

M-4451/0307



User's Guide

DATA ANALYSIS SOFTWARE

ZAILA

Operation Manual

INSTRUCTION MANUAL

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— Table of Contents —

1. Overview	2
1-1 Main functions and features.....	2
1-2 Operation environment	2
2. Installation and removal	3
2-1 Installation method.....	3
2-2 Un-installation (Remove) method	4
3. Operation	5
3-1 Data analysis software block diagram	5
3-2 Startup method of data analysis software	6
3-3 Exiting data analysis software.....	6
3-4 Easy to use! Operation Guide	7
4. Main menu	12
5. Trend graph	13
5-1 File selection.....	16
5-2 Data registration	16
5-3 Data list.....	17
5-4 Data between cursors.....	18
5-5 Search	19
5-6 Bar graph.....	20
5-7 Insert message	21
5-8 Edit message.....	21
5-9 Alarm display	22
5-10 Continuous replay.....	22
5-11 Print screen.....	23
5-12 View cursor	23
5-13 Trend line.....	24
5-14 Set scale axis.....	25
5-15 Set time axis	26
5-16 Set time display interval	26
5-17 Title	27
5-18 Legend.....	28
5-19 Supplementary settings	28
5-20 Magnify/Reduce/Rotate	29
6. FTP	30
7. FAQ	31

1. Overview

Data analysis software is a software package to analyze the data acquired by the instrument of our company.

1-1 Main functions and features

- The data acquired by the instrument is displayed as trend.
- A number of data files can be compiled to one and displayed as a trend.
- Maximum 128 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 98/Me

Windows 2000/XP Home/XP Pro

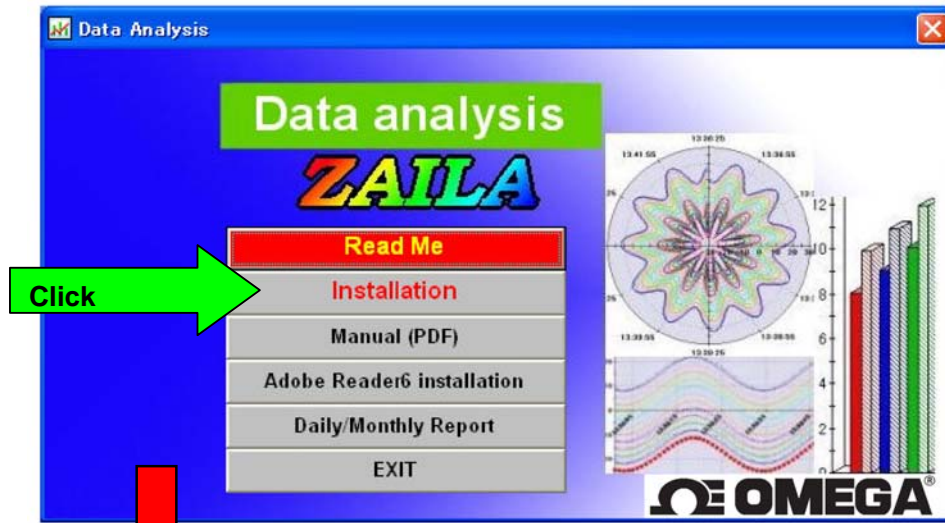
※ **Windows NT4.0 is out of scope of operation.**

※ **Internet Explorer 4.0 or above is necessary.**

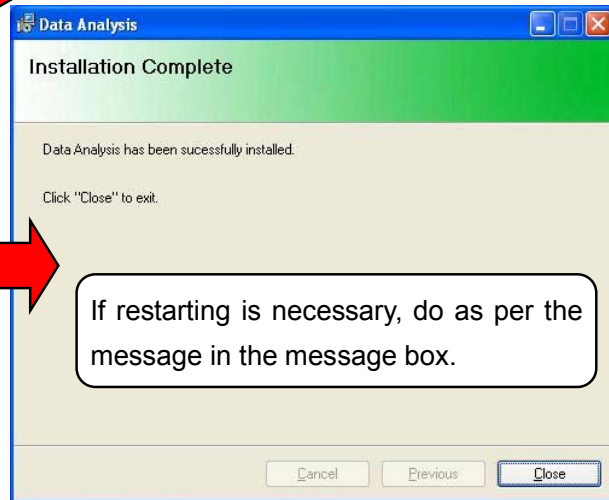
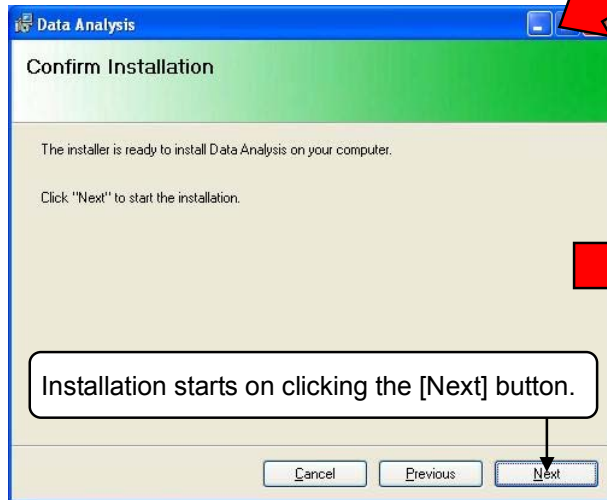
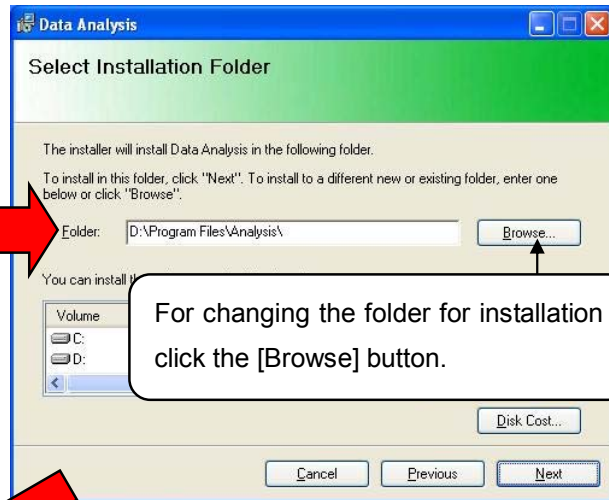
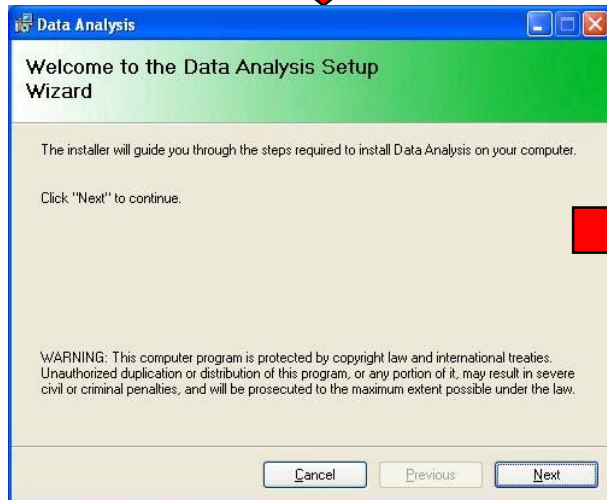
2. Installation and removal

2-1 Installation method

Click "Installation" button. Installation screen gets display.

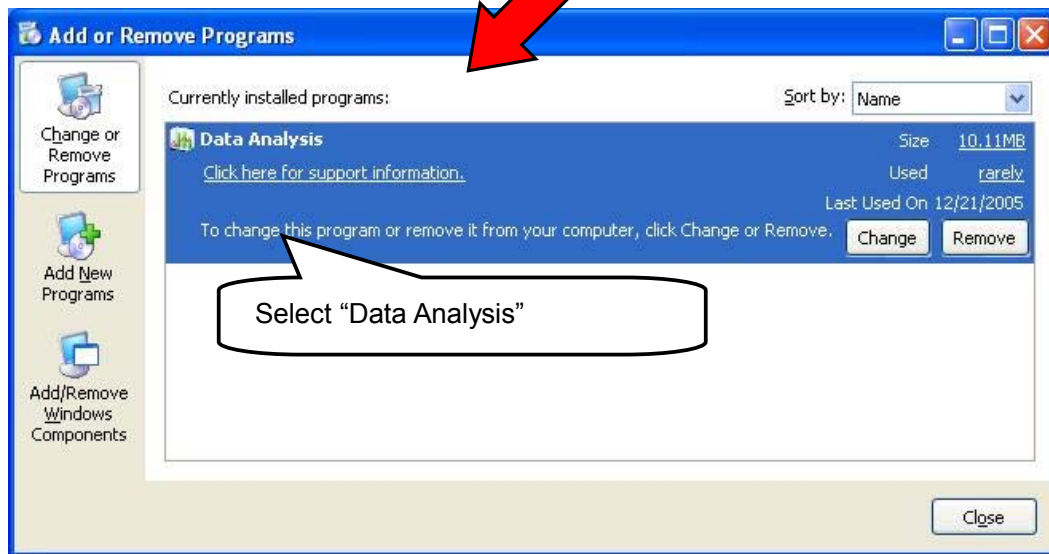
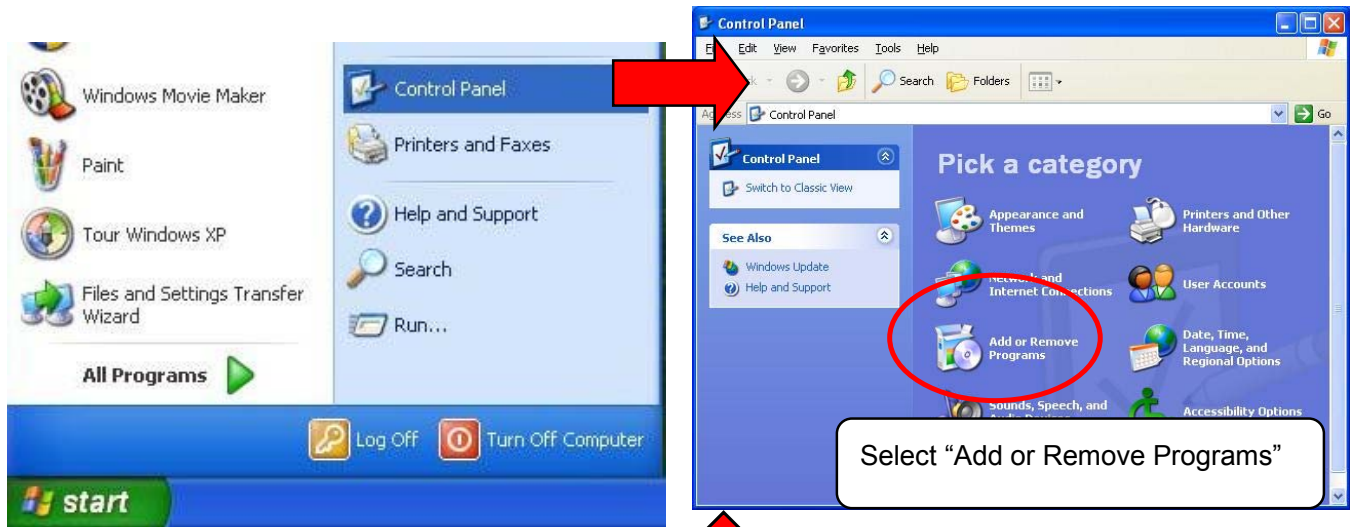


Do as shown in the following screens.



2-2 Un-installation (Remove) method

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

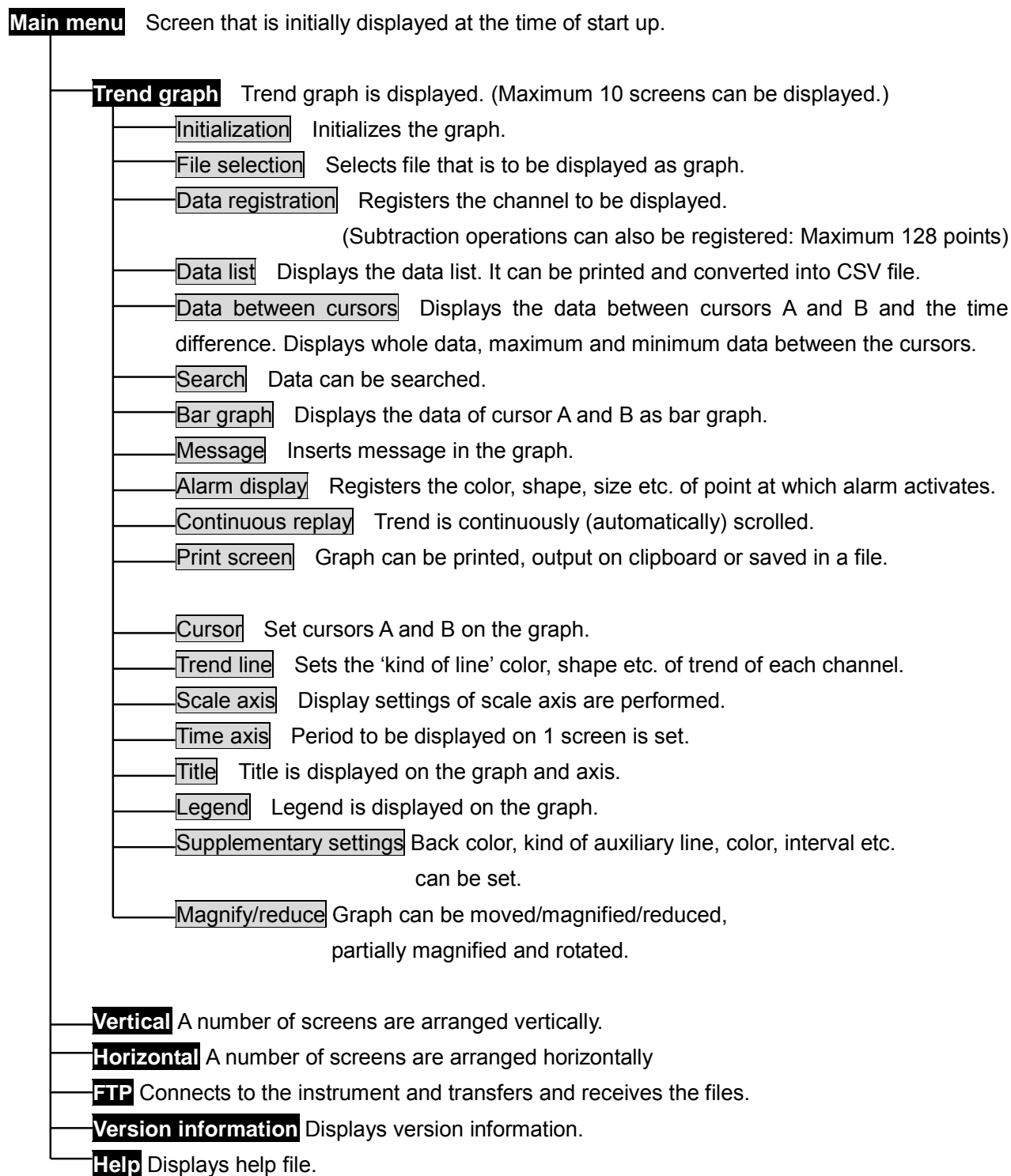


At this point, folder related to data analysis software remains.

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

3. Operation

3-1 Data analysis software block diagram



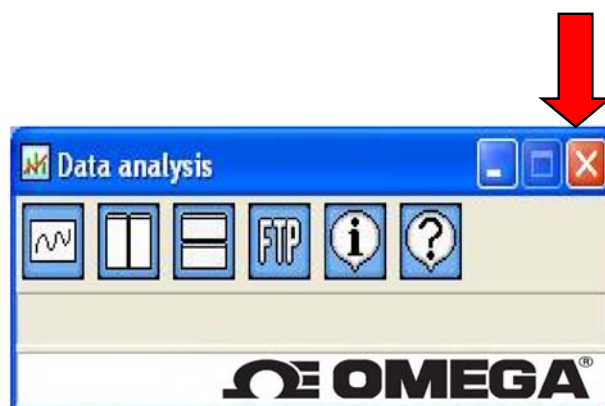
3-2 Startup method of data analysis software

It is started by clicking “Data analysis” –“Omega”-“All programs”-“Start” from Windows task bar.



3-3 Exiting data analysis software

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



Easy to use! Operation Guide

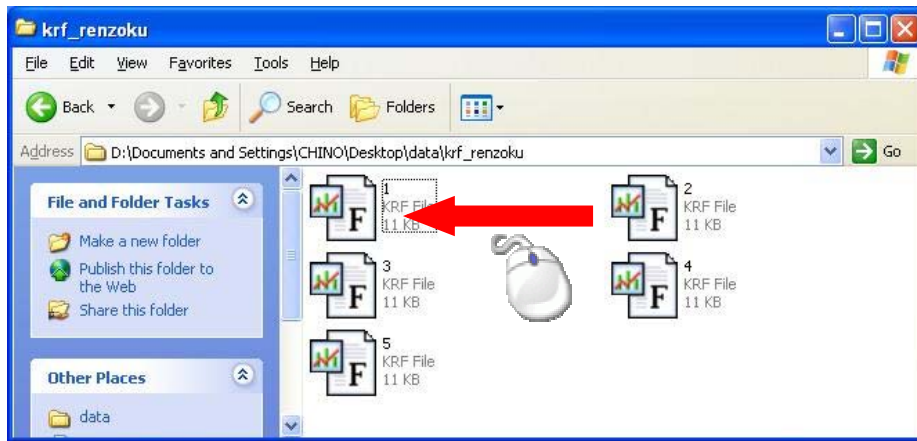
1. Select file

File to be analyzed is selected. Following are the methods of selecting the files.

(Select any one of the following methods)

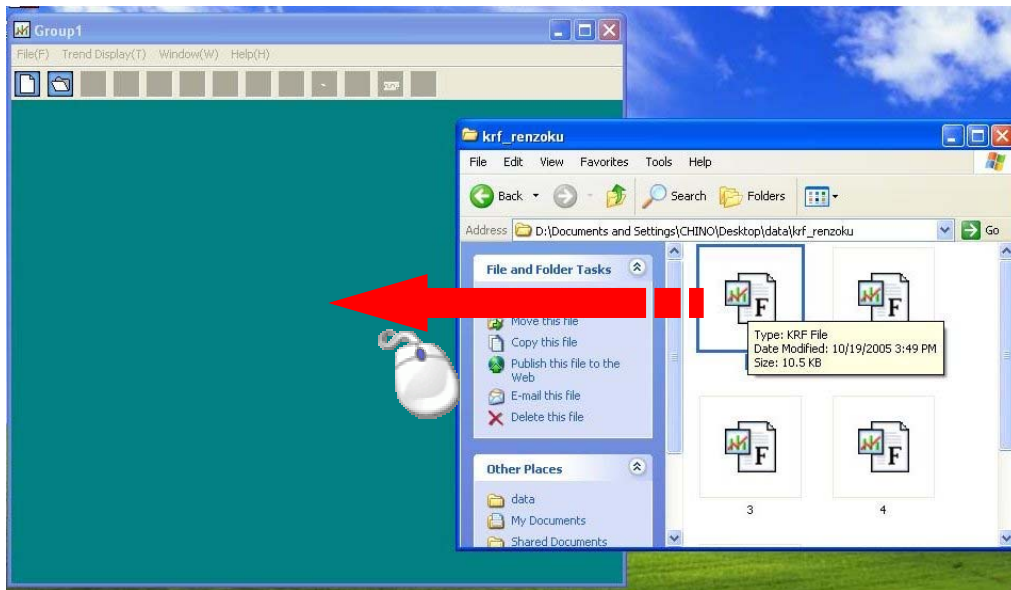
(1) Double click

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




(2) Drag and drop

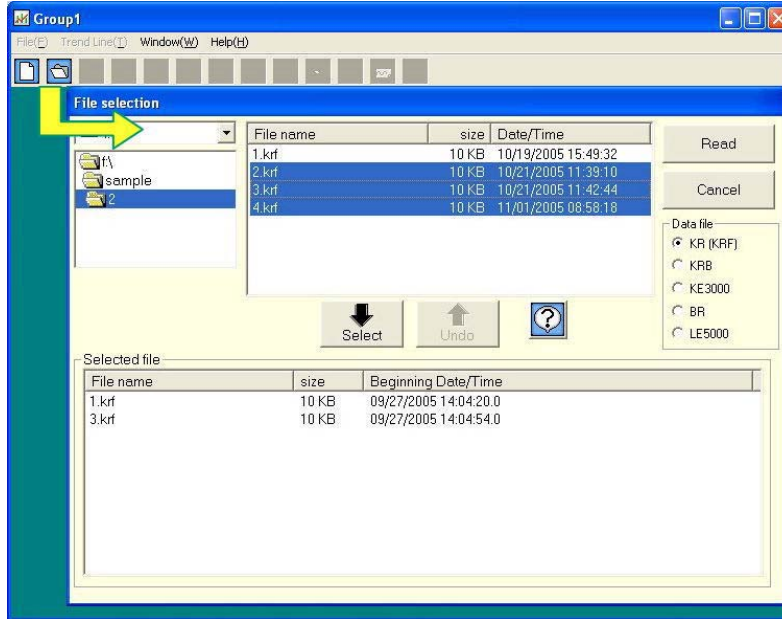
Start analysis software and when trend screen opens, drag and drop the file.



(3)File selection

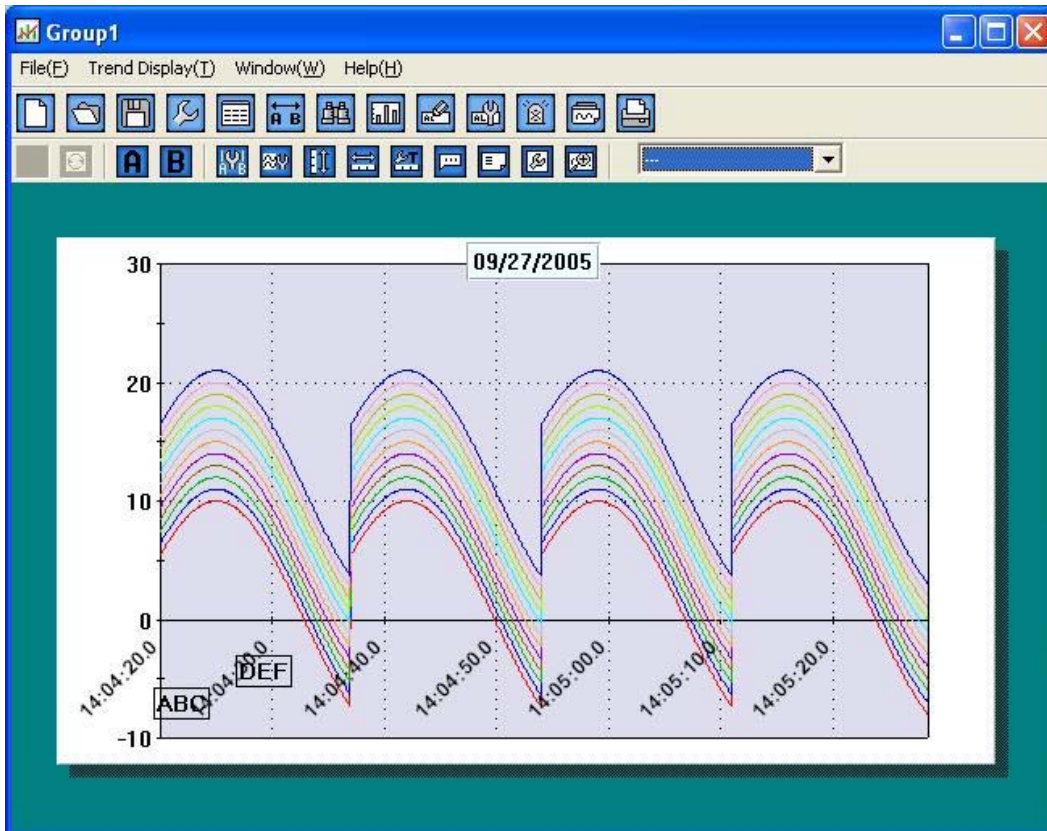
Start analysis software and when trend screen opens, click “File selection” icon .

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)

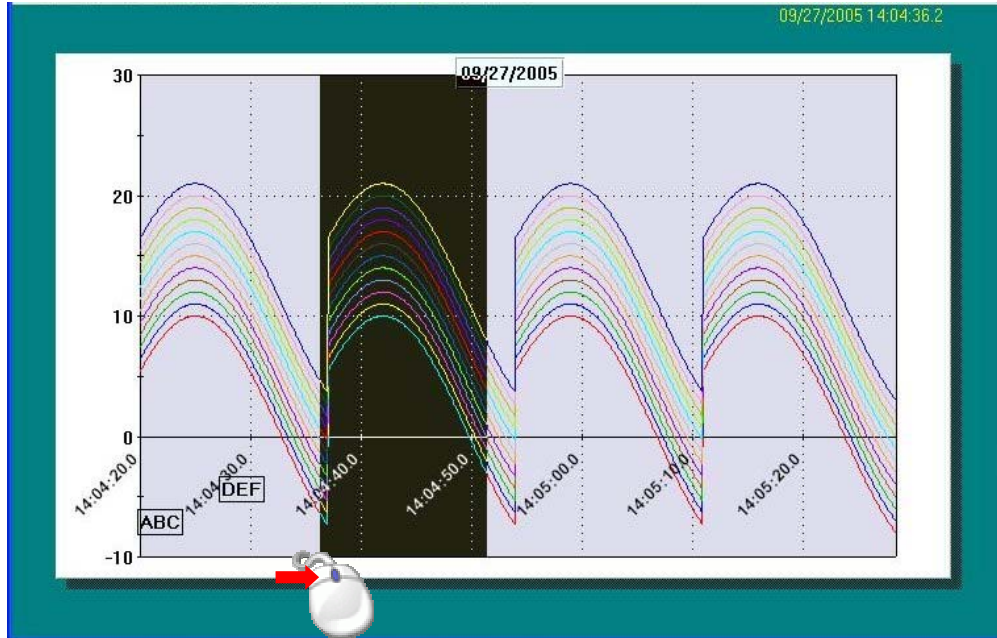


3.Changing the time axis


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.

Time axis

Whole period
09/27/2005 14:04:20.0 to 09/27/2005 14:05:28.5

Specify hours

Beginning Date/Time
09/27/2005 14:04:20

Specify range
09/27/2005 14:04:20 to 09/27/2005 14:05:28

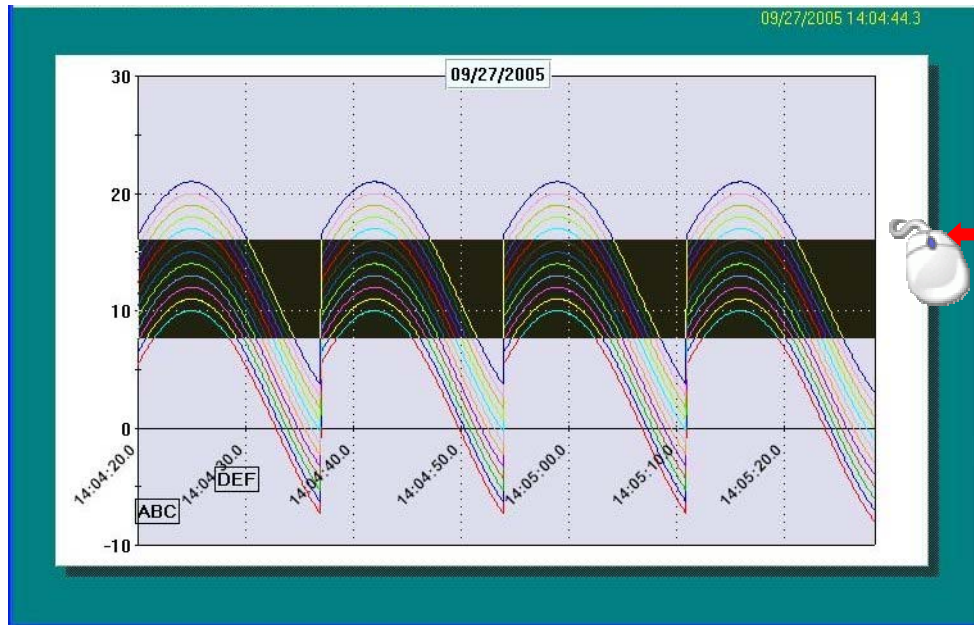
OK Cancel ?

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.

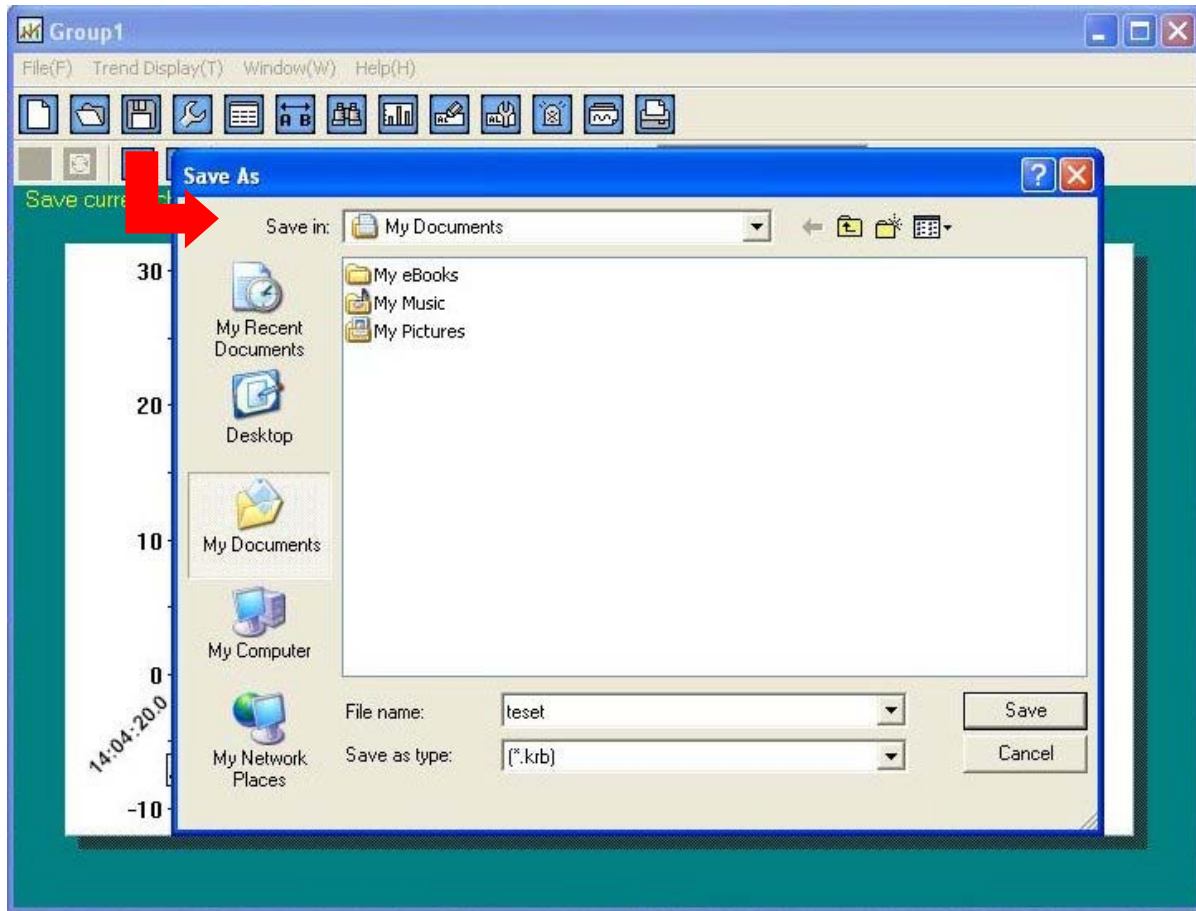
Scale axis			
Scale	Optimization		
Max value	30		
Min value	-30		
Scaling	Optimization		
Label display interval	10		
Label inclination	0		
Additional scale interval	5		
<input type="checkbox"/> Logarithmic scale	Cross point with time axis		
<input type="checkbox"/> Rotate the axis			
OK	Cancel	Preview	

5. Save

The contents that are edited using data analysis software can be saved.

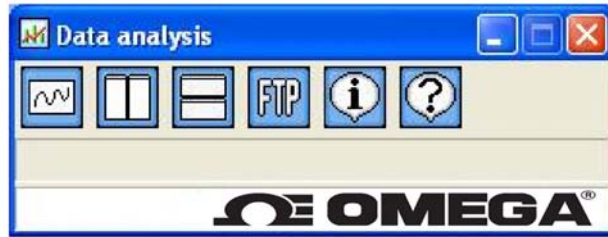
Click the save button  on the tool bar and enter the name of the file. (Extension krb)







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



4. Main menu



It is the screen displayed immediately after starting.



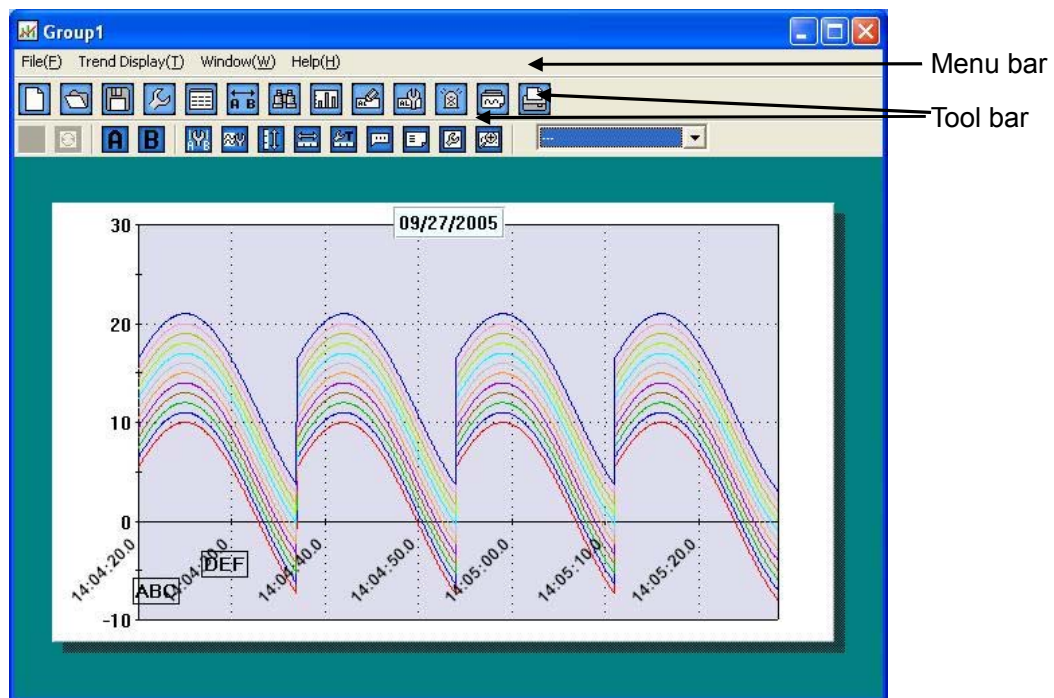
	Trend screen is displayed. Up to 10 groups can be displayed.
	Multiple windows are arranged vertically and displayed.
	Multiple windows are arranged horizontally and displayed.
	File transfer and reception (FTP) with the instrument is done.
	Version information is displayed.
	Help is displayed.

5. Trend graph

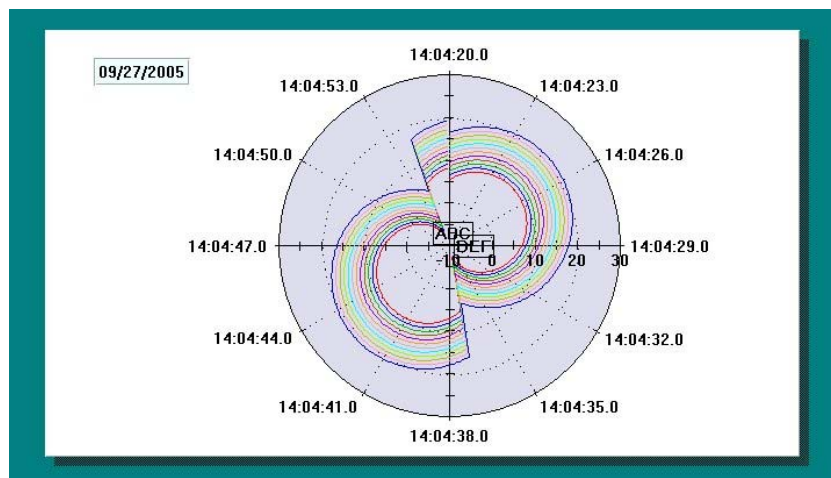
It is the screen in which the acquired data is displayed as trend graph.

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

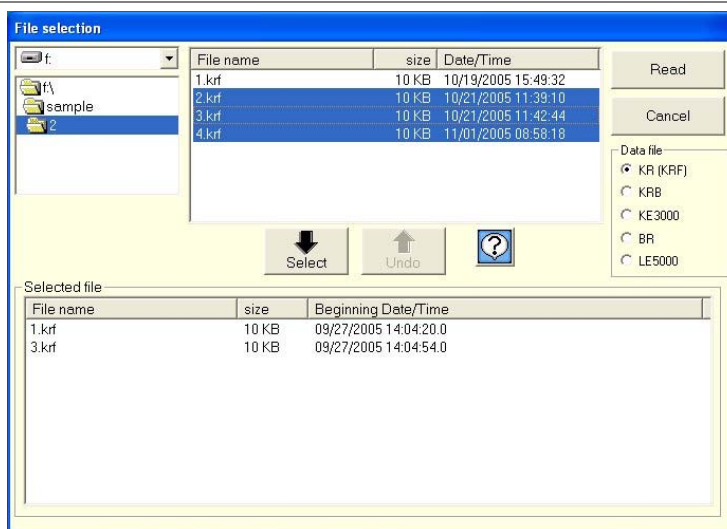
Tool bar: Below

	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.
	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.

5-1 File selection

- Select a file.
- 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. (Maximum 128 points).
- 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.

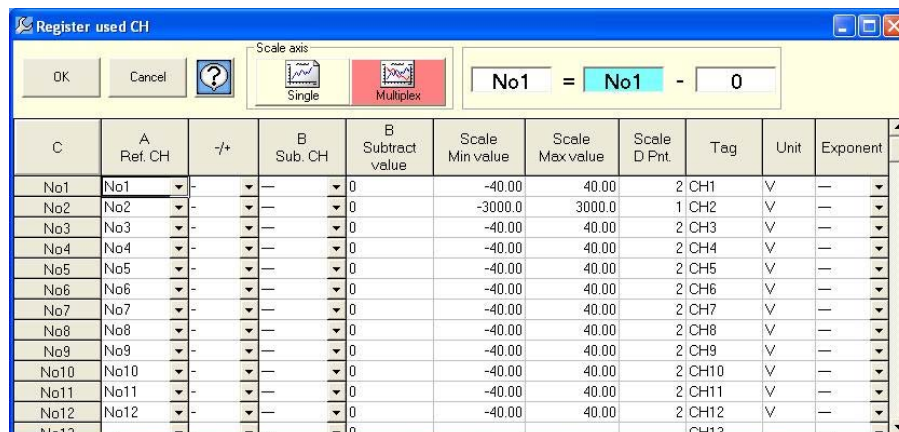
“Operation method”

Reference CH is registered in, A: Reference channel.

Channel to be subtracted is registered in B.








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

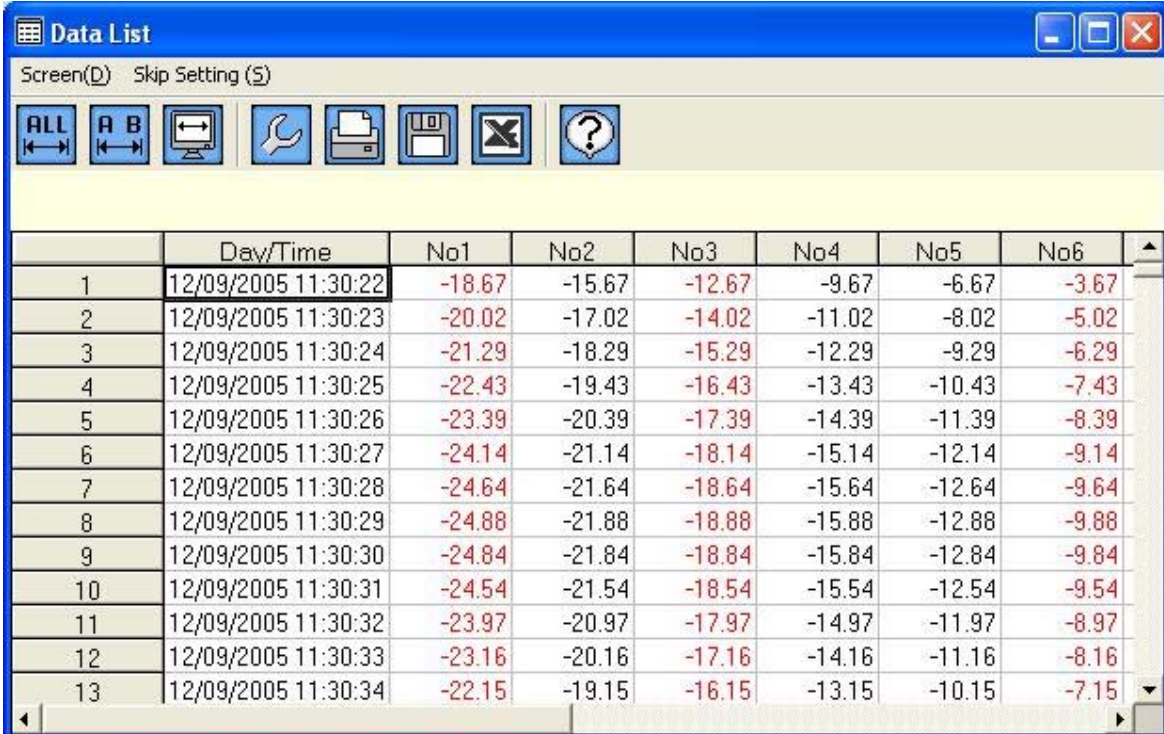
- Scale axis can be switched single mode or multiplex mode.
- “Single mode” Data value of each channel is displayed in the same scale axis.
 “Multiplex mode” Data value of each channel is displayed by scaling of the maximum/minimum scale value. *Cannot use logarithmic scale. *Cannot display standard deviation



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.
	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.













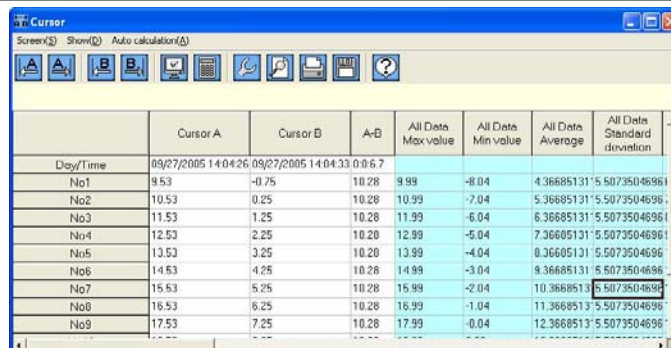
The screenshot shows a window titled "Data List" with a toolbar containing icons for ALL, A B, Monitor, Wrench, Printer, Floppy disk, Excel, and Help. Below the toolbar is a table with 8 columns: Day/Time, No1, No2, No3, No4, No5, No6, and a scroll arrow. The data rows are numbered 1 to 13, with the first cell of each row highlighted. The values in the No1-6 columns are negative numbers, with some cells in red text indicating an alarm state.

	Day/Time	No1	No2	No3	No4	No5	No6
1	12/09/2005 11:30:22	-18.67	-15.67	-12.67	-9.67	-6.67	-3.67
2	12/09/2005 11:30:23	-20.02	-17.02	-14.02	-11.02	-8.02	-5.02
3	12/09/2005 11:30:24	-21.29	-18.29	-15.29	-12.29	-9.29	-6.29
4	12/09/2005 11:30:25	-22.43	-19.43	-16.43	-13.43	-10.43	-7.43
5	12/09/2005 11:30:26	-23.39	-20.39	-17.39	-14.39	-11.39	-8.39
6	12/09/2005 11:30:27	-24.14	-21.14	-18.14	-15.14	-12.14	-9.14
7	12/09/2005 11:30:28	-24.64	-21.64	-18.64	-15.64	-12.64	-9.64
8	12/09/2005 11:30:29	-24.88	-21.88	-18.88	-15.88	-12.88	-9.88
9	12/09/2005 11:30:30	-24.84	-21.84	-18.84	-15.84	-12.84	-9.84
10	12/09/2005 11:30:31	-24.54	-21.54	-18.54	-15.54	-12.54	-9.54
11	12/09/2005 11:30:32	-23.97	-20.97	-17.97	-14.97	-11.97	-8.97
12	12/09/2005 11:30:33	-23.16	-20.16	-17.16	-14.16	-11.16	-8.16
13	12/09/2005 11:30:34	-22.15	-19.15	-16.15	-13.15	-10.15	-7.15

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 AB 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 click 
- 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 AB 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.
	Outputs the file.

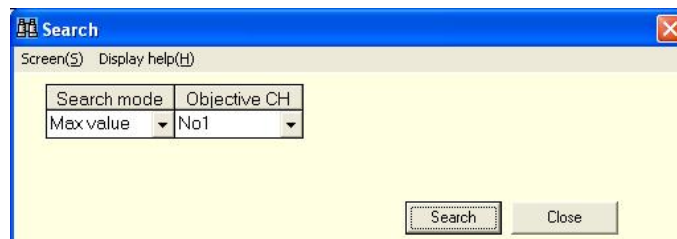


	Cursor A	Cursor B	A-B	All Data Max value	All Data Min value	All Data Average	All Data Standard deviation
Day/Time	09/27/2005 14:04:26	09/27/2005 14:04:33	0:0:6.7				
No1	9.53	-0.75	10.28	9.99	-8.04	4.36685131	5.5073504696
No2	10.53	0.25	10.28	10.99	-7.04	5.36685131	5.5073504696
No3	11.53	1.25	10.28	11.99	-6.04	6.36685131	5.5073504696
No4	12.53	2.25	10.20	12.99	-5.04	7.36685131	5.5073504696
No5	13.53	3.25	10.20	13.99	-4.04	8.36685131	5.5073504696
No6	14.53	4.25	10.28	14.99	-3.04	9.36685131	5.5073504696
No7	15.53	5.25	10.28	15.99	-2.04	10.36685131	5.5073504696
No8	16.53	6.25	10.28	16.99	-1.04	11.36685131	5.5073504696
No9	17.53	7.25	10.28	17.99	-0.04	12.36685131	5.5073504696

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	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.	



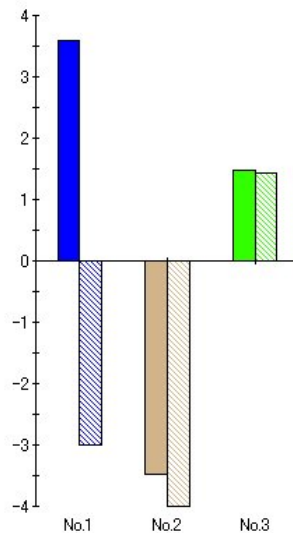
5-6 Bar graph

Displays the data of cursors A and B as bar graph.

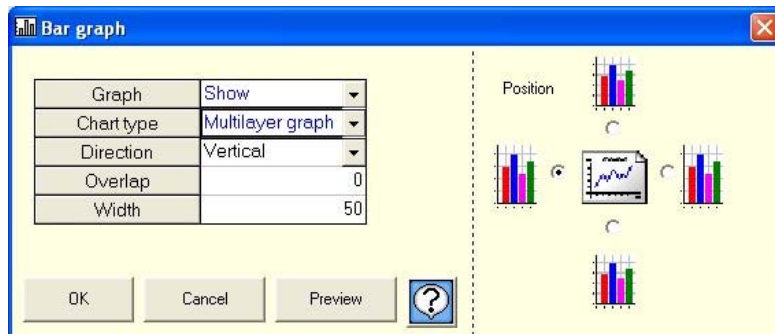
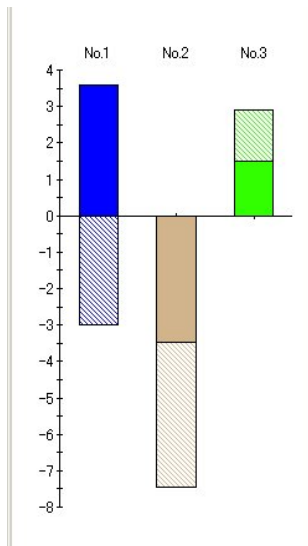
Graph type, display position, direction etc. can be set.

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

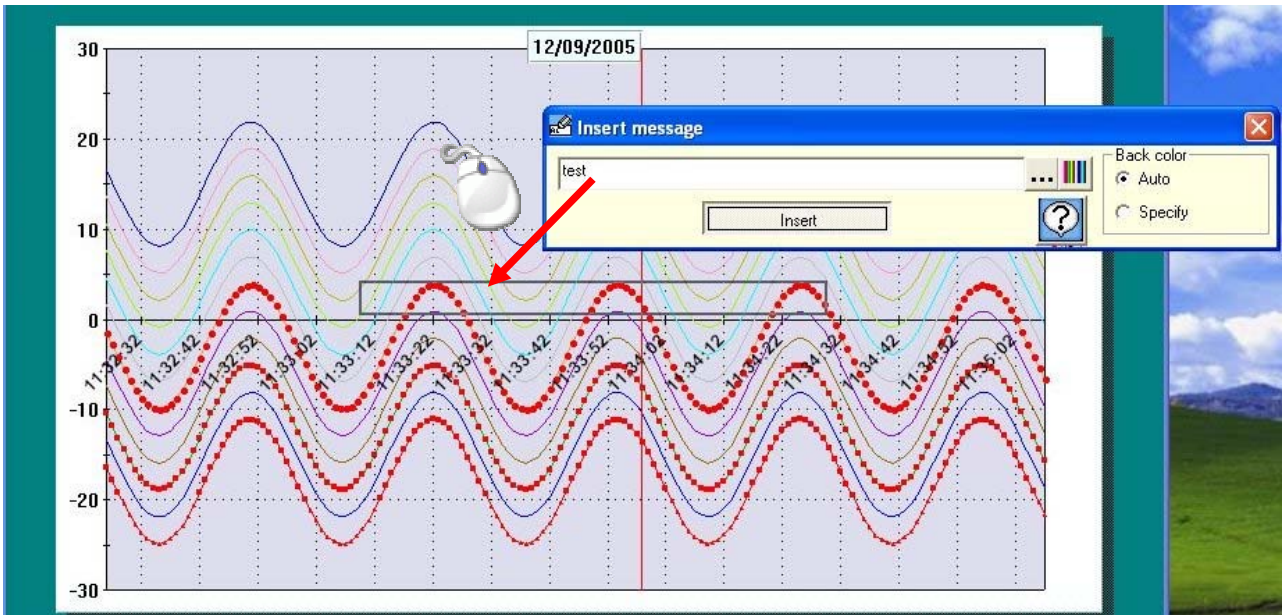
- Message can be inserted in the data on the graph.
- Message is inserted at the nearest data point when it is dragged and dropped.
- Font color, font and background color of the message can be specified.

“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

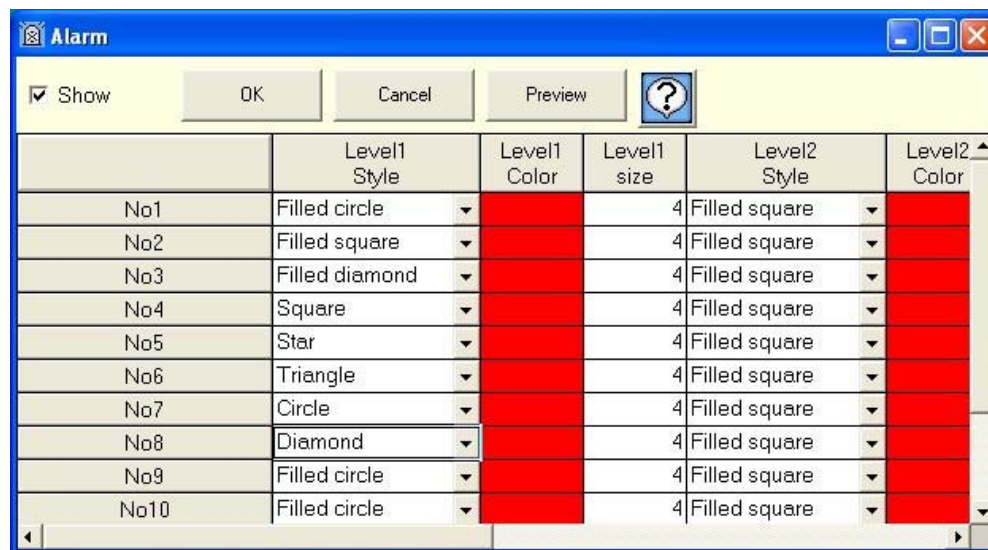
Details of the inserted messages can be edited, moved and deleted.

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

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.

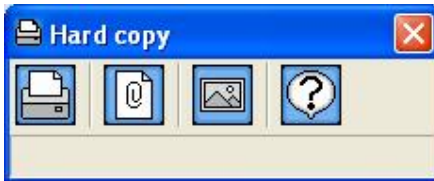
- “Set”

- (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.

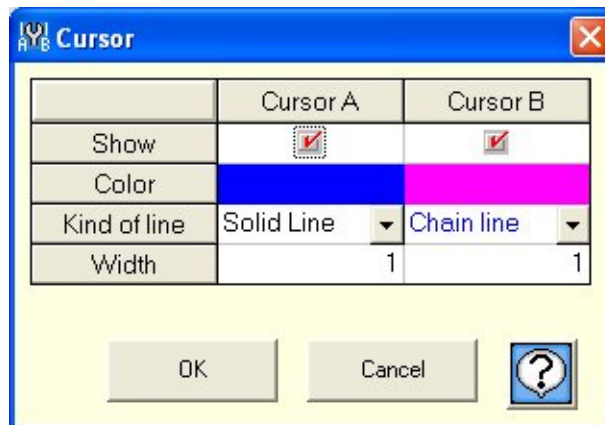
	Prints.
	Outputs on clipboard. Selects one of trend graph and bar graph when both are displayed.
	Outputs to file in BMP and JPG format. Selects one of trend graph and bar graph when both are displayed.



5-12 View cursor

Show/hide, color, kind of line etc. of cursor A,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.	

Tag	Chart type	Line color	Width	Kind of line	Dot color	size	Shape
No1	Line	Red	1	Solid Line	Magenta	7	Filled circle
No2	Dot	Blue	1	Dotted line	Green	7	Star
No3	Line+Dot	Green	1	Chain line	Blue	7	Filled square
No4	None	Brown	1	Dotted line	Red	7	Square
No5	Line	Purple	1	Solid Line	Red	7	Diamond
No6	Line	Orange	1	Solid Line	Blue	7	Circle
No7	Line	Grey	1	Solid Line	Magenta	7	Triangle
No8	Line	Cyan	1	Solid Line	Light Blue	7	None
No9	Line	Yellow-Green	1	Solid Line	Magenta	7	Filled diamond
No10	Line	Olive	1	Solid Line	Green	7	None
No11	Line	Pink	1	Solid Line	Blue	7	None
No12	Line	Dark Blue	1	Solid Line	Red	7	None

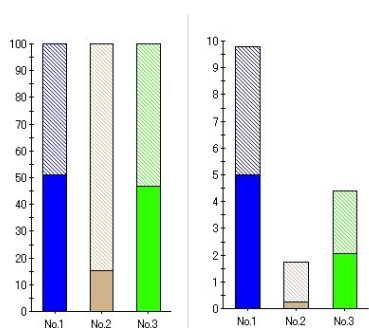
5-14 Set scale axis

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 AB is 100%. (Displayed only when multilayer graph is selected in graph type.)	
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. "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. 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" Display 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.

"Time axis" Title can be entered in time axis.

※ It cannot be set in case of circular chart.

※ Items displayed in gray cannot be changed.

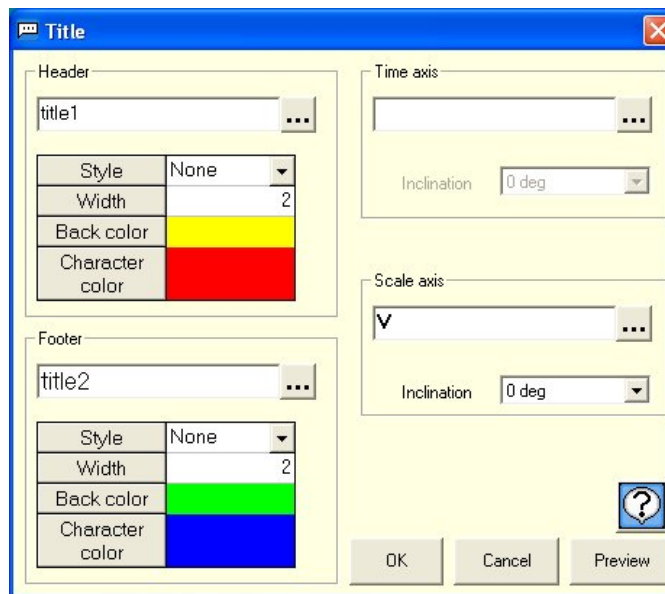
Title	Characters are entered. Font can also be set.
Inclination	Inclination of display characters is selected from the list.

"Scale axis" Title can be entered in scale axis.

(It cannot be set in case of circular chart.

(Items displayed in gray cannot be changed.

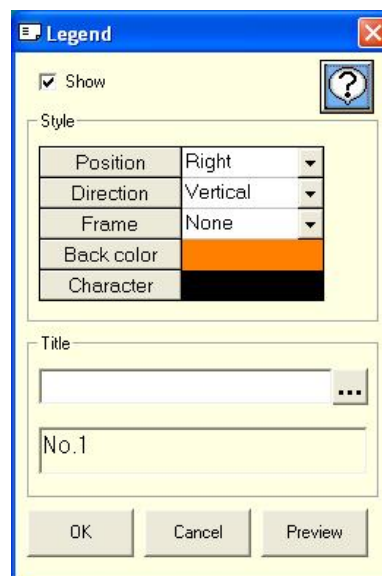
Title	Characters are entered. Font can also be set.
Inclination	Inclination of display characters is selected from the list.



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.

<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.

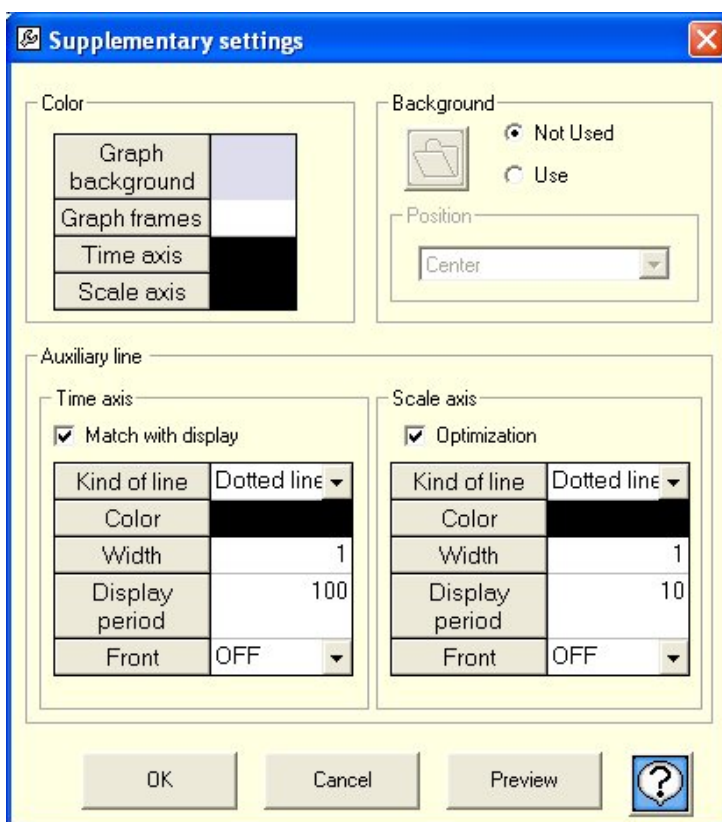
<Auxiliary line> Auxiliary line can be displayed in graph.

<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.

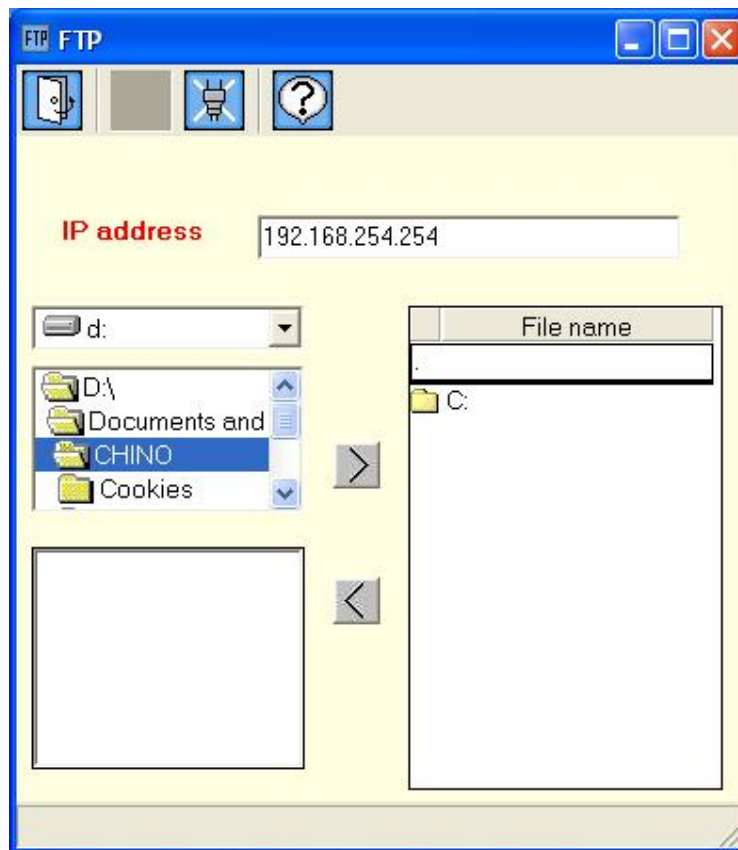
Move	Graph can be moved.
Magnify/Reduce	Graph can be magnified/reduced.
Partially magnify	Graph can be magnified by specifying the range. (Frame is displayed.)
Rotation	Set the depth and on rotating the graph is displayed as 3D as though it is seen from some angle. × Cannot be selected in circular chart.

6. FTP

Transfer and reception between file and instrument is done.

Connect the instrument after entering the IP address.

	Exits.
	Connects to the instrument.
	Instrument is disconnected.
	File is uploaded.
	File is downloaded.




※FTP (File Transfer Protocol)

It is the protocol used for file transfer in the TCP/IP network such as Internet etc.

7. FAQ

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. (To be used in software's such as excel etc.)
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.
12	To create the daily/monthly reports.

 To change the time axis.

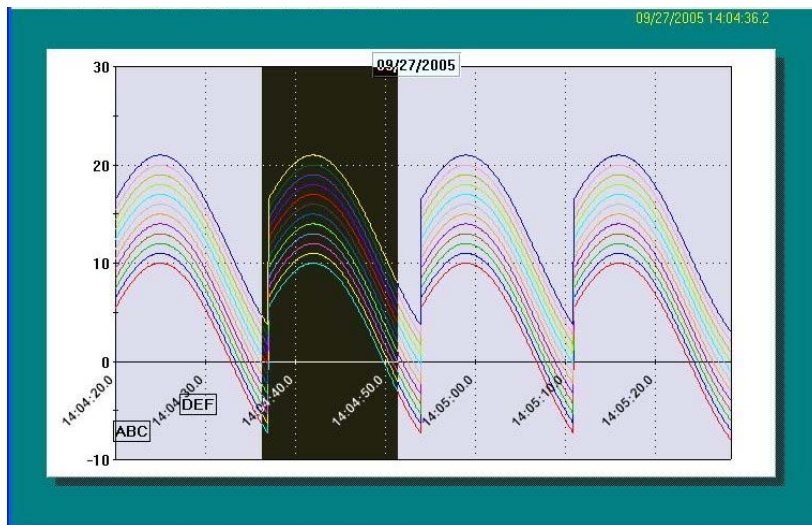
 In case of horizontal/vertical trend graph

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

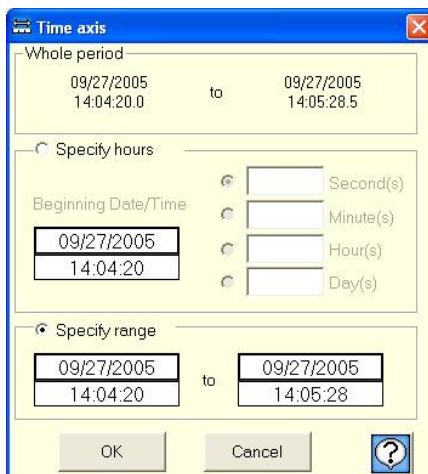
Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point that is to be magnified and release the button on the point (end point is fixed), up to which it is to be magnified. (The range in black color that is rotating is magnified)



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

Following screen is opened on clicking the time axis button  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.



 To maximize the graph by changing the scale.

 In case of horizontal/vertical trend of trend graph

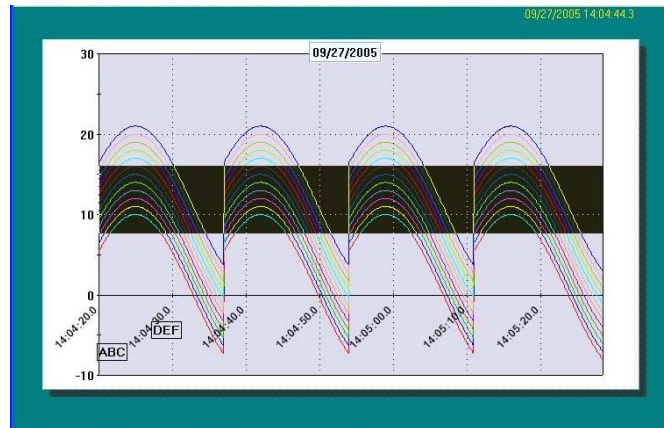
There are 2 methods; (1) Change of scale by using the mouse and (2) Change of scale by using the keyboard.

※ 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

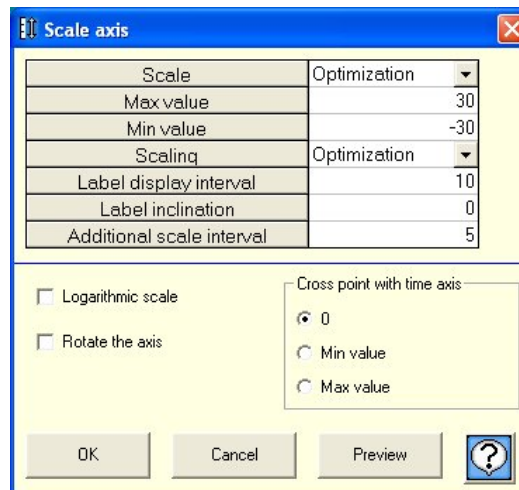
Drag (move the mouse) keeping the left button of the mouse pressed (starting point is fixed) from the point that is to be magnified and release the button on the point (end point is fixed), up to which it is to be magnified. (The range in black color that is rotating is magnified)



(2)Specify the range of scale by using keyboard

Click the scale axis button  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	Optimization
Max value	30
Min value	-30
Scaling	Optimization
Label display interval	10
Label inclination	0
Additional scale interval	5

Logarithmic scale


Rotate the axis


Cross point with time axis


0

Min value


Max value

OK Cancel Preview 

 To display several scale axes on one graph.

 Scale axes are displayed up to 2 on left and right, and up and down.

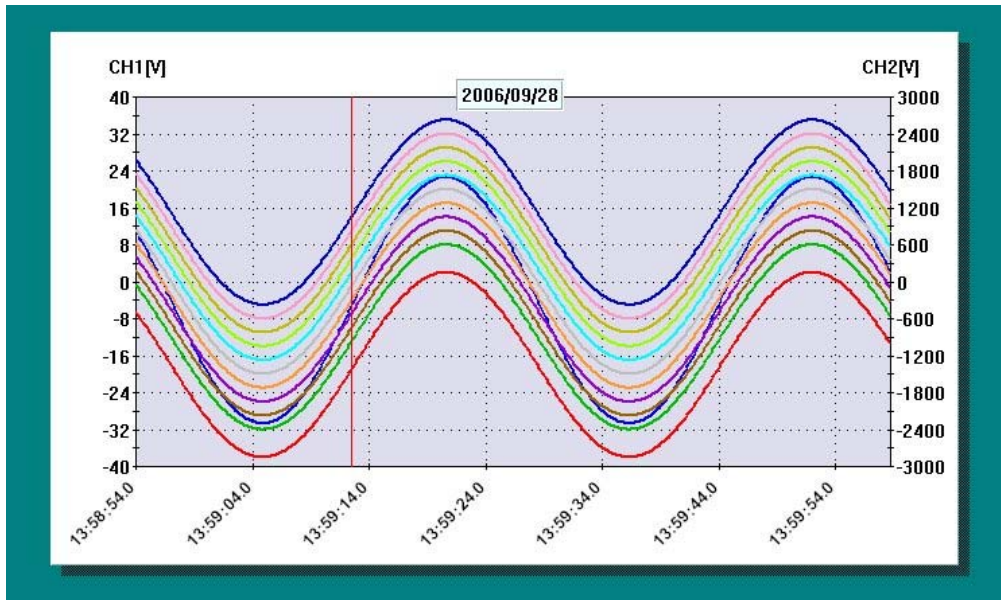
“Show method”


Click  of the tool bar. Switch to the [Multiplex].

Change the scale maximum and minimum value is possible.

[Multiplex mode]

2 scale axes are displayed. ※Displayed only one in circular chart.



Click  of the tool bar when switching the display channel on scale axis.

Click and register the displaying channel (Possible to register in the left and right one by one).

Scale axis


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

	Left	Right
1	●	
2		●
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

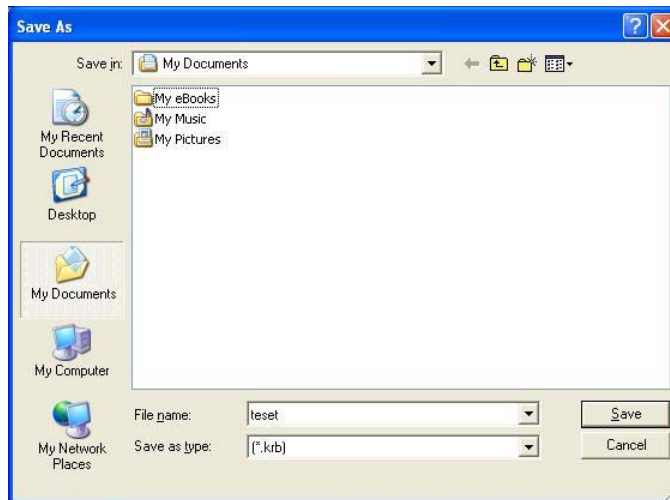
OK Cancel Preview 

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

 Click Save  on the tool menu.

”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 analysis software is not started, then the analysis software is started automatically and trend is displayed.

(2)Drag and drop

Start analysis software and when trend screen opens, drag & drop the file.

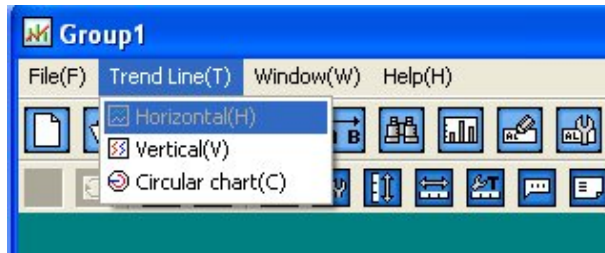
(3)File selection


Start the analysis software and when the trend screen opens, click .



 To change the Trend.

 “Horizontal, Vertical, and Circular Chart” are the 3 types included in ‘Trend’


Any of these types can be changed from the status bar.



 To convert the data to CSV (or to print the data.).


 Open data list  for converting the data to CSV.

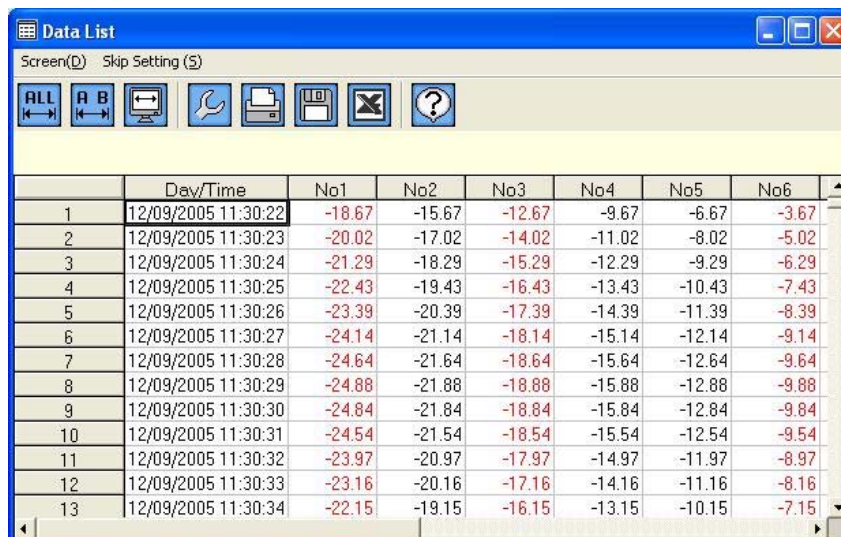
“Convert to CSV”

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 .



	Day/Time	No1	No2	No3	No4	No5	No6
1	12/09/2005 11:30:22	-18.67	-15.67	-12.67	-9.67	-6.67	-3.67
2	12/09/2005 11:30:23	-20.02	-17.02	-14.02	-11.02	-8.02	-5.02
3	12/09/2005 11:30:24	-21.29	-18.29	-15.29	-12.29	-9.29	-6.29
4	12/09/2005 11:30:25	-22.43	-19.43	-16.43	-13.43	-10.43	-7.43
5	12/09/2005 11:30:26	-23.39	-20.39	-17.39	-14.39	-11.39	-8.39
6	12/09/2005 11:30:27	-24.14	-21.14	-18.14	-15.14	-12.14	-9.14
7	12/09/2005 11:30:28	-24.64	-21.64	-18.64	-15.64	-12.64	-9.64
8	12/09/2005 11:30:29	-24.88	-21.88	-18.88	-15.88	-12.88	-9.88
9	12/09/2005 11:30:30	-24.84	-21.84	-18.84	-15.84	-12.84	-9.84
10	12/09/2005 11:30:31	-24.54	-21.54	-18.54	-15.54	-12.54	-9.54
11	12/09/2005 11:30:32	-23.97	-20.97	-17.97	-14.97	-11.97	-8.97
12	12/09/2005 11:30:33	-23.16	-20.16	-17.16	-14.16	-11.16	-8.16
13	12/09/2005 11:30:34	-22.15	-19.15	-16.15	-13.15	-10.15	-7.15

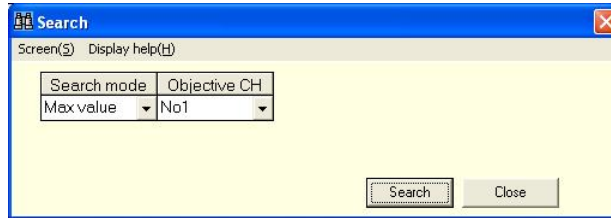


To change the Maximum value/minimum value.



Click search  on the tool bar.

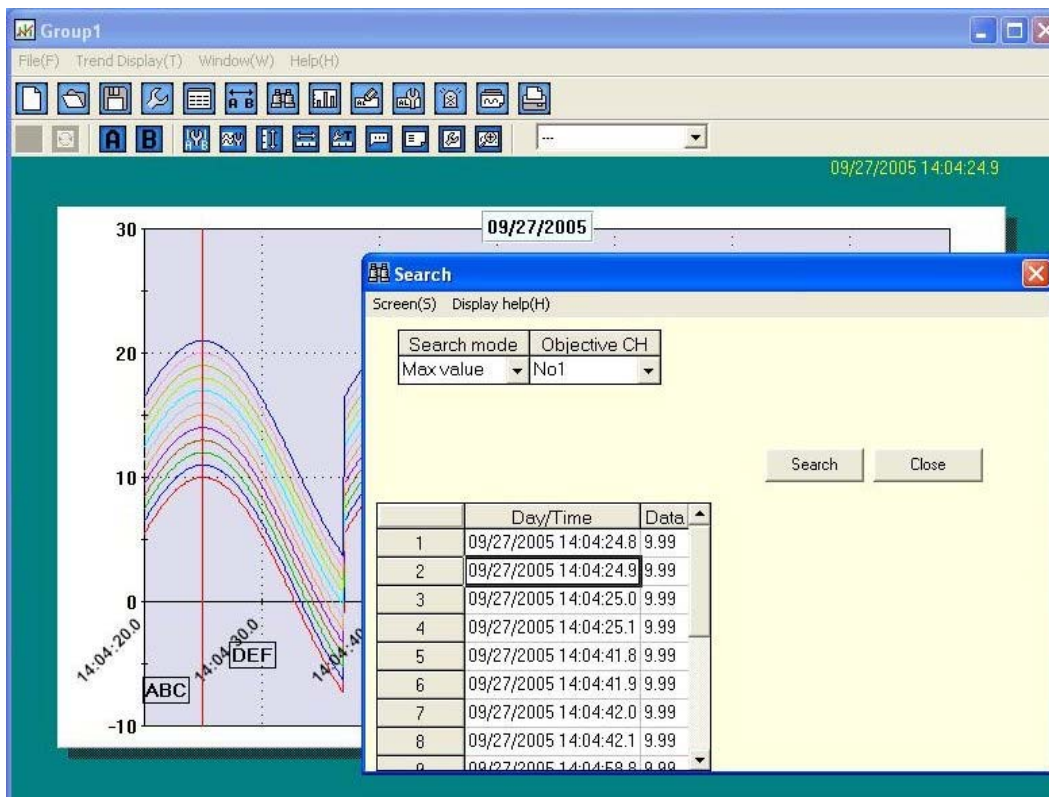
Select the “Maximum value” and “Minimum value” from the screen displayed below. In Objective CH, select the channel to be searched. On selecting “All”, all the channels are searched. Search is started on clicking the Search button.





※ 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.



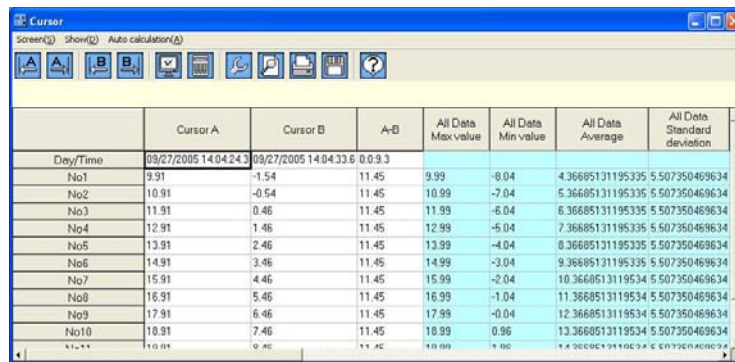
 To display a cursor in the graph and to display the data of that point.

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

Click the Cursor  and  button. 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  on the tool bar.

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

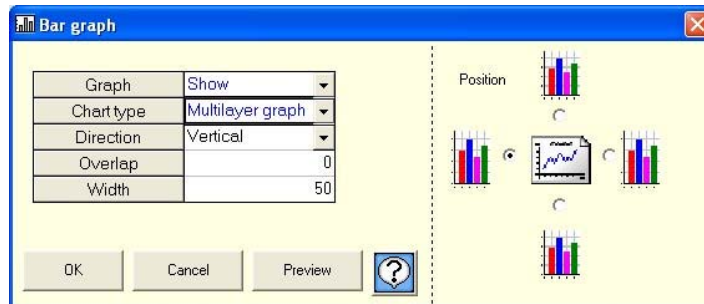


	Cursor A	Cursor B	A-B	All Data Max value	All Data Min value	All Data Average	All Data Standard deviation
Day/Time	09/27/2005 14:04:24.3	09/27/2005 14:04:33.6	0.0:9.3				
No1	9.91	-1.54	11.45	9.99	-8.04	4.36685131195335	5.507350469634
No2	10.91	-0.54	11.45	10.99	-7.04	5.36685131195335	5.507350469634
No3	11.91	0.46	11.45	11.99	-6.04	6.36685131195335	5.507350469634
No4	12.91	1.46	11.45	12.99	-5.04	7.36685131195335	5.507350469634
No5	13.91	2.46	11.45	13.99	-4.04	8.36685131195335	5.507350469634
No6	14.91	3.46	11.45	14.99	-3.04	9.36685131195335	5.507350469634
No7	15.91	4.46	11.45	15.99	-2.04	10.3668513119534	5.507350469634
No8	16.91	5.46	11.45	16.99	-1.04	11.3668513119534	5.507350469634
No9	17.91	6.46	11.45	17.99	-0.04	12.3668513119534	5.507350469634
No10	18.91	7.46	11.45	18.99	0.96	13.3668513119534	5.507350469634

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

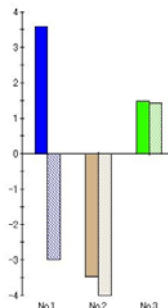
Click  on the tool bar.

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.





To display only 1 channel.

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



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

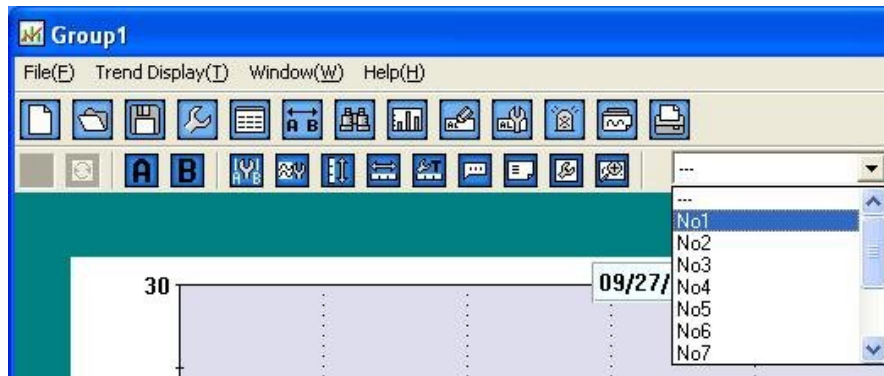
“Selection method”

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.

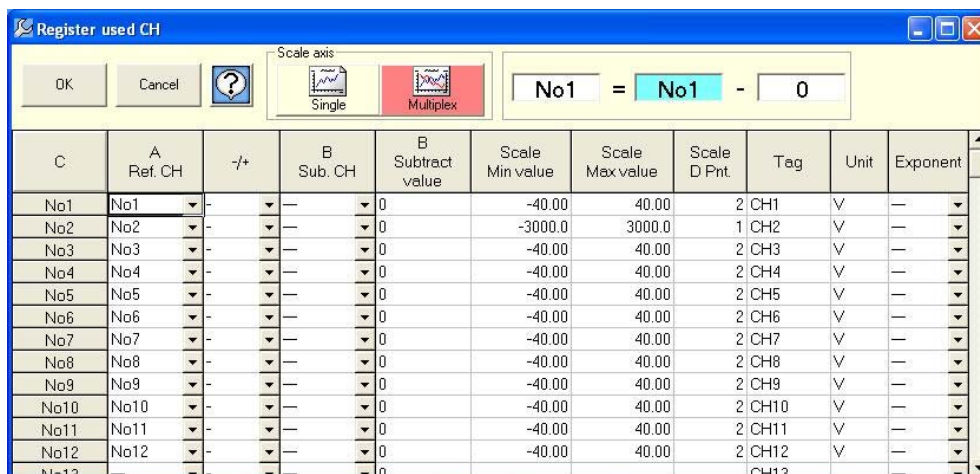



“Method to delete the registered channel”

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 gets deleted, if Reference CH “---” is Nil as in figure below.



 To insert the title in the graph.

 Click title  on the tool bar.

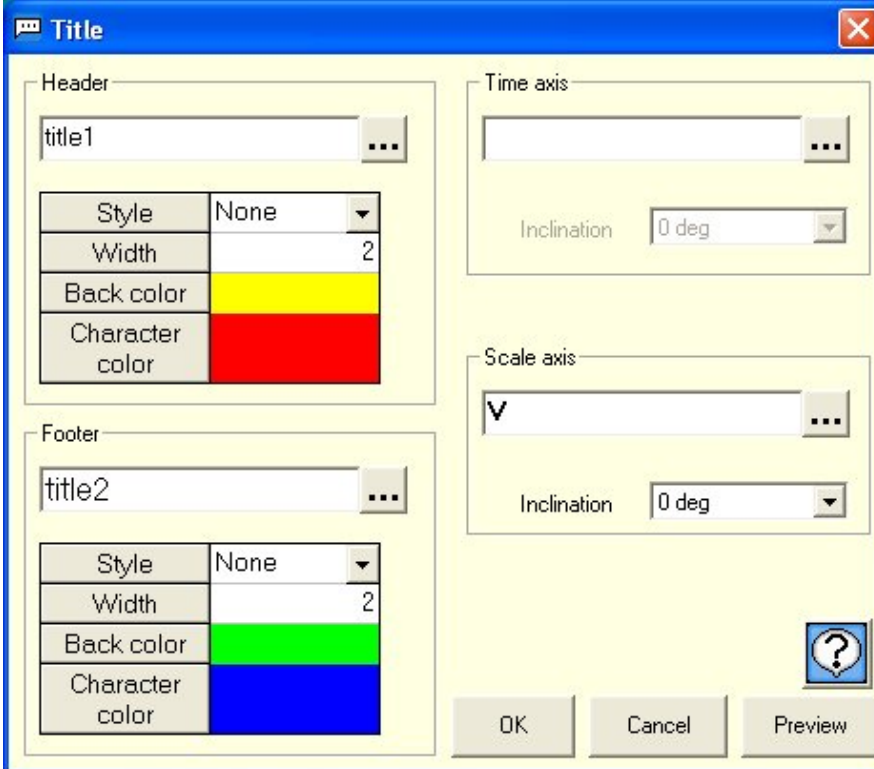
Enter the title in the following screen.

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.




Header	
title1	...
Style	None
Width	2
Back color	Yellow
Character color	Red

Footer	
title2	...
Style	None
Width	2
Back color	Green
Character color	Blue

Time axis	
	...
Inclination	0 deg

Scale axis	
V	...
Inclination	0 deg

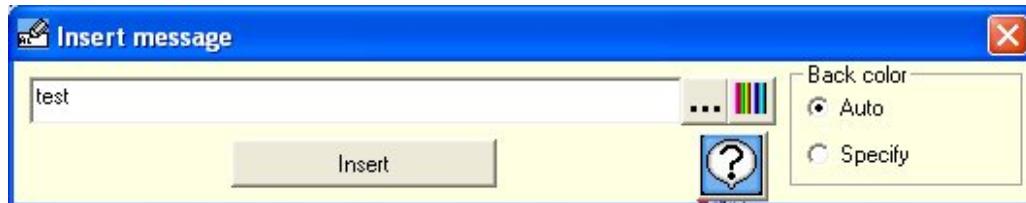
OK Cancel Preview

 To insert the message in the graph.

 Click message icon  for inserting the message.

Enter the message to be displayed in the following screen.

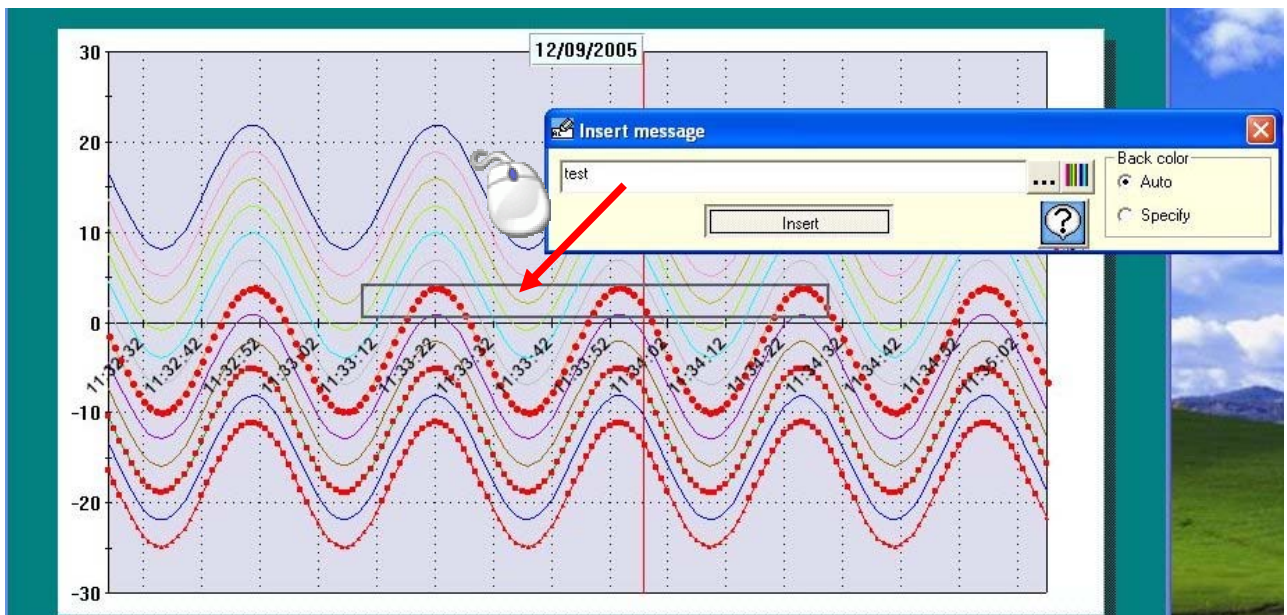
It is also possible to change the character color, font and the back color.



On clicking the 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.






To create the daily/monthly reports.




Daily / Monthly reports can be created by using the report application included in CD. Installation operations on the PC are required for using this application.

Moreover, **Excel (97 or higher) should be installed.**

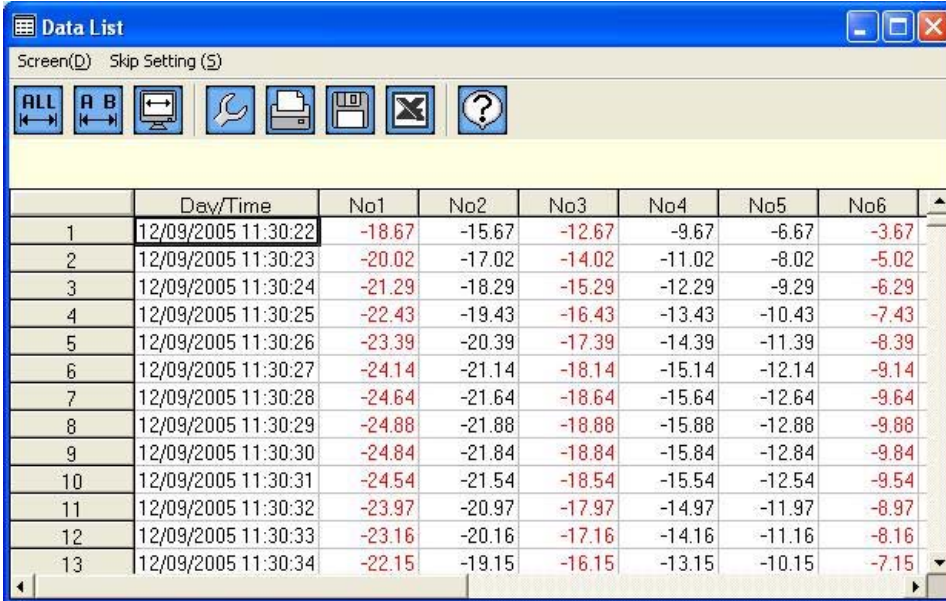
CSV format file can be used for the data.

(1) Open data list  for converting the data to CSV.

“Convert to CSV”

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

A file name is automatic. Please do not change it.



The screenshot shows a window titled "Data List" with a menu bar containing "Screen(D)" and "Skip Setting (S)". Below the menu bar is a toolbar with icons for "ALL", "A B", a monitor, a wrench, a printer, a floppy disk, a trash can, and a question mark. The main area contains a table with the following data:

	Day/Time	No1	No2	No3	No4	No5	No6
1	12/09/2005 11:30:22	-18.67	-15.67	-12.67	-9.67	-6.67	-3.67
2	12/09/2005 11:30:23	-20.02	-17.02	-14.02	-11.02	-8.02	-5.02
3	12/09/2005 11:30:24	-21.29	-18.29	-15.29	-12.29	-9.29	-6.29
4	12/09/2005 11:30:25	-22.43	-19.43	-16.43	-13.43	-10.43	-7.43
5	12/09/2005 11:30:26	-23.39	-20.39	-17.39	-14.39	-11.39	-8.39
6	12/09/2005 11:30:27	-24.14	-21.14	-18.14	-15.14	-12.14	-9.14
7	12/09/2005 11:30:28	-24.64	-21.64	-18.64	-15.64	-12.64	-9.64
8	12/09/2005 11:30:29	-24.88	-21.88	-18.88	-15.88	-12.88	-9.88
9	12/09/2005 11:30:30	-24.84	-21.84	-18.84	-15.84	-12.84	-9.84
10	12/09/2005 11:30:31	-24.54	-21.54	-18.54	-15.54	-12.54	-9.54
11	12/09/2005 11:30:32	-23.97	-20.97	-17.97	-14.97	-11.97	-8.97
12	12/09/2005 11:30:33	-23.16	-20.16	-17.16	-14.16	-11.16	-8.16
13	12/09/2005 11:30:34	-22.15	-19.15	-16.15	-13.15	-10.15	-7.15

(2) Report Application start.

Report Application (Sample)

This Application is the Sample Application.

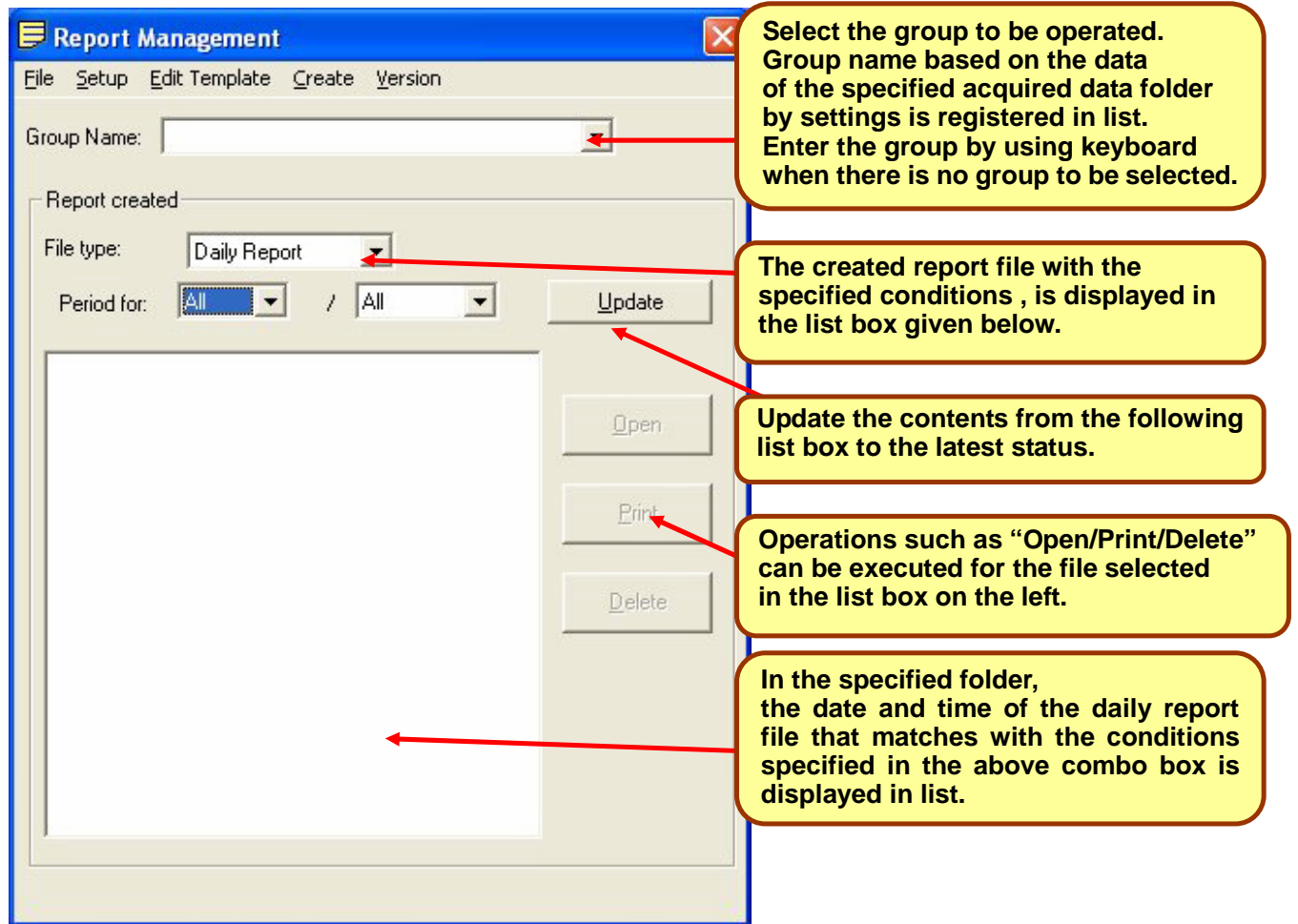
Queries related to usage method and defects cannot be answered.

Please understand it before using.

Main screen

On activating main screen is displayed.

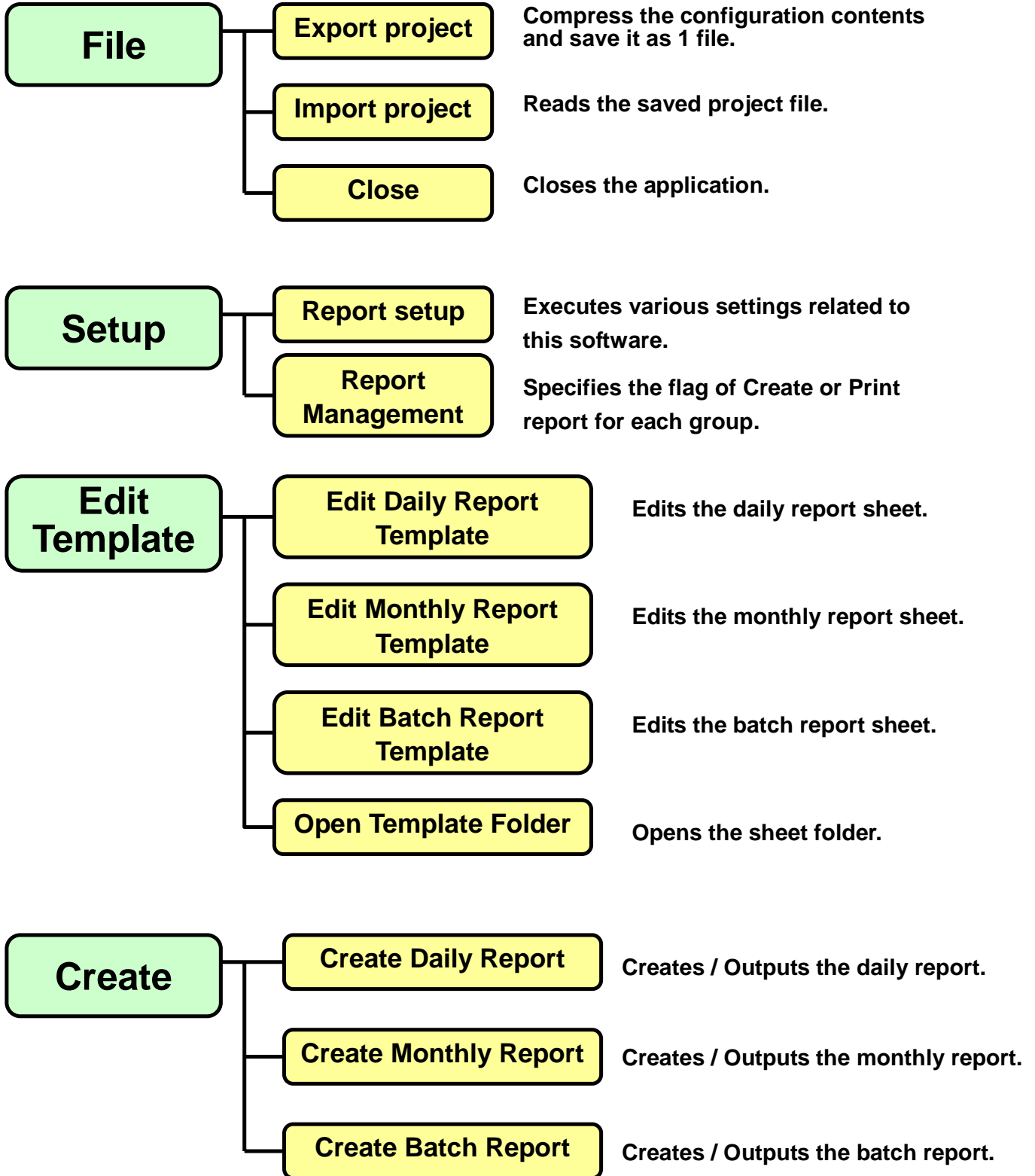
Various operations are carried out considering this screen as base point.



The screenshot shows the 'Report Management' application window. It has a menu bar with 'File', 'Setup', 'Edit Template', 'Create', and 'Version'. Below the menu bar is a 'Group Name:' text box. Underneath is a section titled 'Report created' containing a 'File type:' dropdown menu set to 'Daily Report', and a 'Period for:' section with two dropdown menus, both set to 'All'. To the right of these dropdowns are 'Update', 'Open', 'Print', and 'Delete' buttons. A large empty list box is on the left side of the window. Five callout boxes with red arrows point to these elements:

- Group Name:** Select the group to be operated. Group name based on the data of the specified acquired data folder by settings is registered in list. Enter the group by using keyboard when there is no group to be selected.
- File type:** The created report file with the specified conditions, is displayed in the list box given below.
- Update:** Update the contents from the following list box to the latest status.
- Open/Print/Delete:** Operations such as "Open/Print/Delete" can be executed for the file selected in the list box on the left.
- List Box:** In the specified folder, the date and time of the daily report file that matches with the conditions specified in the above combo box is displayed in list.

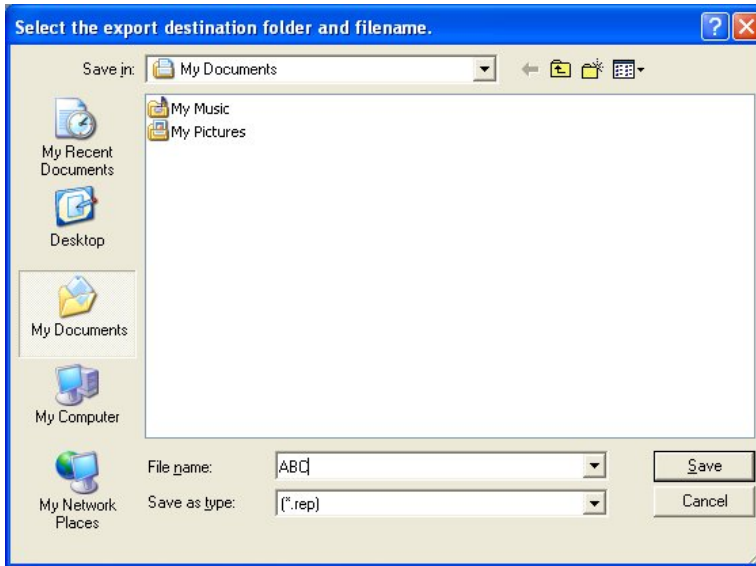
Menu structure



Exporting Project

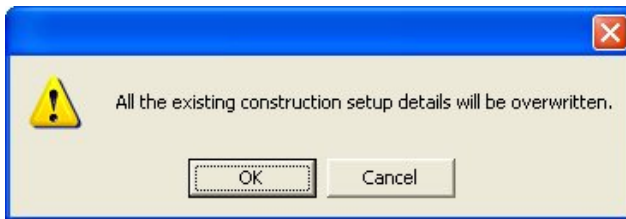
Specify the save destination and the file.

File is created by saving the compressed file.

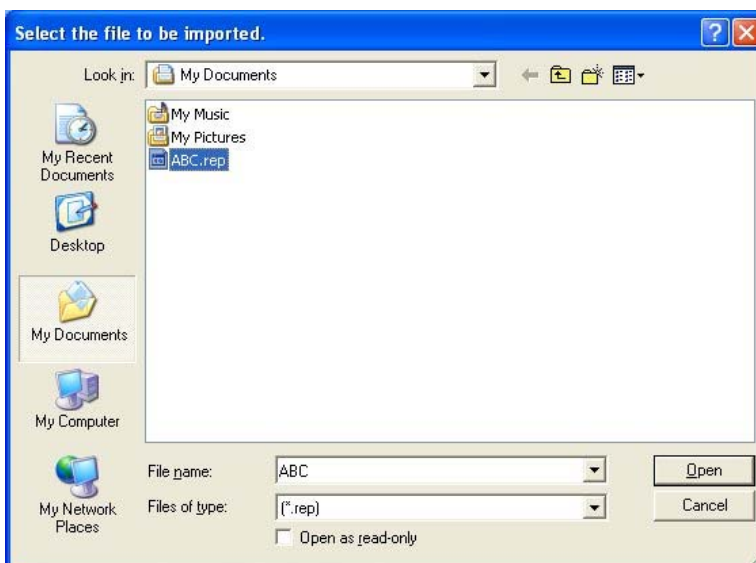


Importing project

Confirmation dialog box for overwriting the configuration is displayed. Click "OK".



Select the file to be read. Read the file.



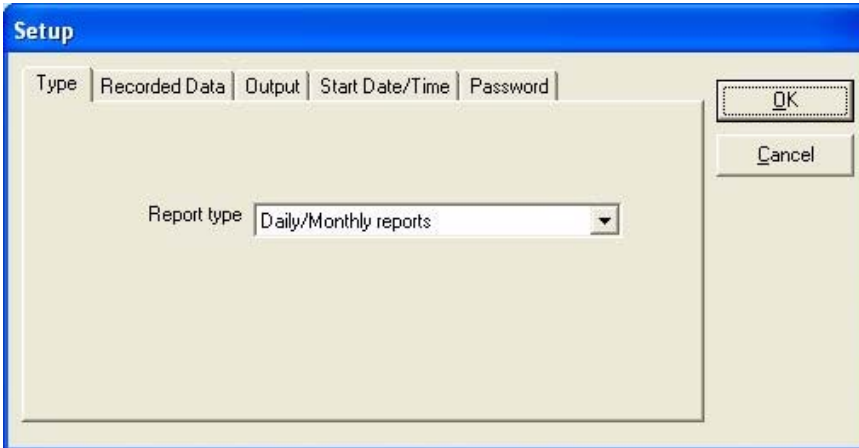
Report settings

Setting tab for type, acquired data, output, print, date origin and password is displayed.
Respective tab contents are described below.

Type

Select the report type to be used from the following 3 patterns.

- (1) Daily report and Monthly report
- (2) Batch report
- (3) Daily report, Monthly report and Batch report



Daily report...Create by collecting the acquired data of 1 day.

Monthly report...Create by collecting the daily report of 1 month.

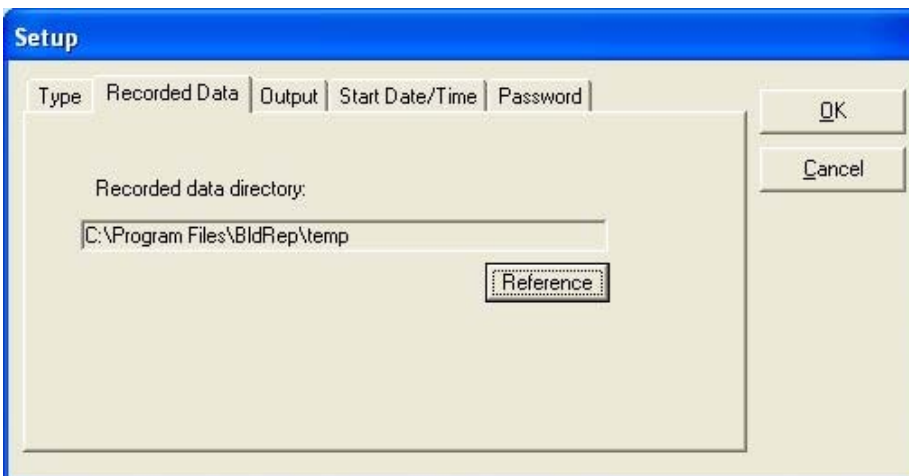
Batch report...Create the batch report corresponding to the acquired data file.

Recorded data

Specify the folder in which the acquired data is saved.

Use the folder selection screen by clicking "Browse" for setting.

Only the CSV format file can be used for the acquired data.



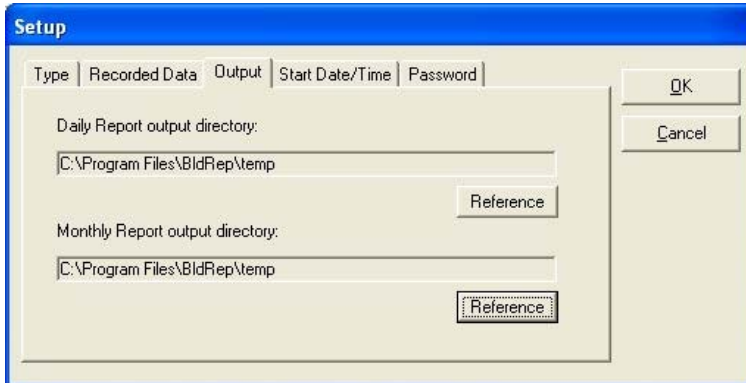
Output

Specify the output destination (save destination) of the report file.

Use the folder selection by clicking the "Browse" for setting.

Required setting items are displayed by selecting the "Type" tab.

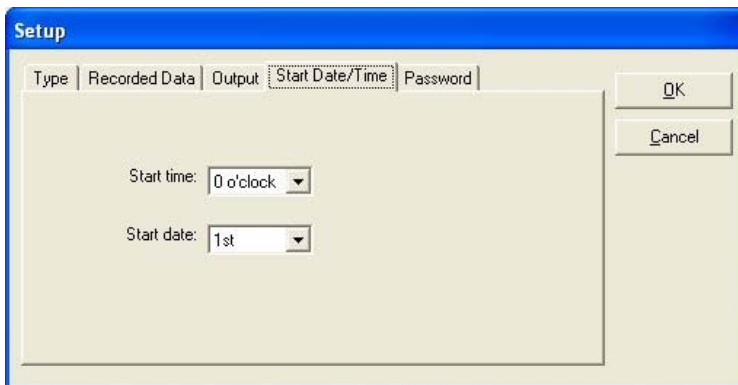
Following figure is the case of Daily report / Monthly report.



Start Date/Time

Set the time of the 1st day in case to create the daily report and the date of the starting of the month in case to create monthly report.

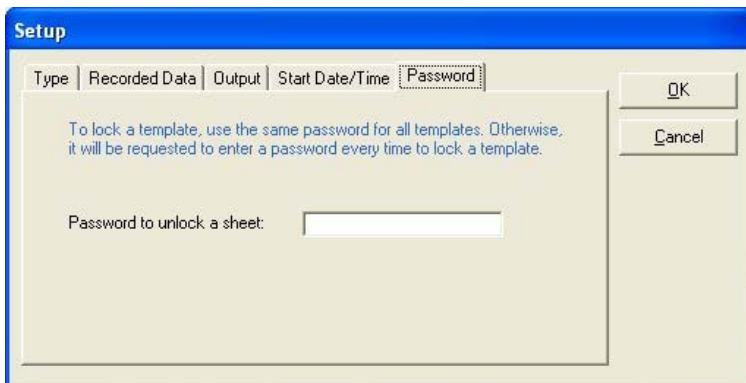
Decide whether to use which time range by using these settings while creating daily or monthly report.



Password

Register the password when the report sheet is locked with password.

Use the same password for all the sheets. When the sheet is locked, password is not set or in case of error settings, it cannot be created.



Report Management

Specify whether to create report for each group.

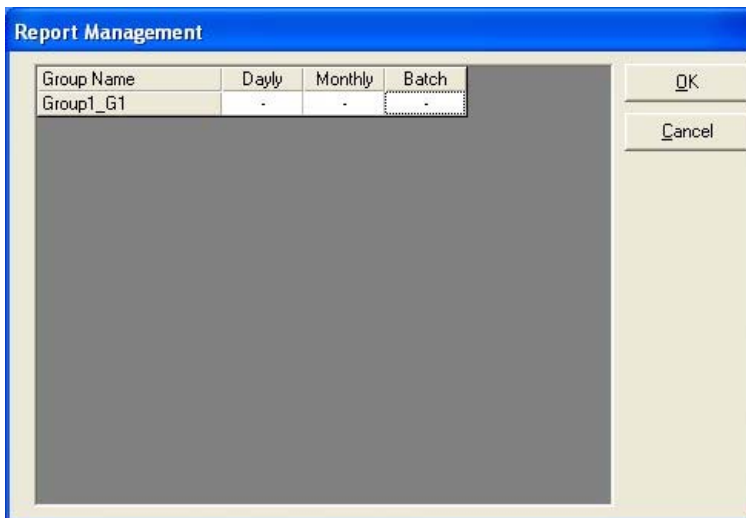
Changes from * → (Blank) → P on clicking each frame.

"-" indicates that the sheet is not created.

Report is not created for the group for which the sheet is not created.

Report is created for the group having * mark and not created for the group having (Blank) mark.

For the group with P mark, report is created and then printed.



Create daily report

Daily report of the groups marked with * mark in the daily report column of report management is created on the basis of the contents in daily report sheet.

- (1) Specify the period for creating the daily report. Select the start date and the end date.
- (2) Daily report is created after reading the acquired data.
- (3) On creating the daily report, it is added in the "Created Reports" list.

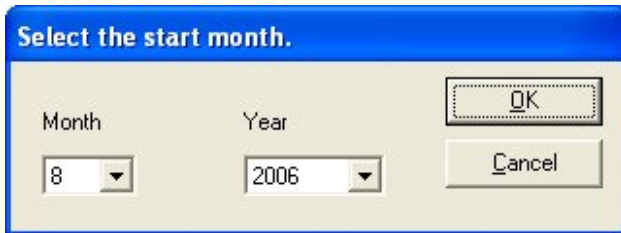


Create monthly report

The monthly report of the groups marked with * mark in the monthly report column of the report management are created on the basis of contents on monthly report sheet.

(1)Specify the period for creating the monthly report.

Select the start month and the end month.



(2)Create a monthly report after reading the daily report.

(3)On creating the monthly report, it is added in the "Created Reports" list.

Edit Report Sheet

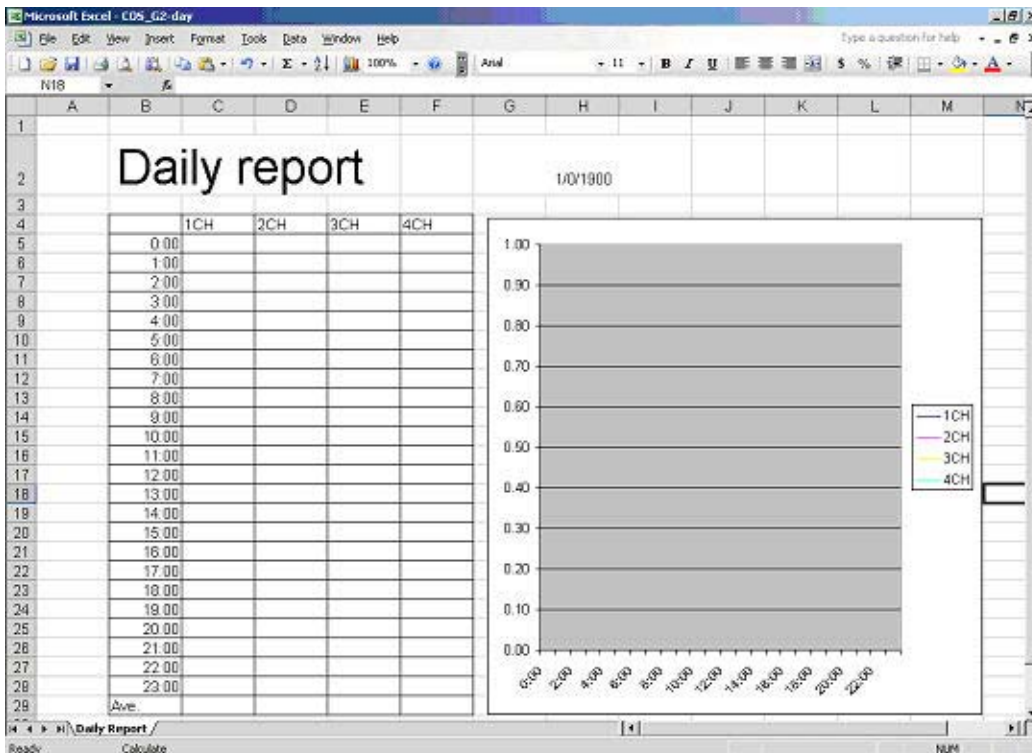
Each report is created on the respective sheets.

Frame of the table, formula, fixed character indicating the cell contents and settings related to printing should be created for the sheet beforehand.

Edit Daily Report

In daily report sheet, the contents created on "daily report" sheet are output as daily report.

(1)Create frame, fixed character string etc. for the daily report.



(2)Open the input screen by double-clicking on the cell where the data is to be pasted.

The screenshot shows the 'Automatic Function Input' dialog box with the following components and callouts:

- Functions Types:** Radio buttons for 'Average Value' (selected), 'Maximum Value', 'Minimum Value', and 'Number of Samples'.
 - Callout: **Select the data channel. If "Recording time" is selected, the time is computed in place of data. Use this for displaying time in the report.**
 - Callout: **Select the function applied to inserted data.**
- Channel:** A list box containing 'Time stamp' (selected) and channels CH01-CH10 with their respective MIN/MAX values.
 - Callout: **Use this area when the input setup is to be input consecutively in the time or channel direction.**
- Continuous Input:** Checkboxes for 'Time direction (Up to Down)' (unchecked) and 'Channel direction (Left to Right)' (unchecked).
 - Callout: **When this is checked and the computation result is an error, the result is displayed as a blank instead of an error indication.**
- Computation Range:** Radio buttons for 'Entire' (selected) and 'Specified at' (with a dropdown set to '0').
- Buttons:** 'OK' and 'Cancel' buttons.

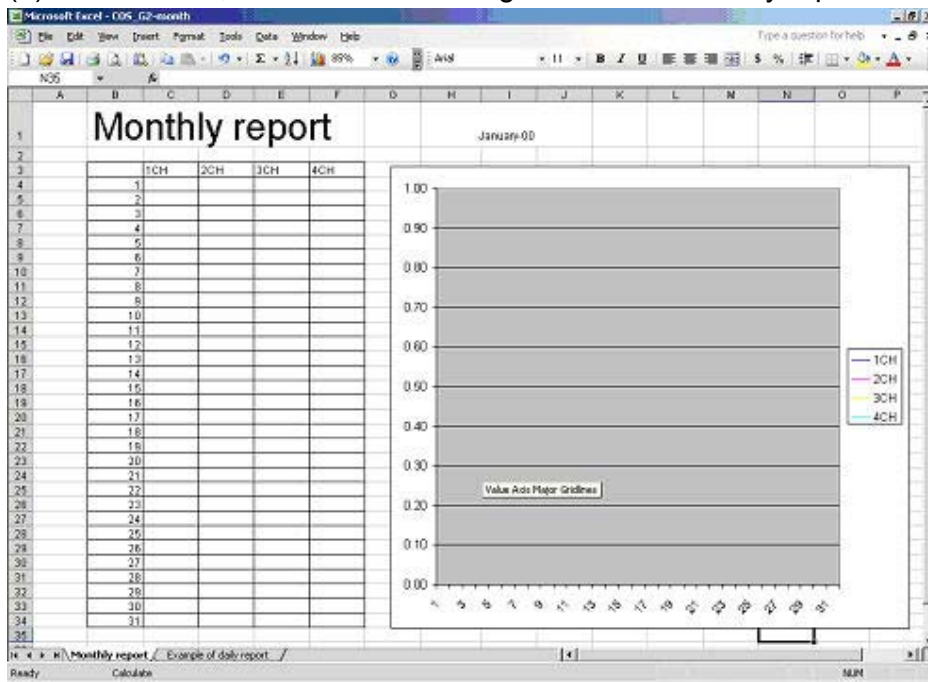
(3)After setting each item, Formula is written in the cell on clicking "OK".

(4)After the creation is complete, "Save as" the file and then close it.

Edit monthly report sheet

In monthly report sheet, the contents created on "monthly report" sheet are output as monthly report.

(1) Create frame, fixed character string etc. for the monthly report.



(2) Open the input screen by double-clicking on the cell where the data is to be pasted.

Specify the position of daily report data to be used. When the cursor is placed here, the daily report contents are displayed; click on the desired cell.

Use this area when the input setup is to be input consecutively in the time or channel direction.

Select the computation to be applied to the data.

Select whether a computation such as averaging or maximum is applied to the entire month or to the data of the specified days. When [Specified days] is selected, it is not permitted to select the function type but the data in the specified position of the specified day is loaded simply.

When this is checked and the computation result is an error, the result is displayed as a blank instead of an error indication.

(3) After setting each item, Formula is written in the cell on clicking "OK".

(4) After the creation is complete, "Save as" the file and then close it.



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1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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