OXYGEN SENSOR INSTRUCTIONS

Overview:

Oxygen sensors are hands down the best tuning sensor you can purchase for your DataMaxx. Oxygen sensors give you a true Air Fuel Ratio, whereas an EGT sensor gives you the result of air fuel ratio.

The main idea behind oxygen sensors is not to hit an exact number based on what your buddy said. Every engine is different and will react differently to weather changes and tune ups. The goal is to find a tune up that works well for your car then note what the AFR (Air Fuel Ratio) is. From that point forward you want to keep the car tuned to that same AFR number. For example, if your baseline AFR is 13.2 and you go to the track and make a time run and see that the AFR is 13.9, you know the car is too lean and you need to fatten it up.

The stoichiometric difference between lean and rich is 14.7. Anything below 14.7 is rich and anything above 14.7 is lean. The further you get from that number the leaner / richer you are. In general, the majority of our customers like to run their engines between 12.8 and 13.2. This is typically a safe tune up and the engine will typically react to weather changes as we would expect.

If you are using the Computech ET Prediction program available on the "RaceAir Pro" or "RaceBase" program then the oxygen sensors can help there as well. With our ET Prediction program, the goal is to find a tune up where the car reacts to weather the way the program expects it to. Once you find that baseline where the ET prediction is working perfectly, take note of what your AFR is and strive for that AFR every weekend.

WARNING: DO NOT CONNECT THE RED WIRE FROM THE O2 CONTROLLER BOX TO THE DATAMAXX! IT NEEDS TO GO TO AN EXTERNAL 12V SUPPLY. CONNECTING THIS RED WIRE TO THE DATAMAXX WILL VOID YOUR WARRANTY!

Part Numbers:

#8041   Wego III Wide Band O2Sensor
#8042   Dual Wego III Wide Band O2 Sensor

Installation:

1. The oxygen sensor should be located on the header pipe about 6-8 inches from the header flange. Ideally the sensor tip should be face down to avoid accumulation of condensation.
2. An 18 x 1.5 mm weld nut must be welded onto the exhaust pipe. After welding, run an 18 x
   1.5 mm tap through the threads. Failure to clean the threads may result in sensor damage. Always use an anti-seize lubricant on the sensor threads
3. Install the Wego IIID unit. The unit is fully sealed, but should be mounted away from sources of engine or exhaust heat. The unit can be secured by means of two #8 screws through the mounting flanges.
4. Connect the Bosch sensors to the 6 pin mating connectors on the Wego wire harness. Connect the black wire to chassis ground, and the red wire to a switched +12 volt power.

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5. The white wire is the signal for the first O2 sensor and should be plugged into a selected "A- WHT" terminal. The blue wire is the signal for the second O2 sensor and should be plugged into a selected "A- WHT" terminal. The thin black wire can go to any one of the Analog GND terminals.

Note: If installing more than 2 Wego controller boxes, you will need to add the filter capacitors.
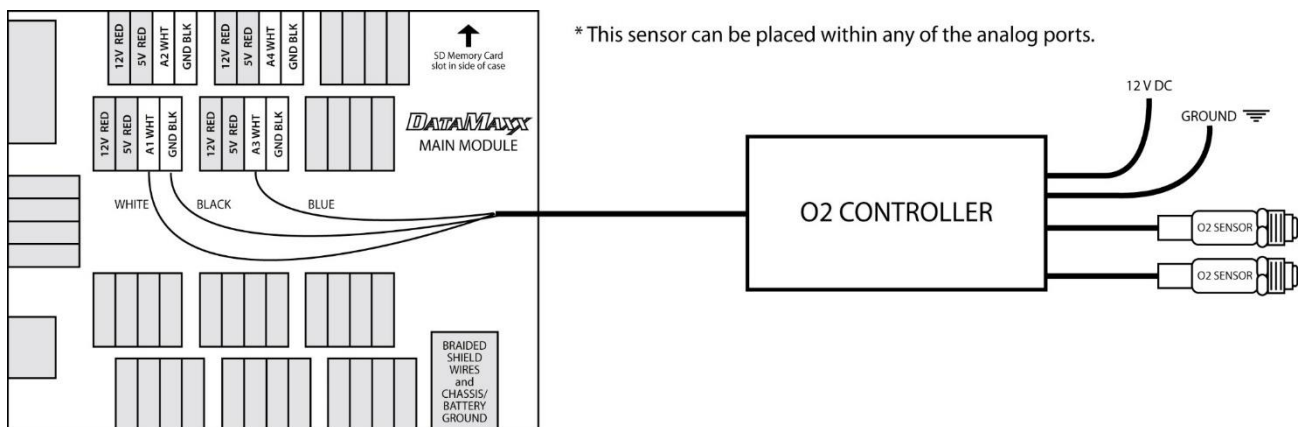
Dip Switch: RTD – OFF

              GND – ON

Calibration:

Calibrating the oxygen sensors is a twostep process. First you need to perform a free air calibration, and then you need to calibrate the DataMaxx so that the software and hardware knows what sensor you have installed.

To Perform a Free Air Calibration
- Take the sensors out of the headers, and let them dangle in the air with the shop doors open.
- Turn the free air calibration trim pots on the Wego as far as you can counterclockwise.
- Turn on power and wait 60 seconds so that the sensors can fully heat up.
- Slowly turn each free air calibration trim pot clockwise until the corresponding LED starts flashing at a rapid rate. Try to set each trim pot at the point where its LED just starts to flash.

To Calibrate:
- Follow the Initial Calibration instructions in the "Software" section, OR:
- Record a short 5 second test log file, and download the log file correctly using the SD button.
- Select Edit, then Properties. You are now in the Channel Properties area.
- Find the Analog channel line that you installed the sensor on, follow it to the right, and click on the finger pushing a red button.
- Change the "Type of Sensor" to either "O2 (Daytona WEGO II) Gas AFR" or "O2 (Daytona WEGO II) Meth AFR" and change the "Channel Name" to whatever you desire.
- When you are done, select OK, and then "Send Config to DataMaxx".

Testing:

If the sensor is mounted in the collector, you are not likely going to get a legitimate reading at idle due to air recursion. There is however a convenient way to test that the sensors are working before going down the track. Turn on the power to the system, and let the oxygen sensors heat up for approximately 2 minutes. Then using a Bic butane lighter, force butane into the tip of the sensor BUT do not light.
When the sensor feels the butane it should go from a reading of 18-20 down to a reading of 10-12.

Troubleshooting:

Most installations usually locate the oxygen sensors in the collector. Because this is so close to open air, you are not likely to get a valid reading until you go down the track. If your oxygen sensor is not reading or working correctly after making a pass down the track, please follow the following steps.

- Verify The Calibration: Record a short 5 second log file, and download to your computer using the SD button in the DataMaxx software and save to an event. Once the log file is open, select Edit, then Properties. Find the channel in question, and verify that the calibration is correct. If it is not, follow the calibration instructions for the Accelerometer in the manual. If the calibration is correct, "Check the Hardware Settings".

- Check Hardware Settings: The first step is to make sure that the red wire coming from the Daytona WEGO controller is going to a power source outside of the DataMaxx. If that red wire is going to the DataMaxx, there is a strong possibility that you damaged the module; place to an external power source and try again. If the red wire is correct, then visually confirm which channel the sensor in question is physically going to. If this is not the same as the calibration, then re-calibrate. If the sensor is going to the channel you thought, we then need to make sure that the corresponding RTD dip switch is OFF and that the GND is on. Refer to the back of your lid to determine which dip switch corresponds to which channel.

- Free Air Calibration: Take the sensors out of the headers, and let them dangle in the air with the shop doors open. Turn the free air calibration trim pots on the Wego as far as you can, counterclockwise. Turn on power, and wait 60 seconds so that the sensors can fully heat up. Slowly turn each free air calibration trim pot clockwise until the corresponding LED starts flashing at a rapid rate. Try to set each trim pot at the point where its LED just starts to flash. After performing the free air calibration, perform the "Butane Test".

Butane Test: Turn on the power to the system, and let the oxygen sensors heat up for approximately 2 minutes. Then using a Bic butane lighter, force butane into the tip of the sensor BUT do not light. When the sensor feels the butane it should go from a reading of 18-20 down to a reading of 10-12. If the sensor changes and drops down, then the sensors are working correctly. If they do not change at all then call Computech Tech Support for more information.