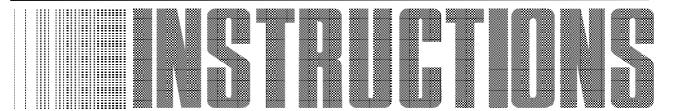


IR-H Data Logging Software

Model: IR-VXG1E

(Software Ver.1.10)



Always keep this instruction manual with this software.

Please be sure to deliver this instruction manual to a person who uses this Software.

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1. Operation environment

Hardware and software	Contents and Condition		
and software	A computer running Windows95/98 and meeting the following requirements		
	CPU	Pentium 90 MHz or faster	
		Using 16550 compatible chip in RS-232C driver	
	OS	Windows95/98	
		At least 16 MB (More than 32 MB recommended)	
	Memory	This memory capacity is the minimum volume of memory required	
Personal		for operating this software independently. More memory is	
computer		recommended.	
	CD-ROM drive	A CD-ROM drive is required for installing this software.	
	Hard disk	One or more hard disk drives of at least 20 MB free space	
	(It may be built-in or externally attached.)		
	Communications	The communications ports supported by Windows.	
	port	The port of COM1 or COM2 is used.	
	Color high-resolution analog RGB.		
Display		ed resolution 640×480 , 800×600 , 1024×768 , 1280×1024 dots and	
	more than 256 color	'S	
Printer	Compatible to Wind	dows.	
	If Microsoft Excel97 has been installed in your personal computer, data can be saved in the		
Software	file of Excel format.		
	However, the progra	am will run, even if Excel97 has not been installed.	

This software is a 32-bit application software compatible to Windows95/98. It can be executed parallel to other applications but its normal operation is not guaranteed in all the conditions.

It may not work properly in the following situations.

- (1) When you have run any 32-bit application software not compatible to Windows95/98.
- (2) When other application software have bugs causing troubles in Windows.
- (3) When other applications have used a large part of CPU or memory. (Especially software related to images.)
- (4) When the computer has a special built-in hardware or software drive.
- (5) When multiple applications have been activated and the performance of Windows has been degraded.

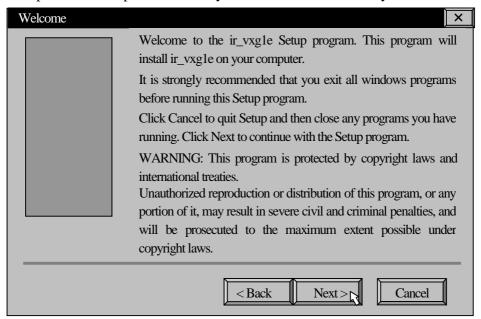
2. Installing and Uninstalling

2.1 Installing your software program

2.1.1 Automatic setup program

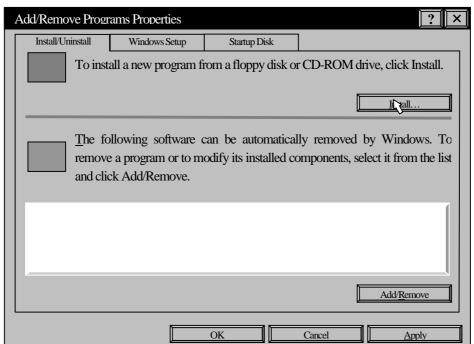
1) Insert the software disk into your computer. (OS: Windows95/98)

The Set up Wizard will open automatically. Follow the instructions on your screen.



2.1.2 When the setup is not started automatically

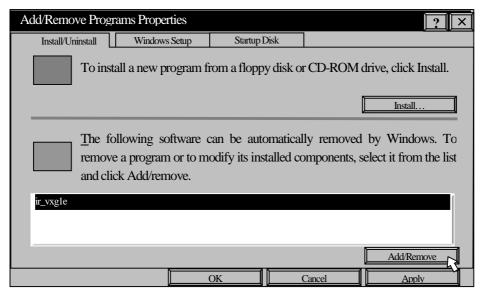
- 1) Click the [Start] button, point to [Settings], and then click [Control Panel].
- 2) Double-click [Add/Remove Programs].
- 3) After clicking [Install] in the following screen, the Setup Wizard will open automatically. Follow the instructions on your screen.



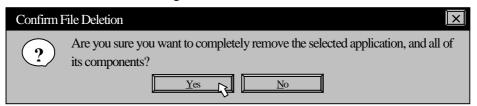
2. Installing and Uninstalling

2.2 Installing your software program

- 1) Click the [Start] button, point to [Settings], and then click [Control Panel].
- 2) Double-click [Add/Remove Programs].
- 3) Select the application software from the list in the following screen and click [Add/Remove Programs].

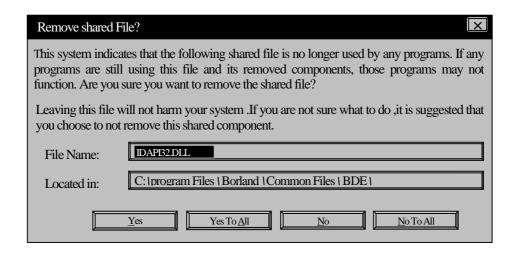


4) Click the [Yes] button in the following screen.



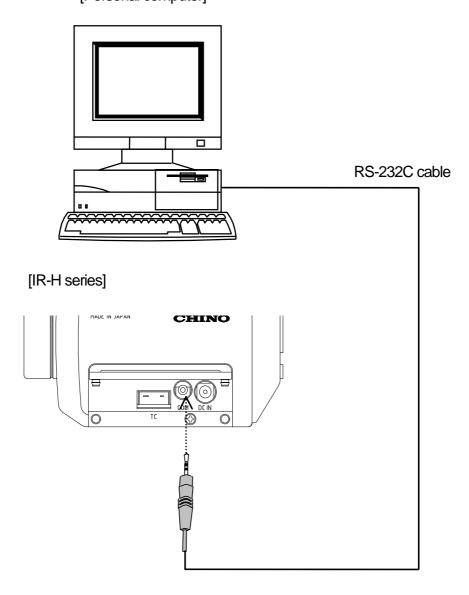
Caution

The following screen may appear depending on computers. If there may be other application using the file or if you are not sure, click the [No] button, and if you are sure there are no other application using it, click the [Yes] button.



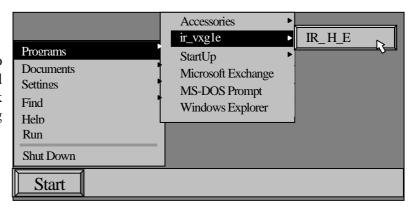
3. Connections with IR-H series

Connect your IR-H series and your personal computer with the RS-232C cable attached with this software package. [Personal computer]

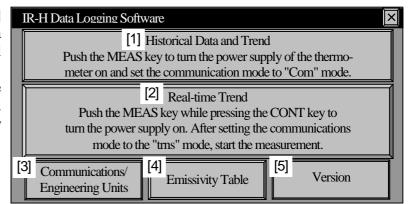


4.1 Start up

 Click Start button, point to Program, point to ir_vxg1e, and then click IR_H_E, or click IR_H_E.exe in the folder being installed on Explorer.



- 2) [**IR-H Data Logging Software**] splash window will appear for a while and then the menu screen will appear.
- 3) The menu screen has two large buttons and three small buttons. You can enter into each mode by clicking a button.



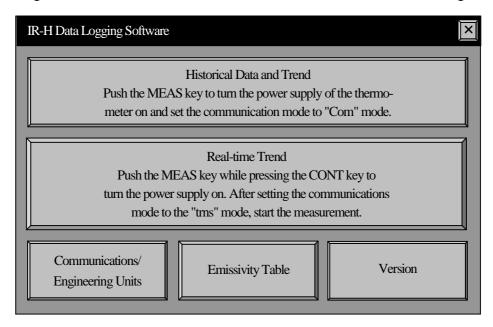
	Kinds of buttons	Contents
[1]	Historical data and	It is the mode for recalling the data being stored in your thermometer. If you select
	Trend	this mode, you are not able to return to the menu screen. Press MEAS key to turn
		the power supply of your thermometer on. Then set the communications mode of
		your thermometer to "com".
[2]	Real-time trend	It is the mode for measuring temperature in real-time. If you select this mode, you
		are not able to return to the menu screen. Press MEAS key while pressing key to
		turn the power supply of your thermometer on. (The thermometer becomes the
		continuous measurement mode.) Set the communications mode of your
		thermometer to "trns" and then press MEAS key again to start a measurement.
[3]	Communications/	For the communications, select the serial port, COM1 or COM2 , of your personal
	Engineering units	computer.
		For the engineering unit, select C or F. (It should conform to the engineering unit
		being set on your thermometer.)
		Click OK button. The screen will return to the menu screen.
[4]	Emissivity table	The emissivity table is displayed for your reference. (Click a tab for the wavelength
		of your thermometer.) Click OK button to return to the menu screen.
[5]	Version	The version number is displayed. By clicking OK button to return to the menu
		screen.

Caution

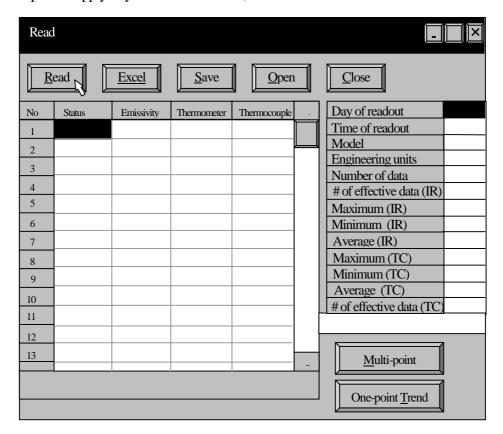
Make sure to set the communications port and the engineering unit by **Communications/Engineering Units** button prior to recall stored data or start a measurement.

4.2 Recalling stored data

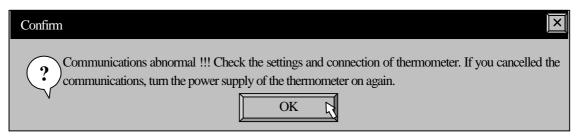
- 1) Connect your thermometer and your personal computer.
- 2) By clicking **Historical Data and Trend** button in the menu screen, [Read data] dialog box will appear.



3) Turn the power supply of your thermometer on, and click **Read** button.



- 4) If the communications is normal, data will be filled in the table on the right side (up to **Number of Data**) and then the displays of [**Now reading...**], [**Progress status display bar**], and [□□□ seconds remains] will appear on the lower panel. Next, data will be filled in the table on the left side and finally the remaining data for the table on the right side will be filled in.
- 5) If the communications is not normal, the message box shown below will appear. Click **OK** button and follow the instructions in the message box.



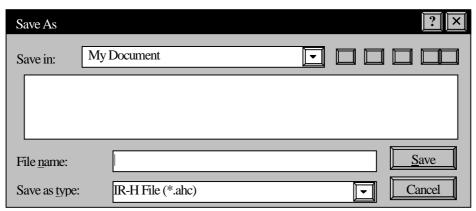
- 6) As the data recalling is one time only during this program runs, you need to start up this program each time you recall data from a file or through communications.
- 7) Save the data in the table into Excel or a file if necessary.
- 8) By clicking **Excel** button (or by pressing **E** key on your keyboard), [**Save as...**] dialog box will appear. Enter a file name and click **Save** button. Then the data will be exported to **Excel** with the displays of [**Now exporting...**] and [**Progress status display bar**].



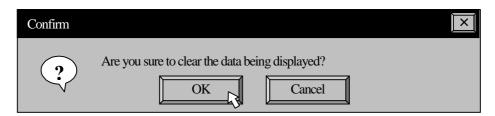
Caution

This function cannot be executed if Excel97 has not been installed. If Excel97 has not been installed, [Failed to export. Confirm if Excel97 is installed.] message box will appear.

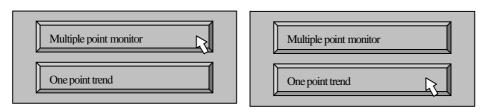
9) By clicking **Save** button (or by pressing **S** key on your keyboard), [**Save as...**] dialog box will appear. Type a file name and click **Save** button. Then the data will be saved with the displays of [**Now saving...**] and [**Progress status display bar**]. The file extension "ahc" will be assigned automatically. This file is used in the process of replaying the stored data as shown in the next paragraph.



10) By clicking Open button (or by pressing O key on your keyboard), the message box shown below will appear. Click OK button and then Open dialog box will appear. Select a file name with the file extension "ahc" and click Open button. The stored data in the file selected will be displayed. To return to the original screen, click Cancel button.



- 11) By using the read data, you can select multiple point monitoring or one point historical trend display. On the multiple point monitoring, the sequential measured data by corresponding measured number and measured objects are accumulated in a database table, and displayed in a report of table format or graph format. On the one point historical trend, data is displayed in a graph format as a trend of same measured object.
- 12) By clicking **Multiple point monitor** button on the lower right (or by pressing **M** key on your keyboard), **Multi-point Monitor** (**30 points**) screen will appear. By clicking **One-point Trend** button (or by pressing **T** key on your keyboard), **One-point Historical Trend** screen will appear.



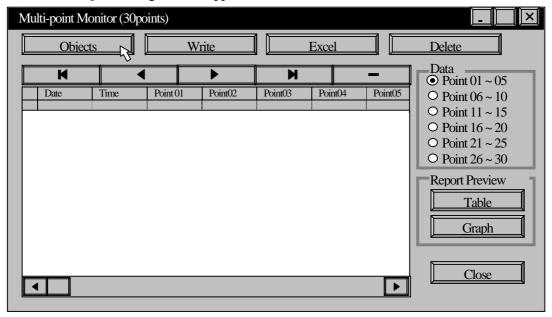
13) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard), the message box shown below will appear. By clicking **OK** button, the program will quit and the screen will return to the menu screen of Windows.

By clicking Cancel button, the message will disappear.

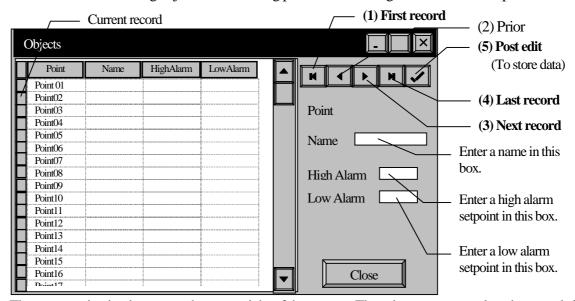


4.2.1 Multi-point monitoring

1) By clicking **Objects** button (or by pressing **O** key on your keyboard) on **Multi-point Monitor** (**30 points**) screen, **Objects** dialog box will appear.



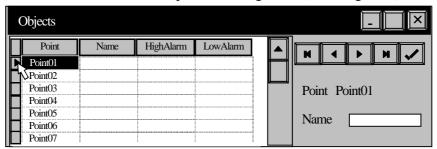
2) Enter names of measuring objects or monitoring places and enter high and low alarm setpoints.



3) There are navigating buttons at the upper right of the screen. These buttons are to select the records in the database table on the left side. The name of the button is displayed when the mouse is placed on that button for a while. The functions are as follows.

Button name	Function
First record	Selects the current record to the first record (Point01).
Prior record	Selects the current record to the previous record.
Next record	Selects the current record to the next record.
Last record	Selects the current record to the last record (Point30).
Post edit	Writes the changes in current record to the database.

- 4) The entering method of names and alarm setpoints is as follows. However, you do not need to enter names and alarm setpoints if not necessary.
 - i) By selecting the current record to **Point01** (the default setting), "**Point01**" is displayed at **Point** column in the first line of the panel on the right side (ash background).



- ii) Move the cursor to **Name** (white ground) column and enter a name through the keyboard. (up to 20 characters)
- iii) By pressing **Tab** key on your keyboard, the cursor will move to **High Alarm** column.
- iv) Enter a high alarm setpoint in integers.
- v) By pressing **Tab** key on your keyboard, the cursor will move to **Low Alarm** column.
- vi) Enter a low alarm setpoint in integers.
- vii) By click **Post edit** button, the entered data will be stored.
- viii) Click Next record button to set the current record at Point02.
- ix) Repeat the operation of from ii) to vii) for setting up to other Point number required.
- 5) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard), the screen will return to **Multi-point Monitor (30 points)** screen.
- 6) By clicking **Write** button (or by pressing **W** key on your keyboard), the data having read from your thermometer will be written to the data table in sequence from **Point01**.



If the number of stored data is less than 30, the data up to that number will be written. Even if the number of stored data is more than 30, the data up to 30 will be added.

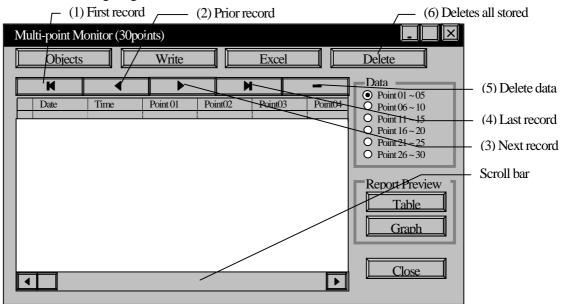


Only the stored data from number 1 to 30 in your thermometer are used. Moreover, the stored data from an in-between number can not be written.



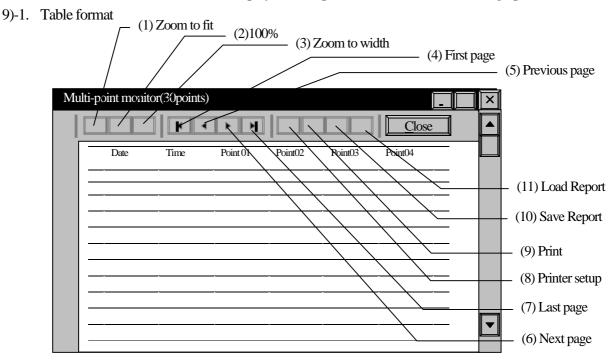
7) The data in the table can be monitored by using the navigating buttons and a scroll bar.

8) The functions of navigating buttons are as follows.



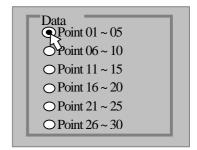
Button name	Function
(1) First record	Selects the current record to the first record (First line).
(2) Prior record	Selects the current record to the previous record.
(3) Next record	Selects the current record to the next record.
(4) Last record	Selects the current record to the last record (Newest data).
(5) Delete record	Deletes the current record (for 1 line).
(6) Deletes all stored data.	Deletes all records.

9) The stored data can be created and displayed in a report format, a table format or a graph format.

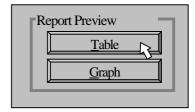


[Creation of table report]

 i) A report is grouped at every 5 points. Select the required group in Data column.



Select the report format, table or graph, by pressing **Table** button or **Graph** button. (Otherwise, press **T** key or **G** key on your keyboard.)

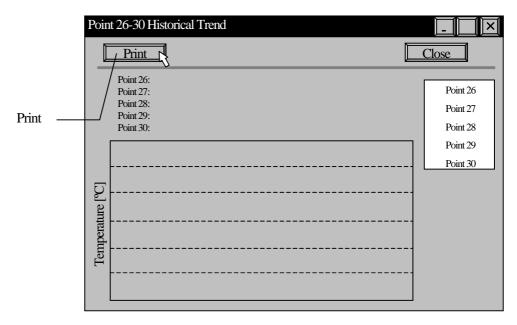


iii) A report preview will be displayed.

Butto	name	Contents
(1) Zoom to fi	Displays a report in	whole page.
(2) 100%	Displays a report in 1	normal 100% size.
(3) Zoom to v	idth Displays a report in t	full horizontal width of paper.
(4) First page	Displays the first pag	ge.
(5) Previous p	ge Displays the previou	s page.
(6) Next page	Displays the next page	ge.
(7) Last page	Displays the last pag	e.
(8) Printer set	p Sets up a table-forma	at report.
(9) Print	Executes printing.	
(10) Save Repo	t Stores a report.	
(11) Load Repo	rt Recalls a stored repo	ort.

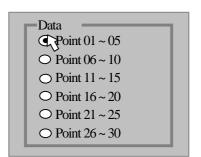
iv) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard), the screen will return to **Multi-point Monitor (30 points)** screen.

9)-2 Graph format



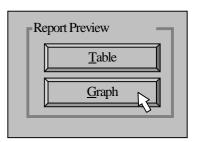
[Creation of graph report]

i) A report is grouped at every 5 points. Select the required group in **Data** column.



- ii) Select the report format, table or graph, by pressing **Table** button or **Graph** button.
 - (Otherwise, press T key or G key on your keyboard.)
- iii) The report preview will be displayed.

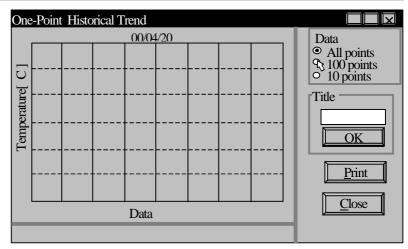
Button name	Details
Print	Executes printing.

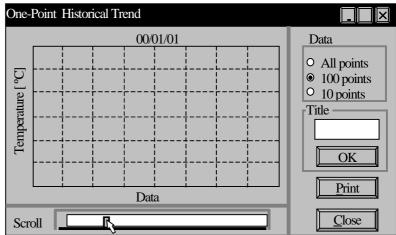


- iv) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard), the screen will return to **Multi-point Monitor** (**30 points**) screen.
- 10) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard) on **Multi-point Monitor** (30 points) screen, the screen will return to **Read Memory** screen.

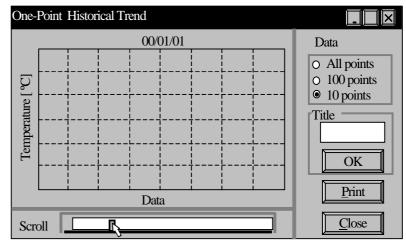
4.2.2 Single point historical trend

- By clicking One-point Trend button on the lower right (or by pressing T key on your keyboard) on the Read Memory screen, One-point Historical Trend screen will appear.
- At first, all read data will be displayed in graph format. (All points have been selected in Data column on the upper right.)
 You can display the data at every 100 points or every 10 points on Data column.
- When 100 points or 10 points is selected, a track bar for scrolling will appear in the panel below. Drag the slider by left-clicking the mouse for selection of the required point.





 When 10 points is selected, digital values are displayed with plotted data.

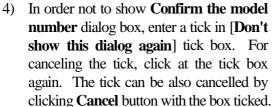


- 5) Type a title through your keyboard on **Title** column. By pressing **Enter** key on your keyboard and clicking **OK** button, the title will be displayed on the left side of date display in the upper part of graph.
- 6) By clicking **Print** button (or pressing **P** key on your keyboard), one copy of the graph being displayed will be printed in landscape orientation. Print the graph by specifying the printing orientation of your printer to landscape. (You do not need to change other settings of your printer.) For printing several copies, repeat the same operation up to the number of copies.
- 7) By clicking **Close** button or **X** button (or by **pressing** C key on your keyboard) on **One-point Historical Trend** screen, the screen will return to **Read Memory** screen.

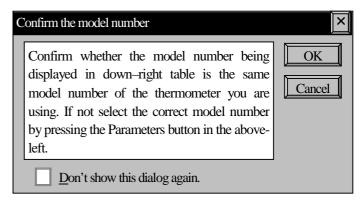
4.3 Real-time measurement

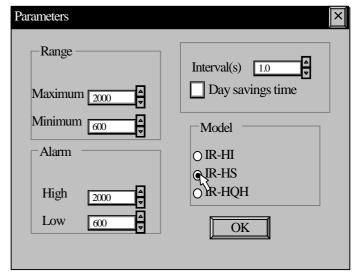
4.3.1 Measurement preparation

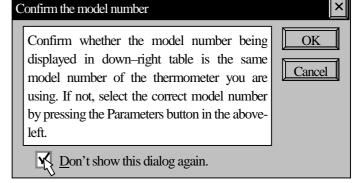
- 1) Connect your thermometer and your personal computer.
- By clicking Real-time Trend button in the menu screen, Real-time Trend screen and Confirm the model number dialog box will appear together.
- 3) Following the message in Confirm the model number dialog box, confirm that the model number in Model column on Real-time Trend screen is same as the model number of your thermometer. After the confirmation, by clicking OK button, Confirm the model number dialog box will disappear and Real-time Trend screen will be active. If the model number is not same, click Parameters button (or press M key on your keyboard). Parameters dialog box will appear. Select the correct model number listed in Model column. By clicking OK button or X button, the screen will return to Real-



time Trend screen.



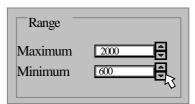




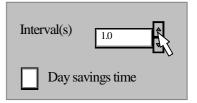
Remarks

Various parameters can be set in **Parameters** dialog box. The setting function can be used during measurement, too.

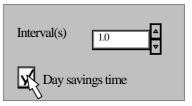
5) The temperature axis of display chart can be set in **Range** column. The values displayed in **Maximum** and **Minimum** columns become the maximum and minimum of temperature axis. Set the values by the up/down buttons on the right side of display window (10-degree increment).



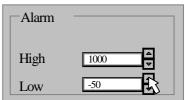
6) Set the measuring interval on your personal computer side by the up/down buttons in **Interval(s)** column. The measuring interval can set from the shortest 0.5 second to the longest 10 seconds by 0.1-second increment. (Default value: 1.0 second)



7) If **Daylight savings time** tick box is ticked, the time axis of graph becomes the daylight savings time.



8) The alarm set-points can be set in **Alarm** column. Set the values by the up/down buttons on the right side of **High** and **Low** columns (10-degree increment).



- 9) After you set necessary parameters, click either **OK** button or **X** button. The screen will return to the **Real time trend** screen.
- 10) Press **MEAS** key while pressing key to turn the power supply of your thermometer on. (The thermometer becomes the continuous measurement mode.) Press **MEAS** key again to start a measurement.

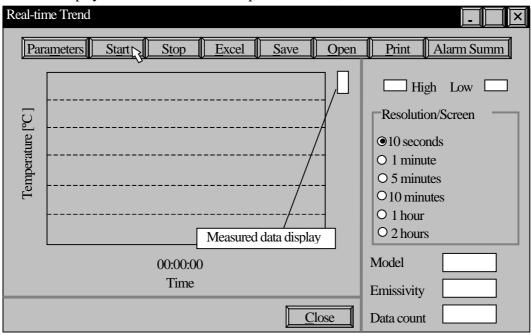
4.3.2 Measurement

1) By clicking **Start** button (or by pressing **A** key on your keyboard), the measurement will start. When **uFL** is displayed in the main display of your thermometer (when the measured temperature does not reach to the measuring range) or when **oFL** is displayed (when the measured temperature exceeds the measuring range), the following data will be displayed and plotted on chart.

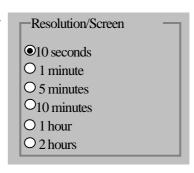
Model Display		lay
Model	Underflow	Overflow
IR-HI	280 (°C) or 550 (°F)	1020 (°C) or 1850 (°F)
IR-HS	580 (°C) or 1090 (°F)	2020 (°C) or 3650 (°F)
IR-HQH	380 (°C) or 730 (°F)	3020 (°C) or 5450 (°F)

By your select ion of **on** (enabled) at **Thermocouple enabled/disabled selection** with the sub marker **tC** (Ref. 5.6.5 in the instruction manual for IR-H) of your thermometer, the temperature measured by a thermocouple will be displayed, too.

When **uFL** is displayed in the sub display (when the measured data measured by a thermocouple does not reach to -50°C or -58°F) or when **oFL** is displayed (when the measured data exceeds 1220°C or 2228°F), **99999** will be displayed and the data will not be plotted on chart. If you select **oFF** (disabled), **99999** will be displayed and the data will not be plotted on chart, too.



2) You can change the chart moving speed by selecting a time per screen in **Resolution/screen** column on the right side.

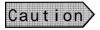


3) If the measured data exceeds the high alarm set-point, **High** column on the upper right side is displayed in red color. If the measured data does not reach to the low alarm setpoint, **Low** column is displayed in blue color. The alarm log data (Day/time, measured temperature, alarm type) is stored in the alarm summary automatically.



4) The maximum number of data is 10,000 data. When the number of data becomes 10,000 data, the message shown below will appear and the data logging will be stopped forcibly.

[Out of data area !!! Measurement was stopped. For restarting the measurement, click Start button again after storing data.]

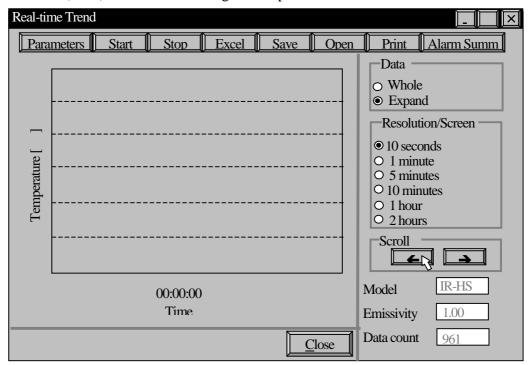


If the chart is not displayed in the screen after the measurement starts, check your thermometer or the connection of communications cable.

5) After the measurement stops, you can measure again. On data saving, the re-measured data is stored in the same file. As the trend graph is displayed as a polygonal line graph, the data before stopping measurement and the data after re-measurement are displayed by connecting with straight lines for the time period of no data logging.

4.3.3 Stop, Save and replay

1) By pressing **Stop** button, the measurement stops and **Arrow** (scroll) buttons will appear on the lower right side. A historical data can be traced and displayed by **Arrow** (scroll) buttons. Click **Arrow** (scroll) buttons to move the screen to the measured time you want to display. The time axis will revert back by clicking **Left arrow** and will proceed forward by clicking **Right arrow**. When you want to see the historical data by magnifying the time axis, move the screen to the measured time roughly with the same chart moving speed at the time of measurement. Then, select a shorter range of chart moving speed and make fine adjustments by clicking either of **Arrow** (scroll) buttons. You can also compress the time axis. Click **Arrow** (scroll) buttons after selecting a chart speed.



2) By clicking **Excel** button (or by pressing **E** key on your keyboard), **Save as** dialog box will appear. Type a file name and click **Save** button. The data will be exported to Excel worksheet application with the display of [**Now exporting--**] and [**Progress status display bar**]. The exporting data is day/time and temperatures measured by your thermometer and by a thermocouple.



Caution

This function cannot be executed if Excel97 has not been installed. If it has not been installed, the message shown below will appear.

[Failed to export. Confirm if Excel97 is installed.]

3) By clicking **Save** button (or by pressing of **S** key on your keyboard), **Save as** dialog box will appear. Type a file name and click **Save** button. The data is saved with the display of [**Now saving...**] and [**Progress status display bar**]. The file extension "**aht**" will be assigned automatically. This file is used in replaying the stored data as shown in the next paragraph.



4) By clicking **Open** button (or by pressing **O** key on your keyboard), the message shown below will appear.

[Are you sure to clear the data being displayed?]

If you want to replay stored data, click **OK** button for **Open** dialog box. Select a file name with the file extension "**aht**" on **Open** dialog box and click **Open** button. The stored data will be displayed. The display contents are date, number of data, maximum temperature, minimum temperature and average temperature in addition to its trend graph. If you do not want to replay stored data, click **Cancel** button to return to the original screen. You can select the data display range (time axis) of screen, **Whole** range or **Expand** display.

Reference

If you select **Expand** display, you can use the chart speed selection and **Allow** (scroll) buttons.

You can export the replayed data to Excel worksheet application, too.

5) By clicking **Print** button (or pressing **P** key on your keyboard), one copy of the graph being displayed will be printed in landscape orientation.

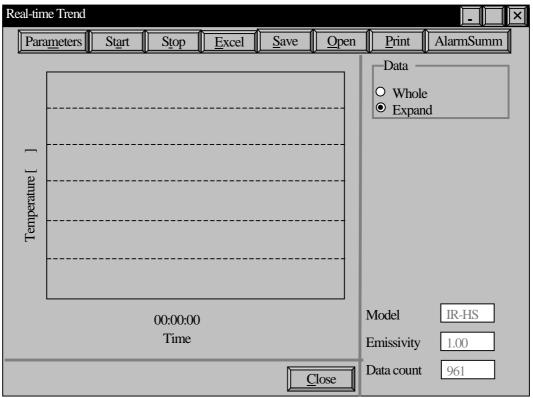
Remarks

The data displayed in the screen will be printed with the same image as displayed.

Print the graph by specifying the printing orientation of your printer to landscape. (You do not need to change other settings of your printer.) For printing several copies, repeat the same operation up to the number of copies.

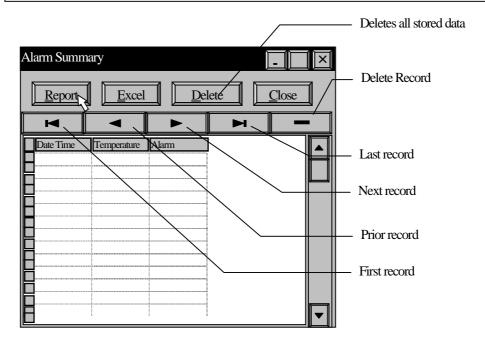
4.3.4 Alarm summary

 By clicking AlarmSumm button (or pressing L key on your keyboard), Alarm summary screen will appear.

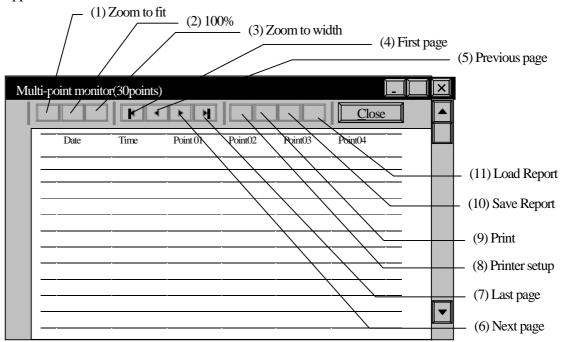


Reference

The latest 100 alarm data are saved. If the data exceeds 100 data, the latest data is saved by erasing the oldest data.



2) By clicking **Report** button (or pressing **R** key on your keyboard), the preview of alarm summary report will appear.



Button name	Contents
(1) Zoom to fit	Displays a report in whole page.
(2) 100%	Displays a report in normal 100% size.
(3) Zoom to width	Displays a report in full horizontal width of paper.
(4) First page	Displays the first page.
(5) Previous page	Displays the previous page
(6) Next page	Displays the next page
(7) Last page	Displays the last page
(8) Printer setup	Sets up a table-format report.
(9) Print	Executes printing.
(10) Save Report	Saves a report.
(11) Load Report	Recalls a saved report.

3) By clicking **Excel** button (or by pressing **E** key on your keyboard), Save as dialog box will appear. Type a file name and click **Save** button. The data is exported to Excel worksheet application with the displays of [**Now exporting...**] and [**Progress status display bar**]. The exporting data is date/time, temperature and alarm type.



Caution

This function cannot be executed if Excel97 has not been installed.

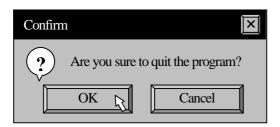
- 4) The data in the table can be monitored by using navigator buttons and the scroll bars.
- 5) The functions of navigating buttons are as follows.

Button name	Details
First record	Sets the current record at the first record (First line).
Prior record	Sets the current record in the previous record.
Next record	Sets the current record in the next record.
Last record	Sets the current record in the last record (Latest data).
Delete record	Deletes the current record (for 1 line).
Deletes all stored data	Deletes all records.

- 6) Maximized display (vertical orientation) is convenient for display of many data.
- 7) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard) on **Alarm Summary** screen, the screen will return to **Real-time Trend** screen.

4.3.5 Quit

1) By clicking **Close** button or **X** button (or by pressing **C** key on your keyboard) on **Real-time Trend** screen, the message box shown below will appear. By clicking **OK** button, the program will quit and the screen will return to the menu screen of Windows. (In this case, the data being displayed will be erased.) By clicking **Cancel** button, the message will disappear.

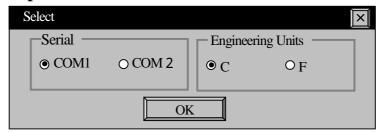


5. Parameters

The following parameters are saved even after quitting the program.

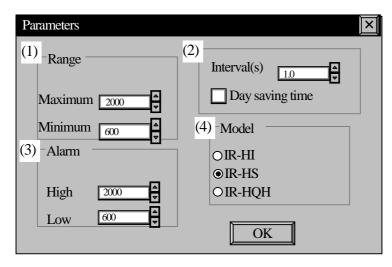
You do not reset these parameters for your next measurement or after, if you do not want to change them.

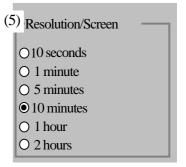
5.1 Common parameters



Parameters	Details
Serial Port	For the RS-232C communications port
	The default is COM1.
Engineering Units	For engineering unit for display
	The default is C.

5.2 Parameters on real-time measurement





Parameters	Details
(1) Range	For the measurement range of graph
	The defaults are maximum 2000, minimum 600.
(2) Interval(s)	For the measuring interval
	The defaults are 1.0 second and the daylight savings time not ticked.
(3) Alarm	For the alarm setpoints
	The defaults are 2000 for the high alarm setpoint and 600 for the low
	alarm setpoint.
(4) Model	For the model number of thermometer for measurement
	The default is IR-HS.
(5) Resolution/Screen	For the chart speed
	The default is 10 minutes.

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