

# AMS-850 User's Manual

AE-100263

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# 1. Overview

AMS-850 is the software that allows you to download data from the Compact Thermo Logger, easily create graphs, tables, or CSV files, and print the data. The following operating environment is needed to use this software.

OS : Microsoft Windows 7  
Microsoft Windows 8.1  
Microsoft Windows 10

Requires a PC of specifications sufficient to run the above operating systems.

- ※ All PCs under the recommended environment are not guaranteed to work successfully with AMS-850.
- ※ AMS-850 can be used only by the user that has a system administrative right (Administrator).
- ※ AMS-850 does not support Mac OS.
- ※ Microsoft® Windows® 7, Windows® 8.1, Windows® 10 are registered trademarks of Microsoft Corporation in the United States and other countries.

# 2. Packing

After purchasing the software, please check to see that the following items are included with your package. If any item is missing or damaged, please contact your distributor or Anritsu Meter at the address on the cover page of this manual.

- (1) CD-ROM ... 1.
- (2) User's manual ... 1

# 3. Compatible Measuring Instruments

This software can be used with the measuring instruments listed in the table below. Before performing measurement, connect the measuring instrument to a personal computer with a USB or RS-232C communication cable.

Product name	Model name	Type of communication	
		USB	RS-232C
Compact Thermo logger	AM-8000, AM-8001, AM-8010 AM-8011, AM-8050, AM-8051 AM-8060, AM-8061	●	
	AM-8100, AM-8101, AM-8110 AM-8111, AM-8150, AM-8151 AM-8160, AM-8161		●

## 4. Simple Guide to Operation

- **Upon first use of AMS-850 (installation)**

If the measuring instrument you use supports USB communication, follow the setup procedure described below sequentially beginning with (1). If your measuring instrument supports RS-232C communication, follow the setup procedure in order of (1), (2), and (5).

- (1) Turn on the power to the measuring instrument and set the CD-ROM in your computer.
- (2) Install AMS-850.
- (3) Connect the measuring instrument to the computer with the USB communication cable.
- (4) Install the USB device driver.
- (5) Launch AMS-850 and set up the communication port.
  - \* For details, refer to Chapter 6, "Installation."

- **To download the data saved in the measuring instrument**

- (1) Connect the measuring instrument to the computer with the communication cable.
- (2) Turn on the power to the measuring instrument.
- (3) Launch AMS-850 and choose Input data from the Communication menu.
- (4) Specify the destination folder in which to save the data.
  - \* For details, refer to Section 8.3, "Downloading Data from the Measuring Instrument."

- **To display the data contained in a file**

- (1) Choose Open from the File menu.
- (2) Specify a file name to open.
- (3) In the View menu, you can choose between Display the Graph and Display the data list display.
  - \* For details, refer to Section 8.5, "Loading and Displaying an Existing File."

- **To open a saved file in Excel**

- (1) Choose Create Text file from the File menu.
- (2) Specify a file name.
- (3) Specify the range of data you wish to be converted into a CSV file and click OK. A text file will be created, which can then be opened in Excel.
  - \* For details, refer to Section 8.9, "Using Data in Spreadsheet Software."

- **To draw a graph in real time**


- (1) Connect the measuring instrument to the computer with the communication cable.
- (2) Turn on the power to the measuring instrument.
- (3) Choose Remote setting from the Communication menu.

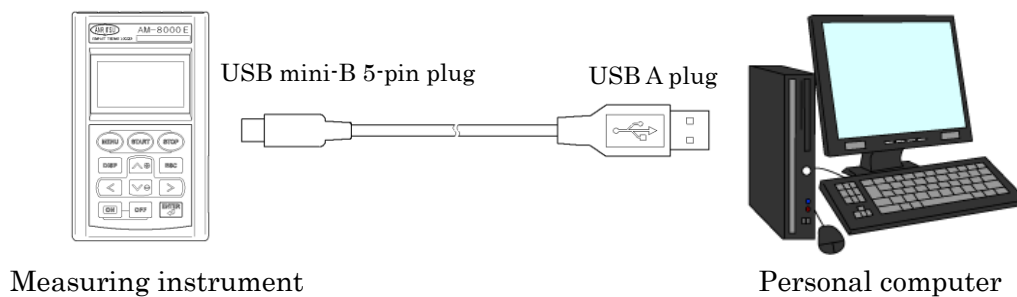
- (4) Set the timing with which to obtain data, and other measurement parameters here.
- (5) Choose Set Real-time data autosaving from the Settings menu and then set the destination folder in which to save files and other items.
- (6) Choose Real Measurement from the Communication menu.
- (7) Specify the destination folder in which to save data.
- (8) Set the vertical and horizontal axes of a graph and other items.
  - \* For details, refer to Section 8.4, "Making Real Measurement Method."



## 5. Connecting the Measuring Instrument

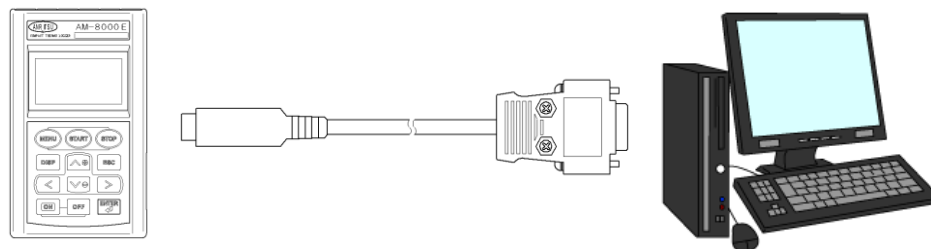
### 5.1 When Using a USB Cable for connection

Use a USB communication cable which has the USB A plug on the PC side and the USB mini-B 5-pin plug on the measuring instrument side. For connection to the PC side, plug the cable into the connector marked with  .



### 5.2 When Using RS-232C Cable for connection

For connection to the PC side, plug the RS-232C cable into the connector marked with  or  .



### CAUTION

If the measuring instrument does not need to communicate with the PC, be sure to isolate it from the PC (by removing the communication cable). If the measuring instrument remains connected to the PC while you run other software applications on the PC, the measuring instrument may operate erratically or malfunction.

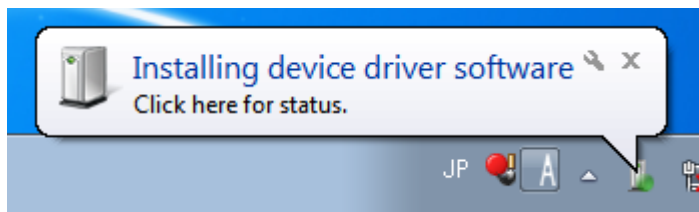
## 6. Installation

Close all of the currently active software applications. AMS-850 may not be installed correctly if another software application is running.

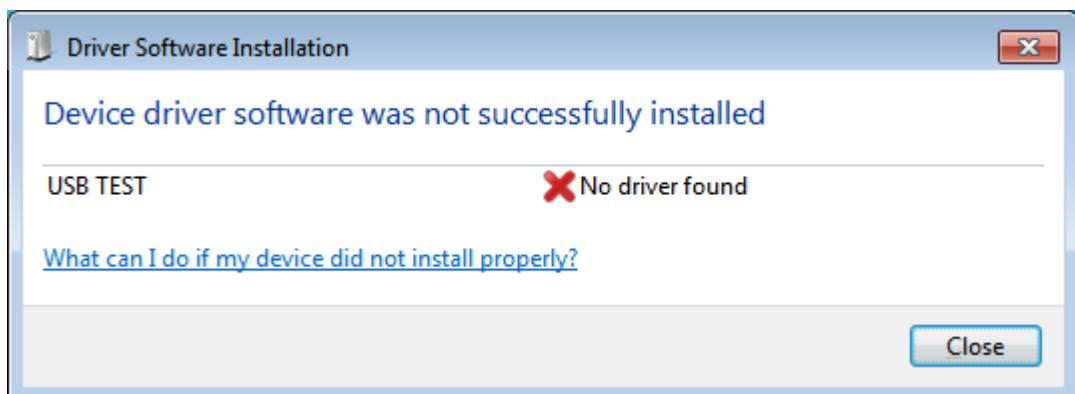
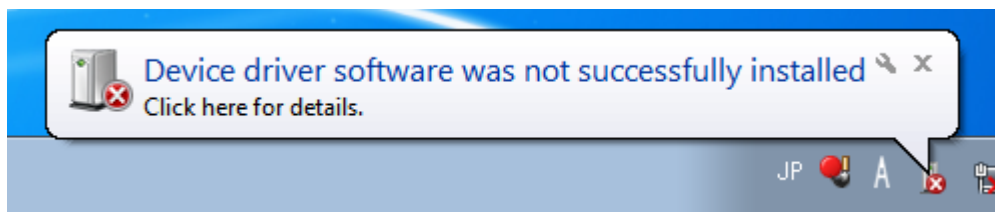
### 6.1 Installing the USB Device Driver

<Windows 7>

- (1) Connect the measuring instrument and computer with the USB communication cable.
- (2) Turn on the power to the measuring instrument.
- (3) Computer will detect the new USB connection and start the automatic installation

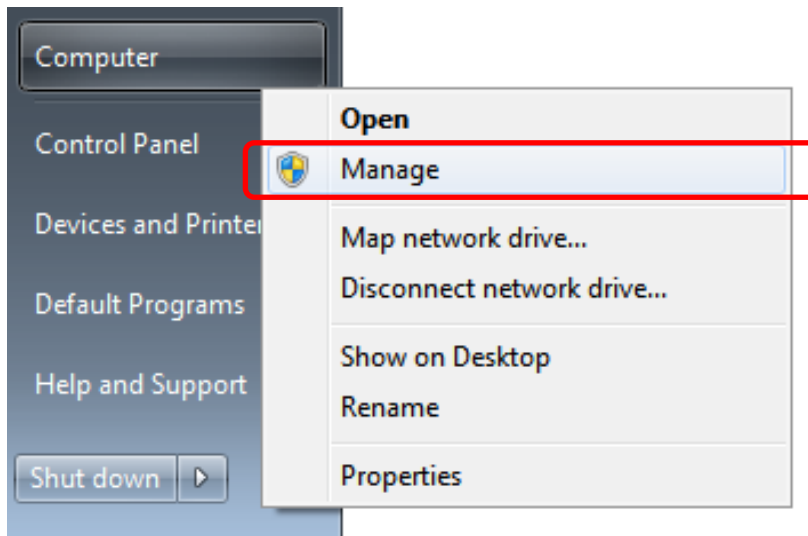


※ If the driver is not installed, the following message is displayed.



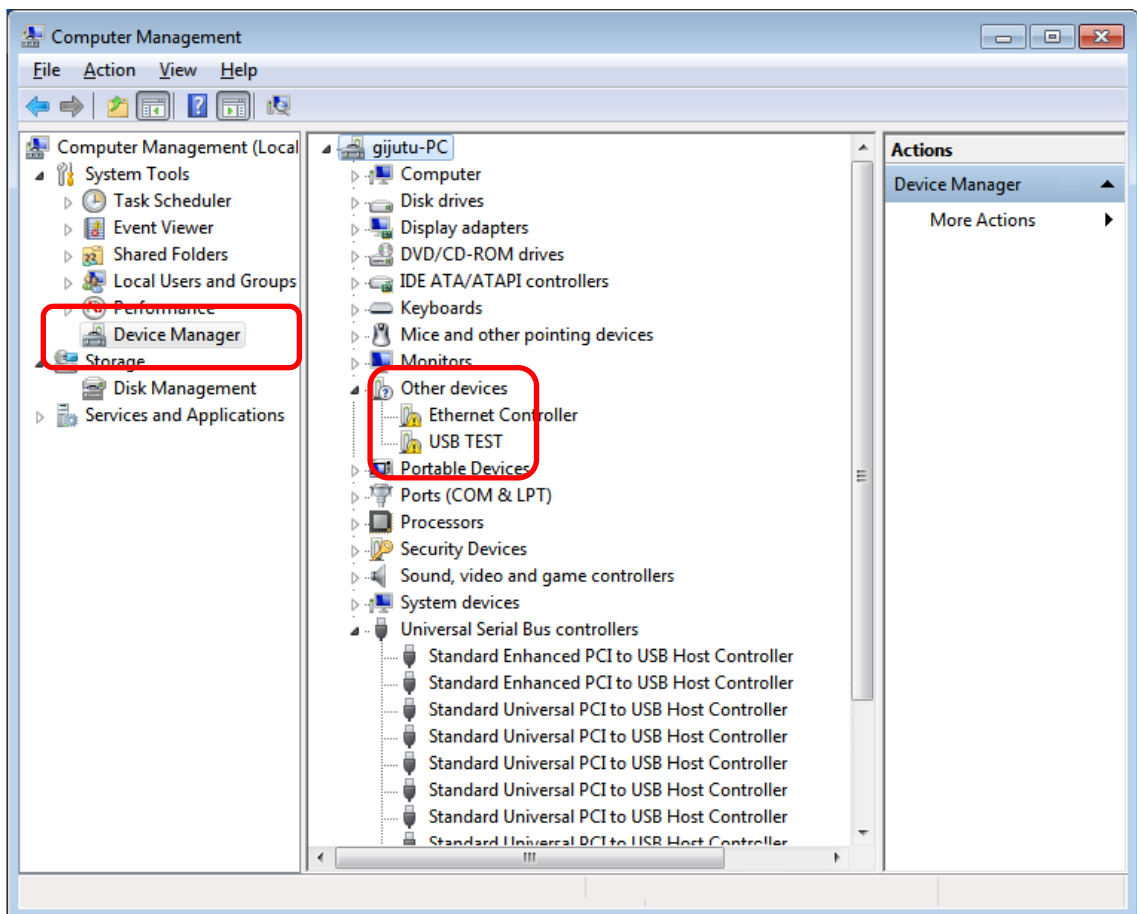
※ Depending on the configuration of computer the message may not be displayed. Install the driver by the method described below in that case as well.

(4) Right-click [Computer] in the Start menu. Select the [Manage].

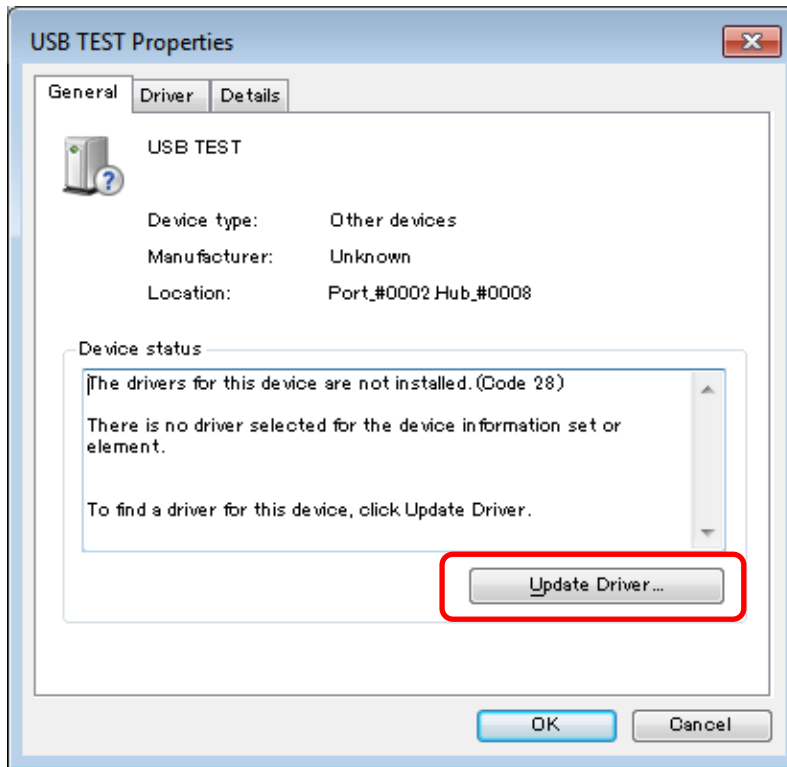
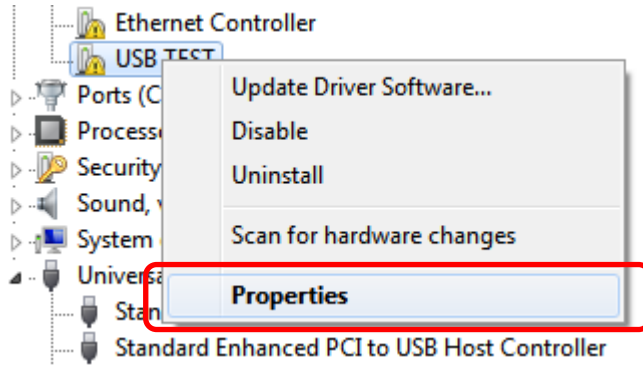


(5) Click the [Device Manager].

Make sure that you have USB TEST in the [Other devices].

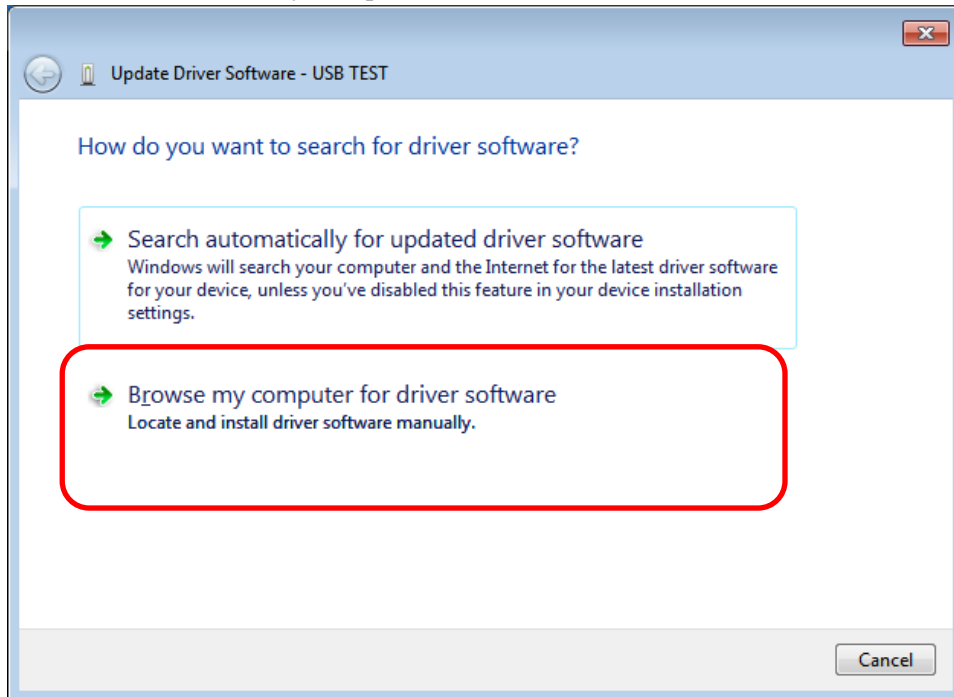


(6) Right-click USB TEST and select [Properties]. Then, click [Update Driver].

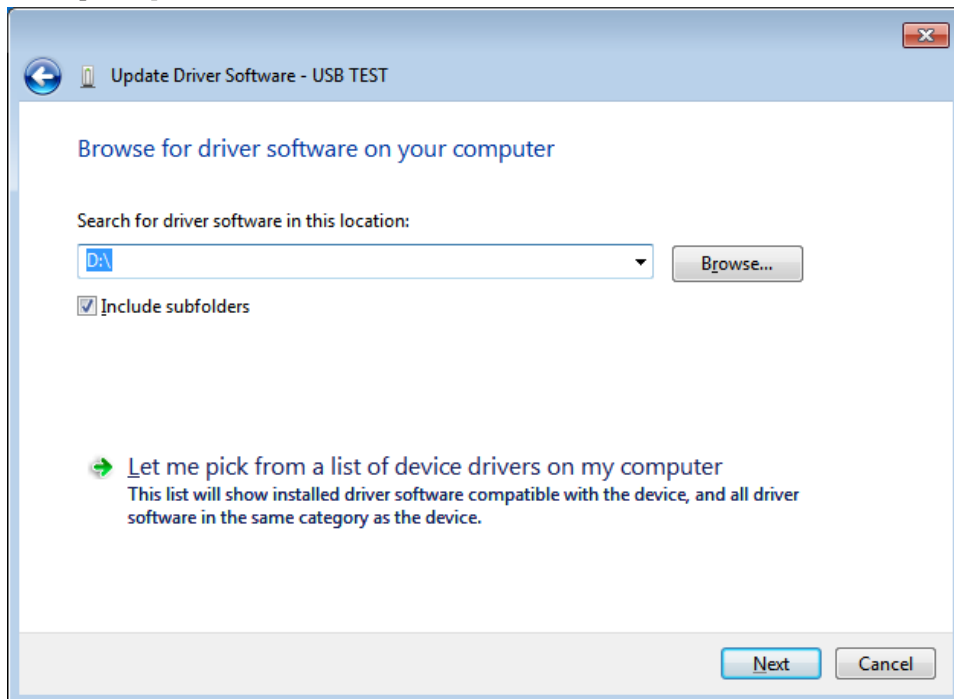


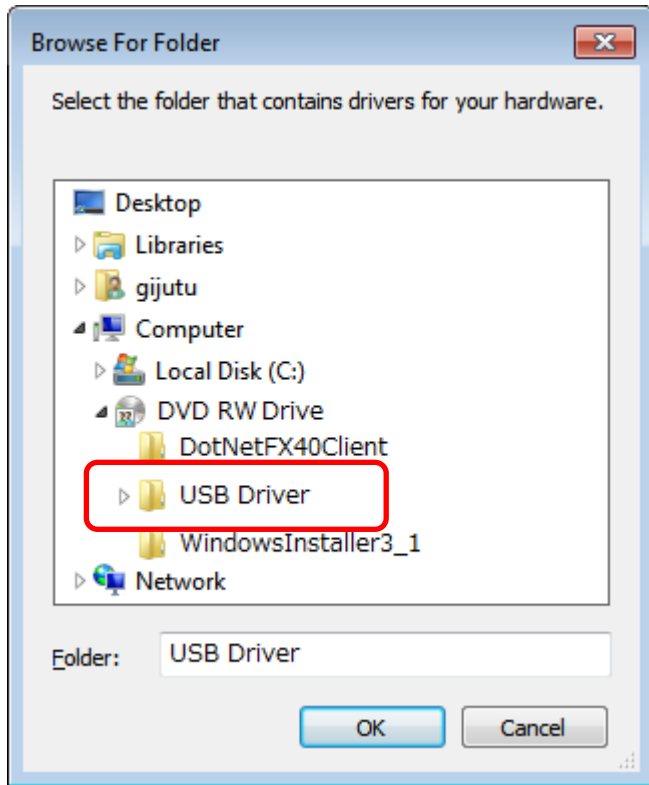
※Same screen opens when double-clicking USB TEST.

(7) Click “Browse my computer for driver software”.

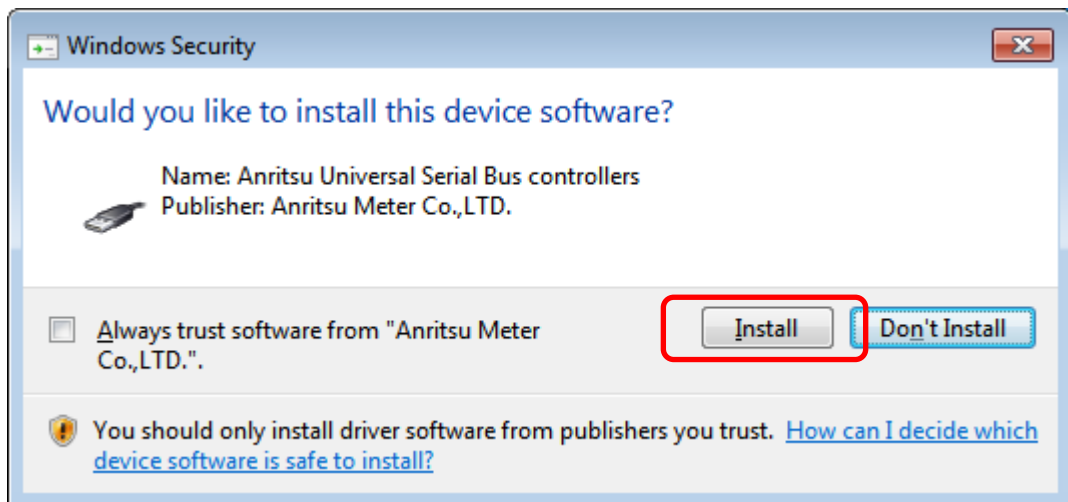


(8) Insert the CD into your PC. Click [Browse] select the CD from lists and click [Next].

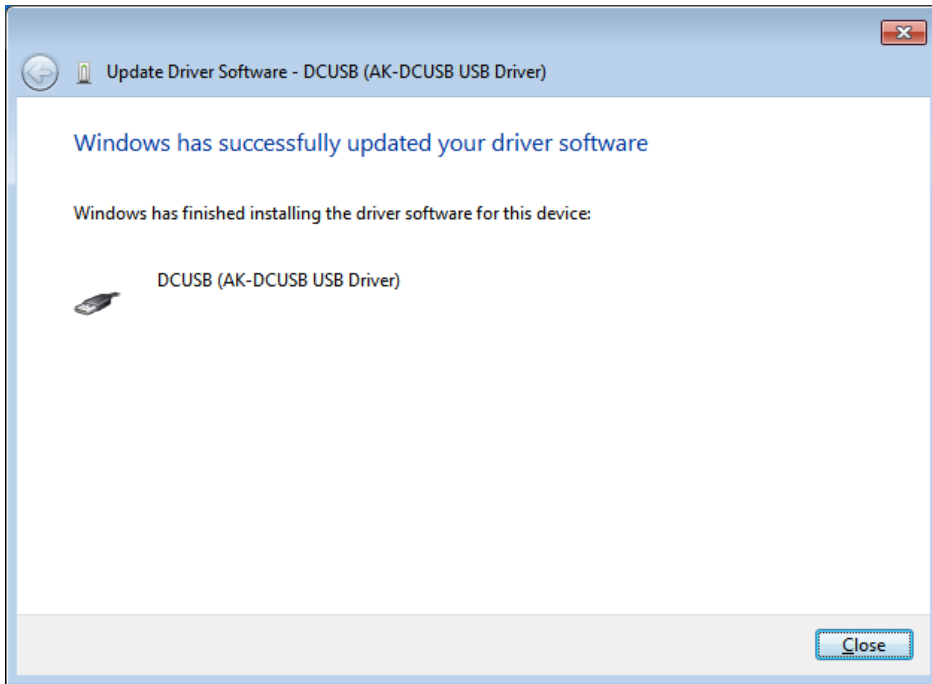




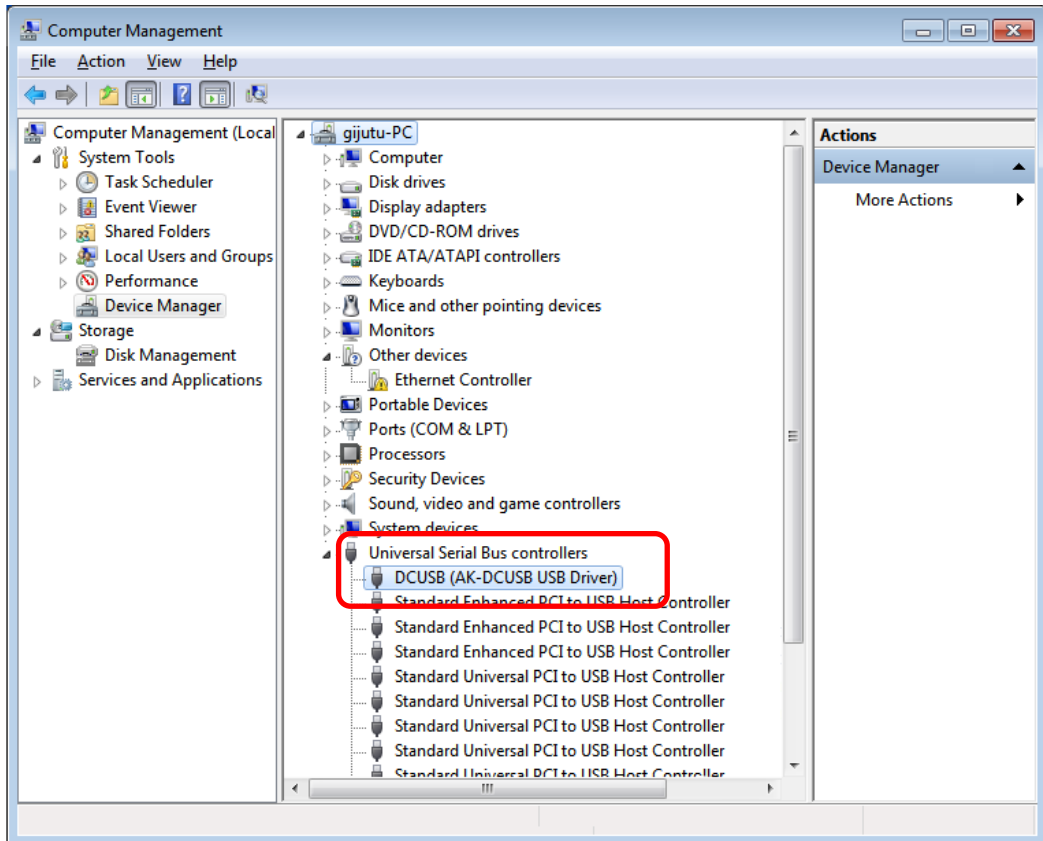
※Click 【Install】



- (9) When the installation is completed, the Add Hardware wizard shown below will be displayed. Click Finish.

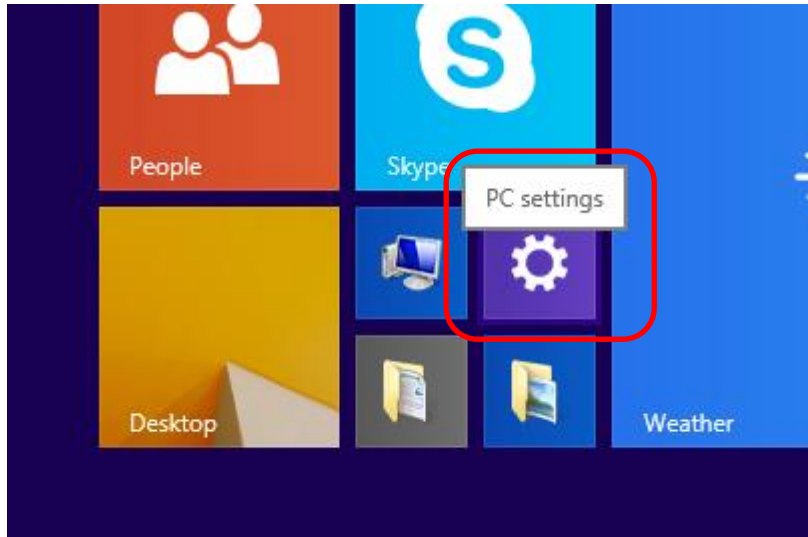


- (10) Check to see that “DCUSB” is found below the heading “Universal Serial Bus controllers.”

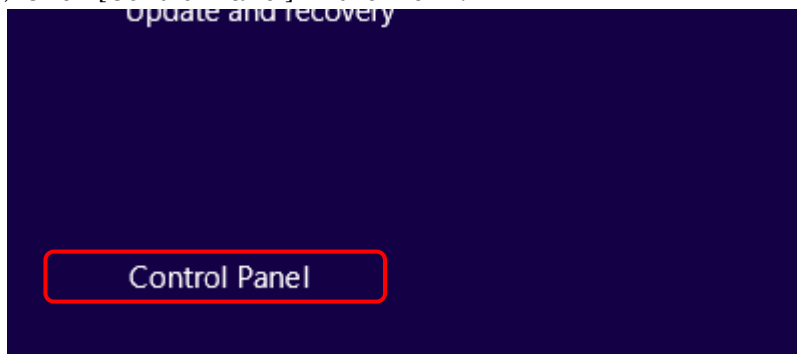


<Windows 8.1>

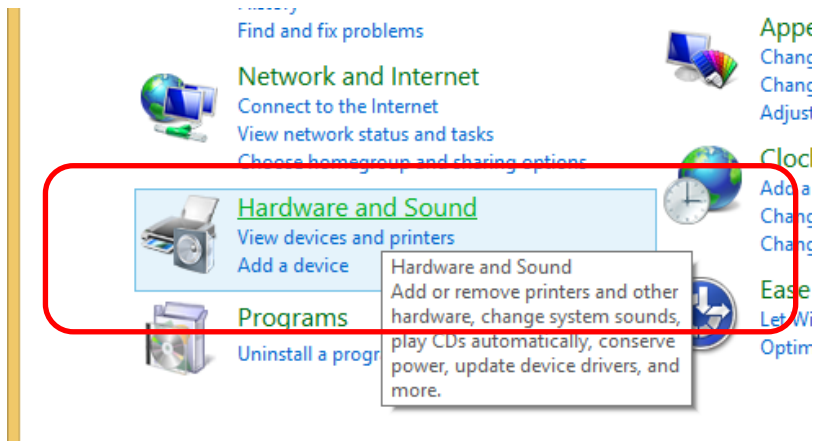
- (1) Connect the measuring instrument and computer with the USB communication cable.
- (2) Turn on the power to the measuring instrument.
- (3) Click [PC settings] in the Start menu.



- (4) Click [Control Panel] in the menu.



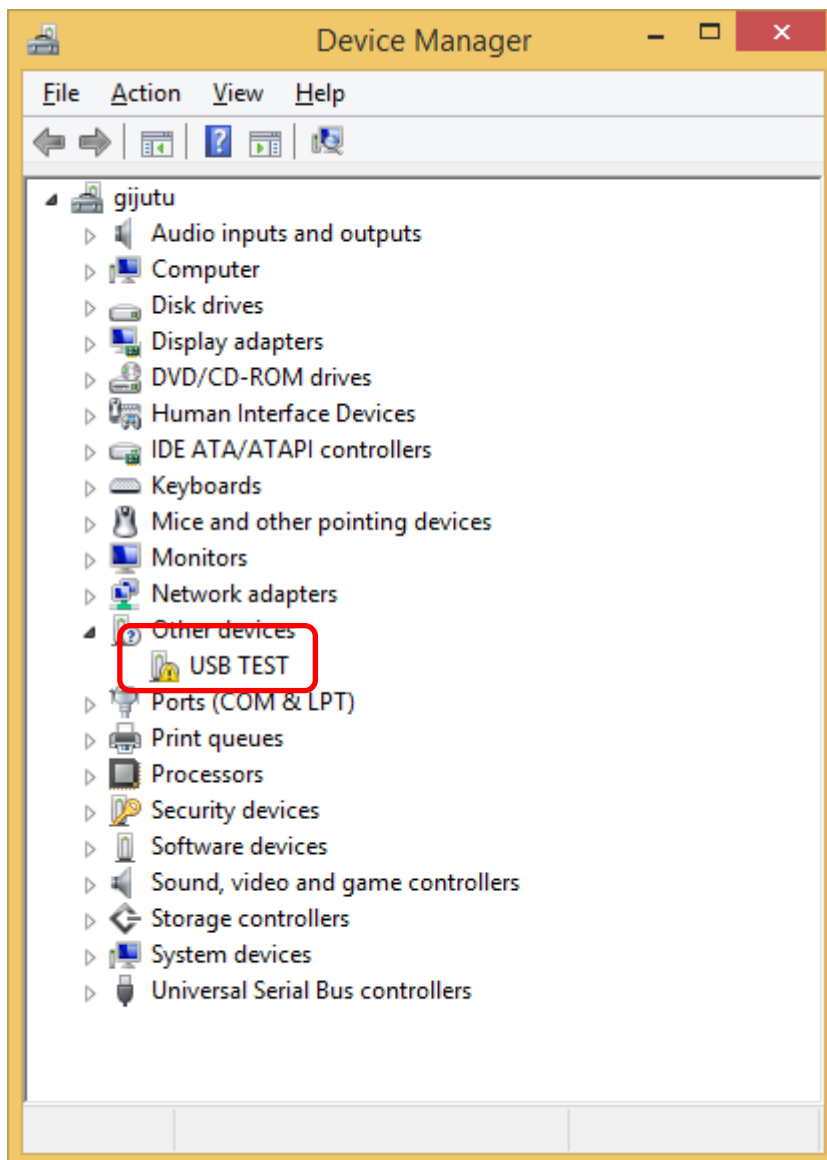
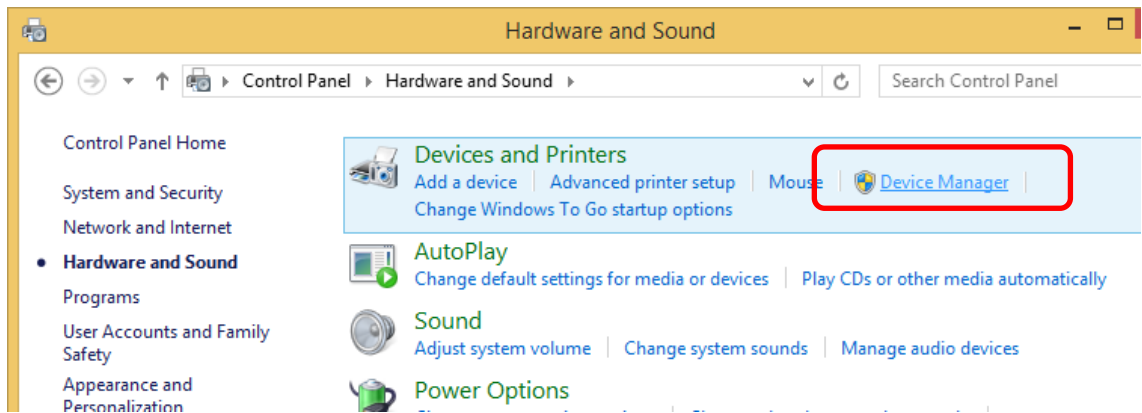
- (5) Click [Hardware and Sound].





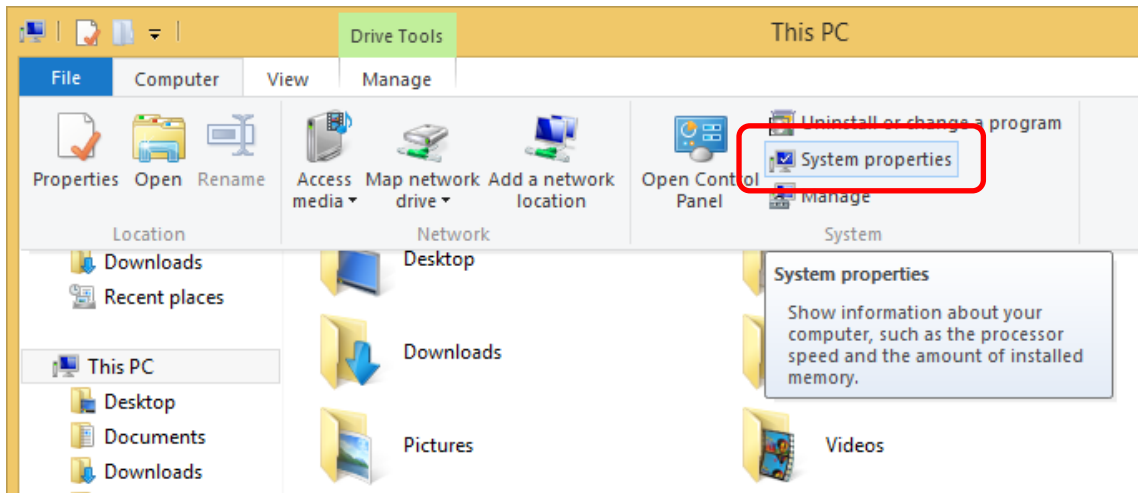
(6) Click the [Device Manager].

Make sure that you have USB TEST in the [Other devices].




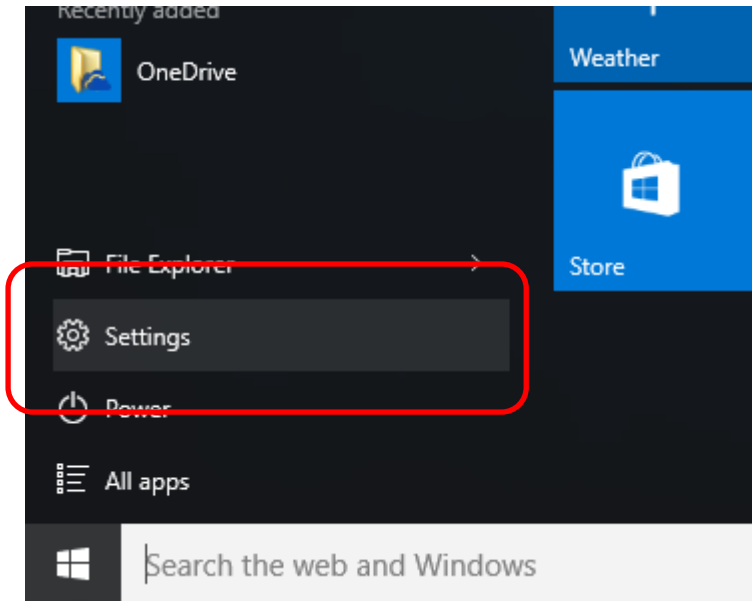
(7) Right-click USB TEST and select [Properties]. Then, click [Update Driver].  
Follow the instructions from (6) on Windows7 the installation.

※Select the [Devices manager] in the System properties.

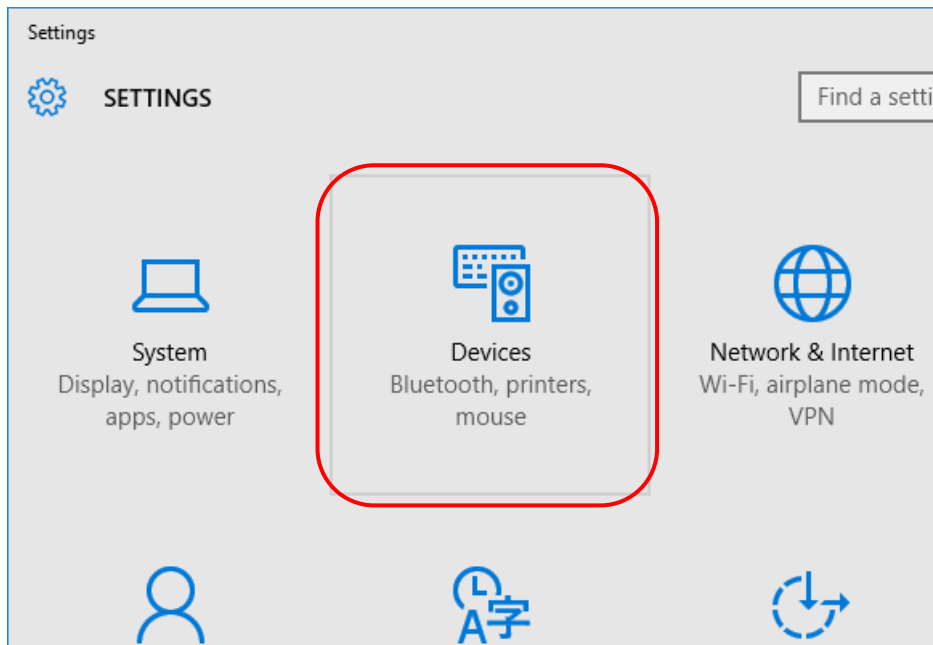


<Windows 10>

- (1) Connect the measuring instrument and computer with the USB communication cable.
- (2) Turn on the power to the measuring instrument.
- (3) Click [Settings] in the  Start menu.

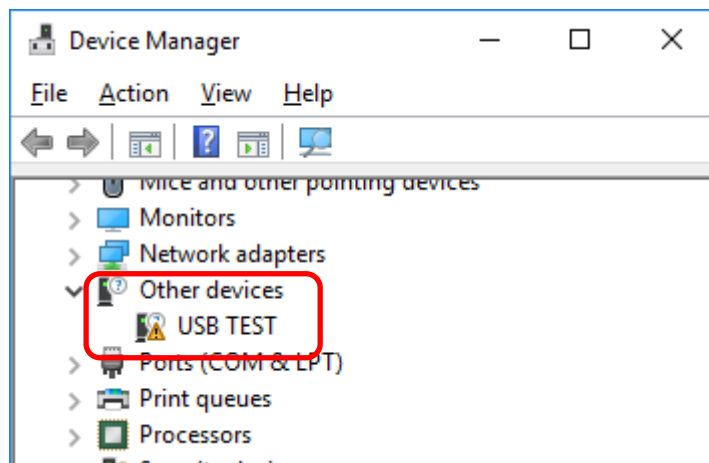
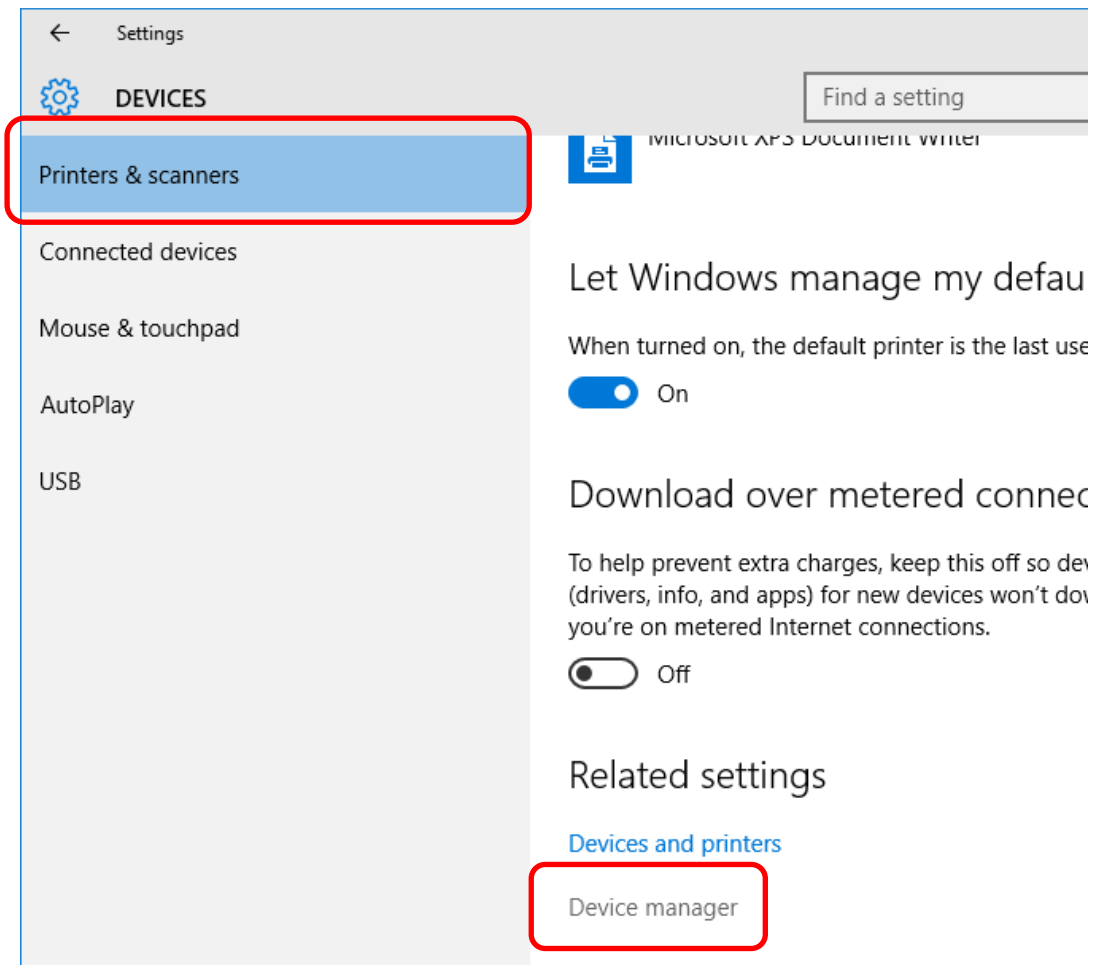


- (4) Click [Devices].



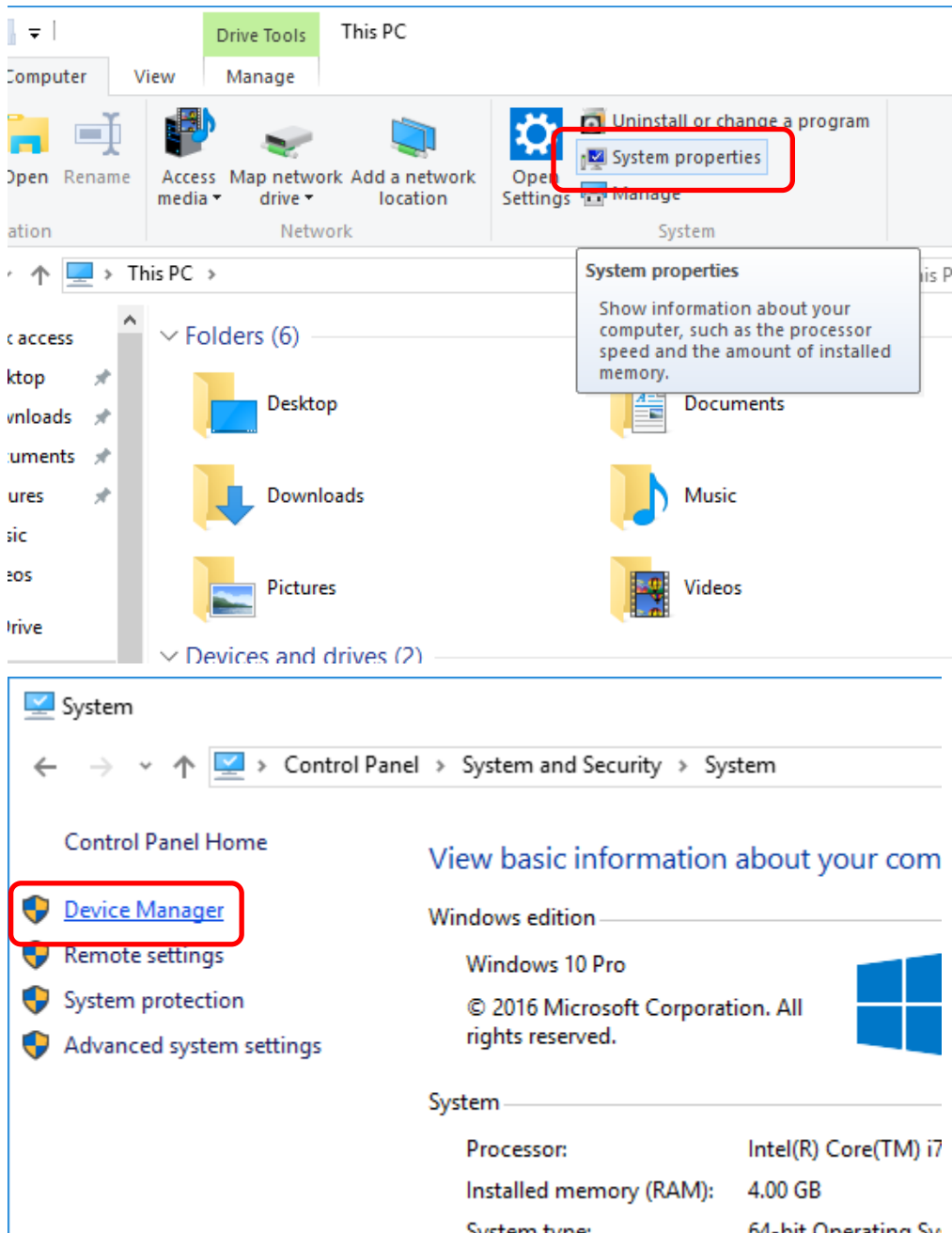
(5) Click [Device manager] in the Printers & scanners.

Make sure that you have USB TEST in the [Other devices].



(6) Right-click USB TEST and select [Properties]. Then, click [Update Driver].  
Follow the instructions from (6) on Windows7 the installation.

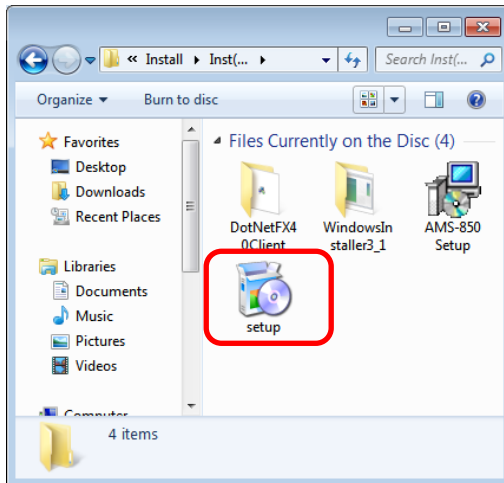
※Select the [Devices manager] in the System properties.



## 6.2 Installing AMS-850

### ● Installation

- (1) Set the AMS-850 CD-ROM into the CD-ROM drive of your computer.
- (2) Double-click SETUP.EXE in the AMS-850 Install folder.

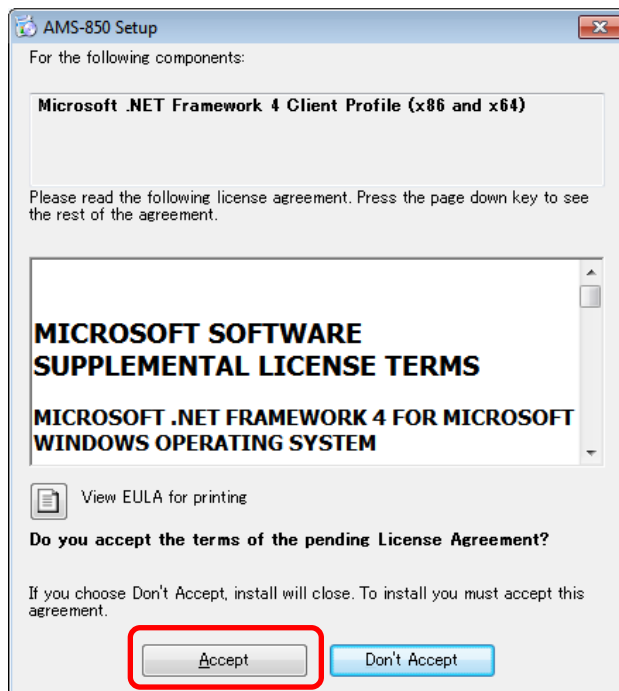


A window for installing programs similar to the one shown below will appear.

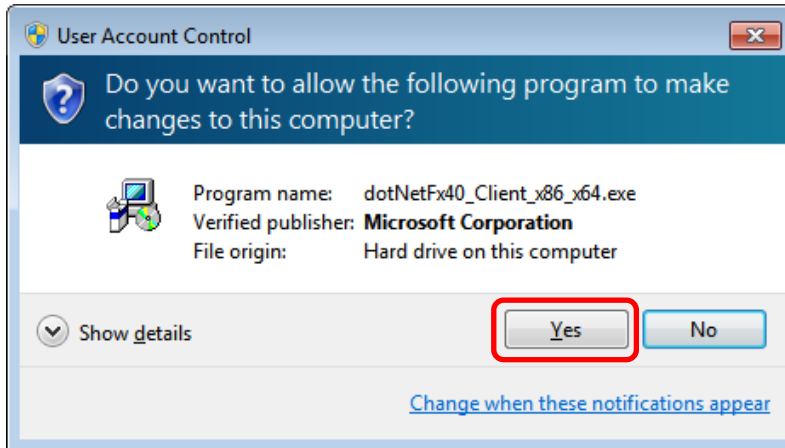
- (3) Microsoft .NET Framework 4 is required on your computer to work the AMS-850.

If it is not installed on your computer, Setup screen is displayed.

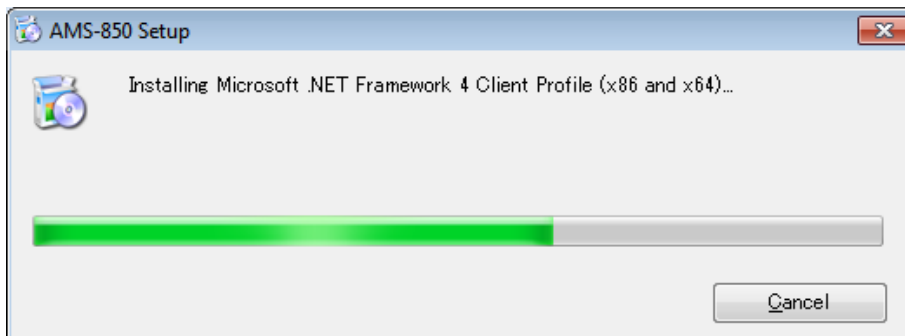
Read the contents, click [Accept] if there is no problem.



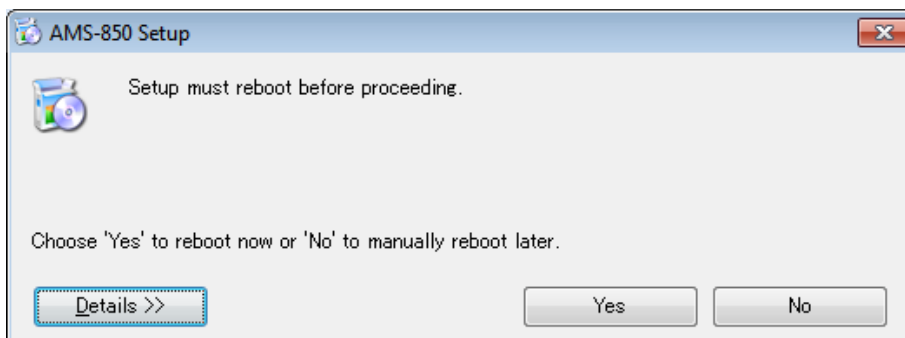
Click **Yes** .



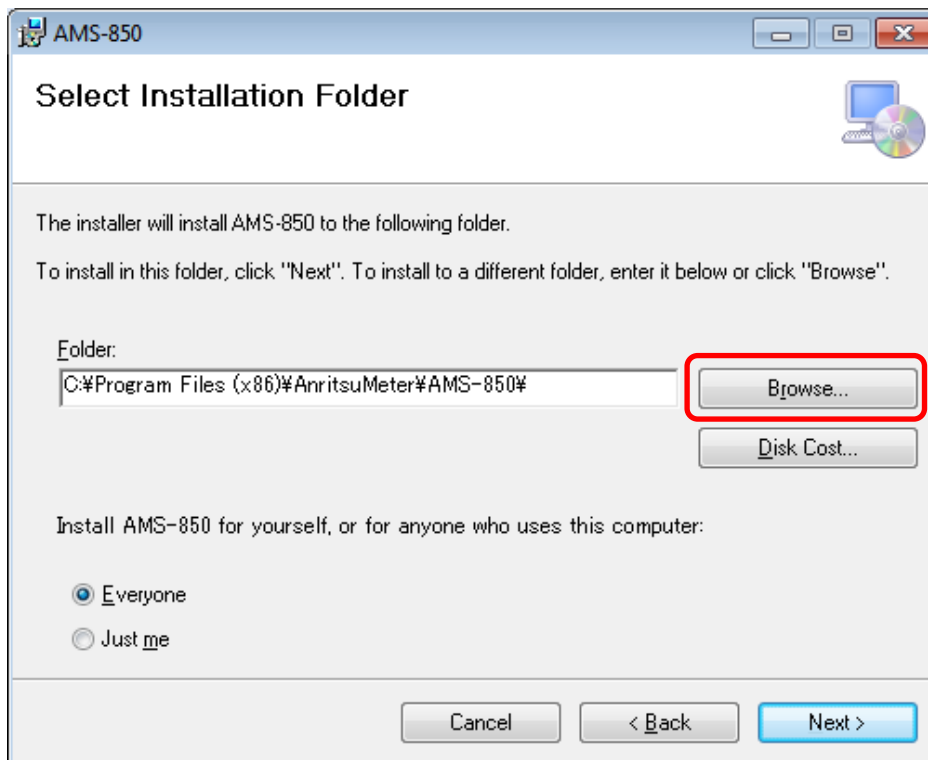
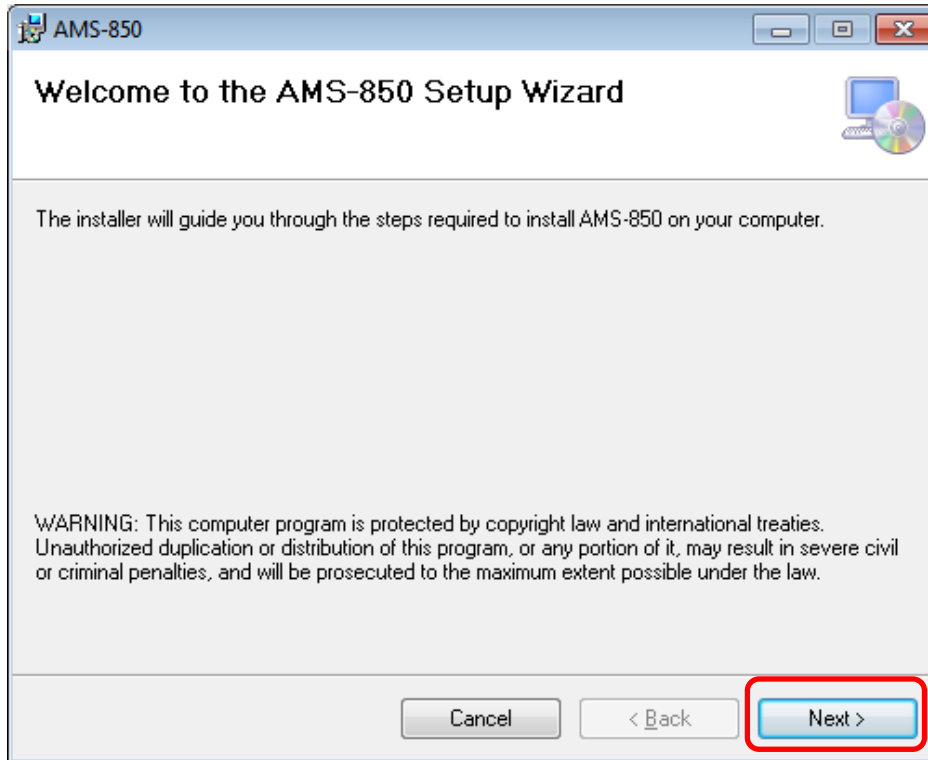
Setup starts.



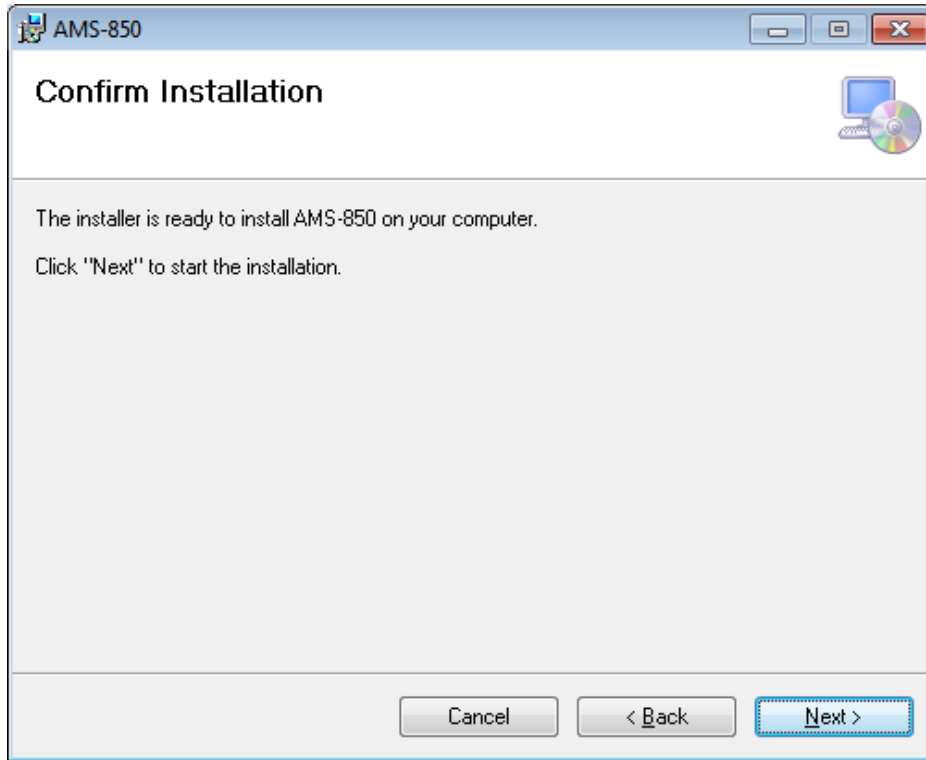
Restart when finished.



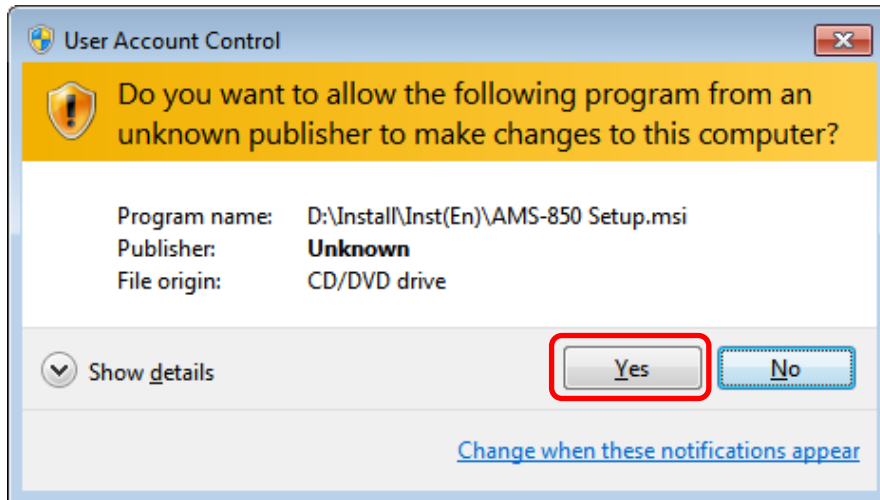
(4) Follow the instructions to complete the installation.

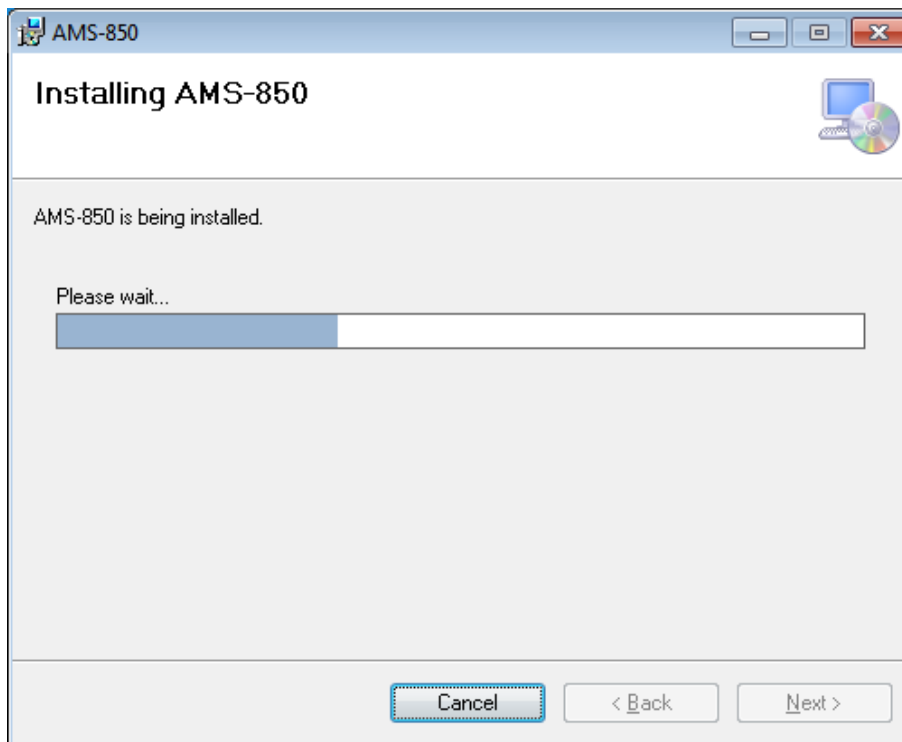






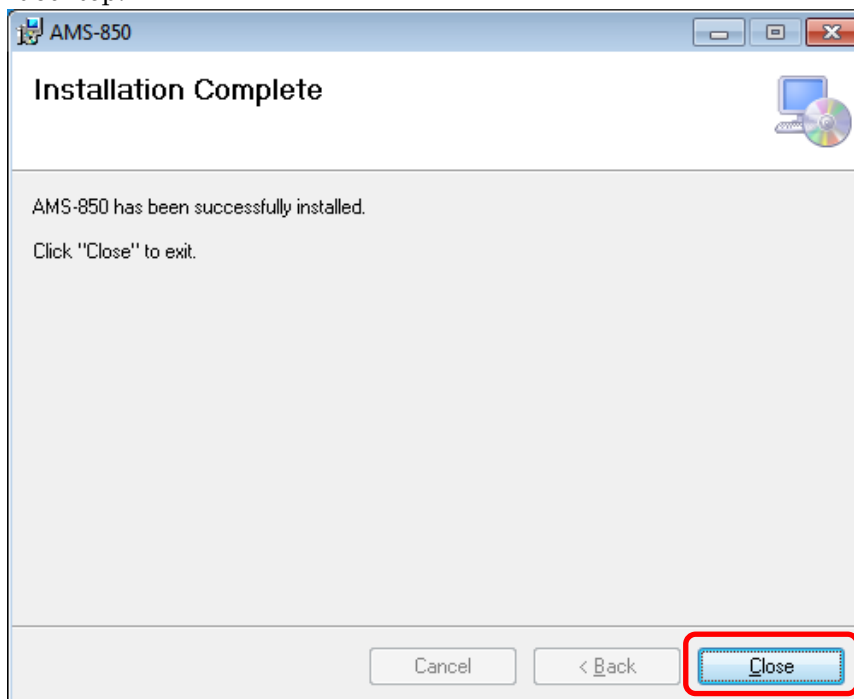
Click **[Yes]** .





(5) AMS-850 installation is complete, Click [Close].

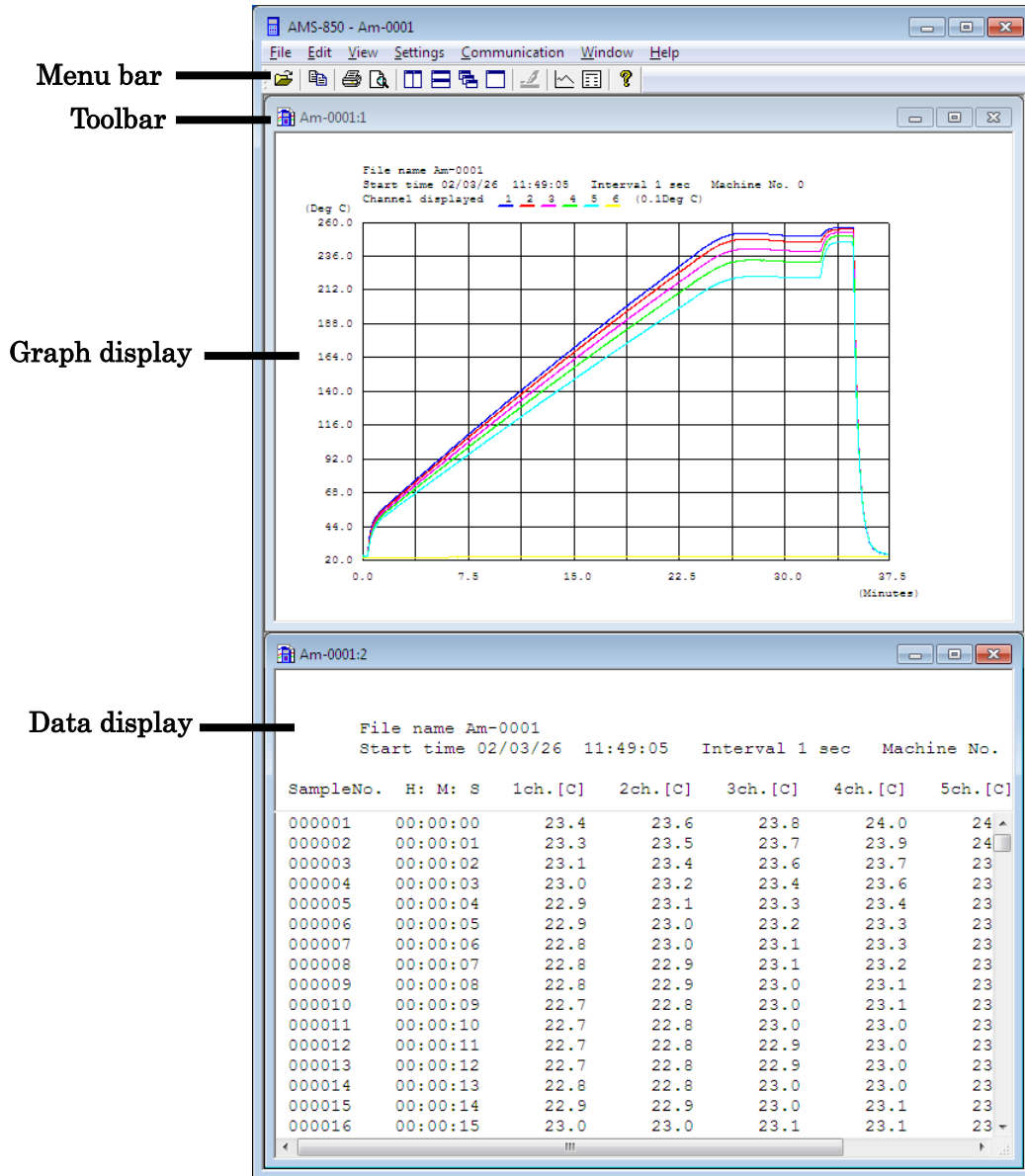
AMS-850 is registered in the Start menu. Then, the shortcut is created on the desktop.



\* Make sure the software is installed by a user with administration privileges. For details, consult your system administrator.

# 7. Screen Configuration

## 7.1 Names and Functions of the Main Screen



**Menu bar:** Allows you to set functions and perform measurements.

**Toolbar:** Contains the frequently used functions that have been turned into buttons.

**Graph display:** Displays measurement data as a graph.

**Data display:** Displays measurement data in list form.

## 7.2 Operation Method

### <Operation with a mouse>

Clicking the left mouse button on an item in the menu bar or toolbar allows you to select the item.

In the data display or graph display screen, furthermore, you can use the mouse to scroll the screen.

### <Operation from the keyboard>

You can use the keyboard to select items in the menu bar or toolbar as you do with the mouse.

The English letters corresponding to menu items have an underscored letter, as in File, thus can be typed in using the keyboard to select a menu or perform an operation, as shown below.

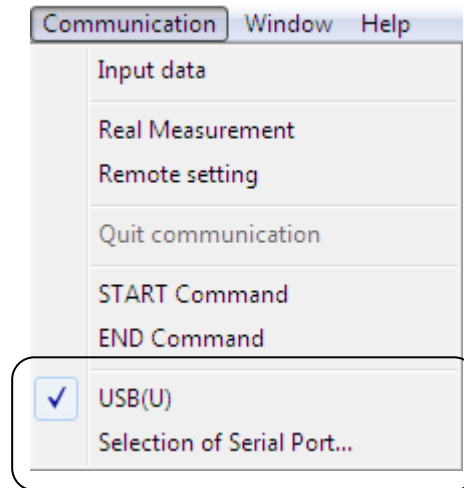
- Menu bar: ALT (GRPH) + English letter (e.g., File, Communication)
- Pulldown menu: English letter (e.g., Open, Print)
- TAB key: Moves to the subsequent input point (for example, between items in a dialog box).

## 8. Using the Software

### 8.1 Setting the Communication Port

- In the Communication menu, select the port on your computer that is to be used for communication with the measuring instrument.

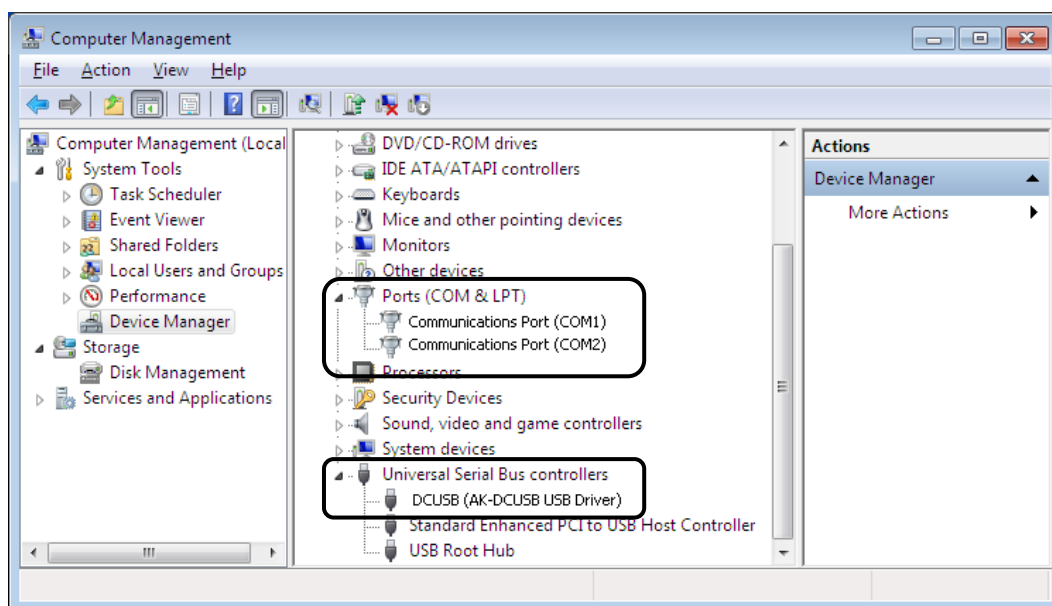
When you are using USB, select USB here.



\* If you do not know which serial port number to use or you wish to check whether the USB cable is connected, follow the procedure below:

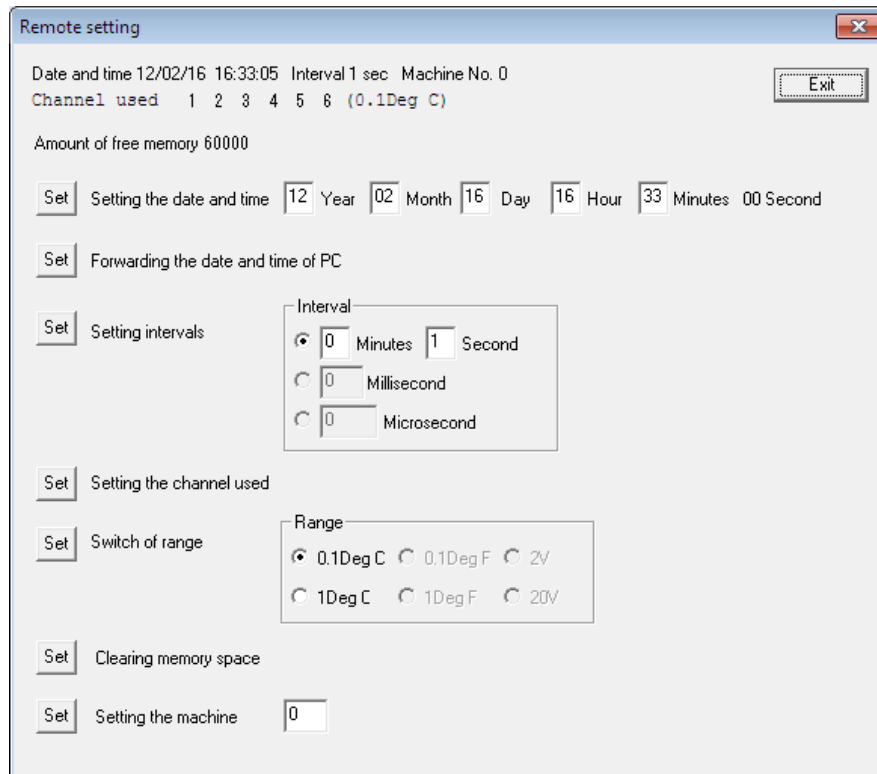
- (1) From the Start menu of Windows, choose Settings and then Control Panel.
- (2) In Control Panel, choose System and open Device Manager. Then, check the following:

- For RS-232C communication, check the COM number of the port.
- For USB communication, check to see that “DCUSB” is shown in Universal Serial Bus controllers. If it is not shown, temporarily remove the USB cable and then reinsert.



## 8.2 Making or Changing Settings on the Measuring Instrument

- (1) Connect the measuring instrument to the computer with the communication cable, and turn on the power to the measuring instrument.
- (2) Choose Remote setting from the Communication menu.



### A. Setting the clock

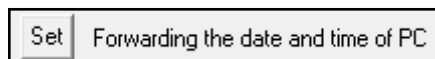
<For manual setting>



Enter numeric values in the date and time input columns and click the “Set” button located to the left of the input columns.

\* For years, enter the two low-order digits of the calendar year.

<When making use of the computer clock >



Click the “Set” button located to the left of the label “Forwarding the date and time of PC.” The internal date and time of the PC will be set in the measuring instrument.

## B. Setting measurement intervals

Set a time interval at which you wish measurements to be taken.

- After entering a time interval, click the “Set” button.
- \* Depending on the type of measuring instrument used, you can set the interval in milliseconds or microseconds. Note, however, that the data sent to the measuring instrument when you press the “Set” button is the one whose radio button is currently selected (marked by a dot within it).
- \* Be especially careful when your measuring instrument allows multiple units of time to be selected.

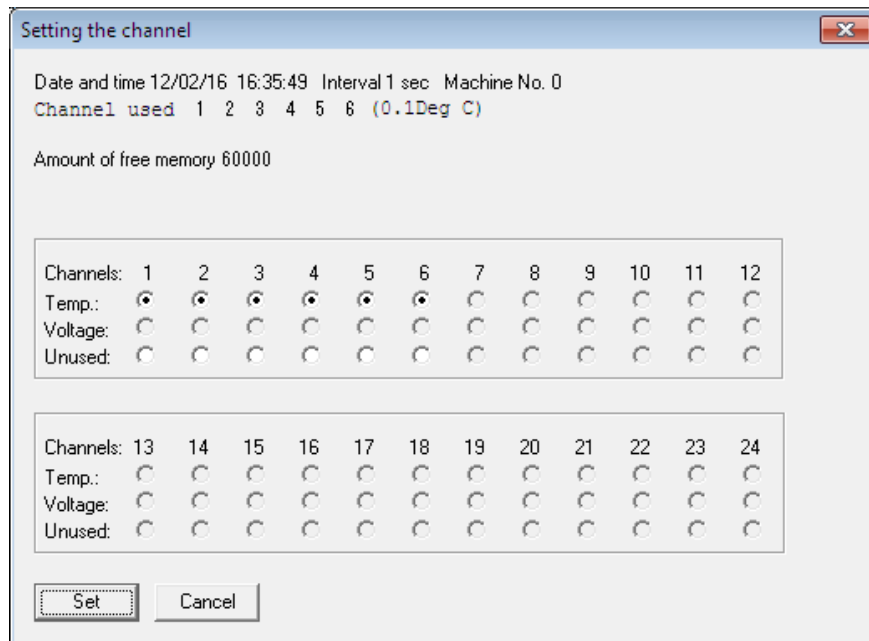
The table below lists the time intervals that can be set on each type of measuring instrument.

Model	Time interval
AM-8000, AM-8010, AM-8050 AM-8060, AM-8100, AM-8110 AM-8150, AM-8160	1 sec. to 99 min. 59 sec. (in 1-second increments)
AM-8001, AM-8051, AM-8111 AM-8161	1 sec. to 99 min. 59 sec. (in 1-second increments) 100 ms to 990 ms. (in 10-ms increments)
AM-8010, AM-8011, AM-8060 AM-8061, AM-8110, AM-8111	1 sec. to 99 min. 59 sec. (in 1-second increments) 200 ms to 990 ms. (in 10-ms increments)

## C. Setting the channels used for measurement

Set the channels you wish to be used for measurement.

- (1) Clicking the “Set” button for Setting the channel used brings up a channel setup screen.
- (2) Select mode (temperature, voltage, or unused) for each channel and click Set. (The number of usable channels and usable modes differ with the measuring instrument model used.)



#### D. Setting resolutions

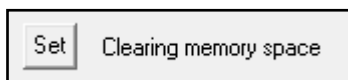
Set the resolution of data.



- Select your desired range and click the “Set” button.  
(The selectable ranges differ with the measuring instrument model used.)

#### E. Clearing memory

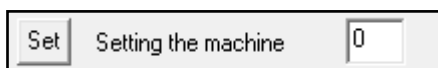
This operation clears all of the data stored in the internal memory of the measuring instrument.



- Click the “Set” button.
- \* Save data in your computer before clearing data.

#### F. Setting machine No.

Set machine No. in the measuring instrument.



- Enter machine No. and click the “Set” button.
- \* Machine Nos. from 00 to 99 can be set.

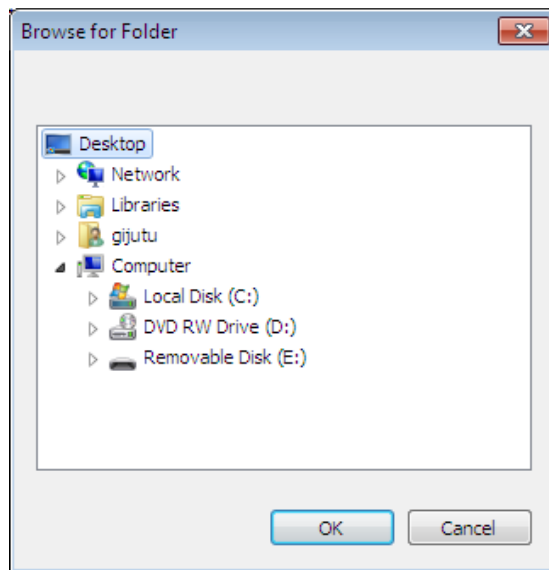


### 8.3 Downloading Data from the Measuring Instrument

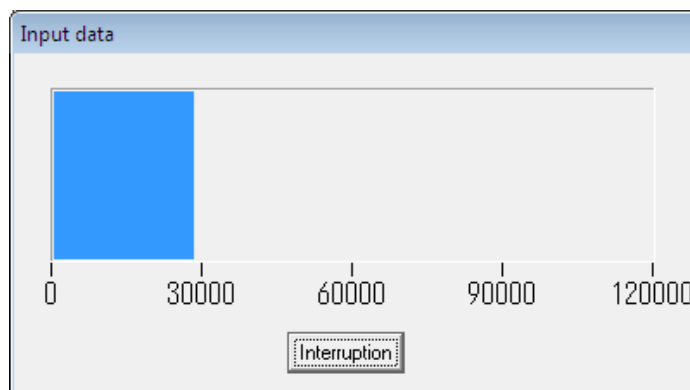
Download the data saved in the measuring instrument into your computer to create a file.

The data in the measuring instrument is separated in block units, and one file is created for each block.

- (1) Connect the measuring instrument and computer with the communication cable, and turn on the power to the measuring instrument.
- (2) Choose Input data from the Communication menu.
- (3) Specify the destination folder into which data is to be saved, and click OK.

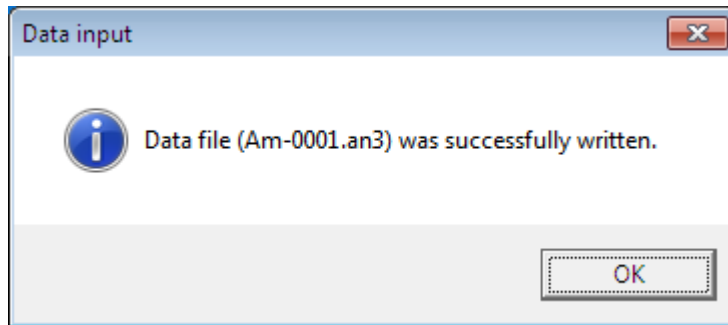


During communication, a transfer bar is displayed as shown below, allowing you to confirm the progress of data transfer. Pressing Interruption here causes the communication to stop, and the data currently being transferred or not yet transferred is not saved in the PC.



- \* Do not press any keys on the measuring instrument during communication, as this will terminate transfer or cause a malfunction.
- \* Since the data in the measuring instrument is retained even after you selected to run Data Input, if a communication error, etc. occurs during communication, reselect Data Input.

When Data Input finishes and all data has been transferred, a newly created data file is displayed.



**(a) File names**

The files are named "Am-\*\*\*\*.an3".

The \*\*\*\* part in the file name denotes a number assigned for each directory from 0001 to 9999. Even if a file is deleted, all other file numbers remain unchanged.

For example, if when files up to the number 9999 are saved on the hard disk, files from 0001 to 9998 are deleted, the file with the number 9999 remains intact. In this case, because the file with the largest number (9999) remains saved, no more data can be saved in the directory where this file exists.

If new data needs to be stored in this directory, rename the file or take other appropriate measures.

Example: Change the name "Am-9999.an3" to "Am-0001.an3."

**(b) File size**

The file size is comprised of the following.

$$\text{File size} = (\text{header part}) + (\text{data part}) \times (\text{amount of data})$$

- Header part (information on measurement) = 1,024 bytes
- Data part (per data on each channel) = 2 bytes

Example 1: If the data size is 3 KB

$$\begin{aligned} \text{File size} &= 1,024 + 2 \times 3,000 \\ &= 7,024 \text{ bytes} \\ &= \text{approx. } 7 \text{ KB} \end{aligned}$$

Example 2: If the data size is 120 KB

$$\begin{aligned} \text{File size} &= 1,024 + 2 \times 120,000 \\ &= 241,024 \text{ bytes} \\ &= \text{approx. } 240 \text{ KB} \end{aligned}$$

## 8.4 Real Measurement Method

This method displays a graph during measurement. The data is saved to a file.

\* The performance of real measurement depends on that of the PC you are using.

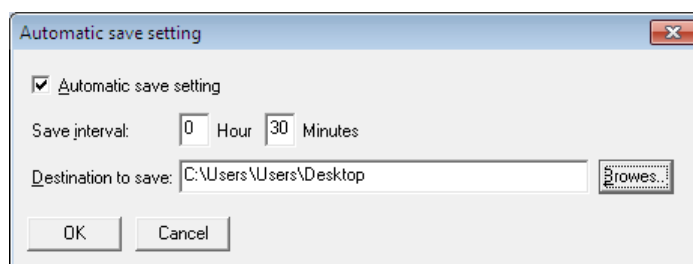
Be especially aware that if other software is running on your computer, it may cause a delay in measurement or other errors.

- (1) Check to see that the set time interval of the measuring instrument falls within the range shown in the table below. If not, alter the time interval.

Model	Interval
All models in the AM-8000 series	1 sec. to 99 min. 59 sec.

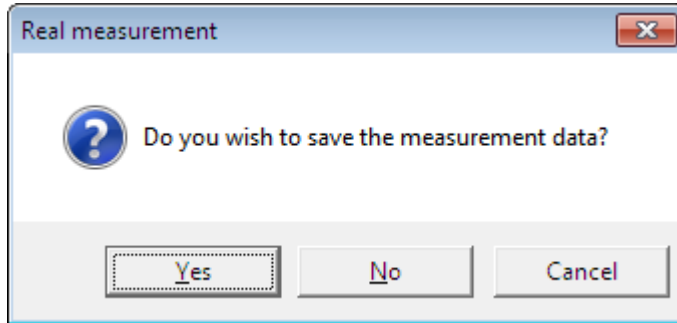
- (2) Connect the measuring instrument to the computer with a communication cable, and turn on the power to the measuring instrument.
- (3) Choose Set Real-time data autosaving from the Settings menu.

\* During real measurement, the data is saved at predetermined intervals. Consequently, even if the power to the PC is suddenly shut down, the data saved up to this point exists as a backup file. The file can be opened in AMS-850 by changing its extension (dat) to the one that corresponds to the measuring instrument you used for measurement (an3).



- ① Select to enable or disable automatic saving.
- ② Set the interval in which you wish data to be automatically saved.  
The time interval can be set in the range 1 minute to 23 hours 59 minutes.
- ③ Specify the destination folder into which to save.  
The names of the files created by autosaving are named according to date with the extension “dat” added.  
Example: C:\Program Files\Anritsu-Meter\AMS-850\DATA\050401.dat  
April 1, 2005

(4) Choose Real Measurement from the Communication menu.



(5) To create a file, click Yes and specify the destination folder into which to save. The files are named "Am-\*\*\*\*.an3" (\*\*\*\* denotes file numbers 0001 to 9999). If the amount of data in a file exceeds the limit, the file number is incremented by 1 and the next data that follows is saved to a new file.

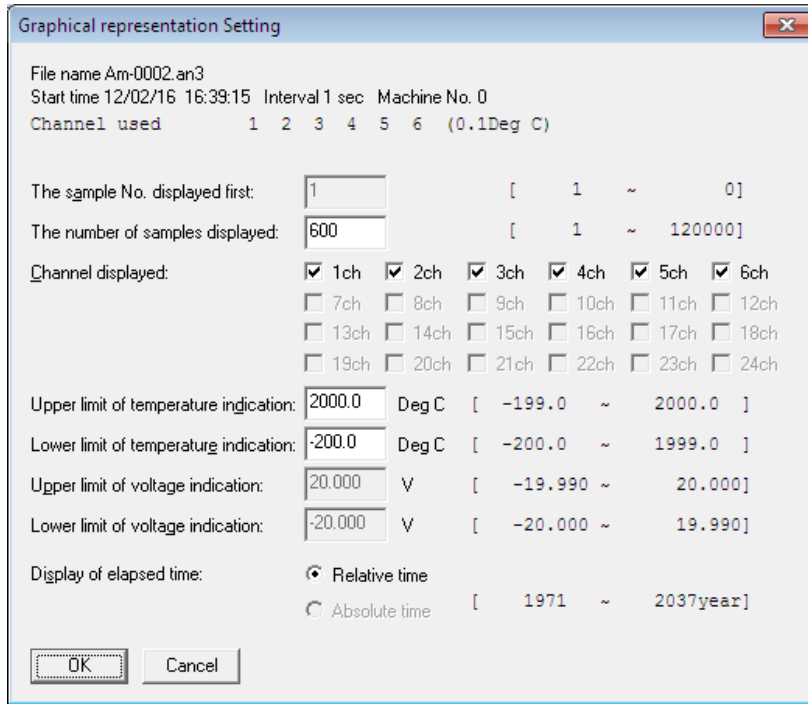
**\* The measurement underway is temporarily halted when a new file is created, thus data for several intervals during which time measurement is halted may not be acquired.**

The amount of data that can be saved to one file differs with the type of measuring instrument, as shown in the table below.

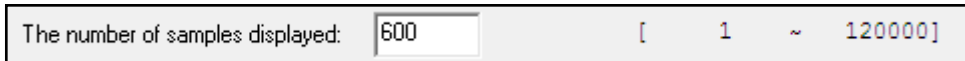
Model	Data size
AM-8000, AM-8001, AM-8010, AM-8011, AM-8050, AM-8051, AM-8060, AM-8061, AM-8100, AM-8101, AM-8110, AM-8111, AM-8150, AM-8151, AM-8160, AM-8161, (including high-speed version HS)	120000 data

\* If measurement is taken over a long time and disk space runs out, measurement is aborted and a message is displayed on the screen.

(6) Set the type of graph you wish to be displayed.



① Set intervals on the horizontal axis according to the number of displayed samples.



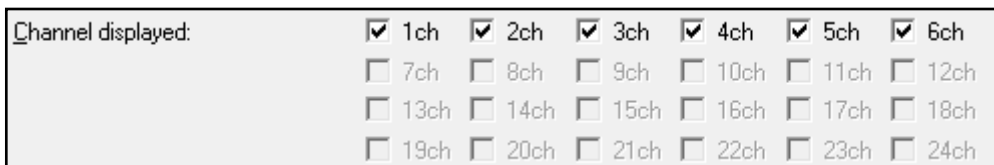
To find the number of samples from the time

$$\text{Number of samples} = \text{maximum time on the horizontal axis (in seconds)} / \text{interval (in seconds)}$$

Example: To calculate the number of samples, in order to display the data (measured at 1-second intervals) for 60 minutes

$$\begin{aligned} \text{Number of samples} &= 60 \text{ minutes} \times 60 \text{ (seconds)} \times 1 \text{ (second)} \\ &= 3600 \end{aligned}$$

② Select the channels whose data you wish to be graphically displayed.

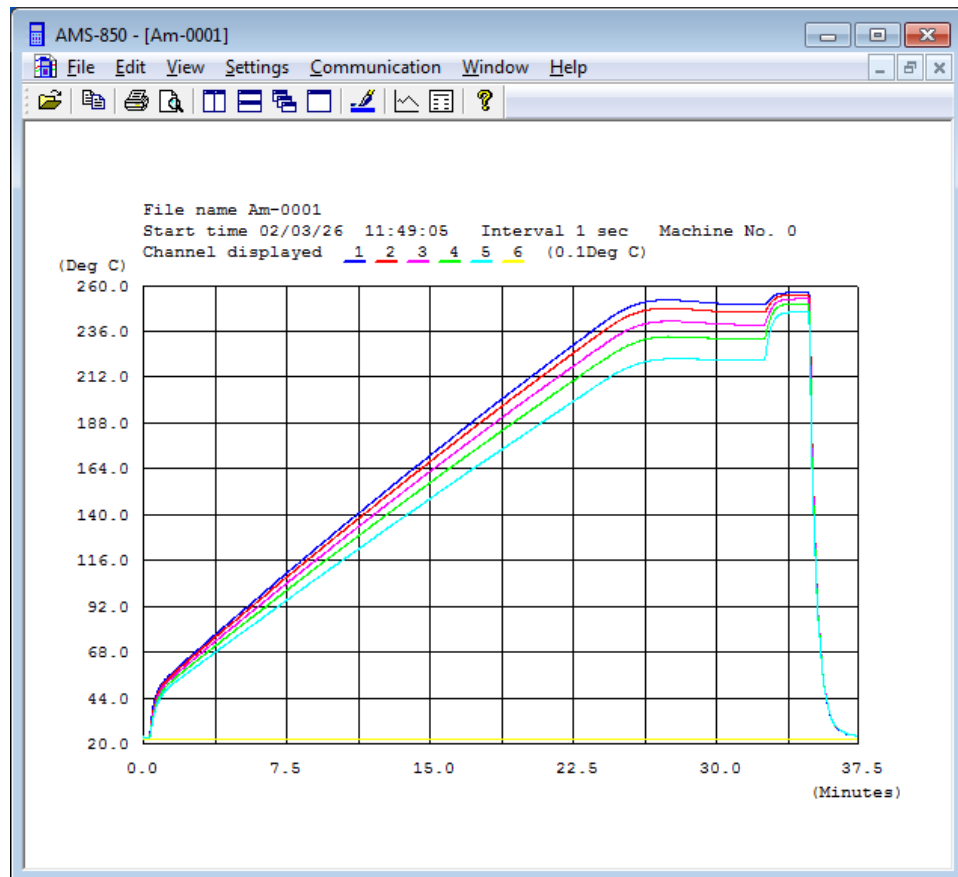


- ③ Set the upper-limit and lower-limit display values to set up the vertical axis.

If temperatures and voltages are to be measured simultaneously, set the display range of temperature and that of voltage separately.

Upper limit of temperature indication:	2000.0	Deg C	[ -199.0 ~ 2000.0 ]
Lower limit of temperature indication:	-200.0	Deg C	[ -200.0 ~ 1999.0 ]
Upper limit of voltage indication:	20.000	V	[ -19.990 ~ 20.000 ]
Lower limit of voltage indication:	-20.000	V	[ -20.000 ~ 19.990 ]

- ④ When all parameters have been set, click OK.  
Measurement will start.



To finish real measurement, choose Quit communication from the Communication menu.

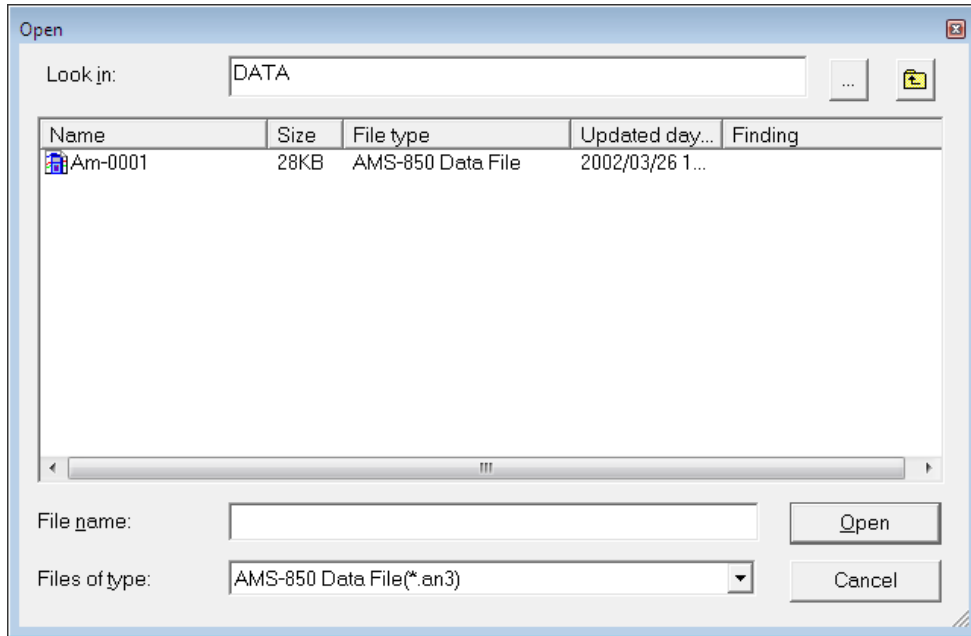
- Viewing the data preceding the time currently displayed on the screen during measurement

- ① Choose Scroll the graph from the View menu.
- ② Drag the gauge and move the mouse left or right.  
This will move the horizontal axis of the graph to the desired point.

## 8.5 Loading and Displaying an Existing File

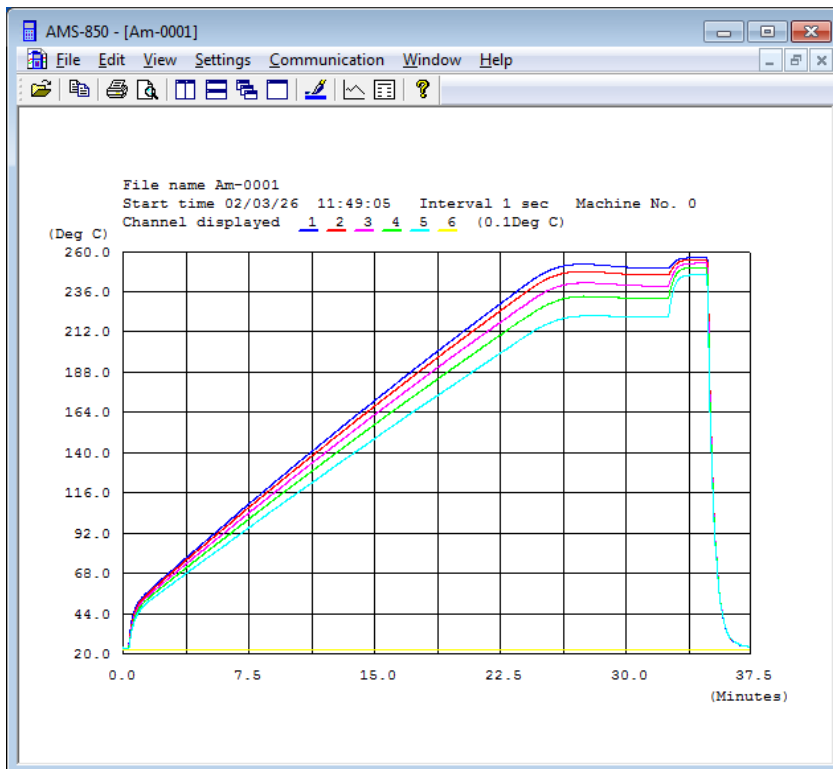
Open one of the files that have already been saved by AMS-850 and display it graphically or as a data list.

- ① Choose Open from the File menu.



- ② Specify the file you wish to open and click Open.

\* Check to see that the file name you have selected is shown in the file name column before you click Open.

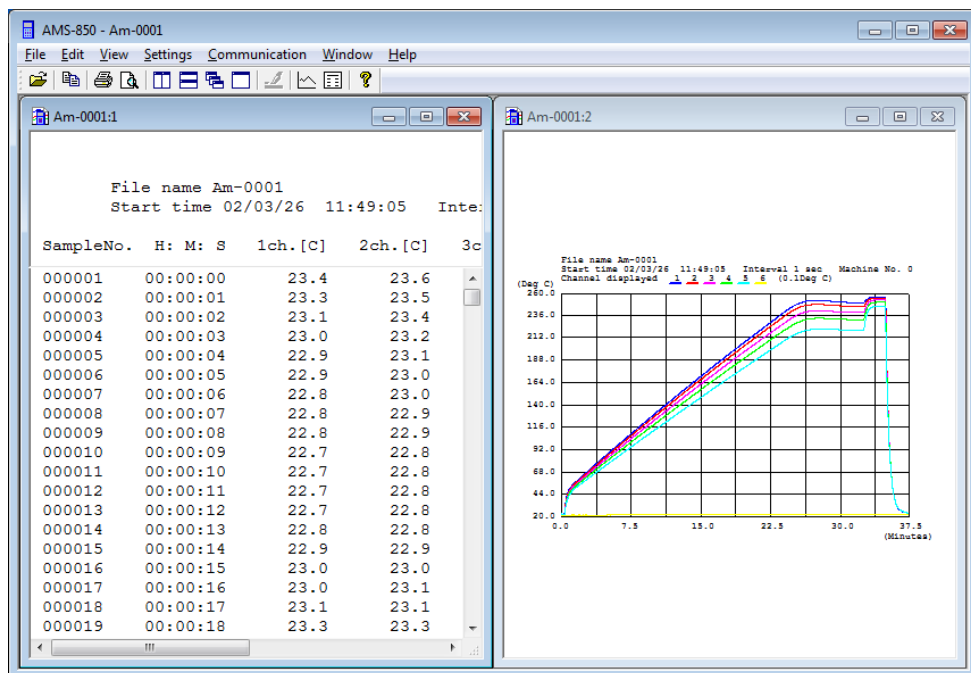


- You can use the toolbar to switch between graph display and data display.



**<To display a graph and data simultaneously>**

- While a graph is active, choose New Window from the Window menu. Two instances of the same graph will be opened, so use the toolbar to change one of the two graphs to data display.



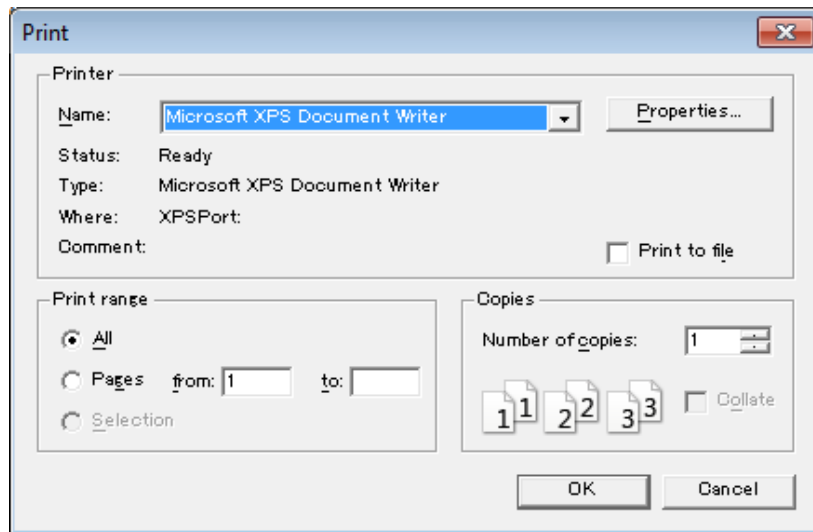
- \* If you wish to change the display range of the graph or the line color or line type of the graph, refer to Section 8.7, “Graph Display.”



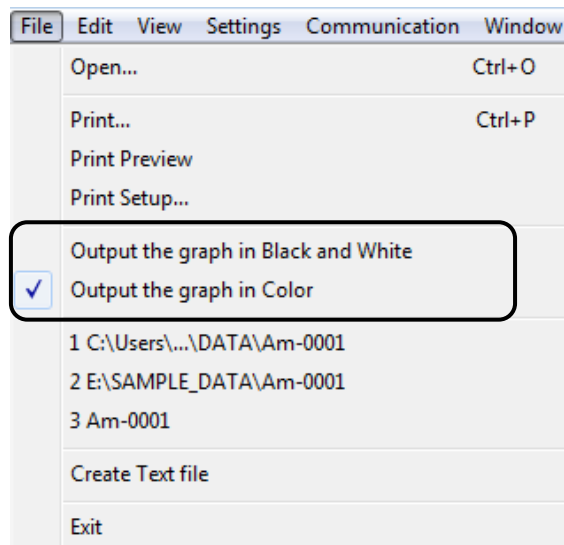
## 8.6 Printing Graphs and Data

You can print the graph or data or remarks being displayed on the screen via a printer.

- ① Activate the target you wish to print (e.g., graph or data).
  - \* Note that multiple graphs or sets of data displayed on the screen are only printable singularly.
- ② Choose Print Setup from the File menu, and then set up your printer.

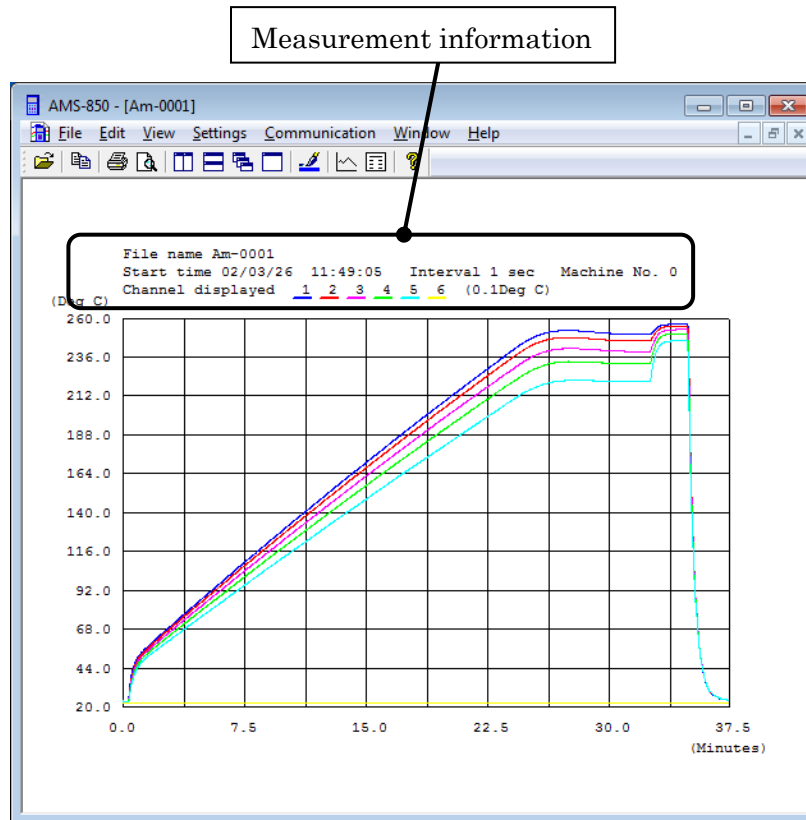


- ③ In the File menu, select the type of graph to be printed. Select color or black and white (depending on printer type).  
Some monochrome-only printers cannot print lightly colored lines. In that case, select to black and white.



- ④ Choose Print from the File menu, and then click OK to print.

## 8.7 Graph Display



### A. Setting the display range

- Activate the graph and choose Set the graphical representation from the Settings menu.

Graphical representation Setting

File name Am-0001  
Start time 02/03/26 11:49:05 Interval 1 sec Machine No. 0  
Channel displayed 1 2 3 4 5 6 (0.1Deg C)

The sample No. displayed first: [ 1 ] [ 00:00:00 ] [ 1 ~ 2250 ]

The number of samples displayed: [ 2250 ] [ 00:37:29 ] [ 1 ~ 60000 ]

Channel displayed:

1ch  2ch  3ch  4ch  5ch  6ch  
 7ch  8ch  9ch  10ch  11ch  12ch  
 13ch  14ch  15ch  16ch  17ch  18ch  
 19ch  20ch  21ch  22ch  23ch  24ch

Upper limit of temperature indication: [ 260.0 ] Deg C [ -199.0 ~ 2000.0 ]

Lower limit of temperature indication: [ 20.0 ] Deg C [ -200.0 ~ 1999.0 ]

Upper limit of voltage indication: [ 20.000 ] V [ -19.990 ~ 20.000 ]

Lower limit of voltage indication: [ -20.000 ] V [ -20.000 ~ 19.990 ]

Display of elapsed time:

Relative time  
 Absolute time [ 1971 ~ 2037year ]

[ OK ] [ Cancel ]

(a) Changing the scale of the horizontal axis

The sample No. displayed first:	<input type="text" value="1"/>	<input type="text" value="00:00:00"/>	[	<input type="text" value="1"/>	~	<input type="text" value="2250"/>	]
The number of samples displayed:	<input type="text" value="2250"/>	<input type="text" value="00:37:29"/>	[	<input type="text" value="1"/>	~	<input type="text" value="60000"/>	]

- ① Set First Sample No. to specify the minimum value on the horizontal axis.
  - ② Set Samples to specify the measurement data sequence number on the horizontal axis.
- \* Clicking the time displayed to the right of the input column allows you to edit the approximate value for the start or the end time.

(b) Changing the scale of the vertical axis

Upper limit of temperature indication:	<input type="text" value="260.0"/>	Deg C	[	<input type="text" value="-199.0"/>	~	<input type="text" value="2000.0"/>	]
Lower limit of temperature indication:	<input type="text" value="20.0"/>	Deg C	[	<input type="text" value="-200.0"/>	~	<input type="text" value="1999.0"/>	]
Upper limit of voltage indication:	<input type="text" value="20.000"/>	V	[	<input type="text" value="-19.990"/>	~	<input type="text" value="20.000"/>	]
Lower limit of voltage indication:	<input type="text" value="-20.000"/>	V	[	<input type="text" value="-20.000"/>	~	<input type="text" value="19.990"/>	]

- Set the upper-limit and lower-limit display values to specify the display range on the vertical axis.  
For the temperature display range, set Upper Range (Temp.) and Lower Range (Temp.). For the voltage display range, set Upper Range (Volts) and Lower Range (Volts).

(c) Setting to show or hide channels

Channel displayed:	<input checked="" type="checkbox"/> 1ch	<input checked="" type="checkbox"/> 2ch	<input checked="" type="checkbox"/> 3ch	<input checked="" type="checkbox"/> 4ch	<input checked="" type="checkbox"/> 5ch	<input checked="" type="checkbox"/> 6ch
	<input type="checkbox"/> 7ch	<input type="checkbox"/> 8ch	<input type="checkbox"/> 9ch	<input type="checkbox"/> 10ch	<input type="checkbox"/> 11ch	<input type="checkbox"/> 12ch
	<input type="checkbox"/> 13ch	<input type="checkbox"/> 14ch	<input type="checkbox"/> 15ch	<input type="checkbox"/> 16ch	<input type="checkbox"/> 17ch	<input type="checkbox"/> 18ch
	<input type="checkbox"/> 19ch	<input type="checkbox"/> 20ch	<input type="checkbox"/> 21ch	<input type="checkbox"/> 22ch	<input type="checkbox"/> 23ch	<input type="checkbox"/> 24ch

- Choose to show or hide channels.

(d) Selecting time display

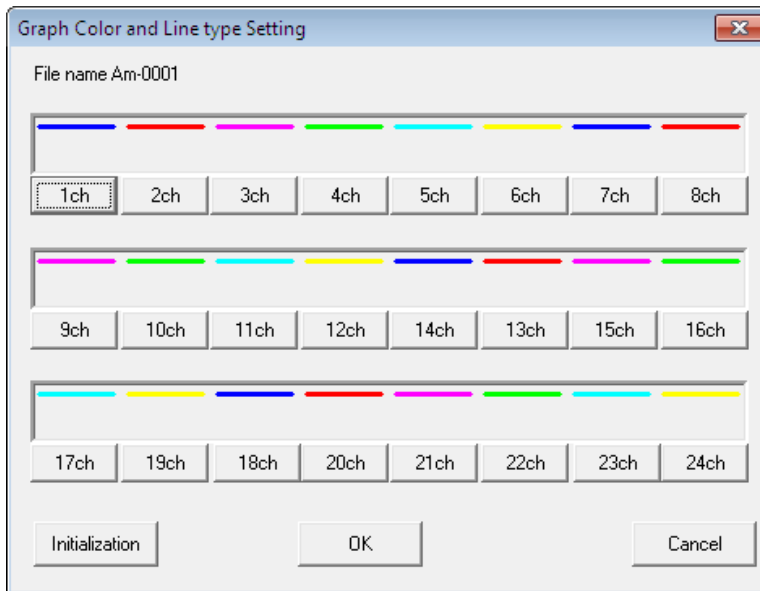
Display of elapsed time:	<input checked="" type="radio"/> Relative time	
	<input type="radio"/> Absolute time	[ <input type="text" value="1971"/> ~ <input type="text" value="2037"/> year ]

- Select the format of time in which you wish the time to be displayed.
  - Relative time indicates the lapsed time from start of measurement.
  - Absolute time indicates the date and time when measurement was made.

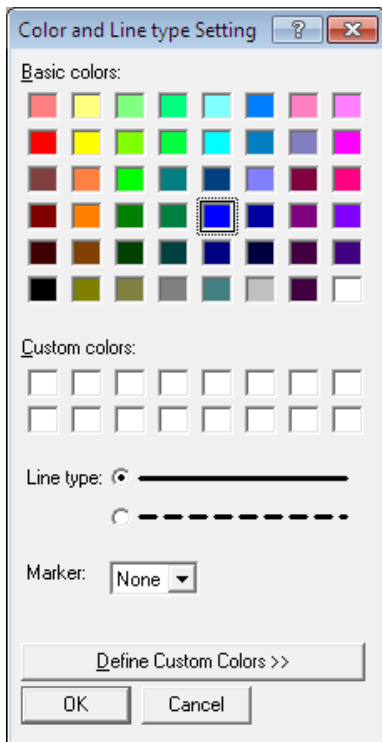
## B. Setting line colors and line types

Graphs can be drawn with different line colors or different line types for each channel.

- ① Choose Set the graph Color and Line type from the Settings menu.



- ② Click the button for the channel whose line colors or line types you wish to change.

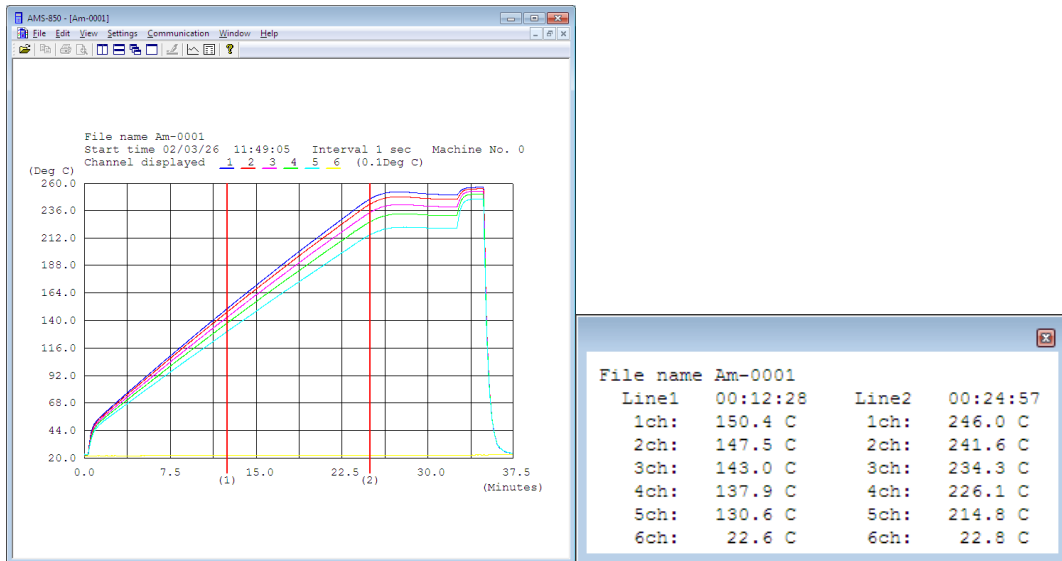


- ③ Select your desired color from Basic Colors or Custom Colors.
- ④ For the line type, select solid line or broken line.
- ⑤ For the marker, select the one desired.

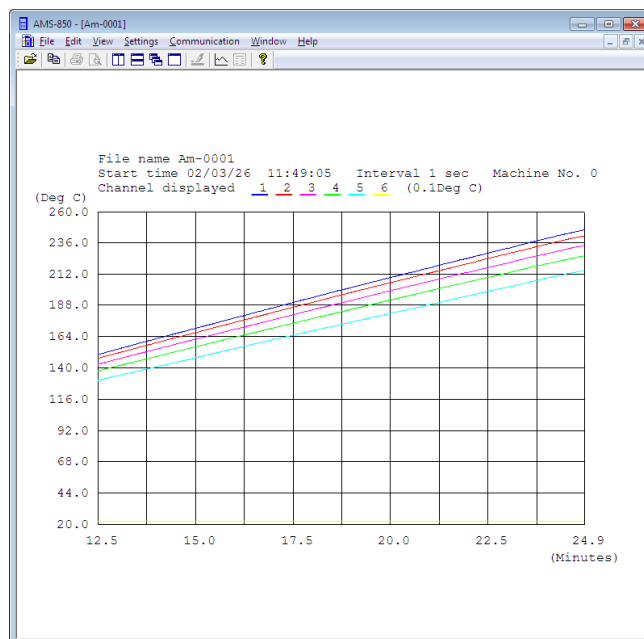
## C. Enlarged display

### (a) Enlarging

- ① Choose Enlarge the selection from the View menu.  
The red magnification bar (1) and (2) will be displayed on the graph.  
At the same time, the data at the positions (1) and (2) will be displayed.
- ② Hold down the left mouse button on number (1) or (2) of the red magnification bar while moving the mouse, and the magnification bar will move. Specify the range of the graph you wish to be enlarged. (You also can use the arrow keys to move the magnification bar.)



- ① Press the right mouse button and then click Zoom.  
The range of the graph specified by the magnification bars (1) and (2) will be enlarged.



(b) To reverse the enlarged display

- Choose Restore the display range from the View menu.

The enlarged range of the graph will be returned to its original size.

\* **The range that you can move the magnification bars depend on the range of graph display.**

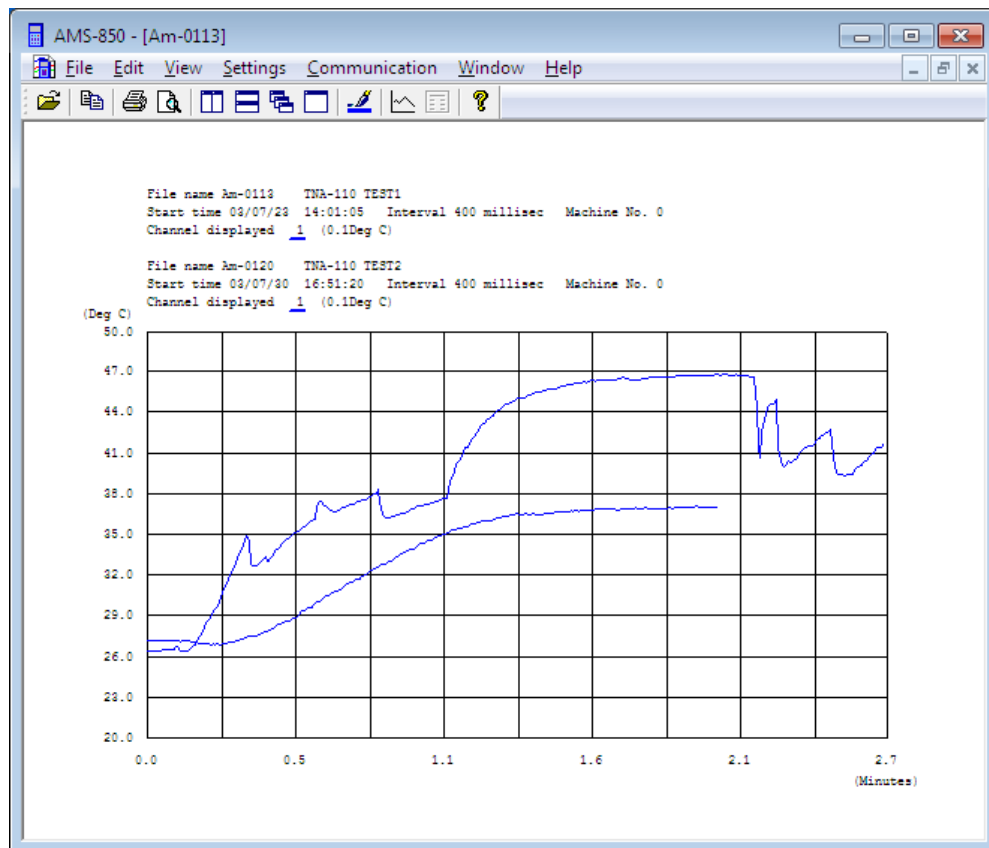
\* **For the data files derived from measurements made at millisecond or microsecond intervals, the time data at the positions (1) and (2) are displayed by the unit of the second.**

(Ex.Line1 00:01:07.2 -> Line1 67.2)

#### D. Merging two graphs

You can merge two different files into a single file for graph display.

- ① Open the first file (see Section 8.5).
- ② Choose Merge files from the Edit menu, select the second file in it, and then click File Open.



\* **Note that the following files cannot be merged.**

**Files derived from manual measurement**

**Data files derived from measurement with a 1999.9 mV voltage range**

**Combination of files in different units of temperature, °C and °F**

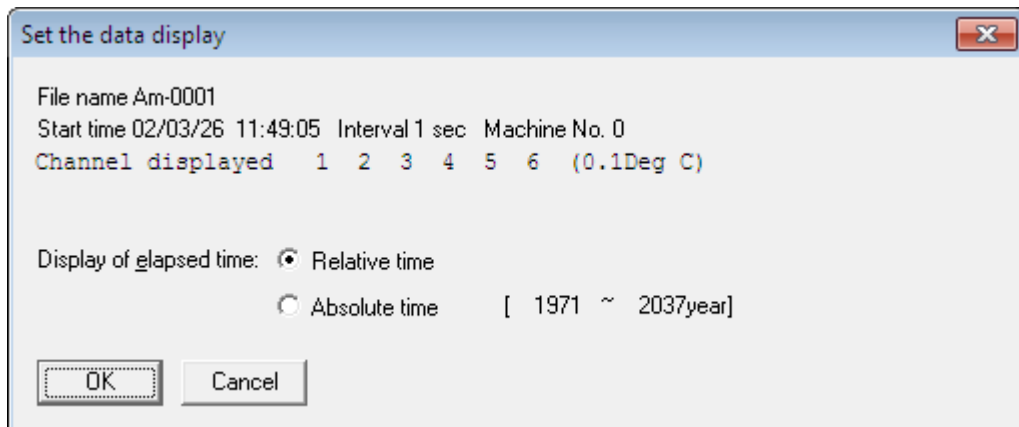
**Combination of files in different time interval, 1 or more second and less than 1 second.**

## 8.8 Data Display

SampleNo.	H: M: S	1ch. [C]	2ch. [C]	3ch. [C]	4ch. [C]	5ch. [C]	6
000001	00:00:00	23.4	23.6	23.8	24.0	24.1	
000002	00:00:01	23.3	23.5	23.7	23.9	24.0	
000003	00:00:02	23.1	23.4	23.6	23.7	23.8	
000004	00:00:03	23.0	23.2	23.4	23.6	23.7	
000005	00:00:04	22.9	23.1	23.3	23.4	23.5	
000006	00:00:05	22.9	23.0	23.2	23.3	23.4	
000007	00:00:06	22.8	23.0	23.1	23.3	23.4	
000008	00:00:07	22.8	22.9	23.1	23.2	23.3	
000009	00:00:08	22.8	22.9	23.0	23.1	23.3	
000010	00:00:09	22.7	22.8	23.0	23.1	23.2	
000011	00:00:10	22.7	22.8	23.0	23.0	23.1	
000012	00:00:11	22.7	22.8	22.9	23.0	23.1	
000013	00:00:12	22.7	22.8	22.9	23.0	23.1	
000014	00:00:13	22.8	22.8	23.0	23.0	23.1	
000015	00:00:14	22.9	22.9	23.0	23.1	23.2	
000016	00:00:15	23.0	23.0	23.1	23.1	23.2	
000017	00:00:16	23.0	23.1	23.1	23.2	23.3	

### A. Setting the format for time in which you wish the time to be displayed

- ① Choose Set the Data display from the Settings menu.

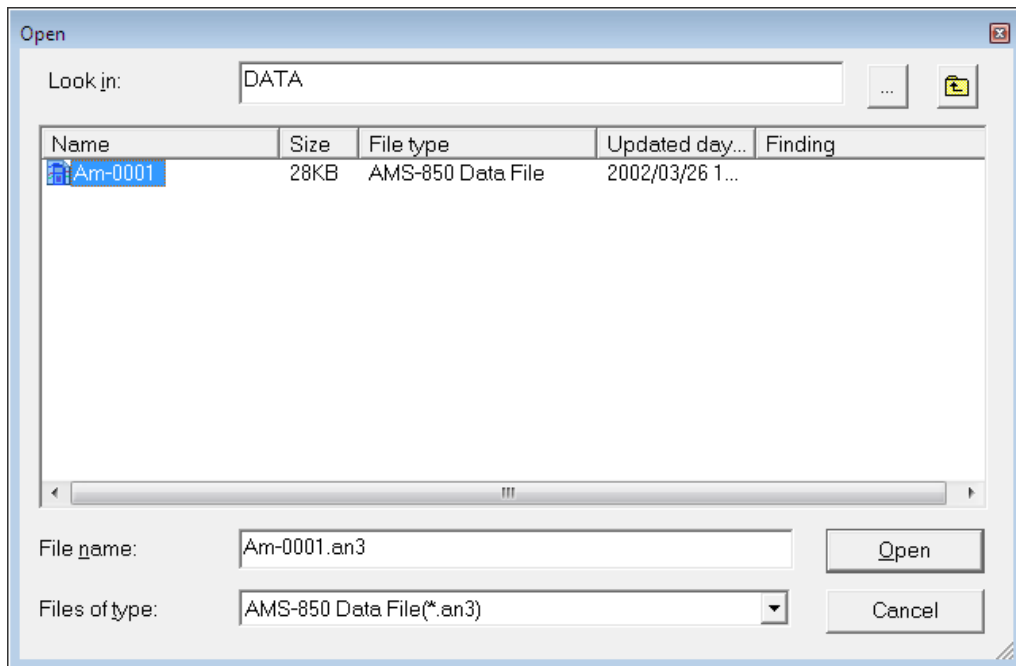


- ② Select the format of time in which you wish the time to be displayed.
  - Relative time indicates the lapsed time from start of measurement.
  - Absolute time indicates the date and time when measurement was made.

## 8.9 Using Data in Spreadsheet Software

The data files created by AMS-850 can be converted into CSV files for use in Excel or other spreadsheet software.

- (1) Choose Create Text file from the File menu.



- (2) Specify the file you wish to convert and click Open.

The converted file is created in the same directory as its source file.

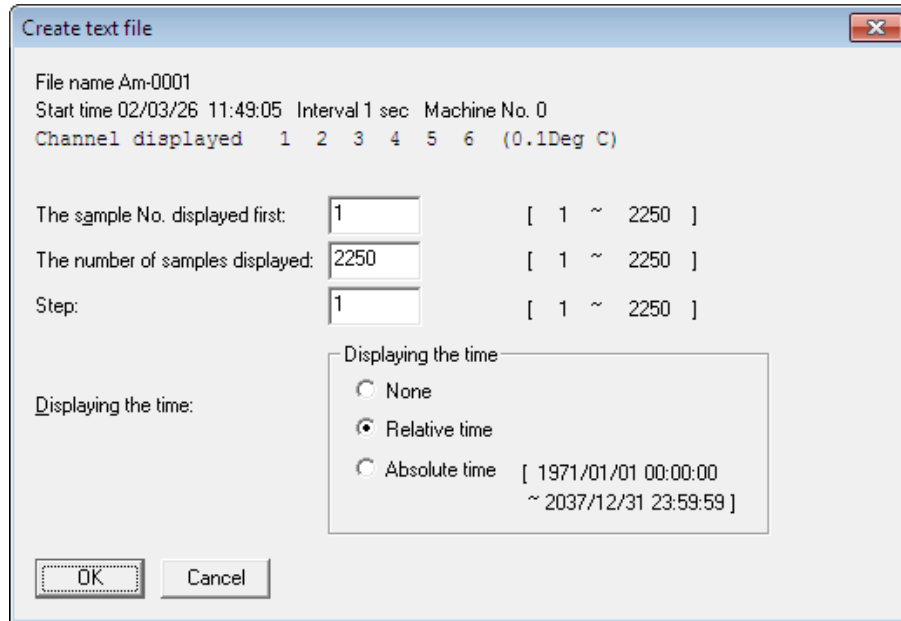
This file is named after the source file by changing its extension to “.csv.”

Example:

Source file	C:\Data\Am-0001.an3
Converted file	C:\Data\Am-0001.csv



(3) Set the format in which you wish a text file to be saved.



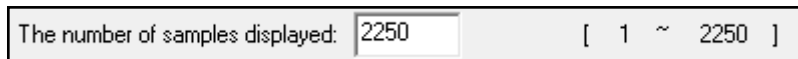
① Set the sequence number of the data from which you wish a text file to be created.



② Set the number of data items present in one file.

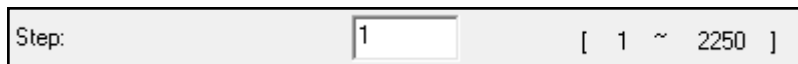
The number of data items actually created is

(Number of data items) = number of displayed data items / number of steps



③ To create a text file by interleaving or “thinning out” the source data file, you need to set the increment amount.

\* Depending on the spreadsheet software used, the number of data items that can be loaded is limited. If the source file contains a large amount of data, interleave it following the above procedure or split the file.



- ④ Select the format of time in which you wish the time to be displayed when a text file is created.

Displaying the time:

Displaying the time:

None

Relative time

Absolute time [ 1971/01/01 00:00:00  
~ 2037/12/31 23:59:59 ]

- Relative time indicates the lapsed time from start of measurement.
  - Absolute time indicates the date and time when measurement was made.
- \* For the data files derived from measurements in manual mode, you can select neither Relative time nor Absolute time.**
- \* For the data files derived from measurements made at millisecond or microsecond intervals, you cannot select Absolute time.**
- \* When Relative time is selected, the time can only be displayed in the range 00:00:00 to 23:59:59 (hours:minutes:seconds). Please note that the data collected during 24 hours or longer is displayed in the above range of time repeatedly.**
- \* Use display in Absolute time for the data collected between 1971/01/01 00:00:00 to 2037/12/31 23:59:59. For the data collected before or after this period, no date and time are displayed.**

- ⑤ Double-clicking a text file with the mouse launches spreadsheet software.

If you are using Excel, the file will be displayed in a manner similar to the samples shown below. You can create a graph from the file by making use of the functions of Excel.

<Time display: Not selected>

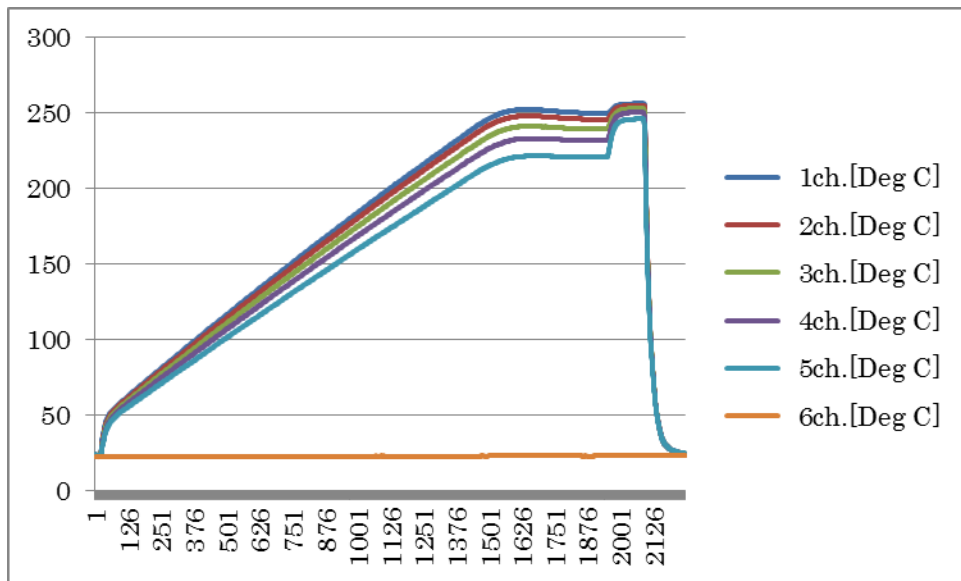
	A	B	C	D	E	F	G
1	File name	Am-0001					
2							
3	Start time	2 Year		3 Month		26 Day	
4		11 Hour		49 Minutes		5 Second	
5							
6	Interval	0 Hour		0 Minutes		1 Second	
7		0 Millisecond		0 Microsecond			
8							
9	MachineNo.	0					
10							
11							
12		File name	Am-0001				
13		Start time	02/03/26 11:49:05	Interval	1Sec	Machine No.	0
14							
15	Sample No.	1 ch.[Deg C]	2ch.[Deg C]	3ch.[Deg C]	4ch.[Deg C]	5ch.[Deg C]	6ch.[Deg C]
16	1	23.4	23.6	23.8	24	24.1	22.4
17	2	23.3	23.5	23.7	23.9	24	22.4
18	3	23.1	23.4	23.6	23.7	23.8	22.4
19	4	23	23.2	23.4	23.6	23.7	22.4
20	5	22.9	23.1	23.3	23.4	23.5	22.4
21	6	22.9	23	23.2	23.3	23.4	22.4
22	7	22.8	23	23.1	23.3	23.4	22.4
23	8	22.8	22.9	23.1	23.2	23.3	22.4
24	9	22.8	22.9	23	23.1	23.3	22.4

<Time display: Absolute time>

	A	B	C	D	E	F	G
1	File name	Am-0001					
2							
3	Start time	2 Year		3 Month		26 Day	
4		11 Hour		49 Minutes		5 Second	
5							
6	Interval	0 Hour		0 Minutes		1 Second	
7		0 Millisecond		0 Microsecond			
8							
9	MachineNo.	0					
10							
11							
12		File name	Am-0001				
13		Start time	02/03/26 11:49:05	Interval	1Sec	Machine No.	0
14							
15	Sample No.	H: M: S	1 ch.[Deg C]	2ch.[Deg C]	3ch.[Deg C]	4ch.[Deg C]	5ch.[Deg C]
16	1	00:00:00	23.4	23.6	23.8	24	24.1
17	2	00:00:01	23.3	23.5	23.7	23.9	24
18	3	00:00:02	23.1	23.4	23.6	23.7	23.8
19	4	00:00:03	23	23.2	23.4	23.6	23.7
20	5	00:00:04	22.9	23.1	23.3	23.4	23.5
21	6	00:00:05	22.9	23	23.2	23.3	23.4
22	7	00:00:06	22.8	23	23.1	23.3	23.4
23	8	00:00:07	22.8	22.9	23.1	23.2	23.3
24	9	00:00:08	22.8	22.9	23	23.1	23.3

<Time display: Relative time>

	A	B	C	D	E	F	G
1	File name	Am-0001					
2							
3	Start time	2 Year		3 Month		26 Day	
4		11 Hour		49 Minutes		5 Second	
5							
6	Interval	0 Hour		0 Minutes		1 Second	
7		0 Millisecond		0 Microsecond			
8							
9	MachineNo.	0					
10							
11							
12		File name Am-0001					
13		Start time 02/03/26 11:49:05 Interval 1Sec Machine No.0					
14							
15	Sample No.	Y/ M/ D	H: M: S	1 ch.[Deg C]	2 ch.[Deg C]	3ch.[Deg C]	4ch.[Deg C]
16	1	2002/3/26	11:49:05	23.4	23.6	23.8	24
17	2	2002/3/26	11:49:06	23.3	23.5	23.7	23.9
18	3	2002/3/26	11:49:07	23.1	23.4	23.6	23.7
19	4	2002/3/26	11:49:08	23	23.2	23.4	23.6
20	5	2002/3/26	11:49:09	22.9	23.1	23.3	23.4
21	6	2002/3/26	11:49:10	22.9	23	23.2	23.3
22	7	2002/3/26	11:49:11	22.8	23	23.1	23.3
23	8	2002/3/26	11:49:12	22.8	22.9	23.1	23.2
24	9	2002/3/26	11:49:13	22.8	22.9	23	23.1



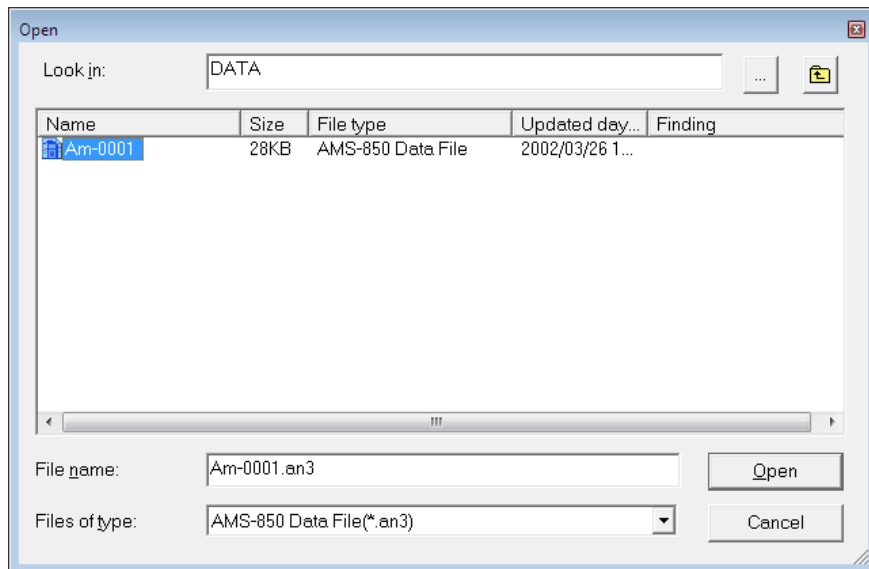
## 8.10 Pasting Data into a Document File

- ① Launch AMS-850 and open a data file (see Section 8.5).
- ② Choose Copy from the Edit menu. The screen data will be copied to the clipboard.
- ③ Open a document file created in Word, etc.
- ④ Move the mouse to your desired position in the document and paste the copied data at that position.

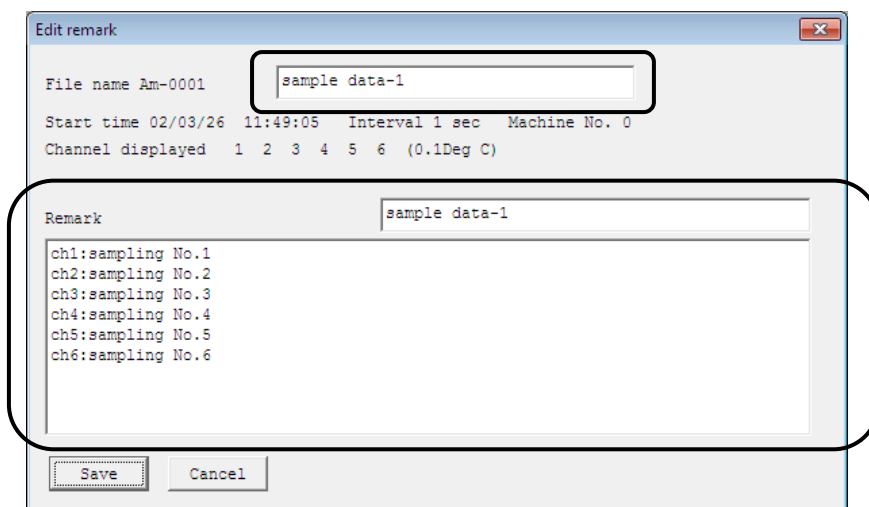
## 8.11 Attaching a Remark to Graphs or Data

### A. How to create a remark

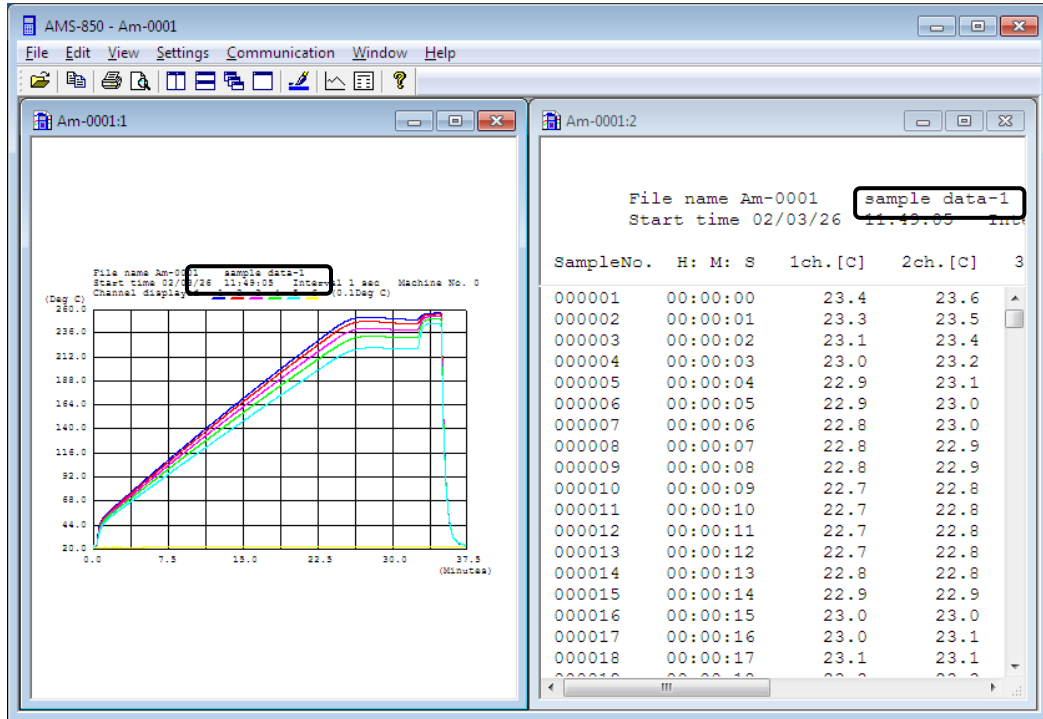
- ① Choose Edit remark from the Edit menu.



- ② Specify a file name and click Open.
- ③ Enter a remark representing the content of data recorded in the file or the conditions under which data was recorded.

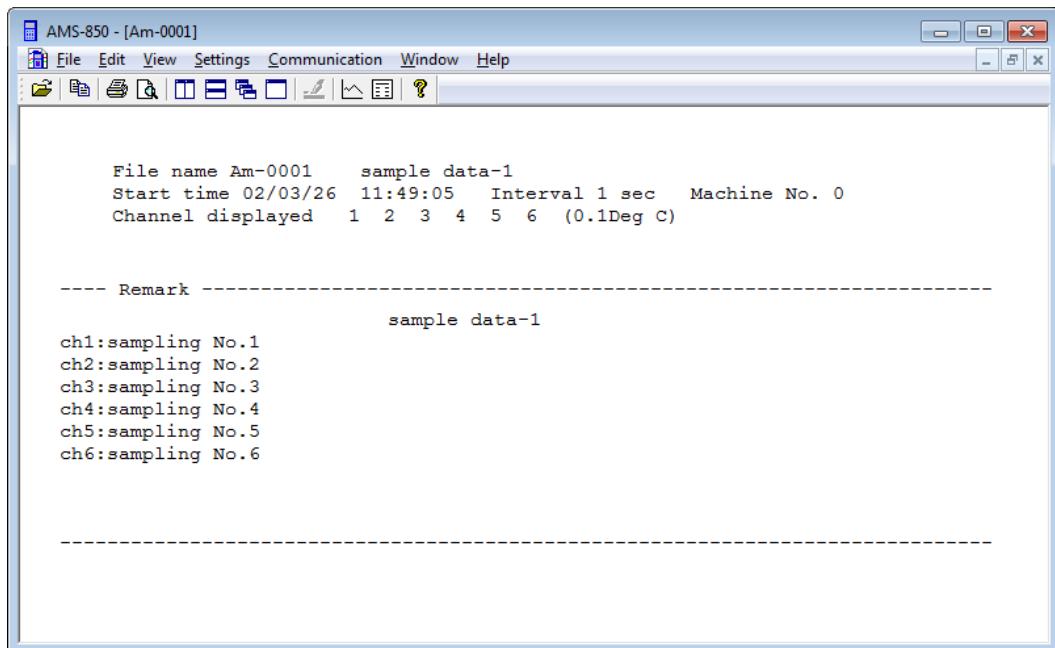


- The character string entered in the text box located to the right of the file name is displayed as the remark for the graph or data. It is also displayed in the remark column of the dialog box.



## B. How to check details of the remark

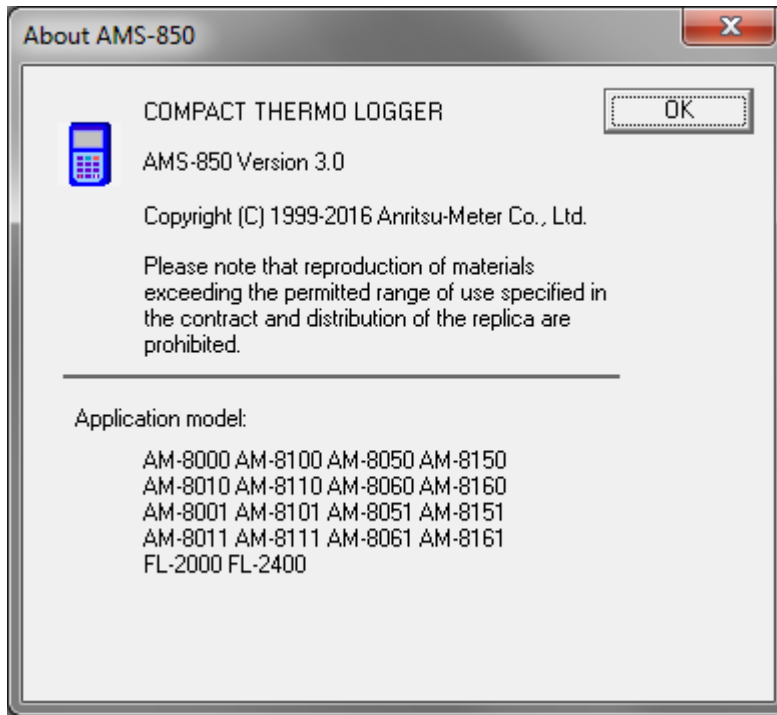
- Choose Display Remark from the View menu.



## 9. Version Information

Choosing About AMS-850 from the Help menu allows you to check which version of AMS-850 is installed on your computer.

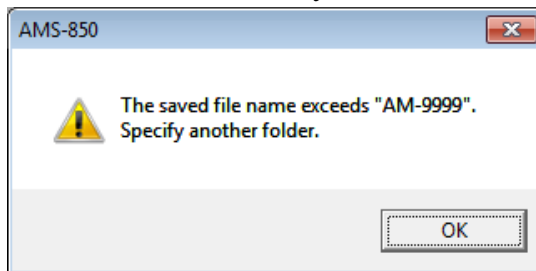
Please note that this software is continually updated, and, as such, the version installed on your computer may not be the latest available.



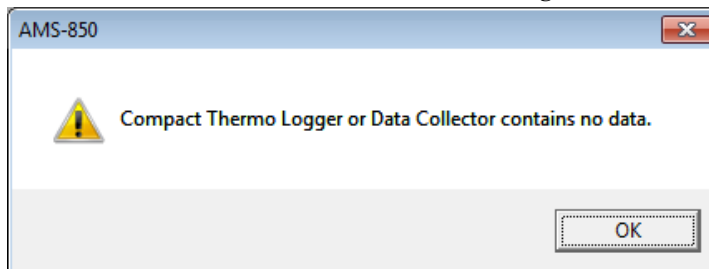
## 10. Error Messages

The following presents typical error messages output in this software application.

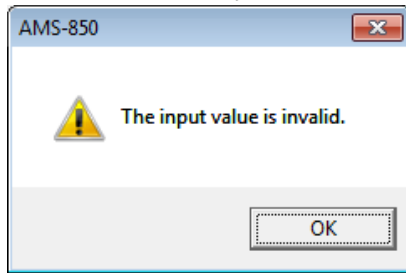
- (1) If AM-9999 already exists in the folder in which data is to be saved



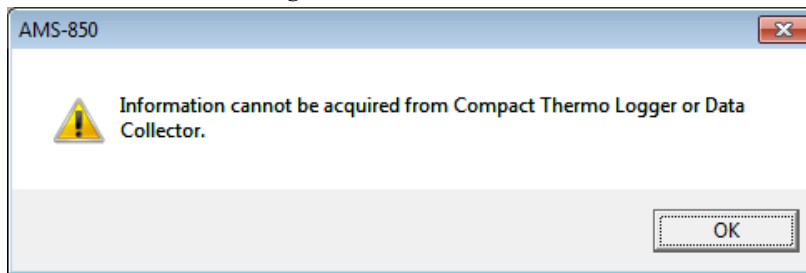
- (2) If data is not saved in the measuring instrument



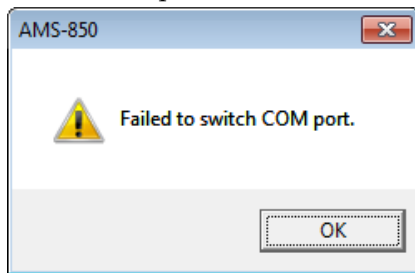
(3) If the value you have entered is incorrect



(4) If the measuring instrument cannot be communicated with



(5) If no ports to connect to can be found in the PC



## 11. Command List

### 11.1 Explanation of the Menu Bar

#### <File>

① **Open**

Opens a data file.

② **Print**

Prints graph display, data display, or remarks via printer.

③ **Print Preview**

Previews the print data.

④ **Print Setup**

Sets up a printer.

⑤ **Output the graph in Black and White**

Selects printer output mode for a graph so that the graph will be printed in black and white.

⑥ **Output the graph in Color**

Selects printer output mode for a graph so that the graph will be printed using color.

⑦ **Create Text file**

Converts a data file into text format.



⑧ **Exit (End of Application)**

Quits AMS-850.

<**Edit**>

① **Copy**

Copies graph display, data display, or remarks to the clipboard.

② **Edit remark**

Attaches a remark to graphs or data.

③ **Merge files**

Combines graphs in two data files into a single graph for display on the screen.

<**View**>

① **Enlarge the Select**

Enlarges the selected range of a displayed graph.

② **Scroll the graph**

Scrolls the horizontal axis of a graph during real measurement.

③ **Restore the display range**

Reverses the enlarged range of a graph to its original size.

④ **Display the Graph**

Displays measurement data graphically.

⑤ **Display the Data**

Displays measurement data in list form.

⑥ **Display Remark**

Displays information on a file, etc. as a remark or caption.

<**Settings**>

① **Set the graphical representation**

Sets the vertical and horizontal axes of a graph, and other parameters.

② **Set the Data display**

Sets the format of time displayed during data display.

③ **Set the graph Color and Line type**

Sets the line colors, line types, etc. of a graph.

④ **Set Real-time data autosaving**

Sets the destination folder in which the backup data for real measurement is saved.

<**Communication**>

① **Input Data**

Downloads data from the measuring instrument into a PC.

② **Real Measurement**

Displays the data recorded in the measuring instrument graphically in real time.

③ **Remote setting**

Sets the clock and measurement conditions of the measuring instrument.

④ **Quit communication**

Stops communication.

⑤ **START Command**

Sends the START command to the measuring instrument.

⑥ **END Command**

Sends the END command to the measuring instrument.

⑦ **USB**

Sets the type of communication port interface to USB.

⑧ **Serial Port COM1–6**

Sets a communication port to one of the serial ports on a PC.

**<Window>**

① **New Window**

Opens a new graph or data list.

② **Cascade**

Displays open graphs or data lists in a cascade.

③ **Tile Vertically**

Tiles the graphs or data lists on the screen vertically, i.e., side by side.

④ **Tile Horizontally**

Tiles the graphs or data lists on the screen horizontally, i.e., one below another.

⑤ **Arrange Icons**

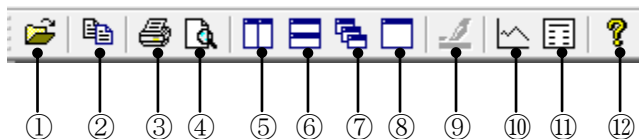
Arranges the icons representing displayed graphs or data lists in order.

**<Help>**

① **About AMS-850**

Shows the version information on AMS-850.

## 11.2 Explanation of the Toolbar



① Opens a data file.

② Copies graphs or data to the clipboard.

③ Prints graphs or data.

④ Previews the data to be printed.

⑤ Tiles the windows horizontally, i.e., one below another.

⑥ Tiles the windows vertically, i.e., side by side.

⑦ Cascades windows in a neat stack with all windows visible.

⑧ Fills the whole screen with a window.

⑨ Sets line colors and line types of a graph.

⑩ Displays measurement data graphically.

⑪ Displays measurement data in list form.

⑫ Displays version information.