is one. If you do have an SD card in the Main module and are getting this error message, please follow the troubleshooting instructions for “1 Red Blink” above.
- Green Light Blinking: The green light blinking is actually not an error, but an indication that the system is working and has power.
- No Green Light: The first step is to check with a volt meter to make sure that you have power at the black and red wire of the CAN Bus in the analog module. If you do have power over 12 volts, turn power off and remove the 4 screws that hold the circuit board to the case. On the bottom of the circuit board there is a power transistor that is black and silver and has three prongs that connect it to the board. Make sure that all of the leads are sufficiently attached to the board. If they are not, please call Computech Tech Support to arrange to have the power transistor replaced on your circuit board. If the power transistor appears to be intact, replace the 4 screws, then remove all of the wires from your analog module except for the black and red of the CAN Bus. Power the system on again and if it still does not show any green light, contact Computech Tech Support. If the green light turns on and blinks, turn off power, reconnect the Green and White wire of the CAN Bus and power back up. If the light goes out, please refer to “Diagnosing a CAN Bus Error” in the Troubleshooting section. If the green light turns on and flickers, turn power off, and slowly begin reconnecting each sensor, powering up after each one in order to determine which one is causing the power failure.
- Green Light Always On: This is usually an indication that there is something wrong with the calibration. Please refer to “Factory Reset / Re-Calibration” in the Troubleshooting section.

- Sensors Not Reading Correctly: If your sensors are not reading the numbers you would expect on your LCD dash, the issue is most likely associated with the calibration. It is recommended to go that that specific sensor type troubleshooting section to properly diagnose.

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.