

Datalogger and RS232 Interface

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RS232 Protocol

To request data, send a character to the Meter. As having received a SPACE character, the meter will send out 9 bytes data as follow:

Byte 1	Byte 2	Byte 3,4	Byte 5,6	Byte 7	Byte 8	Byte 9
02H	Function	Down LCD	Up LCD	Status1	Status 2	03H

Byte1 Starting Byte (02)

Byte2 Function Byte

bit7	bit6	bit5	bit4	bit2,3	bit1	bit0
x	V	A	KW	x	Ω	Diode

Byte3,4,5,6 LCD Byte (E0DE----OL)

Byte7 Status1 Byte

bit7	bit6	bit5	bit4	bit3	bit2	bit0,1
Low Bettery	Down “-“	Record	Max	Min	HOLD	00 PF/KW 01 V/A 10 PF/KVA

Byte8 Status2 Byte

bit7	bit6	bit5	bit4	bit2,3	bit0,1
x	P-	P+	Up “-“	00 x1 01 x0.1 10 x0.01 11 x0.001 Up “.”	00 x1 01 x0.1 10 x0.01 11 x0.001 Down “.”

Byte9 Ending Byte (03)

Commands

"D" + Year + Month + Date + Hour + Minute + Second

Function : Input time to the meter

"Y"

Function : Load No.s of Recorded Set + Last Address + Sampling + ID Code (1 + 2 + 1 + 1)

"U"

Function : Load Recorded Data

00 55 AA 00 + First Recorded Set + 00 55 AA 00 + Second Recorded Set +.....

Each set contains : Time + Function + Down LCD + Up LCD + Status1 + Status2 +.....

(6 + 1 + 1 + 2 + 1 + 1 + 1

Hardware Requirements and Setup

PC HardWare Requirements :

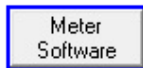
HDD, CD Rom, 486 PC or above, with available communication port
EGA or higher monitor
4M bytes or more memory size

PC HardWare Setup :

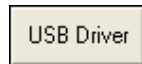
Connect the Meter with PC by supplied cable

Software Requirements and Setup

- 1 Start up windows XP / 7 operating system
- 2 Close all other applications
- 3 Insert the disk in CD drive

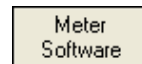


To install USB to Serial driver, click



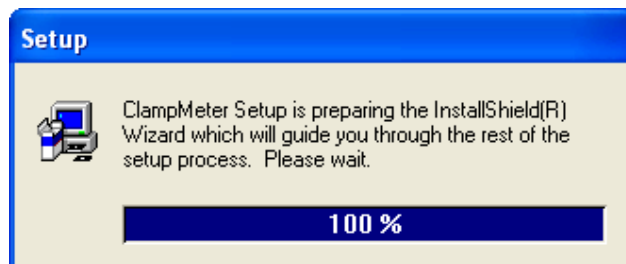
Follow the on-screen instructions to set up USB driver.

To install Serial to USB driver, click



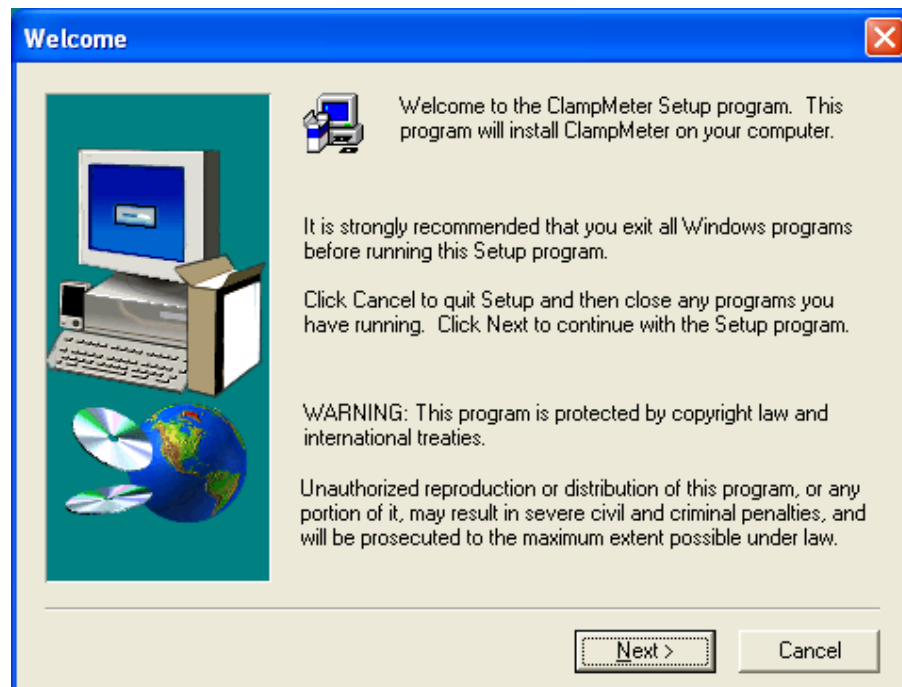
Follow the on-screen instructions.

1).



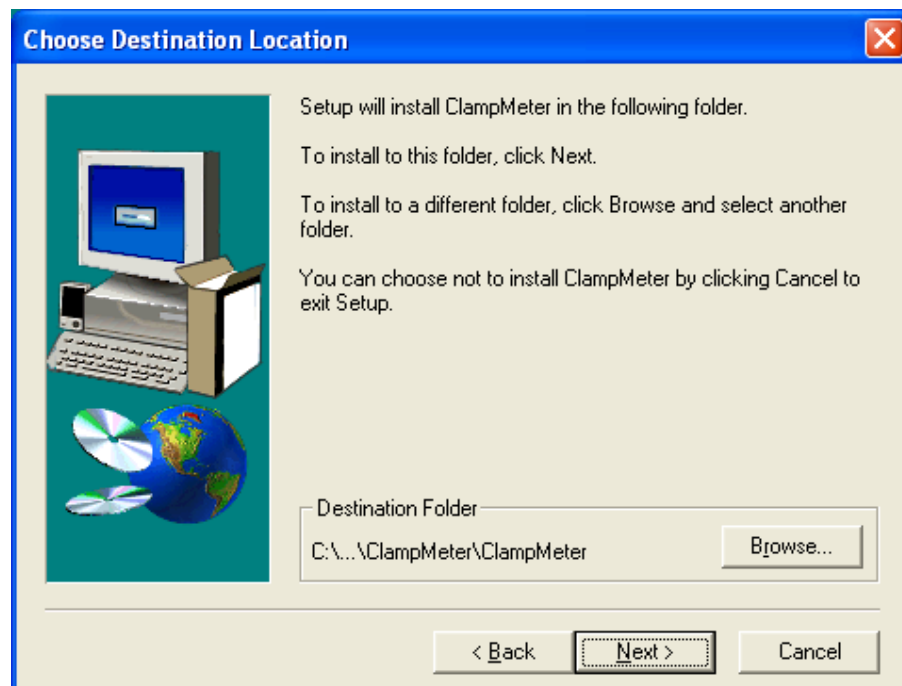
Setup program will run automatically.

2).



Click Next> button

3).

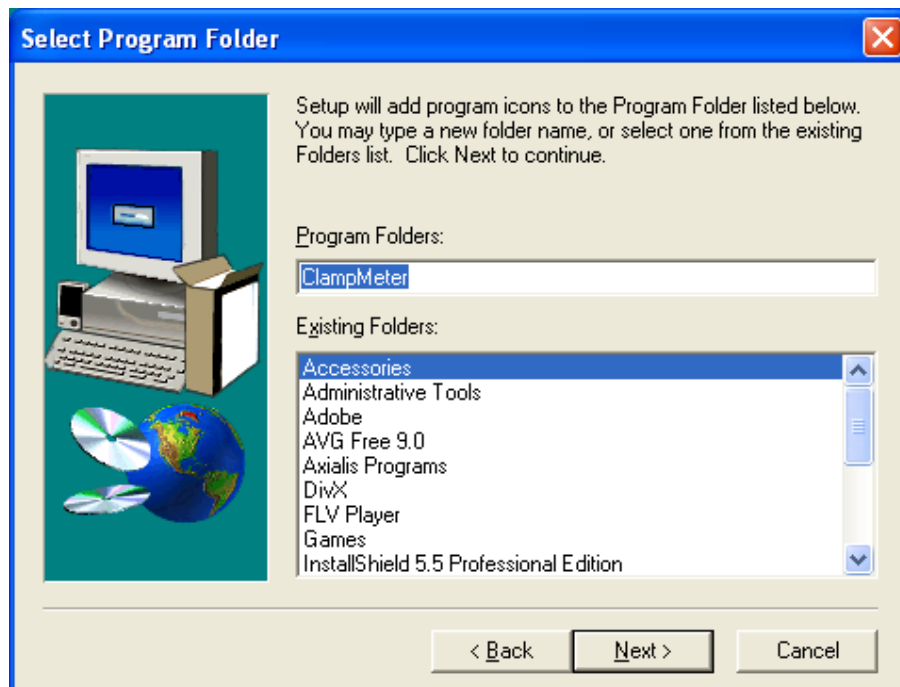


a. Click Next> to use the default folder

or

b. Click Browse... to select a different folder

4).



Click Next> button

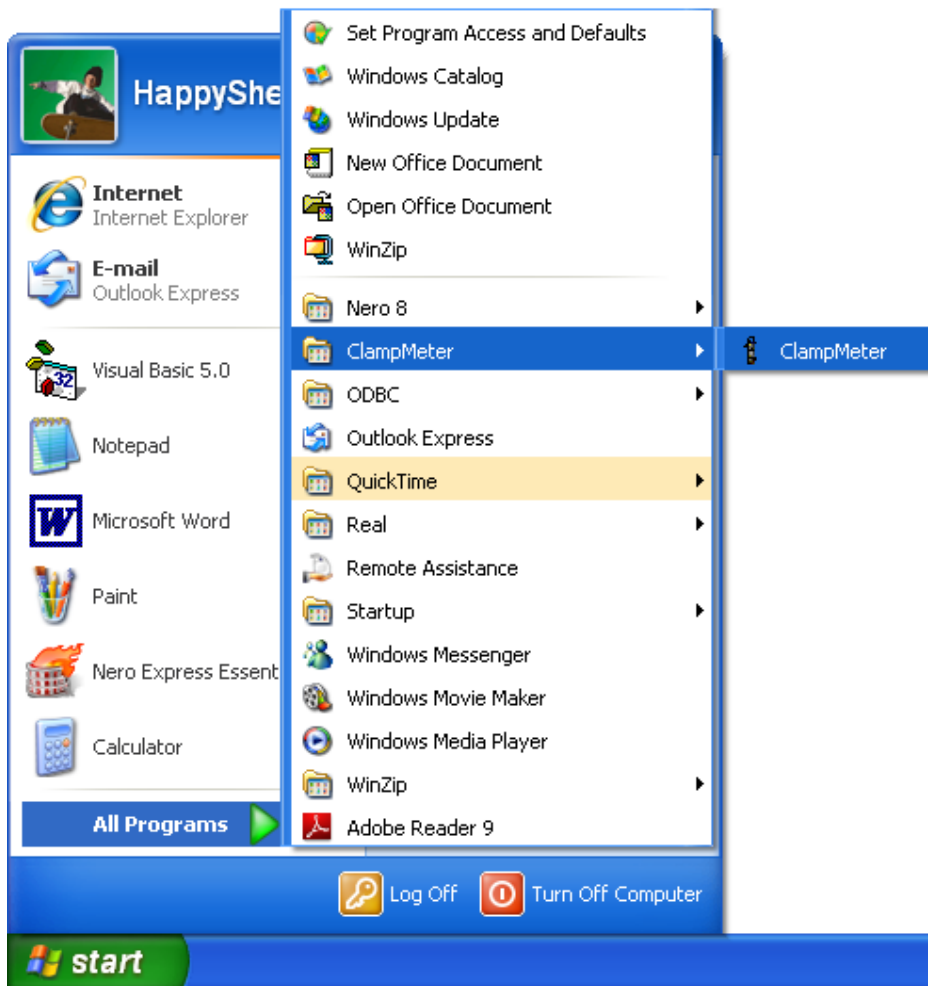


Setup is completed.

On-Line Operation

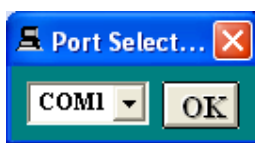
■ Run the software

1. start → All Programs → ClampMeter → ClampMeter

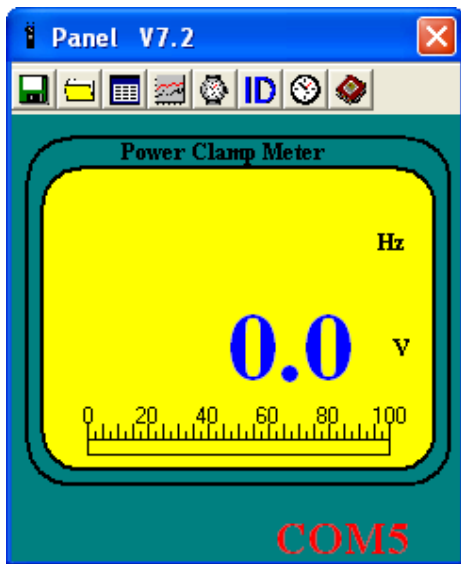


2.

Click an available COM port



3. Main software screen



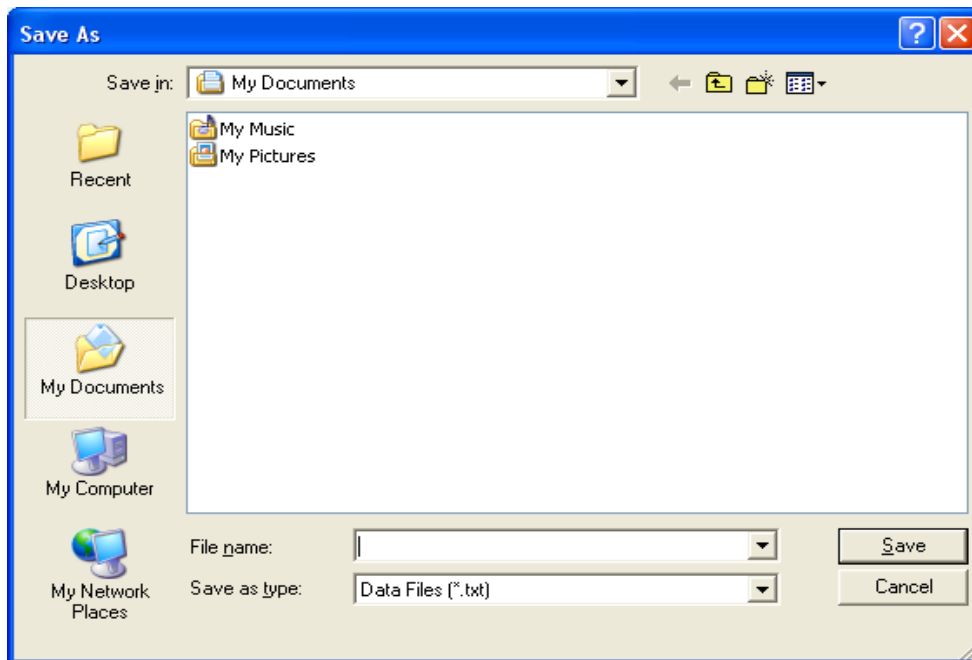
■ Record

Save to Hard Disk (PC)

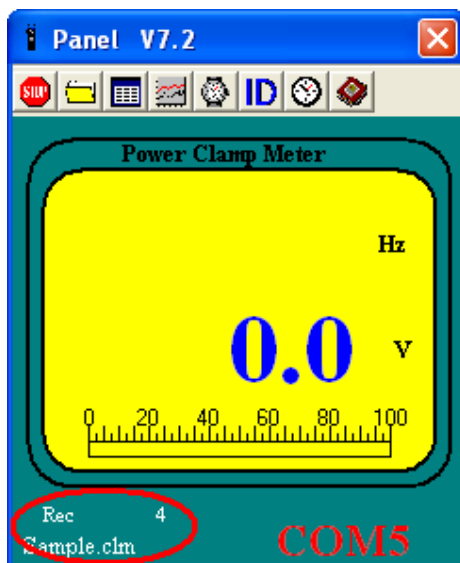
By PC Sampling Rate


Click  button.

The dialog box shown below, will appear.




Input a file name and then click "Save" to begin saving data to the file just named.

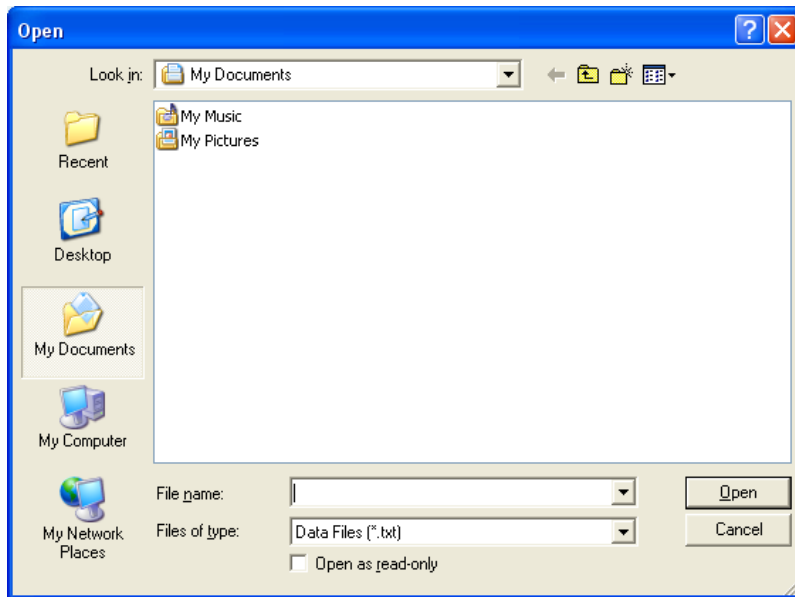


Click  button to stop recording.

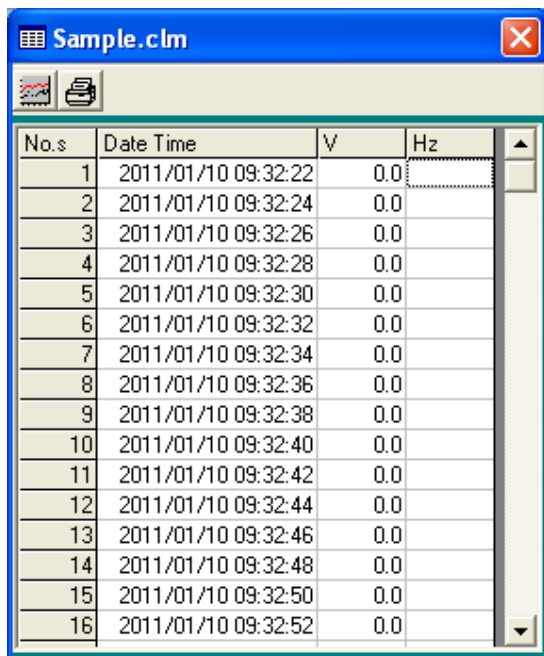
Download Data

1. Download Data from Hard Disk

Click  button. The Open window, shown below, appears




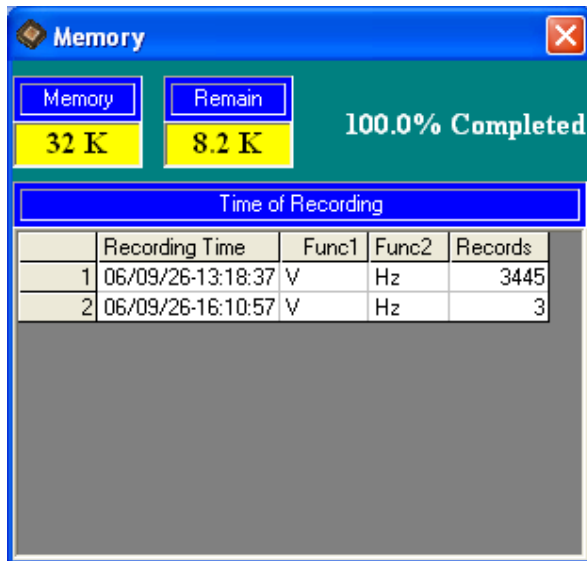
Input the file that was selected earlier and then click the Open button.



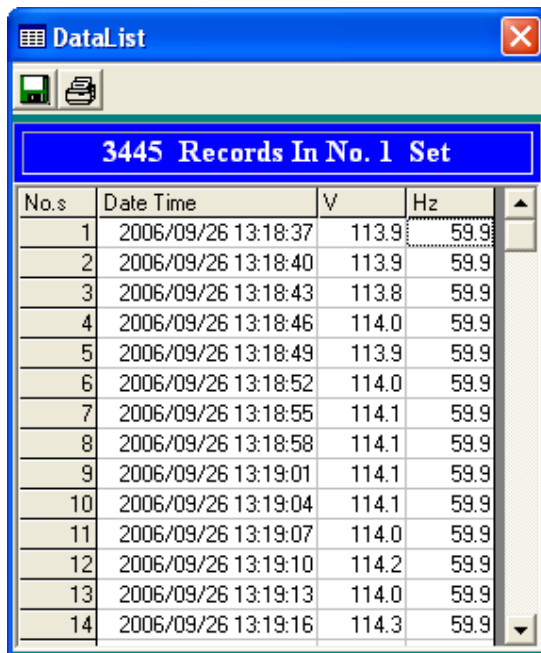
No.s	Date Time	V	Hz
1	2011/01/10 09:32:22	0.0	
2	2011/01/10 09:32:24	0.0	
3	2011/01/10 09:32:26	0.0	
4	2011/01/10 09:32:28	0.0	
5	2011/01/10 09:32:30	0.0	
6	2011/01/10 09:32:32	0.0	
7	2011/01/10 09:32:34	0.0	
8	2011/01/10 09:32:36	0.0	
9	2011/01/10 09:32:38	0.0	
10	2011/01/10 09:32:40	0.0	
11	2011/01/10 09:32:42	0.0	
12	2011/01/10 09:32:44	0.0	
13	2011/01/10 09:32:46	0.0	
14	2011/01/10 09:32:48	0.0	
15	2011/01/10 09:32:50	0.0	
16	2011/01/10 09:32:52	0.0	

2. Download Data from EEP ROM

Click  button. The Data Logger window, shown below, will open.



Click on a SET number to view the set's details. For example, in the window above, there are 2 sets from which to choose. The list below is an example of an opened set.



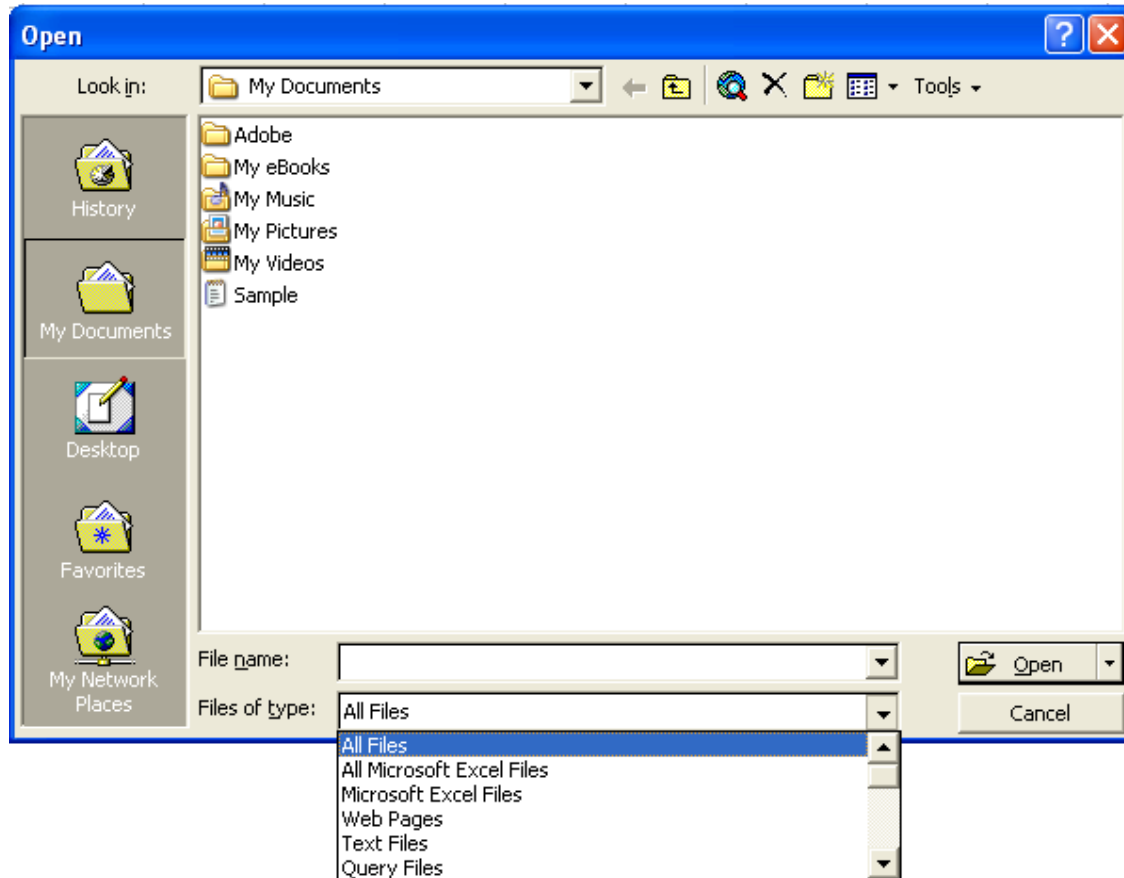
The DataList window shows a list of records for Set No. 1, titled '3445 Records In No. 1 Set'. The table has columns for No.s, Date Time, V, and Hz. The records show a sequence of measurements over time.

No.s	Date Time	V	Hz
1	2006/09/26 13:18:37	113.9	59.9
2	2006/09/26 13:18:40	113.9	59.9
3	2006/09/26 13:18:43	113.8	59.9
4	2006/09/26 13:18:46	114.0	59.9
5	2006/09/26 13:18:49	113.9	59.9
6	2006/09/26 13:18:52	114.0	59.9
7	2006/09/26 13:18:55	114.1	59.9
8	2006/09/26 13:18:58	114.1	59.9
9	2006/09/26 13:19:01	114.1	59.9
10	2006/09/26 13:19:04	114.1	59.9
11	2006/09/26 13:19:07	114.0	59.9
12	2006/09/26 13:19:10	114.2	59.9
13	2006/09/26 13:19:13	114.0	59.9
14	2006/09/26 13:19:16	114.3	59.9

■ Data Convert

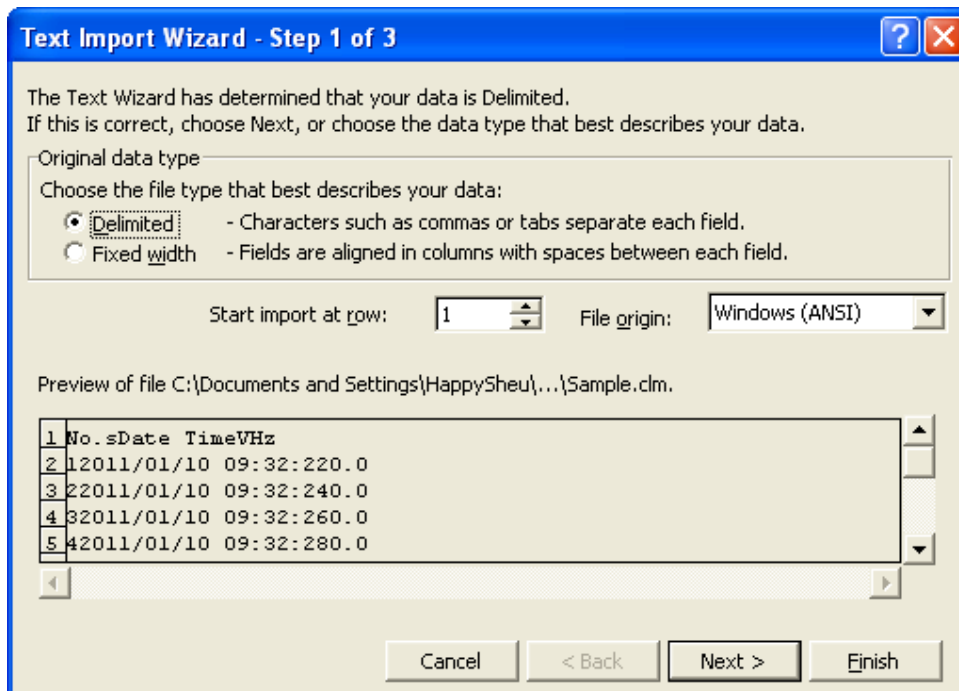
Apply for Excel

Open Microsoft Excel, find the file already saved in Excel type, for example, test.xls.



or find any file already saved in HDD, for example, sample.clm.

The "Text Import Wizard" then appears. Follow the steps 1 to 3 to complete.



The Text Wizard has determined that your data is Delimited.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

☒ Delimited - Characters such as commas or tabs separate each field.
☐ Fixed width - Fields are aligned in columns with spaces between each field.

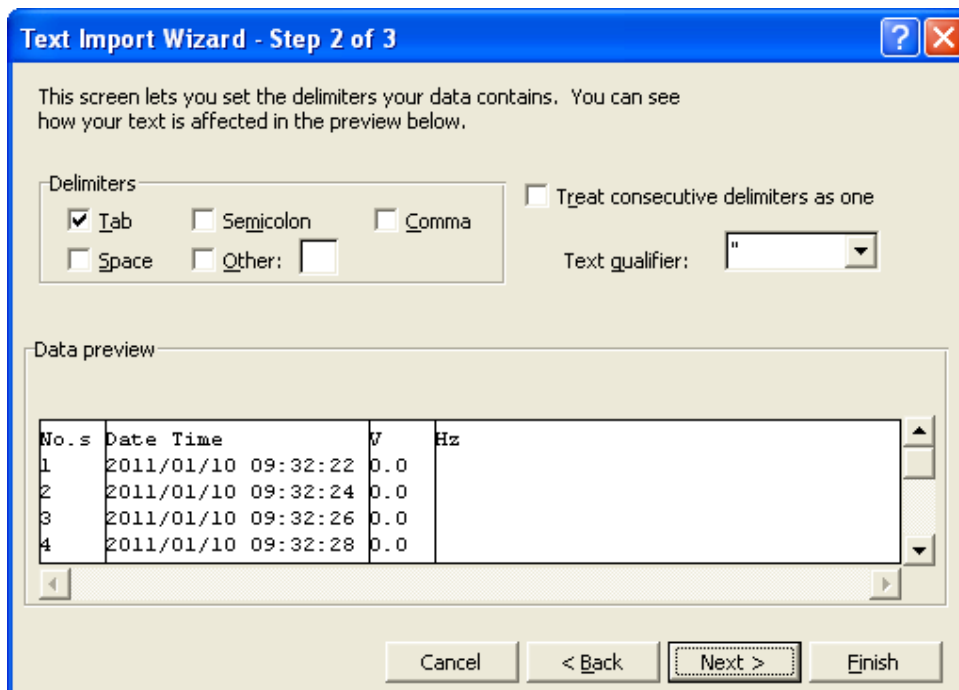
Start import at row: File origin:

Preview of file C:\Documents and Settings\HappySheu\...\Sample.clm.

No.s	Date Time	V	Hz
1	2011/01/10 09:32:22	0.0	
2	2011/01/10 09:32:24	0.0	
3	2011/01/10 09:32:26	0.0	
4	2011/01/10 09:32:28	0.0	

Buttons: Cancel, < Back, Next >, Finish

Click Next> button



This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☒ Tab ☐ Semicolon ☐ Comma
☐ Space ☐ Other:

☐ Treat consecutive delimiters as one

Text qualifier:

Data preview

No.s	Date Time	V	Hz
1	2011/01/10 09:32:22	0.0	
2	2011/01/10 09:32:24	0.0	
3	2011/01/10 09:32:26	0.0	
4	2011/01/10 09:32:28	0.0	

Buttons: Cancel, < Back, Next >, Finish

Click Next> button

Text Import Wizard - Step 3 of 3

This screen lets you select each column and set the Data Format.

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

[Advanced...](#)

Column data format

☒ General

☐ Text

☐ Date: MDY

☐ Do not import column (skip)

Data preview

General	General	General	General
No.s	Date Time	V	Hz
1	2011/01/10 09:32:22	0.0	
2	2011/01/10 09:32:24	0.0	
3	2011/01/10 09:32:26	0.0	
4	2011/01/10 09:32:28	0.0	

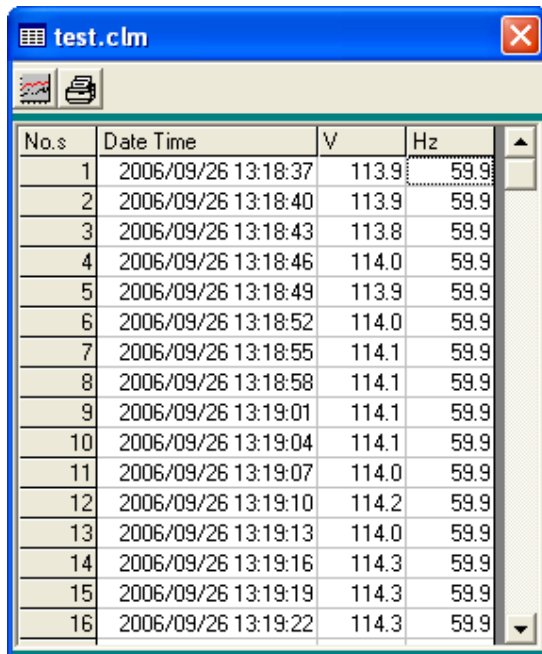
Cancel < Back Next > Finish

Click **Finish** button

	A	B	C	D
1	No.s	Date Time	V	Hz
2	1	1/10/2011 9:32	0	
3	2	1/10/2011 9:32	0	
4	3	1/10/2011 9:32	0	
5	4	1/10/2011 9:32	0	
6	5	1/10/2011 9:32	0	
7	6	1/10/2011 9:32	0	
8	7	1/10/2011 9:32	0	
9	8	1/10/2011 9:32	0	
10	9	1/10/2011 9:32	0	

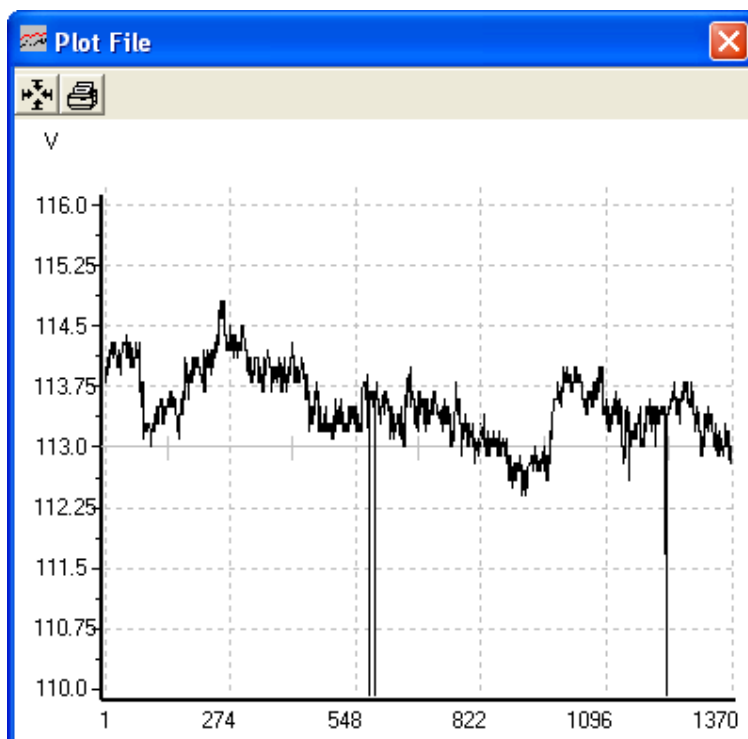
Apply for Graph

Open a saved data file in the software program and then click  .



The screenshot shows a window titled 'test.clm' with a table of data. The table has four columns: 'No.s', 'Date Time', 'V', and 'Hz'. The data is as follows:


No.s	Date Time	V	Hz
1	2006/09/26 13:18:37	113.9	59.9
2	2006/09/26 13:18:40	113.9	59.9
3	2006/09/26 13:18:43	113.8	59.9
4	2006/09/26 13:18:46	114.0	59.9
5	2006/09/26 13:18:49	113.9	59.9
6	2006/09/26 13:18:52	114.0	59.9
7	2006/09/26 13:18:55	114.1	59.9
8	2006/09/26 13:18:58	114.1	59.9
9	2006/09/26 13:19:01	114.1	59.9
10	2006/09/26 13:19:04	114.1	59.9
11	2006/09/26 13:19:07	114.0	59.9
12	2006/09/26 13:19:10	114.2	59.9
13	2006/09/26 13:19:13	114.0	59.9
14	2006/09/26 13:19:16	114.3	59.9
15	2006/09/26 13:19:19	114.3	59.9
16	2006/09/26 13:19:22	114.3	59.9

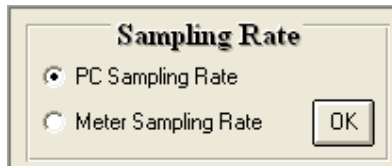


■ Sampling Time

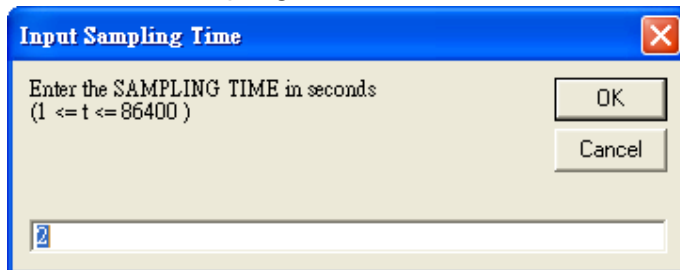
PC Sampling Rate:

(rate at which the PC collects readings while connected to the meter)

Click  on the **Menu Bar**.




Choose "PC Sampling Rate" and then click "OK" button.

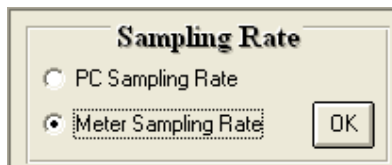


In the **Input Sampling Time** dialog box, input a sampling time and then click "OK" button to confirm.

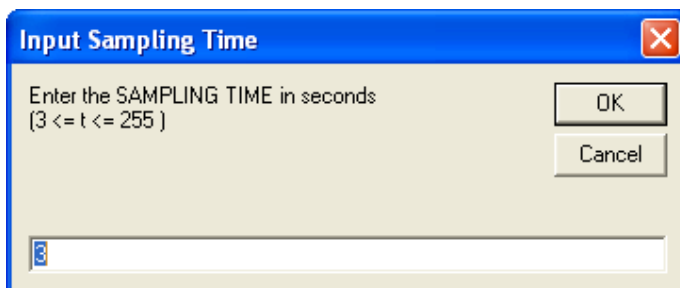
Meter Sampling Rate:

(rate at which meter stores readings)

Click  on the **Menu Bar**.




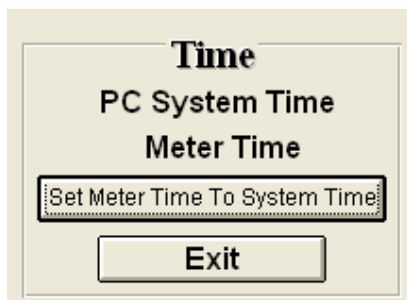
Choose "PC Sampling Rate" and then click "OK" button.



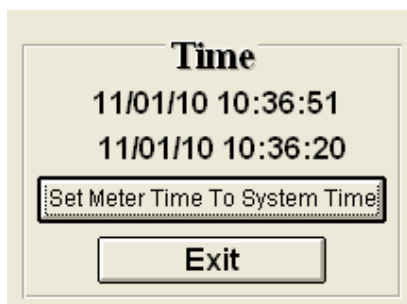
Input a sampling time and then click "OK" button to confirm.


■ RTC (Real Time Clock)

Click  on the **Menu Bar** to set the meter time to PC system time.




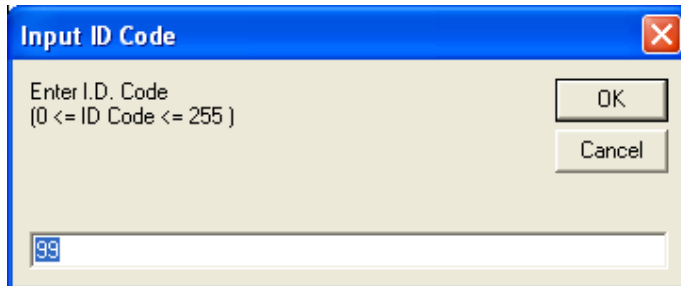
Click **PC System Time** to show PC System Time or **Meter Time** to show Meter Time.



Click  to set the meter time to PC system time.

■ ID Code

Click  button. The “Input ID Code” window, shown below, appears.



The image shows a standard Windows-style dialog box titled "Input ID Code". It has a blue title bar with a red close button in the top right corner. The main area is light beige and contains the text "Enter I.D. Code" followed by "(0 <= ID Code <= 255)". On the right side, there are two buttons: "OK" and "Cancel". At the bottom, there is a text input field with the number "99" entered and a blue selection cursor.

Input an expected ID Code and press “OK” button to confirm.