PRESSURE SENSOR INSTRUCTIONS

Overview:

Pressure sensors are an analog style sensor that produces a voltage from 0V to 5V depending on the amount of pressure applied and the range of the sensor. If you are using a pressure sensor, you can install it into any available analog channel.

Part Numbers:

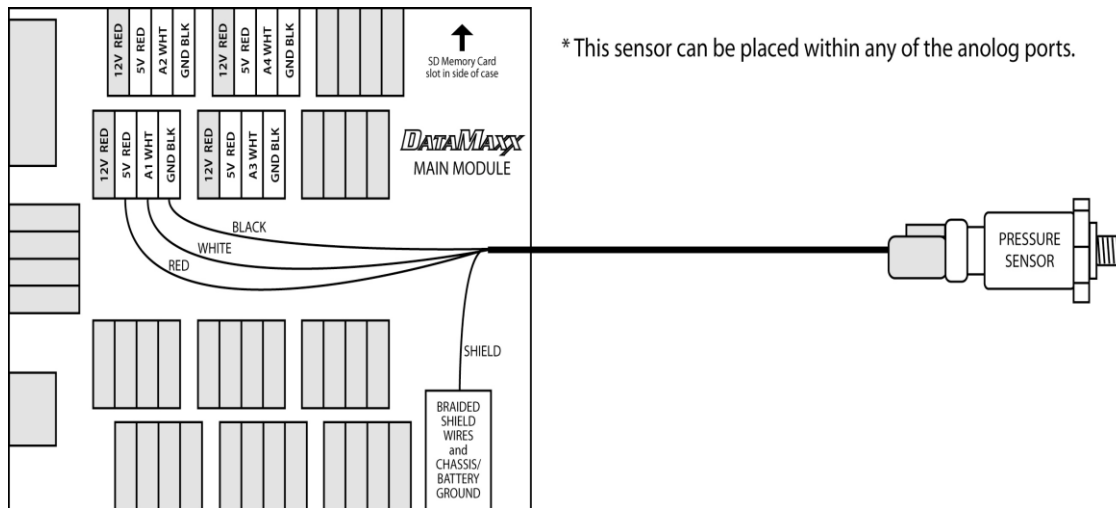|	
#8023	-14.7 to 30 Vacuum Pressure Kit
#8025	0 to 15 Pressure Kit
#8030	0 to 100 Pressure Kit
#8031	0 to 500 Pressure Kit
#8033	0 to 1500 Pressure Kit
#8034	0 to 2000 Pressure Kit

Installation:

The first step to installing the pressure sensor, is determining the best place to locate it. You can install the pressure sensor directly to the engine or selected application or use a type of cushioned clamp to remote mount the sensor away from the engine and the vibration effects that the engine can cause. It is recommended to use Teflon tape on the threads to ensure a tight seal.

After the sensor is installed, you can run the wire to either your Main Module or one of your Expansion Analog Modules. You can then wire the sensor into any of the open Analog channels. It does not matter which module or which analog channel you wire the sensor into—as we will later calibrate the system and let it know where each sensor was physically installed.

If using the standard *DATAMAXX* pressure sensor (black, round, and will have a *DATAMAXX* label on it) insert the white wire into an available "A- WHT" terminal, the black wire to the "GND BLK" terminal, and the red wire to the "5V RED" terminal.

> **Note:** If you pressure sensor only has a single wire, please refer to the Oil Pressure instructions

Dip Switches: RTD – OFF

                              GND – ON

Calibration

After installing your pressure sensor, 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" and the "Channel Name" to what you want.
  - The type of sensor should be listed on the side of the pressure sensor.
- When you are done, select OK, and then "Send Config to DataMaxx".

Dip Switches: 3 Wire   RTD – OFF

GND – ON

Testing:

All pressure sensors should read approximately zero when there is no pressure applied. The only way to truly test a pressure sensor is to apply pressure to it and watch for a reaction.
If for some reason a sensor is consistently reading a value other than zero at rest, you can "Zero" a sensor. To do so, please see the "Custom Calibration / Zeroing Sensors" in the Software section.

Troubleshooting:

If your three wire pressure sensor is not reading or working correctly please follow the following steps. If you have a single wire pressure sensor, please see the Oil Pressure Troubleshooting section.

- 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 "Pressure Sensors" 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. Do this when there is no pressure on the sensor and it should be reading 0 psi. If your sensor is a vacuum psi the voltage should be between 1.4v to 1.8v. If your sensor is 15 psi, 30 psi, 100 psi, 150 psi, 500 psi, 1500 psi or 2000 psi the voltage should be between .3v and .6v. 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 "Pressure Sensor" 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, "Check the Extension Cable".

- Check the Extension Cable: The first thing in verifying your extension cable and connection, is to check that the wires are still well-connected, where they go into the connector. To do this, gently tug on the black, red and white wire where it goes into the connector. If it comes out easily, then you need to replace your extension cable—if it does not, then you need to re-terminate your wires. To do this, simply unscrew the black, red and white wire where it goes into the analog channel. Visually inspect the ends of the wire to ensure that you were not crimping down on the insulation. Then re-terminate the wires back in their appropriate terminals.

ZEROING SENSORS

Sometimes a sensor will not always read absolutely zero, or be off by a certain amount. The DataMaxx software has the ability to rectify this with our "Make Minor Adjustment" feature.

1. Open a log file that needs to be adjusted. Go to Edit, and then Properties.

2. Find the sensor that needs adjusting, follow the line to the right, and click on the "Calibration" button (finger pushing a red button).

3. To the right of the "Type of Sensor" drop down list, click on the "Calibration" button again.

4. Click on the "Calibration Builder" tab at the top, and make sure that the check box is checked for "Use Calibration Builder" for this sensor.

5. The bottom is the area where you can make minor adjustments to all your readings. If your sensor is always reading 2 psi higher than it should then you would want to type in -2, and then hit the "Add Adjustment to All Readings" button.

6. Select Ok, and then Ok again, to get you back to the channel properties.

7. Because this has now changed the sensor to a Custom calibration, the software does not know which zone to place it in. So click on the "All-In-One View" preferences button and change the sensors zone to the correct zone.

8. When you are done, click on the "Send Configuration to DataMaxx (via SD Card)" button at the bottom right of the channel properties screen. It should then ask you if you

want to set the Hardware Clock. If you are near the DataMaxx system then say Ok, if not then select No (for every second it takes you to get to the system is a second the SD card does not know has past—for instance, if it takes you 3 minutes to get to the DataMaxx your clock will be 3 minutes slow). Then select Ok, and Ok again, then take the SD card out of your computer.

9. Take the SD card to your DataMaxx system, turn the power on, wait at least 5 seconds and then place the SD card into the Main Module. You will notice the lights on the Main Module acting unusual, and if you have an LCD Dash you will see thing—such as Config #10 done. Wait approximately 1 minute and you have completed your DataMaxx LCD Dash Calibration.