



## **Brucato (PCU) ACU Software Management Instructions**

Set up your system using the READ ME FIRST file before beginning. ENSURE THAT YOUR SERIAL PORT IS CONFIGURED TO COM 1; the process will not work without doing so.

(For on-water use, no power supply is needed, the power will be provided by the Brucato PCU or ACU harness.)

Remove cover of the (PCU) ACU and connect the interface module to the DB9 connector. Attach the other end of the interface module to your computer's communication port with the extension cable.

With your (PCU) ACU energized using the AC adapter or on the water by your ECU harness, open the Brucato PCU/ACU Management.xls file with Microsoft Excel. When prompted, allow 'Macros To Be Enabled'.

The program will open showing you the Real Time Data screen. This screen is not active until you click on the Start button. When the Start button is depressed the program will read from your (PCU) ACU operating parameters including RPM, Manifold Temperature, Air Temperature, Manifold Pressure, Battery Voltage, Injection Output and Steamwheel Position etc. To Exit the Real Time Data screen, (push the Escape Key and End on the pop-up window) or PRESS STOP on the ACU.

Click Calibration tab at the bottom of the worksheet, this will take you to the Calibration worksheet. This page contains the Fuel Map. From this page you are able to read data from the (PCU) ACU including the fuel map, the serial number, revlimiter and program version. From this page you can also transmit data to the (PCU) ACU.

The Fuel Map has 24 RPM columns and 16 load signal (manifold pressure) rows. The top row load signal of 980 represents Zero vacuum, as in wide-open throttle. The bottom load signal value of 70 represent maximum vacuum signal. Eighty (80) units of load signal equals one inch of mercury.

The values in the Fuel Map are based on a logarithmic scale, therefore to change a value by 1% simply subtract or add 1. Or to change by 10% subtract or add 10, regardless of the original value. Please note that value changes on the steamwheel or potentiometer equates to the exact value change on the Fuel Map.



The benefit of making changes on the Fuel Map verses adjusting the PCUs or ACUs potentiometer is the flexibility to adjust the fuel delivery for any engine load.

**Before making changes to any settings on the Calibration worksheet, it is highly recommended that you SAVE A COPY OF YOUR INITIAL CALIBRATION SETTINGS (your fuel map). To save a copy, highlight the Fuel Calibration Table by right clicking from Cell A6 and drag a window to Cell AH27. Copy the highlighted area by clicking on 'Edit' - 'Copy'. Next on the tool bar click the white sheet in the far left-hand corner. This will open a NEW Excel file, click on cell A1, click 'Edit' - 'Paste', name your file and save to the location of your choice.**

Should you wish to transfer a saved Fuel Map back to the Brucato (PCU) ACU Management software for transmitting back to your (PCU) ACU, follow the above steps in reverse.

**When changes are made to the Fuel Map, be sure to SAVE your changes.**

To read the fuel map, revlimiter, program version and (PCU) ACU serial number, press Control R (read) on the PCU or click READ IN on the ACU; this information will transmit into the worksheet. Changes to the fuel map and revlimiter can be made directly on the worksheet, but will not be active until you transmit this data back to the (PCU) ACU. This is done by pressing Control T (transmit) on the PCU or SEND TO on the ACU.

Click Potentiometers Tab at the bottom of the worksheet. This screen will display the actual potentiometers settings to aid in making fine adjustments Even though there may be values showing on the worksheet, they are not active until you START by pressing Control K (potentiometer read) on the PCU and ESCAPE to end. On an ACU, simply push START POTS and click to STOP to end.

Click on Graph Tab at the bottom of the worksheet. From a running engine with a laptop computer, this feature allows the acquisition of data from your (PCU) ACU at the rate of up to 20 times per second, depending on your computer's processing speed, and allows a 30-second graph to be displayed of actual running conditions including Time, RPM, Manifold Pressure, Voltage, Fuel Delivery. Exhaust temperature can also be displayed with optional hardware. To start recording a graph press Control G (graph capture).

The graph can be viewed to give a general overview of actual running parameters; the raw data for this graph is shown on the left side of this worksheet. This information can be utilized to tune your (PCU) ACU or other engine functions. To escape this worksheet, hit Escape.

**Good Luck and More Power to You!**