

# Electromagnetic Current Velocity Sensor for Laboratory use

## Software Operation Manual

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Version 1.02



**JFE Advantech Co., Ltd.**

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## 1) Install of software

### 1-1. System Requirements

This software runs on Windows OS. We advise you to check your PC before installing.. The recommended environment is as below.·

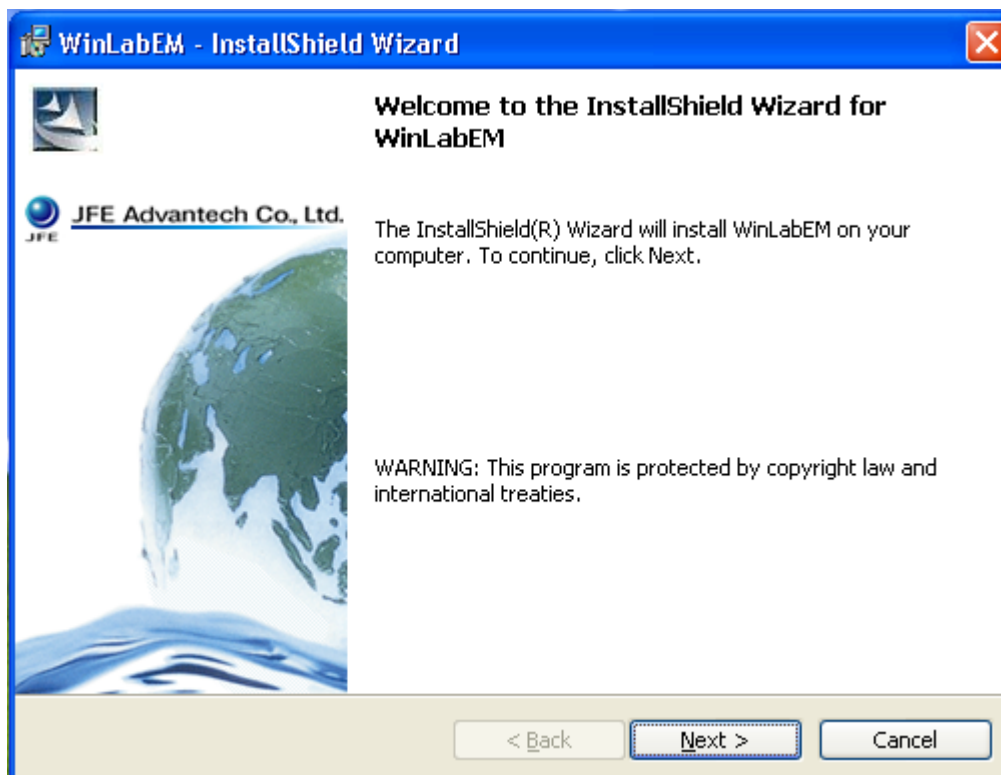
CPU	Pentium 4 3.0GHz or higher
Memory	512MB or greater
Display resolution	1280 × 1024 or less
OS	Windows 2000 SP4, Windows XP SP2 (Not yet checked with Vista)

### 1-2. Install

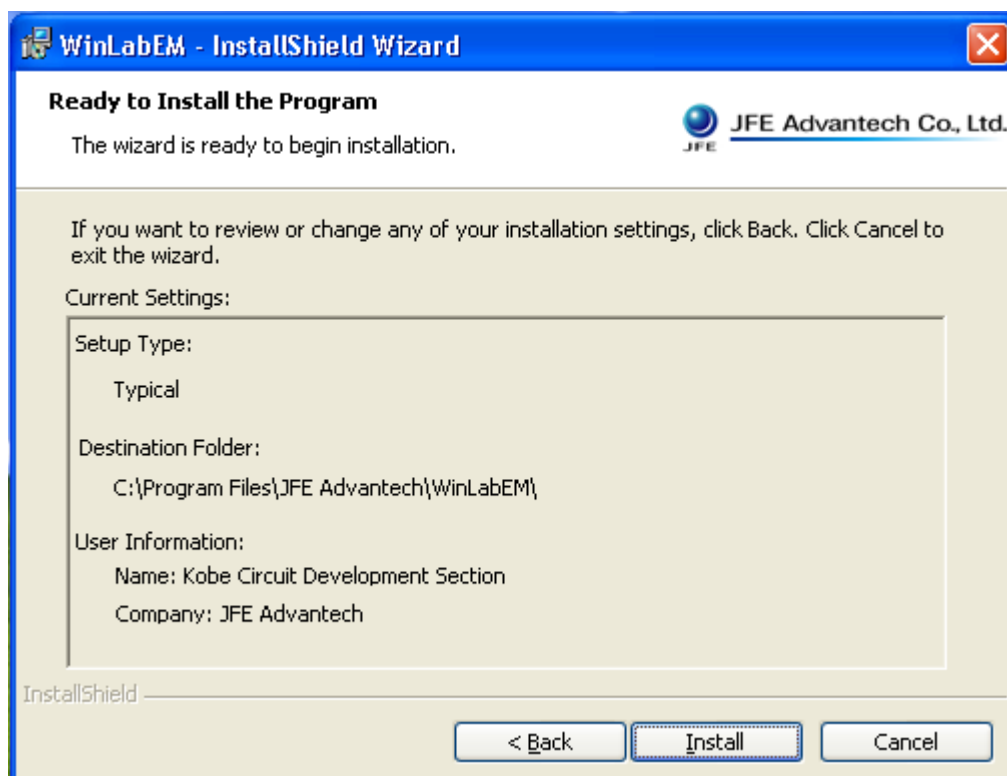
Double clicking “setup/exe” in the CD starts the installation of the software into your PC. In some case, NET Framework may start to be installed. As this software use it, follow instructions appeared in the screen and install it

[Follow the on-screen prompts appeared in each pane.](#)

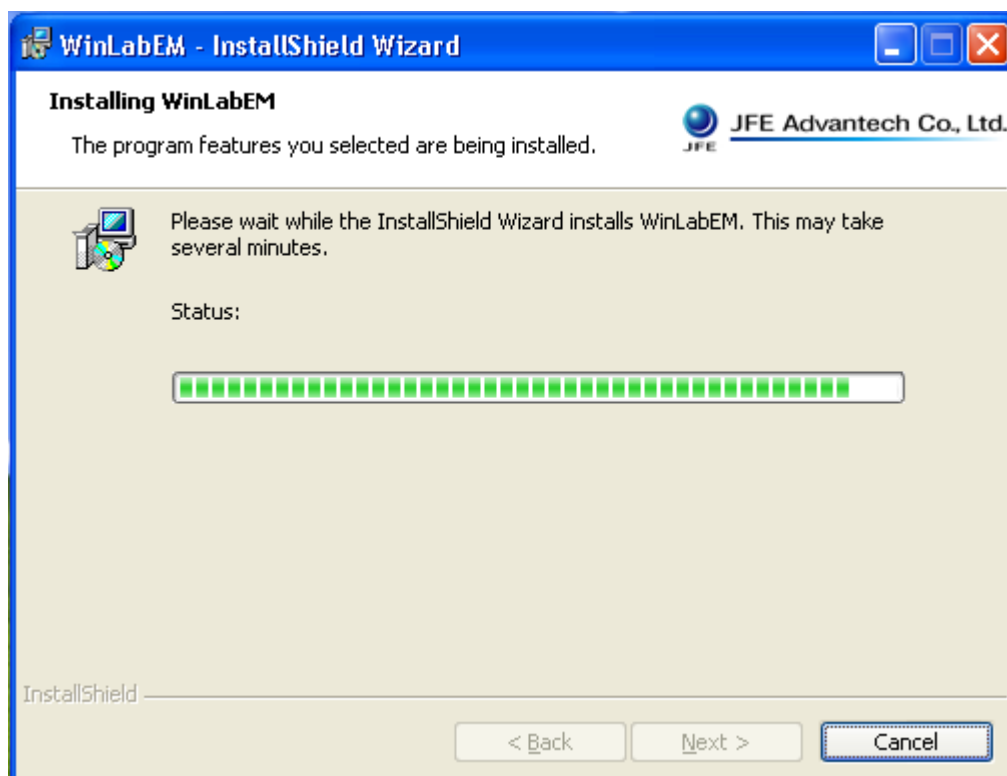
You can suspend the installation by pressing “Cancel” at any moment.



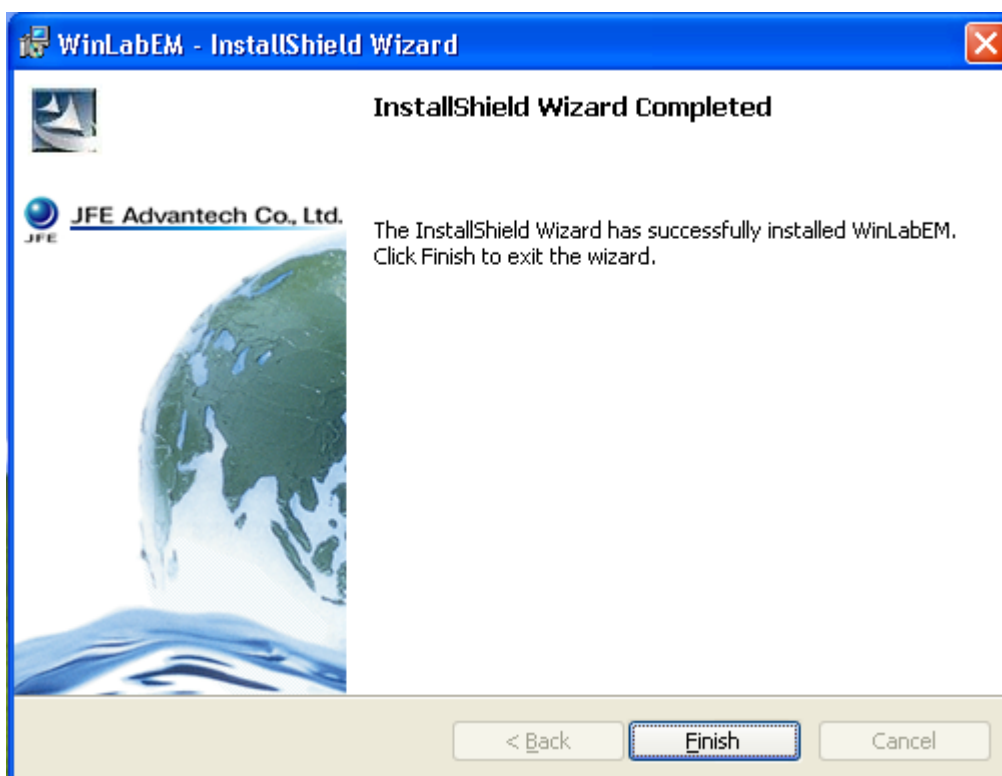
Click "Next" button.



Click "Install" button, then the install starts



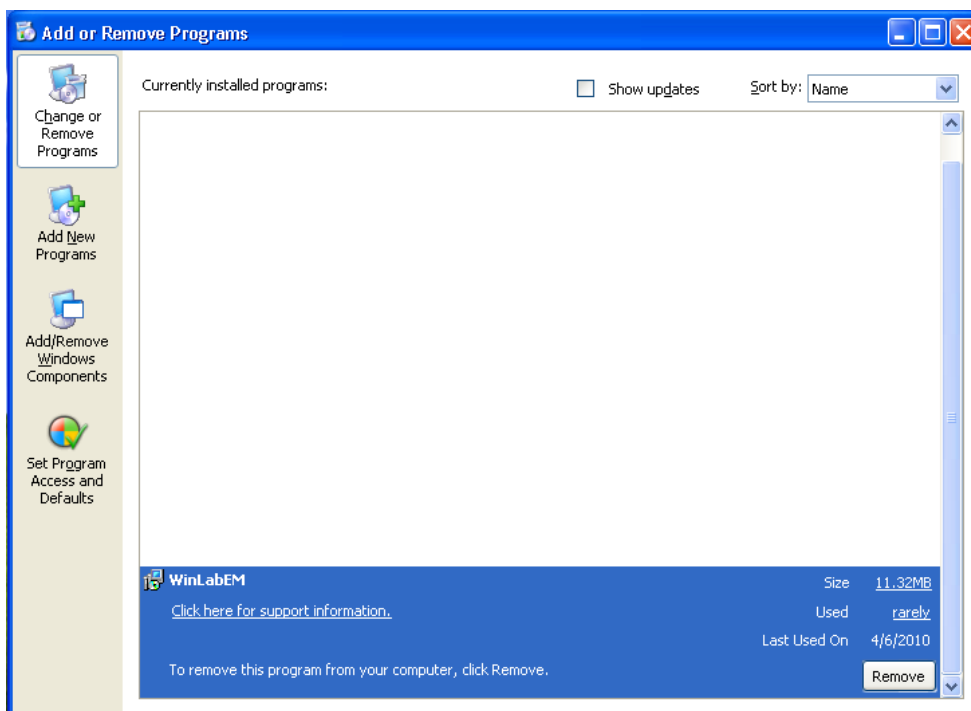
Now on installing....



Click "Finish", then install has been completed.

### 1-3. Uninstall

- 1) Click **Start button** and select **Control Panel**.
- 2) Double click **Delete & Add of Programs** in Control Panel
- 3) Click "**Remove**" after selecting "WinLabEM"



## 2) To boot the software

### 2-1. To boot the software

Click start button of Windows and then click

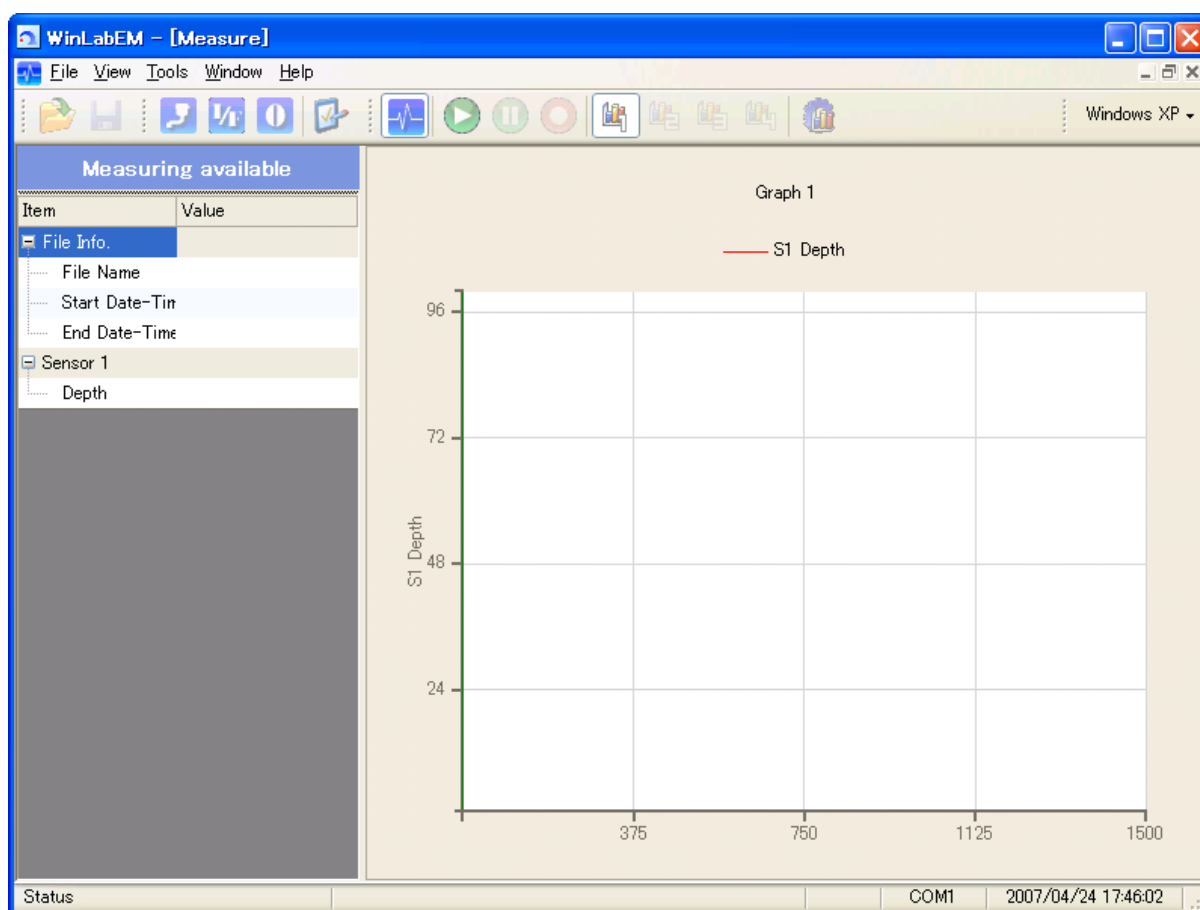
**Program** → **JFE Advantech** → **WinLabEM** → **WinLabEM** in turn.

If you have a shortcut on disk top, double click it.



The software of Electromagnetic Current Meter for Laboratory starts.

Following initiation screen is turned on.



### 2-2. To quit the software


To quit the software click **file** → **close** or click [**x**] button at the right upper corner.

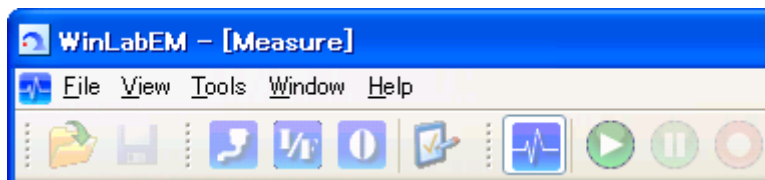
You are not allowed to quit the software during measurement or on the way of setting zero point.

## 3) Setup

### 3-1. Comm Setup

Display the setup window from initiation screen or icon.

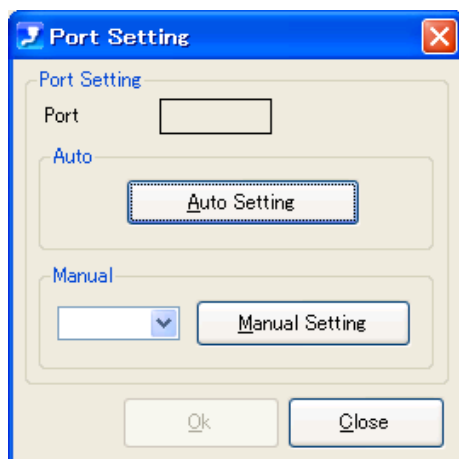
Click **Tool** → **Comm Setup** or click 



Here we set up which communication port I/F is to be connected with.

On clicking Comm Setup, following window shows up.

In case with which comm port I/F have not yet been designated to connect or in case the instrument is not detected at designated port, it shows up automatically.



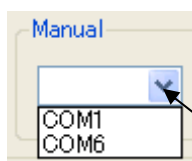
#### •Auto Setting

Click, **Auto Setting** button after you connect sensor and turn the power on.

Then, connecting port number will be searched for.

#### •Manual Setting


It is to be used for manual setup before you connect sensor.

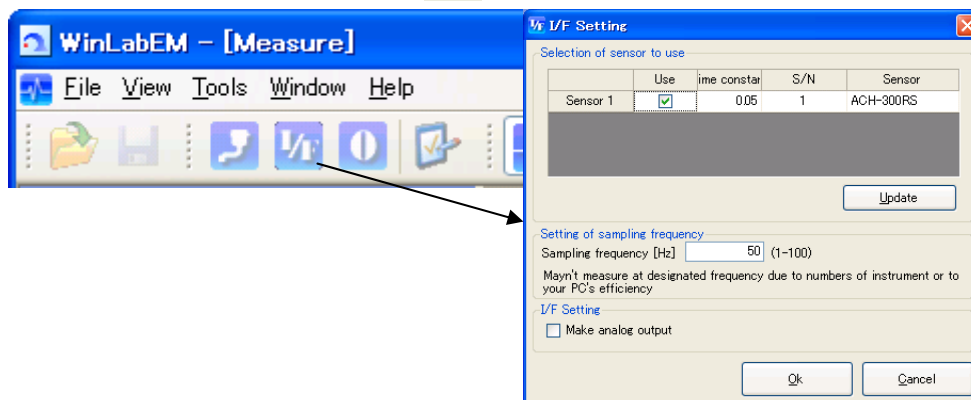


When you click here at combo box, COM port numbers currently connected to PC appear in dropdown window.

### 3-2. I/F Setup

Display the setup window from initiation screen or icon.

Click **Tool** → **I/F setup** or Click 



#### 3-2-1. Selection of sensor to use

- It allows you the sensor you want to use displaying all sensor currently connected to PC

For the selection, check the box to use

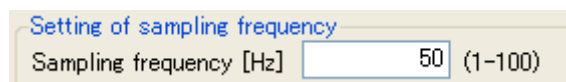


Checked sensors are in use of measurement

- Change of time constant  
You can change the time constant. (The water meter is not revokable.)  
Selectable among 0.05, 1.0 and 5.0 seconds

#### 3-2-2. Sampling frequency setup

You can select sampling frequency between 1-100Hz.

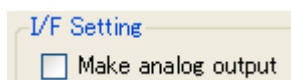


Please be noted fastest sampling rate of 100Hz may not be executed depending on the ability of your PC or on the numbers of sensor connected (20Hz recommended).

#### 3-2-3. Analog output setup

Select whether you need analog output from I/F.

If checked, analog output is available (in default, not being checked)

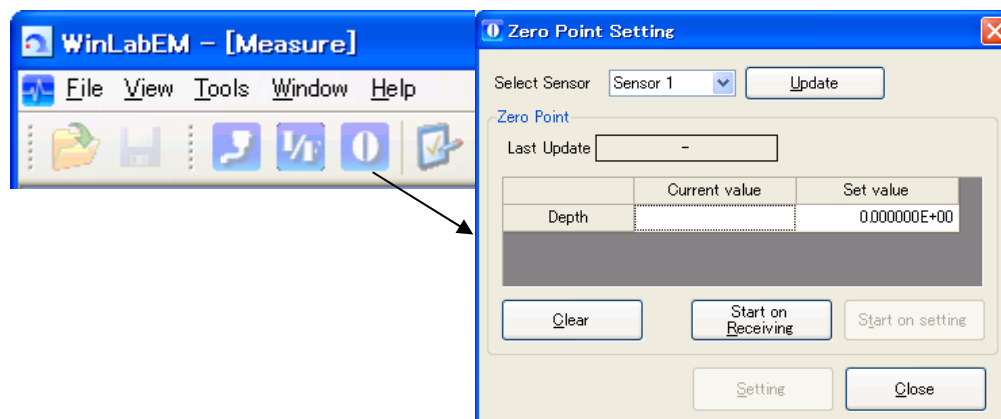




### 3-3. Zero point setup

Setup zero point of the sensor selected.

Click **Tool** → **Zero point setup** or Click 



Select the sensor number to be set, and do that submerging the sensor in **still water**.

After making the zero point setting, don't forget to verify before measurement.

First click **Start on Receiving** button for displaying current velocity. Then click **Start on setting** button at the moment you want to do zero point setting. 10minutes averaged value at 25Hz is calculated and the setting is completed.

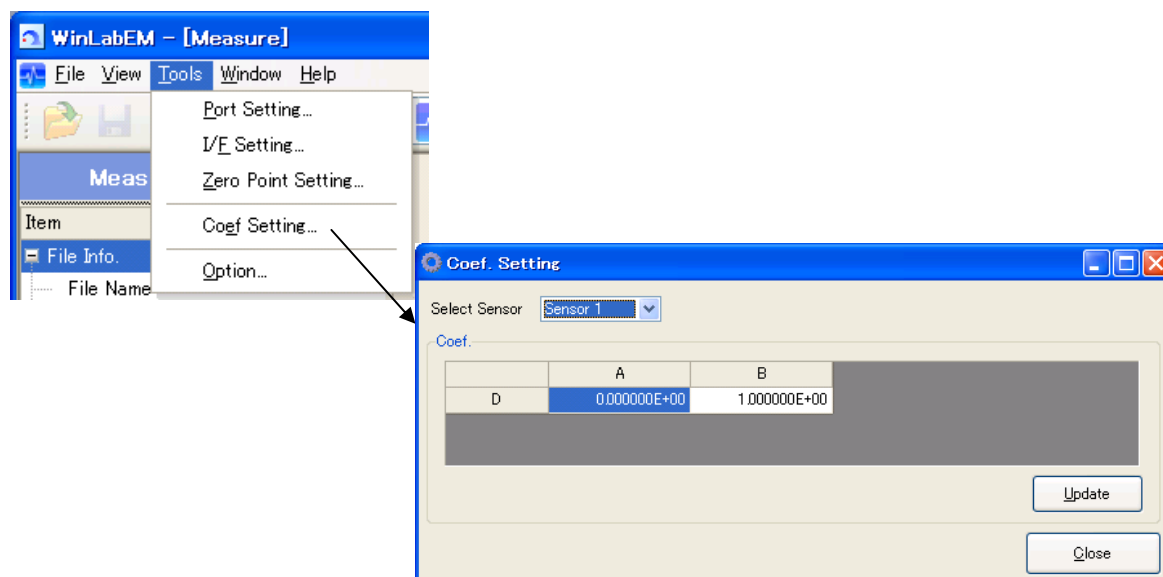
(Clicking on **Clear** button returns to default)

If there is no unreasonable in the value, click **Setting** button to set it as zero point.

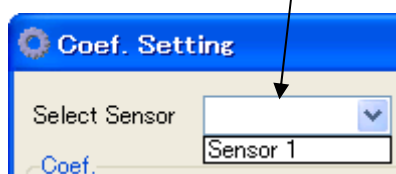
### 3-4. Coef setting

It is to read constant with which N-value is converted to calculated value.

Click **Tool** → **Coef setting**



You can select the sensor whose constant you want to display

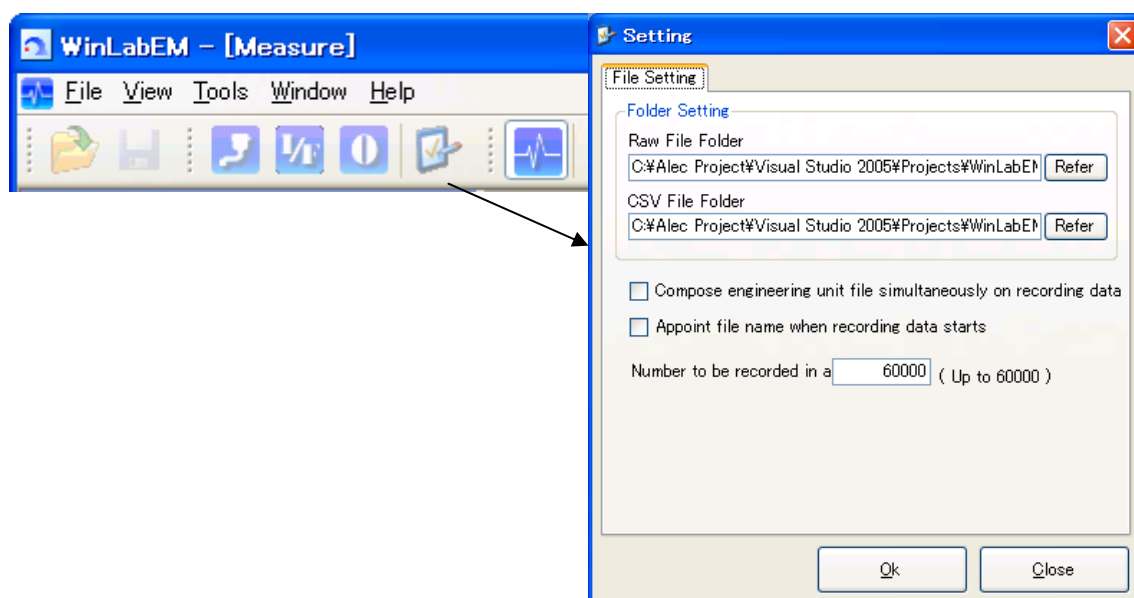


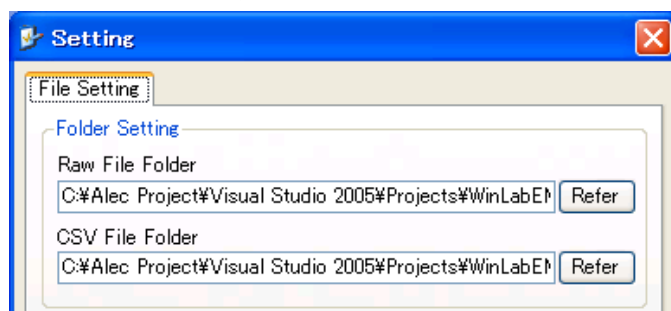
Clicking Display Update reads the latest constant and displays it.  
(Only available for display. You cannot change the value)

### 3-5. Option

Here you can set up software.

Click **Tool** → **Option** or Click

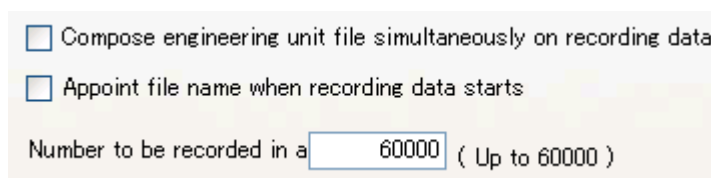




- Folder setting

You can set the folder to reserve Raw and CSV data.

Write on text box or select it in the dialog appeared when pushing refer button.



- Compose CSV file on recording data

You can select during measurement whether RAW file (N-value file) and CSV file are composed at the same time.

[If CSV file is added, measuring interval may be extended than original setting.](#)

- Designate file name on starting to record data

Dialog is displayed and file name is to be designated when data cording starts.

If not being checked in this edit box, it automatically composed in the format of **YYYYMMDD\_HHMMSS\_00001.RAW**

- Set the number of data to be recorded in a file


You can set the number of data to be recorded in a file. The maximum is limited as 60000

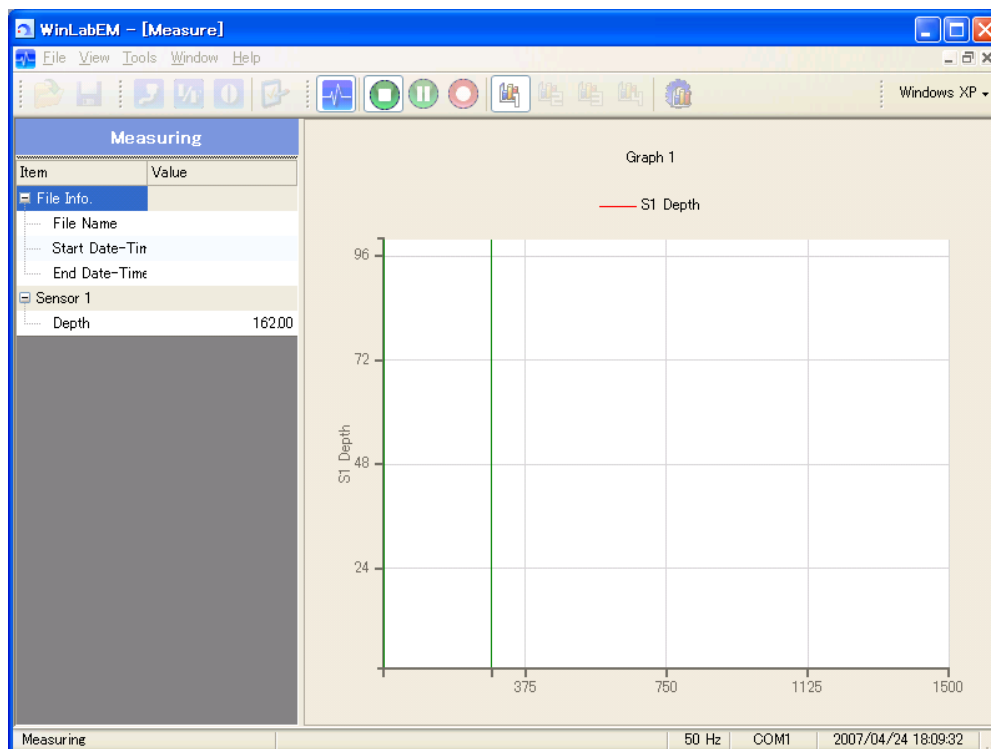
In case the number of data exceed the setting, files with the names of 00001 - 99999 are composed in turn.




The name comes to 99999, **measurement and recording cease automatically.**

## 4) Measurement

### 4-1. Start measurement

Click icon  , then measurement starts and graphic display and list display start.

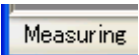




- Click  , then the display of graph and list ceases while data recording in file still is going when you get working. List display can be hidden by clicking [-] button.
- Click  , during measurement stops measuring. If the data recording is in on the way, it also stops the recording.
- During the measurement  allows you to change the setting of graphical display.


## 4-2. Record the data

Clicking  gets data recording starting in file.

If you check the box of **Designate file name on starting data recording** in optional condition, a dialog shows up when recording starts. You can designate file name.


File recording is not on the way,  sign appears at the lower left of the window.

When recording is taken,  appears and  sign at the place.

Click  to stop the recording

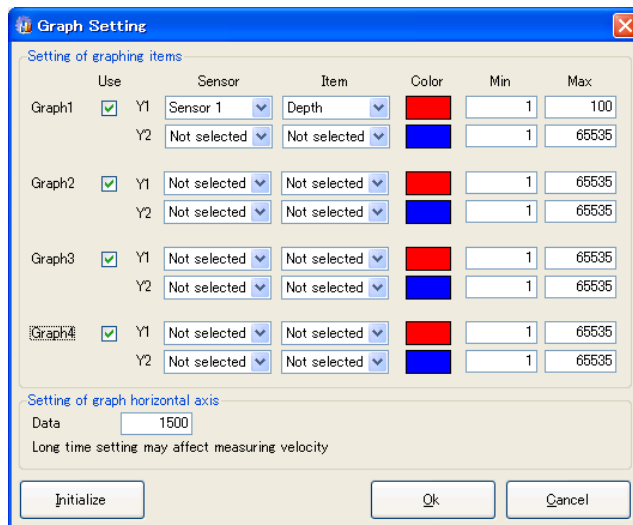
## 5) Raw file (N-value file) reading\* Engineering Unit (CSV) file outputting

### 5-1. To read Raw file (N-value file)

To read Raw file (N-value file) and display graph, click **File** → **Open File** or click icon 

Select the file you want to read in the dialog.

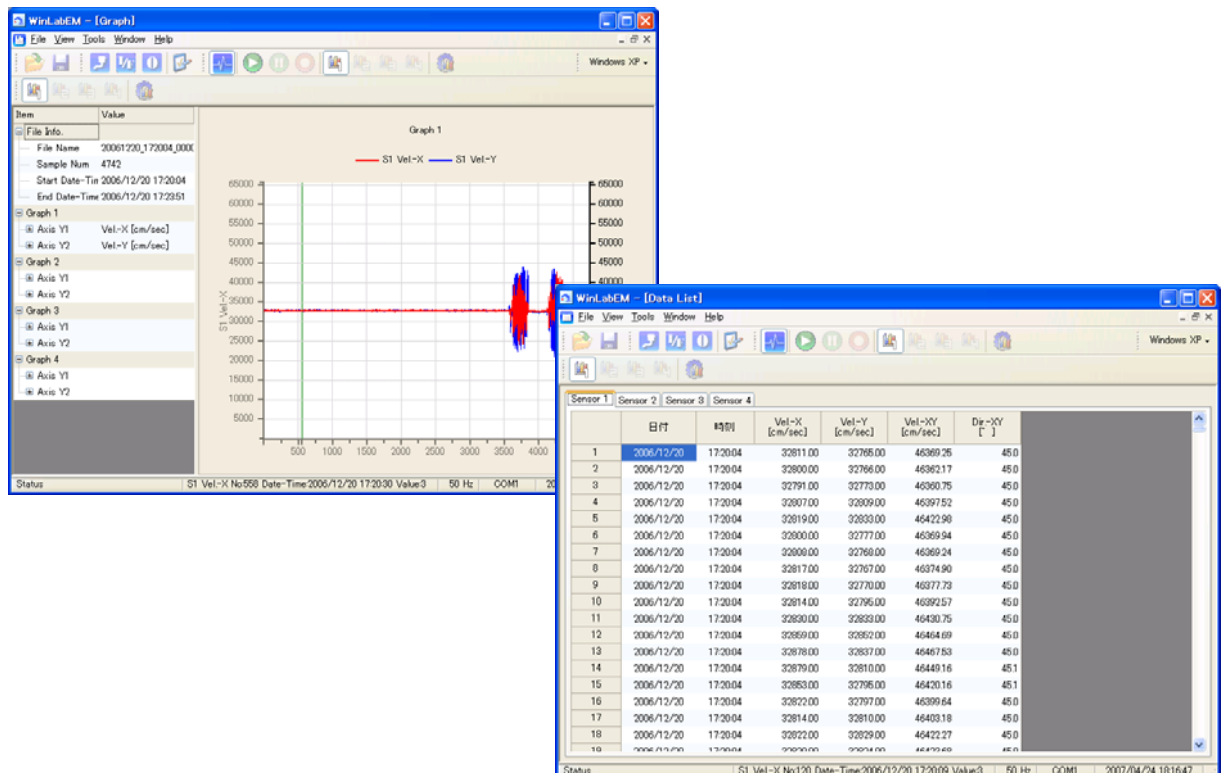
When reading is completed, graph setup window appears. Do setting of graph.



- Use            Select of use
- Sensor        Select of sensors to be displayed in Y axis
- Item            Select of displaying
- Color          Select in graph line
- Smallest      Value in Y axis
- Biggest        Value in Y axis

In case the graph is used, make sure to select its sensor and item.

When graphical setting is completed, the data are displayed in the graph and in the list.



Maximum 4 graphs are available at the same time.

Expanded display is available by clicking and dragging on graphs.

When multiple graphs are displayed, all are to be extended at same scale.

An extension can be released by right clicking.


Extended range is highlighted on the data list.



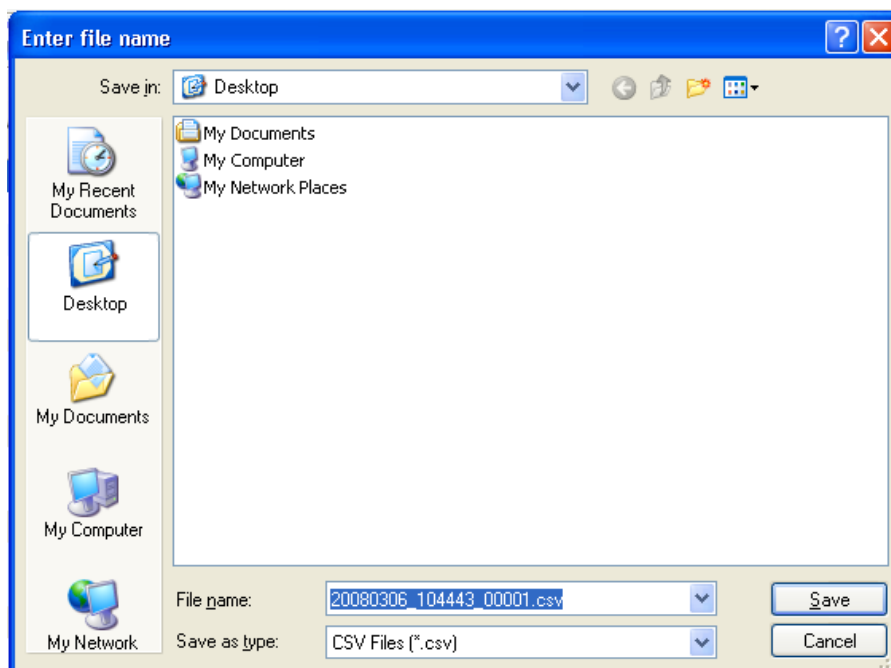
Selection of displayed graph  
 Graph not in use is not selectable  
 Sign of graph setting

## 5-2. Engineering unit file outputting

Data currently in reading are output are output in engineering unit file (CSV file).

Click **File** → **Reserve in CSV file** or Click icon 

Below dialog appears, then input fine name and click **Save** button.



When extension of graph(range-selected) is applied, the data of the range are output.

## 6) Contents of files

### 6-1. Headers

are same both in Raw file(N value file) and in engineering unit file with some exceptions.  
Information of data file and instrument is written.

[SoftWare] Name=WinLabEM SoftwareVersion=0.5.3 LogVersion=	<b>Software information</b> Application software name Version of Application software
[File] DataType=Raw  StartTime=2006/12/13 9:00:03 EndTime=2006/12/13 9:00:21 DateFormat=yyyy/MM/dd TimeFormat=HH:mm:ss DateSeparator=/ TimeSeparator=: DataNumber=551 FileNumber=1	<b>File information</b> Data Type Raw=N-value Physical=Engineering Start Time of Recording Close Time of Recording Date Format Time Format For Data Separating For Time Separating Data Number File No. (A number from starting)
[Measurment] StartTime=2006/12/13 8:59:58	<b>Measurement information</b> Starting Time of measurement
[I/F] Connect=1100 ModelName=ACM-4IF DeviceVersion= . FirmwareVersion=01.00 SerialNumber=65535	<b>I/F Setup</b> Connecting Status of Sensor in use Model Name Version of Device Version of Firmware Serial No.
[Sensor1] Connect=1 ModelName=ACM2-RS DeviceVersion=01.00 FirmwareVersion=01.00 SerialNumber=1 SensorType=XY Channel=2 CoefMax=2 SubChannel=4 SubCoefMax=2	<b>Sensor 1 information</b> Being used in measurement Model Name Version of Device Version of Firmware Serial No. Type of Sensor Number of Sensor Channel Maximum Coefficient Number of Sub Coefficient Channel Maximum Sub Coefficient
Ch11=0.000000E+00 Ch12=1.000000E+00 Ch21=0.000000E+00 Ch22=1.000000E+00	Coefficient 1 of Ch1 Coefficient 2 of Ch1 Coefficient 1 of Ch2 Coefficient 2 of Ch2



SubCh11=0.000000E+00  
 SubCh12=0.000000E+00  
 SubCh21= 16465.74  
 SubCh22= 16388.90  
 SubCh31=0.000000E+00  
 SubCh32=0.000000E+00  
 SubCh41=0.000000E+00  
 SubCh42=0.000000E+00

Coefficient 1 of SubCh1  
 Coefficient 2 of SubCh1  
 Coefficient 1 of SubCh2  
 Coefficient 2 of SubCh2  
 Coefficient 1 of SubCh3  
 Coefficient 2 of SubCh3  
 Coefficient 1 of SubCh4  
 Coefficient 2 of SubCh4

[Sensor2]

**Sensor 2 information**

Connect=0  
 ModelName=ACM2-RS  
 DeviceVersion=01.00  
 FirmwareVersion=01.00  
 SerialNumber=2  
 SensorType=XY  
 Channel=2  
 CoefMax=2  
 SubChannel=4  
 SubCoefMax=2

Ch11=0.000000E+00  
 Ch12=1.000000E+00  
 Ch21=0.000000E+00  
 Ch22=1.000000E+00

SubCh11= 4095  
 SubCh12= 1  
 SubCh21=0.000000E+00  
 SubCh22=0.000000E+00  
 SubCh31=0.000000E+00  
 SubCh32=0.000000E+00  
 SubCh41=0.000000E+00  
 SubCh42=0.000000E+00

[Sensor3]

**Sensor 3 information**

Connect=0  
 ModelName=  
 DeviceVersion=  
 FirmwareVersion=  
 SerialNumber=  
 SensorType=  
 Channel=  
 CoefMax=  
 SubChannel=  
 SubCoefMax=

No coefficient information is available on the port not being connected

[Sensor4]

**Sensor 4 information**

Connect=0  
 ModelName=

DeviceVersion= FirmwareVersion= SerialNumber= SensorType= Channel= CoefMax= SubChannel= SubCoefMax=
--

## **6-2. Data part**

Measured N-values are recorded in Raw file while measured data are recorded in engineering unit file.

Each datum is separated by [,] and one datum is written in a line. The lower the newer.

Data part in engineering unit file vary format by sensor.

Raw file

[Item]

Measuring year month and date, Measuring hour minute and second, Sensor1 Ch1 N-value, Sensor1 Ch2 N-value, ..... Sensor 4 ChX N-value,

Engineering unit file

[Item]

Measuring year month and date, Measuring hour minute and second, .... format for others varies by sensor



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