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**Instruction Manual**

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**DATA VIEWER FOR  
PAPERLESS RECORDER**

**TYPE: GR200**



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# WARNING

- If an error or improper operation occurs in our product, or customer-made programs should be found defective, protection and safety circuits, etc should be provided for safety of the system to be used. In addition, safety measures should be taken against personal injury or fatal accident to the system.
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- This manual is subject to change without previous notice.
- Although we always keep track of the information contained herein to assure accuracy, SHINKO TECHNOS will not be responsible for any damage to the system due to mistakes, skip or misuse in writing.
- Be sure to read the Readme.text file included in CD-ROM.
- Depending on the environment to be used and the usage, it may not operate normally.
- Please note that operation except the Personal Computer which made by maker, such as self-assembled PC and so on, cannot be guaranteed.

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Issued in October, 2002  
Rev. 1st edition October, 2002  
Rev. 2nd edition May, 2003  
Rev. 3rd edition May, 2004  
Rev. 4th edition November, 2004  
Rev. 5th edition March, 2006  
Rev. 6th edition June, 2007

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# 1. OUTLINE

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## 1.1 Foreword

This instruction manual describes installation and operation for the data viewer of the paperless recorder. Read it carefully before use.

## 1.2 Data Viewer for paperless recorder

The data viewer (hereinafter referred to as Viewer) for the paperless recorder allows you to view recorded data on personal computer connected via an adapter or the FTP communication to a memory card for the paperless recorder.

## 1.3 Contents of package

The following items are packaged with the product.

CD-ROM for installation: 1

Instruction Manual which is installed to above CD-ROM

## 1.4 Recommended operating environment

- Microsoft Windows 2000 or XP.  
(The Viewer is not run on Windows 95, 98, NT or Me.)
- Hard disk with a free capacity of 30MB or more
- RAM with 64MB or more
- PC card slot (1 slot)
- Memory card (Compact Flash)  
(Scandisk type SDCFB-256 is recommended)
- PC card adapter  
(Scandisk type SDAD-38 is recommended)
- Printer driver (Indispensable)
- PC by the manufacturer  
(The operation on self-made PCs and shop-brand PCs cannot be guaranteed.)

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## 1.5 Installing data viewer for paperless recorder

- 1) If other application software programs are open, terminate all of them.
- 2) If the data viewer has been already installed, delete it from “Add/Remove Programs” on Control Panel.
- 3) Set CD-ROM in the personal computer drive.
- 4) Start Setup.exe in the CD-ROM disk.
- 5) Follow the instructions displayed on the screen.
- 6) A message is displayed, prompting you to verify that “Data display setup is complete”.  
Now, the Data Viewer installation is completed.

## 1.6 Uninstalling data viewer for paperless recorder

Follow windows operation

In case of installation of new data viewer, you should delete current data viewer which you use before installation of new data viewer.

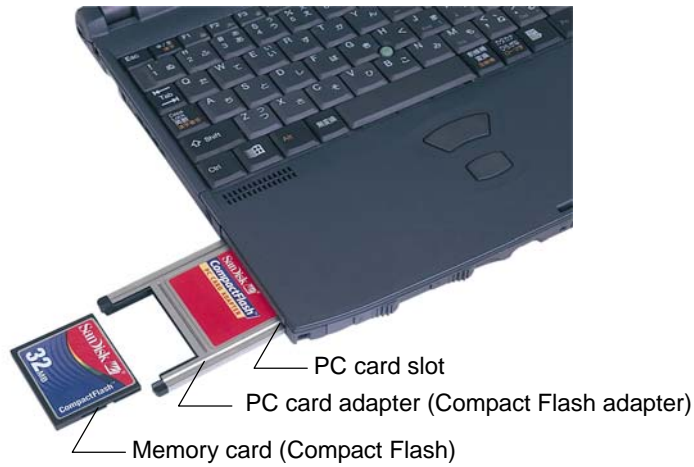


## 2. COPYING RECORDED DATA

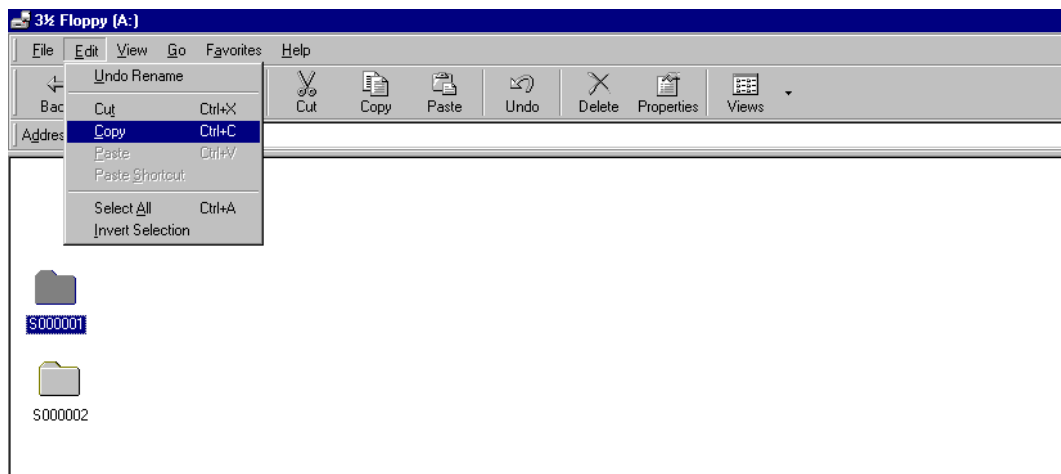
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Recorded data in a memory card is copied to PC hard disk.

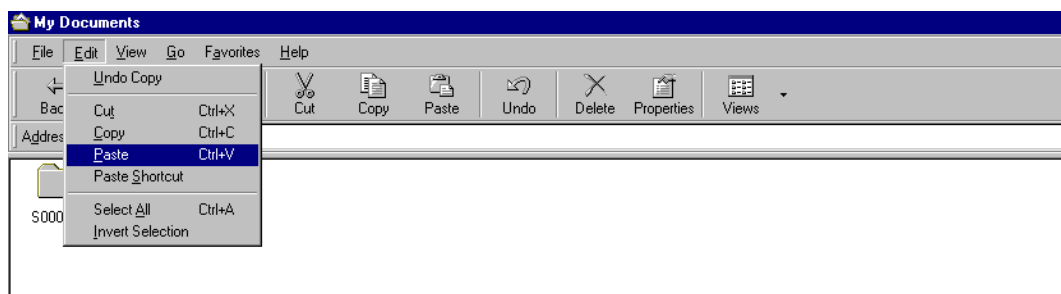
Insert the memory card into the PC card slot.



Select a folder in the memory card, and click “Edit” ⇒ “Copy”.



Next, select PC hard disk drive, and then click “Edit” ⇒ “Paste”.

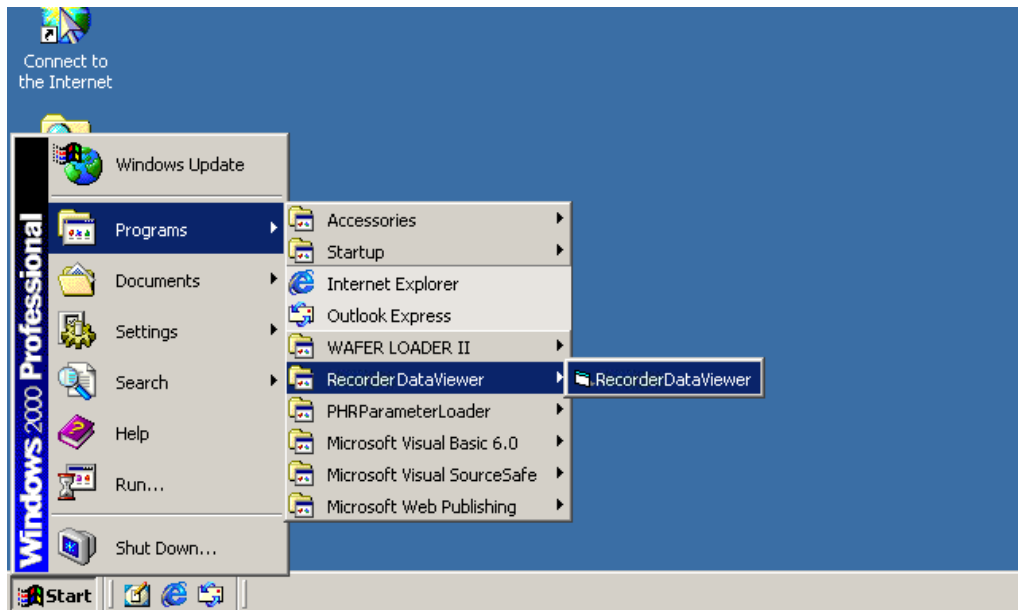


# 3. BASIC OPERATION

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## 3.1 Start

Select “Programs” ⇒ “Recorder Data Viewer” ⇒ “Recorder Data Viewer” from the Start menu.



The “Data Display” screen appears in Fig. 3-1.

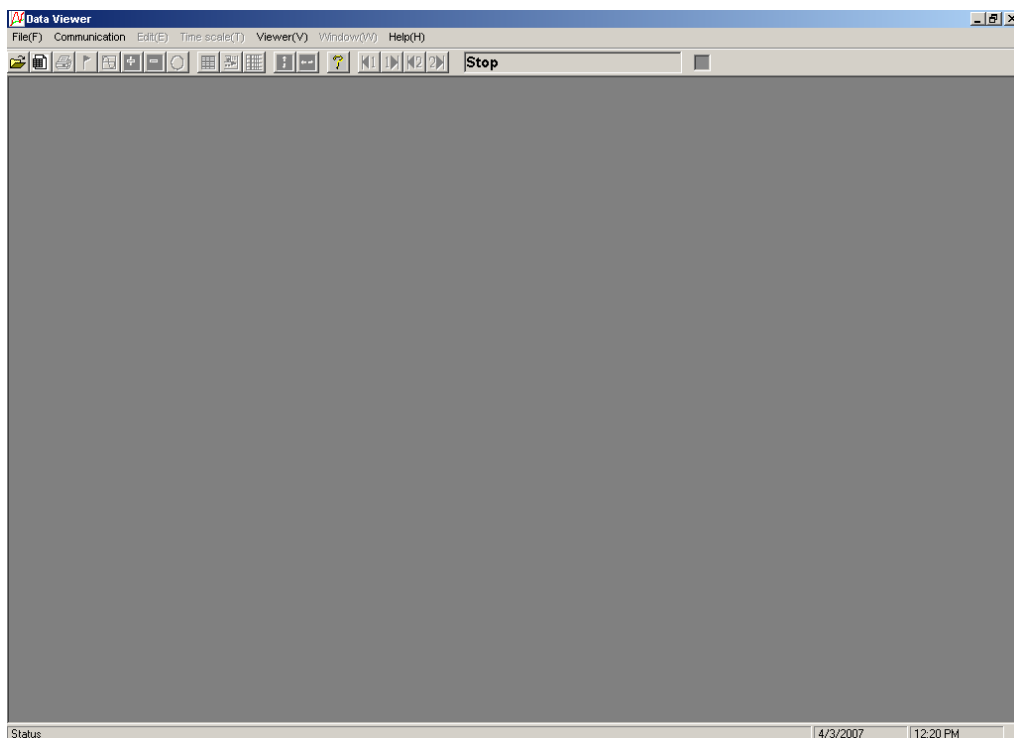


Fig. 3-1 “Data Display” screen

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## 3.2 How to open record data files and totalize data files

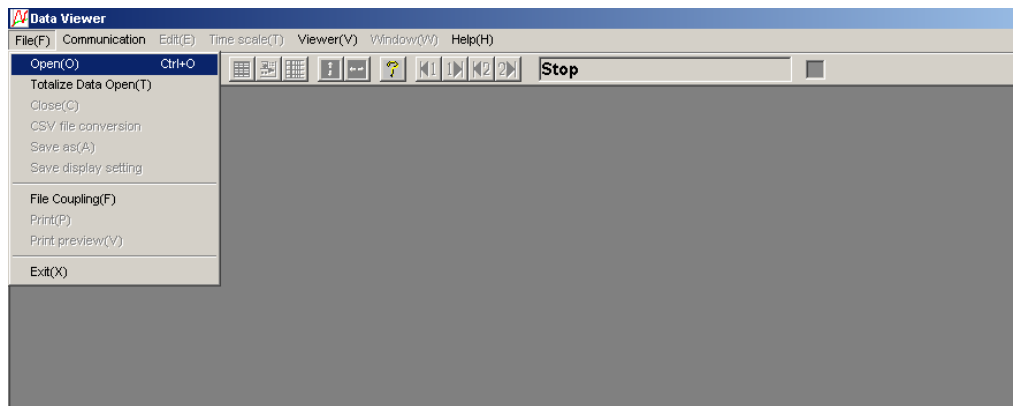
There are two methods to open record data files: one is to directly specify a record data file, and the other is to register a record data file with the file list and specify the file to open.

To open a totalize data file, directly specify the file.

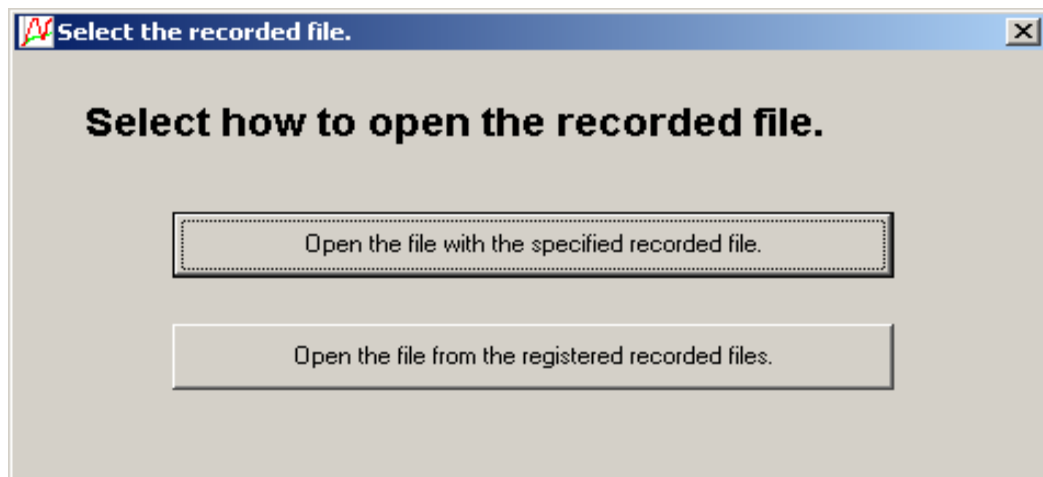
### 3.2.1 Directly opening record files

Follow the procedure below to open a record data file.

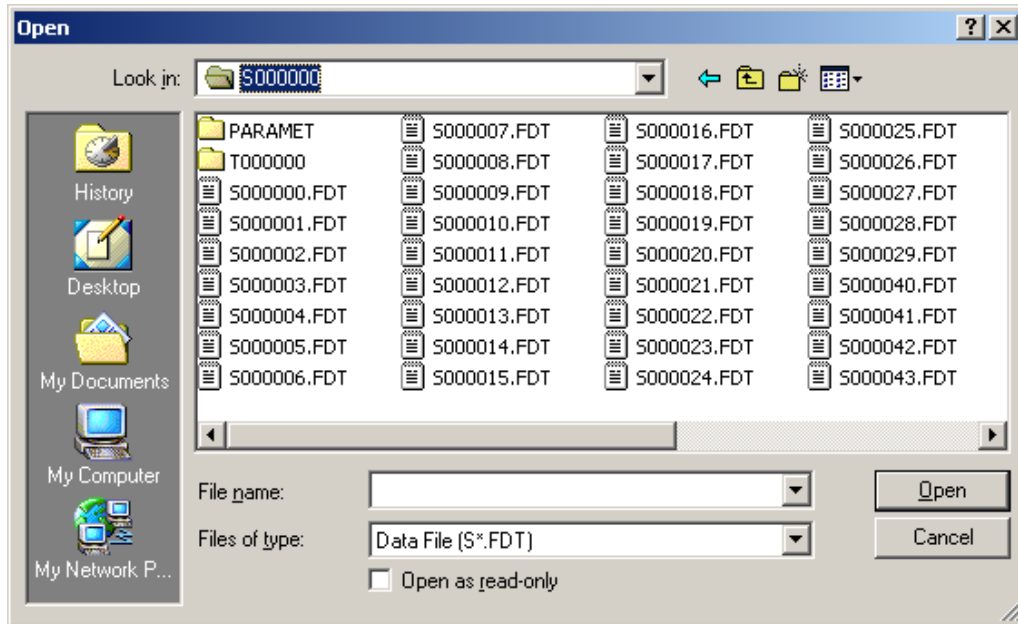
1) Click “File” ⇒ “Open”.



2)The “Select the recorded file” screen appears. Select “Open the file with the specified recorded file.”

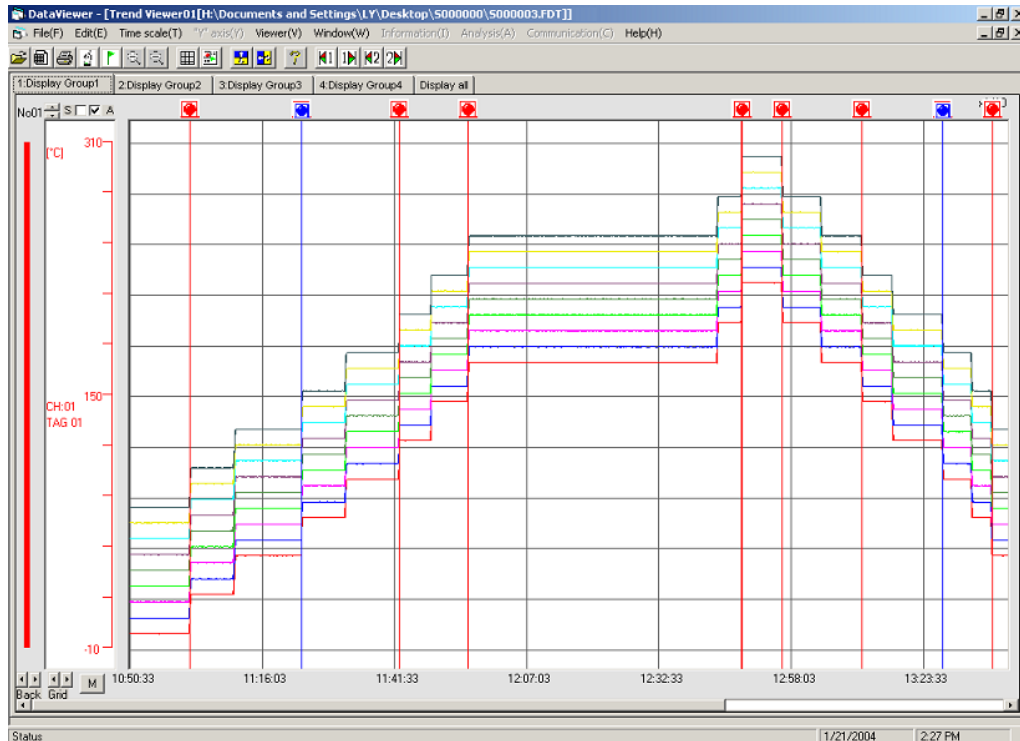


- 3) Select a record data file (S00\*\*\*\*.fdt) in the folder which was copied to the PC as described in “2 COPYING RECORDED DATA,” and click “Open.” Even if you select an event data file (A00\*\*\*\*.fdt) and click “Open,” the file will not be opened.



If the record data file is normal, the following screen appears.

- Trend display of record data



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**Note)**

- 1) Record data files which do not contain record data cannot be opened.
- 2) When changing a record data file name (Sxxxxxx.FDT), also change the name of the event data file which corresponds to the record data file.

Change the names of both files so that the “xxxxxx” parts of “Sxxxxxx.FDT” and “Axxxxxx.FDT” are the same. Do not change the first characters of the file names, “S” and “A.”

Record data files and event data files are created in pairs in the beginning of the recording and used in pairs when they are opened by the viewer. Therefore, if “xxxxxx” parts of a record data file and a event data file which are not in pairs are the same, the program does not operate properly when the file is opened by the viewer.

<Example>

Do not set such file names as the following example, in which the “xxxxxx” parts of both of changed names of the record data file (S000088.FDT) on the upper line and that of the event data file (A000088.FDT) on the lower line are the same.

```
Before change  S000001.FDT/A000001.FDT 2002-11-19 10:00
                S000002.FDT/A000002.FDT 2002-11-19 15:38
After change   S000088.FDT/A000001.FDT 2002-11-19 10:00
                S000002.FDT/A000088.FDT 2002-11-19 15:38
```

- 3) Do not open four or more files at a time. Otherwise an abnormal operation such as a reboot of the viewer may occur.
- 4) Do not set such file names as the following. Otherwise you cannot read the files by the viewer.
  - File names consist of a single character (example: S. FDT, A. FDT)
  - File names consist of nine characters or more.

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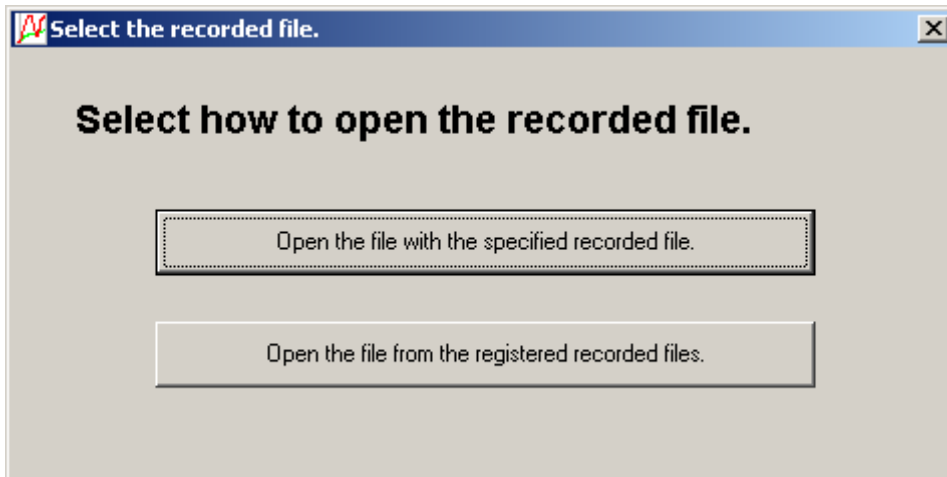
### 3.2.2 Opening record data files registered with the file list

You can file the record data files, which were registered with the file list, by group.

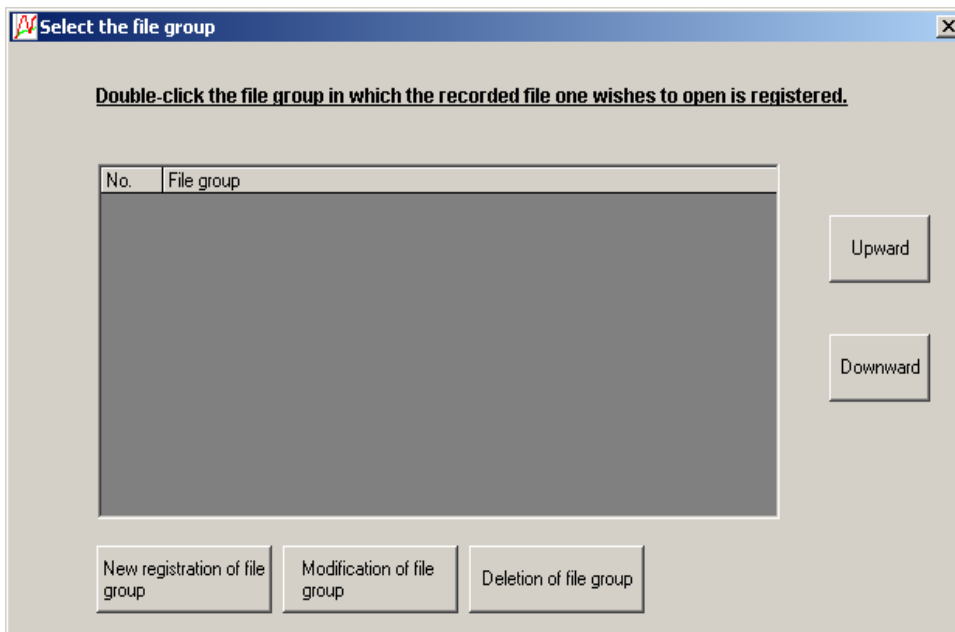
To use the function, register the files with the file list.

Follow the procedure below to register and open record data files.

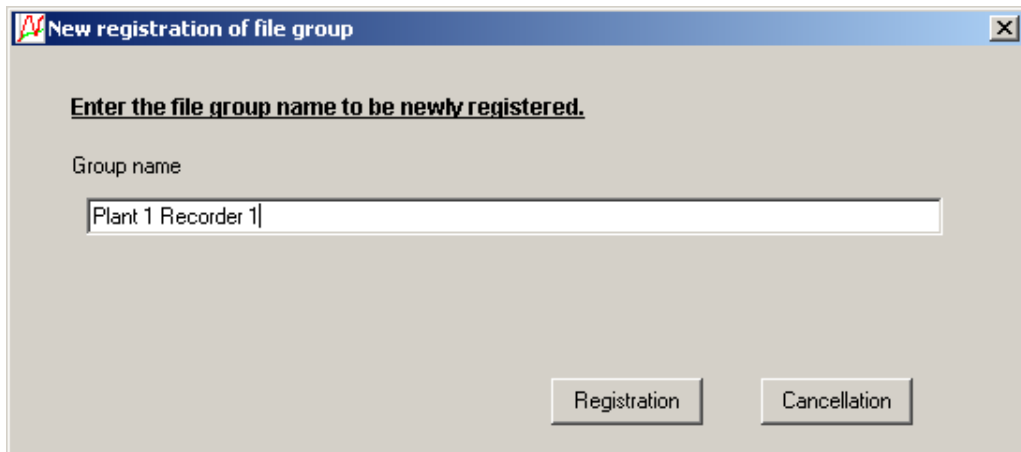
- 1) Click “File” ⇒ “Open”.
- 2) The “Select the recorded file” screen appears. Select “Open the file from the registered recorded files.”



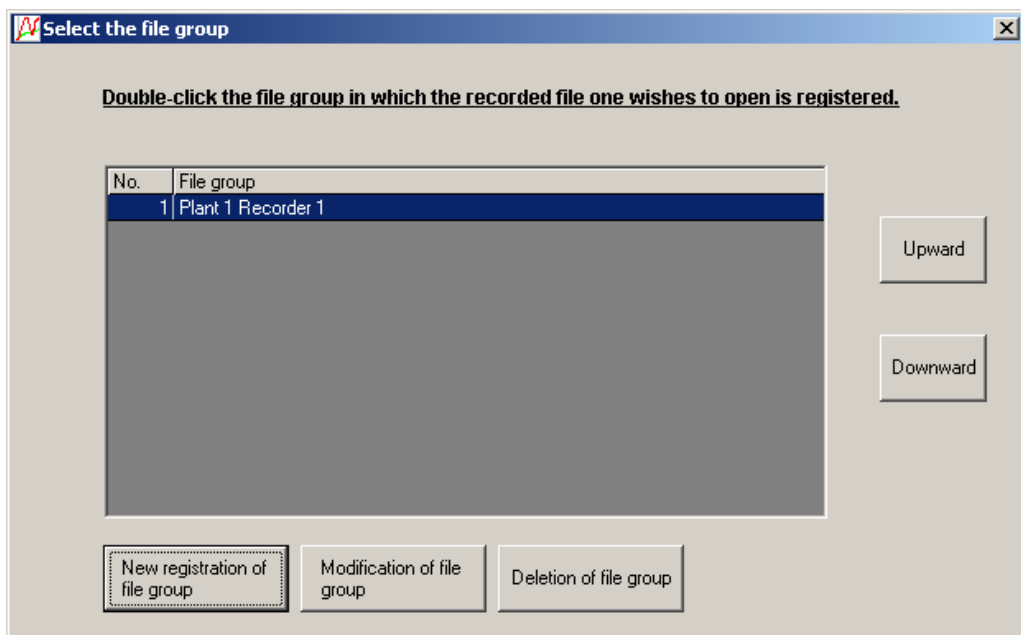
- 3) Since no file group is registered in initial state, register the file group. When the “Select the file group” screen appears, click the “New registration of file group.”



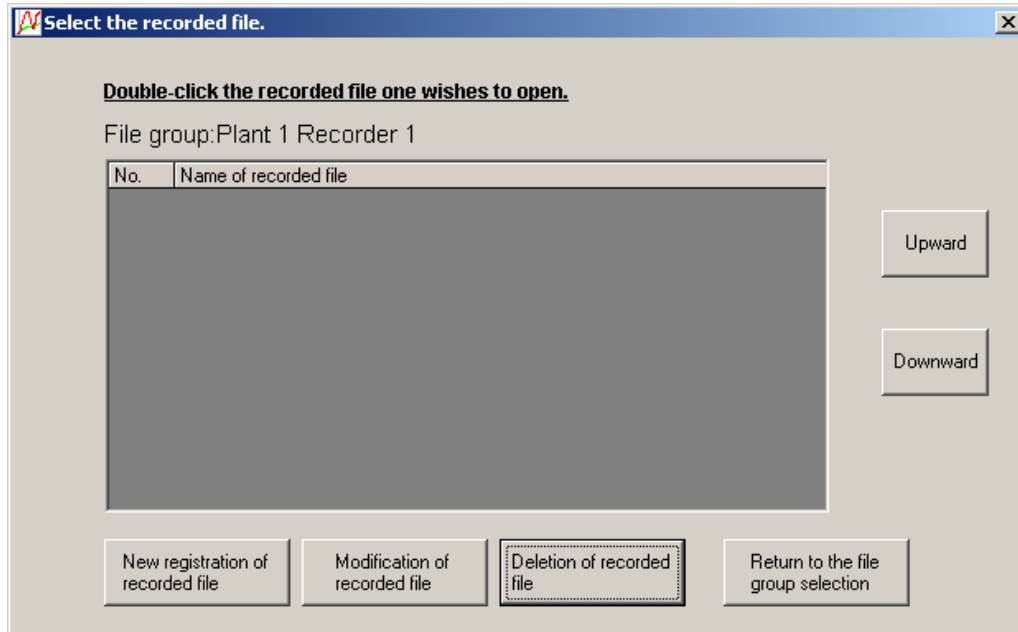
- 
- 4) The “New registration of file group” screen appears. Enter an arbitrary file group name and click the “Registration” button.



- 5) The new file group name you registered is displayed on the “Select the file group” screen. Double-click the group name.

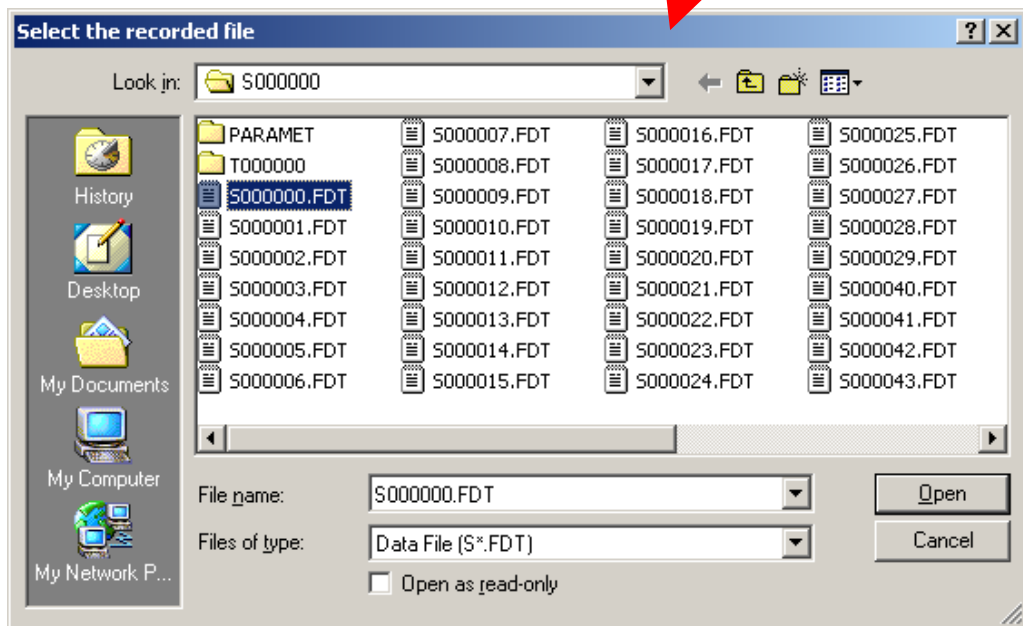
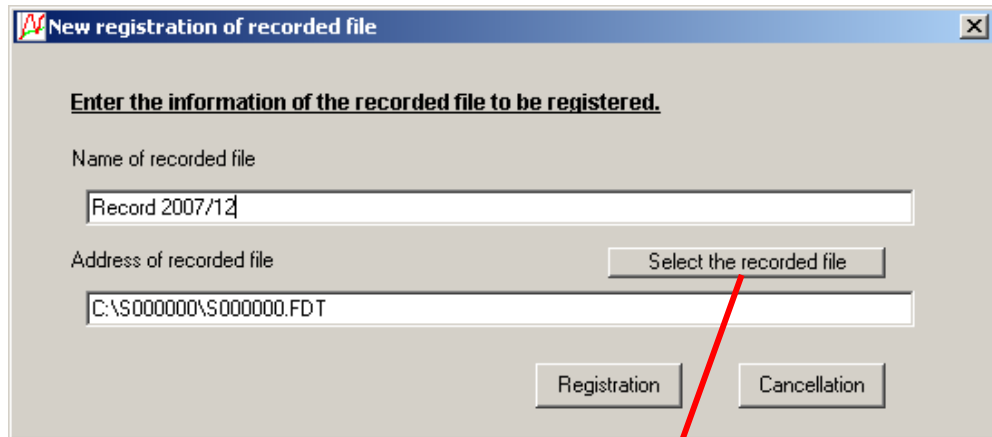


- 
- 6) Since no record data file is registered in initial state, register a record data file. When the “Select the recorded file” screen appears, click the “New registration of recorded file.”

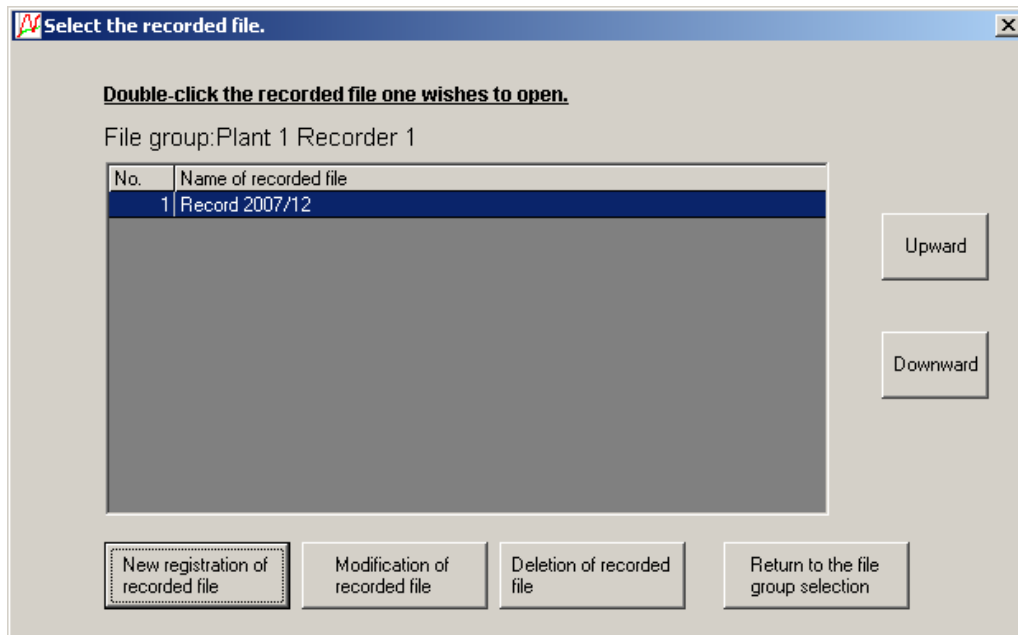




- 7) When the “New registration of recorded file” screen appears, register an arbitrary recorded file name. Click the “Select the recorded file” button to open the “Select the recorded file” screen. Select a desired recorded data file by clicking “Open” and click the “Registration” button.



- 
- 8) The new recorded file name you registered is displayed on the “Select the recorded file” screen. Double-click the file name. If the recorded data file is normal, the trend screen appears.

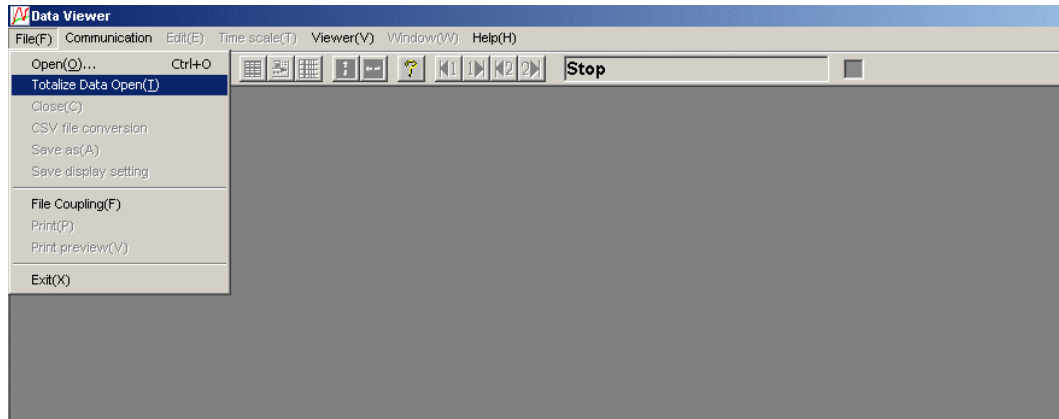


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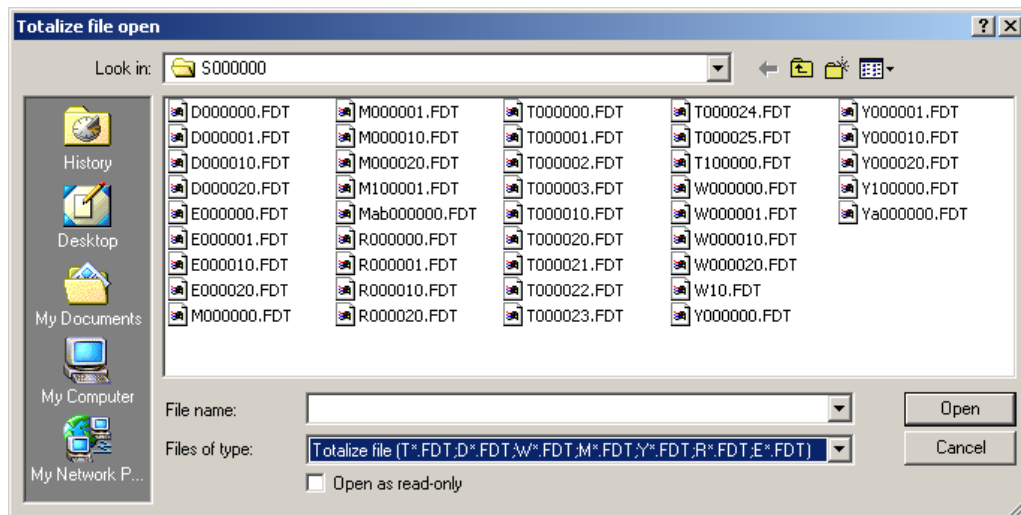
### 3.2.3 How to open totalize data files

Follow the procedure below to open a totalize data file.

1) Click “File” ⇒ “Totalize Data Open”.



2) Select a desired totalize data file (See \* below.) and click “Open.”



\* The meanings of the file names are as follows:

- T00xxxx.FDT : Daily Totalize Data file
- D00xxxx.FDT : Monthly Totalize Data file
- M00xxxx.FDT : Annual Totalize Data file
- E00xxxx.FDT : External Totalize Data file

If the totalize data file is normal, the following screen appears.

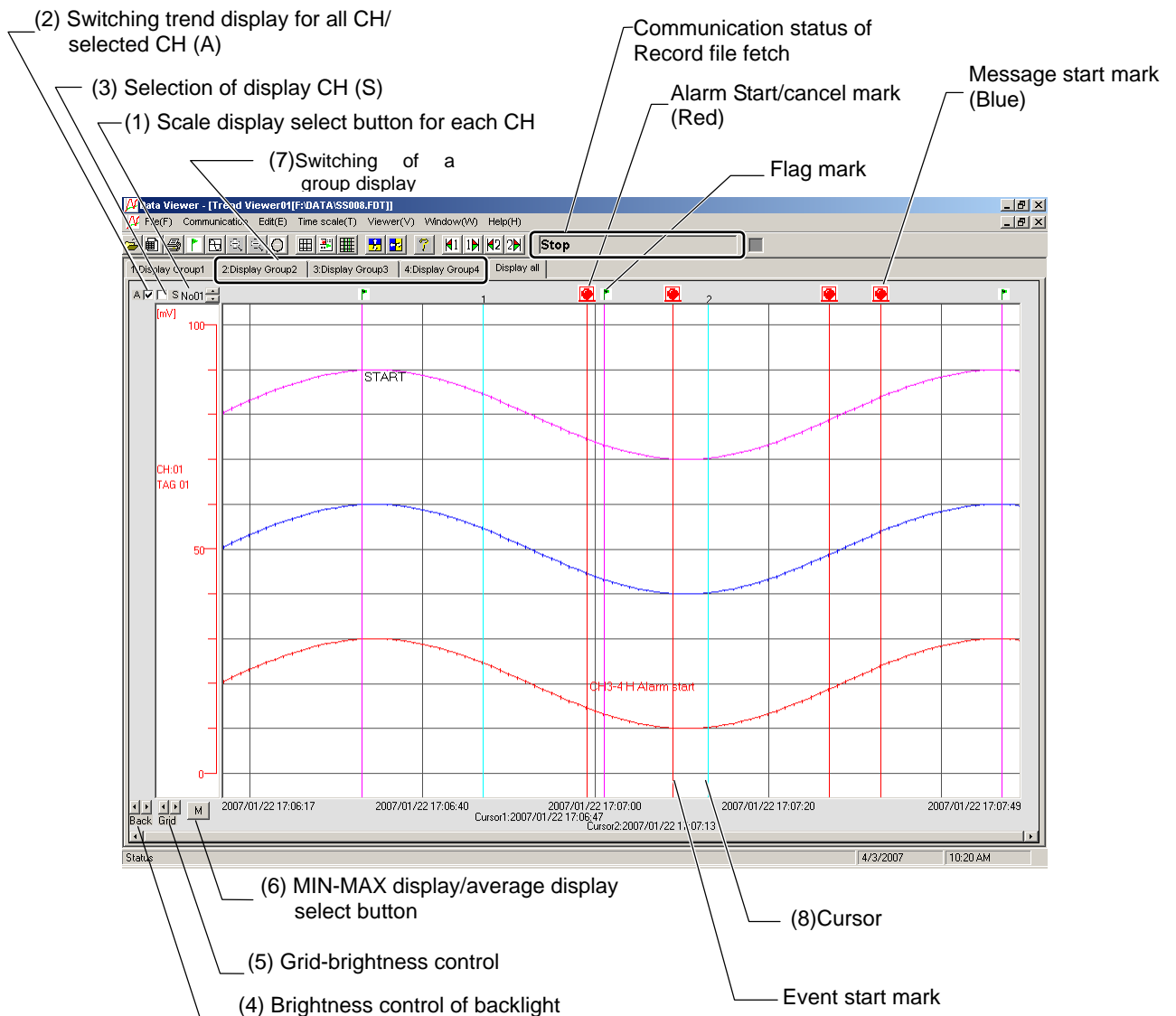
- Totalize value display

Totalize type		CH01	CH03	CH05	CH07	CH09	CH11	CH13	CH15	CH17
Totalize tag		Count	Count	Count	Count	Count	Count	Count	Count	Count
Totalize start time	Totalize stop time	STAG 01	STAG 03	STAG 05	STAG 07	STAG 09	STAG 11	STAG 13	STAG 15	STAG 17
		m3/min	kg/s	kg/cm3	mm/s	MPa	g/l	kg/h	ppmCO	%Ar
2004/01/21 10:50:32	2004/01/21 11:00:00	129.4	121.5	157.9	130.1	96.4	118.7	116.7	111.6	111.3
2004/01/21 11:00:00	2004/01/21 11:10:00	11941.4	11915.8	11956.8	11940.4	11901.1	11922.9	11911.5	11907.2	11911.6
2004/01/21 11:10:00	2004/01/21 11:20:00	28629.2	28600.1	28629.4	28607.0	28599.7	28608.5	28596.1	28582.4	28590.5
2004/01/21 11:20:00	2004/01/21 11:30:00	38632.2	38602.2	38643.5	38612.3	38588.3	38610.1	38591.0	38591.1	38601.1
2004/01/21 11:30:00	2004/01/21 11:40:00	55552.9	55498.0	55545.8	55518.5	55492.0	55499.9	55499.4	55481.0	55512.0
2004/01/21 11:40:00	2004/01/21 11:50:00	71695.6	71627.5	71680.4	71655.4	71613.5	71630.9	71631.0	71623.4	71647.2
2004/01/21 11:50:00	2004/01/21 12:00:00	94375.6	94306.4	94344.1	94307.0	94279.0	94297.2	94290.5	94299.2	94304.6
2004/01/21 12:00:00	2004/01/21 12:10:00	103023.4	102961.3	103003.9	102952.3	102938.8	102957.4	102934.6	102949.9	102956.5
2004/01/21 12:10:00	2004/01/21 12:20:00	103018.6	102953.2	102999.4	102950.2	102945.8	102953.8	102931.0	102947.3	102960.1
2004/01/21 12:20:00	2004/01/21 12:30:00	103016.9	102945.1	102994.1	102952.7	102948.1	102954.8	102939.4	102942.9	102961.5
2004/01/21 12:30:00	2004/01/21 12:40:00	103017.5	102941.3	102997.8	102949.6	102942.0	102960.2	102943.5	102941.6	102963.5
2004/01/21 12:40:00	2004/01/21 12:50:00	114371.7	114286.7	114343.3	114308.6	114301.4	114313.3	114292.1	114293.2	114317.2
2004/01/21 12:50:00	2004/01/21 13:00:00	127894.5	127796.6	127854.1	127822.6	127817.7	127831.3	127815.0	127821.9	127831.3
2004/01/21 13:00:00	2004/01/21 13:10:00	108980.9	108892.6	108947.0	108912.0	108906.1	108919.1	108893.3	108898.6	108922.9
2004/01/21 13:10:00	2004/01/21 13:20:00	87289.1	87200.7	87252.2	87221.0	87198.9	87212.0	87209.4	87191.7	87223.8
2004/01/21 13:20:00	2004/01/21 13:30:00	69312.4	69244.5	69304.8	69274.4	69241.8	69256.6	69252.8	69226.0	69268.9
2004/01/21 13:30:00	2004/01/21 13:40:00	43854.6	43818.7	43864.2	43829.2	43811.2	43823.1	43809.3	43804.2	43819.3
2004/01/21 13:40:00	2004/01/21 13:50:00	24082.8	24084.0	24100.8	24079.4	24056.8	24070.6	24055.3	24044.1	24049.1
2004/01/21 13:50:00	2004/01/21 14:00:00	2456.8	2445.3	2483.8	2454.0	2421.8	2433.5	2430.8	2426.3	2427.5
2004/01/21 14:00:00	2004/01/21 14:07:04	102.7	94.3	123.3	98.1	77.2	87.6	87.3	83.9	82.4

**Note)**

- 1) A totalize data file is created when a totalize calculation is started (not created when a recording is started).
- 2) Totalize data files and record data files are not pairs.
- 3) Do not set such file names as the following. Otherwise you cannot read the files by the viewer.
  - File names, initial characters of which are other than one of the following: “T, ” “D, ” “M, ” and “E”
  - File names consist of a single character (example: T. FDT, E. FDT).
  - File names consist of nine characters or more.

### 3.3 Displaying "Trend" screen



(1) Scale display select button for each CH

:Scale of the recording range of each CH is switched by pressing ▲ ▼ buttons.

(2) Switching trend display for all CH/selected CH (A)

:Whether trend display for all CH or selected CH is selected.

Setting can be switched by ticking the box (☐) at the left of the character A.

(Ticked) : Trend display is performed for all CH.

(Not ticked) : Trend display is performed for selected CH only.

(3) Selection of display CH (S)

:When "Trend display for selected CH only" is selected for the trend display mode, select for the trend display mode, select which CH to be displayed with this check box.

Select the CH by pressing ▲ ▼ button at the left of the character S, and tick box (☐) at the left of the characters. Trend display or non-display is selected by doing so.

(Ticked) : Trend display is performed for this CH.

(Not ticked) : Trend display is not performed for this CH

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(4) Brightness control of backlight

: The background is darkened by ► button.

The background is brightened by ◀ button.

(5) Grid brightness control (vertical shaft: time, horizontal shaft: measuring unit)

: The grid is darkened by ► button.

The grid is brightened by ◀ button.

(6) MIN-MAX display/average display select button

: It allows selection of trend display type between M: MIN-MAX display and A: average display.

MIN-MAX display:

Connect the maximum and minimum value of the measured value for each display update cycle with a line, and sort the data in the order to display the trend.

Average display:

Calculate the average value of the measured value for each display update cycle, and sort the data in the order to display the trend.

(Average value is displayed on trend graphs only, while a list of instantaneous values is always displayed in min/max.)

Note) MIN-MAX display and Average display can only be switched for the data recorded with recording type Max/Min. The display cannot be switched when the data recorded with the recording type Instantaneous value or Average value.

(7) Switching of a group displayed

: A group displayed on the trend screen can be switched. Click the tab at the top of the trend display screen and select a group to be displayed or “Display all”

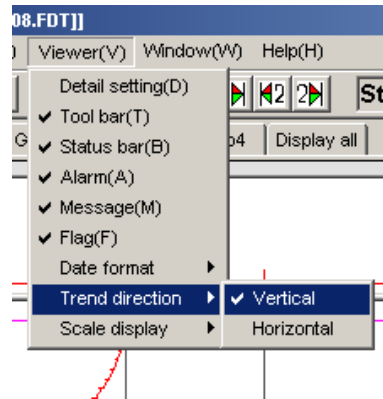
To display all record data of the channels, select “Display all”.

(8) Cursor: Click an arbitrary point on the trend screen to display the cursor 1. To display the cursor 2, right-click the trend screen to switch the cursor and click the trend screen.

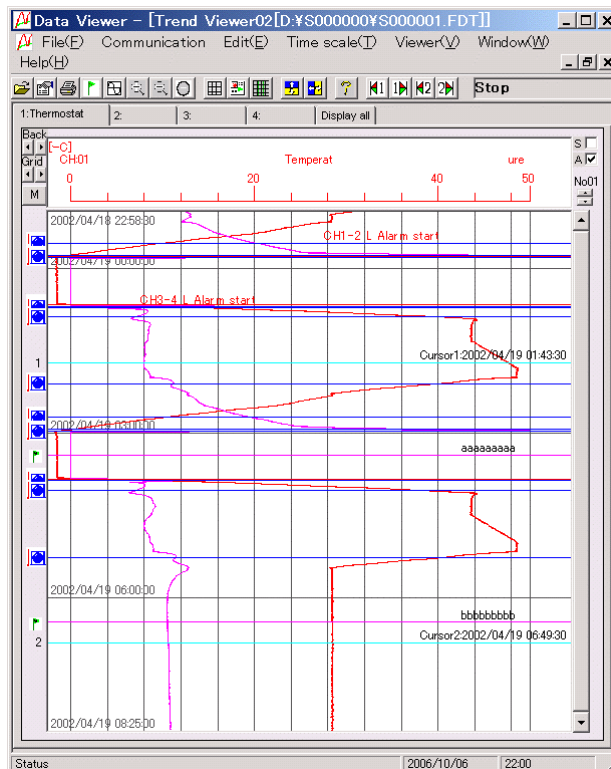
### 3.3.1 Vertical display of trend screen

The trend display can be changed to vertical display by the following procedures. When it is changed to the vertical display, the printing results and the printing preview screen are also vertical.

- (1) Select "Viewer(V)" ⇒ "Trend direction" ⇒ "Vertical".



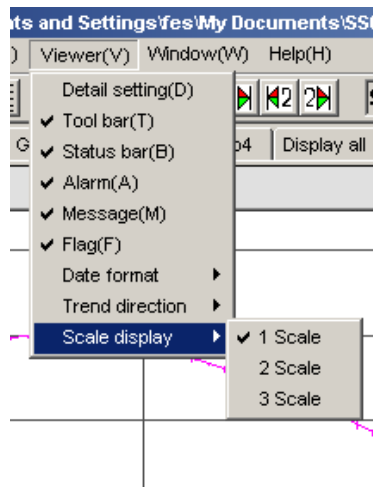
- (2) The trend screen is displayed vertically as shown below.



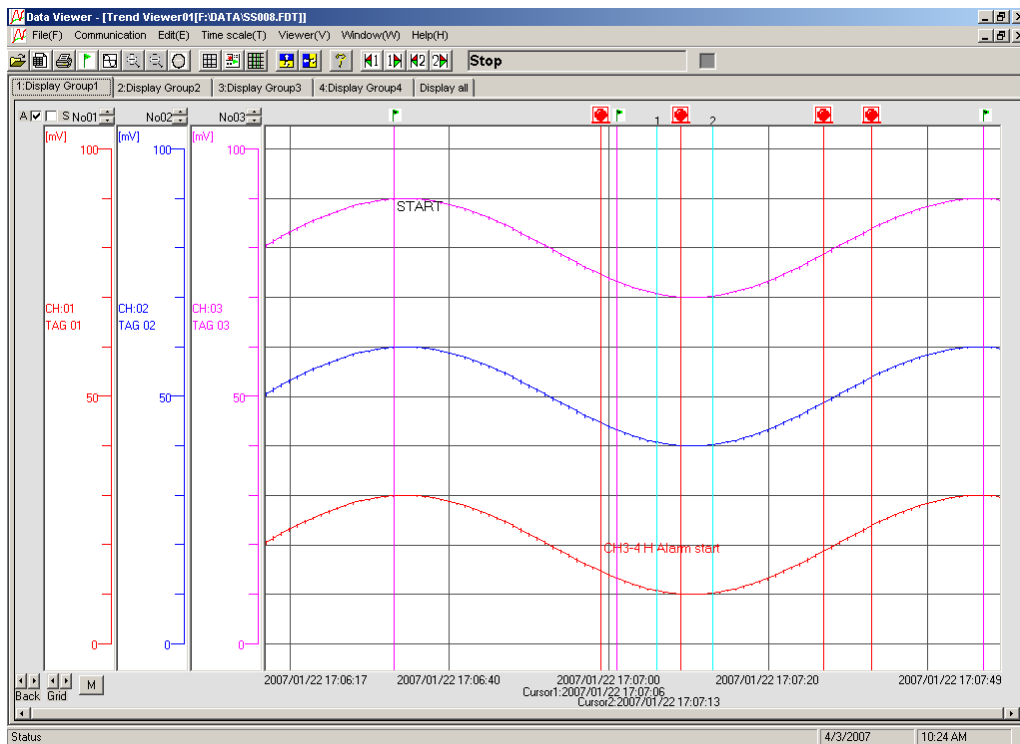
### 3.3.2 Changing method of scale number

Scale number of the trend display can be changed by the following procedures.

- (1) Select "Viewer(V)" ⇒ "Scale display", and set number of scales.



Example: The horizontal trend screen when three scales are displayed.





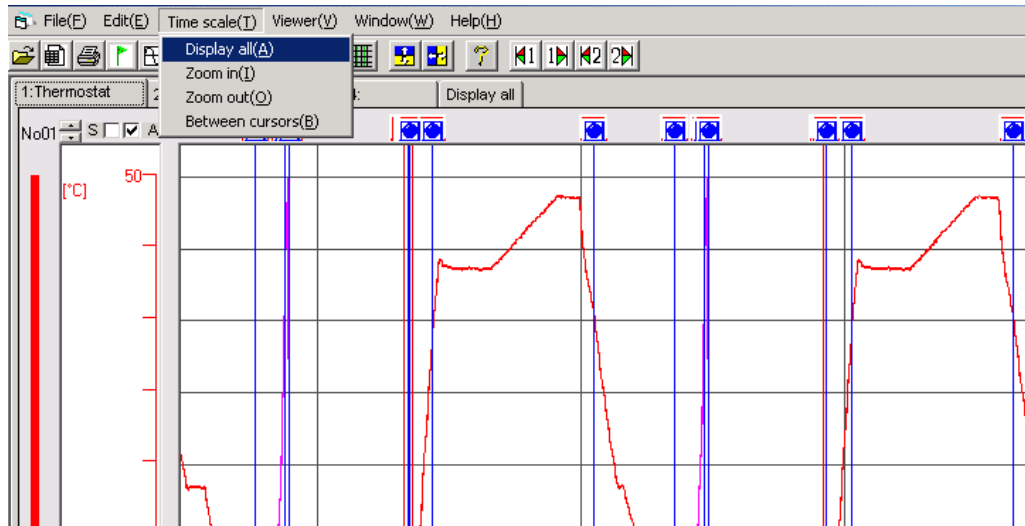
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### 3.3.3 Zoom In/Out of time scale

The trend screen enables you to zoom in/out the time scale.

Zoom-out magnification varies depending on the capacity of the record file.

Click “Time scale” ⇒ “Zoom in” or “Zoom out”.



- Display all: Displays all the recorded data on one screen.
- Zoom in: Reduces the time scale into half.
- Zoom out: Doubles the time scale.
- Between cursors: Displays the area between cursor 1 and cursor 2 on one screen.

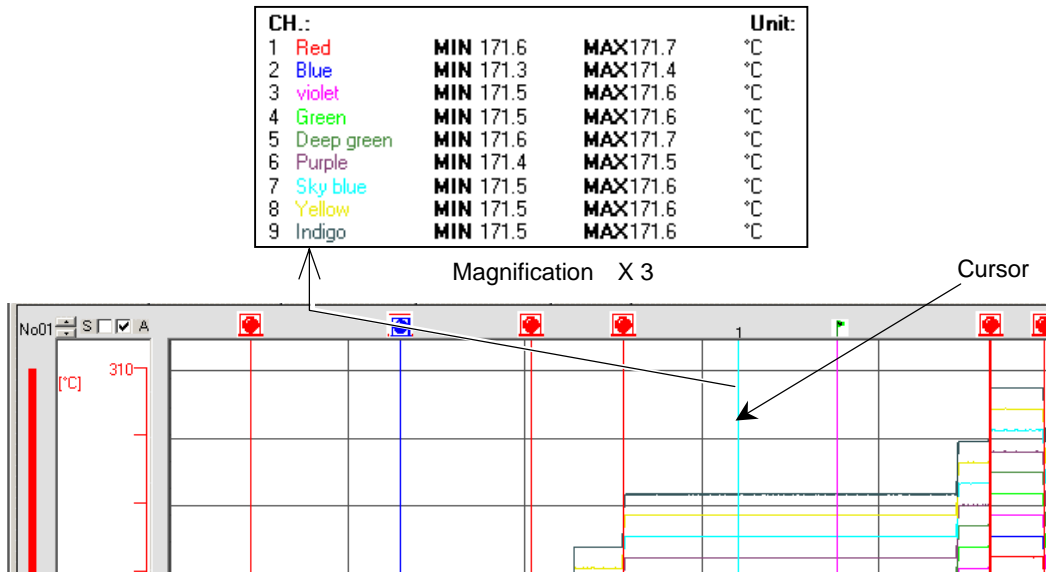
### 3.3.4 Display of time scale by cursor

The first cursor appears by clicking the time scale on the “Trend” screen. The cursor can be set at any positions you prefer.

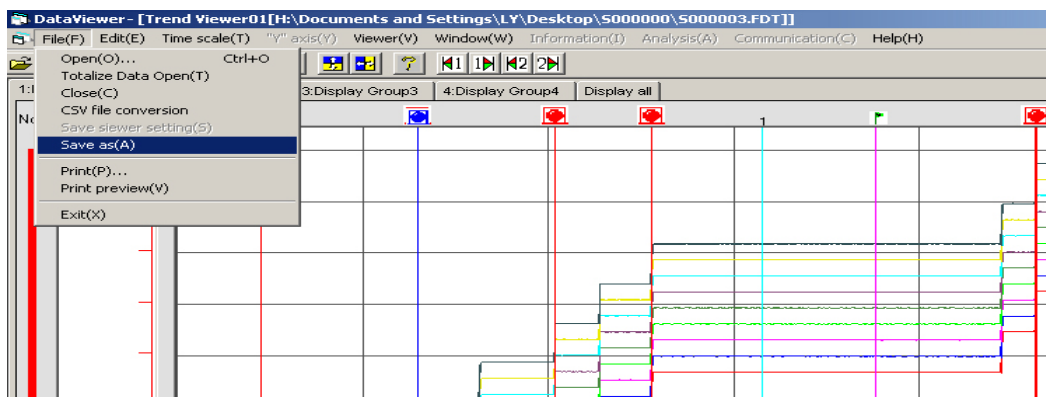
Press the SHIFT key once, or right-click to select Change of Cursor, and then click the “Trend” screen, and the second cursor will be displayed.

Every time the SHIFT key is pressed, or Change of Cursor is selected by right-clicking, the selection of cursor is switched between the first and the second ones.

In the state where the first or the second cursor is kept displayed, the measured value at the position of the cursor (maximum/minimum value) can be printed (refer to Item 0).



To move the cursor or disappear it from the screen, click “Edit” and follow the instructions given below:



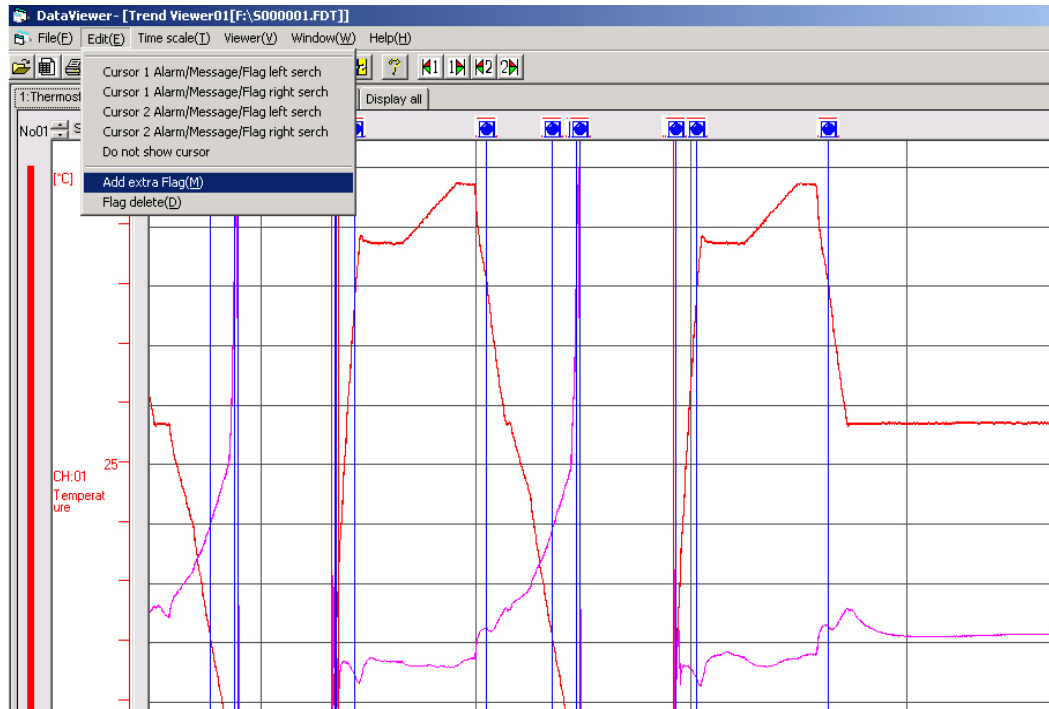
- “Cursor 1 Alarm/Message/Flag left serch”: The cursor moves to “Event Start Message” or “Flag” on the left.
- “Cursor 2 Alarm/Message/Flag left serch”
- “Cursor 1 Alarm/Message/Flag right serch”: The cursor moves to “Event Start Message” or “Flag” on the right.
- “Cursor 2 Alarm/Message/Flag right serch”
- “Do not show cursor”: The cursor disappears.

- Note)
- For the flag, refer to 3.3.5, “Display of flag”.
  - Both “Cursor 1 Alarm/Message/Flag left serch” and “Cursor 1 Alarm/Message/ Flag right serch” are only valid when the cursor is displayed on the trend screen.
  - When selecting the cursor position, the point of the measured value at right of the position you clicked is selected.

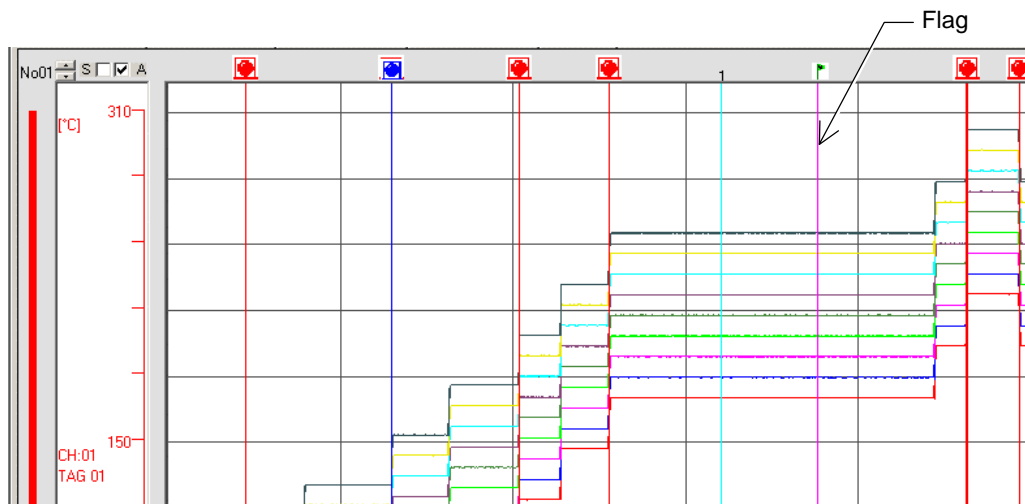
### 3.3.5 Display of flag

Any recorded data can be found by attaching a flag to the time scale. Move the cursor to the “Time Scale” where you want to attach the flag.

Click “Edit” ⇒ “Add extra Flag”.



The displayed cursor turns to a flag.

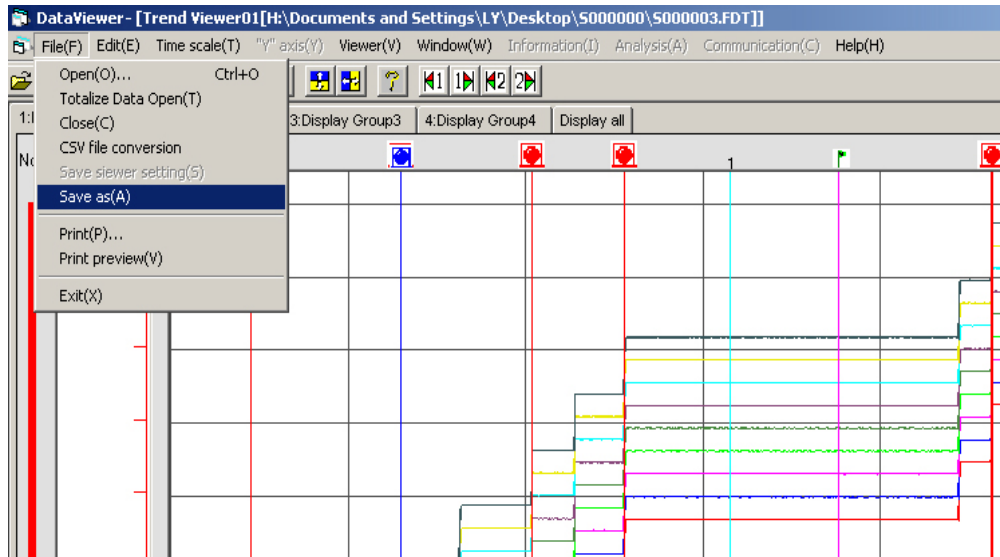


To delete all of the flags, click “Edit” ⇒ “Flag delete”.

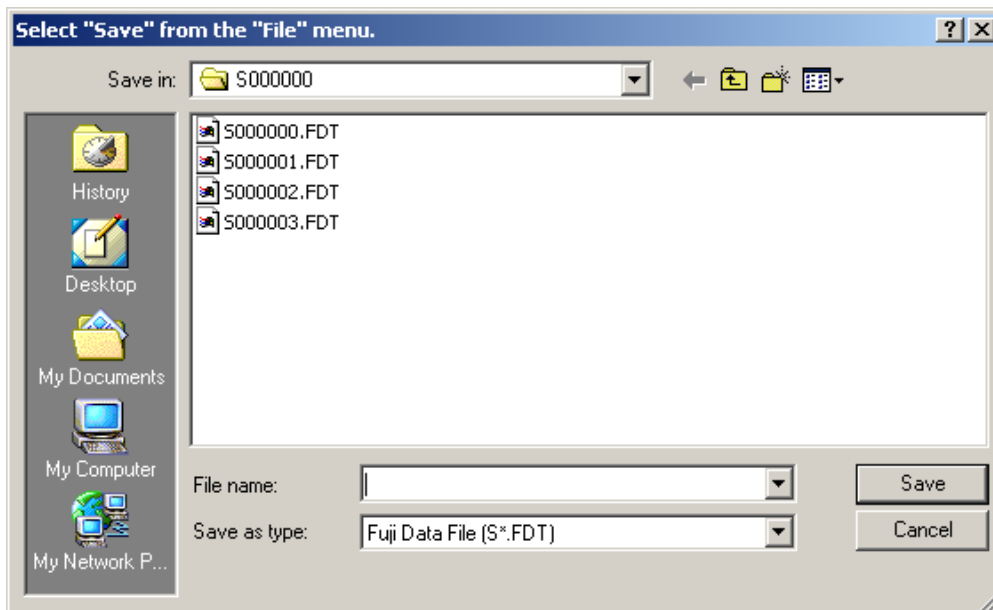
Note) For verification of the set time of the flag time scale, refer to 3.7 “Event Summary Display”.

### 3.3.6 Storing trend screen display

- 1) Display the part to be stored as a new record file on the trend screen.
- 2) Click “File” ⇒ “Save as”.



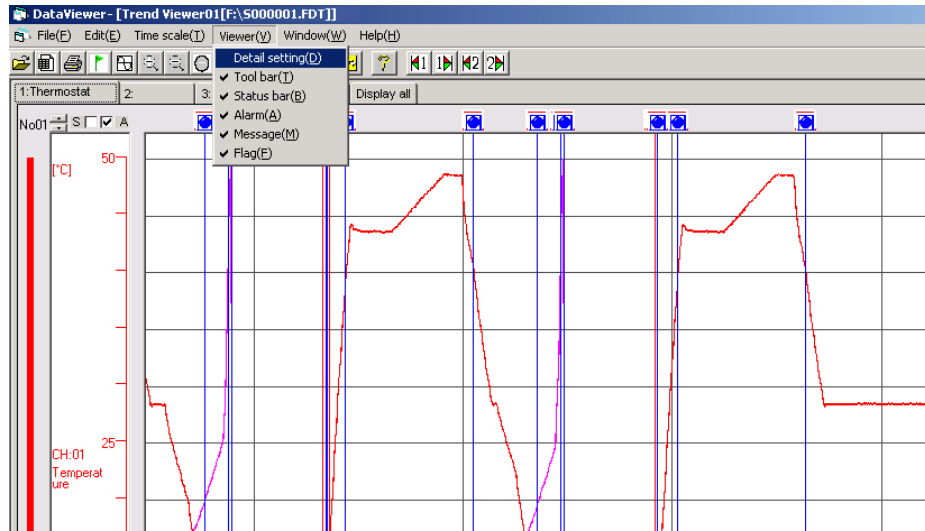
- 3) Enter an arbitrary file name (S\*\*\*\*\*.fdt) and then click “Save”.



### 3.4 Display of set value in recording range

A click of “Detail Setting” on Viewer enables you to display recording range parameters (min. value and max. value) of the recorded data displayed on the screen.

Click “Display” ⇒ “Detail Setting”.



The “Detail Setting” screen appears.

Groups of 2 to 4

NO	Channel	Recording range	
		Min	Max
WNo1	1	0	500
WNo2	2	0	500
WNo3	3	0	500
WNo4	4	0	500
WNo5	5	0	500
WNo6	6	0	500
WNo7	7	0	500
WNo8	8	0	500
WNo9	9	0	500
WNo10	None		

When changing the range, click the scale area at left of the “Trend” screen. On the “Range Setting” screen that is displayed, change the range.

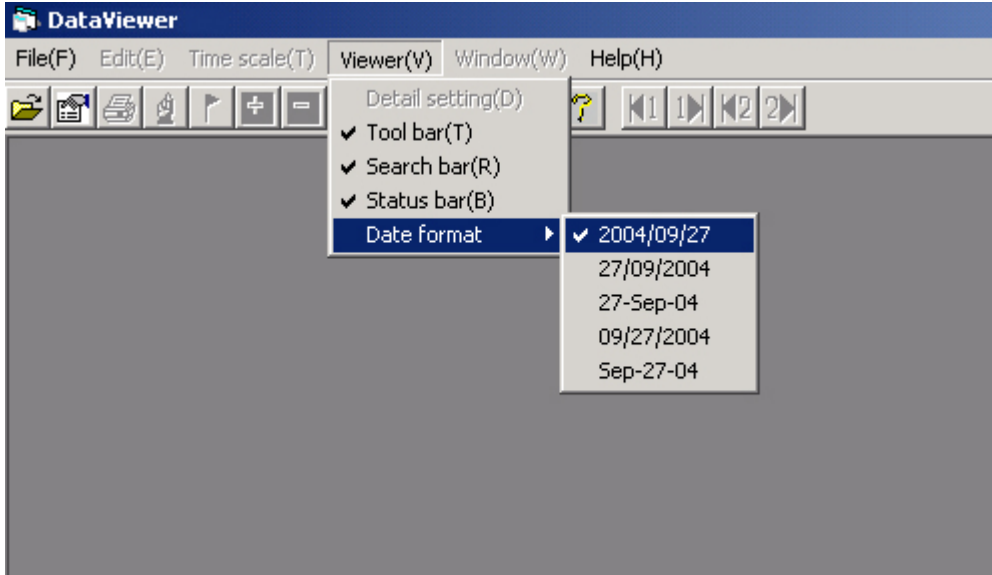
Note) Clicking the tabs for groups 1 to 4 allows you to view the chart of each group.

---

## 3.5 Setting date format

You can change the date format.

Click [Viewer] and then [Date format].



The selectable date formats are displayed. Click the format you want to use from those listed in the following table.

Date format selection item	Format	Example of screen display
2004/09/27	yyyy/mm/dd	2004/09/27 17:00:00
27/09/2004	dd/mm/yyyy	27/09/2004 17:00:00
27-Nov-04	dd-MMM-yy	27-Nov-04 17:00:00
09/27/2004	mm/dd/yyyy	09/27/2004 17:00:00
Nov-27-04	MMM-dd-yy	Nov-27-04 17:00:00

Note 1: The date displayed on the date format selection item is fixed to September 27, 2004.

Note 2: The time at the lower right corner of the viewer screen and that at the upper right corner of the print preview screen are displayed in the date format selected on the PC.

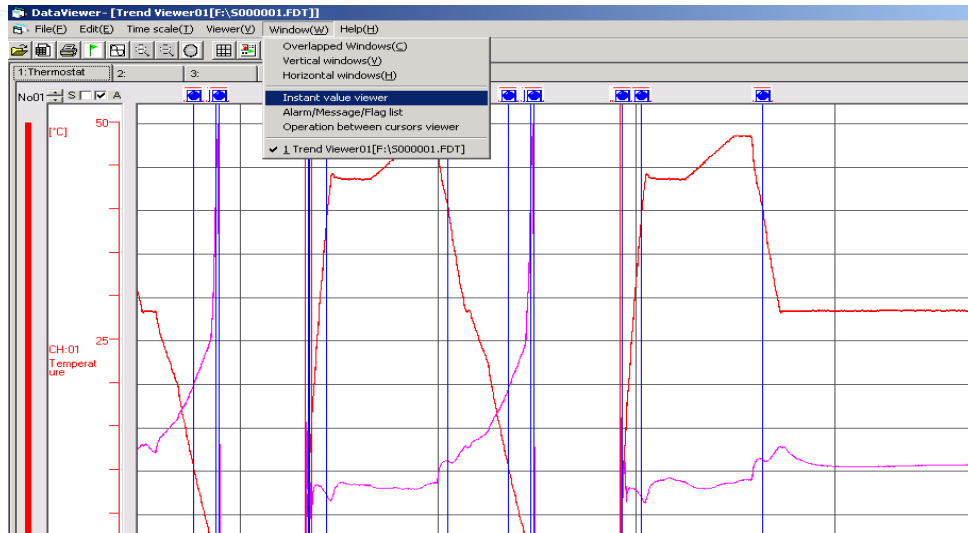
Note 3: The date is displayed in the newly selected format beginning from the first screen displayed after the change. (The date format on the screen currently displayed is not changed.)

### 3.6 Display of instantaneous values

A click of “Instant Value Viewer” to be displayed on “Window” enables you to display max. value and min. value for “Refreshment cycle” of every recorded data.

Active cursor position appears on display lead instantaneously.

Click “Window” ⇒ “Instant Value Viewer”.



The Instant Value Viewer screen appears.

Groups of 2 to 4

The screenshot shows the 'Instant value list01[F:\DATA\S009.FDT]' window. It displays a table with columns for 'CH01', 'CH02', 'CH03', 'CH02', 'CH03', and 'CH03'. Each channel has a 'TAG' and 'mV' values. The table is organized into four display groups. The 'Display all' tab is selected. The status bar at the bottom shows '4/3/2007' and '11:57 AM'.

	CH01	CH01	CH02	CH02	CH03	CH03
	TAG 01	TAG 01	TAG 02	TAG 02	TAG 03	TAG 03
	mV	mV	mV	mV	mV	mV
Min	Max	Min	Max	Min	Max	Max
2007/01/22 17:06:17	20.0	20.9	50.0	50.9	80.0	80.9
2007/01/22 17:06:18	20.9	21.8	50.9	51.8	80.9	81.8
2007/01/22 17:06:19	21.8	22.6	51.8	52.6	81.8	82.6
2007/01/22 17:06:20	22.6	23.5	52.6	53.5	82.6	83.5
2007/01/22 17:06:21	23.5	24.3	53.5	54.3	83.5	84.3
2007/01/22 17:06:22	24.3	25.0	54.3	55.0	84.3	85.0
2007/01/22 17:06:23	25.0	25.8	55.0	55.8	85.0	85.8
2007/01/22 17:06:24	25.8	26.4	55.8	56.4	85.8	86.4
2007/01/22 17:06:25	26.4	27.1	56.4	57.1	86.4	87.1
2007/01/22 17:06:26	27.1	27.7	57.1	57.7	87.1	87.7
2007/01/22 17:06:27	27.7	28.2	57.7	58.2	87.7	88.2
2007/01/22 17:06:28	28.2	28.7	58.2	58.7	88.2	88.7
2007/01/22 17:06:29	28.7	29.0	58.7	59.0	88.7	89.0
2007/01/22 17:06:30	29.0	29.4	59.0	59.4	89.0	89.4
2007/01/22 17:06:31	29.4	29.6	59.4	59.6	89.4	89.6
2007/01/22 17:06:32	29.6	29.8	59.6	59.8	89.6	89.8
2007/01/22 17:06:33	29.8	29.9	59.8	59.9	89.8	89.9
2007/01/22 17:06:34	29.9	30.0	59.9	60.0	89.9	90.0
2007/01/22 17:06:35	29.9	29.9	59.9	59.9	89.9	89.9
2007/01/22 17:06:36	29.8	29.8	59.8	59.8	89.8	89.8
2007/01/22 17:06:37	29.6	29.8	59.6	59.8	89.6	89.8
2007/01/22 17:06:38	29.3	29.6	59.3	59.6	89.3	89.6
2007/01/22 17:06:39	29.0	29.3	59.0	59.3	89.0	89.3
2007/01/22 17:06:40	28.6	29.0	58.6	59.0	88.6	89.0
2007/01/22 17:06:41	28.1	28.6	58.1	58.6	88.1	88.6
2007/01/22 17:06:42	27.6	28.1	57.6	58.1	87.6	88.1
2007/01/22 17:06:43	27.0	27.6	57.0	57.6	87.0	87.6
2007/01/22 17:06:44	26.4	27.0	56.4	57.0	86.4	87.0
2007/01/22 17:06:45	25.7	26.4	55.7	56.4	85.7	86.4
2007/01/22 17:06:46	25.0	25.7	55.0	55.7	85.0	85.7
2007/01/22 17:06:47	24.2	25.0	54.2	55.0	84.2	85.0

The number of recorded data that can be viewed on a single Instant Value Viewer screen is up to 1202. To view data in excess of 1202, click the “Next Page”.

Note) Clicking the tabs for groups 1 to 4 allows you to view the chart of each group.

Clicking the "Display all" tab allows you to view the chart of all the channels.

- Extracting the recorded data

Select the fields containing the recorded data to be extracted using the mouse and then press [Ctrl] and [C] at the same time, and the recorded data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

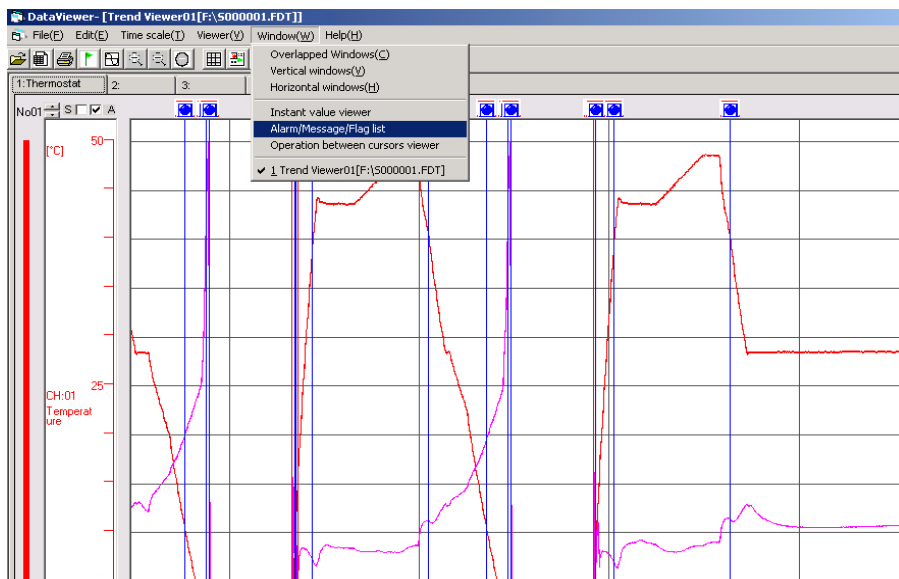
Clock	CH01	CH01	CH02	CH02	CH03	CH03	CH04
	Min	Max	Min	Max	Min	Max	Min
2002/06/04 10:44:49	202.3	202.3	202.3	202.3	202.3	202.3	202.3
2002/06/04 10:44:50	202.3	203.1	202.3	203.1	202.3	203.1	202.3
2002/06/04 10:44:51	203.1	204.3	203.1	204.3	203.1	204.3	203.1
2002/06/04 10:44:52	204.3	205.8	204.3	205.8	204.3	205.8	204.3
2002/06/04 10:44:53	205.8	207.7	205.8	207.7	205.8	207.7	205.8
2002/06/04 10:44:54	207.7	209.9	207.7	209.9	207.7	209.9	207.7
2002/06/04 10:44:55	209.9	212.4	209.9	212.4	209.9	212.4	209.9
2002/06/04 10:44:56	212.4	215.2	212.4	215.2	212.4	215.2	212.4
2002/06/04 10:44:57	215.2	218.3	215.2	218.3	215.2	218.3	215.2
2002/06/04 10:44:58	218.3	221.5	218.3	221.5	218.3	221.5	218.3
2002/06/04 10:44:59	221.5	225.0	221.5	225.0	221.5	225.0	221.5
2002/06/04 10:45:00	225.0	228.8	225.0	228.8	225.0	228.8	225.0
2002/06/04 10:45:01	228.8	232.6	228.8	232.6	228.8	232.6	228.8
2002/06/04 10:45:02	232.6	236.6	232.6	236.6	232.6	236.6	232.6
2002/06/04 10:45:03	236.6	240.7	236.6	240.7	236.6	240.7	236.6
2002/06/04 10:45:04	240.7	244.8	240.7	244.8	240.7	244.8	240.7
2002/06/04 10:45:05	244.8	249.0	244.8	249.0	244.8	249.0	244.8
2002/06/04 10:45:06	249.0	253.2	249.0	253.2	249.0	253.2	249.0
2002/06/04 10:45:07	253.2	257.4	253.2	257.4	253.2	257.4	253.2
2002/06/04 10:45:08	257.4	261.5	257.4	261.5	257.4	261.5	257.4
2002/06/04 10:45:09	261.5	265.6	261.5	265.6	261.5	265.6	261.5
2002/06/04 10:45:10	265.6	269.5	265.6	269.5	265.6	269.5	265.6
2002/06/04 10:45:11	269.5	273.3	269.5	273.3	269.5	273.3	269.5
2002/06/04 10:45:12	273.3	276.9	273.3	276.9	273.3	276.9	273.3
2002/06/04 10:45:13	276.9	279.0	276.9	279.0	276.9	279.0	276.9

- Moving the cursor

Double-click on the instantaneous value display screen while the cursor is displayed, and the cursor moves to the selected data.

### 3.7 Event Summary Display

To display the alarm and message lists, click “Window” ⇒ “Alarm/Message/Flag list”.





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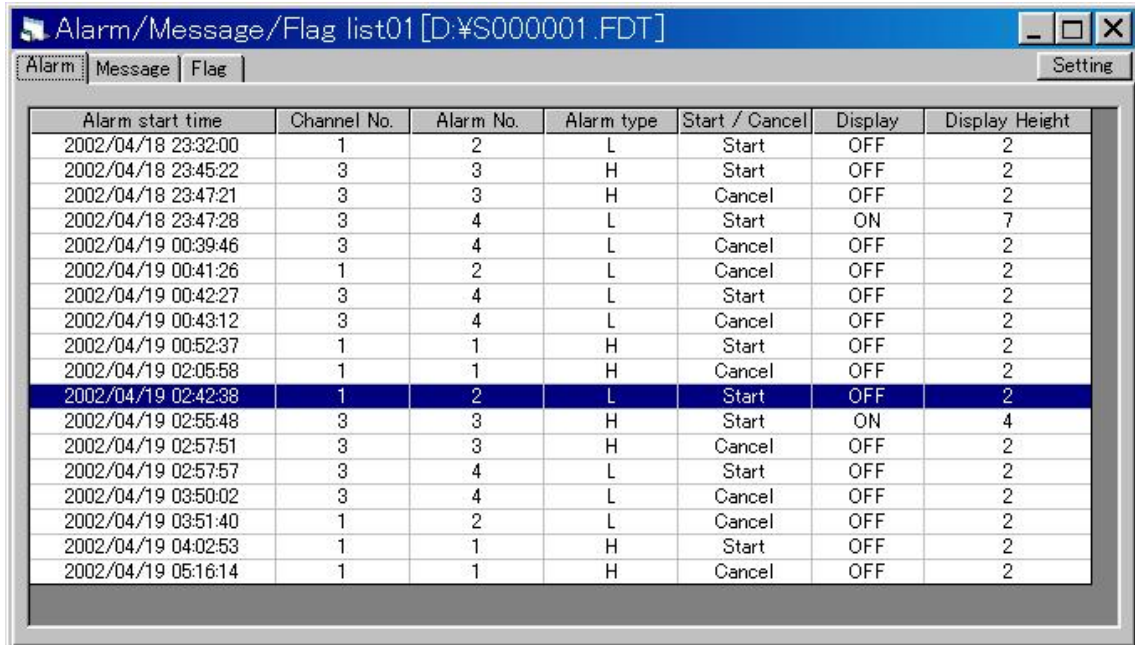
### 3.7.1 Alarm list

An alarm list is displayed.

**Caution**

Printing function is not available.

Print this data out by display hard copy of Windows.



The screenshot shows a window titled "Alarm/Message/Flag list01 [D:\\$S000001.FDT]". The window has tabs for "Alarm", "Message", and "Flag", and a "Setting" button. The main content is a table with the following columns: "Alarm start time", "Channel No.", "Alarm No.", "Alarm type", "Start / Cancel", "Display", and "Display Height". The table contains 20 rows of data, with the row for "2002/04/19 02:42:38" highlighted in blue.

Alarm start time	Channel No.	Alarm No.	Alarm type	Start / Cancel	Display	Display Height
2002/04/18 23:32:00	1	2	L	Start	OFF	2
2002/04/18 23:45:22	3	3	H	Start	OFF	2
2002/04/18 23:47:21	3	3	H	Cancel	OFF	2
2002/04/18 23:47:28	3	4	L	Start	ON	7
2002/04/19 00:39:46	3	4	L	Cancel	OFF	2
2002/04/19 00:41:26	1	2	L	Cancel	OFF	2
2002/04/19 00:42:27	3	4	L	Start	OFF	2
2002/04/19 00:43:12	3	4	L	Cancel	OFF	2
2002/04/19 00:52:37	1	1	H	Start	OFF	2
2002/04/19 02:05:58	1	1	H	Cancel	OFF	2
2002/04/19 02:42:38	1	2	L	Start	OFF	2
2002/04/19 02:55:48	3	3	H	Start	ON	4
2002/04/19 02:57:51	3	3	H	Cancel	OFF	2
2002/04/19 02:57:57	3	4	L	Start	OFF	2
2002/04/19 03:50:02	3	4	L	Cancel	OFF	2
2002/04/19 03:51:40	1	2	L	Cancel	OFF	2
2002/04/19 04:02:53	1	1	H	Start	OFF	2
2002/04/19 05:16:14	1	1	H	Cancel	OFF	2

- Extracting the alarm list data

Select the fields containing the alarm list data to be extracted using the mouse and then press [Ctrl] and [C] at the same time, and the alarm list data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

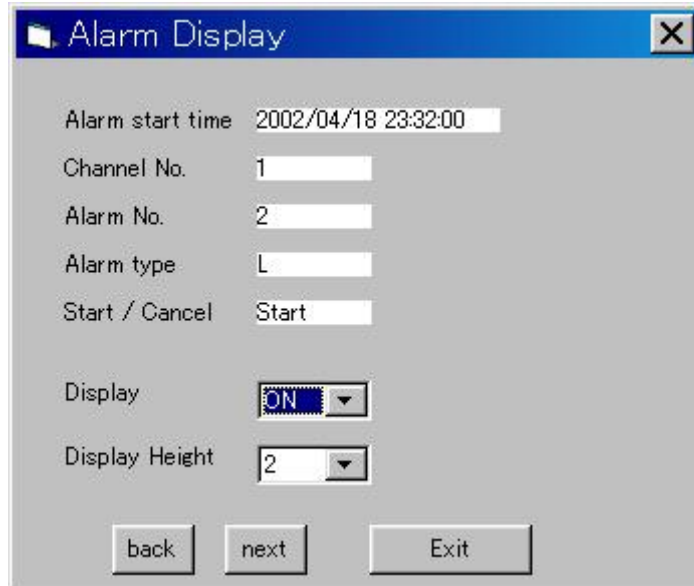
- Moving the cursor

Double-click the alarm list data while the cursor is displayed, and the cursor will jump to the recorded data close to the data selected.

- How to display alarm data trend screen

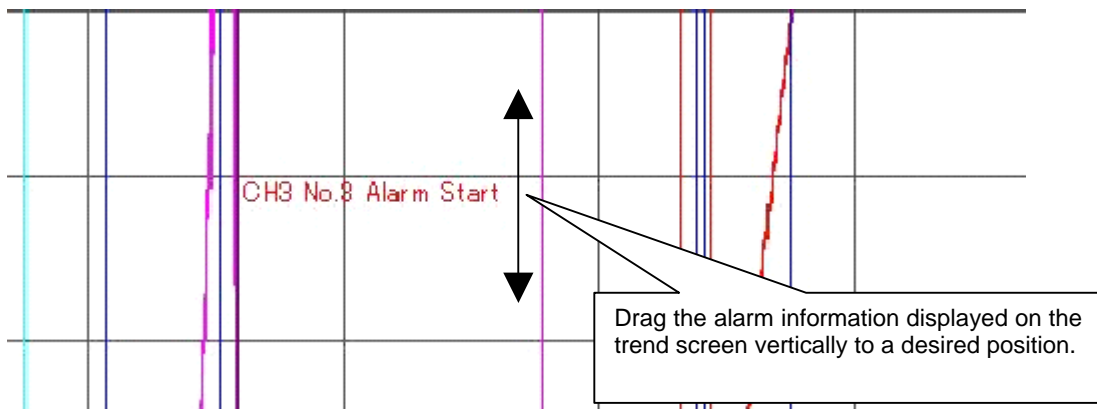
Press the “Setting” button at the upper right-hand corner of the alarm list screen.

On the following screen that appears, set “Display” for the alarm to be displayed on the trend screen to ON.



- The display position of alarm data can be changed by clicking on the alarm data displayed on the trend screen with the mouse.

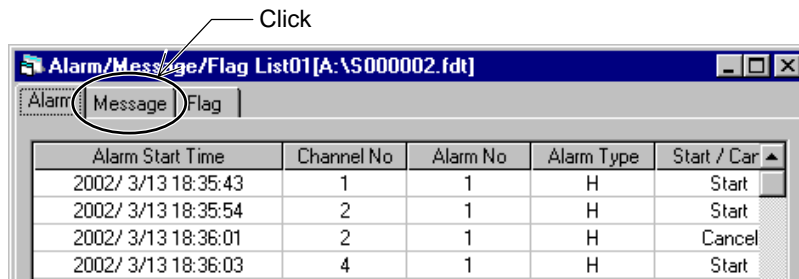
#### Trend screen



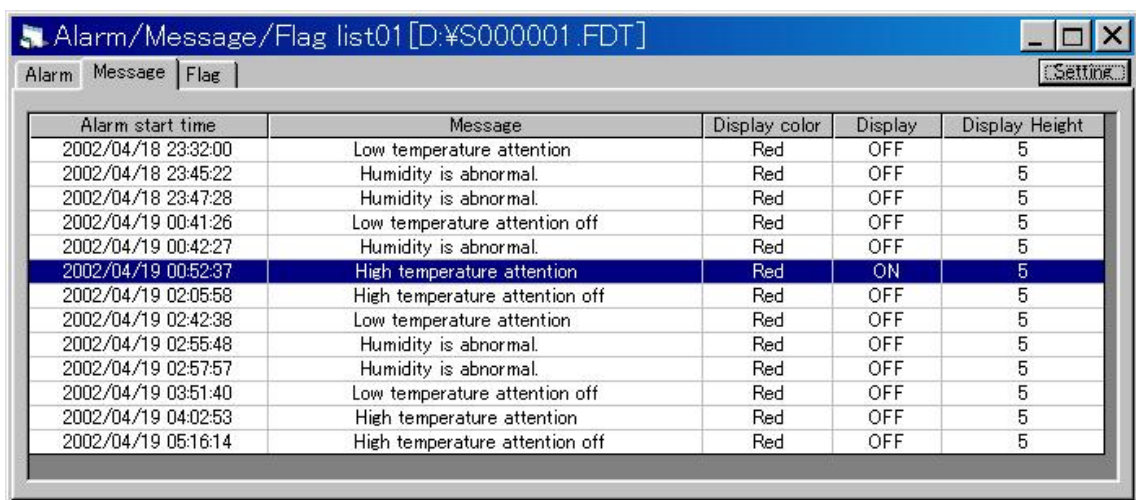
- To display the currently selected contents the next time the trend screen is displayed, save the contents before closing the trend screen.
- If the information is saved, a file having the name with the character “S” of the displayed file changed to “F” (F\*\*\*\*\*FDT) is created within the folder that contains the displayed record file. When moving or deleting the record file, also move or delete the new file.
- Note that if the record file is opened at the same time, the newest information is saved.

### 3.7.2 Message list

To display a message list, click “Message”.



A message list is displayed.



- Extracting the message list data

Select the fields containing the message list data to be extracted using the mouse and then press [Ctrl] and [C] at the same time, and the message list data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

Note) Double-click the list data field when the list data field cannot be selected using the mouse.

- Moving the cursor

Double-click the message list data while the cursor is displayed, and the cursor will jump to the recorded data close to the data selected.

- How to display message data trend screen

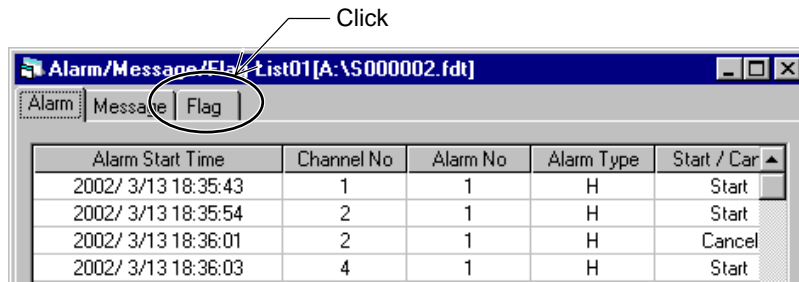
- Press the “Setting” button at the upper right-hand corner of the message list screen. On the message data display select screen that appears, set “Display” for the message to be displayed on the trend screen to ON.

- 
- The display position of the message data can be changed by clicking on the message data displayed on the trend screen with the mouse.
  - To display the currently selected contents the next time the trend screen is displayed, save the contents before closing the trend screen.
  - If the information is saved, a file having the name with the character “S” of the displayed file changed to “F” (F\*\*\*\*\*FDT) is created within the folder that contains the displayed record file. When moving or deleting the record file, also move or delete the new file.
  - Note that if the record file is opened at the same time, the newest information is saved.

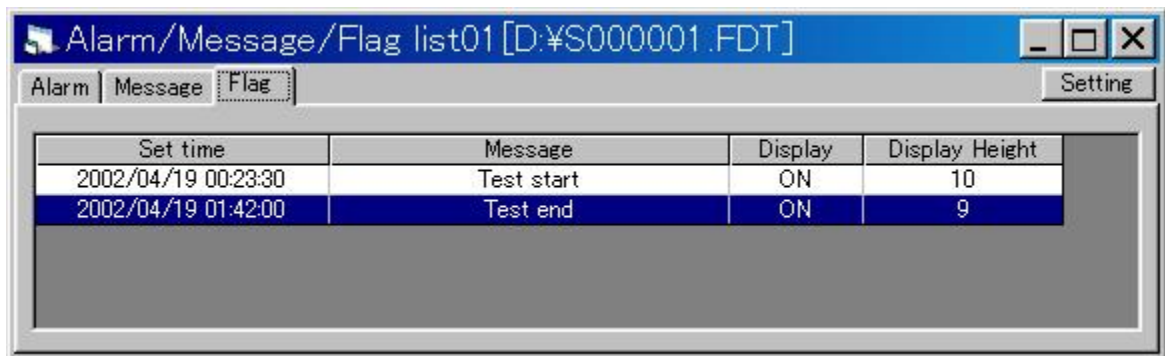
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### 3.7.3 Flag list

To display a flag list, click “Flag”. (Refer to Item “3.3.3” for flag.)



A flag list is displayed.



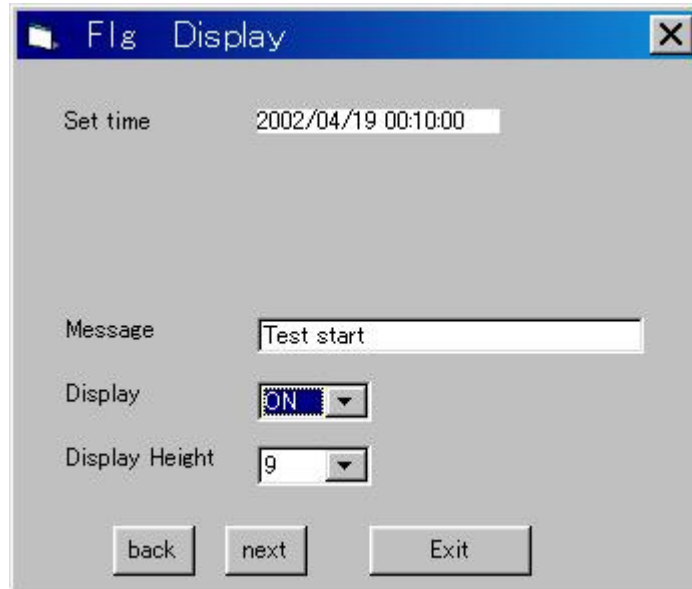
- Extracting the flag list data

Select the fields containing the flag list data to be extracted using the mouse and then press [Ctrl] and [C] at the same time, and the flag list data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

- Moving the cursor

Double-click the flag list data while the cursor is displayed, and the cursor will jump to the recorded data close to the data selected.

- 
- How to display flag data trend screen
    - Press the “Setting” button at the upper right-hand corner of the flag list screen.  
On the following screen that appears, select “Message” for the flag to be displayed on the trend screen, and set “Display” to ON.



- The display position of the flag data can be changed by clicking on the flag data displayed on the trend screen with the mouse.
- To display the currently selected contents the next time the trend screen is displayed, save the contents before closing the trend screen.
- If the information is saved, a file having the name with the character “S” of the displayed file changed to “F” (F\*\*\*\*\*FDT) is created within the folder that contains the displayed record file. When moving or deleting the record file, also move or delete the new file.
- Note that if the record file is opened at the same time, the newest information is saved.

## 3.8 Display of totalize data

### Totalize data display screen

Totalize data for recorded cycle of each channel appears.

Groups of 1 to 4

Totalize type	Count	CH03	CH05	CH07	CH09	
Totalize lag	STAG 01	STAG 03	STAG 05	STAG 07	STAG 09	
Totalize start time	Totalize stop time	m3/min	kg/s	kg/cm3	mm/s	MPa
2004/01/21 10:50:32	2004/01/21 11:00:00	129.4	121.5	157.9	130.1	96.4
2004/01/21 11:00:00	2004/01/21 11:10:00	11941.4	11915.8	11956.8	11940.4	11901.1
2004/01/21 11:10:00	2004/01/21 11:20:00	28629.2	28600.1	28629.4	28607.0	28589.7
2004/01/21 11:20:00	2004/01/21 11:30:00	38632.2	38602.2	38643.5	38612.3	38588.3
2004/01/21 11:30:00	2004/01/21 11:40:00	55552.9	55498.0	55545.8	55518.5	55492.0
2004/01/21 11:40:00	2004/01/21 11:50:00	71695.6	71627.5	71680.4	71655.4	71613.5
2004/01/21 11:50:00	2004/01/21 12:00:00	94375.6	94306.4	94344.1	94307.0	94279.0
2004/01/21 12:00:00	2004/01/21 12:10:00	103023.4	102961.3	103003.9	102952.3	102938.8
2004/01/21 12:10:00	2004/01/21 12:20:00	103018.6	102953.2	102999.4	102950.2	102945.8
2004/01/21 12:20:00	2004/01/21 12:30:00	103016.9	102945.1	102994.1	102952.7	102948.1
2004/01/21 12:30:00	2004/01/21 12:40:00	103017.5	102941.3	102997.8	102948.6	102942.0
2004/01/21 12:40:00	2004/01/21 12:50:00	114371.7	114286.7	114343.3	114308.6	114301.4
2004/01/21 12:50:00	2004/01/21 13:00:00	127894.5	127796.6	127854.1	127822.6	127817.7
2004/01/21 13:00:00	2004/01/21 13:10:00	109980.9	109892.6	109847.0	109912.0	109906.1
2004/01/21 13:10:00	2004/01/21 13:20:00	87289.1	87200.7	87252.2	87221.0	87198.9
2004/01/21 13:20:00	2004/01/21 13:30:00	69312.4	69244.5	69304.8	69274.4	69241.8
2004/01/21 13:30:00	2004/01/21 13:40:00	43854.6	43818.7	43864.2	43829.2	43811.2
2004/01/21 13:40:00	2004/01/21 13:50:00	24092.8	24064.0	24100.8	24079.4	24056.8
2004/01/21 13:50:00	2004/01/21 14:00:00	2456.8	2445.3	2483.8	2454.0	2421.8
2004/01/21 14:00:00	2004/01/21 14:07:04	102.7	94.3	123.3	98.1	77.2

The number of recorded data that can be viewed on a single totalize data up to 1,202.

To data in excess of 1,202, click the “Next Page”.

Note) Clicking the tabs for groups 1 to 4 allows you to view the integration data of each group.

Clicking the Display All tab allows you to view the totalized data of all the channels.

- Extracting integrated data

Select the fields containing the integrated data to be extracted and then press [Ctrl] and [C] at the same time, and the integrated data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

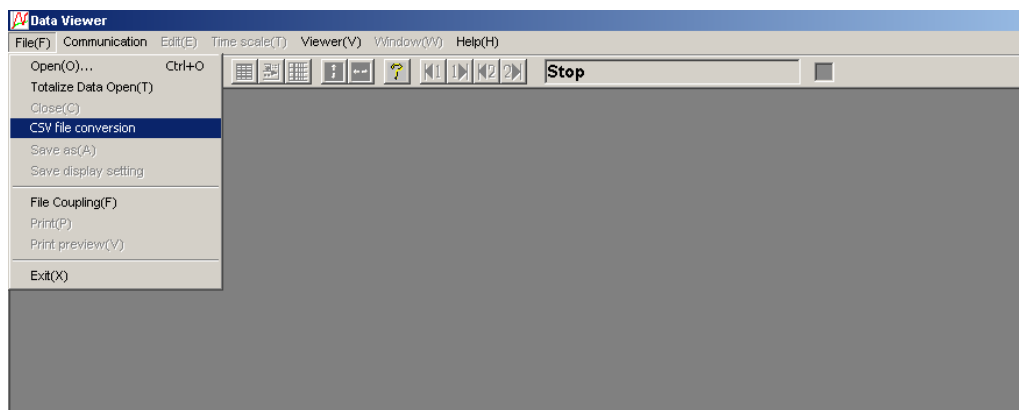
---

## 3.9 CSV file conversion

Recorded data (Trend data, Event data, Totalize data) can be converted to a CSV file which can be opened by Excel.

Follow the procedure shown below to create a CSV file.

- 1) Click “Trend data” or “Totalize data”.  
(Recorded data which is converted to CSV appear on the foremost.)
- 2) Click “File” ⇒ “CSV file conversion”



The CSV file has now been created. (The CSV file will be created in the folder that contains the recorded data file.)

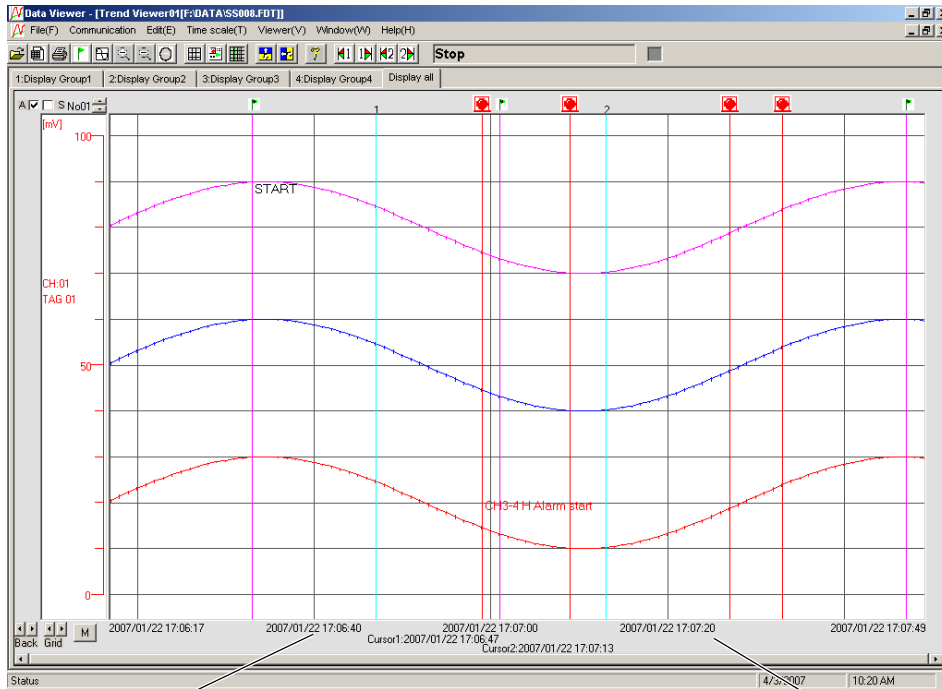


### 3.10 Operation between cursors viewer

The maximum, minimum, and the average value of the recorded data between cursor 1 and cursor 2 are calculated and displayed.

If only one cursor is displayed, the data recorded between the start of recording and the cursor is calculated and displayed.

Click “Window” ⇒ “Operation between cursors viewer”, and the following screen appears.



Between cursors calculation screen 01

Display time : 2002/06/04 10:47:49 to 2002/06/04 11:03:28  
 Time width : 0 day 00:15:39  
 Data number : 940

1: PHR 2: 3: 4: Display all

	CH01	CH02	CH03	CH04	CH05	CH06	CH07	CH08	CH09
	TAG 01	TAG 02	TAG 03	TAG 04	TAG 05	TAG 06	TAG 07	TAG 08	TAG 09
	°C	°C	°C	°C	°C	°C	°C	°C	°C
MAX	298.3	298.3	298.3	298.3	298.3	298.3	298.3	298.3	298.3
MIN	201.7	201.7	201.7	201.7	201.7	201.7	201.7	201.7	201.7
Average	250.1	250.1	250.1	250.1	250.1	250.1	250.1	250.1	250.1

The following erroneous input data is not used for calculation of the average value between cursors.

Data	Value
Bunout	-32768
Error	-32768
Over	32767
Under	-32767

- Extracting the calculation data between cursors

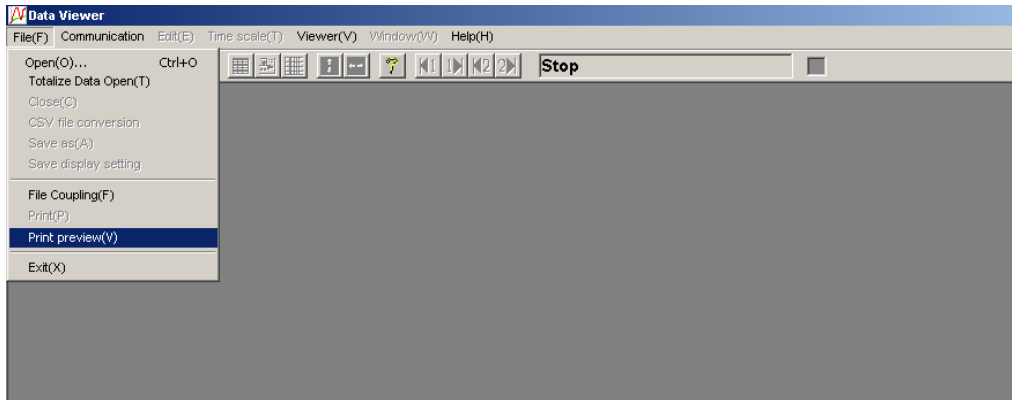
Select the fields containing the data between cursors to be extracted using the mouse and then press [Ctrl] and [C] at the same time, and the calculation data in the selected fields is copied to the clipboard. Paste it on Excel or a text editor to use it.

# 4. PRINTING

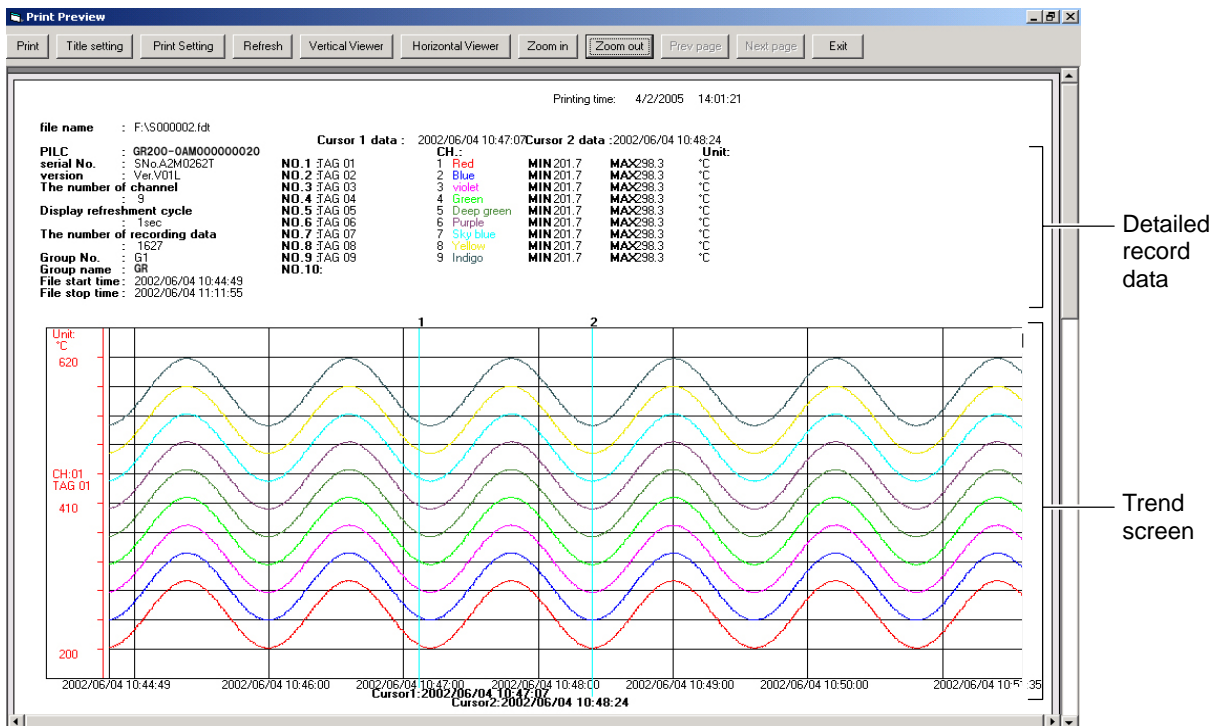
**Caution** If no printer driver is installed in your PC, do not perform printing or preview function. Otherwise, your PC may stop operating.

## 4.1 Print Preview

To print the record data, click “File” ⇒ “Print preview”.



A Print Preview screen is displayed.



[Detailed record data]

You can switch between the two types of the measured value printing, those of the cursor position and flag position. The contents to be printed can be switched on the “Print Setting” screen in Section 4.2 Print Preview Menu. If the trend screen is switched to the all channel display screen, the measured values at the cursor position are printed without fail.

## (1) Measured value printing of the cursor position

Printing time: 4/2/2005 14:01:21

<pre> file name      : F:\S000002.fdt PILC          : GR200-OAM00000020 serial No.    : SNo.A2M0262T version       : Ver.V01L The number of channel : 9 Display refreshment cycle : 1sec The number of recording data : 1627 Group No.     : G1 Group name    : GR File start time : 2002/06/04 10:44:49 File stop time : 2002/06/04 11:11:55         </pre>	<pre> Cursor 1 data : 2002/06/04 10:47:07 Cursor 2 data : 2002/06/04 10:48:24 CH: 1 Red      MIN 201.7  MAX 298.3  °C 2 Blue     MIN 201.7  MAX 298.3  °C 3 violet   MIN 201.7  MAX 298.3  °C 4 Green    MIN 201.7  MAX 298.3  °C 5 Deep green MIN 201.7  MAX 298.3  °C 6 Purple   MIN 201.7  MAX 298.3  °C 7 Sky blue MIN 201.7  MAX 298.3  °C 8 Yellow   MIN 201.7  MAX 298.3  °C 9 Indigo   MIN 201.7  MAX 298.3  °C NO.1 TAG 01 NO.2 TAG 02 NO.3 TAG 03 NO.4 TAG 04 NO.5 TAG 05 NO.6 TAG 06 NO.7 TAG 07 NO.8 TAG 08 NO.9 TAG 09 NO.10:         </pre>
--	---

File property

Tag name

Measured value

### To print measured value

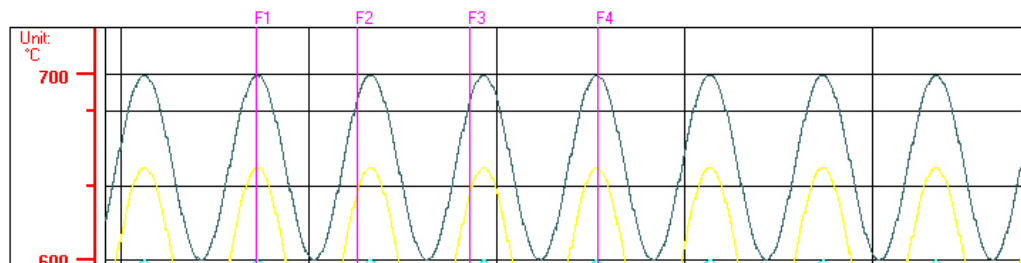
Following three prints are available.

- 1) When cursor 1 and 2 is in trend display.  
Maximum and minimum value of measured value between cursor 1 and 2 can be printed.
- 2) When cursor 1 is in trend display.  
Time measured value (MIN-MAX value) of cursor 1 can be printed.
- 3) Except to above 1) and 2).  
Measured (MIN-MAX value) value of lead trend display can be printed.

## (2) Measured value printing of the flag position

Printing time: 4/17/2008 10:51:03 AM

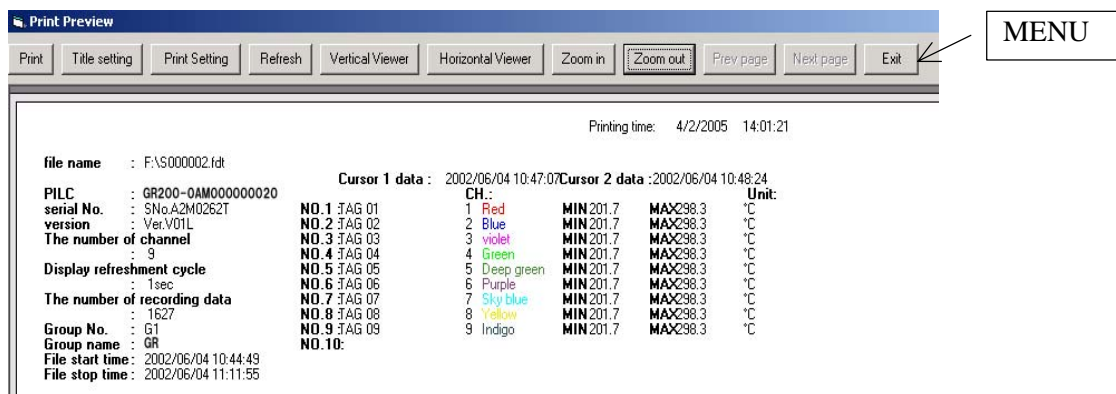
<pre> file name      : C:\S000000\S000010.FDT PILC          : GR200-OAM00000020 serial No.    : SNo.LY00000T version       : Ver.V01A The number of channel : 4 Display refreshment cycle : 5sec The number of recording data : 18742 Group No.     : G1 Group name    : GR File start time : Nov-15-03 22:29:10 File stop time : Nov-17-03 00:30:55         </pre>	<pre> NO: TAG1: TAG2: Range: Unit: 1 TAG 01 200 to 700 °C 2 TAG 02 200 to 700 °C 3 TAG 03 200 to 700 °C 4 TAG 04 200 to 700 °C 5 TAG 05 200 to 700 °C 6 TAG 06 200 to 700 °C 7 TAG 07 200 to 700 °C 8 TAG 08 200 to 700 °C 9 TAG 09 200 to 700 °C 10         </pre>	<pre> CH:Color: Flag1: Flag2: Flag3: Flag4: 1 Red      299.4 286.3 285.8 299.8 2 Blue     349.7 337.8 337.3 349.9 3 violet   399.4 386.3 385.8 399.8 4 Green    449.4 436.3 435.8 449.8 5 Deep green 499.7 487.8 487.3 499.9 6 Purple   549.4 536.3 535.8 549.8 7 Sky blue 599.4 586.3 585.8 599.8 8 Yellow   649.4 636.3 635.8 649.8 9 Indigo   699.4 686.3 685.8 699.8         </pre>
---	---	---



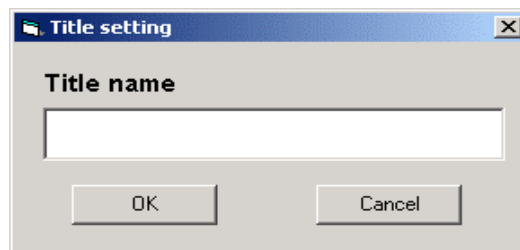
### Printing measured values

- If measured values are displayed vertically, the first to fourth values on the trend screen are printed. If measured values are displayed horizontally, the first to sixth values on the trend screen are printed.
- If the maximum/minimum recording method is selected as a channel recording method, an intermediate value of the maximum and minimum values is printed.

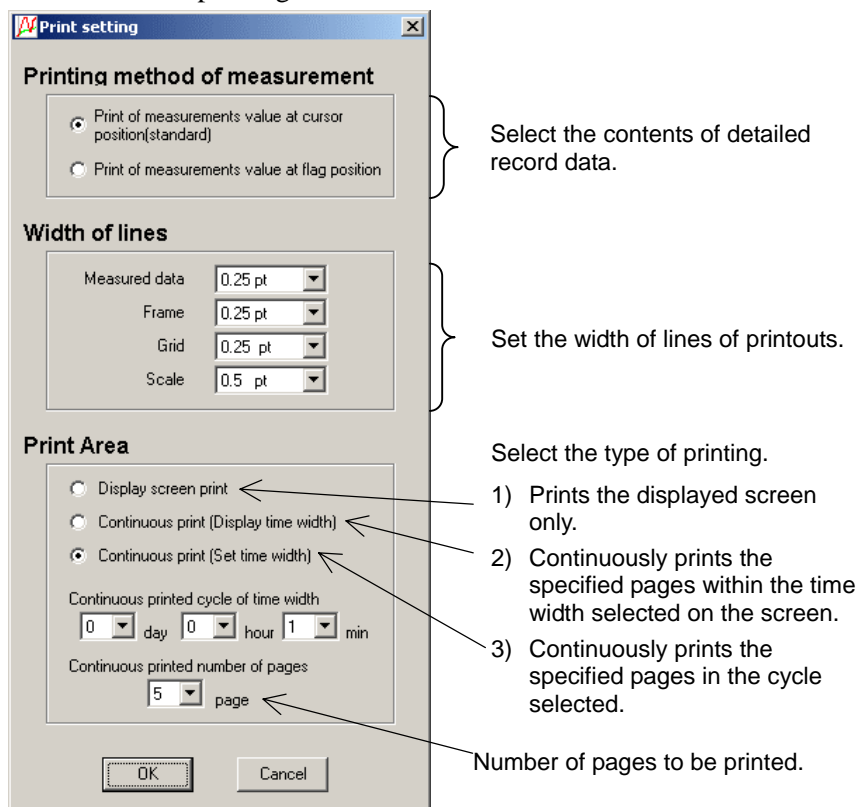
## 4.2 Print Preview Menu



- “Print” : Allows you to print recorded data that specified by “Print Setting”, “Vertical Viewer” and “Horizontal Viewer”.
- “Title setting” : The number of title character is up to 80. Title remains until data viewer is closed.



- “Print Setting” : Allows you to set the width of lines in printouts and select continuous printing.



- 
- “Refresh” : Allows you to upgrade the Pre-Viewer screen when set values are changed on “Print Setting”.
  - “Vertical Viewer” : Allows you to switch to “Vertical Viewer” from the Horizontal Pre-Viewer screen (□).
  - “Horizontal Viewer”: Allows you to switch to “Horizontal Viewer” from the Vertical Pre-Viewer screen (□).
  - “Zoom in” : Enlarges the size of the Pre-Viewer screen.
  - “Zoom out” : Reduces the size of the Pre-Viewer screen.
  - “Prev page” : Displays the previous print preview screen.
  - “Next page” : Displays the next print preview screen.
  - “Exit” : Returns to the former Data Display screen.

## 4.3 Example of Printing on Print Pre-Viewer screen

(Vertical viewer printing)

### GR200 Data Viewer

Printing time: 2005/04/02 13:45:22

file name : G:\S000001.FDT

PLC : GR200-0AM000000020

serial No. : SNo.A2M0262T

version : Ver.V01L

The number of channel : 2

Display refreshment cycle : 30sec

The number of recording data : 1134

Group No. : G1

Group name : Thermostat

File start time : 2002/04/18 22:58:30

File stop time : 2002/04/19 08:25:00

Cursor 1 data : 2002/04/19 00:25:30

Cursor 2 data : 2002/04/19 03:10:30

NO.1 : Temperat

NO.2 : Humidity

NO.3 :

NO.4 :

NO.5 :

NO.6 :

NO.7 :

NO.8 :

NO.9 :

NO.10 :

CH.:

1 Red

3 violet

MIN -1.8

MIN 0.0

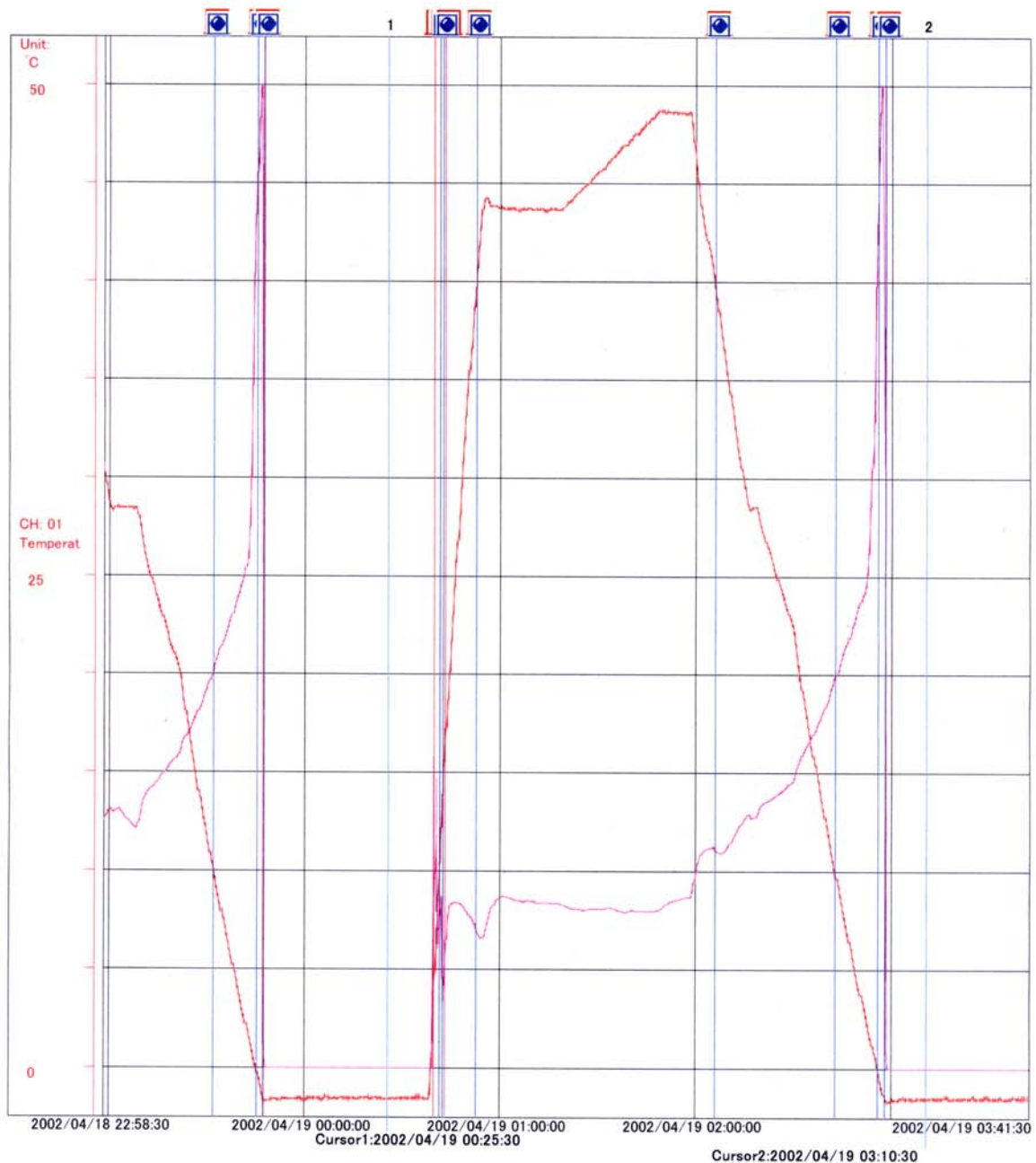
MAX 48.8

MAX 100.1

Unit:

°C

%RH



(Horizontal viewer printing)

Printing time: 2005/04/02 13:46:13

GR200 Data Viewer

file name : G:\S0000002.fdt

PILC : GR200-0AM0000000020

serial No. : SNo\_A2M0262T

version : Var.V01L

The number of channel : 9

Display refreshment cycle : 1sec

The number of recording data : 1627

Group No. : G1

Group name : GR

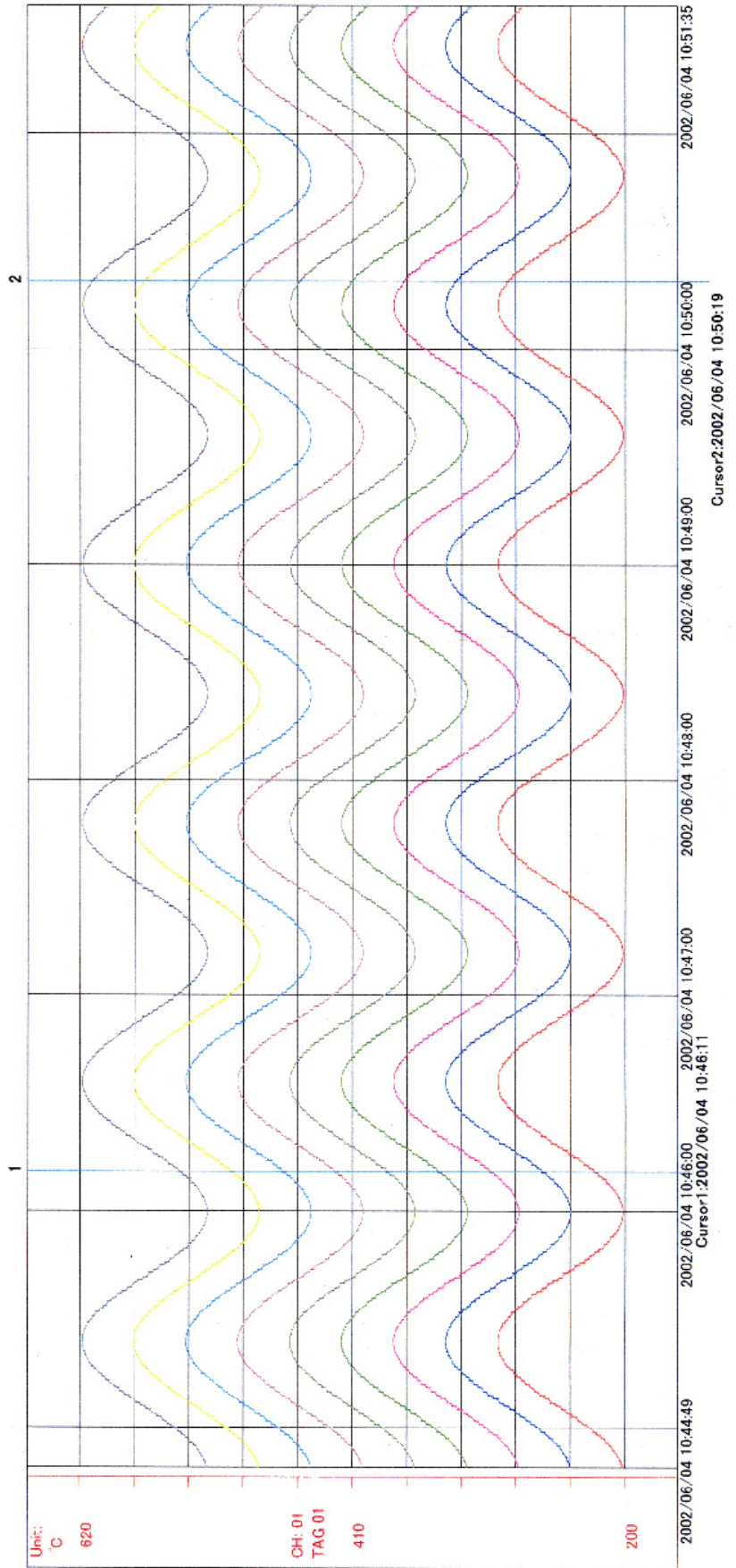
File start time : 2002/06/04 10:44:49

File stop time : 2002/06/04 11:11:55

Cursor 1 data : 2002/06/04 10:46:11  
 Cursor 2 data : 2002/06/04 10:50:19

CH:	MIN	MAX	Unit:
1 Red	201.7	298.3	°C
2 Blue	201.7	298.3	°C
3 violet	201.7	298.3	°C
4 Green	201.7	298.3	°C
5 Deep green	201.7	298.3	°C
6 Purple	201.7	298.3	°C
7 Sky blue	201.7	298.3	°C
8 Yellow	201.7	298.3	°C
9 Indigo	201.7	298.3	°C

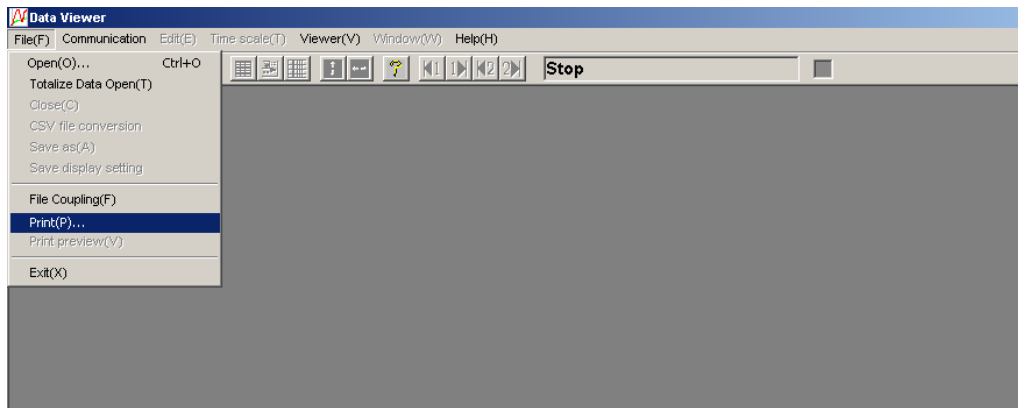
NO.1 : TAG 01  
 NO.2 : TAG 02  
 NO.3 : TAG 03  
 NO.4 : TAG 04  
 NO.5 : TAG 05  
 NO.6 : TAG 06  
 NO.7 : TAG 07  
 NO.8 : TAG 08  
 NO.9 : TAG 09  
 NO.10:



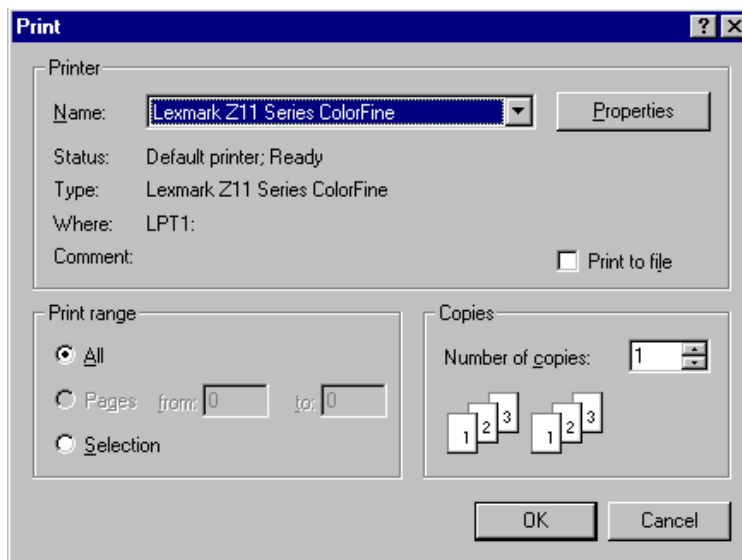
---

## 4.4 Printing

Click “File” ⇒ “Print”.



The Print dialog box appears



Check if the desired printer is selected for Name, and click [OK], and then printing is started.

When changing the page orientation to vertical or horizontal, refer to the "Vertical Viewer" and "Horizontal Viewer" in "4.2 Print Preview Menu".



(Example of printing)

Printing time: 2005/04/02 13:45:22

GR200 Data Viewer

file name : G:\S000001.FDT

PILC : GR200-0AM000000020  
serial No. : SNo.A2M0262T  
version : Ver.V01L

The number of channel : 2

Display refreshment cycle : 30sec

The number of recording data : 1134

Group No. : G1

Group name : Thermostat

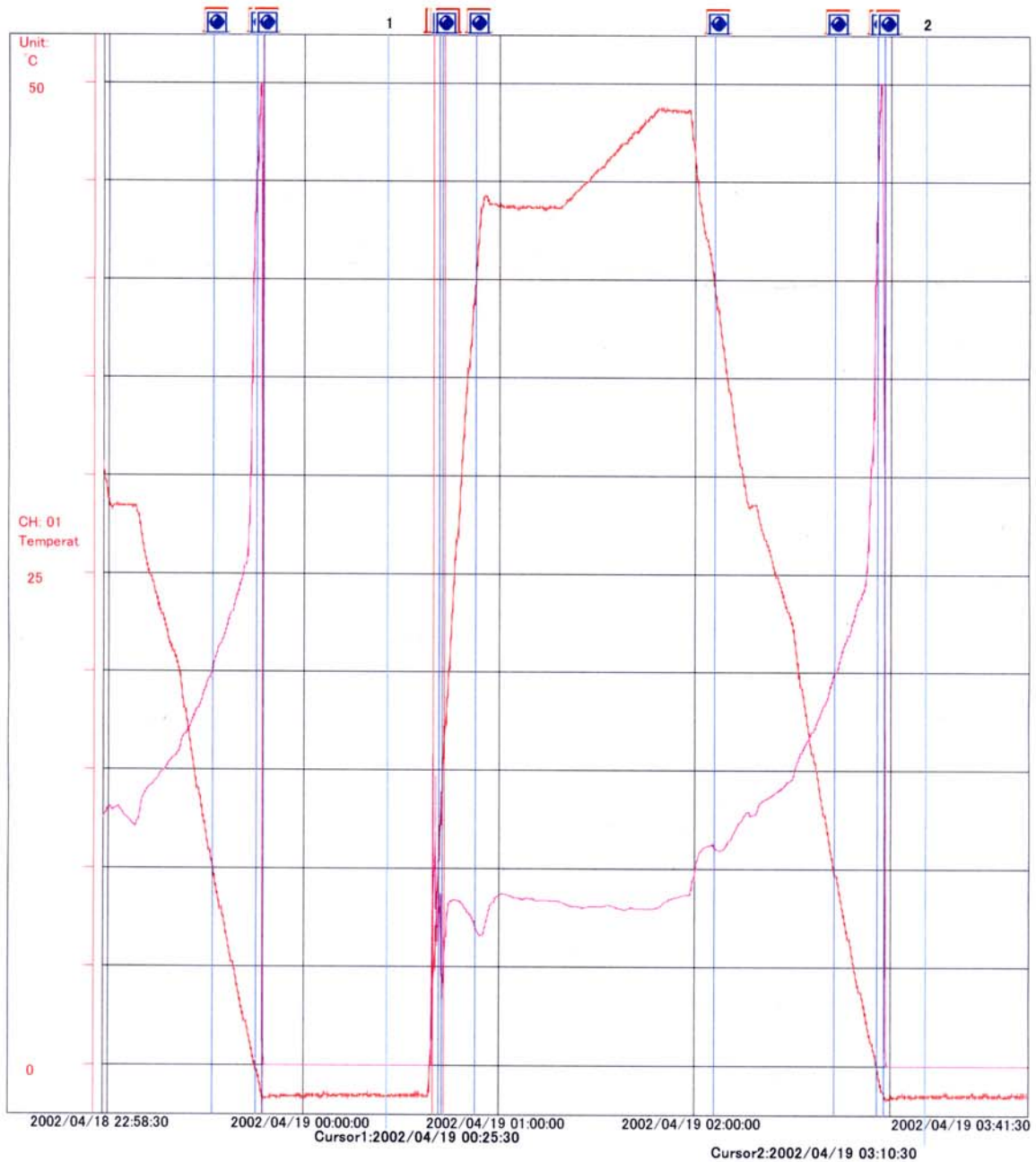
File start time : 2002/04/18 22:58:30

File stop time : 2002/04/19 08:25:00

Cursor 1 data : 2002/04/19 00:25:30

Cursor 2 data : 2002/04/19 03:10:30

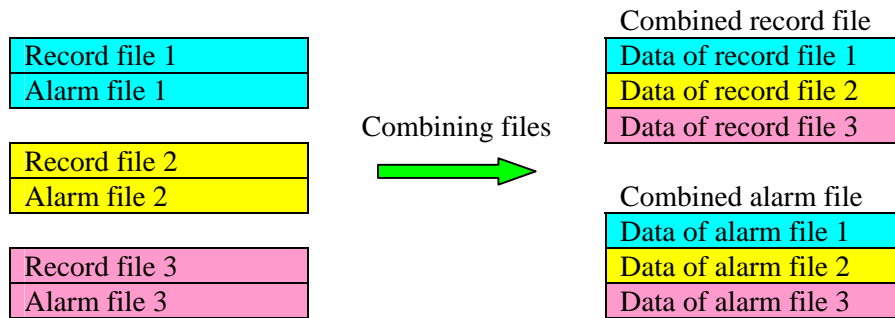
NO.	Item	CH.	MIN	MAX	Unit
NO.1	Temperat	1 Red	-1.8	MAX 48.8	°C
NO.2	Humidity	3 violet	MIN 0.0	MAX 100.1	%RH
NO.3					
NO.4					
NO.5					
NO.6					
NO.7					
NO.8					
NO.9					
NO.10					



# 5. FILE COUPLING FUNCTION

---

- Two or more record files and event data files can be combined into one.



- Record files are combined in chronological order of recording.
- The name of the combined file is the one originally selected except that the second character is replaced with “C.”

Example:



- No change is made to the original record files to be combined. Note that if a combined file is selected for the first file of those to be combined, that file can be overwritten.
  - If there is time interval between the files to be combined, the measurement during the period is supplemented by “0.”
  - Record files with different settings cannot be combined.
    - (1) When record format (ASCII, Binary) is different
    - (2) When “Refreshment cycle” is different
 

Example: If the “Refreshment cycle” of record file 1 is 1 second, while that of record file 2 is 30 seconds, those files cannot be combined.
    - (3) When the number of channels recorded is different
 

Example: If the number of record channels of record file 1 is 9, while that of record file 2 is 18, those files cannot be combined.
    - (4) When channel record type is different (File 1: MIN-MAX, File 2: average recording, etc.)
 

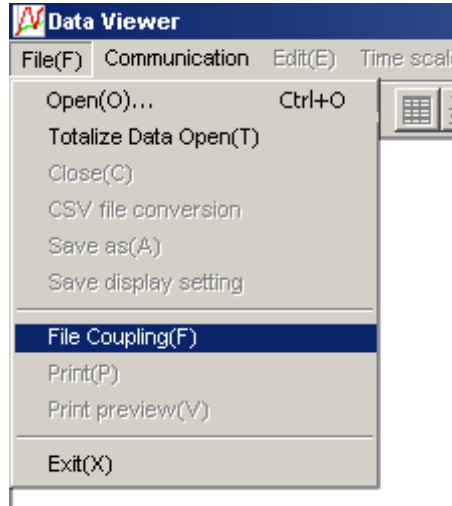
Example: If the record type of channel 1 of record file 1 is MIN-MAX recording, while that of channel 1 of record file 2 is average value recording, those files cannot be combined.
  - Files that can be combined are record files and event files only. Totalize files cannot be combined.
- Note)
- The size of the combined file is the sum of the size of the original files. Be careful not to create a file that is too large.
  - The time interval between the files to be combined, if any, is supplemented by dummy data. If the time interval is too long, the size of the combined file becomes too large.

---

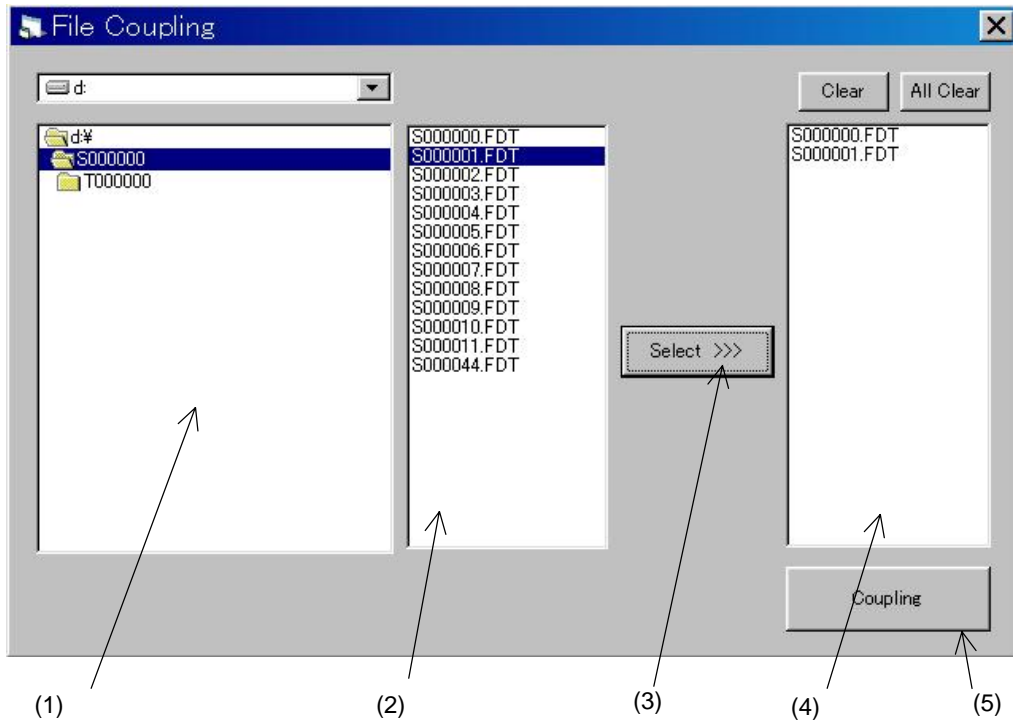
## 5.1 How to couple files

Follow the procedure shown below to combine files.

- 1) Display the file coupling screen by clicking "File (F)" ⇒ "File Coupling (F)".



- 2) Select the folder in which record files to be combined are stored (1).
- 3) The record file stored is displayed in (2). (Event data files are not displayed.)  
Select the files to be combined, and press the "Select >>" button in (3)
- 4) The files to be combined are displayed in (4).
- 5) Press the "Coupling" button (5) if the displayed files are to be combined, and the files are combined in the folder in which the record files have been stored.



## 6. FILE DOWNLOAD FUNCTION USING ETHERNET COMMUNICATION

---

- Record files stored in a compact flash card for the paperless recorder can be downloaded using Ethernet communication. The files can also be deleted.

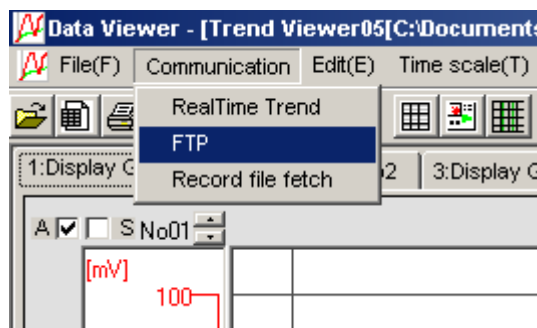
Note) 

- Ethernet communication option is required to use this function.
- Set the FTP server function setting to ON to use this function.

### 6.1 How to download files

Follow the procedure shown below to download record files.

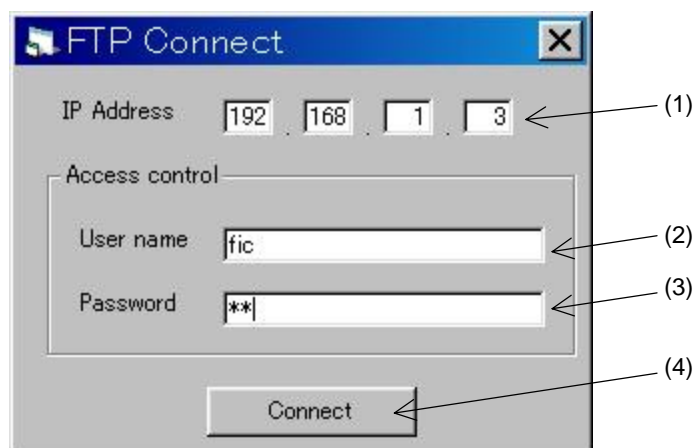
- 1) Display the screen on which the paperless recorder and Ethernet communication are to be connected by clicking "Communication" ⇒ "FTP".



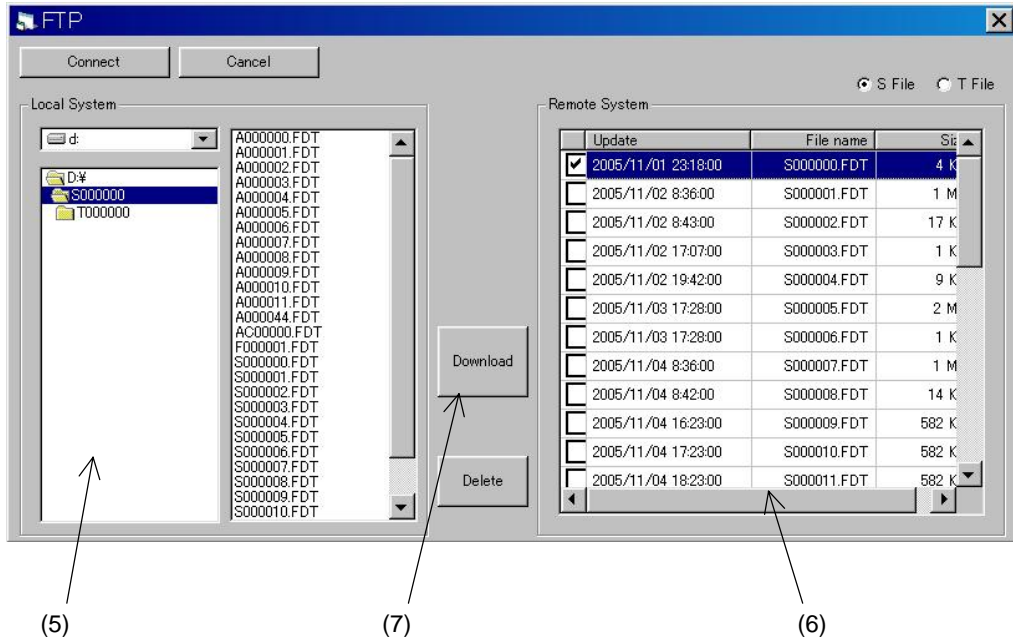
- 2) Select the IP Address (1) of the paperless recorder to be connected.

Then select user name (1) and password (2), and click the "Connect" button (4). The file download screen is displayed when communication is established.

\* If the "FTP access function" is set to OFF, connection can be established even if common user name "ftp" is selected as a user name.



- 3) Select a folder to which the read file is to be stored on the folder select screen (5).
- 4) The file that is recorded in the compact flash card of the paperless recorder is displayed (6).  
Check a file to be read on your PC. (Two or more files can be selected.)
- 5) Press the “Download” button (7), and reading of the selected file is started.



- Note)
- Click “T File” on the upper right-hand corner of the screen to read a totalize file.
  - To delete a file, select the file to be deleted and then click the “Delete” button.
  - If a file having the same name exists in the folder to which the file is to be stored, the file cannot be read.

# 7. THE AUTOMATIC ACQUISITION FUNCTION OF ARCHIVED FILES BY USING THE FTP COMMUNICATION

---

- Archived files within a compact flash (CF) memory card of the recorder in the Ethernet are downloaded into PC by starting the FTP communication periodically.
- Record files are automatically fetched from a maximum of ten recorders.
- Loaded record data is stored in a folder inside the folder in which the data viewer is installed. The name of stored file is the name produced in IP Address of recorder where FTP communication was made.  
For example, when the IP address of the recorder is 192.168.1.1, the folder name is to be “IP192168001001”.
- The re-start confirmation screen for automatic acquisition function is displayed when data viewer is finished and restarted while automatic acquisition function for record file is in operation.

## (Caution)

- When using this function, Ethernet communication option is required for paperless recorder.
- When using this function, set “FTP server function” of paperless recorder to the ON state.

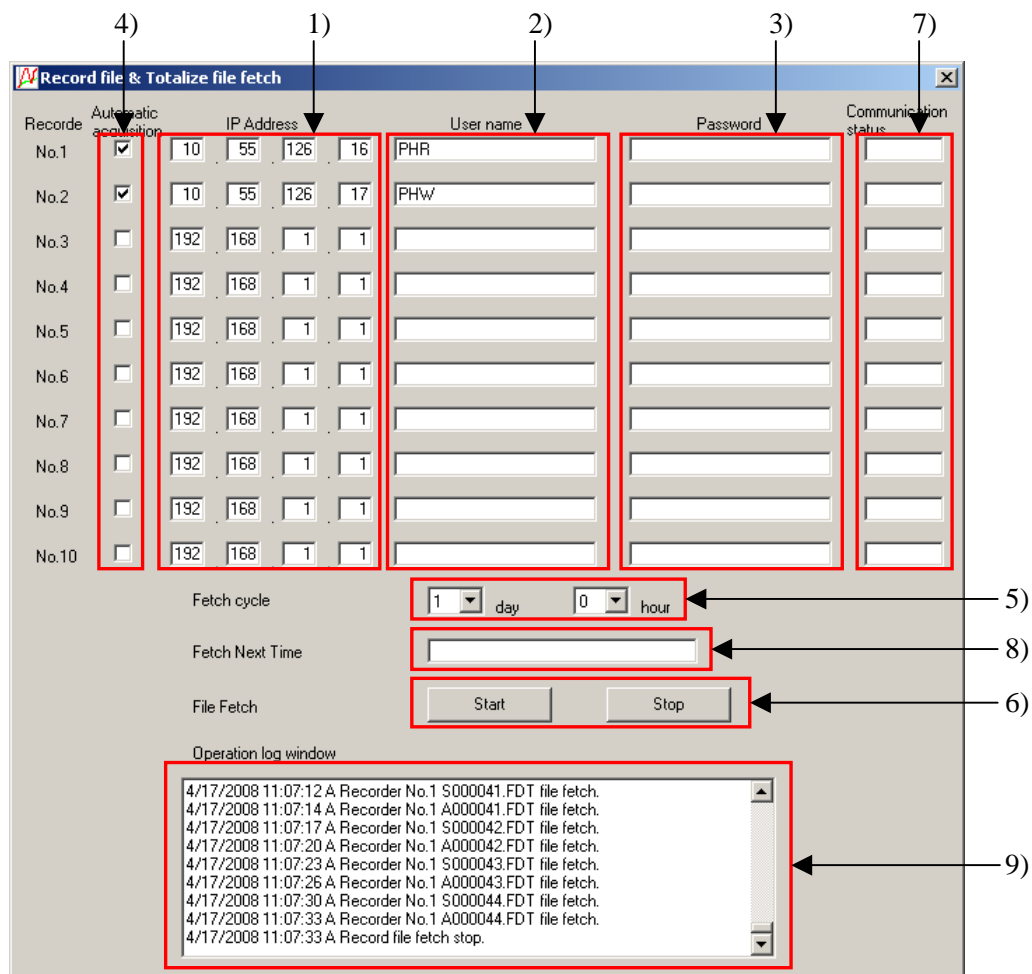
## 7.1 How to fetch files by using the FTP communication

Follow the procedure below to automatically fetch record files.

- 1) Select "Communication" ⇒ "Record file fetch" to display the setting screen.



- 2) Perform the setting in the following order.
  - 1) Set the IP address of the paperless recorder on the Ethernet.
  - 2) Set the user name.  
\* If the “FTP access management” of the paperless recorder is set to OFF, the connection can be realized in the condition in which the common user name “ftp” is set as a user name.
  - 3) Set the password.
  - 4) Select check boxes of desired paperless recorders for automatic acquisition.
  - 5) Set the fetch cycle (FTP communication cycle).  
\* Setting range  
Day: 0 to 60  
Hour: 0 to 24
  - 6) Select “Start” to start automatic acquisition.



## 7.2 Description of the setting screen

In addition to the contents described in Section エラー! 参照元が見つかりません。 , the following are displayed on the automatic acquisition setting screen for record files.

- 7) An automatic acquisition communication condition of a record file is displayed. “OK” is displayed if the previous automatic acquisition was completed properly, and “NG” is displayed if it failed.
- 8) The next automatic acquisition time is displayed.
- 9) The automatic acquisition function result is displayed.

Result log samples of automatic acquisition function

	Communication log sample
Automatic fetch start log	2006/05/12 10:20:30 Record file fetch start.
Automatic fetch re-start log	2006/05/12 10:20:30 Record file fetch restart.
Automatic fetch stop log	2006/05/12 10:20:30 Record file fetch stop.
Stop log related to viewer end	2006/05/12 10:20:30 Viewer stop.
Log at the time of FTP communication error	2006/05/12 10:20:30 FTP communication error!
Log for user name error	2006/05/12 10:20:30 FTP user name error!
Log at the time of downloading file	2006/05/12 10:20:30 S000000.FDT file fetch.
Log at the time of file download error	2006/05/12 10:20:30 S000000.FDT file fetch error!

---

## 7.3 Files that can be fetched

- Following files are fetched.
  - (1) Record file: S\*\*\*\*\*.FDT
  - (2) Event file: A\*\*\*\*\*.FDT
  - (3) Totalize files: T\*\*\*\*\*.FDT, D\*\*\*\*\*.FDT, M\*\*\*\*\*.FDT, E\*\*\*\*\*.FDT
- When a file with the same file name already exists in the folder, check if the two are the same. If not, overwrite it.



## 8. REAL TIME TREND FUNCTION

---

- The measured values of the recorder in the Ethernet and the RS-485 communication are read periodically to show them in the trend display and the digital display.
- Up to 86400 read values can be recorded in PC and checked in the standard trend screen.

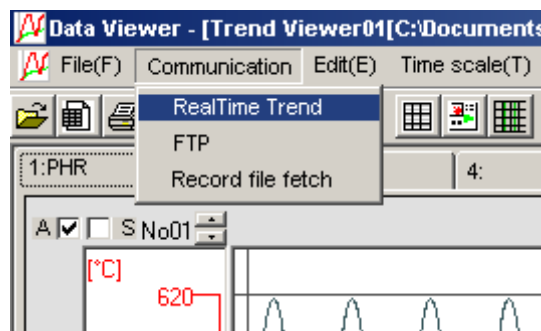
(Note)

- The Ethernet communication option or the RS-485 communication option is required for the paperless recorder to use this function.
- Set the “MODBUS TCP/IP function” of paperless recorder to ON to use this function in the Ethernet communication.
- Reading process of the measured values stops during the FTP communication.
- When reading of the measured values of the recorder in each periodic cycle fails, “0” is saved as the measured values in that cycle. (It appears as if the instruction changed suddenly.)
- The real-time trend function can be used only for one recorder at a time.
- The real time trend screen can be displayed only in the horizontal direction.
- When you change the setting of the recorder during the real-time trend, stop the real-time trend, restart it and update the setting. (The setting values of the recorder are not updated automatically.)

### 8.1 Display method of real time trend screen display method

Follow the procedure shown below to display the real time trend screen.

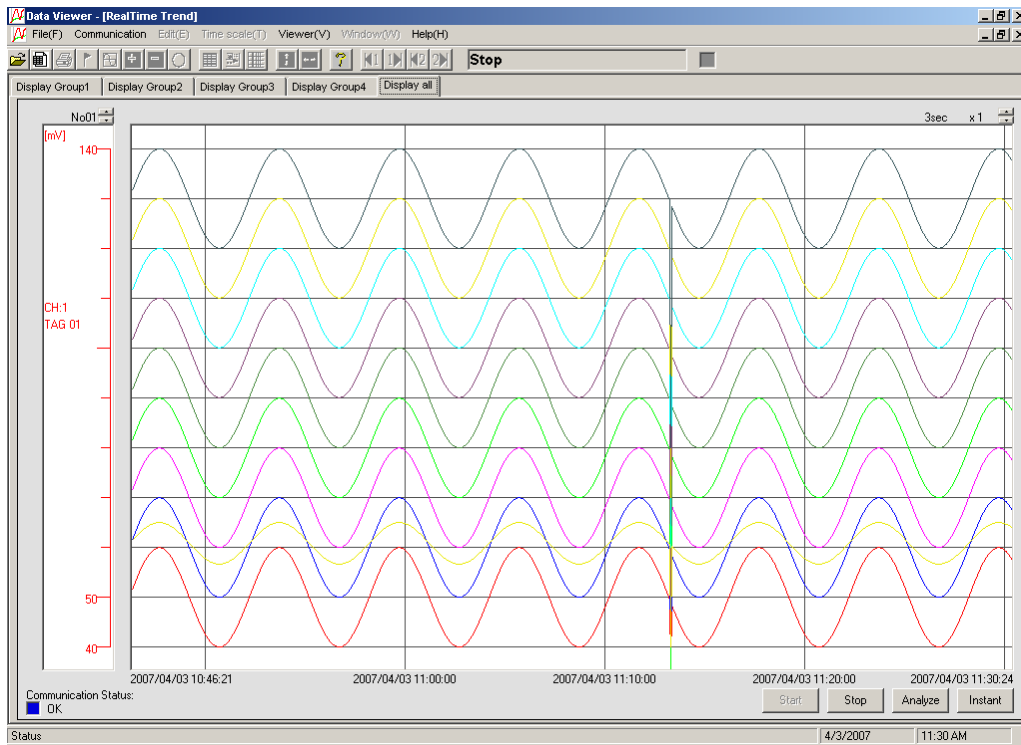
- 1) Select "Communication" ⇒ "Real time display" to display the real time trend setting screen.



- 2) Set the real-time trend setting items shown below and press the “real-time display” button.

- (1) Select the communication method (Ethernet or RS-232C).
- (2) Select the read cycle for the measured values. The read cycle can be selected from 1, 2, 3, 5, 10, 20, 30 seconds and 1 minute. The shorter a read cycle is, the higher the percentage of reading error is. So adjust the read cycle according to the PC environment.
- (3) Set the station No. of the recorder, which you communicate with.
- (4) Set the communication condition for Ethernet and RS-232C.  
In the case of Ethernet : Set the IP address.  
In the case of RS-232C : Set the communication port, communication speed and parity.

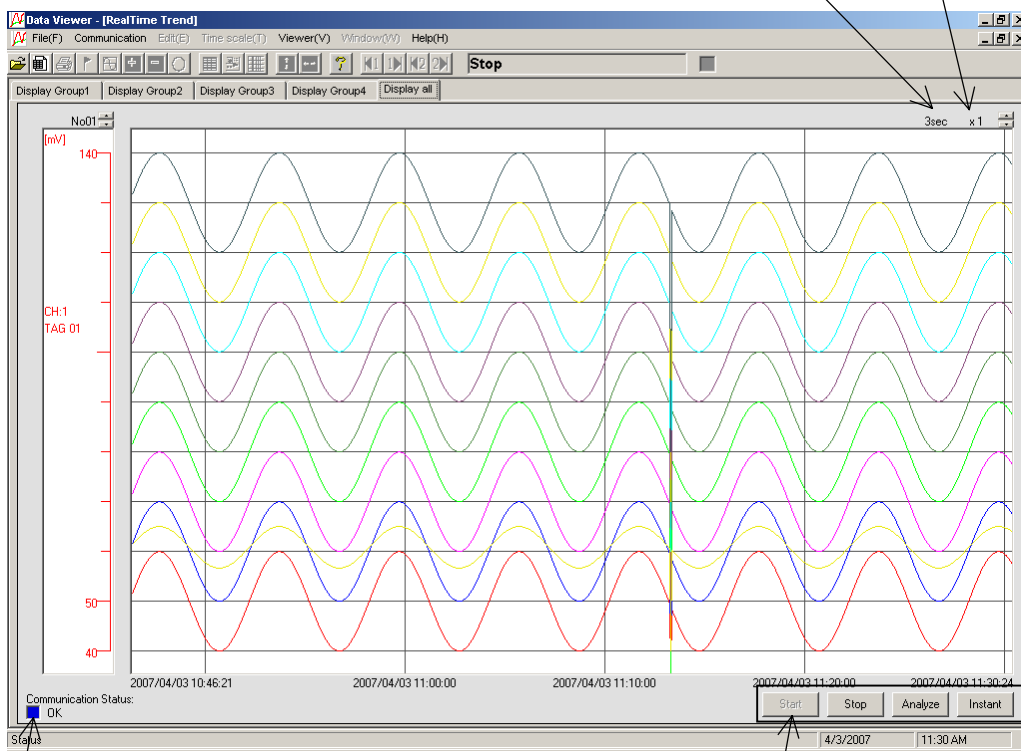
3) Press the “Start” button on the real time trend screen to start communication with the recorder.



## 8.2 Description of real time trend screen

The following items are displayed on the real time trend screen.

- (3) Measurement value read interval
- (4) Real time trend display magnification



(2) Communication status

(1) Real time trend operation buttons

---

(1) Real time trend operation buttons

Start	Starts the real time trend communication
Stop	Stops the real time trend communication
Measurement value	The screen showing the measured values in numerical display appears.
Analysis	The measured values recorded in PC are displayed in the standard trend display screen. (Note) As this process takes time, communication stops during the processing.

(2) Communication status

The color and comment of square box indicates the communication status of real time trend.

Blue	Communication status
Red flicker	Status during communication
Red	Communication error status

(3) Measurement value read interval

Measurement value read interval is displayed.

(4) Real time trend display magnification

Real time trend display magnification is set.

“x1” is the standard. When the value is larger than it, the trend screen display is compressed, and when the value is smaller than it, the display is enlarged. Display magnification is set with the button in the top right of the screen.

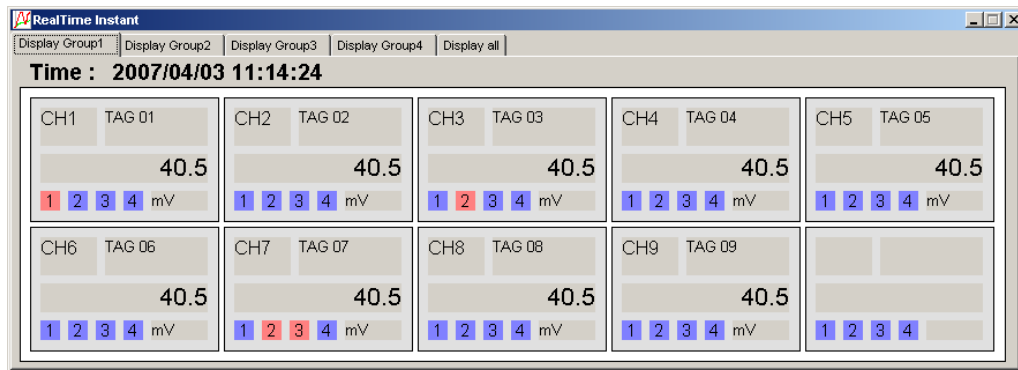
Setting range of the display magnification : ×0.1, ×0.5, ×1, ×2, ×10, ×60

---

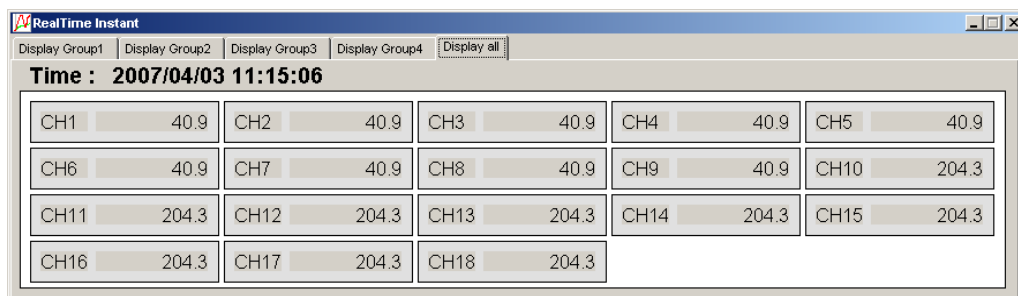
## 8.3 Description of measurement value display screen

Pressing the “Measurement value” button on the real time trend screen displays the measurement value display screen as shown below. You can check the measurement value, tag, unit and alarm information of each channel in this screen. Note that, only measurement value can be checked in the total display of the measurement value display screen.

- Measurement value display screen for each display group



- Measurement value display screen for total display



## 9. SIMPLE LIST FUNCTION

- You can create the following list of daily, monthly and annual reports from record data files displayed on the viewer.

Time	Point Value	Maximum	Minimum	Average	Totalize(/h)
0 - 1H	249.8	299.9	200.1	250.0	250.0
1 - 2H	242.0	299.9	200.1	250.0	250.0
2 - 3H	234.2	299.9	200.1	250.1	250.1
3 - 4H	227.0	299.9	200.1	250.1	250.1
4 - 5H	220.0	299.9	200.1	250.1	250.1
5 - 6H	214.0	299.9	200.1	250.1	250.1
6 - 7H	208.9	299.9	200.1	250.1	250.1
7 - 8H	204.9	299.9	200.1	250.1	250.1
8 - 9H	202.2	299.9	200.1	250.1	250.1
9 - 10H	200.6	299.9	200.1	250.1	250.1
10 - 11H	200.2	299.9	200.1	250.1	250.1
11 - 12H	201.1	299.9	200.1	250.1	250.1
12 - 13H	203.2	299.9	200.1	250.1	250.1
13 - 14H	206.6	299.9	200.1	250.1	250.1
14 - 15H	211.0	299.9	200.1	250.1	250.1
15 - 16H	216.8	299.9	200.1	250.1	250.1
16 - 17H	223.4	299.9	200.1	250.1	250.1
17 - 18H	230.5	299.9	200.1	250.0	250.0
18 - 19H	238.0	299.9	200.1	250.0	250.0
19 - 20H	245.8	299.9	200.1	250.0	250.0
20 - 21H	253.8	299.9	200.1	250.0	250.0
21 - 22H	262.0	299.9	200.1	250.0	250.0
22 - 23H	269.8	299.9	200.1	249.9	249.9
23 - 24H	277.1	299.9	200.1	249.9	249.9
Result	-	299.9	200.1	250.1	6001.4

- Lists are created by calculating the following values from record data files.

Calculated value	Description
Instantaneous value	Measured values of the channels on the hour are stored.
Maximum value	Maximum values of measured values of the channels during a specified period are stored.
Minimum value	Minimum values of measured values of the channels during a specified period are stored.
Mean value	Mean values of measured values of the channels during a specified period are stored.
Totalize value	Totalize values of measured values of the channels during a specified period are stored. Base time for totalize values is one hour (/h).

- The following values are calculated from the lists of the daily, monthly and annual reports.

	Description
Daily report	Hourly values of a day in which the cursor is placed.
Monthly report	Daily values of a month in which the cursor is placed.
Annual report	Monthly values of a year in which the cursor is placed.

- Lists are created based on the time of the cursor 1 on the trend screen displayed.
- List results of daily, monthly and annual reports are saved as CSV files.

List files are created in folders of record data files from which the list files were created.

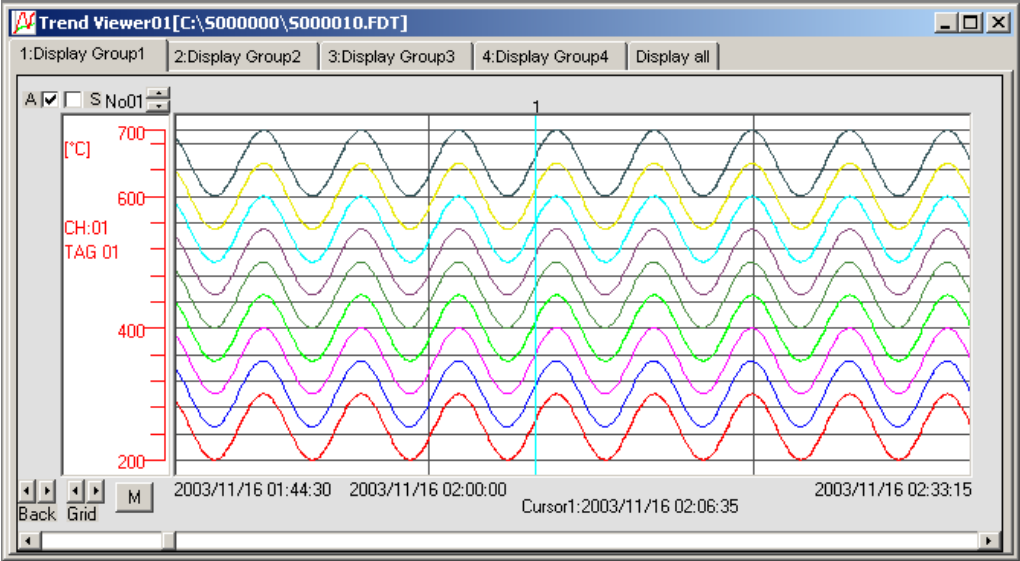
File names of list files are automatically created from record data file names from which the list files were created, as shown below.

	Composition of list file names	List file names created if a record data file name is "S000000.FDT"
Daily report	Record file name + "Daily" + A date of a daily report	S000000Daily20070227.csv
Monthly report	Record file name + "Monthly " + A month of a monthly report	S000000Monthly200702.csv
Annual report	Record file name + "Annual" + A year of a Annual report	S000000Annual2007.csv

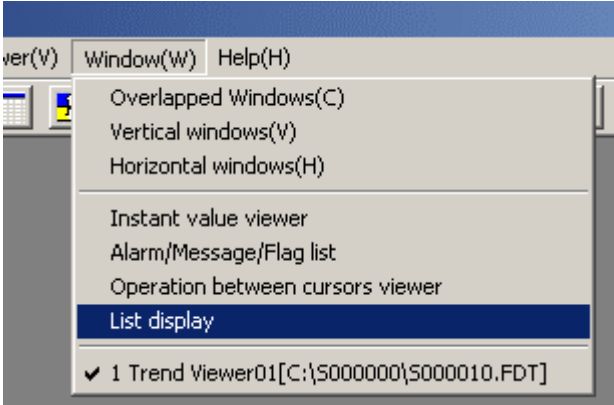
# 9.1 How to display the list display screen

Follow the procedure below to display the list display screen.

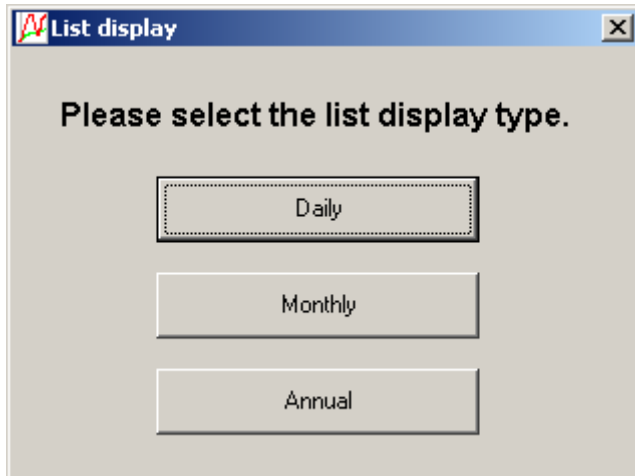
(1) Display the trend screen, and place the cursor 1 in a date from which you want to create a list.



(2) Click “Window” ⇒ “List display” to display the “Select the list display type” screen.



- (3) Select the list display type to display the list display screen.



- (4) Click "Save" at the lower left of the screen to save the list result as a CSV file.

The screenshot shows a window titled "Daily01 [C:\S000000\S000010.FDT]". It contains a table with the following data:

Time	Point Value	Maximum	Minimum	Average	Totalize(/h)
0 - 1H	249.8	299.9	200.1	250.0	250.0
1 - 2H	242.0	299.9	200.1	250.0	250.0
2 - 3H	234.2	299.9	200.1	250.1	250.1
3 - 4H	227.0	299.9	200.1	250.1	250.1
4 - 5H	220.0	299.9	200.1	250.1	250.1
5 - 6H	214.0	299.9	200.1	250.1	250.1
6 - 7H	208.9	299.9	200.1	250.1	250.1
7 - 8H	204.9	299.9	200.1	250.1	250.1
8 - 9H	202.2	299.9	200.1	250.1	250.1
9 - 10H	200.6	299.9	200.1	250.1	250.1
10 - 11H	200.2	299.9	200.1	250.1	250.1
11 - 12H	201.1	299.9	200.1	250.1	250.1
12 - 13H	203.2	299.9	200.1	250.1	250.1
13 - 14H	206.6	299.9	200.1	250.1	250.1
14 - 15H	211.0	299.9	200.1	250.1	250.1
15 - 16H	216.8	299.9	200.1	250.1	250.1
16 - 17H	223.4	299.9	200.1	250.1	250.1
17 - 18H	230.5	299.9	200.1	250.0	250.0
18 - 19H	238.0	299.9	200.1	250.0	250.0
19 - 20H	245.8	299.9	200.1	250.0	250.0
20 - 21H	253.8	299.9	200.1	250.0	250.0
21 - 22H	262.0	299.9	200.1	250.0	250.0
22 - 23H	269.8	299.9	200.1	249.9	249.9
23 - 24H	277.1	299.9	200.1	249.9	249.9
Result	-	299.9	200.1	250.1	6001.4

At the bottom left of the window, there is a "Save" button.



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