Datalogger and RS232 Interface

RS232 Wiring Hardware

RS232 Wiring Diagram

Meter Side

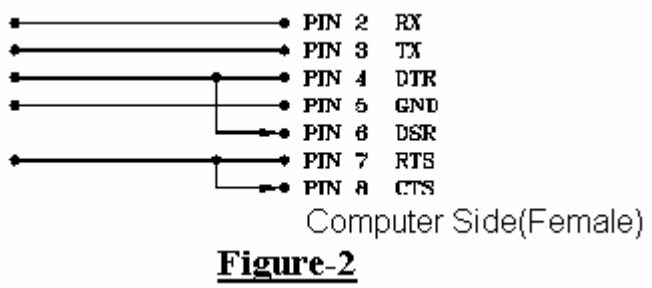
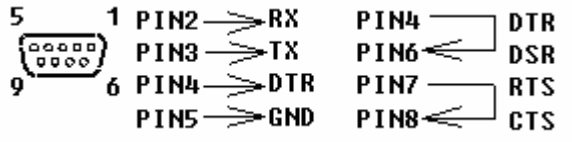


Figure-2

RS232 Connector Diagram

The RS-232 “DB-9” side of the PC Interface Cable connects to the PC’s COM port. Refer to the diagram below for wiring information. Note that a SERIAL to USB Adapter may be used.



RS232 Settings

19200, N, 8, 1

RS-232 Protocol

Settings：19200,N,8,1

On Line Transfer (36 bytes data to PC)

Byte1	Byte2	Byte3	Byte4	Byte5	Bite6
Start 02	Status 1	Status 2	Status 3	Status 4	MR Value

Byte7	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13
Cal value		Main value		Time value		Stop 03

Details:

(1) Starting byte 02 (Byte1)

(2) Status:

Status 1

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	BT	Down of :	Up of :	MMA	AVG	MIN	MAX	Hold

Status 2

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1		Main x 0.1	Main x 0.01	Main x 0.001	R	M	Dot of Cal	CAL

Status 3

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Btu	k	%	d	/h	m^2	h	W

Status 4

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	NO	YES	CLR	OL	d	/h	·h	(ft^2)

(3) LCD Displayed Data

MR Value (Byte6) : 00~99

CAL Value, Main Value, Time Value : C: X Cal Value: DDDD: FULL

(4) Stop Byte 03 (Byte13)

“A” command:

02 + AAh + Last Add (2 Bytes) + 03

Commands : (after “A” command)

“O”---Power off “T”---Time switch “H”---Hold “U”---Unit Switch

“P”---Percent(%) “B”---Manual Recording “R”---Read “X”---MAX/MIN/AVG

“E”---Escape from MMA “I”---Auto Recording “D”---Erase Memory “M”---Reply 1333

“C”+ DD + hh + mm + ss---Set up Time “G” + mm + ss---Set up Intv “F”---Read Auto Records

Auto Rec.s :

00 55 AA 00 + Intv + DDHHMMSS + Intv (2 Bytes)
+ Data1 + Data2 + Data3 + Data1 + Data2 + Data3
+ Data1 + Data2 + Data3 + Data1 + Data2 + Data3 + …

00 55 AA 00 + Intv + DDHHMMSS + Intv (2 Bytes)
+ Data1 + Data2 + Data3 + Data1 + Data2 + Data3
+ Data1 + Data2 + Data3 + Data1 + Data2 + Data3 + …

Data : (Data1 x 65536 + Data2 x 256 + Data3) / 1000

Hardware Requirements and Setup

PC HardWare Requirements :

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

PC HardWare Setup :

1) Switch off all power related to the PC
2) Connect the DB9 (female) end of the supplied RS-232 cable to available COM port
3) Switch on all related power
4) Connect the PS/2 plug end of the RS232 cable to the meter

Software Requirements and Setup

1 Start up windows XP / 7 / 8 operating system

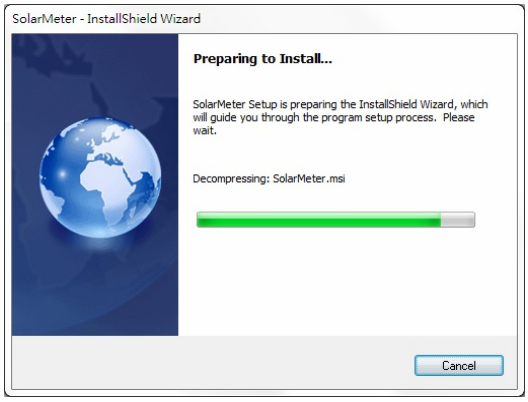
2 Close all other applications

3 Insert the disk in CD drive

(if autorun does not start, open the CD drive then execute “setup.exe”)

Follow the on-screen instructions.

1).

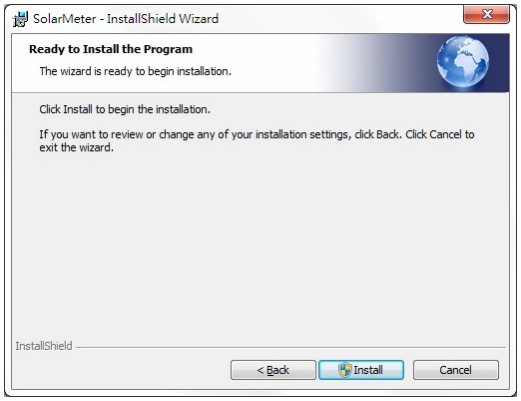


Setup will run automatically.

2).

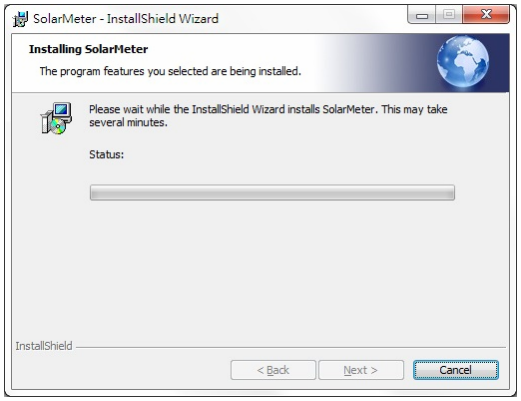
Click Next> button

3).



a. Click **Install** button

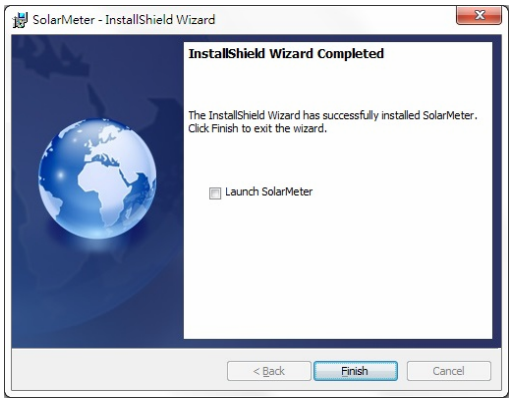
4).



If there shows a “User Account Control” window that asks “Do you want to allow the following program from an unknown publisher to make changes to this computer?”

Click **Yes** button

5).



Click **Finish** button to complete.

On-Line Operation

■ Run the software

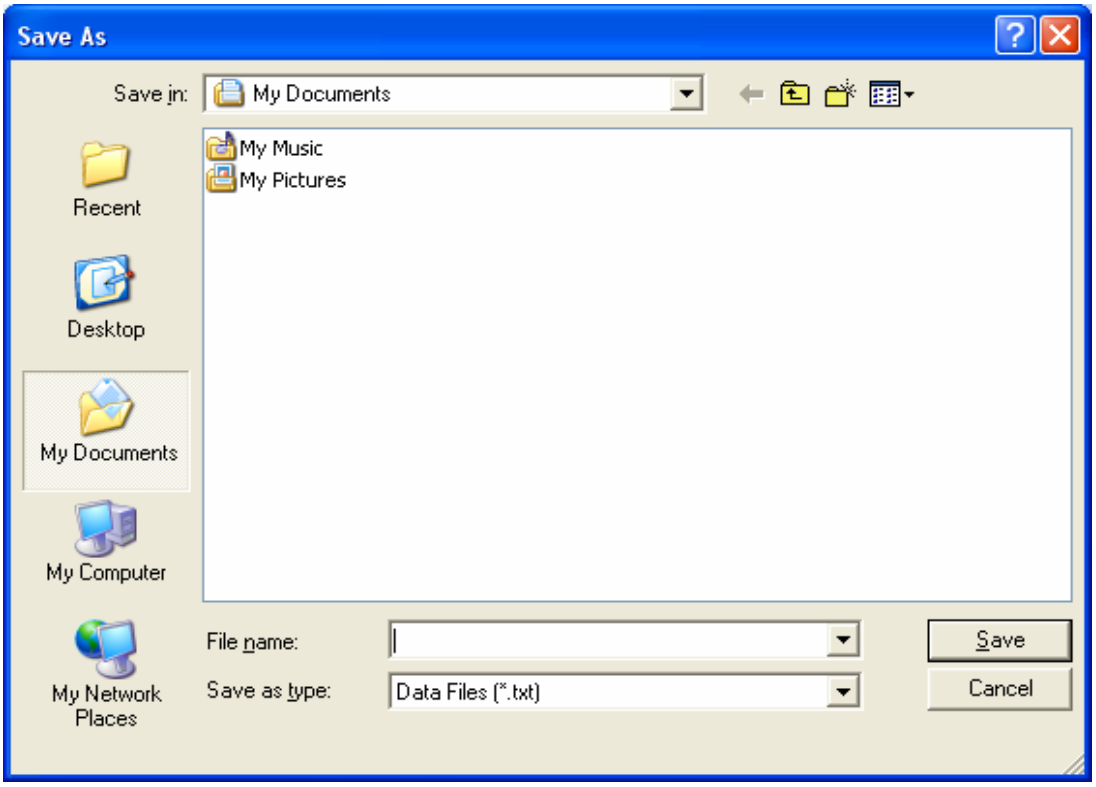
1. Click icon.
2. Click an available COM port

3. Main software screen

■ Record

Save to Hard Disk (PC)

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.

Save to EEP Rom (Light Meter)

1. **Automatically Record**

   Press the button  named MEMORY for about 3 seconds till “**M**” symbol starts flashing on the LCD. Press that button again (momentarily) to stop recording.

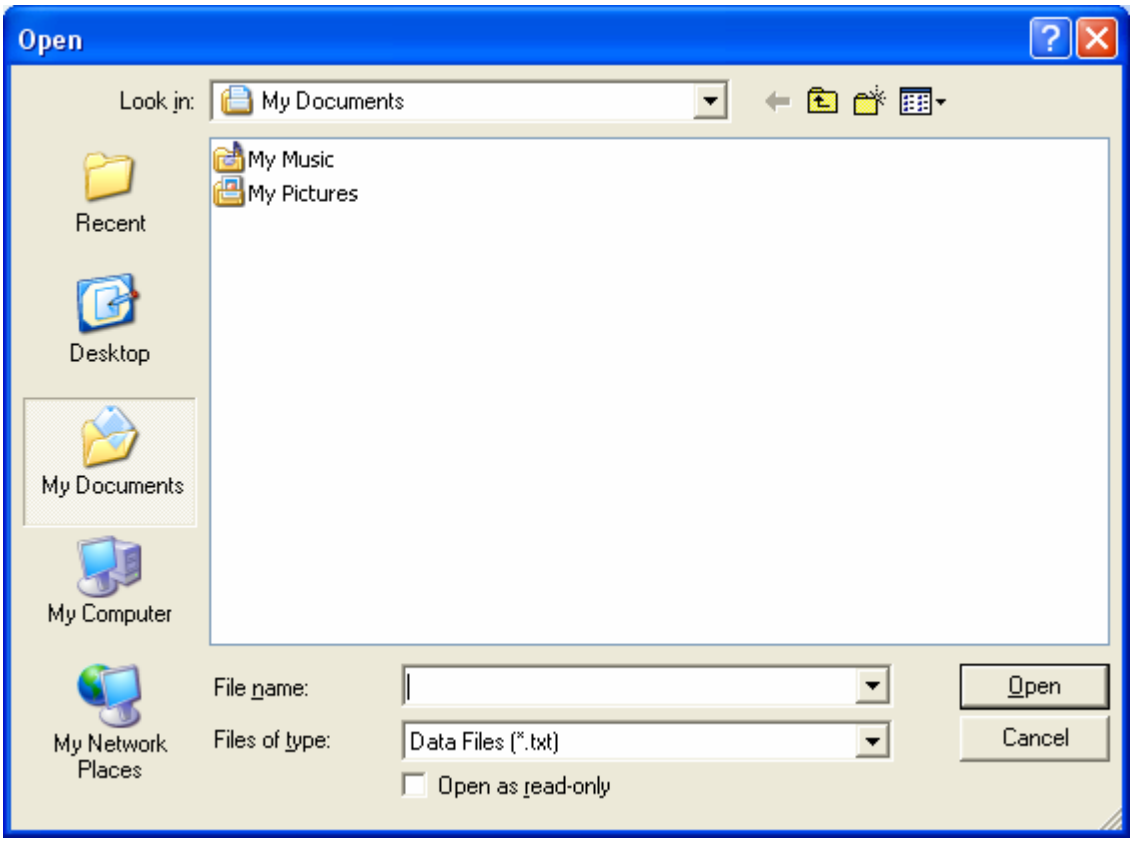
2. **Manually Record**

   Press the button  named MEMORY momentarily to store one reading. The “**M**” symbol will flash once.

Download Data

1. Download Data from Hard Disk

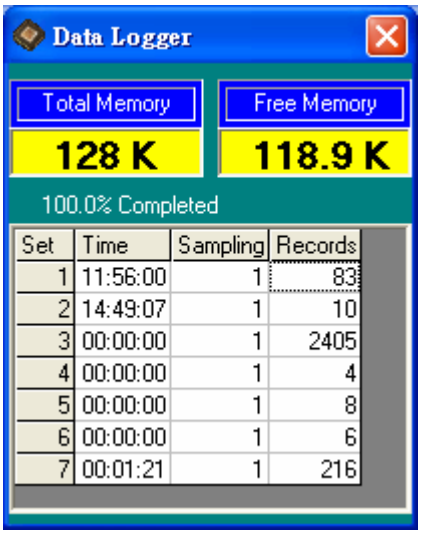
Click  button. The Open window, shown below, appears



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

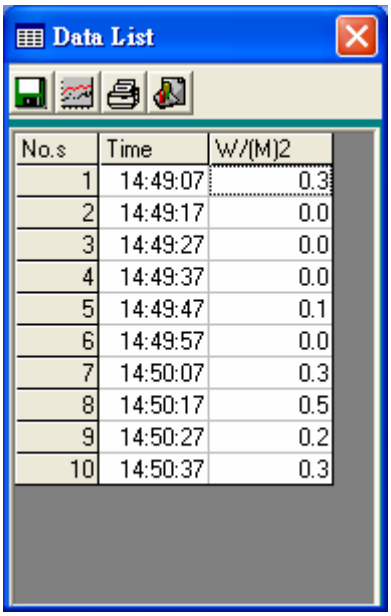
2. Download Data from EEP ROM

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



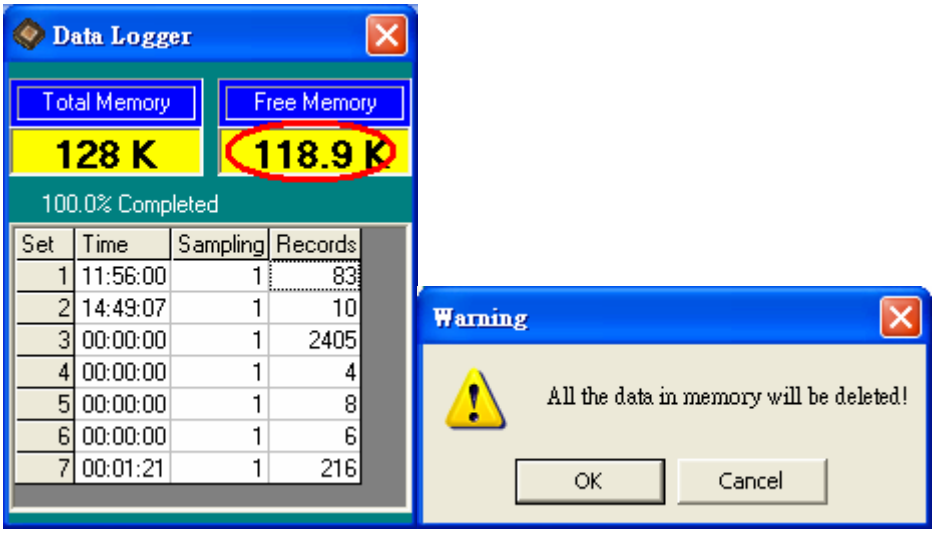
Set	Time	Sampling	Records
1	11:56:00	1	83
2	14:49:07	1	10
3	00:00:00	1	2405
4	00:00:00	1	4
5	00:00:00	1	8
6	00:00:00	1	6
7	00:01:21	1	216

Click on a SET number to view the set's details. For example, in the window above, there are 7 sets from which to choose. The list below is an example of an opened set.



No.s	Time	W/(M)2
1	14:49:07	0.3
2	14:49:17	0.0
3	14:49:27	0.0
4	14:49:37	0.0
5	14:49:47	0.1
6	14:49:57	0.0
7	14:50:07	0.3
8	14:50:17	0.5
9	14:50:27	0.2
10	14:50:37	0.3

To erase saved data in EEP ROM, click the Free Memory label (see below)

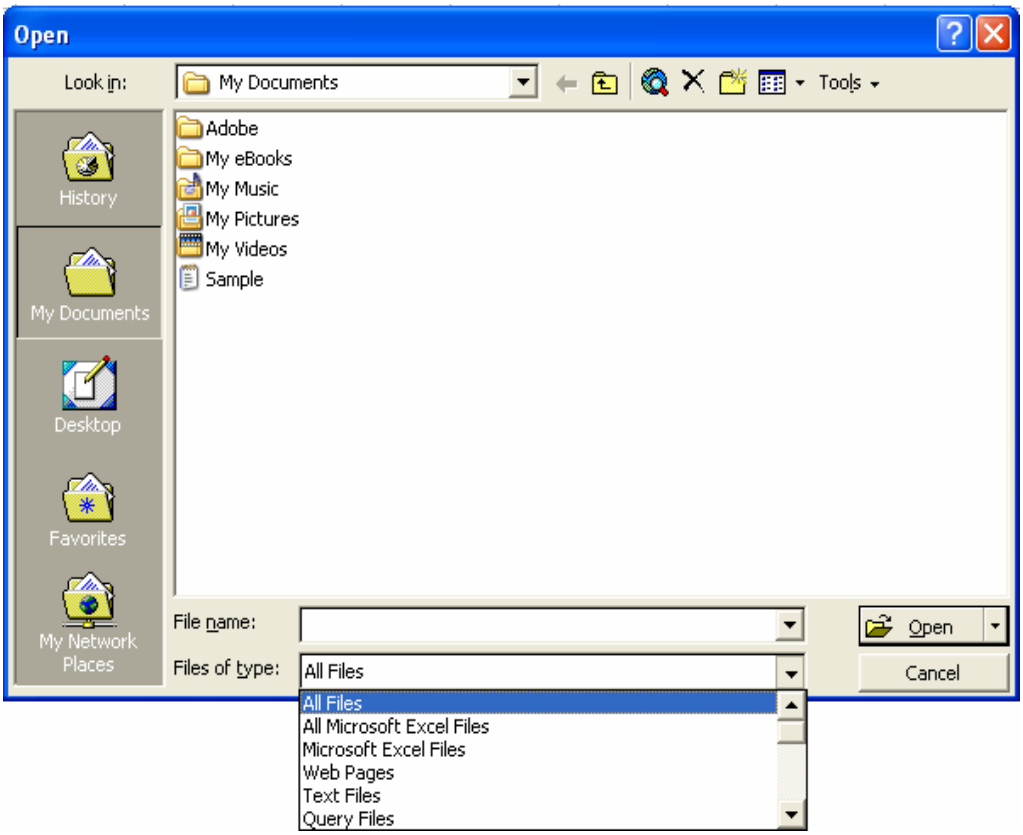


Press OK to confirm.

■ Data Convert

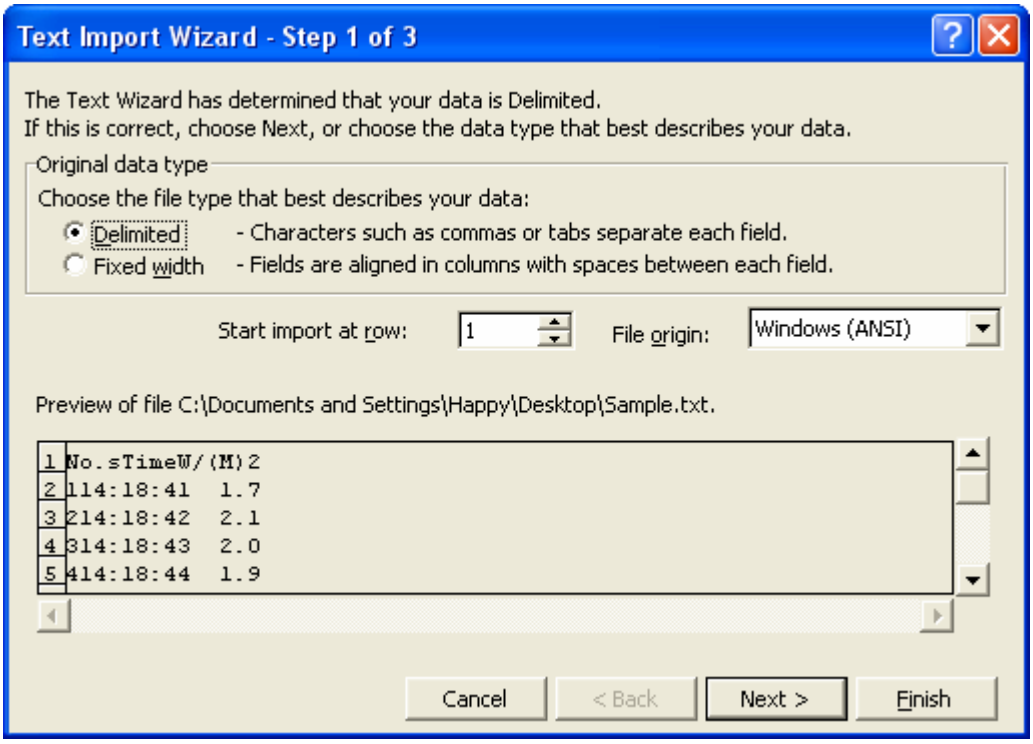
Apply for Excel

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

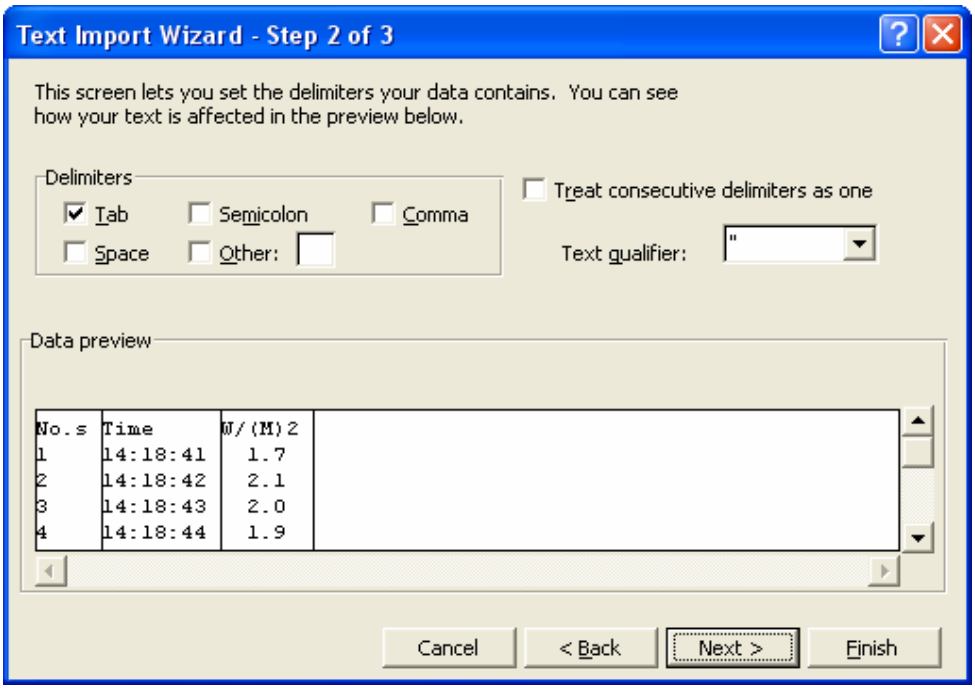


or find any file already saved in HDD, for example, sample.dat.

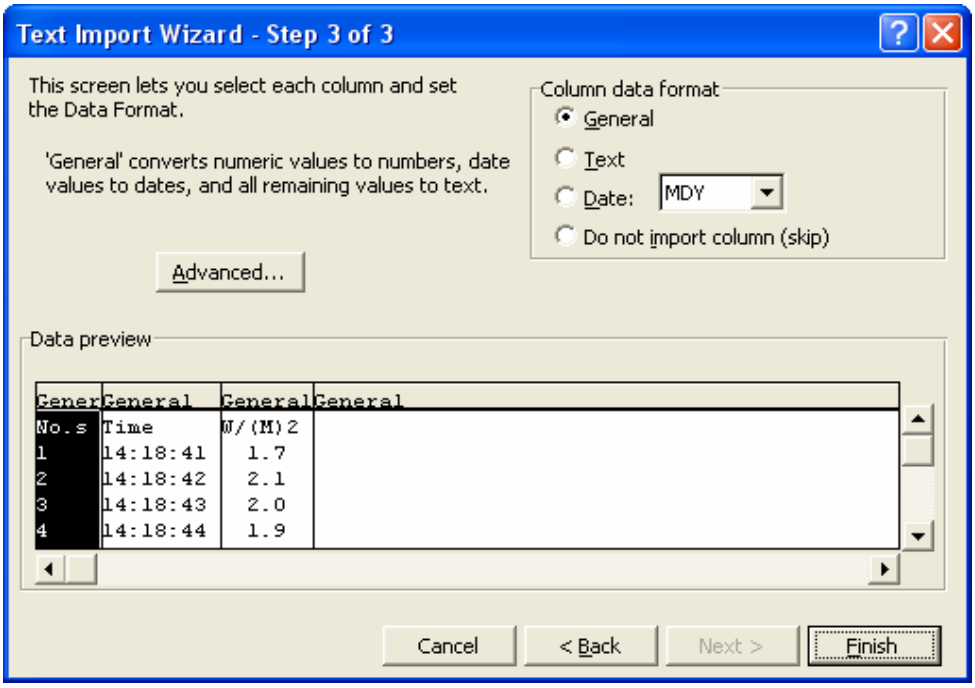
The "Text Import Wizard" then appears. Follow the steps 1 to 3 to complete.



Click Next> button



Click Next> button

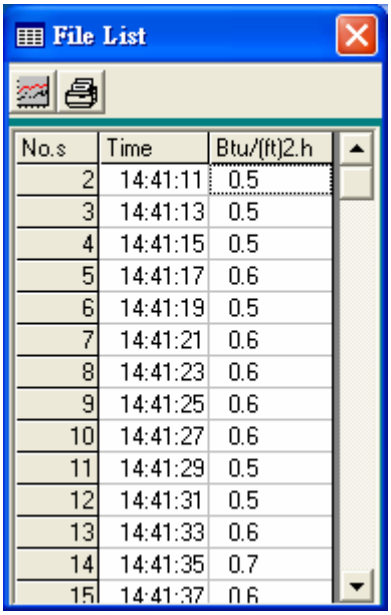


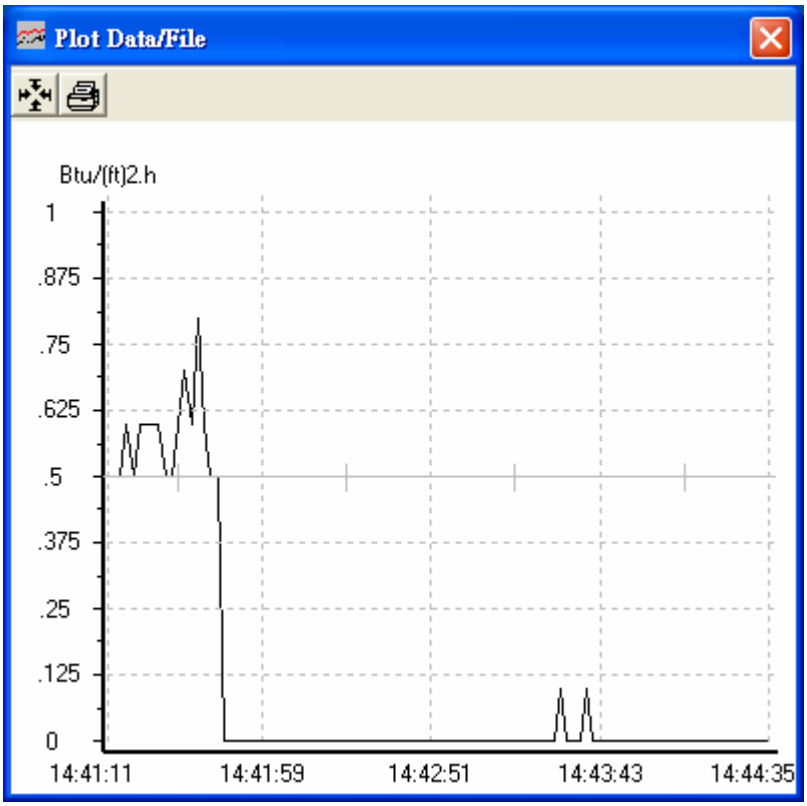
Click **Finish** button

1	No.s	Time	W/(M)2
2	1	14:18:41	1.7
3	2	14:18:42	2.1
4	3	14:18:43	2
5	4	14:18:44	1.9
6	5	14:18:45	2
7	6	14:18:46	1.3
8	7	14:18:47	1.7
9	8	14:18:48	2
10	9	14:18:49	1.8
11	10	14:18:50	1.6
12	11	14:18:51	1.2

Apply for Graph

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

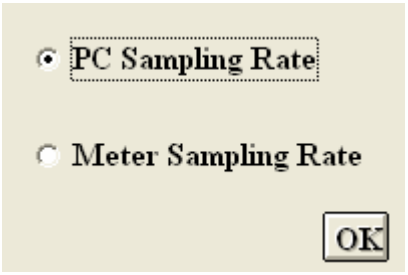




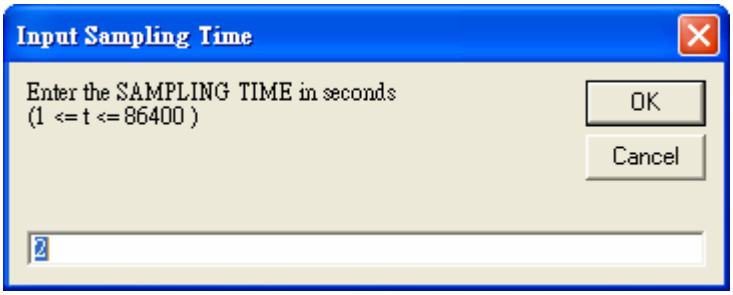
■ Sampling Time

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

Click  on the **Menu Bar.**



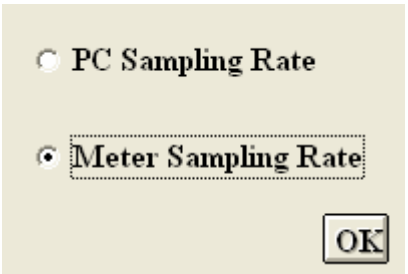
Choose “PC Sampling Rate” and then click “OK” buton.



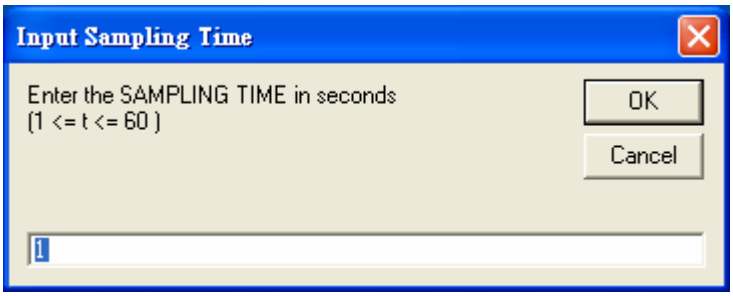
In the **Input Sampling Time** dialog box, input a sampling time and then click "**OK**" button to confirm.

Meter Sampling Rate:
(rate at which meter stores readings)

Click  on the **Menu Bar.**



Choose “PC Sampling Rate” and then click “OK” buton.



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.