ACCELEROMETER SENSOR INSTRUCTIONS

Overview:

The accelerometer will tell you how hard your vehicle is launching. It can help identify tire spin as well as determining a wealth of information.
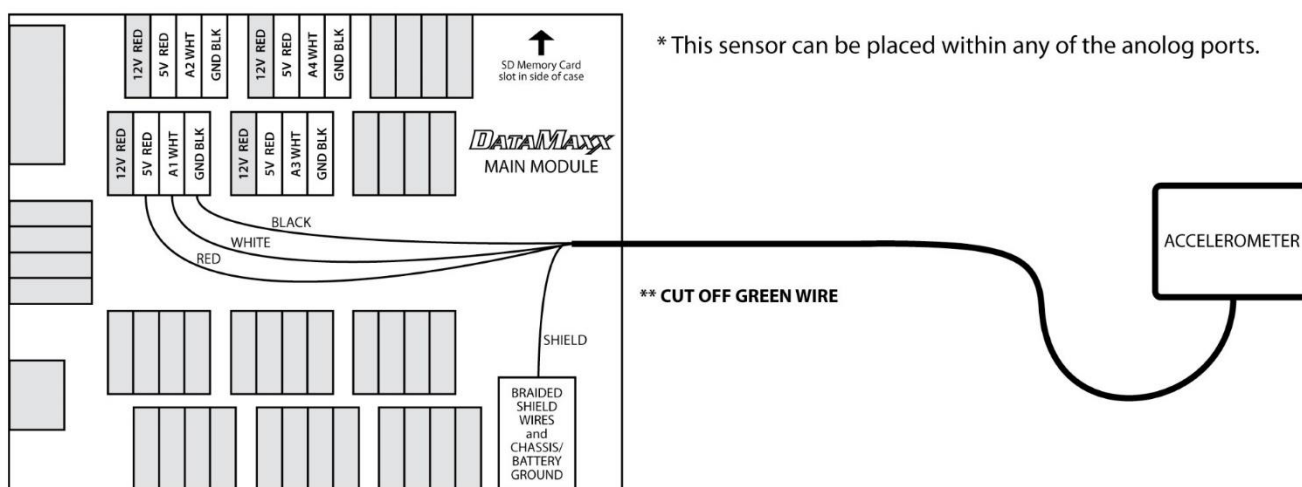
Part Numbers:

#8040   Single Axis 3.5 G Accelerometer

Installation:

For accurate readings, it is important to properly mount your accelerometer. For single axis accelerometers in drag racing applications, simply make sure that the arrow on the accelerometer point's exactly straight forward. Mounting the accelerometer away from the center of gravity of the car will introduce false readings because "yaw" (mere rotation or spinning) is misperceived as acceleration (changing direction of motion or cornering).

Find a suitable mounting location where the sensor will not be susceptible to excessive vibration. It is also helpful to use 3M foam tape to securely adhere to a surface, but do not actually adhere it until you have calibrated and tested the sensor. Now run the wire to either the Main or Analog module, and connect to a free Analog input. Connect the white wire to "A- WHT", black wire to "GND BLK", and the red wire to "5V RED."

CONNECTING THE ACCEL TO 12V WILL DESTROY THE SENSOR

Calibration:

After installing your accelerometer you will need to tell the computer and the *DATAMAXX* what type of sensor it is. You will also need to know which Module and analog channel that you have plugged it into.

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 "Accelerometer" and change the "Channel Name" to "Accel".
• When you are done, select OK, then click on the "Filter" button for that specific channel.
• Click on the check box to enable "Automatically zero reading just before launch".
• When you are done, select OK, and then "Send Config to DataMaxx".

Dip Switch: RTD – OFF

                   GND – ON

Testing:

With the accelerometer wired but not mounted, tilt it so that the arrow points straight up toward the sky. A reading close to one should result. This indicates one earth gravity or one "g" of acceleration. If you point the arrow straight down toward the earth, the reading should be minus one. If you hold the sensor level, the reading should be close to zero. Now, permanently mount the sensor. It is OK if the reading is not perfectly zero, as the software will automatically set it to a zero value at the appropriate place.

Troubleshooting:

If your accelerometer is not reading or working correctly 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 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, then we need to first make sure that the sensor is plugged into the 5V reference voltage terminal and not the 12V one. If that is correct, 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.

- Verify Output Voltage: After the calibration and hardware settings have been verified, we need to check the voltage on the white signal wire terminal. To do this, take your volt meter, connect the ground to one of the four ground posts in the DataMaxx and place the red volt meter lead to the white signal wire screw terminal. If the sensor is level, the voltage should be between 1v to 3v. If the voltage is within these values then the sensor is working correctly and your calibration is incorrect. Re-calibrate the sensor per the calibration instructions in the Accelerometer section and follow the "Testing" procedure. If the sensor is reading a flat 0V, be sure to set your volt meter so that it will read a tenth of a volt, if you do not see a decimal point then your voltmeter setting needs to change. If your volt meter is reading a tenth of a volt and yet the sensor is reading a flat 0v, your sensor itself is broken and needs to be replaced. If the sensor is reading above the expected voltage, then there is an open connection between the DataMaxx and the sensor, and the sensor will need to be sent back to Computech.