Mx2 Dual/Single Mass Airflow Sensor Signal Processor

for use with Hz output sensors

Terms of Use and Sale

Our products are intended for off road use only. Torque Rush Performance Inc. assumes no responsibility for vehicle damage, personal injury, breach of law or any expenses resultant from vehicle modification or use of these products. Any modifications from the original design of a vehicle are done at the user's own risk. Purchase or installation of any of these products constitutes acceptance of these terms by the purchaser or user.

USE

The **Mx2** can be used to combine the outputs of two Hz output sensors, mimic the output of a different sensor type, or rescale the MAF without tuning software. The **Mx2** uses customizable characterization tables with interpolation.

Installation

The **Mx2** should be mounted away from hot engine parts.

All factory connections to the primary MAF sensor will be maintained, other than the signal out wire which will be cut. The sensor side will now be connected to the **Mx2** Light Green wire and the ECM side will be connected to the **Mx2** Dark Green wire.

The factory 12V supply and ground circuits to the sensor will be shared with both MAF sensors and the **Mx2**.

Only 3 wires are need for the secondary MAF sensor; 12V, ground and signal out.

Mx2 wiring connections:

Red -- 12V from factory MAF/Combination Sensor wiring

Black – ground from factory sensor wiring

Light Green – signal from primary MAF sensor

Blue – signal from secondary MAF sensor

Dark Green – signal out to ECM

Pink and Yellow wires(hidden inside loom) – currently unused, can be configured for use with external switches

Calibration

Device setup and calibration is accomplished using the TRP MAF Magic software application.

Install the MAF Magic software on your PC and connect the **Mx2** via the appropriate USB cable.

Under the "MAF Tables" tab you will see a sensor characterization table. You can switch between 3 different tables; Primary MAF sensor, Secondary MAF sensor, and Output.

If you select "Dual" mode in the drop down box to the right of the table, all 3 tables will be used. If you select "Single" mode, only the Primary and Output tables will be used, although all 3 tables may be programmed. "Single" mode allows the device to mimic the output of a sensor different than the actual installed sensor, or to rescale the output of a sensor. In "Dual" mode the airflows of both sensors are combined and the frequency output will correspond to the combined airflow per the "Output" table.

Use the drop down box above the table to select the specific sensor table you wish to program. The software will read from the **Mx2** and display the currently programmed calibration for that table.

For each table, the step size of the "Frequency" column can be set to either 125 or 150 by selecting either value in the drop down box to the right of the table.

New airflow values may be entered in the tables either manually or via the copy/paste method. If using copy/paste, ensure that the table is fully populated with rational values to the end of the column. Select the correct starting cell prior to clicking "Paste". Once the table has been populated, click "Update" to program the new values to the **Mx2** . Repeat for all 3 tables if using "Dual" mode or at least the Primary and Output tables if using "Single" mode.

LED Status Indicator

When the device is running, the LED will be flashing at a rapid rate. Every flash indicates approximately 2000 output update cycles.

1 double flash- either sensor signal has been lost in "Dual" mode, or the Primary sensor signal has been lost in "Single" mode.

Multiple double flashes indicate a hardware fault

Logging

The TPS signals can be datalogged using our D2A software.

Powerup the **Mx2** by switching on the vehicle ignition
.
Remove the cover from the **Mx2** box and connect the USB calbe between the **Mx2** and you PC.

Select either "Live Data" or "Record". Selecting record will allow you to save the log file.

You can pause playback and use the cursor to view signal values at any point in the chart.

Firmware Updates

If available, firmware updates may be installed to the **Mx2** by the following procedure.

1. Download and save the latest firmware file from http://torquerush.com/downloads.html

2. Click the "Firmware Update" tab in the MAF Magic software and connect the **Mx2** to your PC.

3. Disconnect the Mx2 from vehicle power. Remove the rubber plug from the **Mx2** enclosure and connect it to your computer using an appropriate USB cable.

4. Browse to and select the the appropriate ".trp" firmware file.

5. Click "Update Module Firmware".

PC Serial Port Settings

Communication between your PC and the **Mx2** may be improved by increasing the bit rate for the port assigned to the **Mx2** to a value of 38400 in the Windows Device Manager.
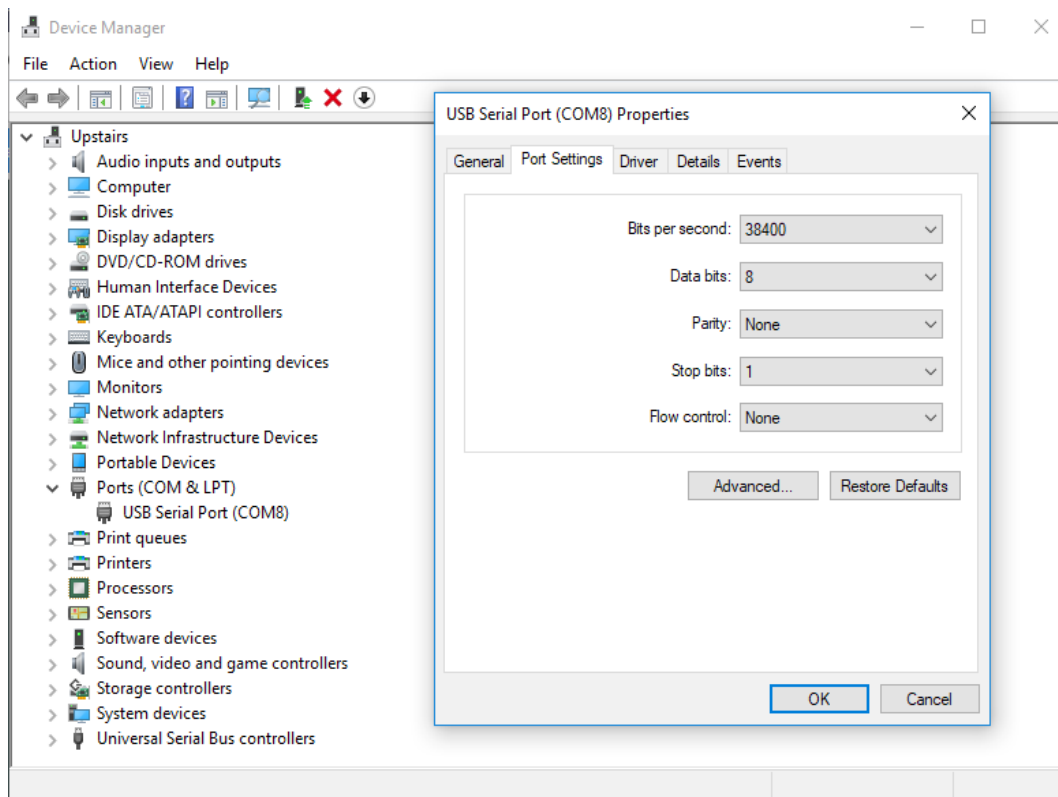
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