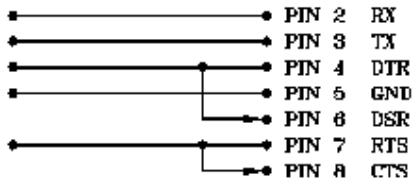
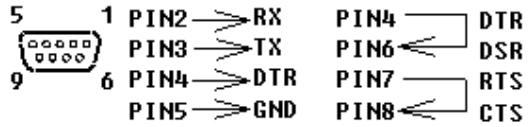
Instruction Manual

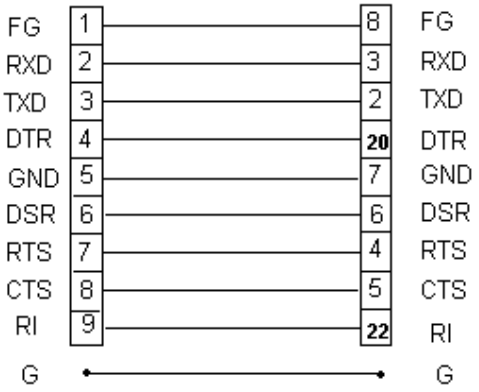
RS232 Wiring Diagram



Connector Wiring Diagram



9 to 25 Pin RS232 Wiring Diagram



RS232 Default Settings

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

Baud Rate **19200**

Parity **N**one

Data bits **8**

Stop bit **1**

RS232 Decode

Send “w” then MCU returns “77H” back , and then command

“space” character：（61 Bytes MCU DATA）

02	AVH	AVL	AIH	AIL	AVAH	AVAL	AWH	AWL	APFH	APFL	
AθH	AθL	AVARH	AVARL	BVH	BVL	BIH	BIL	BVAH	BVAL		
BWH	BWL	BPFH	BPFL	BθH	BθL	BVARH	BVARL	CVH	CVL		
CIH	CIL	CVAH	CVAL	CWH	CWL	CPFH	CPFL	CθH	CθL		
CVARH	CVARL	TVAH	TVAL	TWH	TWL	TPFH	TPFL	TθH	TθL		
TVARH	TVARL	HZH	HZL	I4H	I4L	FLAG0	FLAG1	FLAG2	03		

FLAG 0	FLAG 1	FLAG 2
BIT0：P2W	BIT0：AWN	BIT0：BVOL
BIT1：1P3W	BIT1：AVARN	BIT1：BIOL
BIT2：3P3W2M	BIT2：BWN	BIT2：CVOL
BIT3：3P4W	BIT3：BVARN	BIT3：CIOL
BIT4：MODE	BIT4：CWN	BIT4：I4OL
BIT5：LBT	BIT5：CVARN	BIT5：TWN_FLAG
BIT6：X	BIT6：AVOL	BIT6：TVARN_FLAG
BIT7：X	BIT7：AIOL	BIT7：X

Send “w” then MCU returns “77H” back ,and then command as below

（D）+ YY,MM,DD,hh,mm,ss set RTC

（G）erase memory

（K）+ No.s read details of recorded set

No.s of Rec.s + YYMMDDhhmmss + Flag0 + Interval.
2 + 6 + 1 + 1 (bytes)

（k） (follow K + N command) read details (256 bytes / k command)

Flag1 + Flag2 + Hz + AV +AI + AW + BV + BI + BW + CV + CI + CW + I4
1 + 1 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 (bytes)

（T）load major information of data logger

Sets + Last add. + Rec.s of 1st set + YYMMDDhhmmss + Flag0 + Interval
+ Rec.s of 2nd set + YYMMDDhhmmss + Flag0 + Interval
……..
1 + 3 + 2 + 6 + 1 + 1 + 2 + 6 + 1 + 1 …… (bytes)

Graphic Mode：

（a）load graphic voltage data of A phase

（b）load graphic voltage data of B phase

（c）load graphic voltage data of C phase

（d）load graphic current data of A phase

（e）load graphic current data of B phase

（f）load graphic current data of C phase

HARDWARE REQUIREMENTS AND SETUP

PC HardWare Requirements :

HDD, CD Rom, 486 PC or above, with COM1 or COM2 COM port

EGA or higher monitor

4M bytes or more memorysize

PC HardWare Setup :

1) Switch off all power related to the PC

2) Connect the socket (female) of RS232 cable to COM1 or COM2 COM port

3) Switch on all related power

4) Connect the socket of RS232 cable to Power Analyzer

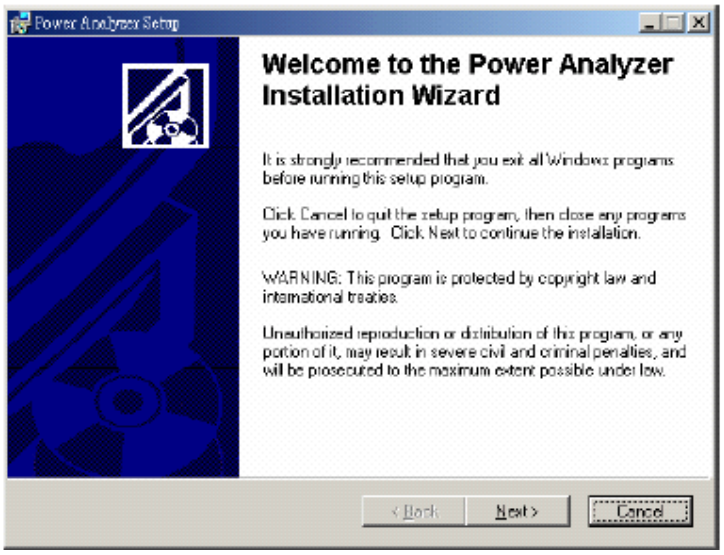
Software Requirements and Setup

1) Start up windows 2000 operating system
2) Close all application
3) Insert disk in CD drive

   Wait for “Autorun” to start and follow on-scree instructions

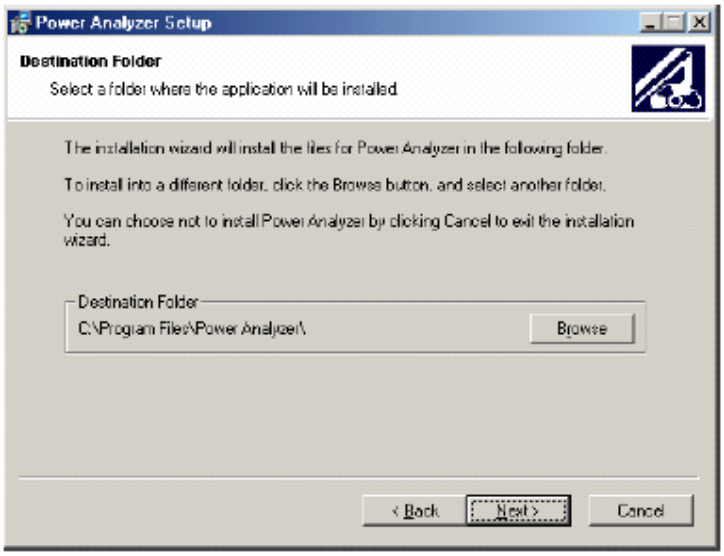
   (If “autorun” does not sart, click on “Start” then “Run”. Type the drive letter and “:\LV\Installer\Setup.exe” and click “OK” .)
4) Setup program will run automatically.

1.



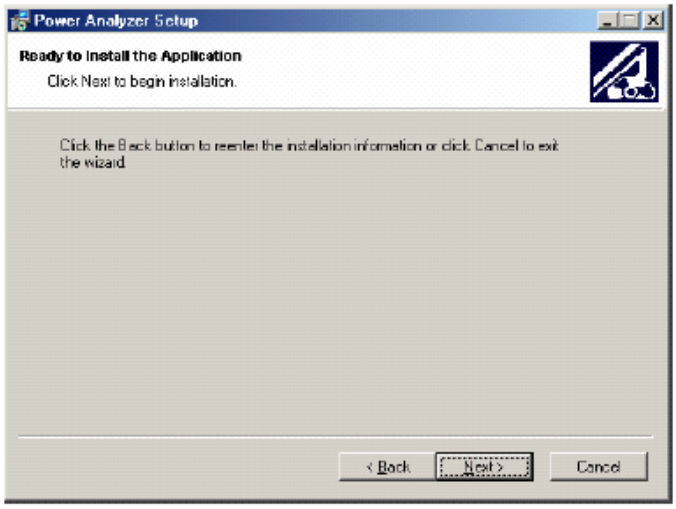
Click “Next>” buton

2.



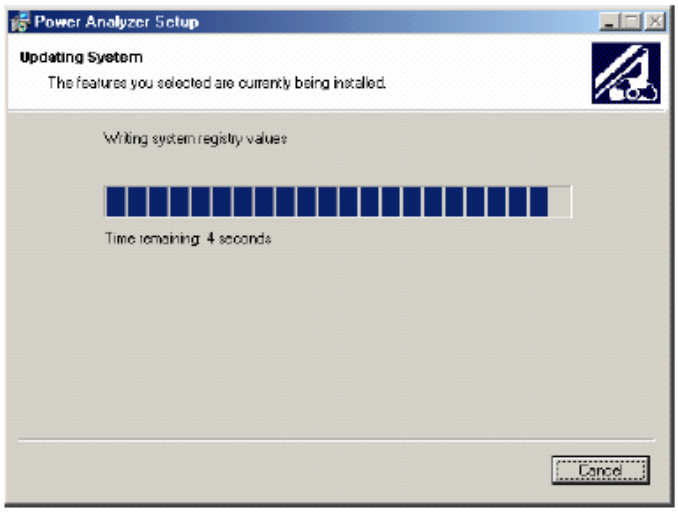
Click “Next>” buton

3.



Click “**N**ext>” buton

4.

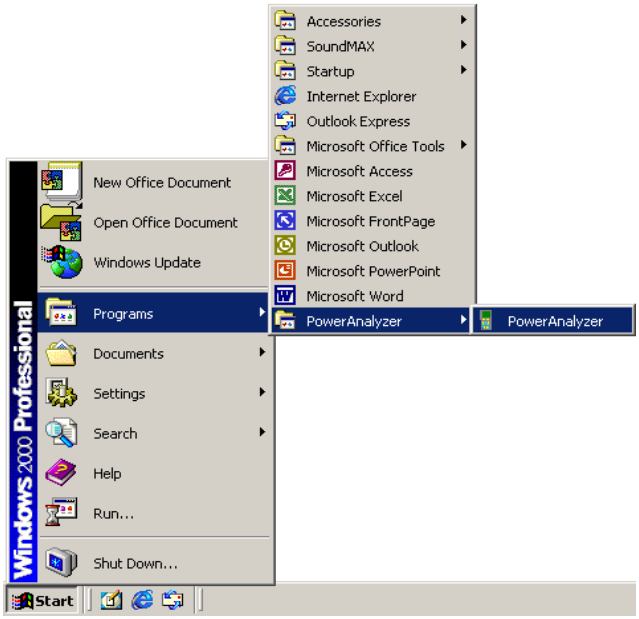


Click "Next"

5.

Communication Operation

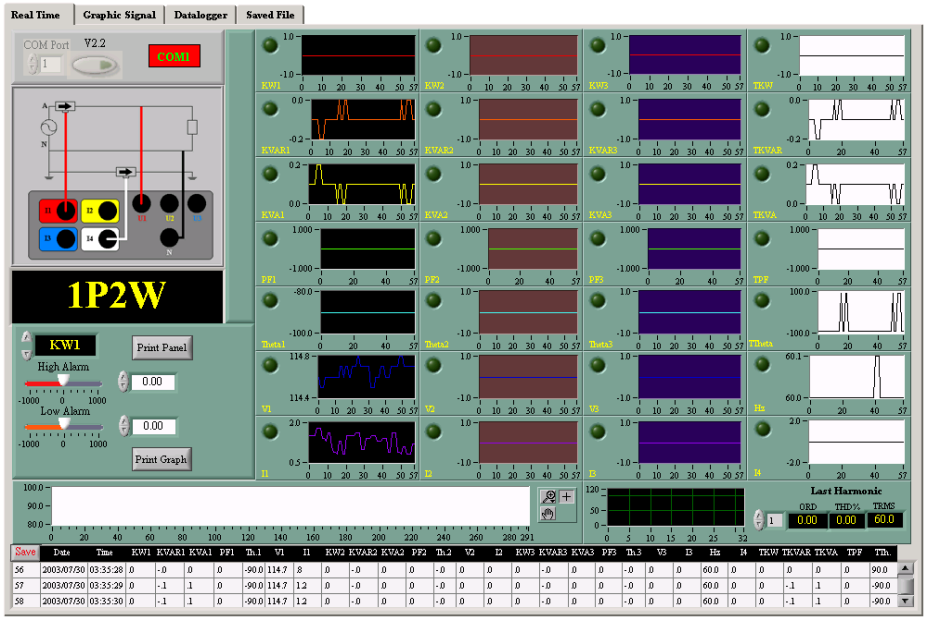
Run the software



Start → Programs → PowerAnalyzer (Default) → PowerAnalyzer

Select an available COM Port then click

Main tableau



Real Time Clock

Click the tab button “ Dataloger” as above

Click 

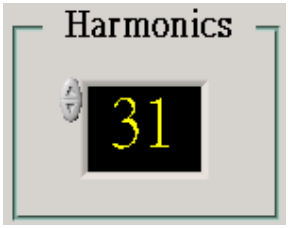
to set Real Time Clock (Meter Time) to system Time

Harmonic

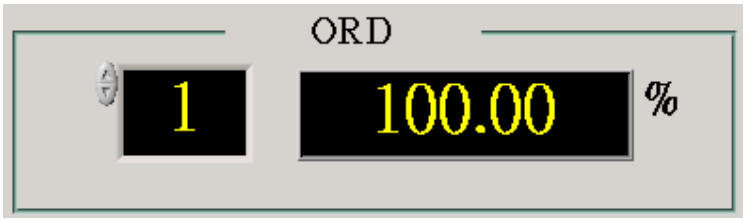
Click the tab button “Graphic Signal” as above

Click 

(available with V1, V2, V3, I1, I2, I3) to get Graphic Signal.



Set up the willing harmonics to compute (< = 31)



The xth-order harmonic

This is the number of harmonic components willing to approximate and use in the THD measurement. This number includes the fundamental component. For example, if willing to compute the second harmonic distortion in your signal, this number should be two.

Note: If got 

in the result, that means “Not Available or Zero”.

% THD is the percent total harmonic distortion present in the input signal.

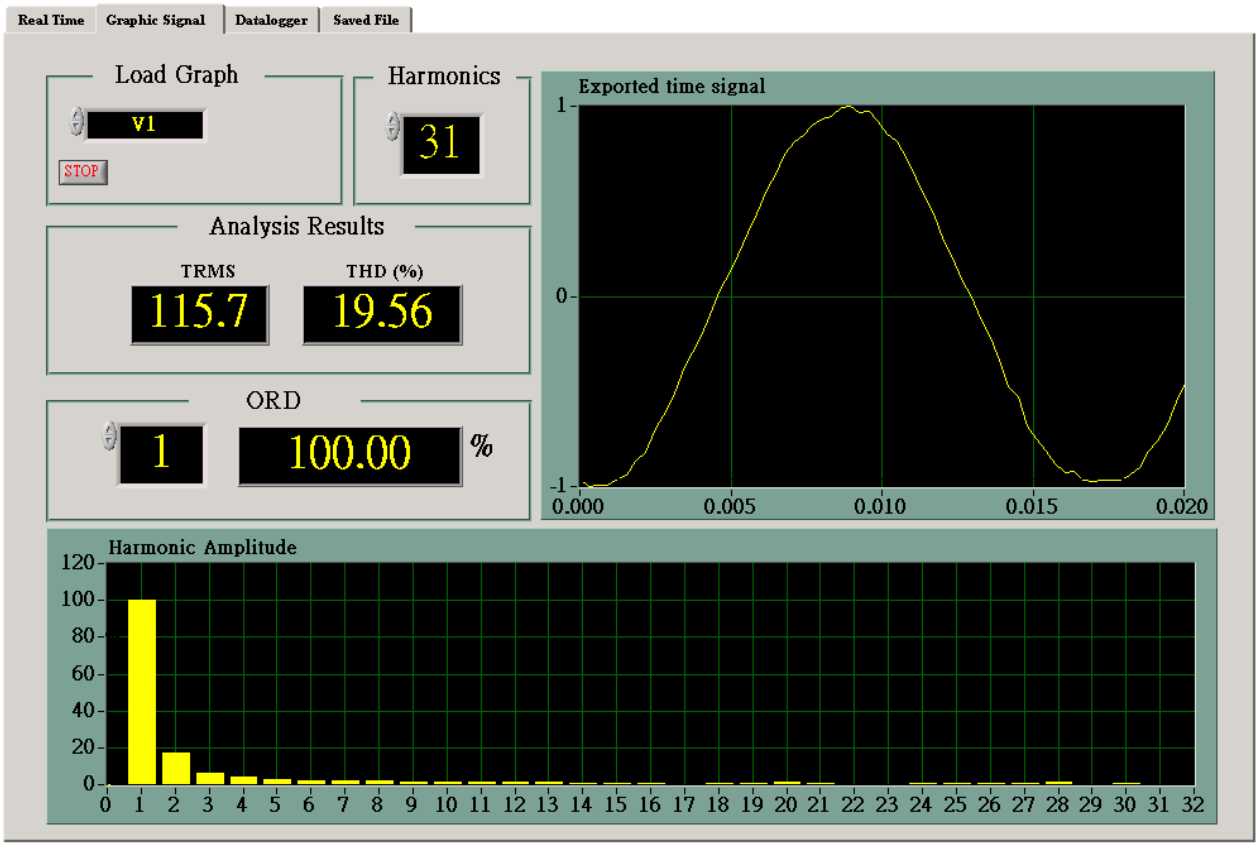
The THD computation is made using the following equation

$$\%THD = \frac{100\sqrt{A(f_2)^2 + A(f_3)^2 + \ldots + A(f_N)^2}}{A(f_1)}$$

,

where

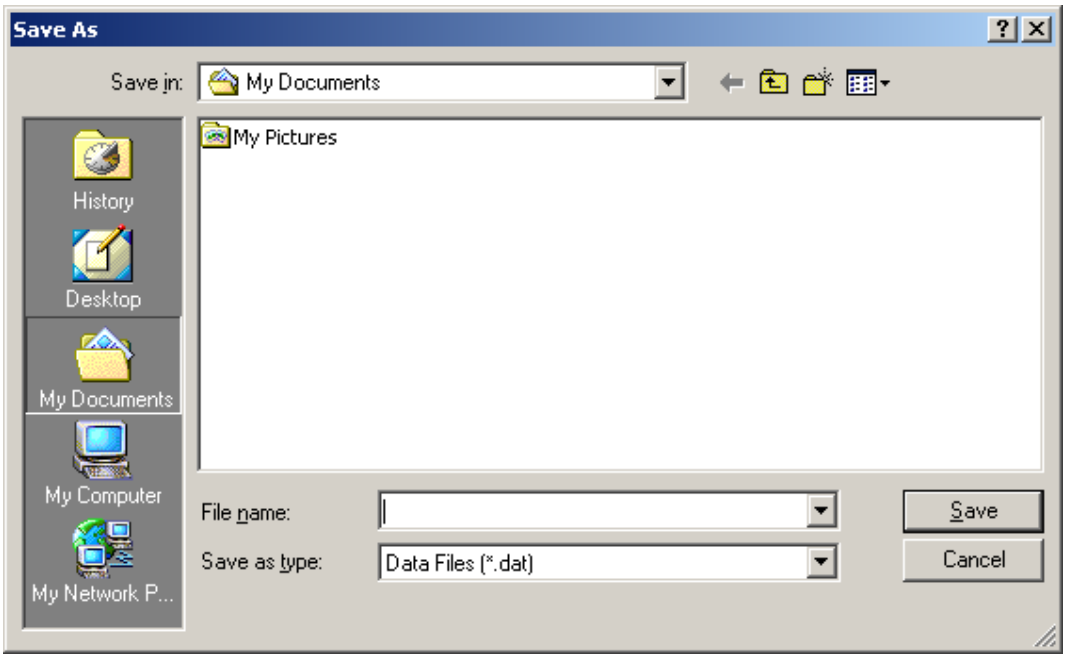
$A(f_1)$ is the amplitude of the fundamental component, $A(f_N)$ is the amplitude of the harmonic, and N is the number of harmonics.


Real Time
Graphic Signal
Datalogger
Saved File
Load Graph
V1
STOP
Harmonics
31
Analysis Results
TRMS
115.7
THD (%)
19.56
ORD
1
100.00
%
Exported time signal
1
0
-1
0.000
0.005
0.010
0.015
0.020
Harmonic Amplitude
120
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

Data Record

Save to H.D.D.

Click  . There comes a dialog box as below :



Input a willing file name and then click  to save data.

Save to EEPROM

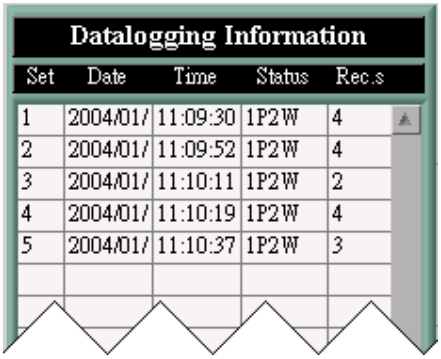
Click the blue key labeled “START” on the meter to proceed.

Download data

1. Download Data from EEPROM

1).

Click the tab button “Datalogger” as above



As above, there are 5 sets recorded in the Power Analyzer. Each got 4, 4, 2, 3 and 4 records.

2).

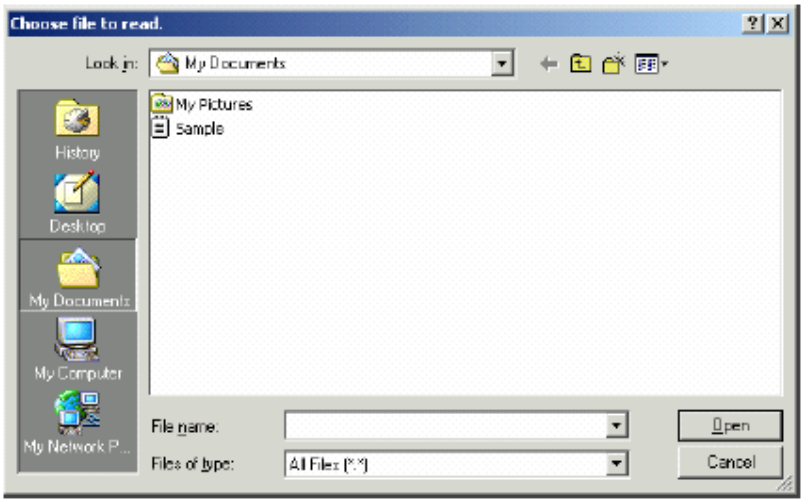
Enter a willing set and then click 

to get details.

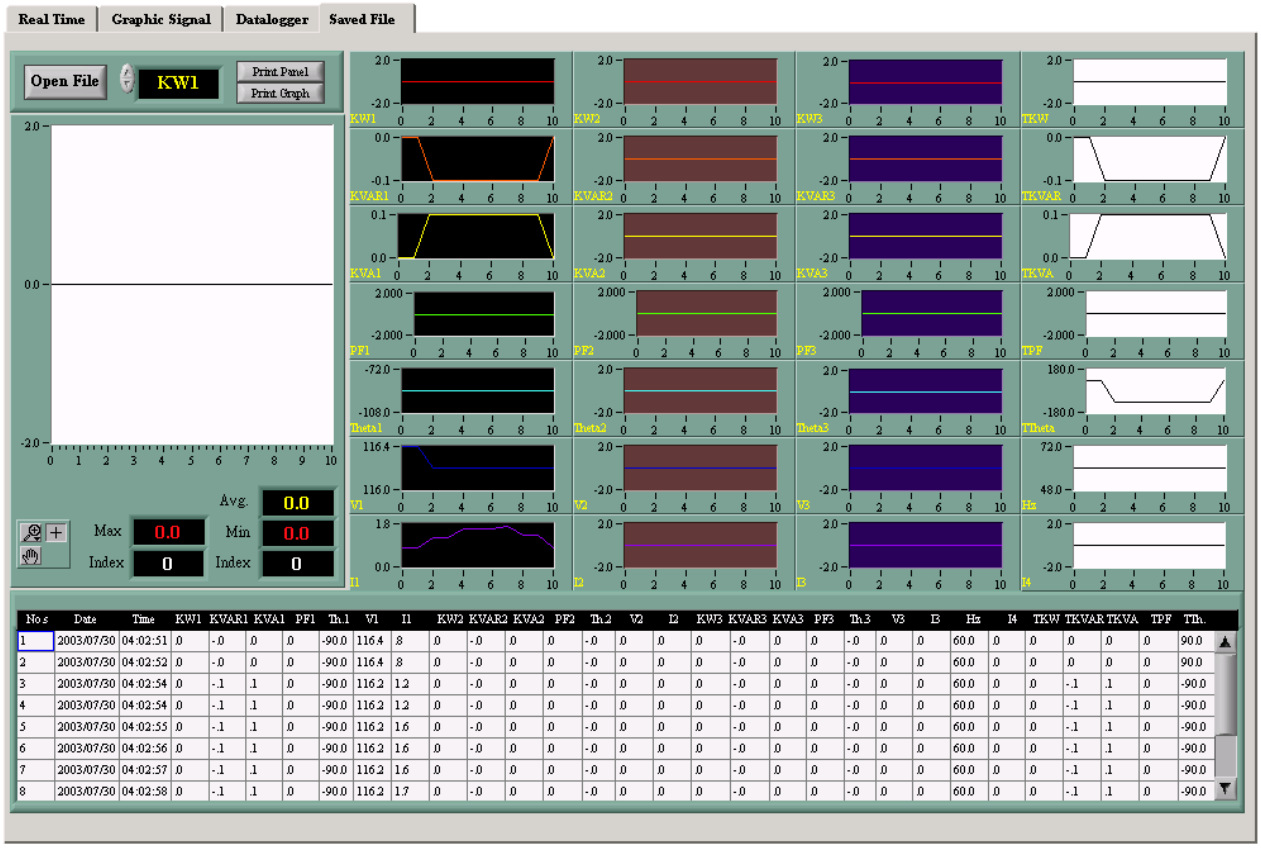
2. Download Data from Hard Disk

Click the tab button “Saved File” as above

2). Click  . There comes a dialog box as below



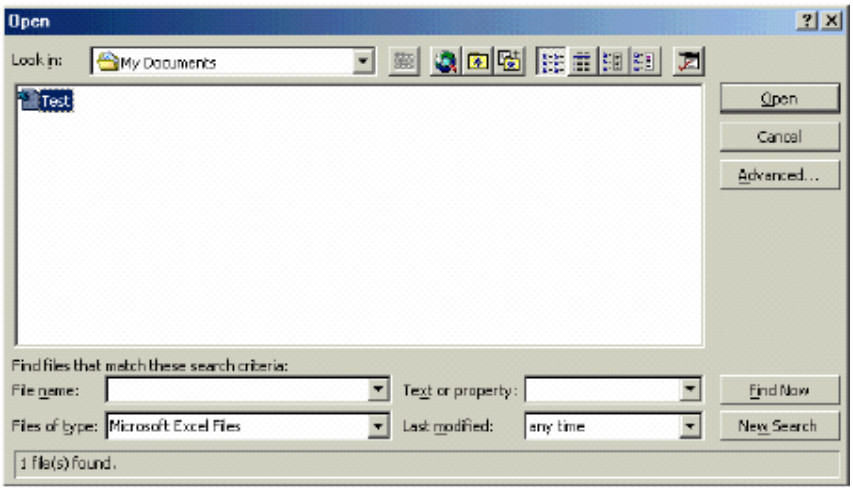
Input the file name and then click Open button if willing to read.



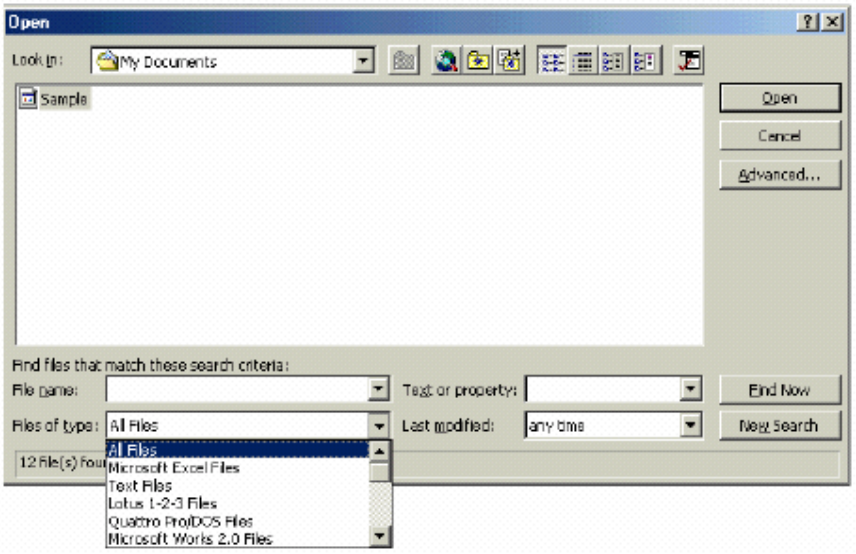
Data Convert

Apply for Excel

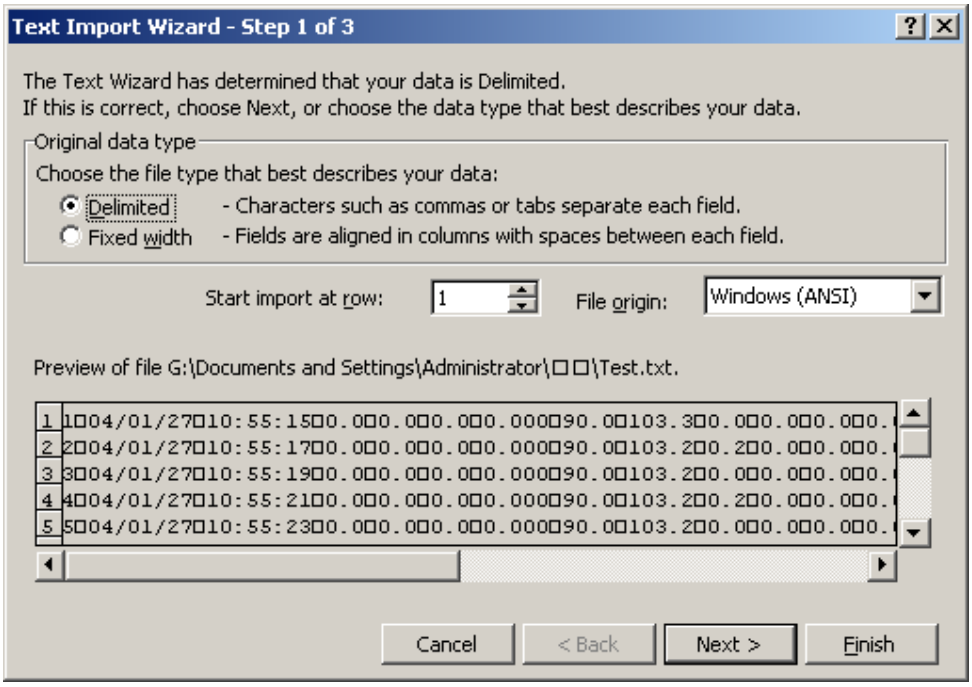
Open Microsoft Excel, find the file saved in Excel type, for example, test.xls.



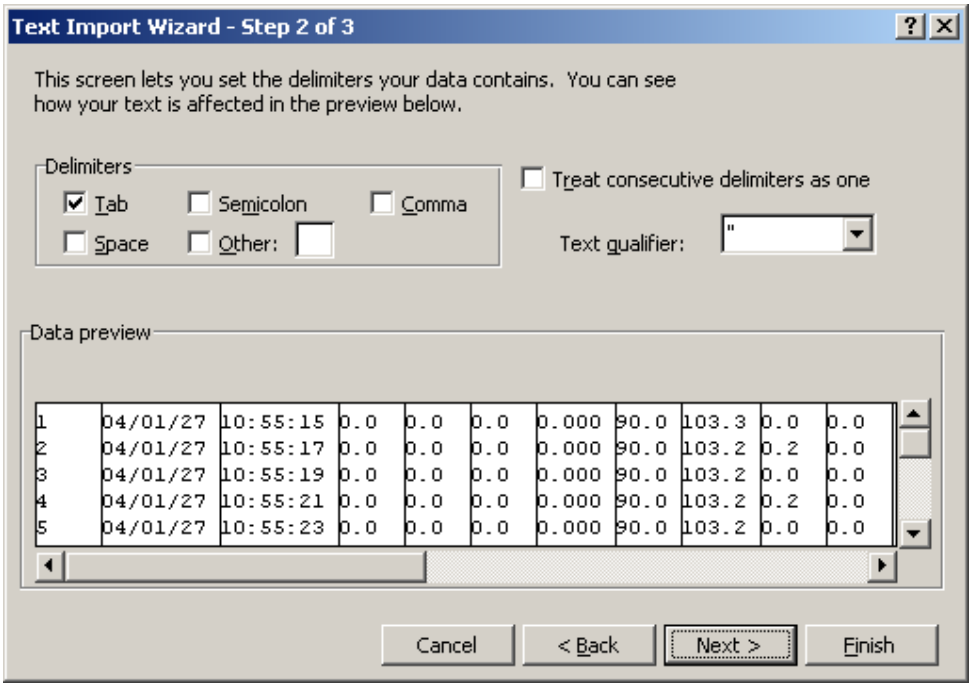
or find any file already saved in HDD, for example, sample.dat.(see below)



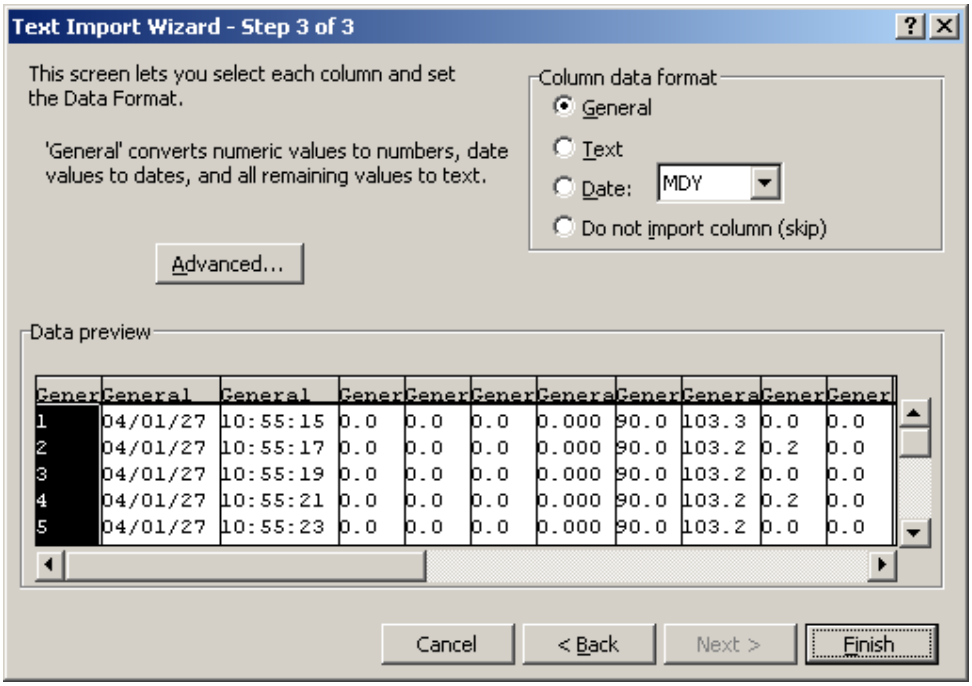
The "Text Import Wizard" then appears. Follow the steps 1 to 3 to complete.

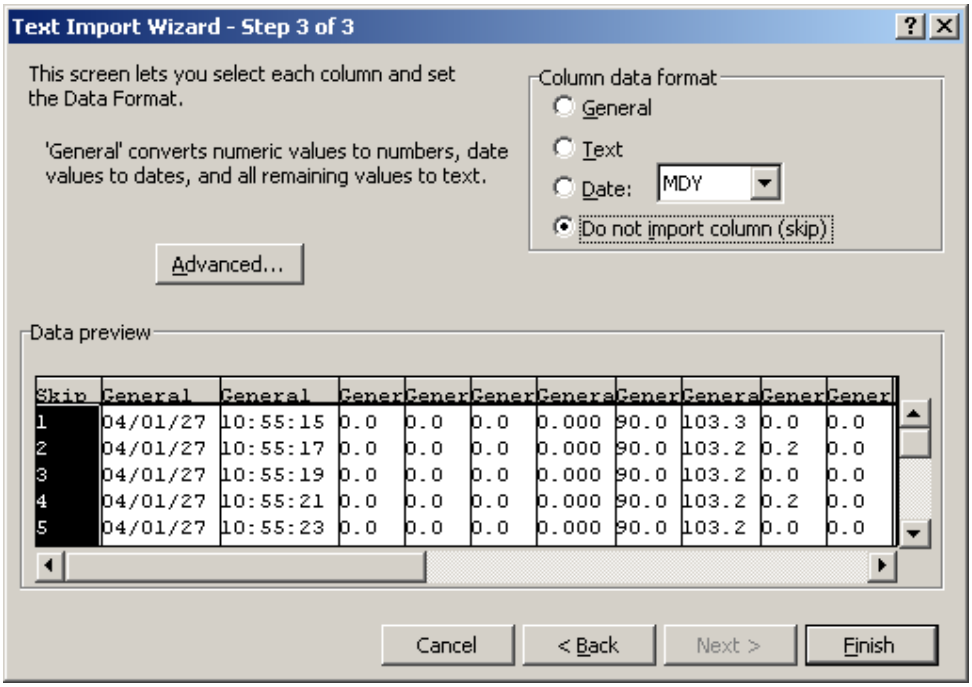


Click Next >



Click Next >





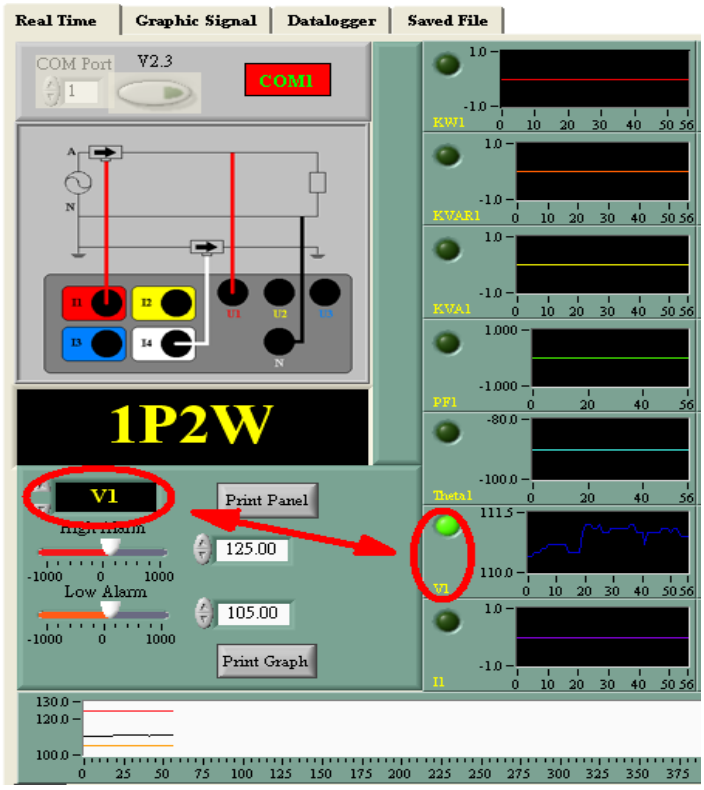
Click Finish to complete.

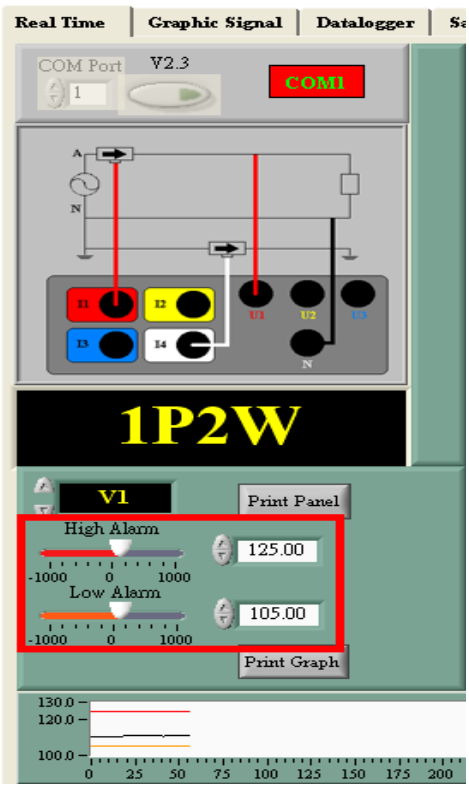
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	4/1/2027	10:55:15	0	0	0	0	90	103.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.94	0
2	4/1/2027	10:55:17	0	0	0	0	90	103.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.95	0
3	4/1/2027	10:55:19	0	0	0	0	90	103.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.94	0
4	4/1/2027	10:55:21	0	0	0	0	90	103.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.93	0
5	4/1/2027	10:55:23	0	0	0	0	90	103.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.94	0
6	4/1/2027	10:55:25	0	0	0	0	90	103.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.94	0
7	4/1/2027	10:55:27	0	0	0	0	90	103.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.95	0

Other Features

Alarm

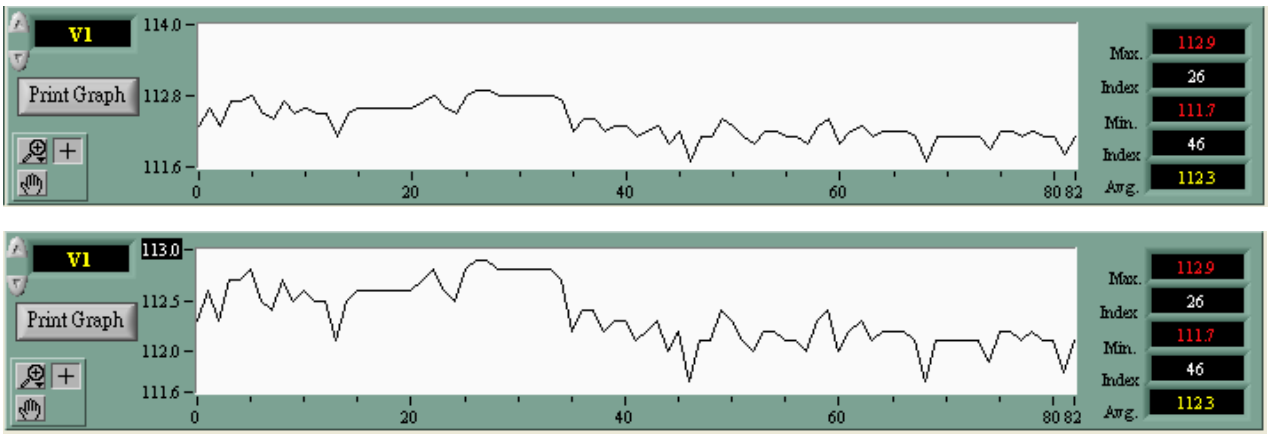
Select a willing function and changing the values (see below) to get high alarm and low alarm function with Over or Under warning symbol.



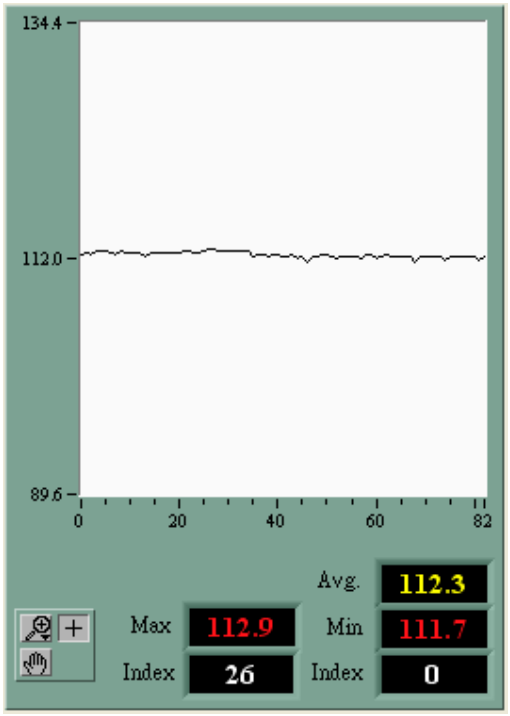


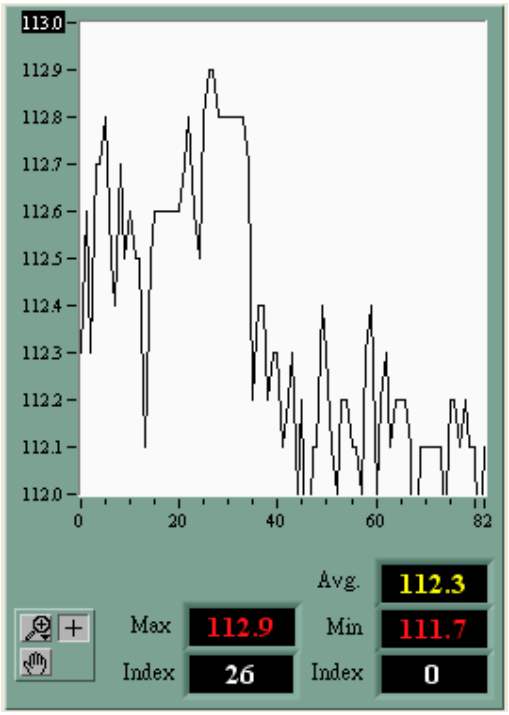
Zoom in & Zoom out Graph

Directly Change The X / Y Axis Value

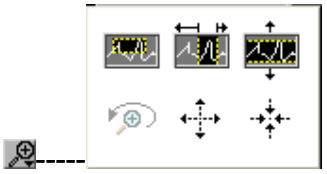


Highlight the X / Y Axis then make the willing change(s).





By Clicking Tools



 X and Y axes zoom in  X axis zoom in  Y axis zoom in

 Back  Both X and Y axes zoom in  Both X and Y axes zoom out

 Back to normal status

 Drag and drop graph