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# Introduction

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Thank you for your purchase of the SR series.

This software allows analysis of data stored on a SD card by the SR series.

This instruction manual describes preparation of hardware, program installation, operation method and so on. To fully understand this software and prevent troubles, be sure to read this instruction manual before installing.

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## Precautions

1. Be careful not to drop the software when taking it out of the package.
2. If not used for a long time, keep the software in a CD case after installation and store it at room temperature, away from dust.
3. Keep this instruction manual carefully until the software is discarded.
4. When discarding the software, follow the local regulations for waste disposal and cooperate in recycling.

### ■ Checking before use

After opening the package of this software, be sure to check the following before use. If you have found any problems, please contact the dealer where you purchased the product or the nearest sales office of Azbil.

1. Appearance  
Check the appearance of the product to see if there is any damage.
2. Label  
Check that the model written on the label is correct.

## Cautions for handling the CD-ROM

1. Eject the CD-ROM media from the drive when not used.
2. Be sure to keep the disk in a CD case.
3. Keep the disk away from direct sunlight, high temperature and humidity.
4. Keep the signal side clean from fingerprints, dirt, dust, scratches and water drops.

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# 1. Overview

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Data analysis software ZAILA is a software package to analyze the data stored in SD card by the SR series.

## 1-1. Main functions and features

- The data acquired by the SR series is displayed as trend.
- A number of data files can be compiled to one and displayed as a trend.
- Maximum 24 channels can be registered. Subtraction operations etc can also be registered.
- Acquired data can be printed, saved in CSV format or text format.
- Maximum value, minimum value, average value, standard deviation and median value can be displayed numerically and as graph.
- Two cursors can be displayed in the graph.
- Maximum value, minimum value, average value, standard deviation and median value between the cursors can be displayed as numeric value and graph.
- Graph can be magnified, reduced and partially magnified.
- Message can be inserted in the graph.
- Scale axis of graph can be logarithmically displayed.
- Trend graph can be printed. It can be saved as JPG or BMP.

## 1-2. Operation environment

### < Hardware >

CPU	1GHz or above
Memory	256MB (512 MB or more is recommended)
Disk drive	CD-ROM drive: 1 drive or more (necessary during installation) Hard disk drive: 1 drive or more for items with free space that is 100MB or more

### < Software >

OS ..... Windows XP / Windows Vista / Windows 7

※ Internet Explorer 4.0 or above is necessary.

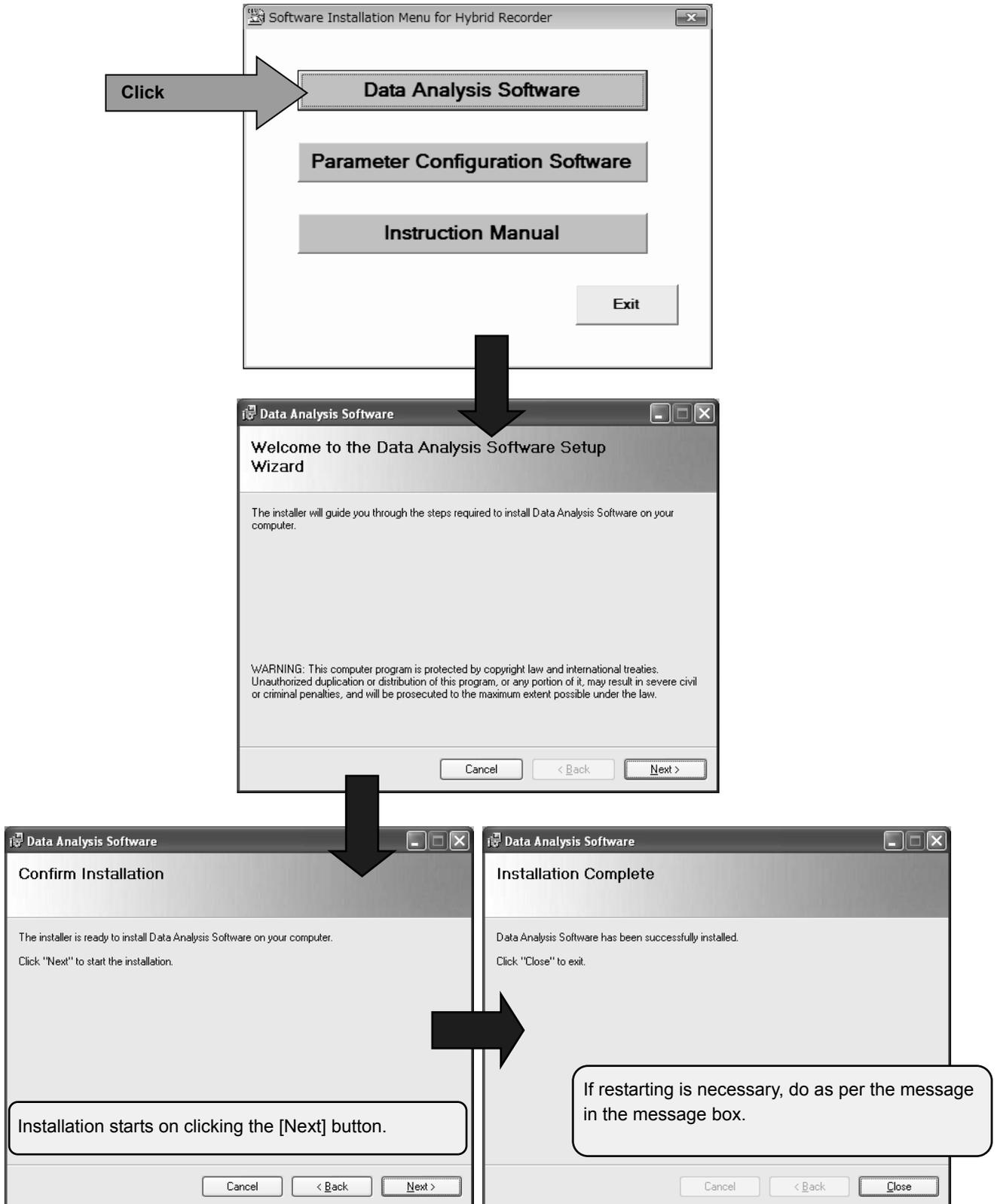
※ If you use Windows Vista/Windows 7, go to [Control Panel] - [Display] to set DPI to "Small-100%".

## 2. Installation and removal

### 2-1. Installation method

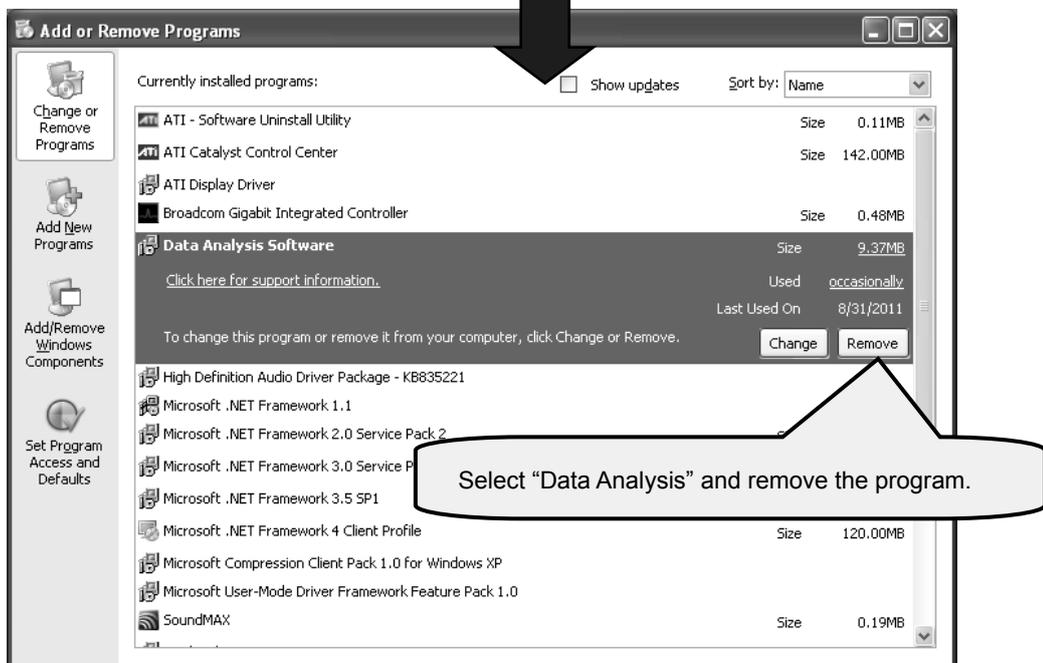
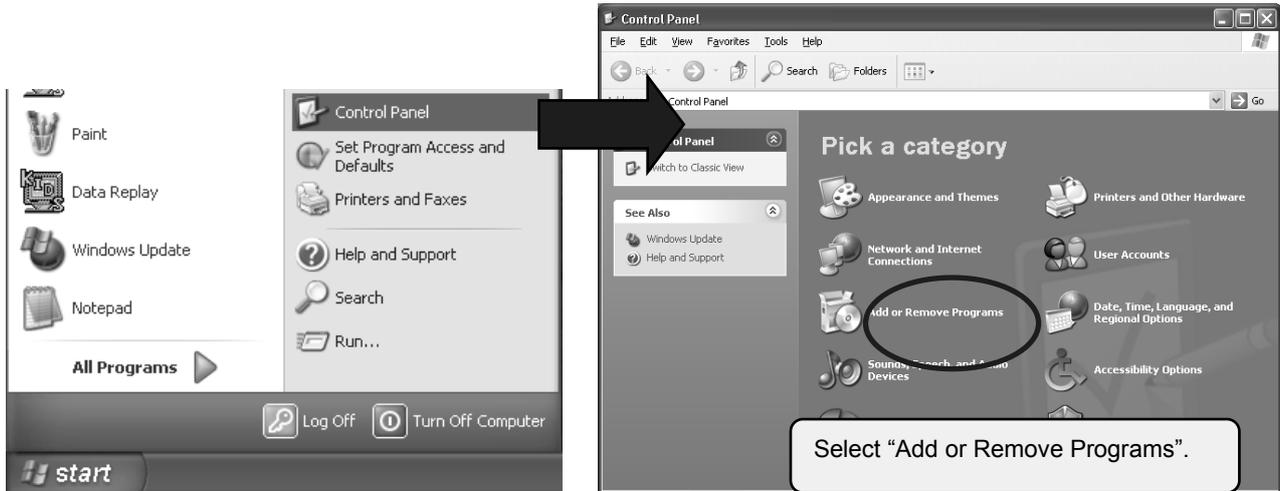
Click "Data Analysis" button. Installation screen gets display.

- Follow the instructions in the windows shown below. -



## 2-2. Un-installation (Remove) method

Click "Control Panel" from "All Programs" from "Start" of Windows task bar.

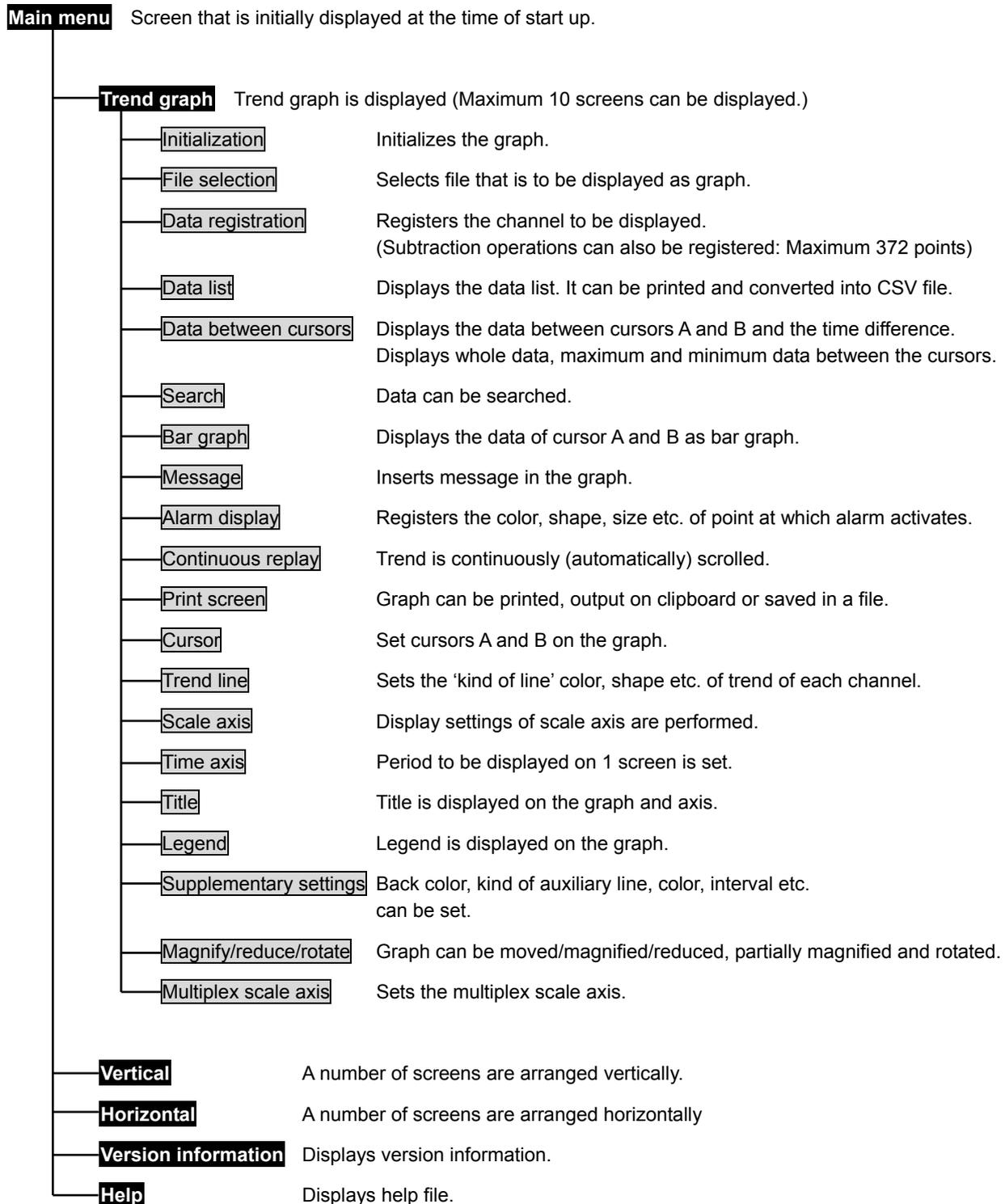


At this point, folder related to ZAILA remains.

In case of deleting all, delete the "Analysis" folder from explorer etc.

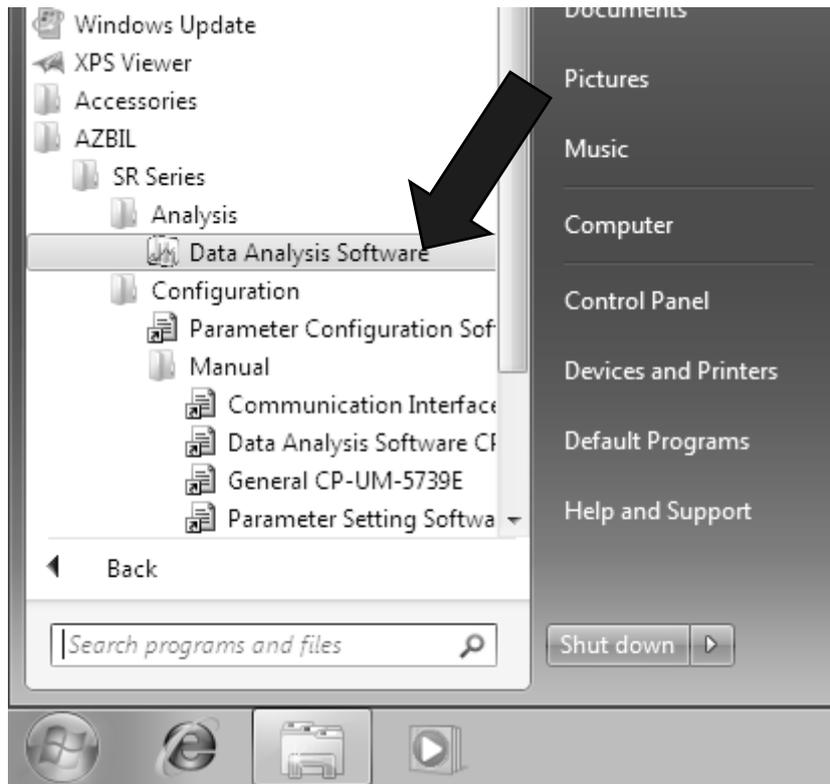
# 3. Operation

## 3-1. Data analysis software block diagram



### 3-2. Startup method of ZAILA

It is started by clicking “All Programs” - “azbil” - “SR Series” - “Analysis” - “Data Analysis” from “Start” in the Windows task bar.



### 3-3. Exiting data ZAILA

Click “X” on the right corner of the task bar.



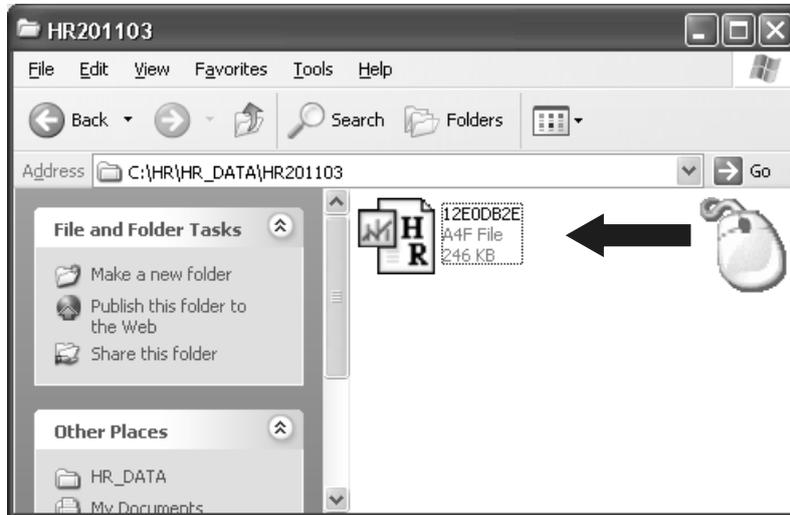
### 3-4. Easy to use! Operation guide

#### 1. Select file

File to be analyzed is selected. Following are the methods of selecting the files.  
(Select any one of the following methods)

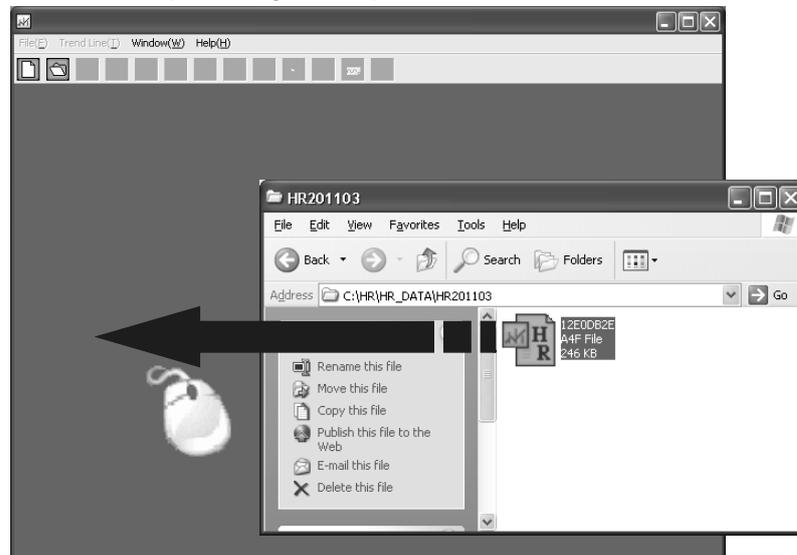
(1) Double click

When data file (extension is krb or krf) is double clicked, ZAILA starts automatically and trend graph is displayed



(2) Drag and drop

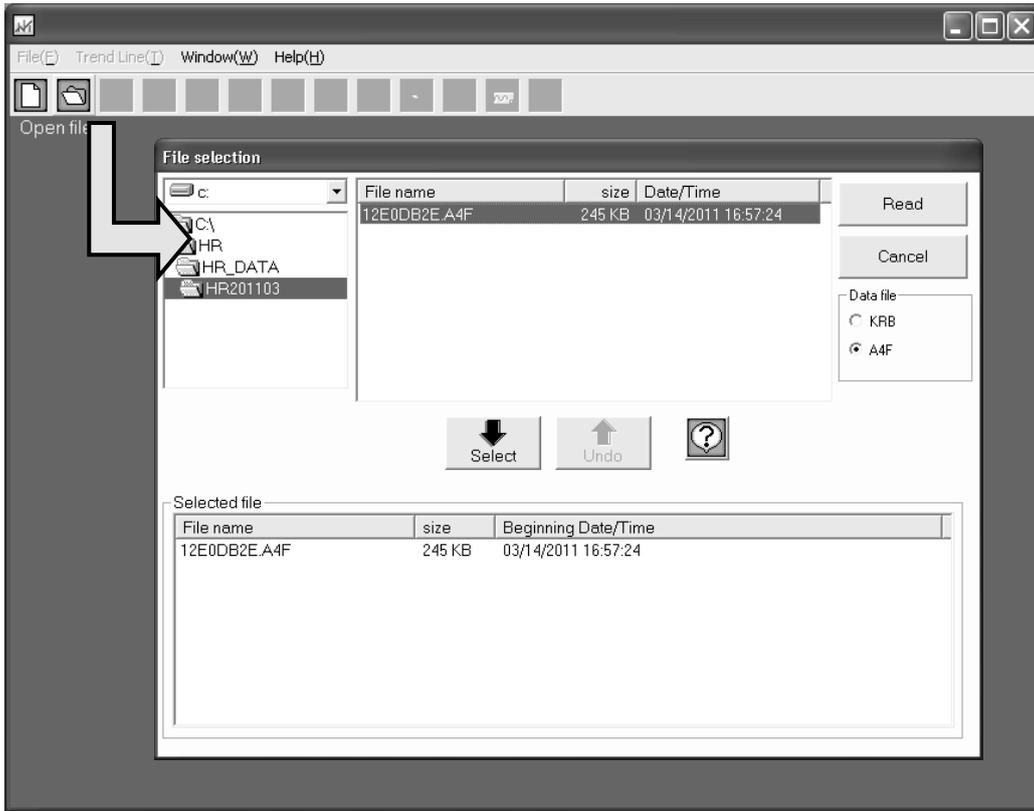
Start ZAILA and when trend screen opens, drag and drop the file.



(3) File selection

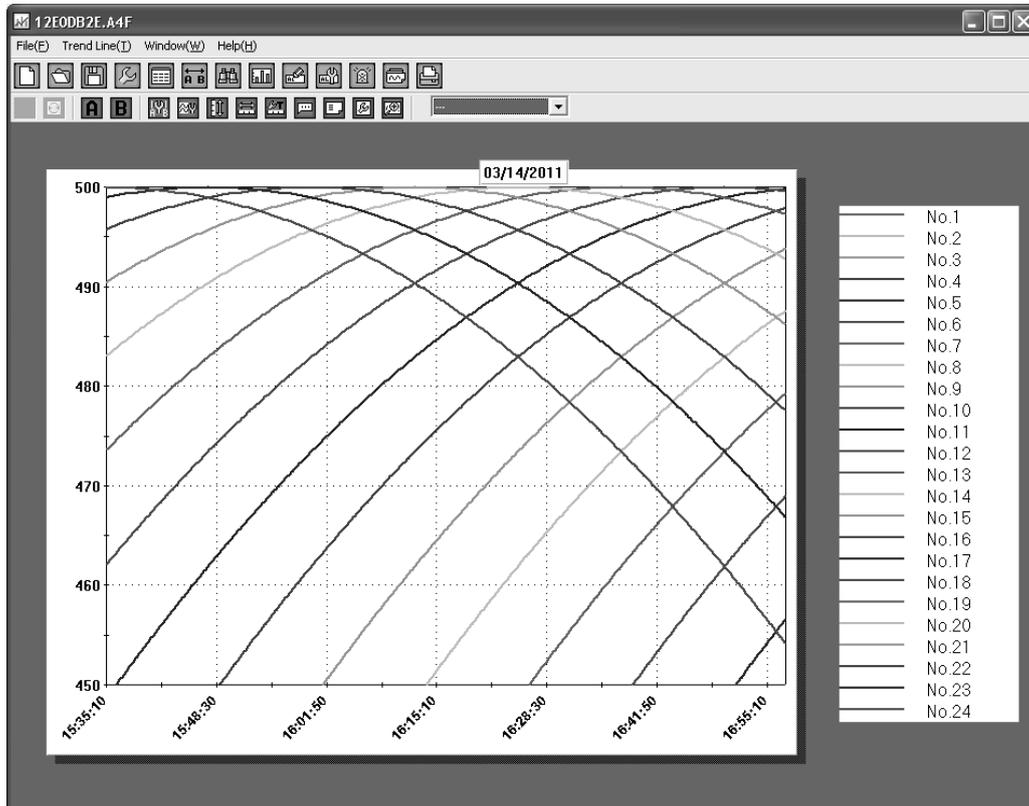
Start ZAILA and when trend screen opens, click “File selection” button .

Select the file when “File selection” screen opens.



2. Trend display

If file can be selected normally, it can be displayed as trend. (Range of the all data is displayed)

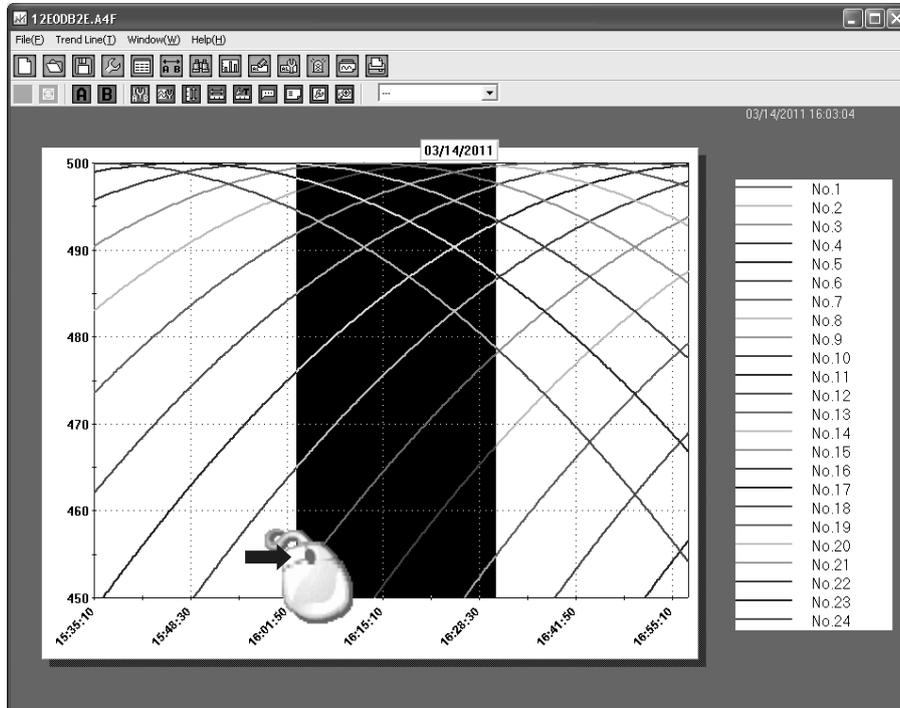


### 3. Changing the time axis

Time axis can be expanded and the data in that time range can be displayed on 1 screen by magnifying it. Data that is out of range can be viewed by scrolling the screen. There are 2 methods of changing the time axis.

(1) Specify the range of time axis by using mouse

Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point that is to be magnified and release the button on the point (end point is fixed); up to which it is to be magnified. (The range in black color that is rotating is magnified)



(2) Specify the range of time axis by using keyboard

Click the time axis button  on the tool bar and open the following screen.

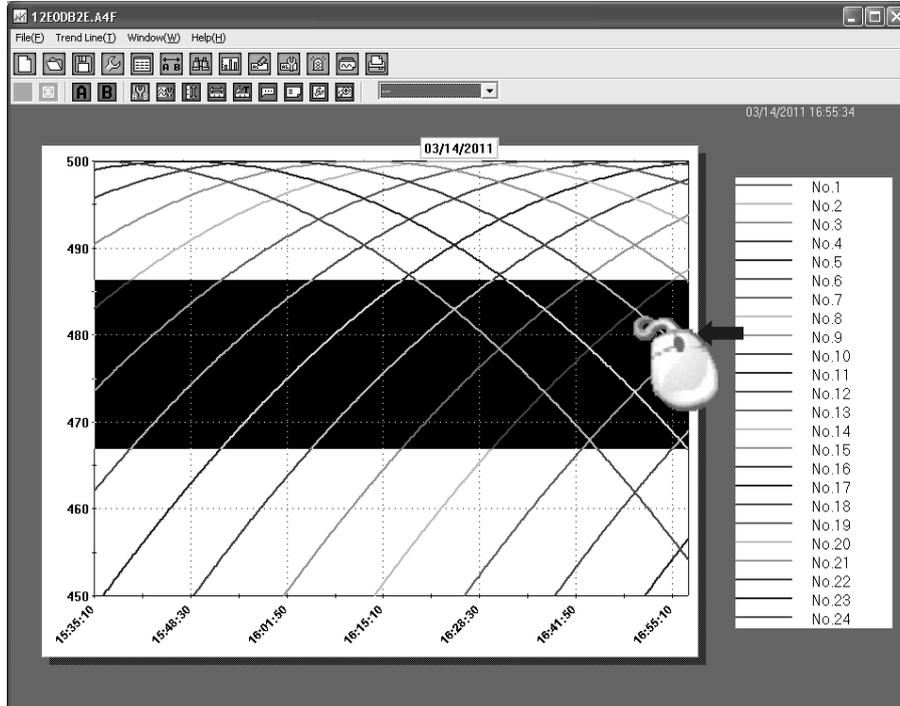
On clicking OK after entering the duration, if there is no mistake in the input, specified range is displayed.

#### 4. Changing the scale axis

Scale axis can be expanded and the data in that time range can be displayed on 1 screen by magnifying it. There are 2 methods of changing the scale axis.

(1) Specify the range of scale axis by using mouse

Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point (end point is fixed) that is to be magnified and release the button on the point, up to which it is to be magnified. (The range in black color that is rotating is magnified)



(2) Specify the range of scale axis by using keyboard

Click the scale axis button  and open the following screen.

On clicking OK button after entering Max value and Minimum value, if there is no mistake in the input, specified range is displayed.

The 'Scale axis' dialog box has the following fields and options:

Scale	Manual
Max value	500
Min value	450
Scaling	Optimization
Label display interval	10
Label inclination	0
Additional scale interval	5

Options:

- Logarithmic scale
- Rotate the axis

Cross point with time axis:

- 0
- Min value
- Max value

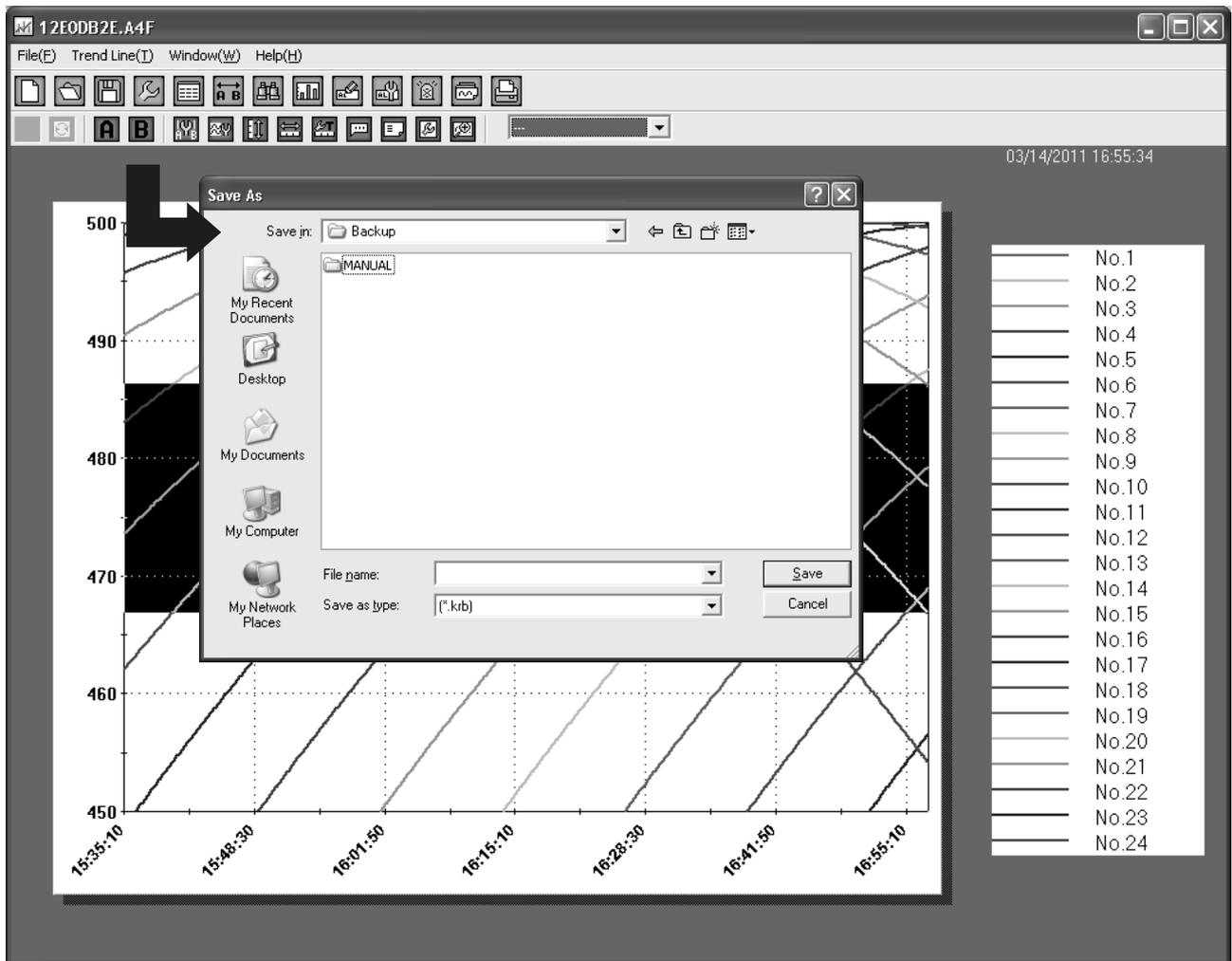
Buttons: OK, Cancel, Preview, ?

## 5. Save

The contents that are edited using ZAILA can be saved.

Click “Save” button  on the tool bar and enter the name of the file (extension krb).

If the saved file is selected by method “1. Select file”, the status at the time of saving can be reproduced.



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## 4. Main menu

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It is the screen displayed immediately after starting.



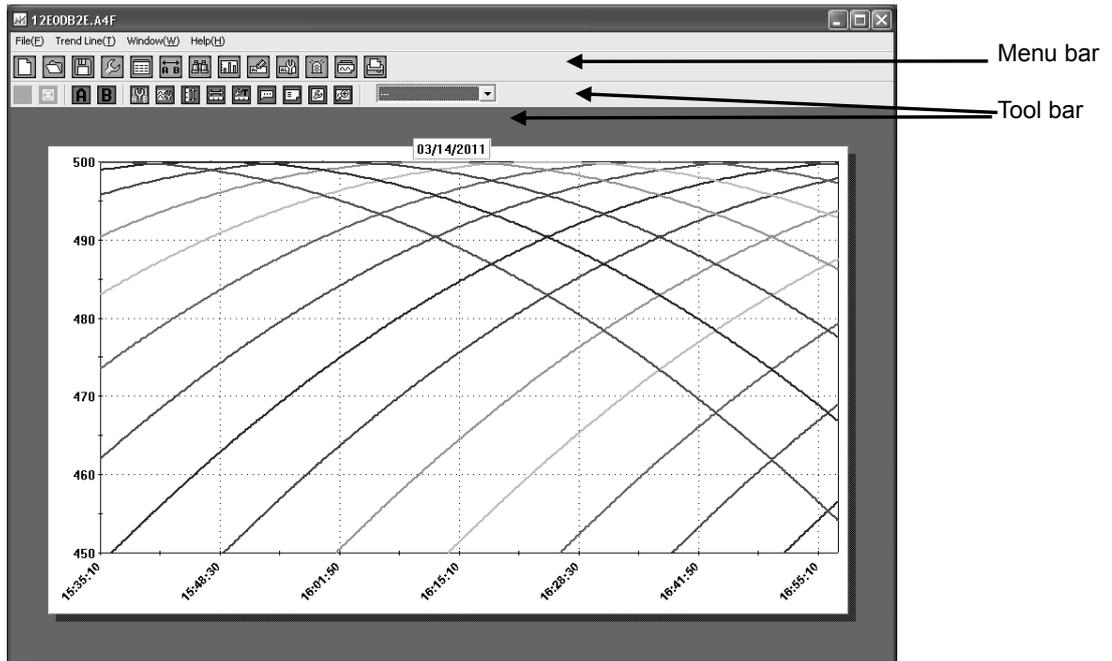
	Trend screen is displayed. Up to 10 groups can be displayed.
	Multiple windows are arranged vertically and displayed.
	Multiple windows are arranged horizontally and displayed.
	Version information is displayed.
	Help is displayed.

# 5. Trend graph

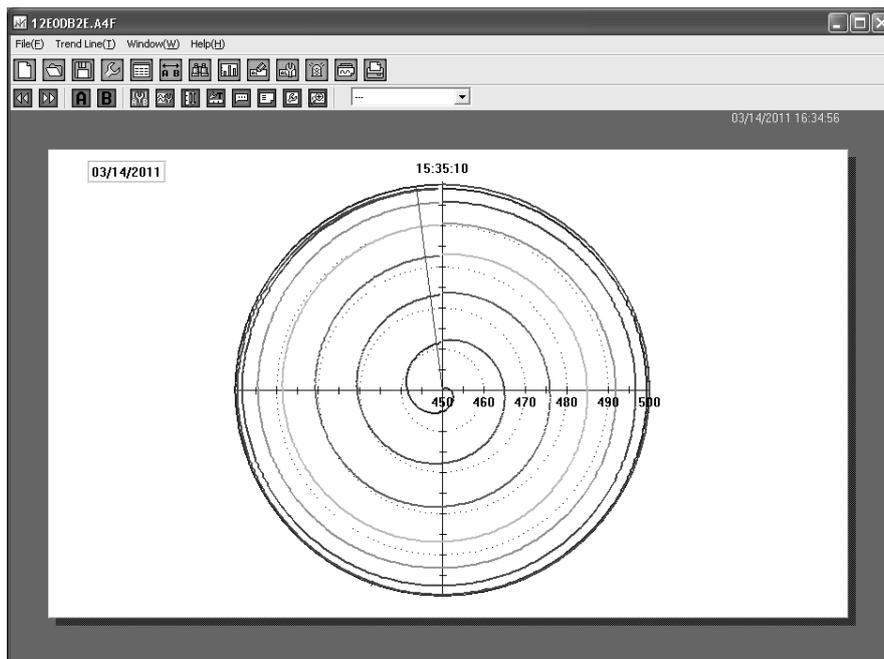
It is the screen in which the acquired data is displayed as trend graph.

- There are 3 types of trend displays viz. “horizontal trend, vertical trend and circular chart”. Display is changed using the menu bar on the upper side of the screen. (Refer to page 35).
- In case of horizontal/vertical trend, all data is displayed on 1 screen and time axis can be magnified (Refer to Easy to use! Operation guide). Screen can be scrolled by using the scroll bar.
- In case of circular chart, data of 360 points (degrees) can be viewed in one lap.  
Screen is updated using previous ◀◀ and next ▶▶ buttons.
- On doing various settings using the tool bar, various screens are displayed and data analysis can be done.

<Horizontal trend>



<Circular chart>



Tool bar: Upper

	Clears all the information (Initialization).
	File selection screen is displayed. Select the data that is to be analyzed.
	Saves the current status. (Extension: KRB)
	Registers the channel to be used. Subtraction operation and tag, units can also be registered.
	Data list is displayed. Data list of channel can be displayed, printed and file can be saved.
	Data of cursors A and B, and time are displayed. Time difference and data difference between cursors A and B; maximum, minimum and average value between cursors A and B and all data is displayed, printed and saved.
	Search screen is displayed and data can be searched.
	Displays the data of cursors A and B as bar graph. Display position, thickness and direction can be set.
	Message can be inserted in trend graph and bar graph.
	Details of the inserted message are displayed and they can be edited, moved and deleted.
	Shape, color and size of the point at which alarm activates can be set. Ignore when alarm is not displayed.
	Continuous replay is displayed and trend is continuously scrolled. (Not operable when displayed in multi-scale.)
	Trend screen can be printed, output on clipboard or can be saved as a file.

Tool bar: Below

	If time axis is magnified and performed, it returns to the previous step. × Not displayed in case of circular chart.
	Returns time axis to default and displays 'all data' in 1 screen. × Not displayed in case of circular chart.
	Circular chart displays 360 points data in one lap. Returns to the pervious lap. × Displayed only in case of circular chart.
	Moves to the next lap. × Displayed only in case of circular chart.
	If this button and then the trend screen are clicked, cursor A is set at the nearest position where it is clicked. On clicking it once again, the setting gets released, and even when trend screen is clicked, cursor is not set. (Cursor that is already set is not released.)
	If this button and then the trend screen are clicked, cursor B is set at the nearest position where it is clicked. On clicking it once again, the setting gets released, and even when trend screen is clicked, cursor is not set. (Cursor that is already set is not released.)
	Cursor A,B can be viewed or hidden and color, line type etc. can be set.
	Line type, color, shape etc. of trend of each channel can be set.
	Sets display of scale axis. Maximum/minimum value, scale display interval, logarithm display can be set. (Not operable when displayed in multi-scale.)
	Performs settings of time axis. Period to be displayed on the screen can be entered. × Not displayed in case of circular chart.
	Sets display of time axis. Time display interval, additional scale interval etc. can be set.
	Title can be entered in the graph.
	Legend display can be set.
	Supplementary settings of graph are done. Back color, line type of auxiliary line, color, interval etc. can be set.
	Graph can be magnified, reduced and rotated. (Not operable when displayed in multi-scale.)

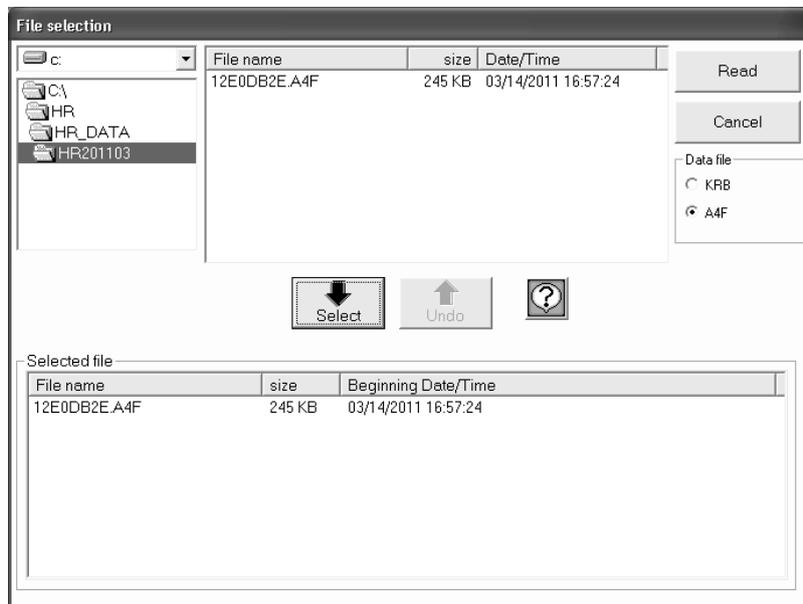
## 5-1. File selection

- Select a file (ZAILA handles the following files.).

Extension	Description
A4F	Files created by the SR series.
KRB	Files created when data displayed on ZAILA are stored.

- File list is displayed on the upper side of 'File selection' screen.
- On selecting the file and clicking the select button, the selected file gets added in the file column on the lower side of the screen. If the acquisition period is same, multiple files can be selected. (Only 1 file with extension KRB can be selected.)

Select	Selected file gets added in the file column on the lower side of the screen.
Undo	Selected file is deleted from the selected file column.
Read	Data of selected file is read.



## 5-2. Data registration

- Registers the channel to be used.
- Subtraction operation can be registered.
- Tag, unit and exponential display can be registered.
- Registration is done automatically but in case of performing an operation registration is done manually.

“Operation method”

Reference CH is registered in, A: Reference channel.

CH to be subtracted is registered in B.

In case of subtracting a fixed value, input numeric value in, B: value to be subtracted.

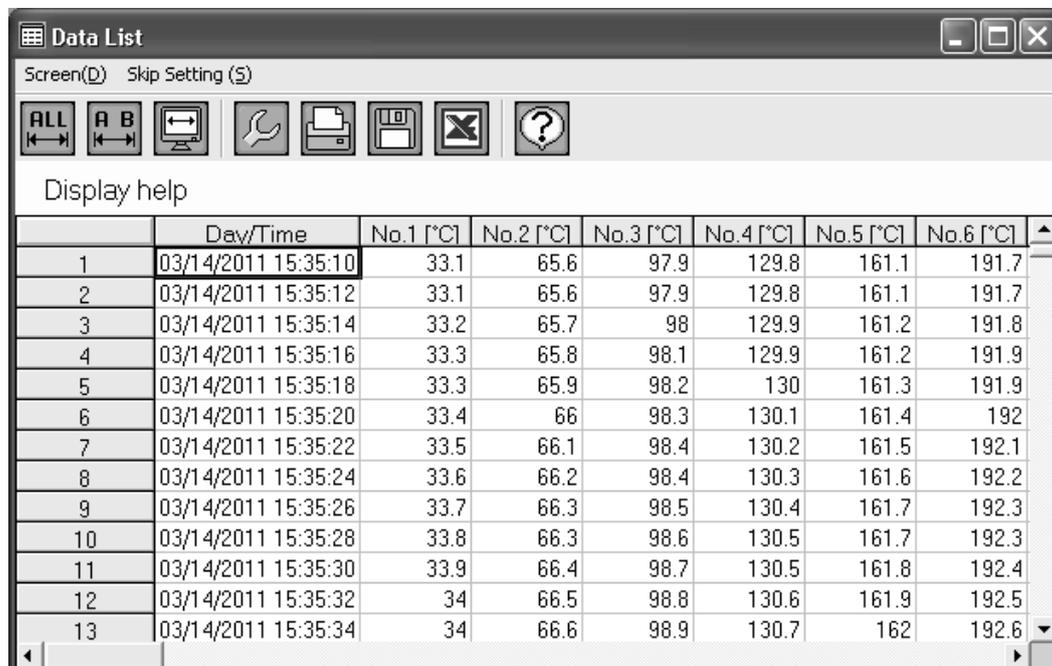
- Scale axis can be switched single mode, double mode, or multiplex mode.  
 Single mode ..... Data value of each channel is displayed in the same scale axis.  
 Double mode ..... Data value of each channel is displayed by scaling of the maximum/minimum scale value.  
 \* Cannot use logarithmic scale. \* Cannot display standard deviation  
 Multiplex mode ..... Several scales are displayed in the graph as in the case of recorders.  
 \* Cannot display when index data is included.  
 \* Cannot display standard deviation.

CH	Show	A Ref. CH	+/-	B Sub. CH	B Subtract value	Scale Min value	Scale Max value	Scale D Pnt	Tag	Unit	Exponent
No1	<input checked="" type="checkbox"/>	No1	-	-	0	-500.0	500.0	1	Temp1	°C	—
No2	<input checked="" type="checkbox"/>	No2	-	-	0	-500.0	500.0	1	Temp2	°C	—
No3	<input checked="" type="checkbox"/>	No3	-	-	0	-500.0	500.0	1	Temp3	°C	—
No4	<input checked="" type="checkbox"/>	No4	-	-	0	-500.0	500.0	1	Temp4	°C	—
No5	<input checked="" type="checkbox"/>	No5	-	-	0	-500.0	500.0	1	Flow1	NL/min	—
No6	<input checked="" type="checkbox"/>	No6	-	-	0	-500.0	500.0	1	Flow2	NL/min	—
No7	<input checked="" type="checkbox"/>	No7	-	-	0	-500.0	500.0	1	Flow3	NL/min	—
No8	<input checked="" type="checkbox"/>	No8	-	-	0	-500.0	500.0	1	Press1	Pa	—
No9	<input checked="" type="checkbox"/>	No9	-	-	0	-500.0	500.0	1	Press2	Pa	—
No10	<input checked="" type="checkbox"/>	No10	-	-	0	-500.0	500.0	1	Press3	Pa	—
No11	<input checked="" type="checkbox"/>	No11	-	-	0	-500.0	500.0	1	No.11	°C	—
No12	<input checked="" type="checkbox"/>	No12	-	-	0	-500.0	500.0	1	No.12	°C	—
No13	<input checked="" type="checkbox"/>	No13	-	-	0	-500.0	500.0	1	No.13	°C	—
No14	<input checked="" type="checkbox"/>	No14	-	-	0	-500.0	500.0	1	No.14	°C	—

### 5-3. Data list

- Data list is displayed in table format.
- The point at which alarm is activated is displayed in red.
- If the mouse is moved to that cell, details of the warning are displayed.
- Data list can be output as file.

	Displays all data as a list.
	Displays data between cursor A and B as list. Ignore when cursor A and B are not set.
	Displays the period that is currently shown. ※ Not displayed in case of circular chart.
	Print settings are done.
	Prints. ※ When computerizing with the 64-bit version of Windows Vista/Windows 7, save the contents before output.
	Outputs the file. Formats like CSV and text format (Tab delimiter) can be selected.
	Export to Excel. Auto-launch Excel, and display a graph. ※ Excel is necessary for display.



The screenshot shows a window titled "Data List" with a toolbar containing icons for ALL, A B, Monitor, Wrench, Printer, Floppy disk, Excel, and Help. Below the toolbar is a "Display help" button. The main area contains a table with the following data:

	Day/Time	No.1 [°C]	No.2 [°C]	No.3 [°C]	No.4 [°C]	No.5 [°C]	No.6 [°C]
1	03/14/2011 15:35:10	33.1	65.6	97.9	129.8	161.1	191.7
2	03/14/2011 15:35:12	33.1	65.6	97.9	129.8	161.1	191.7
3	03/14/2011 15:35:14	33.2	65.7	98	129.9	161.2	191.8
4	03/14/2011 15:35:16	33.3	65.8	98.1	129.9	161.2	191.9
5	03/14/2011 15:35:18	33.3	65.9	98.2	130	161.3	191.9
6	03/14/2011 15:35:20	33.4	66	98.3	130.1	161.4	192
7	03/14/2011 15:35:22	33.5	66.1	98.4	130.2	161.5	192.1
8	03/14/2011 15:35:24	33.6	66.2	98.4	130.3	161.6	192.2
9	03/14/2011 15:35:26	33.7	66.3	98.5	130.4	161.7	192.3
10	03/14/2011 15:35:28	33.8	66.3	98.6	130.5	161.7	192.3
11	03/14/2011 15:35:30	33.9	66.4	98.7	130.5	161.8	192.4
12	03/14/2011 15:35:32	34	66.5	98.8	130.6	161.9	192.5
13	03/14/2011 15:35:34	34	66.6	98.9	130.7	162	192.6

## 5-4. Data between cursors

- Data of cursors A and B, and time are displayed. Time difference and data difference between cursors A and B; maximum, minimum, average, standard deviation, median value between cursors A and B and all data is displayed as list, printed and saved.
- Cursors A and B can be moved. (As it is moved one by one, fine adjustment is possible.)
- Points in data of cursors A and B at which alarm is activated is displayed in red.
- If the data difference of cursor A and B (A-B) is minus, it is displayed in red.
- Calculation between cursors A and B is displayed on clicking 
- On clicking auto calculation of menu bar to ON, the calculations are made for every change of cursor AB.  
× The larger the data the longer it takes for calculation.
- Operation result between all data and between cursors A and B can be displayed in trend screen.

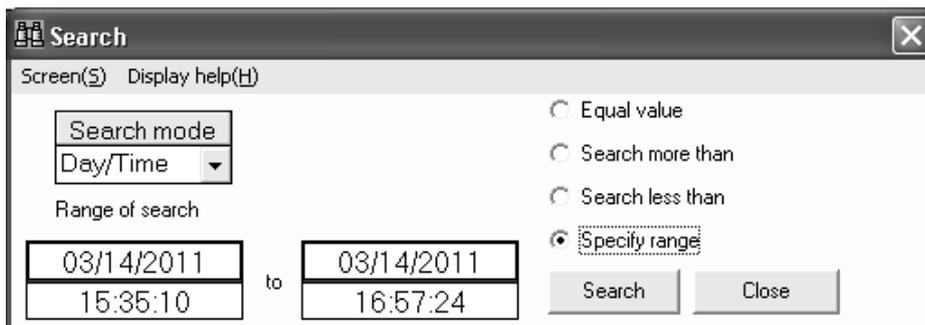
	Move cursor A one step to the left.
	Move cursor A one step to the right.
	Move cursor B one step to the left.
	Move cursor B one step to the right.
	In case of displaying computation calculation result of data as trend, register the color, line type etc. of trend.
	Calculation of the computation between the cursors is made. × Ignore when cursors A and B are not set.
	Do the print settings.
	Print preview is displayed.
	Prints. × When computerizing with the 64-bit version of Windows Vista/Windows 7, save the contents before output.
	Outputs the file.

	Cursor A	Cursor B	A-B	All Data Max value	All Data Min value	All Data Average	All Data Standard deviation
Day/Time	03/14/2011 15:41:34	03/14/2011 16:44:10	0:0:3.756				
No.1 [°C]	49.7	207.2	-157.5	238.3	33.1	137.769651539708	59.4696253088403
No.2 [°C]	82.1	236.5	-154.4	266.5	65.6	168.64688006483	58.2212746723537
No.3 [°C]	114.2	264.8	-150.6	293.6	97.9	198.801377633711	56.7248369249785
No.4 [°C]	145.8	292	-146.2	319.5	129.8	228.10510534846	54.98752578322
No.5 [°C]	176.8	317.9	-141.1	343.9	161.1	256.430551053485	53.0147887851623
No.6 [°C]	207	342.5	-135.5	366.9	191.7	283.65822528363	50.8173206918371

## 5-5. Search

- Search screen is displayed and data can be searched.
- Search result is displayed as list in table format and on clicking it, that point is displayed by cursor.
  - × When it is not displayed in trend screen, auto scrolling is done and that point is displayed by cursor.

Search mode	Contents								
Max value	Searches the maximum value of the objective channel.								
Min value	Searches the minimum value of the objective channel.								
Average	Searches value that is equal to, greater than or less than the average value of the objective channel.								
Standard deviation	Searches the value that is within the range and outside the range (average value $\pm\sigma$ ) of standard deviation of objective channel.								
Median	Searches value that is equal to, greater than or less than the median value of the objective channel.								
Manual input	Enters manually the value to be searched. It can be searched by specifying the value that is equal to, greater than, less than or by specifying the range.								
Day / Time	Enter the time to be searched. It can be searched by specifying the time equal to, greater than or less than the entered time or by specifying the range. In case of specifying the range, enter the range of time to be searched.								
Cursor	Searches the maximum value, minimum value, average value, standard deviation or median value between the cursors. Searches cursors A and B.								
Message	Searches a point that has a message.								
	<table border="1"> <tr> <td>All</td> <td>"All" searches all messages.</td> </tr> <tr> <td>Match with letters</td> <td>"Match with letters" searches only the message that has a string that matches completely with the entered letter.</td> </tr> <tr> <td>Including letters</td> <td>"Including letters" searches the message that contains the entered letter.</td> </tr> <tr> <td>Excluding letters</td> <td>"Excluding letters" searches the message that does not contain the entered letter.</td> </tr> </table>	All	"All" searches all messages.	Match with letters	"Match with letters" searches only the message that has a string that matches completely with the entered letter.	Including letters	"Including letters" searches the message that contains the entered letter.	Excluding letters	"Excluding letters" searches the message that does not contain the entered letter.
	All	"All" searches all messages.							
	Match with letters	"Match with letters" searches only the message that has a string that matches completely with the entered letter.							
Including letters	"Including letters" searches the message that contains the entered letter.								
Excluding letters	"Excluding letters" searches the message that does not contain the entered letter.								
Alarm	Searches the point at which alarm of the objective channel is displayed. Can be searched from 'all' or level 1-4.								

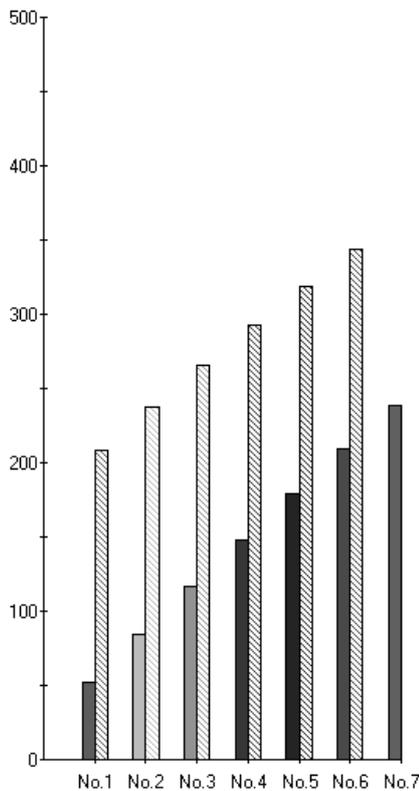


## 5-6. Bar graph

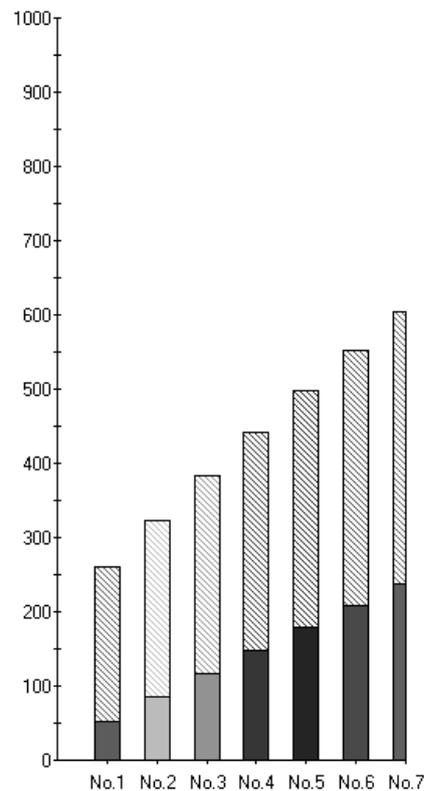
- Displays the data of cursors A and B as bar graph.
- Graph type, display position, direction etc. can be set.

Graph	Selects between show/hide. In case of display, select the position of arrangement from one of 'above', 'below', 'left' and 'right'.
Chart type	It can be selected from bar graph, multilayer graph and Data (refer to figure below). Bar graph displays cursors A and B in adjacent manner (left). In case of multilayer graph, cursors A and B are displayed as multilayered graph in 1 bar graph (right). In case of Data, Data of cursors A and B, and time are displayed. Time difference and data difference between cursors A and B are displayed.
Direction	Direction of graph can be selected from "Horizontal direction/Vertical direction".
Overlap	Overlapping of graph can be set. * Ignore in case of multilayer graph.
Width	Width of the bar can be set.

Bar graph



Multilayer graph

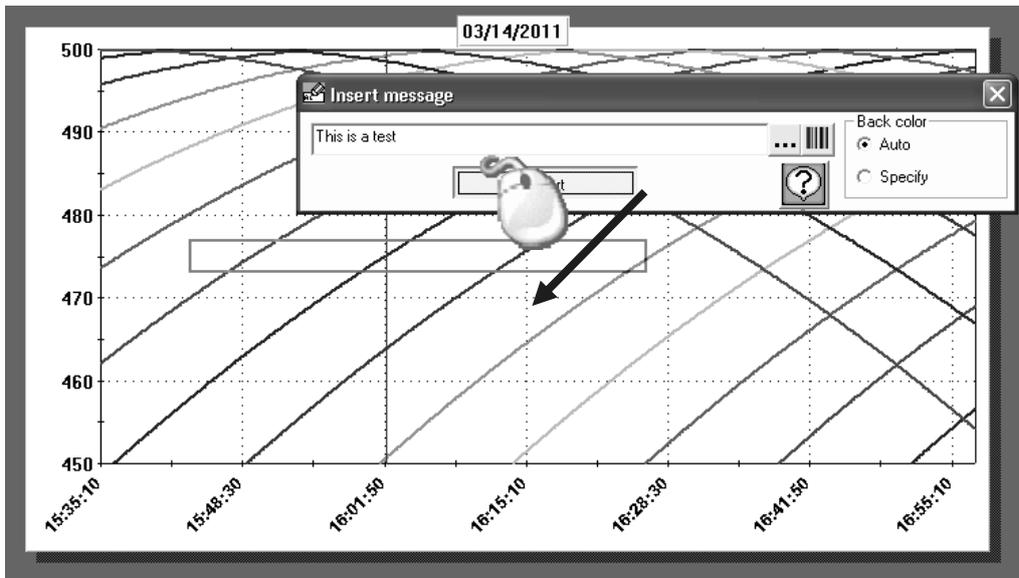


## 5-7. Insert message

- Message can be inserted in the data on the graph.
- Message is inserted at the nearest data point when it is dragged and dropped.
- Font color, font and background color of the message can be specified.

“Method of inserting message”

- (1) Input a message. Select font color and font back color. (Button on the right)
- (2) Click the insert button and move the message that is input, to the trend screen by keeping the right button of the mouse pressed (Drag).
- (3) If mouse is moved in the trend screen, the frame is highlighted and displayed. Hence release the left button of the mouse. (Drop).



## 5-8. Edit message

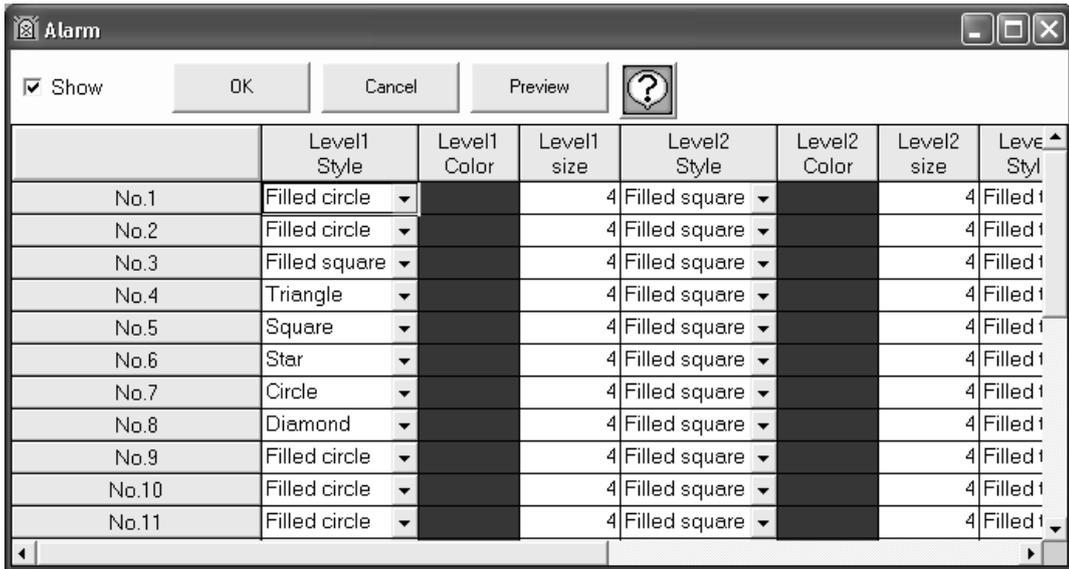
- Details of the inserted messages can be edited, moved and deleted.

Edit	Message can be edited. Enter the message directly.
Delete	Right click on the message to be deleted and select delete option.
Move	<p>“Trend graph”</p> <p>On clicking the right and left buttons, it can be moved to the right and left.</p> <p>On clicking the up and down buttons, one can move between the channels.</p> <p>“Bar graph”</p> <p>On clicking the right and left buttons, one can move between the channels.</p> <p>On clicking the up and down buttons, one can move between cursors A,B.</p>

## 5-9. Alarm display

- Display on the trend graph, the points of every level at which warning appears.
- Shape, color, size etc. of each point at which alarm activates can be set.
- Ignore it although it is set, when alarm is not activated.

Style	Select the style to be displayed for the point for which alarm activates (Select from the list).
Color	Select the color to be displayed for the point for which alarm activates. (Click and select.)
Size	Enter the size of the style. (Enter a numeric value.)



## 5-10. Continuous replay

- Trend is continuously (automatically) scrolled.
- Scroll changes depending on the change in speed of scrolling and on, changing the updated data count.
  - "Menu"
 

When endless is selected as "Mode", if data is scrolled till the end, it returns to the beginning and starts scrolling. When endless is not selected, the scrolling stops when data is scrolled till the end.
  - "Button"
 

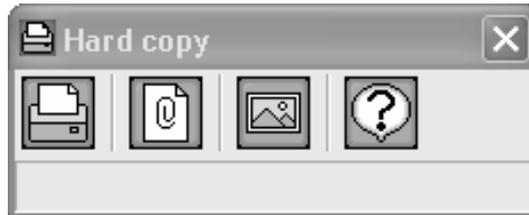
"Start" Starts scrolling  
 "Stop" Pauses. Click 'Start' for restart.  
 "Available" Reflects the current status in the trend graph.
  - "Set"
    - (1) Scrolling speed can be adjusted. The more it is moved to the right, the more the speed.
    - (2) Scrolling ratio can be adjusted. The more it is moved to the right, the higher the ratio and the ratio of updating the screen in 1 scroll becomes higher.
    - (3) Updated data count can be adjusted. It is the data count to be updated by scrolling once.
    - (4) Screen data count can be adjusted. It is the data count to be displayed in 1 screen.

× In case of circular chart only (1) is displayed.  
 × In case of circular chart the data count displayed in 1 screen is 360 points.

## 5-11. Print screen

- Trend screen can be printed, output on clipboard or saved in a file.

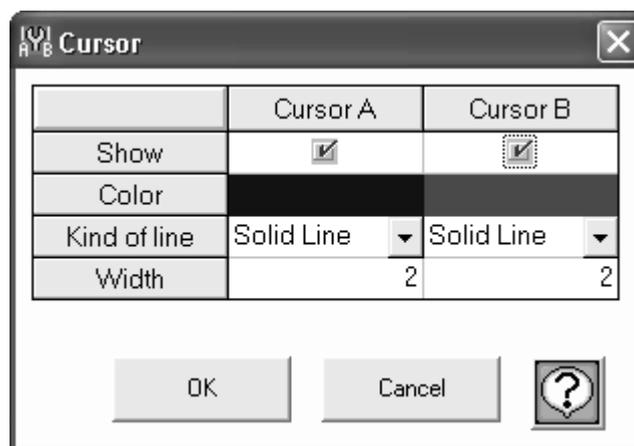
	Prints. ※ When computerizing with the 64-bit version of Windows Vista/Windows 7, save the contents before output.
	Outputs on clipboard. Selects one of trend graph and bar graph when both are displayed.
	Outputs to file in BMP and JPG format. Selects one of trend graph and bar graph when both are displayed.



## 5-12. View cursor

- Show/hide, color, kind of line etc. of cursors A and B can be set.

Show	Click and select show/hide.
Color	Select the color to be displayed.
Kind of line	Select 'Kind of line' to be displayed, from the list. It can be selected from "Solid line/dotted line/chain line".
Width	Enter a numeric value for line width of the cursor to be displayed. The larger the size the wider the cursor.



## 5-13. Trend line

- Set the kind of line, color, shape etc. of trend of each channel.

Chart type	Line	Displays by connecting by a line in between the data as shown in pen type recorder.
	Dot	Displays data by dots as shown in dotting recorder.
	Line + dot	Displays a combination of pen type and dotting type. Displays the data by dots and by connecting by a line in between the data.
Line color	Select the color of the line. × Ignore if dot is selected as graph type.	
Width	Enter the line width. The larger the size the thicker it is displayed. × Ignore if dot is selected as graph type.	
Kind of line	Select from the list the kind of line to be displayed. It can be selected from “Solid line/dotted line/chain line”. × Ignore if dot is selected as graph type.	
Dot color	Select the color of dots. × Ignore if line is selected as graph type.	
Size	Enter the size of dot to be displayed. The larger the size the larger is the dot. × Ignore if line is selected as graph type.	
Shape	Select from the list the shape of the dot to be displayed. × Ignore if line is selected as graph type.	

The screenshot shows a dialog box titled "Trend Line" with buttons for "OK", "Cancel", "Preview", and a help icon. Below the buttons is a table with 8 columns: Tag, Chart type, Line color, Width, Kind of line, Dot color, size, and Shape. The table contains 12 rows of settings for different channels.

Tag	Chart type	Line color	Width	Kind of line	Dot color	size	Shape
No.1	Line		2	Solid Line		7	None
No.2	Dot		2	Solid Line		7	Filled circle
No.3	Line+Dot		2	Dotted line		7	Filled circle
No.4	Line		2	Chain line		7	Star
No.5	Line		2	Solid Line		7	Square
No.6	Line		2	Dotted line		7	Triangle
No.7	Dot		2	Solid Line		7	Diamond
No.8	Line+Dot		2	Chain line		7	Filled circle
No.9	Line		2	Solid Line		7	None
No.10	Line		2	Solid Line		7	None
No.11	Line		2	Solid Line		7	None
No.12	Line		2	Solid Line		7	None

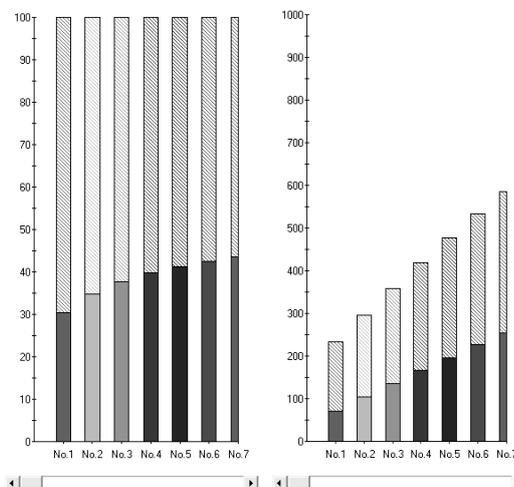
## 5-14. Set scale axis

- Maximum value, minimum value, scale display interval, logarithm display etc. of scale can be displayed.

Scale	Set maximum value/minimum value of scale. "Optimization" Optimizes maximum/minimum value of scale automatically such that all the data is displayed. Normally this is used. "Manual" The value entered in maximum/minimum value of scale is reflected in scale. Use in case of magnifying and reducing.	
Max value	Sets maximum value of scale. Ignore, as it is automatically adjusted in case of "Optimization".	
Min value	Sets the minimum value of scale. Ignore, as it is automatically adjusted in case of "Optimization".	
Scaling	Selects the interval to display the scale. Displays the value in specified interval. "Optimization" Optimizes the value to be displayed and displays it on scale axis. "Manual" Displays in scale axis, the value on label display interval.	
Label display interval	Specifies the interval of displaying the value in scale axis. Ignore as it is automatically adjusted in case of "Optimization".	
Label inclination	Specifies the numeric inclination of label that is displayed (0-359°).	
Additional scale interval	Specifies the interval of additional scale. Auxiliary line can be drawn in scale axis at specified interval. (Value is not displayed.) Ignore as it is automatically adjusted in case of "Optimization".	
Logarithmic scale.	On keeping the check ON, logarithmic scale is displayed. ※ Displayed only on the single mode.	
Rotate the axis.	Rotate the top and the bottom of the scale axis.	
100% overlapping	All the graphs are of same height and are adjusted such that the total of cursors A and B is 100%. ※ Displayed only when multilayer graph is selected in graph type for bar 4 graph.	
Cross point with time axis	Selects the cross point with time axis. ※ Not displayed in circular chart.	
	0	Cross point of time axis and scale axis at 0.
	Minimum value	Cross point of time axis and scale axis at minimum value.
	Maximum value	Cross point of time axis and scale axis at maximum value.

Left:100% overlapping

Right: Multilayer (Not 100% overlapping)



## 5-15. Set time axis

- Period to be displayed in 1 screen can be entered.
- There are 2 methods viz. 'Specify hours' method that displays the data from 'Beginning Date/Time' to a 'Specific period' in 1 screen; and 'Specify range' method that displays the data of specified period in 1 screen. Thus time axis can be changed as per the requirement.
  - × If the entered duration is much smaller than the acquisition cycle; and if the period is very long, an error message is displayed and duration cannot be displayed.
  - × Not displayed in case of circular chart.

Specify hours	Displays in 1 screen the data from 'Beginning Date/Time' to the 'Specific period'.
Specify range	Displays in 1 screen the data of specified period.

## 5-16. Set time display interval

- Sets time display interval, additional scale interval etc.

Time interval	<p>"Automatic" Displays time interval which is optimum. Normally this is easy to understand. If the time axis is magnified/reduced, it is changed to the interval that is most easy to understand.</p> <p>"Data" Displays time in the data interval that is specified. Even when time axis is magnified/reduced, display interval does not change.</p>
Additional scale interval	<p>"None" Additional scale is not displayed.</p> <p>"Data" Displays additional scale in the data interval that is specified. If time display interval is "Automatic", it cannot be selected.</p>
Option display	<p>Set time display.</p> <p>Display font, character color and inclination can be set. If small intervals of display are overlapping, incline the characters.</p>

## 5-17. Title

- Displays title in graph and axis.
  - What the graph and axis explains becomes clear when title is inserted.
- “Header/Footer” .... Title can be entered in header and footer of the graph.**

Style	“None” Displays the title without enclosing it in a frame. “Plane” Displays the title by enclosing it in a frame. “Cubic” Displays the title by enclosing it in a cubic frame.
Width	Sets the frame width. Ignore in case of “None”.
Back color	Sets the back color of title.
Character color	Sets the character color of the title.

**“Axis Setting” ..... Titles can be entered for time axis and scale axis.**

- × Cannot be set in case of circular chart.
- × The items cannot be changed if displayed in gray.

Title	Characters are entered. Font can also be set.
Inclination	Select the tilt of display characters from the list.
Font	The font of display characters is set.

The screenshot shows a dialog box titled "Title" with the following sections:

- Header:** A text field containing "Title1" with a menu icon (three dots) to its right. Below it is a table:
 

Style	Plane
Width	2
Back color	
Character color	
- Footer:** A text field containing "Title2" with a menu icon (three dots) to its right. Below it is a table:
 

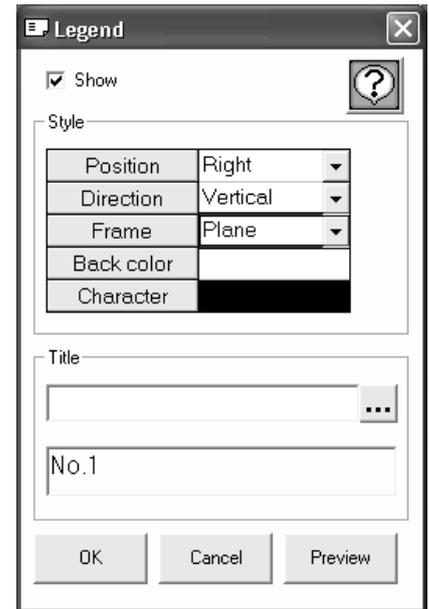
Style	Cubic
Width	2
Back color	
Character color	
- Axis Setting:**
  - Time axis:** A text field containing "Time".
  - Inclination:** A dropdown menu set to "0 deg".
  - Scale axis Left:** A text field containing "°C".
  - Scale axis Right:** A text field containing "mV".
  - Inclination:** A dropdown menu set to "0 deg".
  - Font:** A menu icon (three dots).

At the bottom right, there is a help icon (question mark in a square) and three buttons: "OK", "Cancel", and "Preview".

## 5-18. Legend

- Legend display can be set.

Show	Selection of show/hide of Legend display.
Style	Sets the style for the Legend display.
Position	Position to be displayed of the Legend can be selected in list.
Direction	Direction of Legend can be displayed in list.
Frame	Frame enclosing the Legend can be displayed in list.
Back color	Back color of Legend can be selected.
Character	Character color of Legend can be selected.
Title	Title for Legend can be displayed.



## 5-19. Supplementary settings

- Executes the supplementary settings for graph. Back color, types of supplementary line, color and interval can be set.

“**Color**” ..... Display color of graph is set.

Graph background	Back color of graph can be selected.
Graph frames	Color of graph frame can be selected.
Time axis	Color of time axis can be selected.
Scale axis	Color of scale axis can be selected.
Entire	The background color of the entire screen can be selected.

“**Wall paper**” ..... Wall paper at the background of graph can be displayed.

Wall paper	When 'Use' is selected, select the image (BMP or WMF format) to be used for the wall paper.
Position	When "Stretch" is displayed, the image gets enlarged and is displayed on the screen. When "Center" is selected, image is displayed at the center of the screen. When "Tile stile" is selected, image is displayed in tile pattern.

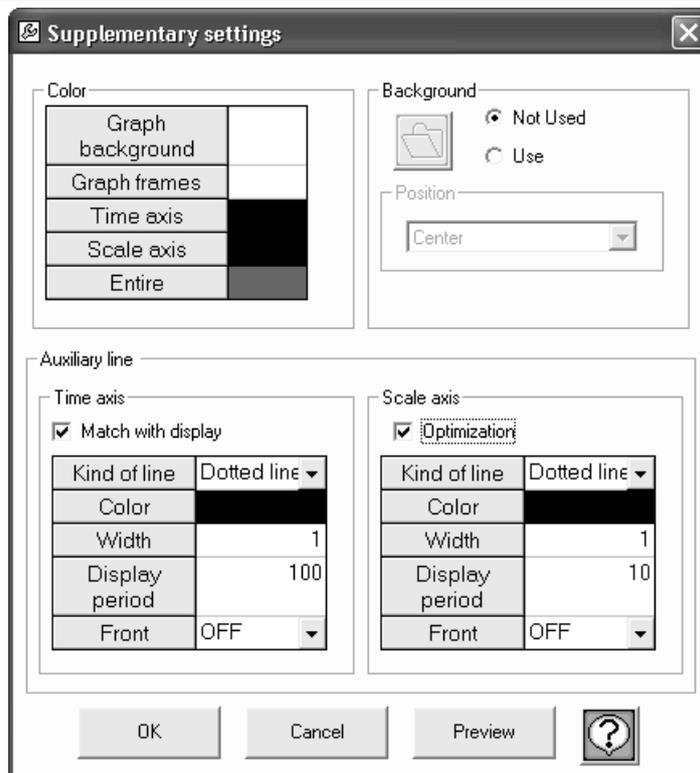
“**Auxiliary line**” ..... Auxiliary line can be displayed in graph.

<Time axis>

Match with display	Displays the auxiliary line for the period specified in time display period.
Kind of line	Kind of line for auxiliary line can be selected.
Color	Color of the auxiliary line can be selected.
Width	Width of the auxiliary line can be selected. Larger the width larger will be its thickness.
Display period	Display period of auxiliary line can be entered. × It is disabled in case of "Match with display".
Front	Select whether to display the auxiliary line at the front of the graph.

<Scale axis>

Optimization	Displays the auxiliary line for the period specified in scale axis display period.
Kind of line	Kind of line for the auxiliary line can be selected in list.
Color	Color of auxiliary line can be selected.
Width	Width of auxiliary line can be entered. Larger the width larger will be its thickness.
Display period	Display period of the auxiliary line can be entered. It is disabled in case of "Optimization".
Front	Whether to display the auxiliary line at the front of graph.



## 5-20. Magnify/Reduce/Rotate

- Graph can be moved/magnified/reduced/zoomed/rotated with the help of interactive operations using mouse.

Move	Graph can be moved.
Magnify/Reduce	Graph can be magnified/reduced.
Partially magnify	Graph can be magnified by specifying the range. (Frame is displayed.)
Rotation	Set the depth and on rotating the graph is displayed as 3D as though it is seen from some angle. ※ Cannot be selected in circular chart.

## 5-21. Multiplex scale axis settings

- Set the multiplex scale axes. The following items can be set.

Low limit	Enter the lower limit of the scale.
High limit	Enter the upper limit of the scale.
Division	Enter the division value of scale board.
Subdivision	Enter the value to further divide the divided scale.
Scale display	Select scale boards to be set as multi-scales. Up to four scale boards can be selected.
Save the setting (applied to next replay)	If this item is checked, the setting of this screen becomes valid when the file is opened next time.

Scale	Low limit	High limit	Division	Subdivisi	Scale display
No.1	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.2	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.3	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.4	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.5	-500.0	500.0	4	5	<input type="checkbox"/>
No.6	-500.0	500.0	4	5	<input type="checkbox"/>
No.7	-500.0	500.0	4	5	<input type="checkbox"/>
No.8	-500.0	500.0	4	5	<input type="checkbox"/>
No.9	-500.0	500.0	4	5	<input type="checkbox"/>
No.10	-500.0	500.0	4	5	<input type="checkbox"/>
No.11	-500.0	500.0	4	5	<input type="checkbox"/>
No.12	-500.0	500.0	4	5	<input type="checkbox"/>
No.13	-500.0	500.0	4	5	<input type="checkbox"/>
No.14	-500.0	500.0	4	5	<input type="checkbox"/>
No.15	-500.0	500.0	4	5	<input type="checkbox"/>
No.16	-500.0	500.0	4	5	<input type="checkbox"/>

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## 6. FAQ

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Please refer to the frequently asked questions and answers listed below.

Q	Question
1	To change the time axis.
2	To maximize the graph by changing the scale.
3	To display several scale axes on one graph.
4	To save the current status and then again reproduce that status.
5	To change the Trend display.
6	To convert the data to CSV format (or to print the data).
7	To search maximum value/minimum value.
8	To display a cursor in the graph and to display the data of that point.
9	To display only 1 channel as it is difficult to understand, if a number of channels are displayed in 1 screen.
10	To enter the title on the graph.
11	To enter the message in the data on the graph.

**Q** To change the time axis.

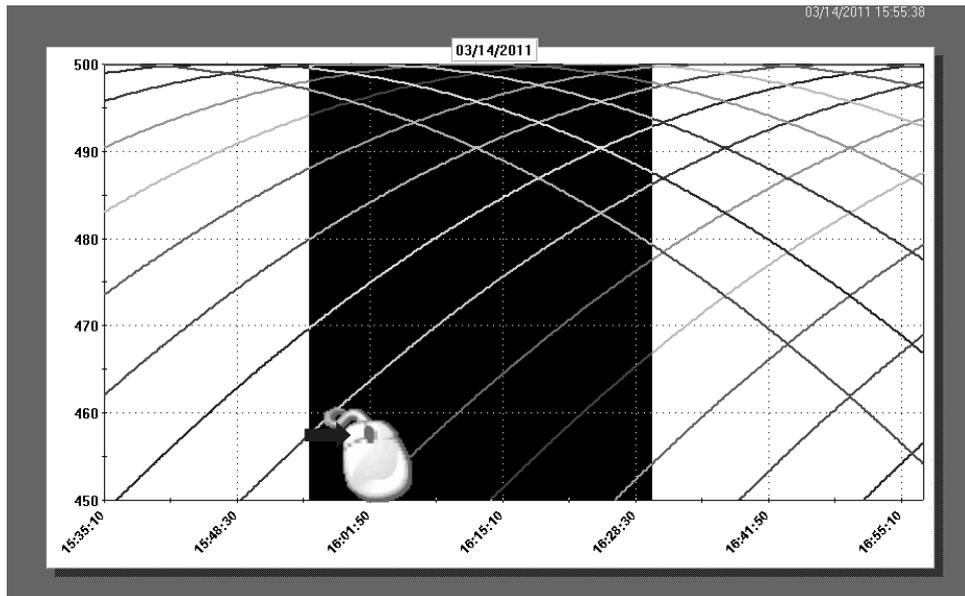
**A** In case of horizontal/vertical trend graph

There are 2 methods; (1) Magnification of time axis by using mouse and (2) Specify the range of time axis by using keyboard.

※ In case of circular chart, display is fixed to 360 points in one lap.

(1) Magnification of time axis by using mouse

Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point that is to be magnified and release the button on the point (end point is fixed), up to which it is to be magnified (The range in black color that is rotating is magnified).



(2) Specify the range of time axis by using keyboard

Following screen is opened on clicking  (Time Axis) on the tool bar.

After entering the time axis, when "OK" button is clicked, specified range is displayed, if there is no error in the input contents.

**Time axis**

Whole period  
03/14/2011 15:35:10 to 03/14/2011 16:57:24

Specify hours

Beginning Date/Time  
03/14/2011 15:35:10

Second(s)  
 Minute(s)  
 Hour(s)  
 Day(s)

Specify range  
03/14/2011 15:35:10 to 03/14/2011 16:57:24

OK Cancel ?

**Q** To maximize the graph by changing the scale.

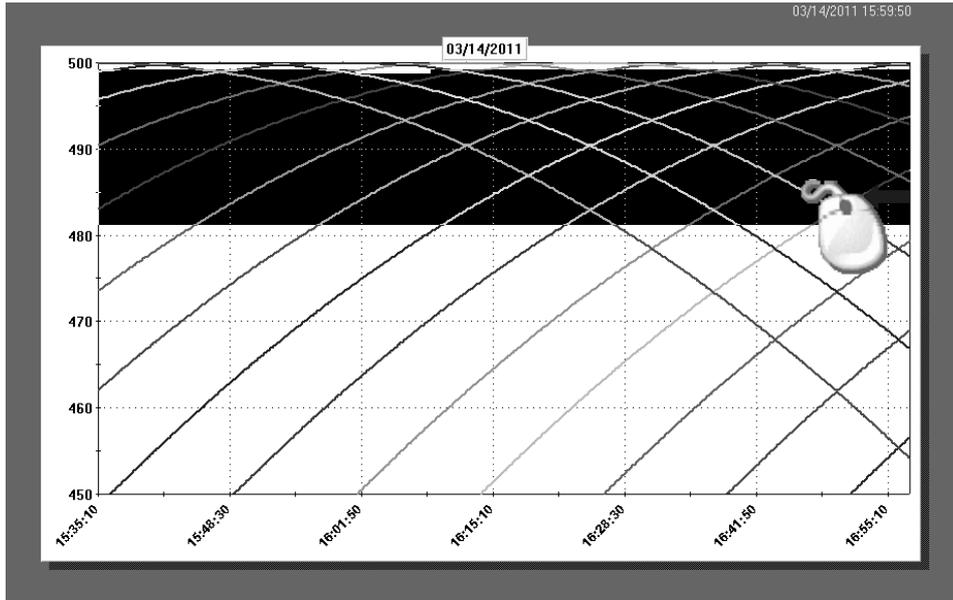
**A** In case of horizontal/vertical trend of trend graph

There are 2 methods; (1) Change of scale by using the mouse and (2) Change of scale by using the keyboard.

- ※ In case of circular chart, scale can be changed only by using the keyboard (2).
- ※ It is also possible to magnify the graph without changing the scale.

(1) Change of scale by using mouse

Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point that is to be magnified and release the button on the point (end point is fixed), up to which it is to be magnified. (The range in black color that is rotating is magnified).



(2) Specify the range of scale by using keyboard

Click  (Scale Axis) on the tool bar and open the following screen. After entering the maximum and minimum value of scale, when "OK" button is clicked, specified range is displayed, if there is no error in the input contents.

Scale axis	
Scale	Optimization
Max value	500
Min value	450
Scaling	Optimization
Label display interval	100
Label inclination	0
Additional scale interval	50

Logarithmic scale

Rotate the axis

Cross point with time axis

0

Min value

Max value

OK Cancel Preview ?

**Q** To display several scale axes on one graph.

**A** Up to two scale axes can be displayed in “Double” mode and four in “Multiple” mode.

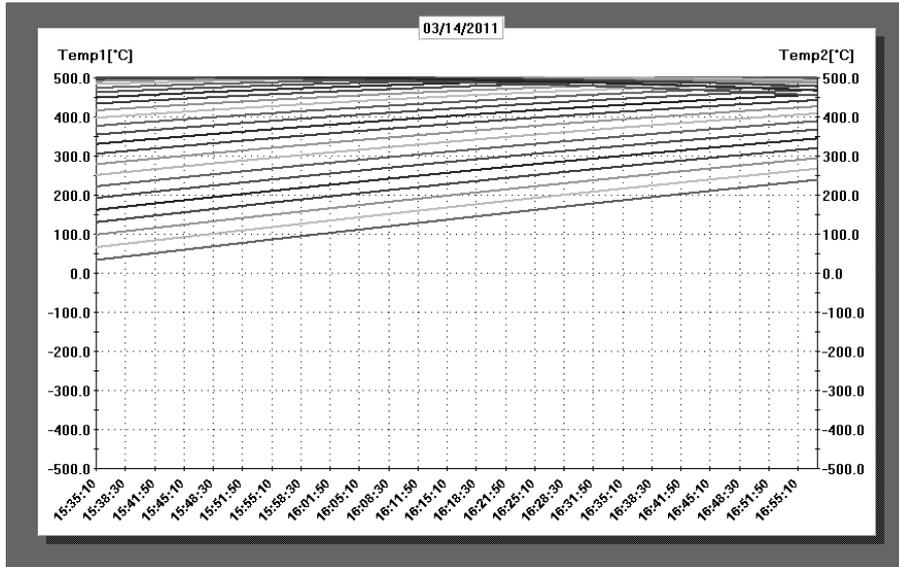
**<Display method in “Double” mode>**

Click  (Registration of Channels Used) on the tool bar in the trend graph display screen.

Click  of the scale axis to switch to “Double”. The maximum and minimum values of the scales can be also changed.

Two scale axes are displayed.

※ Only one scale axis is displayed in case of circular chart.



To switch channels to be displayed on the scale axes, click  (Scale Axis) on the tool bar.

The channels to be displayed are registered.

Scale	
Scale	Manual
Max value(%)	100
Min value(%)	0
Scaling	Optimization
Label display interval	10
Label inclination	0
Additional scale interval	5

Rotate the axis

Cross point with time axis

Auto

Min value

Max value

CH No.	Scale axis	
	Left	Right
1	●	
2		●
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

OK Cancel Preview ?

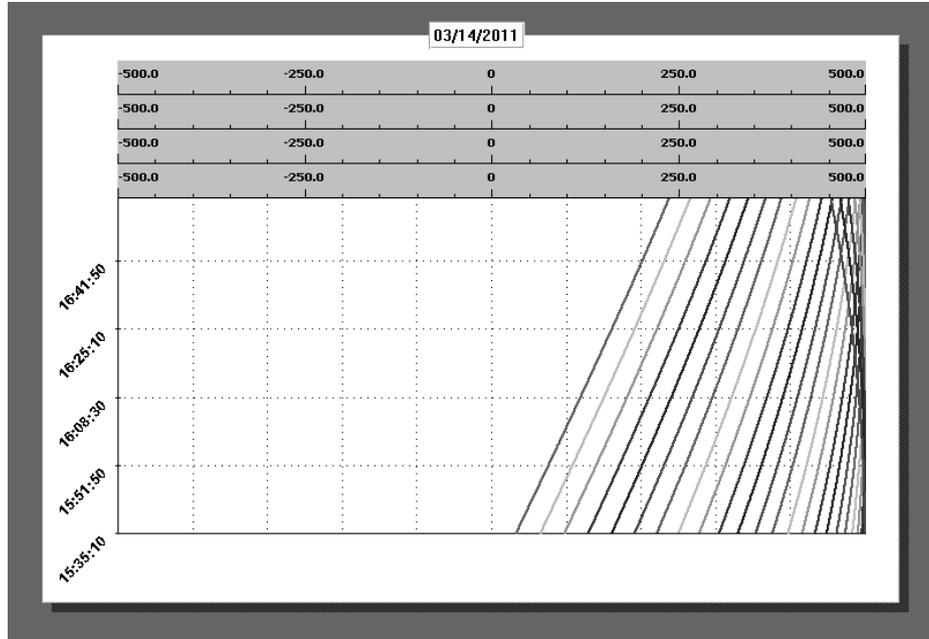
<Display method in “Multiple”>

Click  (Registration of Channels Used) on the tool bar on the trend graph display screen.

Click  of the scale axis to switch to “Multiplex”. The maximum and minimum values of the scales can be also changed.

Up to four scale axes are displayed.

※ Only one scale axis is displayed in case of circular chart.



Channels to be displayed on the scale axes can be switched on the multiplex scale axis setting screen.

**Multiplex scale axis setting**

OK  Save the setting (applied to next replay)

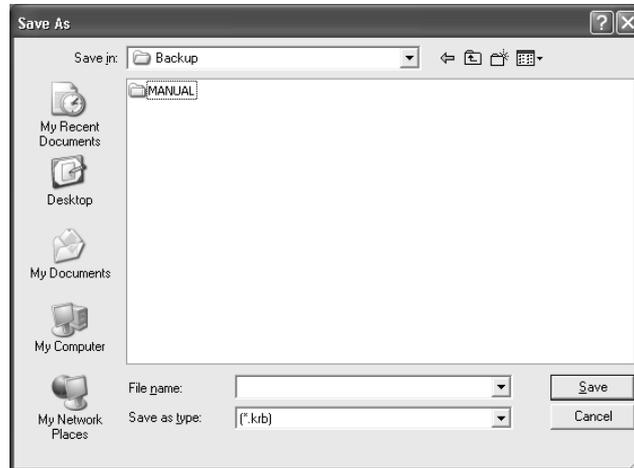
Scale	Low limit	High limit	Division	Subdivisi	Scale display
No.1	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.2	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.3	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.4	-500.0	500.0	4	5	<input checked="" type="checkbox"/>
No.5	-500.0	500.0	4	5	<input type="checkbox"/>
No.6	-500.0	500.0	4	5	<input type="checkbox"/>
No.7	-500.0	500.0	4	5	<input type="checkbox"/>
No.8	-500.0	500.0	4	5	<input type="checkbox"/>
No.9	-500.0	500.0	4	5	<input type="checkbox"/>
No.10	-500.0	500.0	4	5	<input type="checkbox"/>
No.11	-500.0	500.0	4	5	<input type="checkbox"/>
No.12	-500.0	500.0	4	5	<input type="checkbox"/>
No.13	-500.0	500.0	4	5	<input type="checkbox"/>
No.14	-500.0	500.0	4	5	<input type="checkbox"/>
No.15	-500.0	500.0	4	5	<input type="checkbox"/>
No.16	-500.0	500.0	4	5	<input type="checkbox"/>

**Q** To save the current status and then again reproduce that status.

**A** Click  (Save) on the tool bar.

**<Save method>**

Enter the file name and save the file in the following screen. Extension will be added automatically.



**<Read method>**

There are 3 methods to read the saved file.

Select any of the one method (refer to Easy to Use! Operation Guide).

- (1) If the file is double clicked in the status where the ZAILA is not started, then the analysis software is started automatically and trend is displayed.
- (2) Drag and drop  
Start ZAILA and when trend screen opens, drag & drop the file.
- (3) File selection

Start the ZAILA and when the trend screen opens, click  (File Selection) on the toolbar.

**Q** To change the Trend.

**A** “Horizontal, Vertical, and Circular Chart” are the 3 types included in ‘Trend’ Any of these types can be changed from the status bar.



**Q** To convert the data to CSV format (or to print the data).

**A** Click  (Data List) on the tool bar for converting the data to CSV.

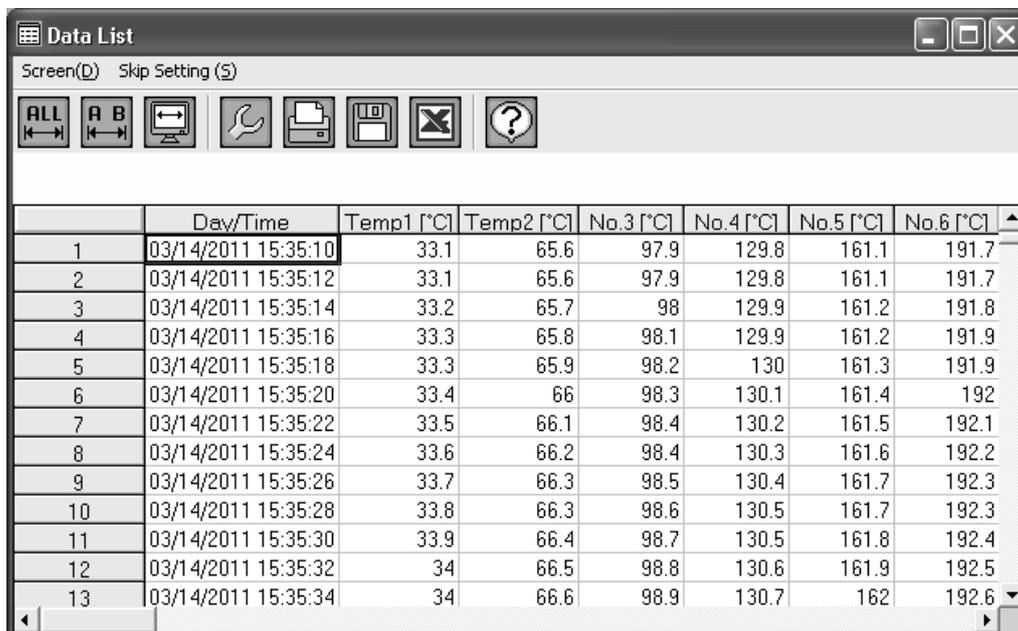
**<Convert to CSV format>**

Data can be saved in the file on clicking the ‘Floppy’ icon .

Data can also be converted to Text format (Tab delimiter) other than CSV format.

**<Print>**

Prints on clicking the ‘Printer’ icon .



The screenshot shows a window titled 'Data List' with a toolbar containing icons for 'ALL', 'A B', a monitor, a wrench, a printer, a floppy disk, a trash can, and a question mark. Below the toolbar is a table with the following data:

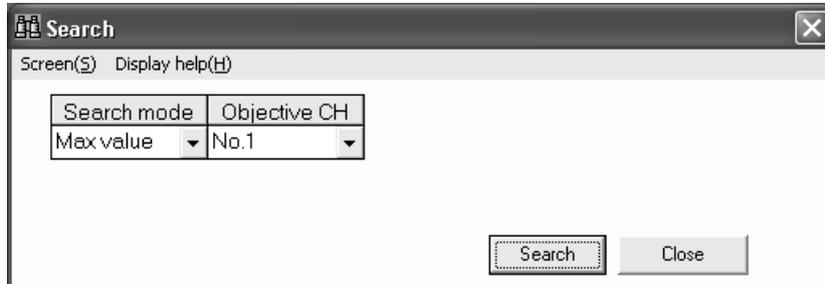
	Day/Time	Temp1 [°C]	Temp2 [°C]	No.3 [°C]	No.4 [°C]	No.5 [°C]	No.6 [°C]
1	03/14/2011 15:35:10	33.1	65.6	97.9	129.8	161.1	191.7
2	03/14/2011 15:35:12	33.1	65.6	97.9	129.8	161.1	191.7
3	03/14/2011 15:35:14	33.2	65.7	98	129.9	161.2	191.8
4	03/14/2011 15:35:16	33.3	65.8	98.1	129.9	161.2	191.9
5	03/14/2011 15:35:18	33.3	65.9	98.2	130	161.3	191.9
6	03/14/2011 15:35:20	33.4	66	98.3	130.1	161.4	192
7	03/14/2011 15:35:22	33.5	66.1	98.4	130.2	161.5	192.1
8	03/14/2011 15:35:24	33.6	66.2	98.4	130.3	161.6	192.2
9	03/14/2011 15:35:26	33.7	66.3	98.5	130.4	161.7	192.3
10	03/14/2011 15:35:28	33.8	66.3	98.6	130.5	161.7	192.3
11	03/14/2011 15:35:30	33.9	66.4	98.7	130.5	161.8	192.4
12	03/14/2011 15:35:32	34	66.5	98.8	130.6	161.9	192.5
13	03/14/2011 15:35:34	34	66.6	98.9	130.7	162	192.6

**Q** To change the Maximum value/minimum value.

**A** Click  (Search) on the tool bar.

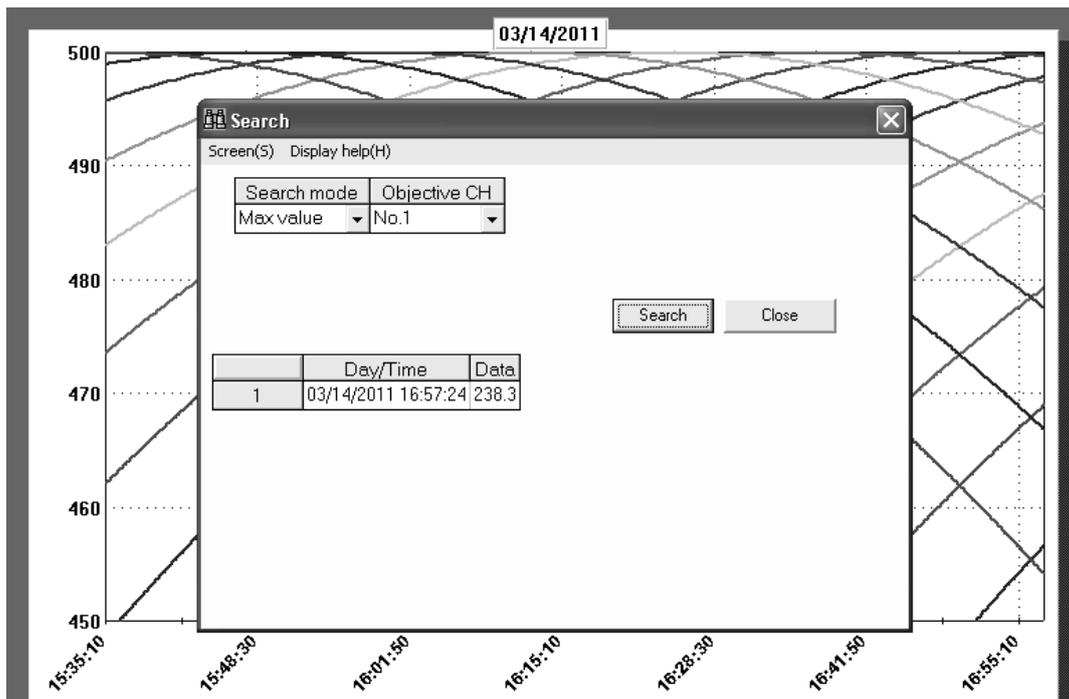
Select the “Maximum value” and “Minimum value” from the screen displayed below.

In Objective CH, select the channel to be searched. On selecting “All”, all the channels are searched. Search is started on clicking the Search button.



× Search mode also includes “Average value”, “Standard deviation”, “Median value”, “Manual input”, “Time”, “Cursor”, “Message” and “Alarm”. For details, refer to [5-5](#).

Search result is displayed in list and when that list is clicked, cursor is displayed on that point and the position can be understood. List is not displayed in case of irrelevant search results.



**Q** To display a cursor in the graph and to display the data of that point.

**A** 2 cursors can be displayed. Here, these cursors are called as Cursor A and Cursor B.

Click the **A** (Cursor A) and **B** (Cursor B) on the tool bar. If clicked on Trend screen, Cursor A and Cursor B are placed on the nearest point from the clicked position.

Detailed information of the cursor is displayed on clicking **A B** (Cursor) on the tool bar.

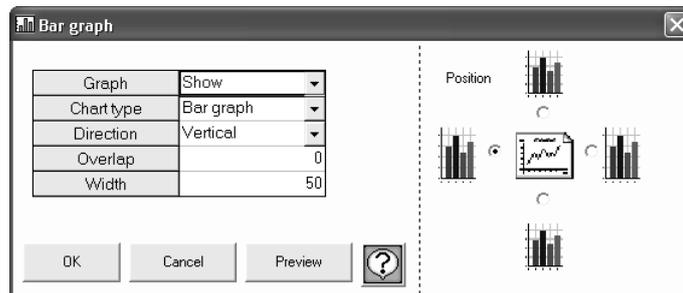
Data deviation or maximum, minimum, average value between the cursors is displayed.

	Cursor A	Cursor B	A-B	All Data Max value	All Data Min value	All Data Average	All Data Standard deviation
Day/Time	03/14/2011 15:41:34	03/14/2011 16:44:10	0:0:3.756				
Temp1 [°C]	49.7	207.2	-157.5	238.3	33.1	137.769651539708	59.469625308840
Temp2 [°C]	82.1	236.5	-154.4	266.5	65.6	168.64688006483	58.2212746723537
No.3 [°C]	114.2	264.8	-150.6	293.6	97.9	198.801377633711	56.724836924978E
No.4 [°C]	145.8	292	-146.2	319.5	129.8	228.10510534846	54.98752578322
No.5 [°C]	176.8	317.9	-141.1	343.9	161.1	256.430551053485	53.014788785162E
No.6 [°C]	207	342.5	-135.5	366.9	191.7	283.65822528363	50.8173206918371

Moreover, Cursor A and B can be displayed in bar graph.

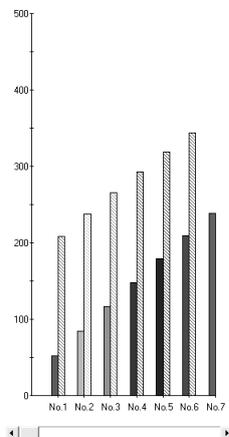
Click  (Bar graph) on the tool bar.

Displays the graph and on selecting the position to be displayed, bar graph is displayed.



**<Bar graph>**

In the same channel, left is the Cursor A value and right is the Cursor B value.



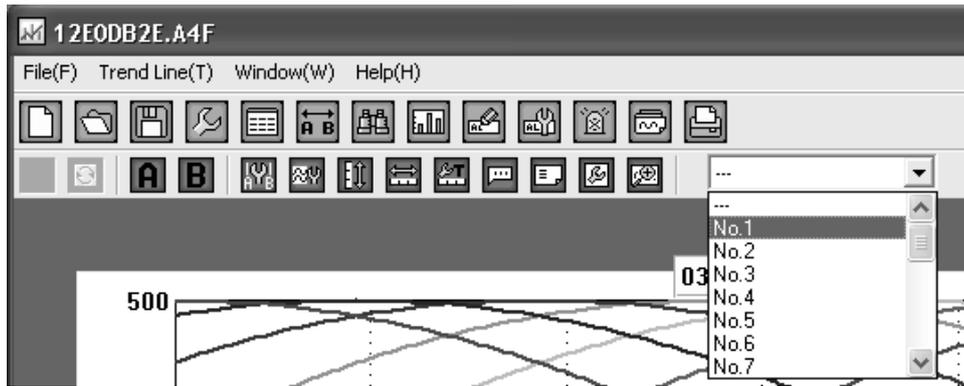
**Q** To display only 1 channel. (Only 1 channel is displayed, as it is difficult to understand when multiple channels are displayed on 1 screen).

**A** Includes 'Method to select 1 channel' and 'Method to delete the registered channel'.

**<Selection method>**

Displays only the channel selected from the list as shown in the following screen (scale is also automatically changed).

When there are multiple channels on 1 screen and it is difficult to view, it can be displayed by switching over. Returns to 'All channel' display if uppermost list "----" is selected.



**<Method to delete the registered channel>**

In case of multiple registrations, if only 1 channel is registered, only that channel is displayed. Only one channel is displayed on 1 screen. Multiple channels cannot be displayed by switching. Click  (Register Channel) on the tool bar.

Registration is cancelled when setting Reference CH is set to "----" (Nil) or the box for display is unchecked.

Register used CH												
		Scale axis			C = A - B							
		Single Double Multiplex										
CH	Show	A Ref. CH	-/+	B Sub. CH	B Subtract value	Scale Min value	Scale Max value	Scale D Pnt	Tag	Unit	Exponent	
No1	<input checked="" type="checkbox"/>	No1	-	-	0	-500.0	500.0	1	No.1	°C	---	
No2	<input checked="" type="checkbox"/>	No2	-	-	0	-500.0	500.0	1	No.2	°C	---	
No3	<input checked="" type="checkbox"/>	No3	-	-	0	-500.0	500.0	1	No.3	°C	---	
No4	<input checked="" type="checkbox"/>	No4	-	-	0	-500.0	500.0	1	No.4	°C	---	
No5	<input checked="" type="checkbox"/>	No5	-	-	0	-500.0	500.0	1	No.5	°C	---	
No6	<input checked="" type="checkbox"/>	No6	-	-	0	-500.0	500.0	1	No.6	°C	---	
No7	<input checked="" type="checkbox"/>	No7	-	-	0	-500.0	500.0	1	No.7	°C	---	
No8	<input checked="" type="checkbox"/>	No8	-	-	0	-500.0	500.0	1	No.8	°C	---	
No9	<input checked="" type="checkbox"/>	No9	-	-	0	-500.0	500.0	1	No.9	°C	---	
No10	<input checked="" type="checkbox"/>	No10	-	-	0	-500.0	500.0	1	No.10	°C	---	
No11	<input checked="" type="checkbox"/>	No11	-	-	0	-500.0	500.0	1	No.11	°C	---	
No12	<input checked="" type="checkbox"/>	No12	-	-	0	-500.0	500.0	1	No.12	°C	---	
No13	<input checked="" type="checkbox"/>	No13	-	-	0	-500.0	500.0	1	No.13	°C	---	
No14	<input checked="" type="checkbox"/>	No14	-	-	0	-500.0	500.0	1	No.14	°C	---	
No15	<input checked="" type="checkbox"/>	No15	-	-	0	-500.0	500.0	1	No.15	°C	---	

**Q** To insert the title in the graph.

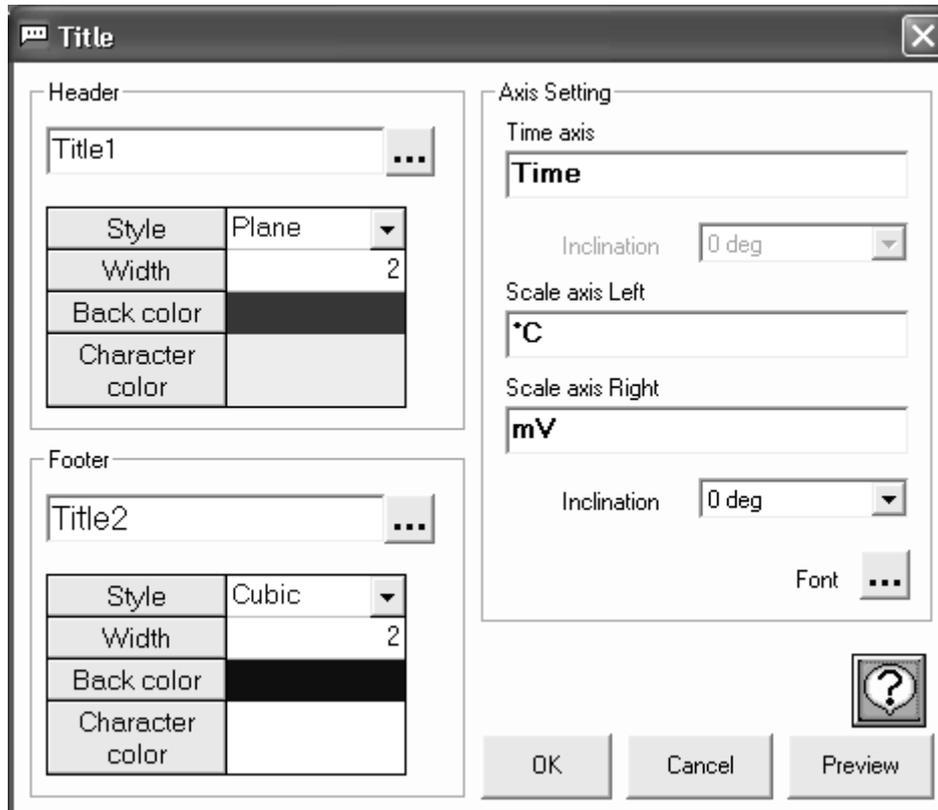
**A** Click  (Title) on the tool bar.

Enter the title in the following screen.

Header and footer are displayed at the top and bottom of the screen.

Title can be entered even for time axis and scale axis (it is excluded in case of circular chart).

※ What the graph and axis explains becomes clear when title is inserted.



The dialog box is titled "Title" and contains the following sections:

- Header:** A text input field containing "Title1" with a menu icon to its right.
- Header Properties Table:**

Style	Plane	▼
Width		2
Back color		
Character color		
- Footer:** A text input field containing "Title2" with a menu icon to its right.
- Footer Properties Table:**

Style	Cubic	▼
Width		2
Back color		
Character color		
- Axis Setting:**
  - Time axis:** A text input field containing "Time".
  - Inclination:** A dropdown menu set to "0 deg".
  - Scale axis Left:** A text input field containing "°C".
  - Scale axis Right:** A text input field containing "mV".
  - Inclination:** A dropdown menu set to "0 deg".
  - Font:** A menu icon.
- Buttons:** "OK", "Cancel", "Preview", and a help icon (question mark in a circle).

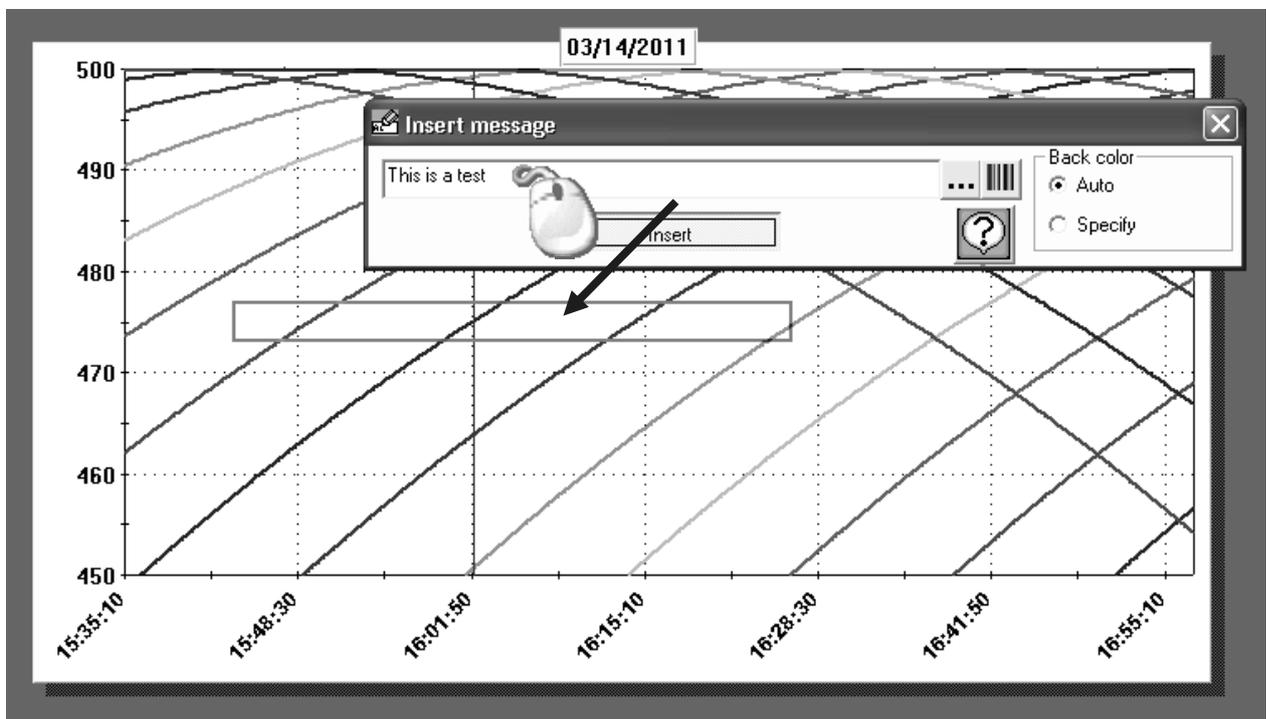
**Q** To insert the message in the graph.

**A** Click  (Message Insertion) on the tool bar for inserting the message.

Enter the message to be displayed in the following screen.  
It is also possible to change the character color, font and the back color.



On clicking "Insert" button, the entered message moves to the trend screen by clicking the left button of the mouse (Drag).  
On placing the mouse on trend screen, as the frame is highlighted, release the left button of the mouse (Drop).  
Message is inserted at the point nearest to the data.



# Terms and Conditions

We would like to express our appreciation for your purchase and use of Azbil Corporation's products. You are required to acknowledge and agree upon the following terms and conditions for your purchase of Azbil Corporation's products (system products, field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

## 1. Warranty period and warranty scope

### 1.1 Warranty period

Azbil Corporation's products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.

### 1.2 Warranty scope

In the event that Azbil Corporation's product has any failure attributable to azbil during the aforementioned warranty period, Azbil Corporation shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place.

Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:

- (1) Failure caused by your improper use of azbil product (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
- (2) Failure caused for other reasons than Azbil Corporation's product;
- (3) Failure caused by any modification or repair made by any person other than Azbil Corporation or Azbil Corporation's subcontractors;
- (4) Failure caused by your use of Azbil Corporation's product in a manner not conforming to the intended usage of that product;
- (5) Failure that the state-of-the-art at the time of Azbil Corporation's shipment did not allow Azbil Corporation to predict; or
- (6) Failure that arose from any reason not attributable to Azbil Corporation, including, without limitation, acts of God, disasters, and actions taken by a third party.

Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Azbil Corporation shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Azbil Corporation's products.

## 2. Ascertainment of suitability

You are required to ascertain the suitability of Azbil Corporation's product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:

- (1) Regulations and standards or laws that your Equipment is to comply with.
- (2) Examples of application described in any documents provided by Azbil Corporation are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
- (3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use

Although azbil is constantly making efforts to improve the quality and reliability of Azbil Corporation's products, there exists a possibility that parts and machinery may break down.

You are required to provide your Equipment with safety design such as fool-proof design, \*1 and fail-safe design\*2 (anti-flame propagation design, etc.), whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth. Furthermore, fault avoidance,\*3 fault tolerance,\*4 or the like should be incorporated so that the said Equipment can satisfy the level of reliability and safety required for your use.

\*1. A design that is safe even if the user makes an error.

\*2. A design that is safe even if the device fails.

\*3. Avoidance of device failure by using highly reliable components, etc.

\*4. The use of redundancy.

## 3. Precautions and restrictions on application

Azbil Corporation's products other than those explicitly specified as applicable (e.g. azbil Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area).

Any Azbil Corporation's products shall not be used for/with medical equipment.

The products are for industrial use. Do not allow general consumers to install or use any Azbil Corporation's product.

However, azbil products can be incorporated into products used by general consumers. If you intend to use a product for that purpose, please contact one of our sales representatives.

In addition,

you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual, etc. in case that you intend to use azbil product for any purposes specified in (1) through (6) below.

Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, fault avoidance, fault tolerance, and other kinds of protection/safety circuit design on your own responsibility to ensure reliability and safety, whereby preventing problems caused by failure or nonconformity.

- (1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
- (2) For use of specific purposes, such as:
  - \* Nuclear energy/radiation related facilities  
[For use outside nuclear energy controlled areas] [For use of Azbil Corporation's Limit Switch For Nuclear Energy]
  - \* Machinery or equipment for space/sea bottom
  - \* Transportation equipment  
[Railway, aircraft, vessels, vehicle equipment, etc.]
  - \* Antidisaster/crime-prevention equipment

- \* Burning appliances
  - \* Electrothermal equipment
  - \* Amusement facilities
  - \* Facilities/applications associated directly with billing
- (3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
  - (4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
  - (5) Machinery or equipment that may affect human lives, human bodies or properties
  - (6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety
4. Precautions against long-term use
- Use of Azbil Corporation's products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification. Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Azbil Corporation's products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.
5. Recommendation for renewal
- Mechanical components, such as relays and switches, used for Azbil Corporation's products will reach the end of their life due to wear by repetitious open/close operations. In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used. Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc. as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Azbil Corporation's products every 5 to 10 years unless otherwise specified in specifications or instruction manuals. System products, field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts. For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.
6. Other precautions
- Prior to your use of Azbil Corporation's products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Azbil Corporation's products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.
7. Changes to specifications
- Please note that the descriptions contained in any documents provided by azbil are subject to change without notice for improvement or for any other reason. For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.
8. Discontinuance of the supply of products/parts
- Please note that the production of any Azbil Corporation's product may be discontinued without notice. For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts. For system products, field instruments, we may not be able to undertake parts replacement for similar reasons.
9. Scope of services
- Prices of Azbil Corporation's products do not include any charges for services such as engineer dispatch service. Accordingly, a separate fee will be charged in any of the following cases:
- (1) Installation, adjustment, guidance, and attendance at a test run
  - (2) Maintenance, inspection, adjustment, and repair
  - (3) Technical guidance and technical education
  - (4) Special test or special inspection of a product under the conditions specified by you
- Please note that we cannot provide any services as set forth above in a nuclear energy controlled area (radiation controlled area) or at a place where the level of exposure to radiation is equivalent to that in a nuclear energy controlled area.

MEMO



**azbil**

*Specifications are subject to change without notice.* (09)

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