

# Datalogger and RS232 Interface

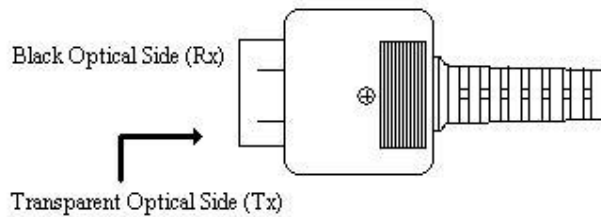
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# Wiring Hardware

## PC Interface Cable

### Meter side of PC Interface Cable

The RS-232 “Optical” plug side of the PC Interface Cable connects to the meter’s RS-232 “Optical” jack. Refer to the diagram below for wiring information.



## RS232 Default Settings

When RS-232 communication enabled, the default RS-232 settings are

Baud Rate **9600**

Parity **None**

Data bits **8**

Stop bit **1**

# RS232 Protocol

## 1. Byte code

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte8	Byte9
02	T1 Status	T1 High	T1 Low	T2 Status	T2 High	T2 Low	Type	03

Byte1 : Starting Byte (02)

Byte2,5 : Starting Bytes

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
—	OL	----						1
+								0

Byte3,4 : T1 Byte

$$T1 = (\text{Byte3} \times 256 + \text{Byte4}) / 10$$

Byte6,7 : T2 Bytes (FF FF : 1315)

$$T2 = (\text{Byte6} \times 256 + \text{Byte7}) / 10$$

Byte8 : Type Byte

00 : K 01 : J 02 : E 03 : T  
04 : R 05 : S 06 : N

Byte9 : Ending Byte (03)

## 2. Commands

"A" : 02 + Last address + 03

Last Address : 8C80

"U" : 02 + 00 55 AA 00 + Interval + Data + Data + ....

+ 00 55 AA 00 + Interval + Data + Data + .... + 03

Interval : 1 Byte

Data : T1 Status + T1 High + T1 Low + T2 Status + T2 High + T2 Low + Type

# **Hardware Requirements and Setup**

## **PC Hardware Requirements :**

HDD, CD Rom, above 486 with PC or USB a 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 USB cable to available port
- 3) Switch on all related power
- 4) Connect the fiber end of the supplied cable to the meter

# Software Requirements and Setup

1) Start up windows 7 / 8 / 10 operating system

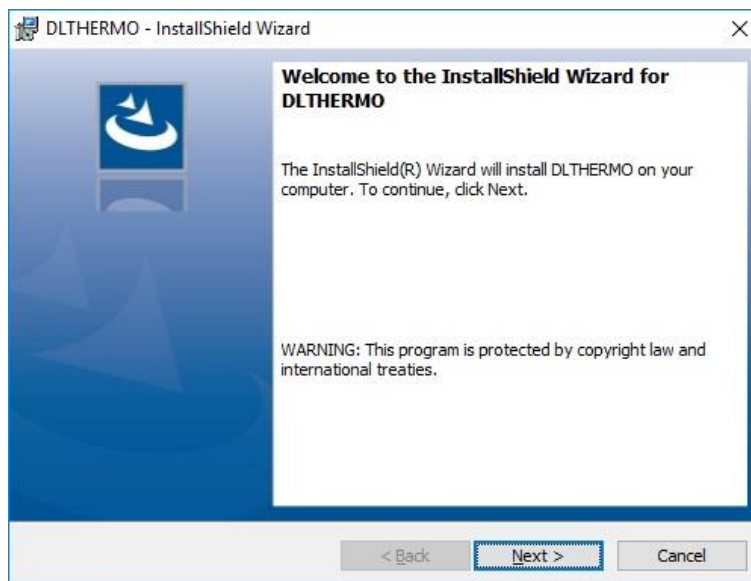
2) Close all other applications

1).



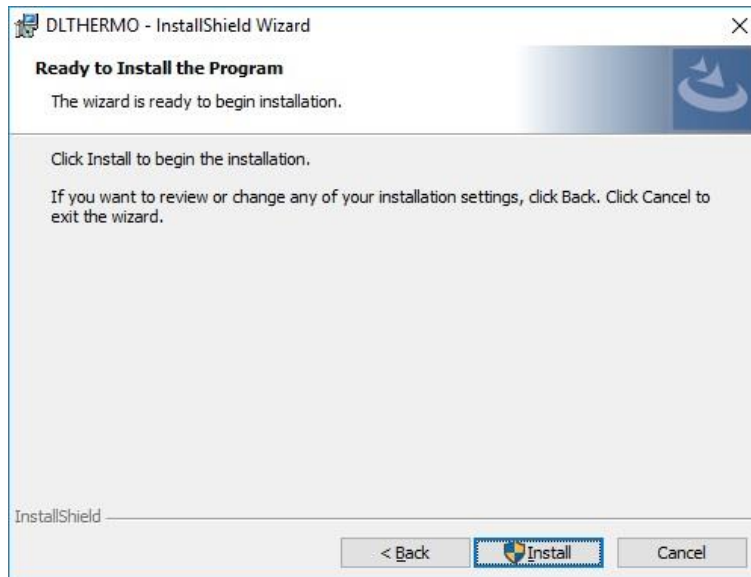
Setup program will run automatically.

2).



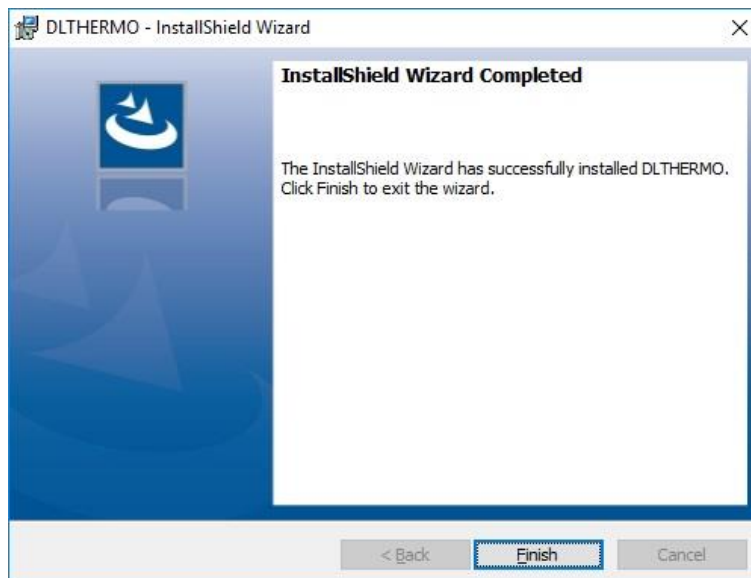
Click Next> button

3).



Click Install> button

4).

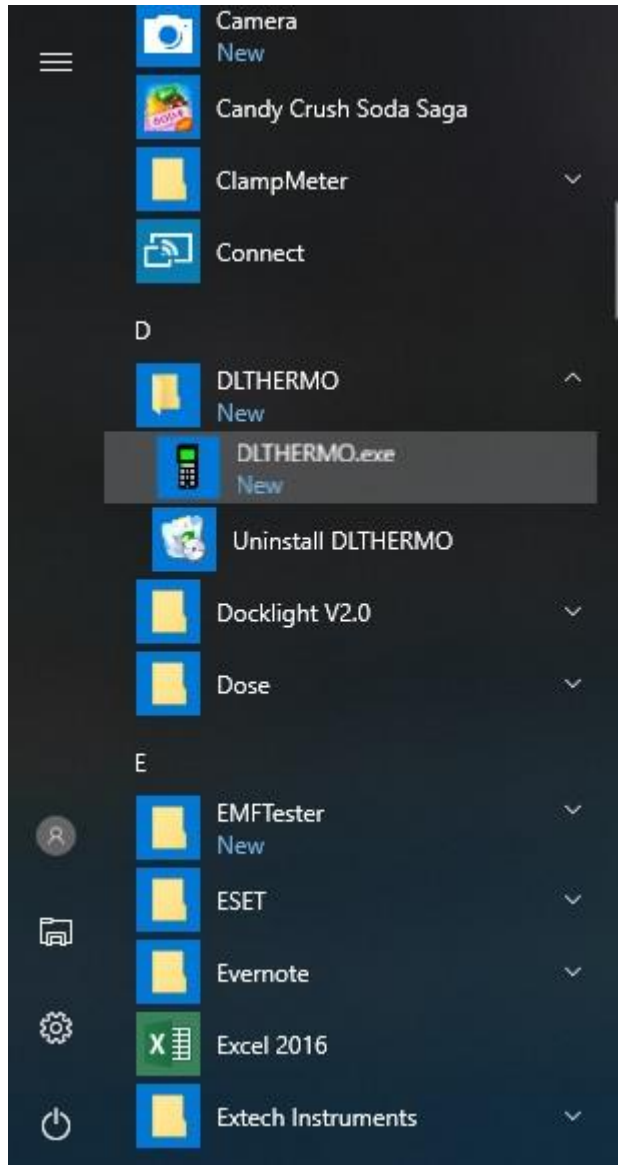


Setup is completed.

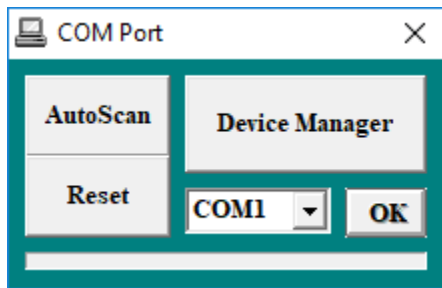
# Communicating Operation

## Run the software

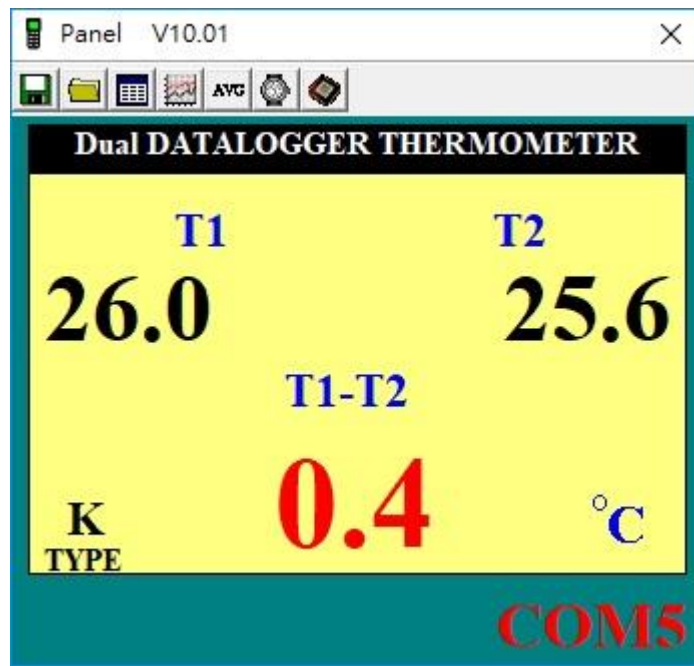
1. Click "Start" form Start menu then move to "All Programs" (or "Programs") then " DLTHERMO.exe" and then click the " DLTHERMO.exe" icon.



2. Click an available COM port




3. Main software screen

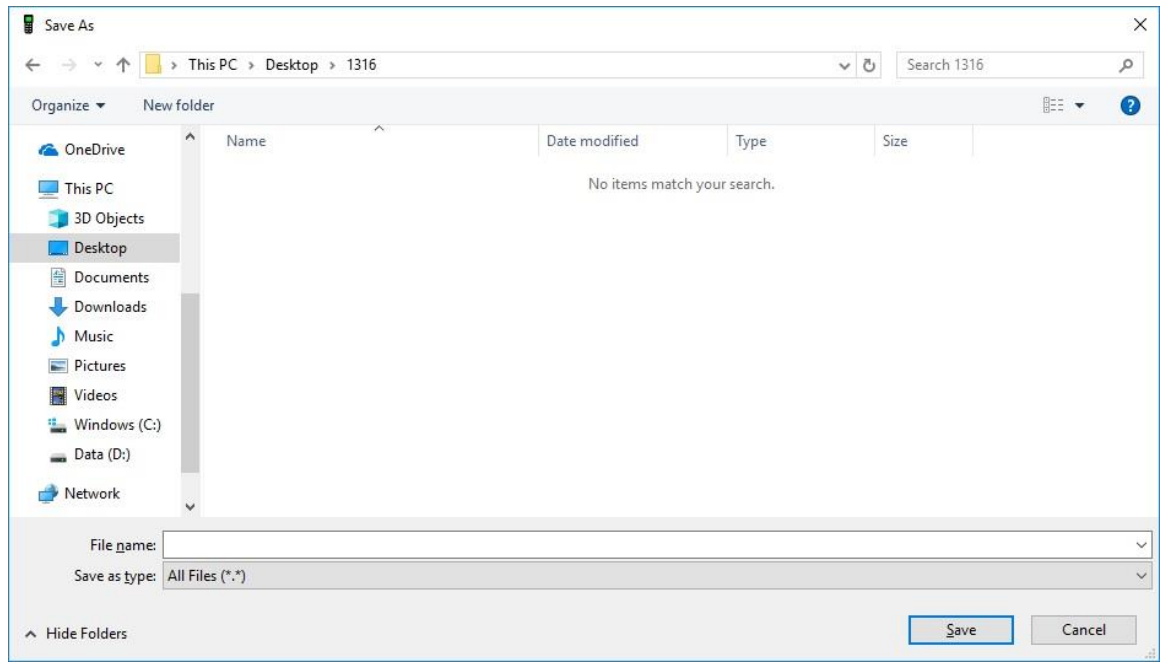






## Record

### Save to Hard Disk (PC)

Click  button. The dialog box shown below will appear



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

Click  to stop recording

## Save to EEPROM

Click the **MEM** on the meter to proceed.

### 1. Automatically Record

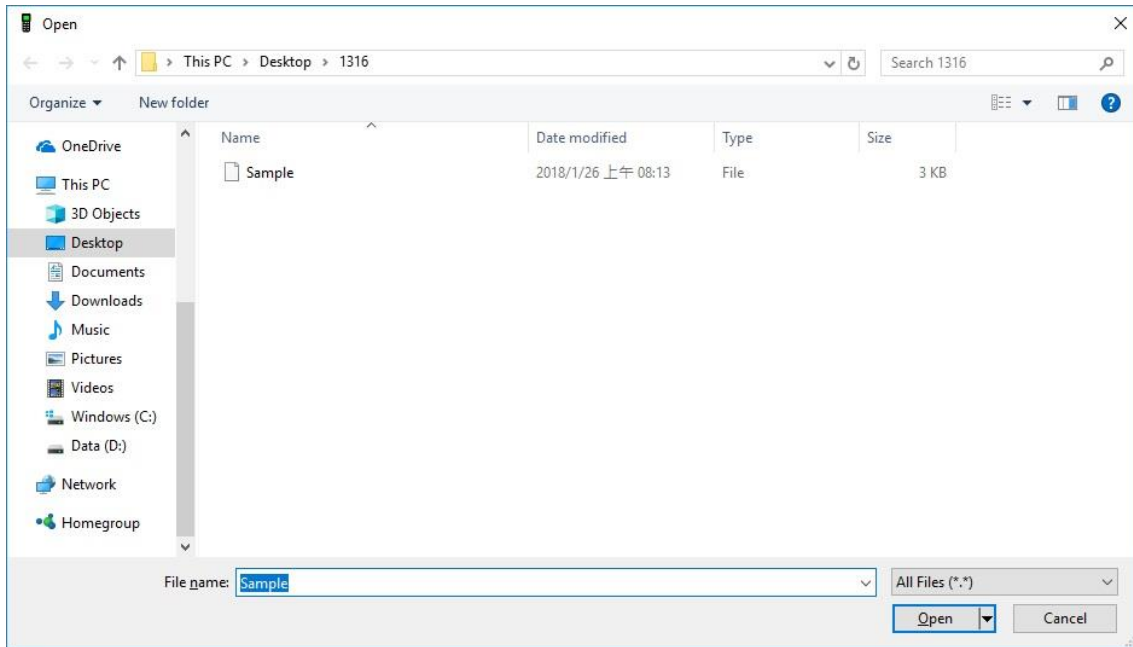
Keep pressing the MEM on the meter till “MEM” symbol starts flashing on the LCD.  
Press this key (momentarily) labeled STOP to stop recording.

### 2. Manually Record

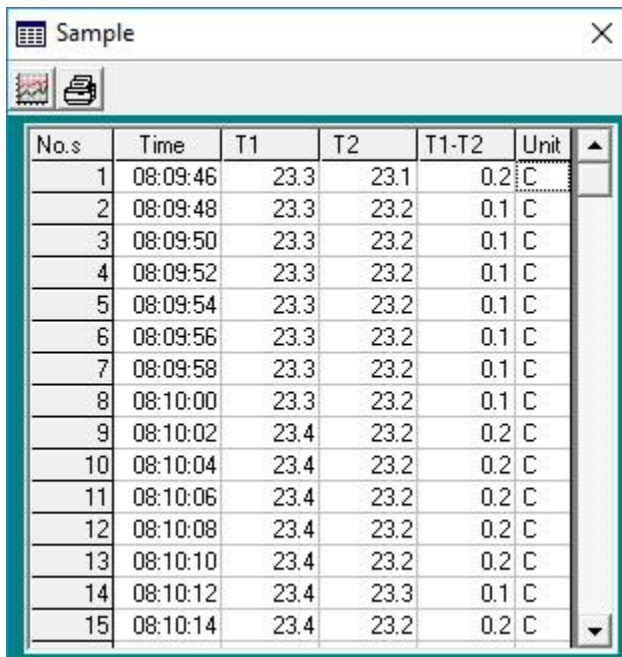
Press the MEM key (momentarily) to store one reading.

## Open File

Click  button. There comes an Open window as below



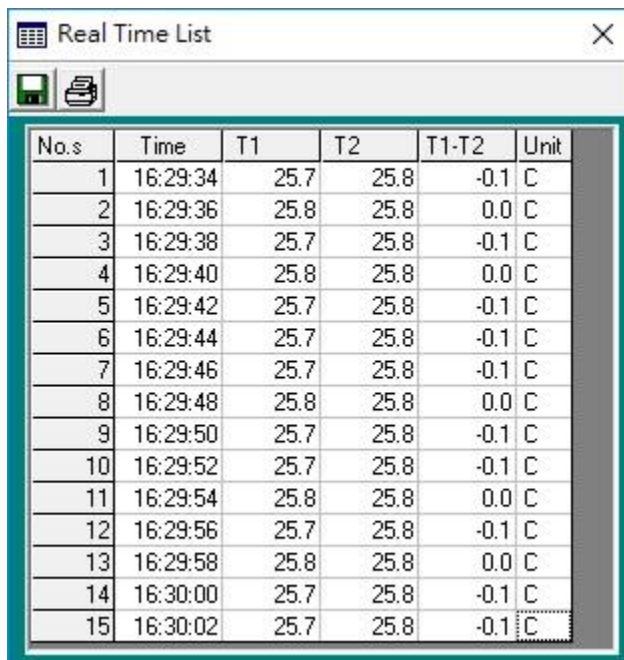
Input the file that was selected earlier and then click the Open button.



No.s	Time	T1	T2	T1-T2	Unit
1	08:09:46	23.3	23.1	0.2	C
2	08:09:48	23.3	23.2	0.1	C
3	08:09:50	23.3	23.2	0.1	C
4	08:09:52	23.3	23.2	0.1	C
5	08:09:54	23.3	23.2	0.1	C
6	08:09:56	23.3	23.2	0.1	C
7	08:09:58	23.3	23.2	0.1	C
8	08:10:00	23.3	23.2	0.1	C
9	08:10:02	23.4	23.2	0.2	C
10	08:10:04	23.4	23.2	0.2	C
11	08:10:06	23.4	23.2	0.2	C
12	08:10:08	23.4	23.2	0.2	C
13	08:10:10	23.4	23.2	0.2	C
14	08:10:12	23.4	23.3	0.1	C
15	08:10:14	23.4	23.2	0.2	C

## List Display

Click on the Data List icon to start viewing Real-Time data in a list.



The image shows a software window titled "Real Time List" with a close button (X) in the top right corner. Below the title bar is a toolbar containing a floppy disk icon (Save) and a printer icon (Print). The main area of the window displays a table with 6 columns: "No.s", "Time", "T1", "T2", "T1-T2", and "Unit". The table contains 15 rows of data, showing temperature readings at 2-second intervals from 16:29:34 to 16:30:02. The "T1-T2" column shows the difference between T1 and T2, which is either -0.1 or 0.0. The "Unit" column shows "C" for Celsius.


No.s	Time	T1	T2	T1-T2	Unit
1	16:29:34	25.7	25.8	-0.1	C
2	16:29:36	25.8	25.8	0.0	C
3	16:29:38	25.7	25.8	-0.1	C
4	16:29:40	25.8	25.8	0.0	C
5	16:29:42	25.7	25.8	-0.1	C
6	16:29:44	25.7	25.8	-0.1	C
7	16:29:46	25.7	25.8	-0.1	C
8	16:29:48	25.8	25.8	0.0	C
9	16:29:50	25.7	25.8	-0.1	C
10	16:29:52	25.7	25.8	-0.1	C
11	16:29:54	25.8	25.8	0.0	C
12	16:29:56	25.7	25.8	-0.1	C
13	16:29:58	25.8	25.8	0.0	C
14	16:30:00	25.7	25.8	-0.1	C
15	16:30:02	25.7	25.8	-0.1	C

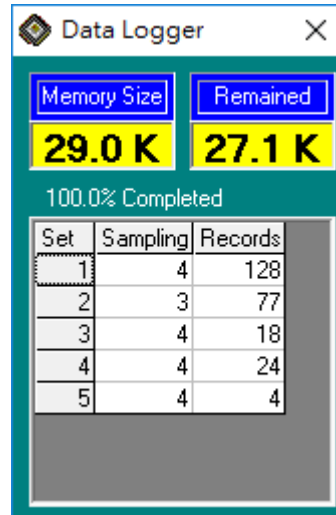
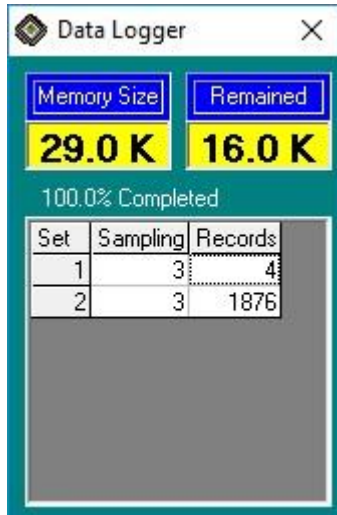
Click on the Save icon  to save the List to the PC.

Click on the Printer icon  to print the data List.

## Data Logger

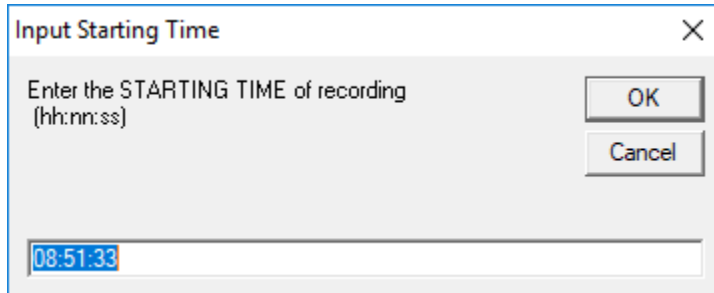
### 1. Download Data from EEP ROM

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



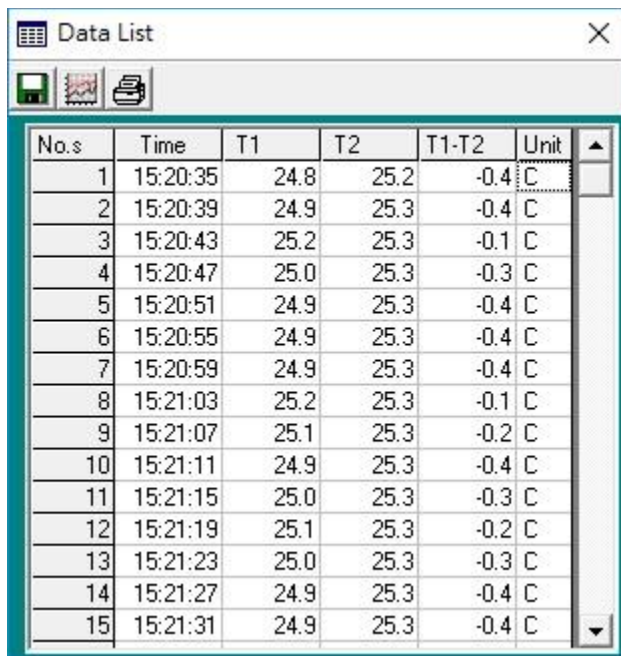
Click on a SET number to view the set's details.

For example, in the window above, there are 2 sets (5 sets) from which to choose.



Enter the starting time of recording.

The list below is an example of an opened set.

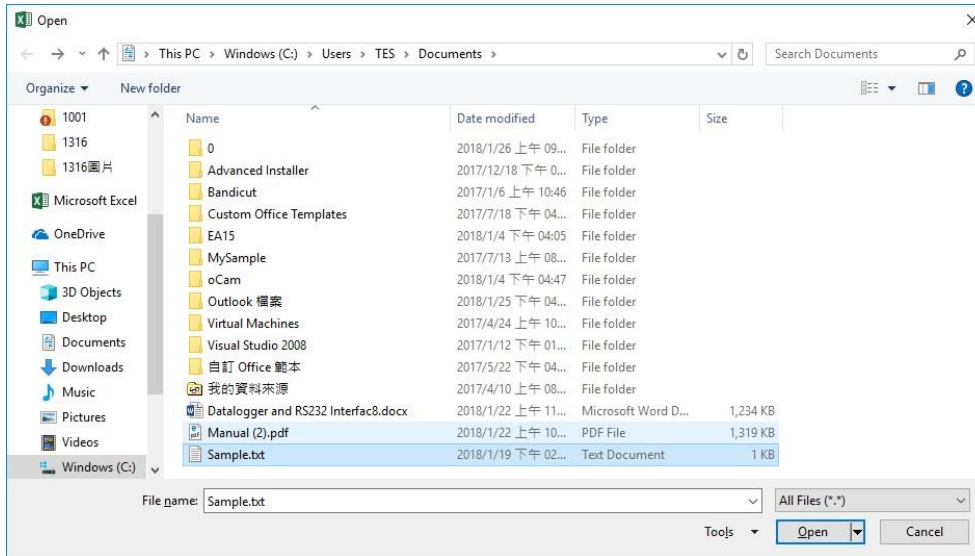


No.s	Time	T1	T2	T1-T2	Unit
1	15:20:35	24.8	25.2	-0.4	C
2	15:20:39	24.9	25.3	-0.4	C
3	15:20:43	25.2	25.3	-0.1	C
4	15:20:47	25.0	25.3	-0.3	C
5	15:20:51	24.9	25.3	-0.4	C
6	15:20:55	24.9	25.3	-0.4	C
7	15:20:59	24.9	25.3	-0.4	C
8	15:21:03	25.2	25.3	-0.1	C
9	15:21:07	25.1	25.3	-0.2	C
10	15:21:11	24.9	25.3	-0.4	C
11	15:21:15	25.0	25.3	-0.3	C
12	15:21:19	25.1	25.3	-0.2	C
13	15:21:23	25.0	25.3	-0.3	C
14	15:21:27	24.9	25.3	-0.4	C
15	15:21:31	24.9	25.3	-0.4	C

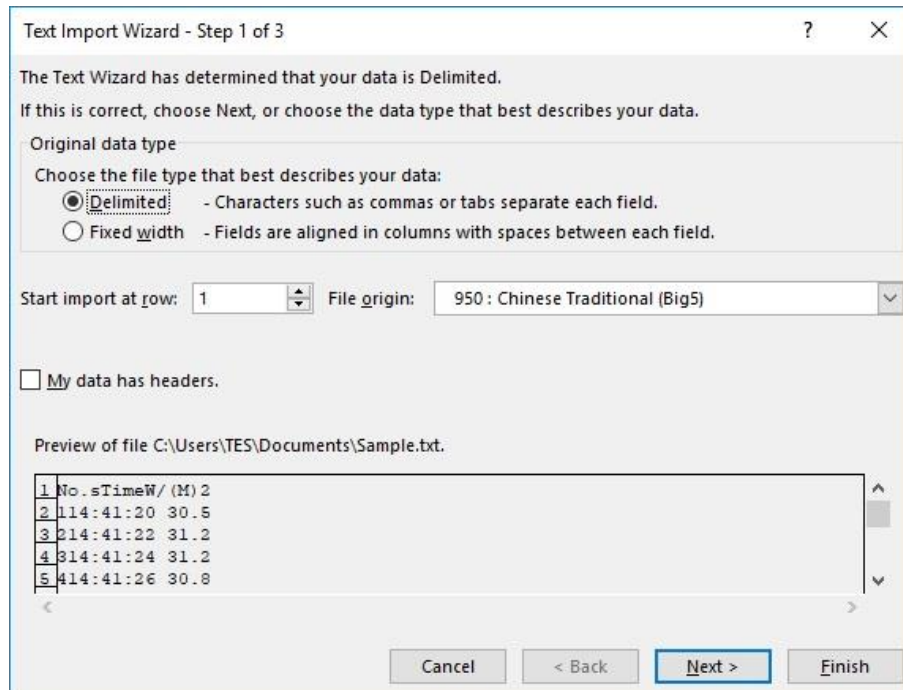
# Data Convert

## Apply for Excel

Open Microsoft Excel, find the file saved, for example.dat.



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

Text Import Wizard - Step 2 of 3

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**

8	14:41:34	31.2	
9	14:41:36	31.2	
10	14:41:38	31.4	
11	14:41:40	31.2	
12	14:41:42	30.9	

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.

**Column data format**

☒ General  
☐ Text  
☐ Date: YMD  
☐ Do not import column (skip)

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

Advanced...

**Data preview**

General	General	General	General
No.s	Time	W/(M)2	
1	14:41:20	30.5	
2	14:41:22	31.2	
3	14:41:24	31.2	
4	14:41:26	30.8	

Cancel < Back Next > **Finish**


Click Finish> button.

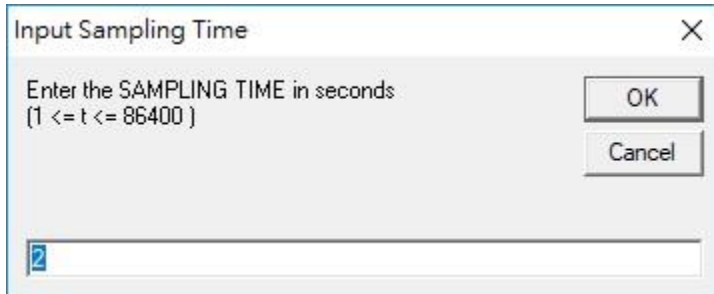
	A	B	C
1	No.s	Time	W/(M)2
2	1	14:41:20	30.5
3	2	14:41:22	31.2
4	3	14:41:24	31.2
5	4	14:41:26	30.8



## Sampling Time

### PC Sampling Rate :

Click  button on the Menu Bar.



The dialog box is titled "Input Sampling Time" and has a close button (X) in the top right corner. Inside the dialog, there is a text prompt: "Enter the SAMPLING TIME in seconds" followed by the range "(1 <= t <= 86400 )". Below this text is a text input field containing the number "2". To the right of the input field are two buttons: "OK" and "Cancel".

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