

Introduction

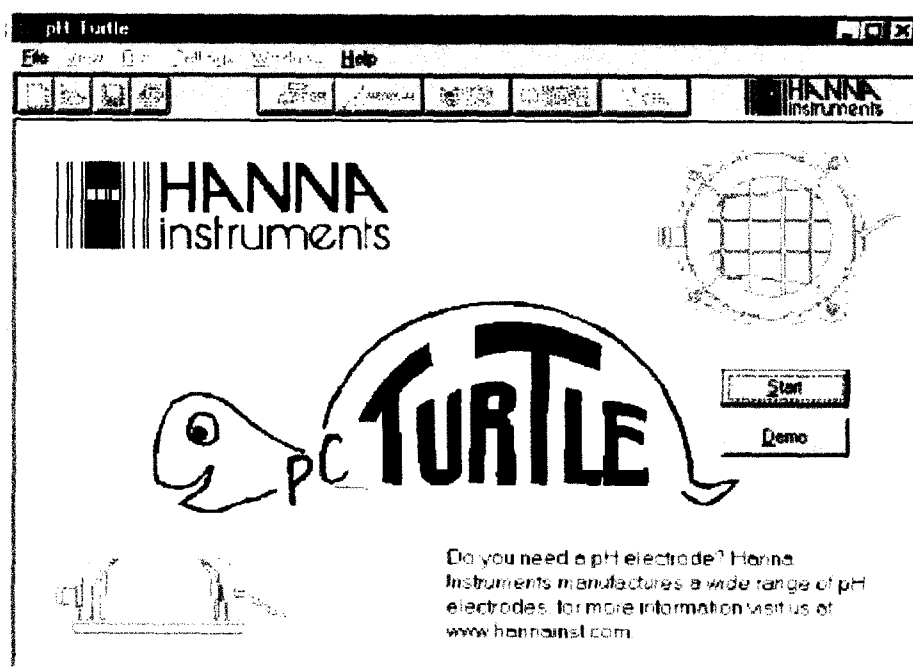
The PC Turtle software is Windows 3.1, Windows 95 and Windows NT compatible and allows the direct measurement of Hanna sensors, data logging and simple real-time graphing. The main window of the software is a MDI (multiple document interface) window with a "meter", a table of logged data and a graph, which can be individually resized or minimized. In this way, for example, the pH value can occupy the entire screen for classroom demonstrations.

Software Features:

- * Continuous logging on your monitor
- * Data in graphic and table formats
- * Min & Max alarm settings and audio warnings
- * Multiple language support
- * Record Data on demand
- * Export data in text format
- * Complete Help reference information
- * Includes Demonstration Mode
- * Calibration on screen

Getting Started

Start the software by double clicking on the PC Turtle Icon or use the Start button in Windows 95




The start up screen will appear as shown above. At this point the user can select either to start the program in normal mode by clicking on the [Start] button or to enter the Demo Mode by clicking on the [Demo] button.

In Demo mode the software will simulate the Turtle taking random readings. All the commands are functional except for the calibration command.


After clicking the [Start] or [Demo] button the main screen will appear. If the Demo mode was selected, the word DEMO will be displayed in the upper right hand corner of the meter display.

Before you begin logging or measuring in the normal mode, you need to connect the Turtle hardware to the 9 pin or 25 pin serial port connector available on your computer.

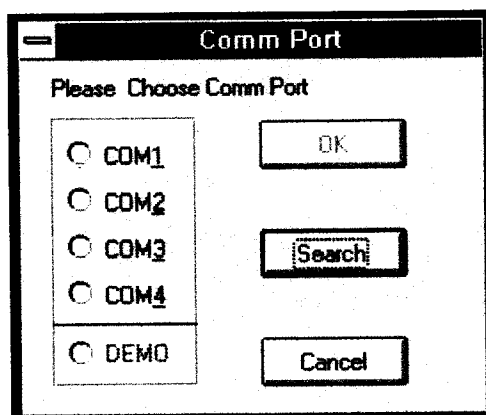
On the tool bar click the  button to set up the serial communications port in which the Turtle is connected.


Refer to SETTINGS for more information on configuring the comm port.

After the comm port is configured, the  button in the tool bar will be enabled.

In the tool bar click on the  button to begin measuring with the Turtle.

ComPort Settings



Click on the  button in the tool bar to set up the serial port in which the Turtle is connected. Click on the comm port in which the Turtle is connected or click on the search button to automatically find the port in which the Turtle is connected. If the comm port is shown in gray, this means the port is not available at this time. After choosing the comm port, a note should appear "Found the Turtle", click [ok] to proceed.


Calibration

Calibrating...

Measured pH Value Unstable Reading	Buffer pH Value Buffer: --	Buffer Temperature Unit: °C
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Automatically recognizing first buffer...

Finished Next > Cancel Help

We recommend calibrating the pH Turtle frequently, especially if high accuracy is desired. The pH Turtle can be calibrated at 1, 2 or 3 points using Hanna pH calibration buffers. To perform a new calibration, click on the  button on the tool bar. A calibration window will appear.

Click on the [perform new calibration] button and follow the instruction given after each step of the procedure. Use the [clear previous calibration] button to remove the previous calibration and revert to the default uncalibrated state. To obtain accurate readings, use pH 7.01 and pH 4.01 if you are going to measure acid samples or pH 7.01 and pH 10.01 for alkaline measurements.

For accurate calibration use two beakers for each buffer solution, the first one for rinsing the electrode and the second for calibration.

Remove the protective cap from the electrode, rinse the bottom 2 1/2 cm (1 inch) with pH 7.01 solution and then immerse the pH electrode up to an inch in the pH 7.01 buffer solution.

Alarm Settings

Settings

Meter Samples Temperature

Alarm Log Graph

Alarm

☐ High Level 14.0

☐ Low Level 0.0

Beep

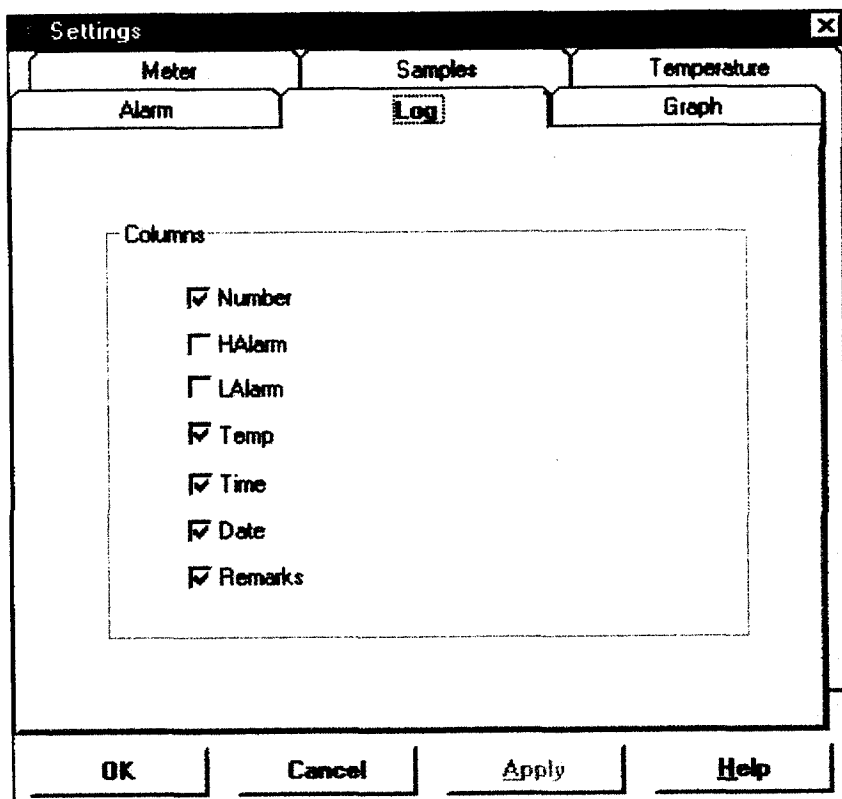
☐ High Level

☐ Low Level

OK Cancel Apply

User can select alarm settings for High and/or Low alarms. The alarm can be visually displayed on the meter (Meter Alarm) and/or on the graph (Graph Alarm). The meter can also provide an audible alarm (Beep).

Log Settings



User can select which column of information to be displayed on the log screen by clicking the appropriate box;

(NUMBER) will display the sample number.

(HALARM) will display the high alarm setting at the time the sample was taken. An asterisk near the number means the sample reading was above the alarm setting.

(LALARM) will display the low alarm setting at the time the sample was taken. An asterisk near the number means the sample reading was below the alarm setting.

(TEMP) will display the temperature compensation setting

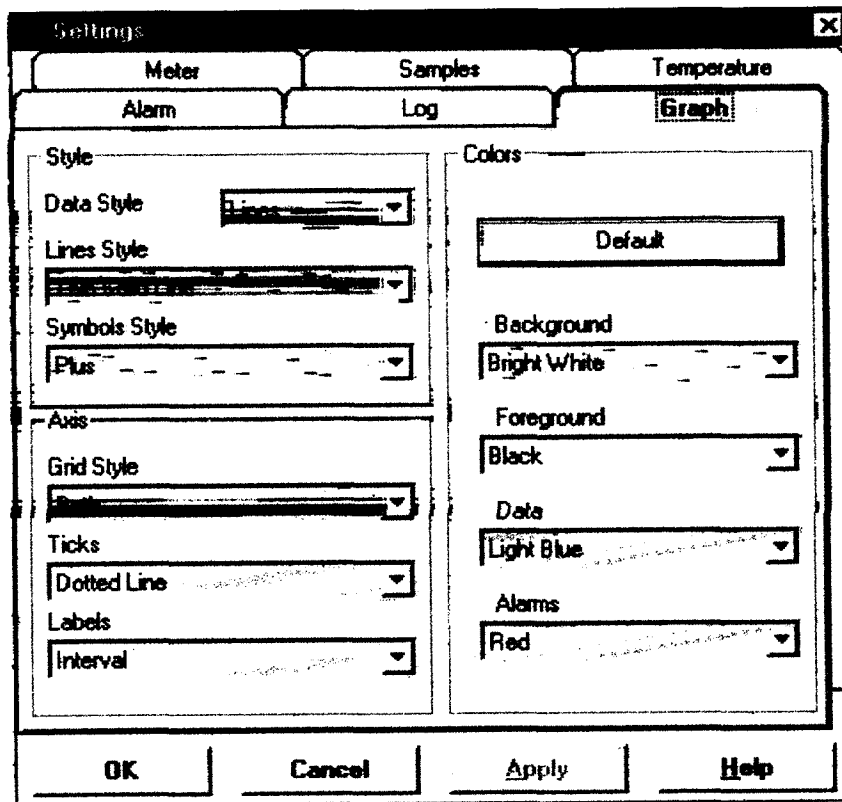
(TIME) will display the time the sample was taken.

(DATE) will display the date of each sample taken.

(REMARKS) will display the remarks if any for each sample.

These remarks can be edited by the user. The default remark is Demo in the Demo mode and Unstable if the reading has not stabilized in measuring mode.

Graph Settings



Style

(LINES STYLE) To set the style of the graph line shown. To be used only when lines is selected in DATA STYLE.

(SYMBOLS STYLE) To set the various styles of symbols displayed. To be used only when symbols is selected in DATA STYLE.

(DATA STYLE) To select the various styles (lines, symbols or both) in which the data is displayed on the graph.

Axis

(GRID STYLE) To select the horizontal grid, vertical grid or both.

(LABELS) To select the labels on the X or Y axis or select (on) to display both

(TICKS) To display reference lines along the X and/or Y axis.

Colors

(BACKGROUND) To choose the background color of the graph.

(FOREGROUND) To choose the foreground color of the graph.

(DATA) To choose the data line color in the graph.

(ALARMS) To select the color of the alarm reference lines in the graph.

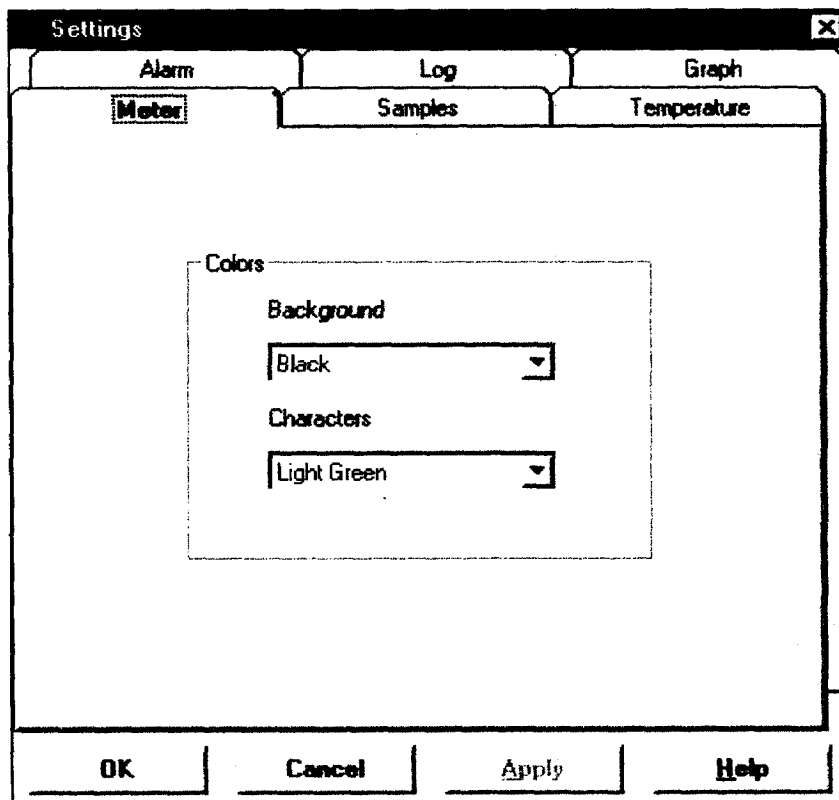
User can select the styles desired and set as default by clicking on the default button.

Temperature Settings

The screenshot shows a software window titled "Settings" with a close button (X) in the top right corner. Inside the window, there are three tabs: "Alarm", "Log", and "Graph". Below these, there are three sub-tabs: "Meter", "Samples", and "Temperature". The "Temperature" sub-tab is currently selected. The main area of the window contains a section titled "Default Samples Temperature". This section includes a vertical list of temperature units: "°C", "°F", and "°K". To the right of this list is a digital display showing the value "25.0". Further to the right are two buttons: a "+" button and a "-" button. At the bottom of the window, there are four buttons: "OK", "Cancel", "Apply", and "Help".

The pH reading is directly affected by temperature. In order for the pH Turtle to measure the pH accurately, the temperature must be taken into consideration. If you know the temperature of the sample to be tested, you can manually compensate for this by setting the known temperature using the [+] or [-] buttons in this window. The temperature can also be entered directly from the keyboard by clicking on the temperature box with the mouse.

Meter Settings



The color of the background and the characters displayed on the meter can be selected in this window.

Sample Interval

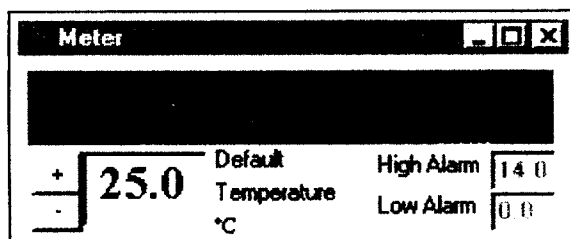
User can select the Sample Interval in seconds.

The maximum Sample Interval is 3600 seconds (1 hour), while the minimum is 1 second.

Current Number of Samples shows the number of samples that have been taken so far.

Maximum Number of Samples is the total amount of samples that will be taken (between 1 and 5000), set by the user. When the Maximum Number is reached, the program will automatically stop logging.

METER






In this window a virtual pH meter is displayed. The pH reading taken from the pH Turtle is given. On the bottom left hand-side of the meter, the current sample temperature is displayed, which can varied by clicking on the [+] or [-] buttons.

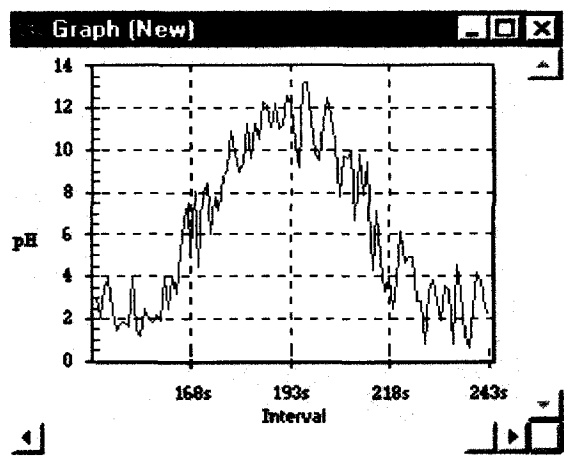
On the lower right of the meter, the alarm settings are displayed. When the pH readings reach the Low or High level alarm limits set by the user, a visual (boxes turn red) and/or an audible (beep) will be activated. For alarm setting procedure see [SETTINGS](#).

On the right hand-side of the meter "Uncalibrated" means that the meter has not been calibrated and this should be done before an accurate reading can be taken. For calibration procedure see [SETTINGS](#).

"Unstable" means that the reading being taken is not stable or there is a problem with the hardware.

GRAPH

When in the log mode, the pH reading recorded are displayed on the graph as the samples are taken. To zoom in on the graph, place the cursor over the graph, hold the down the left mouse button and draw a square over the area to be zoomed. To zoom out, click on the button  which is located in the bottom right hand corner of the graph. Two other commands using the same button are Maximum view  and Standard view , both are disabled in the logging mode. Use the scroll bar to view certain points on the graph. The time axis represents the time the sample was taken and can be referenced in the log for further analysis. There are many options for displaying data on the graph. For more information on setting up the graph see [SETTINGS](#).




LOG

Log (New)								
	#	pH	HAlarm	LAlarm	Temp	Time	Date	Remarks
	388	4.7	----	----	25.0 °C	11:47:16 AM	02/26/98	Demo
	390	1.9	----	----	25.0 °C	11:47:17 AM	02/26/98	Demo
	391	4.0	----	----	25.0 °C	11:47:19 AM	02/26/98	Demo
	392	4.9	----	----	25.0 °C	11:47:19 AM	02/26/98	Demo
	393	2.9	----	----	25.0 °C	11:47:20 AM	02/26/98	Demo
	394	1.4	----	----	25.0 °C	11:47:21 AM	02/26/98	Demo
	395	3.3	----	----	25.0 °C	11:47:22 AM	02/26/98	Demo

In this window, the user can display and record samples taken by the Turtle.

To activate data logging, click on the  button located on the tool bar.

The Record Sample button  is used to record a sample upon demand. This feature is active during measurement and logging, for example, if the meter is logging every five minutes and the user wishes to log a sample sometime in between the set log, the user can do so by clicking on the Record Sample button.

User can select which columns of information to display while in the **SETTINGS** menu. When saving the log to a file, all data will be saved including data in columns not displayed. When opening this file in the future, user can again select which columns of data to display.

This data can also be exported as an ASCII file. This can be done using the [export] command located under the File menu. The file will be saved with a .TXT extension.

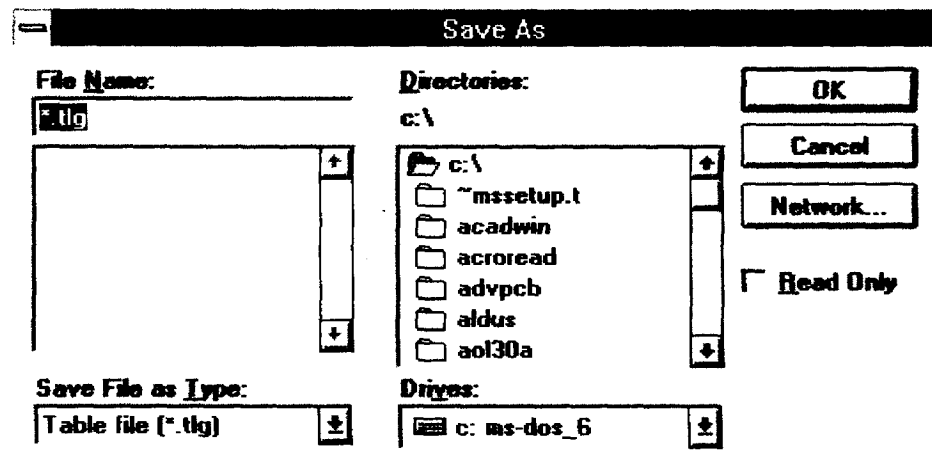
PRINTING, SAVING, EXPORTING

The **P**rint, **S**ave and **E**xport commands in the file menu bring up the Dialog Boxes where standard print and save options are available. The **P**rint and **S**ave commands can also be run using the corresponding buttons in the tool bar.

If you have a printer installed, when you choose **P**rint, the screen will show the printer's dialog box. Each dialog box is different for each type and model of printer, but usually contains all the information needed to print the page/s as desired.

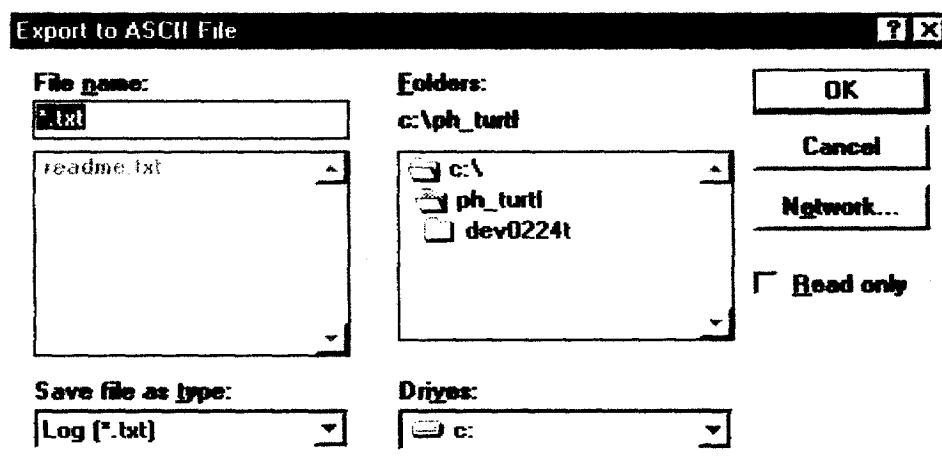
If you choose the **S**ave command, the screen will show the following dialog box:

Note that the log will be saved as a (.TLG) Turtle Log File.



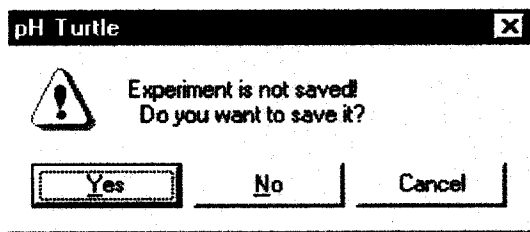
If you choose the **E**xport command, the screen will show the following dialog box:

The log will be exported as a .TXT text file, which is well recognized by most word processors and spreadsheets.



EXITING

Before exiting, the program will prompt the following message if the log has not been saved.



If you click the **Yes** button the save dialog box will be opened before exiting.

If you click the **No** button the program will exit and discard the memorized data.

If you click the **Cancel** button the program will return to the main window.