



**OPERATING INSTRUCTIONS FOR
*ARTISAN*TM DATA COLLECTION SOFTWARE**

**AV1000 AIR VELOCITY METER
MP2000 PRESSURE MANOMETERS
PH2000 PH METER
RH1210 THERMO-HYGROMETER
SL2100 SOUND LEVEL METER
TT2210 THERMOCOUPLE THERMOMETER**

Introduction

The Handheld Meter Software is designed to allow “real-time” data acquisition with the corresponding portable meters. The CD-ROM includes the complete program. Floppy disk versions of this program are available upon request.

This software package is supplied complete with Software on CD-ROM, interface cable for serial port and instruction manual.

The software is designed for simple operation and the following features:

- Up to 16,000 sample readings with real-time clock memory.
- Programmable sample interval from 1 second to 3600 seconds.
- Changing units of display depending upon the meter.
- User-set maximum (High) and minimum (Low) alarm limits.
- Export data in .txt format for further analysis in other spreadsheet programs.

Notes:

It is recommended to make backup copies of the software in case the originals are damaged or destroyed. Refer to the OS user’s manual for details on how to make backup copies.

Setting Up and Connecting the Computer

1. Minimum System Requirements.

- OS: Windows 95/98, 2000
- Memory: 16 MB
- Free disk space: more than 10 MB
- CPU: 486 PC or above
- Serial Ports: COM1.....COM4.

2. Installing the Handheld Meter downloading software

- a) Insert CD-ROM into the computer. If the software does not start loading automatically, select “**Start**,” “**Settings**,” and “**Control Panel**” in that order.
- b) Open “**Add/Remove Programs**” on the Control Panel.
- c) Select on the “**Install**” button on the “**Install/Uninstall**” Window. The program will load from the disk. If necessary, find the **setup.exe** file on the CD-ROM to initiate setup.
- d) Follow the instructions on the screen to complete the installation procedure.

Notes:

When the installation finishes, “Handheld folder” is added to the Program Group. You can start the program from this location or put a shortcut on your desktop.

3. Connecting the Handheld Meter to the computer.

Insert the mini-phone jack (3.5mm) into the side of the meter until it snaps in.

Connect the DB9F plug on the other end of the cable to the COM1...COM4 serial port of your computer.

4. “Real-time” Data Transmission.

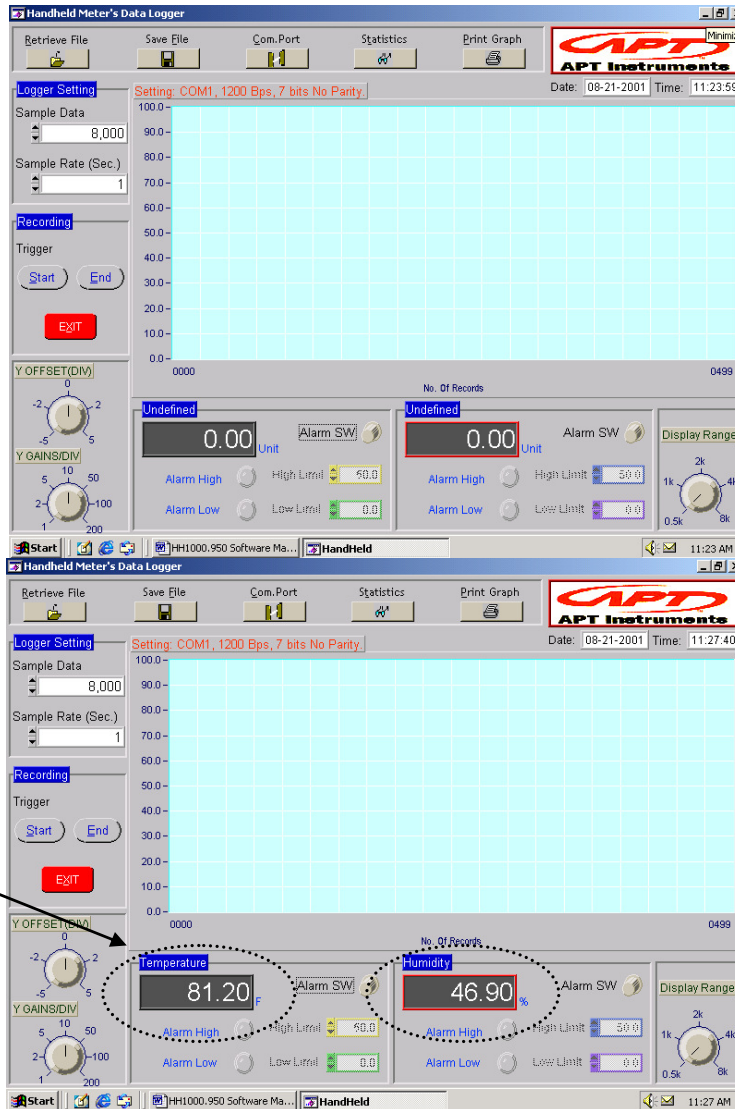
The software in combination with the meter will allow the user to collect the measurement information from the meter in a real-time setup.

No special instrument setup is required as the RS-232 output is always active.

Setup Software Features

1. Large digital display of measurement value.

Below the graph are two large digital displays that represent the first and potentially second inputs from the meter. In Screen A, the two blocks (Black (left) and Red (right) indicate 0.00 with an **Undefined** title. After communication has been established with the meter the titles are renamed automatically (Ex: Display on the left reads “Temperature”, with “Humidity” on the right for RH1210 Thermo-hygrometer) (Screen B). The units of the display are the same as those selected on the meter



Screen A: Initial Startup Screen

Screen B: Initialized Screen with Identified Measurements

EXAMPLE: Thermo-hygrometer

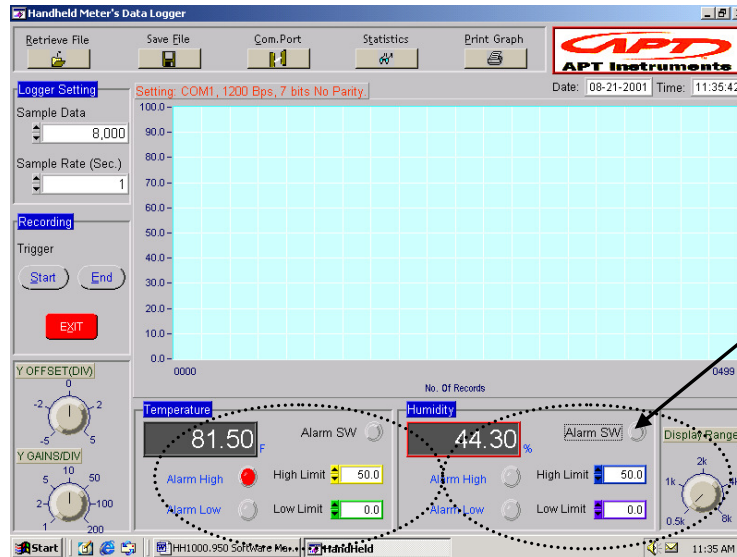
Once the meter has been plugged into the software the “Undefined” measurements became shown as Temperature and Humidity.

Black outline (left): Displays Temperature. (Single or 1st input)

Red outline (right): Displays Humidity (2nd input).

2. High and Low Alarms for each channel.

Below the digital displays are two settings, one each for a "High" or "Low" alarm limits to monitor the data being logged. Depress the Alarm SW buttons to activate the High and Low Limit Alarms. If the data point(s) fall outside of the range, the "ALARM HIGH" or "ALARM LOW" button flashes red and the PC beeps.



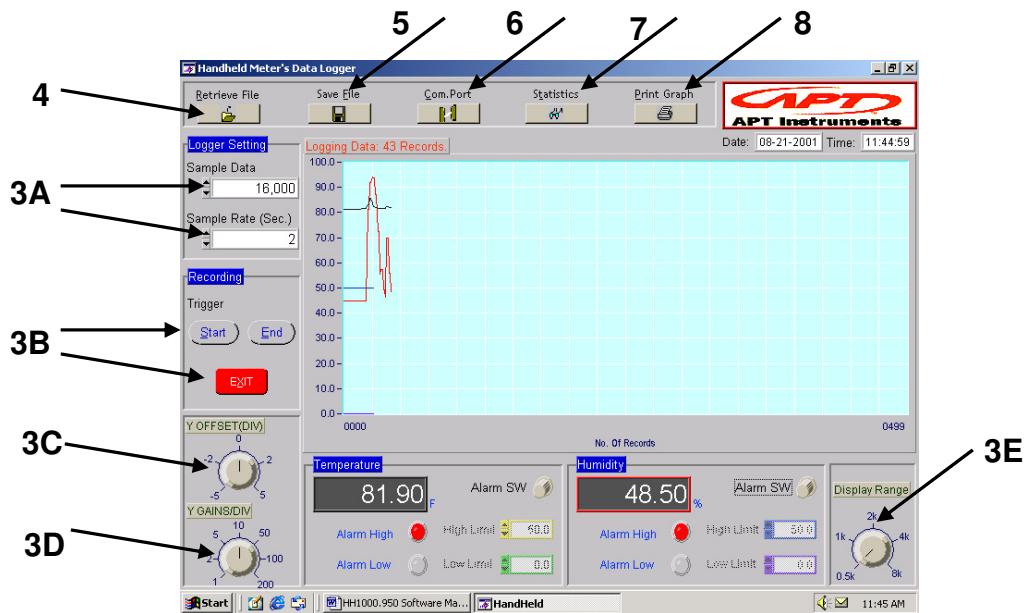
Screen C: High and Low Alarm Set Points

3. Scaling the graph

There are five settings for scaling the graph during data logging. Starting on the top LH side of the window: **Logger Setting**, **Recording Trigger**, **Y-Offset** and **Y-Gain**. On the lower RH side is the **Sample Display Range**. NOTE: All examples here are with the RH1210. The ranges and selections will vary slightly from meter to meter.

3A. Logger Setting. Set the maximum number of records to store.

- Sample Data: 2000, 4000, 8000, 16000 records.
- Sample Rate (Second): 1 to 3600. If the figure entered is out of the range, the warning chart will be displayed.



Screen D: Navigation Buttons for Software Setup

3B. Recording Trigger. Start and Stop the collection of data from the meter.

- a) Select **Start** to start recording, and **End** to stopping recording. Or use **Alt + S** to start recording and **Alt + E** to stop recording on the keyboard.
Depress "**Exit**" to leave the program. Save data first before closing.

3C. Y-Offset (Div). Set the starting point or bottom of the y-axis.

- a) Adjust the knob to start the y-axis at 0 or at up to ± 5 major divisions of the scale.
Ex: With the scale divisions (Y-Gain/Div) at 10, you can start the y-axis at -50, -20, 0, 20 or 50 depending upon the expected range of your data points (as shown with RH1210).

3D. Y-Gain/Div. Set the value of the points between the major divisions.

- a) Adjust the knob to vary the size of the point spread between major divisions. Adjust the gain from 1 to 200 units between points.
Ex: With the scale divisions at 10 and the offset at 0, you can setup the values on the y-axis from 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, to 100. This can be expanded depending upon the expected range of your data points.

3E. Display Range. Set the number of points shown on the x-axis.

- b) Adjust the knob to vary the number of data points shown on in the graph from one of five ranges. Adjust the range from 500 (.5K) to 8000 (8K) data points.

4. To Open A File

- a) Select **Retrieve File** on the tool bar (top of screen).
- b) Double-select the folder that contains that document you want to open. Select the document name, and then select OK.
- c) The software will retrieve the file. Retrieve file records replaces Graph chart title and shows the logging status.

Note:

All documents are in .txt format, no other file type is acceptable.

5. To Save A File

- a) Select **Save File** on the tool bar (top of screen).
- b) Open the folder where you want to store the document. Enter the document name, and then select OK.
- c) The software will save the file.

Note: You can save the logged data with a new name by selecting **Save File** and type a new name in File Name. The .txt file easily transfers into other statistical or analysis software for further review.

6. To Setup a COM port.

- a) Select "**Com. Port**" on the tool bar, or press **Alt + C** simultaneously to enter **COM Port** setting.
- b) Set up the **RS232** port and related settings such as Baud rate, Data bits, Parity and Stop bits.
- c) Select "**OK**" To save the setting, "

Note: **COM1** is the most common setting for desktop and notebook computers. Other serial port options (up to COM4 are supported in this program) depend on your computer settings.

EXIT" or "**CANCEL**" to exit or to escape the setup screen.

7. To Review Statistics.

Once the data has been collected and stored.

- a) Select "**Statistics**" on the top menu bar, or depress **ALT + T** simultaneously to see the statistics histogram.
- b) On the secondary screen you will see a histogram. The histogram is automatically updated when the Measurement range has been reset.

- c) Maximum, Minimum, Mean and Std. Dev. (Standard Deviation) are automatically calculated and shown on the RH side of the screen.
- d) To Print the Statistics, select the printer on the tool bar; or depress Alt + P on the keyboard.

8. To Change Printers and Printer Options

After selecting the Print Option, select Properties, and then select a printer in the Name box. To change paper specifications, enter the settings you need in Graphics Options.

9. Serial Output Format.

Model	Baud Rate	Data Bits	Stop Bits	Serial Format
AV1000	2400	8	1	TXXX.XF, VXXXXFTM TXXX.XC, VXXXXMPS
MP2000	2400	8	1	PXXX.XX
PH2000	2400	8	1	TXXX.XF, XX.XpH TXXX.XC, XX.XmV
RH1210	1200	7	1	TXXX.XC, RHXX.X%
SL2100	2400	8	1	NXXX.XdB
TT2210	2400	8	1	TXXXX.XC, TXXXX.XC

E1OL (Error message – logging data exceeded the maximum range of the meter).

E2UL (Error message – logging data exceeded the minimum range of the meter).

Return of Products

No product should be returned without first obtaining a return authorization and instructions for the return. For your protection, items being returned must be carefully packed to prevent damage in shipment and insured against possible damage or loss. APT Instruments will not be responsible for damage resulting from shipping.

Warranty

APT Instruments warrants to the original purchaser that the product will be free from defects and workmanship for a period of one year. If warranty or adjustment is necessary, please contact us. We will, at our option, arrange to either correct the problem, replace the unit at no charge, or refund the original purchase price. Repairs made necessary by customer abuse, or misuse, accident, or improper maintenance are not covered by this Warranty and all expenses related to those repairs will be invoiced to the customer.

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