HIOKI

INSTRUCTION MANUAL

9625

POWER MEASUREMENT SUPPORT SOFTWARE

HIOKI E. E. CORPORATION

Contents

User's License Agreement 1
Introduction 1
Confirming package contents 1
Symbols 1
Notation 1
Mouse Operation 1
Notes on Use 2

Chapter 1 Overview 3

1.1 Product Overview 3
1.2 Specifications 4
1.2.1 General Specifications 4
1.2.2 Functional Specifications 4
1.3 Calculation Formulas 7

Chapter 2 Setup 9

2.1 System Requirements 9
2.2 Installing and Uninstalling the Software 10
2.3 Launching and Exiting the 9625 11
2.4 Loading/Saving Data 12
2.4.1 Loading a Measurement-data File 12
2.4.2 Loading a Combined File 15
2.4.3 Saving in a Combined File Under a New File Name 16
2.4.4 Saving a Combined File 16
2.4.5 Settings at Startup of the 9625 17

Chapter 3 Screen Configuration 19

3.1 Screens 19
3.2 Screen Configuration 20
3.2.1 Menu Bar 21
3.2.2 Toolbar 22
3.3 Pasting to the Clipboard 22

Chapter 4 Displaying a Time-series Graph 23

4.1 Basic Operation 24
4.2 Advanced Operation 28

Chapter 5 Displaying Summary ____ 31
5.1 Basic Operation 32
5.2 Advanced Operation 35

Chapter 6 Displaying ____ 37
6.1 Basic Operation 38
6.2 Advanced Operation 40

Chapter 7 Displaying a Harmonic List ____ 43
7.1 Basic Operation 44
7.2 Advanced Operation 46

Chapter 8 Displaying a Harmonic Graph ____ 47
8.1 Basic Operation 48
8.2 Advanced Operation 51

Chapter 9 Displaying a Waveform of Harmonic Measurement Data ____ 53
9.1 Basic Operation 54
9.2 Advanced Operation 55

Chapter 10 Displaying Settings ____ 57
10.1 Basic Operation 58

Chapter 11 Saving Data in CSV Format ____ 59

Chapter 12 Printing ____ 61

User's License Agreement

Important Please read the following agreement carefully. This user's license agreement (hereafter referred to as Agreement) is a legal contract between the software user (individual or institution) and HIOKI E. E. CORPORATION (hereafter referred to as HIOKI). The term "software" includes any related electronic documentation and computer software and media, as well as any printed matter (such as the Instruction Manual).
By installing, reproducing, or using the software, you, the Licensee, agree to accept the license terms set forth in this Agreement.

This software is protected by copyright laws, international copyright agreements, as well as non-corporate laws. The software is a licensed product, and is not sold to the user.

1. License

This Agreement grants you, the Licensee, a license to install a single copy of the software on a specified computer system.

2. Explanation of other rights and restrictions

-1. Restrictions on reverse engineering, decompiling, and disassembling:
You may not reverse engineer, decompile, or disassemble the software.

-2. Separation of components:
This software is licensed for use as a single product. You may not separate the components for use on multiple computer systems.

-3. Loaning:
You may not loan or lease the software.

-4. Transfer of software:
You may transfer full rights in accordance with this Agreement. However, if you do so, you may not retain any copy of the software, but must transfer the software in its entirety (all components, media, related documentation such as the Instruction Manual, and this Agreement), and must ensure that the receiver of the software agrees with the terms set forth in this Agreement.

-5. Cancellation:
In the event that the terms and conditions set forth in this Agreement are violated, HIOKI retains the right to cancel this Agreement without compromise of any of its other rights. In this event, you must destroy all copies of the software and its components.

3. Copyright

The title and copyright rights concerning the software's related documentation, such as the Instruction Manual and copies of the software, are the property of HIOKI and other licensors, and are protected by copyright laws and international agreement regulations. Accordingly, you must treat the software as you would any other copyrighted document. However, you are permitted to make copies as indicated in (A) and (B) below provided such copies are not intended for use other than back-up purposes.

(1) You may make a single copy of the software.

(2) You may install this software on a single computer. However, you may not reproduce the documentation supplied with the software, such as the Instruction Manual.

4. Dual media software

You may receive the same software on more than one type of media. However, regardless of the type and size of media provided, you may only use one media type and only on a single computer. You must not use or install the other media on any other computer. Furthermore, except when transferring the software as stipulated above, you may not loan, lease, or transfer the other media to any other user.

5. Warranty

-1. HIOKI reserves the right to make changes to the software specifications without any prior warning. If HIOKI releases a new version of the software, it will provide registered users with information about the revised software.

-2. If the software does not operate in accordance with the supplied Instruction Manual, or the software media or Instruction Manual are damaged in any way, you have one year from the date of purchase to apply for either an exchange or repair at HIOKI's discretion.

-3. In no event will HIOKI be liable for any damages resulting from fire, earthquake, or actions of a third party under the conditions stated in item number 2 above, or for any damage caused as a result of your using the software incorrectly or under unusual circumstances. Further, the warranty is invalid if the following occurs:

(1) Damage incurred through transport, moving, droppage, or any other kind of impact after you purchased the software.

(2) Damage incurred through any form of alteration, unwarranted servicing, or any other type of mistreatment.

-4. In the event that the software is exchanged or repaired, the period of warranty expires on the latest occurring date out of the day stated in the original warranty, and exactly 6 months from the day the exchanged/repaired software is returned to you.

-5. Regardless of the grounds for making a legal claim, HIOKI and its licensors will not be liable for any damage incurred (including, but not limited to: lost profits, suspension of business, loss of data or lost savings) unstated in the warranty terms for the use of this software. This is true even if HIOKI is notified of the possibility of such damages. In any event, HIOKI's liability shall be limited only to replacing defective software with software that is not defective

Introduction

Thank you for purchasing the HIOKI "9625 POWER MEASUREMENT SUPPORT SOFTWARE". To obtain maximum performance from the product, please read this manual first, and keep it handy for future reference.

Trademarks

- Pentium is a registered trademark of Intel Corporation.
- Windows is a registered trademark of Microsoft Corporation.

Confirming package contents

When you receive the software, inspect it carefully to ensure that no damage occurred during shipping. If damage is evident, or if it fails to operate according to the specifications, contact your dealer or Hioki representative.

- Instruction manual
- CD

Symbols

The following symbols in this manual indicate the relative importance of cautions and warnings.

⚠CAUTION	Indicates that incorrect operation presents a possibility of injury to the user or damage to the product.
NOTE	Advisory items related to performance or correct operation of the product.

❖	Indicates references.
(ex) **Edit - Copy**	Indicates a screen display sequence.

Notation

Unless otherwise specified, “Windows” represents Windows 2000, or Windows XP.

Mouse Operation

Click	Press and quickly release the left button of the mouse.
Right-click	Press and quickly release the right button of the mouse.
Double click	Quickly click the left button of the mouse twice.
Activate	Click on a window on the screen to activate that window.
Dialog	Indicates a dialog box displayed on the screen

Notes on Use

In order to ensure safe operation and to obtain maximum performance from the unit, observe the cautions listed below.

⚠CAUTION

- Always hold the disc by the edges, so as not to make fingerprints on the disc or scratch the printing.
- Never touch the recorded side of the disc. Do not place the disc directly on anything hard.
- Do not wet the disc with volatile alcohol or water, as there is a possibility of the label printing disappearing.
- To write on the disc label surface, use a spirit-based felt pen. Do not use a ball-point pen or hard-tipped pen, because there is a danger of scratching the surface and corrupting the data. Do not use adhesive labels.
- Do not expose the disc directly to the sun's rays, or keep it in conditions of high temperature or humidity, as there is a danger of warping, with consequent loss of data.
- To remove dirt, dust, or fingerprints from the disc, wipe with a dry cloth, or use a CD cleaner. Always wipe radially from the inside to the outside, and do not wipe with circular movements. Never use abrasives or solvent cleaners.
- Hioki shall not be held liable for any problems with a computer system that arises from the use of this CD, or for any problem related to the purchase of a Hioki product.

Chapter 1 Overview

1.1 Product Overview

The 9625 POWER MEASUREMENT SUPPORT SOFTWARE is designed to display measurement data on the 3166 or 3169-20/21 CLAMP ON POWER HiTESTER in a graphical format on a computer. The 9625 has the following functions.

(1) Time-series Graph Display
Displays measurement data in a time-series graph. When the demand in each system is measured separately, these measurements will be displayed one on top of another.

(2) Summary Display
Displays a list of measurement data

(3) Daily, Weekly, and Monthly Report Display
Displays a daily, weekly, or monthly report of demand measurements

(4) Harmonic Analysis
Displays harmonic measurement data in the form of a graph, list, or waveform chart

(5) Printing
Prints out the screen image on the printer connected to the PC

(6) Data Combination
Combines up to 16 pieces of measurement data of the 3166 and 3169-20/21. The data is saved and read out as a single combined file.

NOTE

Manually saved data of 3166 and 3169-20/21 cannot be loaded.

1.2 Specifications

1.2.1 General Specifications

Supported Model	3166, 3169-20/21 CLAMP ON POWER HiTESTER	
System Requirements	PC	: PC/AT compatible (DOS/V)
	CPU	: Pentium 200 MHz or higher
	Memory	: 128 MB or more (recommended)
	Hard-disk space	: Free disk space of 128 MB or more
	Display	: XGA (1024 x 768) or higher
	Disk drive	: CD-ROM drive (used for installation)
	OS	: English version of any of the following operating systems Windows 2000, Windows XP
Supplied Media	One CD-R disc	

1.2.2 Functional Specifications

(1) Data/Setting, Load/Save Function

Loaded Data/ Setting	3166	: Integrated power-measurement data file (CSV format with extension ITG) Instantaneous value and integrated value Demand-measurement data file (CSV format with extension DEM) Instantaneous value, maximum value, minimum value, and demand value Harmonic-measurement data file (CSV format with extension HRM) Instantaneous value, average value, and maximum value Waveform data file (Binary format with extension WUI) Setting file (Extension: SET)
	3169-20/21	: Data file (CSV format with extension CSV) Instantaneous value, maximum value, minimum value, average value, integrated value, demand, and harmonic Waveform data file (Binary format with extension WUI) Short-term interval data file (Binary format with extension BIN) Instantaneous value
	9625	: Combined file (Binary format with extension DAT)
Saved data/ Setting	9625	: Combined file (Binary format with extension DAT)
Maximum data size	Up to 528 MB / single piece of data Up to 1.5 GB / multiple pieces of data	

(2) Time-Series Graph Display

Graphic display item	Voltage, current, active power, reactive power, apparent power, power factor, frequency, integrated active power, integrated reactive power, demand, voltage unbalance factor, harmonic (level, content, phase angle, total value, and THD)
Y-axis upper/ lower-limit setting	The position of the vertical axis (Y-axis) of the graph (upper limit and lower limit) is set by moving the slider or entering numbers.
Interval setting (selectable from these presets)	1 cycle/0.1 sec, /0.2 sec, /0.5 sec, /1 sec, /2 sec, /5 sec, /10 sec, /15 sec, /30 sec, /1 min, /2 min, /5 min, /10 min, /15 min, /30 min, /1 hr, /2 hr, /3 hr, /4 hr, /6 hr, /8 hr, /12 hr, /1 day
Display-period setting	• The analysis start date and stop date are selectable during the overall period of the measurement data. Analysis start date (year/month/day/hour/min/sec): Enter appropriate numbers. Analysis stop date (year/month/day/hour/min/sec): Enter appropriate numbers. • Period of measurement data (from the measurement start date to the stop date) may be displayed.
Reference-value setting	The set reference value is displayed.
Graph type selection	Line graph, bar graph, 2-axis graph, and 3-dimensional graph
Line style/color setting	Line style and line color are selectable separately for each piece of data. Marker display is available.
Stacked bar graph display	Displays a stacked bar graph of up to 16 pieces of data (demand value/demand volume)
Cursor measurement	Displays the measurement of a point selected using the cursor
Data-display unit setting	Data is displayed according to a selected unit; a unit of the engineering unit system (m, k, M, G, etc.).

(3) Summary Function

Display-item selection	Select items to be displayed on the summary.
Daily, weekly, and monthly report	Sums up the data of a selected period and displays a daily, weekly, or monthly report
Load-factor calculation	Calculates the load factor/demand factor of a daily, weekly or monthly report, and displays the result
Total per time segment	Divides one day into a maximum of four segments, and sums up the data of each segment
CO_2 conversion display	Display the integrated active power (kWh) in CO_2 according to the conversion rate.

(4) Harmonic Display Function

Waveform display	Displays the waveform of the data for a selected date
List display	Displays a list of the harmonic data for a selected date
Graphic display	Displays a bar graph of the harmonic data for a selected date
Cursor measurement	Cursor measurement is available in the waveform display and the graphic display.

(5) Setting Display Function

Setting display	Displays a list of the current settings Reads the settings from the data file (3169-20/21) Reads the settings from the setting file (3166)

(6) Copy Function

Copying to the clipboard	Screen images can be copied to the clipboard.

(7) Print Function

Time-series graphic display	Prints the data shown by the time-series graphic display, and displays the preview
Summary display	Prints the data shown by the summary display, and displays the preview
Harmonic display	Prints the data shown by the harmonic display, and displays the preview
Setting display	Prints the data shown by the setting display, and displays the preview
Comment input	A comment may be inserted into the print.
Printer	Any color or monochrome printer compatible with the OS used

(8) CSV Format Conversion Function

Convertible Screens	Time-series graph; Summary; Daily, Weekly and Monthly Report; Harmonic Waveform

1.3 Calculation Formulas

(1) Load Factor [%]
(Displayed by using summing results from a daily, weekly, or monthly report screen)

$$\text{Load factor} = \frac{\text{Average active power [kW]}}{\text{Maximum demand value [kW]}} \text{ X } 100 \text{ [\%]}$$

- Average active power is the average of all active power measurements during the summing period. The maximum demand value is the largest among all demand values during the period. The summing period is one day for a daily report, seven days for a weekly report, and one month for a monthly report. The load factor above represents the degree of fluctuations of electricity demand during summing period.

(2) Demand Factor [%]
(Displayed by using summing results from a daily, weekly, or monthly report screen)

$$\text{Demand factor} = \frac{\text{Maximum demand value [kW]}}{\text{Facility capacity [kW]}} \text{ X } 100 \text{ [\%]}$$

- The maximum demand value is the largest among all demand values during the summing period. The summing period is one day for a daily report, seven days for a weekly report, and one month for a monthly report.
- The facility capacity is set in the Load data file dialog. Click **File** on the menu bar, and then select **Load** file to open the dialog. This demand factor shows how much power is used at maximum in terms of the percentage of facility capacity.

(3) Voltage Unbalance Factor Uunb [%]
(Displayed only for the data measured in the 3P3W2M or 3P3W3M mode by the 3169-20/21)

$$\text{Voltage unbalance factor } U_{\text{unb}} = \frac{U_b}{U_a} \text{ X } 100 \text{ [\%]}$$

$$U_a = \sqrt{\frac{1}{6}\left(U1^2 + U2^2 + U3^2\right) + \frac{2}{\sqrt{3}}\sqrt{U_s(U_s - U1)(U_s - U2)(U_s - U3)}}$$

$$U_b = \sqrt{\frac{1}{6}\left(U1^2 + U2^2 + U3^2\right) - \frac{2}{\sqrt{3}}\sqrt{U_s(U_s - U1)(U_s - U2)(U_s - U3)}}$$

$$U_s = \frac{U1 + U2 + U3}{2}$$

$U1$, $U2$, $U3$: Line to line voltage (instantaneous or average values)

- This voltage unbalance factor represents the degree of voltage unbalance between three phase lines.

Chapter 2 Setup

2.1 System Requirements

The computer running the 9625 POWER MEASUREMENT SUPPORT SOFTWARE program must satisfy the following requirements.

Computer Type PC/AT compatible (DOS/V)

Operating System English version of any of the following operating systems:
- Microsoft Windows 2000
- Microsoft Windows XP

CPU Pentium 200 MHz or higher

Memory 128 MB or more (recomended)

Hard Disk Free disk space of 128 MB or more

Display XGA (1024 x 768) or higher

Disk System CD-ROM drive
Used only for installation.

Printer Required for report printing on the computer.
Either color or monochrome can be used, but the fastest possible printing is recommended.

NOTE

- For some models, proper operation cannot be guaranteed even when the above requirements are satisfied.
- To transfer data from a CLAMP ON POWER HiTESTER to a PC, a floppy disk (3166) or PC card (3169-20/21) is required.

2.2 Installing and Uninstalling the Software

Installation

Use the following procedure to install the software.

1. Set up the computer.
   Shut down all currently running applications.
2. Insert the supplied CD disc into the CD-ROM drive.
3. Double-click the setup file (setup.exe) on the CD.

   Supposing the drive letter for the CD-ROM drive is R (if another letter, substitute before the colon) then in the Windows **Start** menu, select **Run**, and enter **R:\english\setup.exe**, then click OK.
4. The 9625 installer start: follow the directions on the screen to complete the installation.

NOTE

- When installing, if other application are running it may not be possible to complete the installation. As far as possible, close all other applications before beginning the installation. In particular, if any anti-virus software is running, it may prevent the installation, even though it is not a virus. In this case, make the appropriate settings in the anti-virus software to allow the installation to proceed.
- Following installation, the computer may need to be restarted.

Uninstallation

Use the following procedure to uninstall the software.

1. In the Windows **Start** menu, select **Settings**, and **Control Panel**.
2. Click the **Add/Remove** Programs icon, to display the **Add/Remove Programs Properties** dialog.
3. In the **Install/Uninstall** tab of the dialog, click on **9625 POWER MEASUREMENT SUPPORT SOFTWARE** in the list of applications, and click **Add/Remove**.

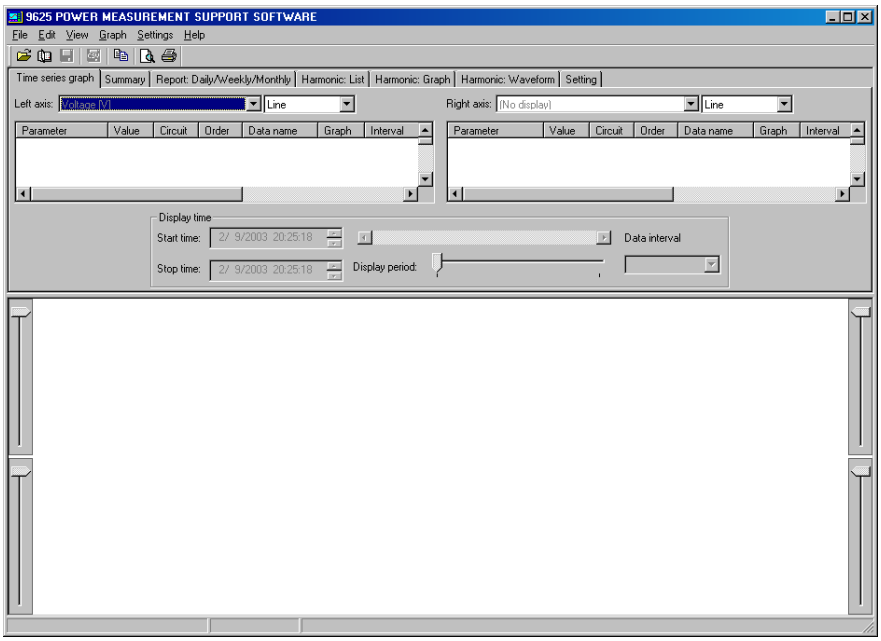
   This runs the uninstaller, which removes the 9625 software.

2.3 Launching and Exiting the 9625

Launching

1. In Windows, select **Start** - **Programs** - **HIOKI** - **HIOKI 9625** - **9625 POWER MEASUREMENT SUPPORT SOFTWARE**.

2. The main screen, entitled **HIOKI 9625 POWER MEASUREMENT SUPPORT SOFTWARE**, appears.



Exiting

1. Select **File** - **Exit** from the main screen.
   You can also click ✕ (Close) at the top right corner of the window to close the application.

2. The program closes.

2.4 Loading/Saving Data

2.4.1 Loading a Measurement-data File

Load the data on a floppy disk saved by the 3166 or the data on a PC card saved by the 3169-20/21.
The following types of data files can be loaded.

3166

- Integrated power-measurement data file (Extension: ITG)
- Demand-measurement data file (Extension: DEM)
- Harmonic-measurement data file (Extension: HRM)
  Waveform data file (Extension: WUI)

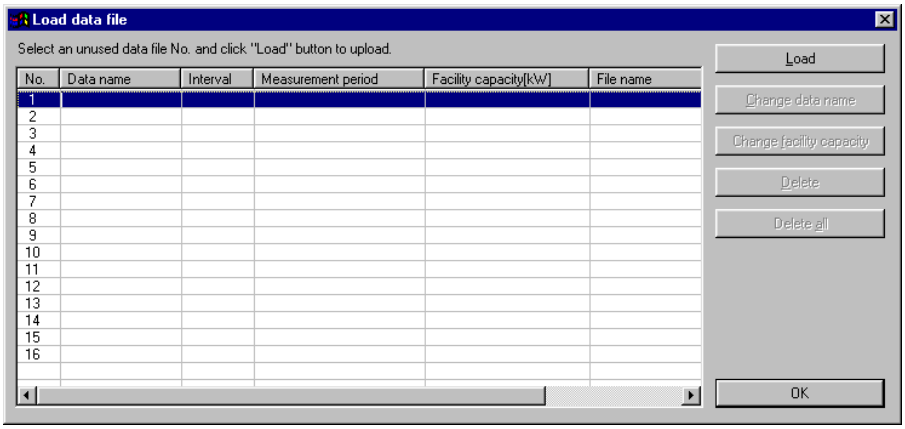
3169-20/21

- Measurement-data file (Extension: CSV)
  Waveform data file (Extension: WUI)
- Short-term-interval data file (Extension: BIN)

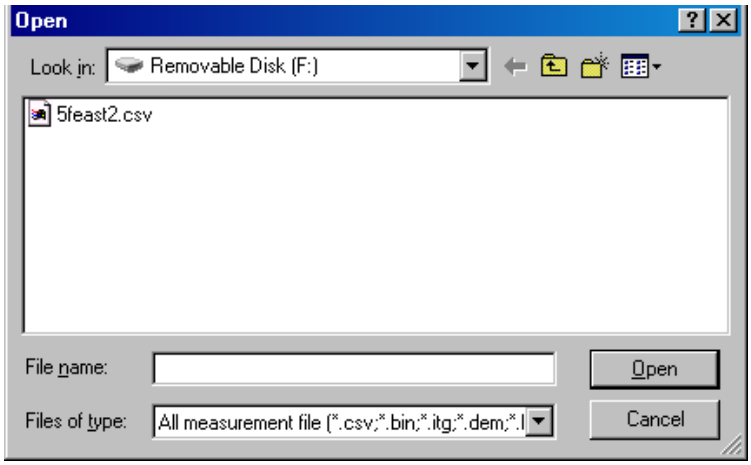
NOTE

- If a waveform data file or a short-term-interval data file is converted to a CSV file using binary CSV conversion software, the CSV file cannot be loaded.
- A file cannot be loaded if it has been overwritten on a spreadsheet program.
- Waveform data is loaded directly from the medium on which it is stored. When loading multiple files, including a waveform data file, copy the files onto the hard disk first or save data individually in a combined file.
  ❖ Combined File:
  2.4.2, "Loading a Combined File" (page 15)
  2.4.3, "Saving in a Combined File Under a New File Name" (page 16)

1. Click the Load data file button , or select **File - Load file** on the menu bar.
2. The Load data file dialog will appear.



3. Click [Load], and the Open dialog will appear.



4. Select a data file to be loaded, and click [Open].
The Load data file dialog will appear.

Loading Multiple Data Files

Select a blank line, and click [Load].
Up to 16 data files can be loaded.

Changing a Data Name

1. Select a data file to change the name.
2. Click [Change data name], and change the name.

Changing the Facility Capacity Setting

The set facility capacity is used in the calculation of the demand factor for a daily, weekly, or monthly report. The default setting is 0 kW. Change the setting as necessary.

1. Select a data file for which the setting can be changed.
2. Click [Change facility capacity], and the Change facility capacity dialog will appear.
3. Enter a capacity for each circuit, and click [OK].

Deleting a Data File

1. Select a data file to be deleted.
2. Click [Delete], and a confirmation message will appear.
3. Click [Yes], and the selected data file will be deleted.

Deleting All Data Files

1. Click [Delete All], and a confirmation message will appear.
2. Click [Yes], and all data files will be deleted.

5. After the data files have been loaded, click [OK].

NOTE

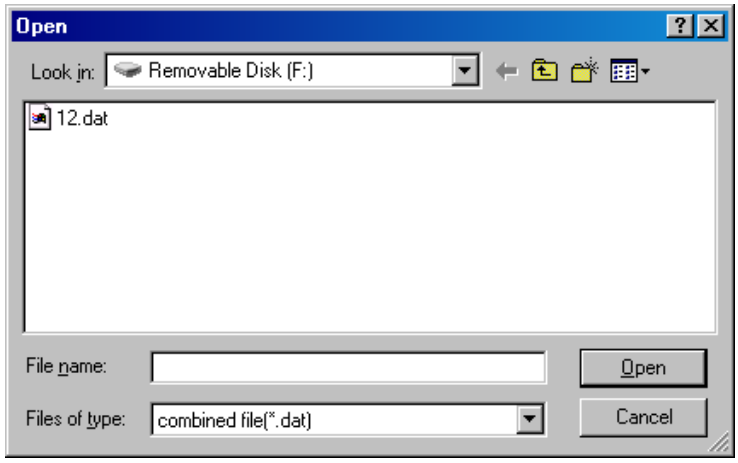
- A waveform data file is loaded together with the harmonic-measurement data file in the case of the 3166, or with the measurement data file in the case of the 3169-20/21. If the name of the waveform data file differs from that of the measurement data file, the waveform data file cannot be loaded when the measurement data file is loaded. When the files are named automatically in the case of the 3169-20/21, the waveform data file cannot be loaded if the filenames differ in their numeric portion: XX of the measurement data file "69MEASXX.CSV" and XX of the waveform data file "69WAVEXX.WUI".
- When multiple data files are loaded, the measurement periods of all files must not exceed one year.
- When a data file is large in size, an extended period may be required to load the file.
  If the data file consists of numerous discrete harmonic measurements, loading even small files make take a long time.
  The loading time varies depending on the specification of the computer.
  The following examples show rough estimates; use them as a guide.
  (Conditions)
  3169-20/21 measurement data files (including waveform data files)
  1P3W, 2 circuits, All items are saved in the files.
  Data size: 64 MB
  Loading time: Approx. 9 minutes
  Computer specification
  PC CPU : Pentium III 800 MHz
  OS : Microsoft Windows 2000 Professional
  RAM : 256 MB
  (Loading directly from a PC card to the PC)

2.4.2 Loading a Combined File

Load a combined file saved on the 9625.
The following type of files can be loaded.

- 9625 combined file (Extension: DAT)

1. Click the Open combined file button , or select **File - Open Combined file** on the menu bar.
2. The Open dialog will appear.



3. Select a combined file to be loaded, and click Open.

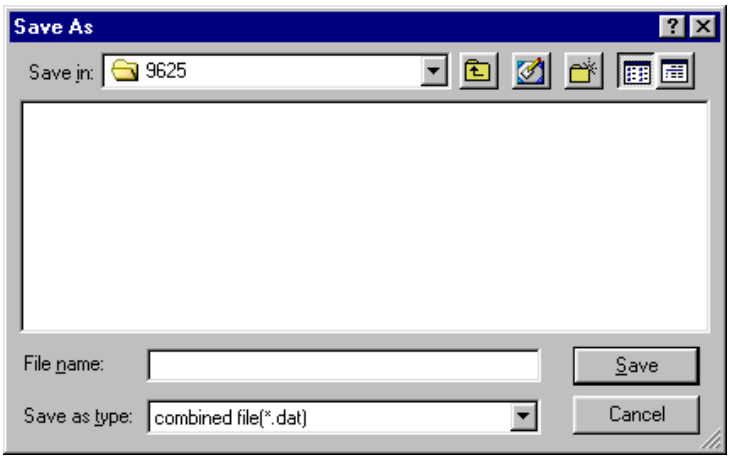
NOTE

- The combined files are the files saved in the format of the 9625.
- When a combined file is loaded, the previously loaded data will be deleted.

2.4.3 Saving in a Combined File Under a New File Name

Combine loaded data files into one file, and save the file as a new combined file.

1. Select **File - Save the combined file as** on the menu bar.
2. The Save As dialog will appear.



3. Enter a filename, and click Save.

2.4.4 Saving a Combined File

Save changes in the loaded combined file.

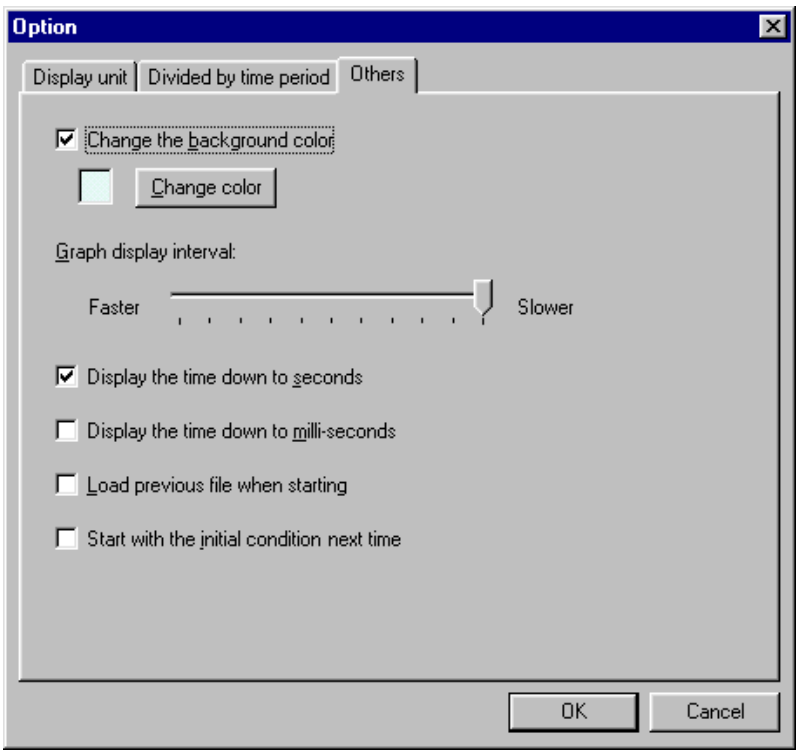
1. Click the Save to combined file button , or select **File - Save combined file** on the menu bar.

2.4.5 Settings at Startup of the 9625

Edit the startup settings as shown below.

- Load the file that was worked on last
  (this becomes effective after the next startup).
- Return to the default settings (this is effective at the next startup only).

Select **Settings - Options - Others** on the menu bar.



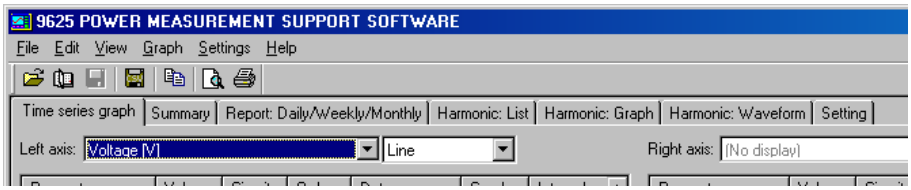
NOTE

If “Start with the initial condition next time” is checked, “Load previous file when starting” is ignored.

Screen Configuration Chapter 3

3.1 Screens

To display a screen, click its tab.



(1) Time-series Graph Screen
Displays a time-series graph of selected data
❖Chapter 4, "Displaying a Time-series Graph" (page 23)

(2) Summary Screen
Displays a list of selected data
❖Chapter 5, "Displaying Summary" (page 31)

(3) Daily, Weekly, and Monthly report Screen
Displays a daily, weekly, or monthly report of demand data
❖Chapter 6, "Displaying the Daily, Weekly, or Monthly Report" (page 37)

(4) Harmonic List Screen
Displays a list of harmonic measurement data
❖Chapter 7, "Displaying a Harmonic List" (page 43)

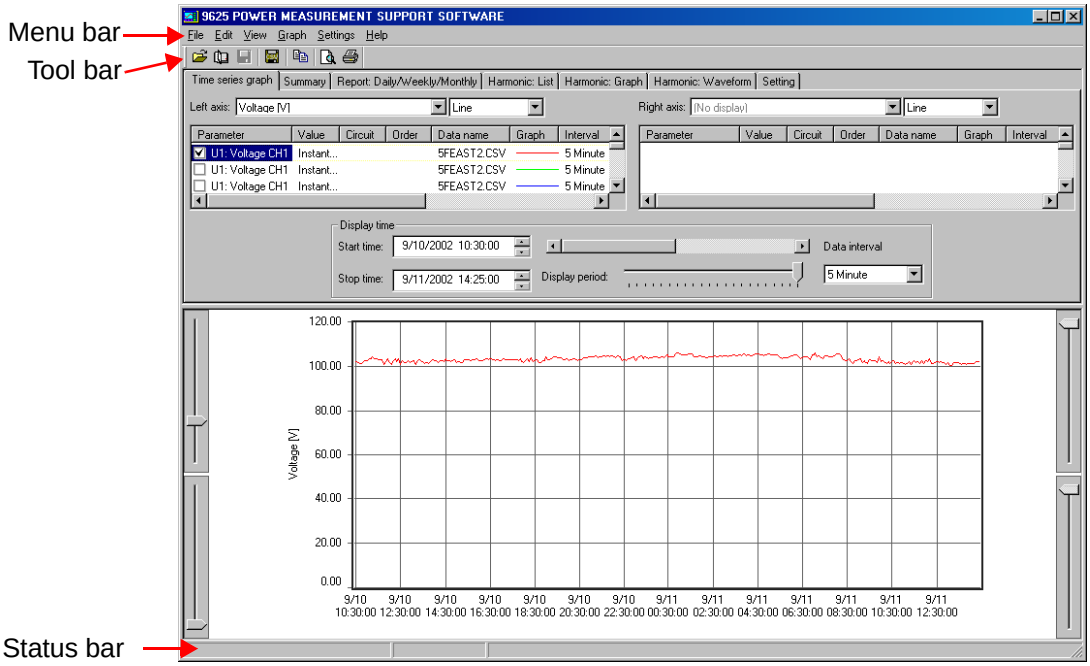
(5) Harmonic Graphic Screen
Displays a bar graph of harmonic measurement data
❖Chapter 8, "Displaying a Harmonic Graph" (page 47)

(6) Harmonic Waveform Screen
Displays a waveform of harmonic measurement data
❖Chapter 9, "Displaying a Waveform of Harmonic Measurement Data" (page 53)

(7) Setting Screen
Displays major setting information
❖Chapter 10, "Displaying Settings" (page 57)

3.2 Screen Configuration

When data has been loaded, the time-series graph will be shown.



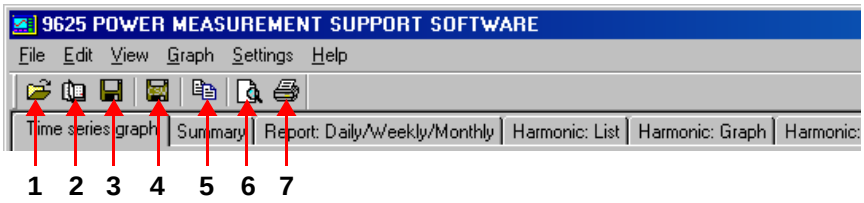
Displays the time during cursor measurement, explanations of the menu bar or tool bar, and the "Loading" message.

3.2.1 Menu Bar

The menu bar has the following menu options.

File	Load File	Load a data file.
	Open Combined File	Open a combined file.
	Save to Combined File	Save changes to a combined file.
	Save the Combined File As	Save in a combined file under a new file-name.
	Save as CSV File	Save the data of the displayed measure-ment item in CSV format.
	Print	Print out the currently displayed screen.
	Print Preview	Display a print preview of the currently displayed screen.
	Printer Settings	Edit the printer settings.
	Recently Opened Com-bined File	Display a list of the combined files worked on last.
	Exit	Exit the 9625.
Edit	Copy	Copy the currently displayed screen to the clipboard.
View	Toolbars	Show or hide the toolbar.
	Change Column Width	Change the column width in the list dis-play.
Graph	2D Display	Display the graph in two dimensions.
	3D Display	Display the graph in three dimensions.
	Rotate	Set the angle and depth to display a 3D graph.
	Change Vertical Axis Settings	Display the Vertical axis setting dialog for a graph.
Settings	Printing Header	Specify a title for the printout and screen copies, or enter logo and comment to in-sert into the printout.
	Options	Display the Option dialog. Edit the dis-play unit, time division, and other set-tings.
Help	Version information	

3.2.2 Toolbar



1 Load data file
2 Open combined file
3 Save to combined file
4 Save as CSV file
5 Copy
6 Print preview
7 Print

3.3 Pasting to the Clipboard

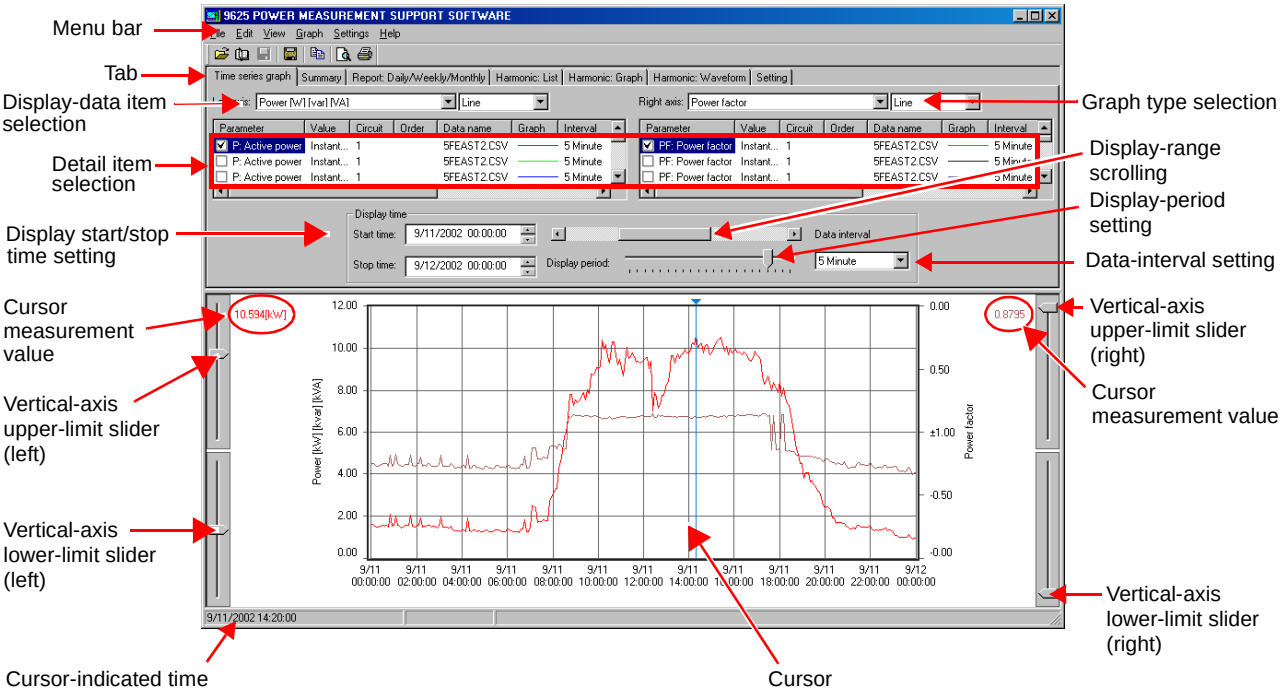
The currently displayed screen can be pasted to the clipboard and worked on using another program, such as a word-processing program.

Click the Copy button  , or select **Edit - Copy** on the menu bar.

Displaying a Time-series Graph

Chapter 4

Display a time-series graph of selected data.
Click the **time-series graph** tab to display.



4.1 Basic Operation

(1) Select Data Items to Display

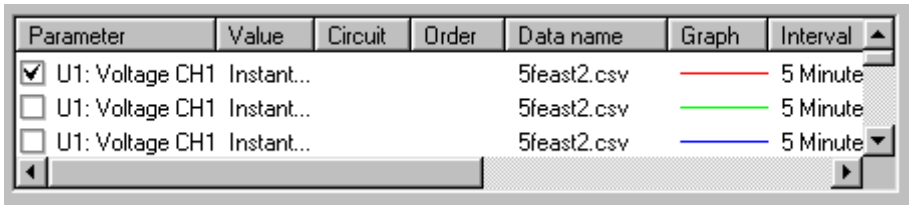
Select a data item for each of the left and right axes of the graph.
Select a graph type (line, bar, and stacked bar graphs) for each axis.
Stacked bar graphs are available for demand volume and demand value (excluding the power factor) only.

(2) Select Detail Items

Select items to be displayed.

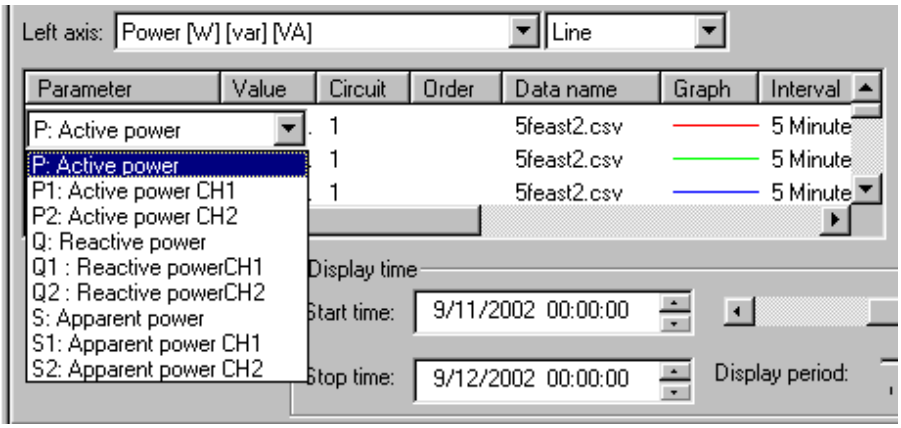
Show/Hide Graph

Check the box of each item to be displayed.



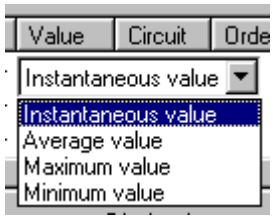
Select Display Item

Left-click on the parameter of an item, and a list of selectable parameters will appear.
Select an item to display from the list.



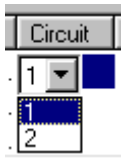
Select Data Type (Value)

Left-click on the value of an item, and a list of selectable data types (instantaneous, average, maximum, and minimum) will appear. Select a data type from the list.



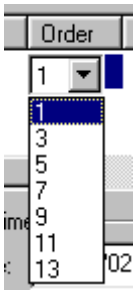
Select Circuit No.

Left-click on the circuit of an item, and a list of selectable circuit numbers will appear. Select the circuit No. of the data to be displayed.



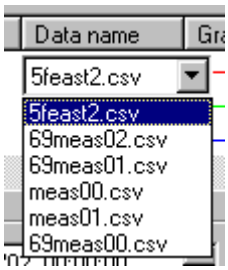
Select Order

Left-click on the order of an item, and a list of selectable orders will appear. Select the order of the harmonic data to be displayed.



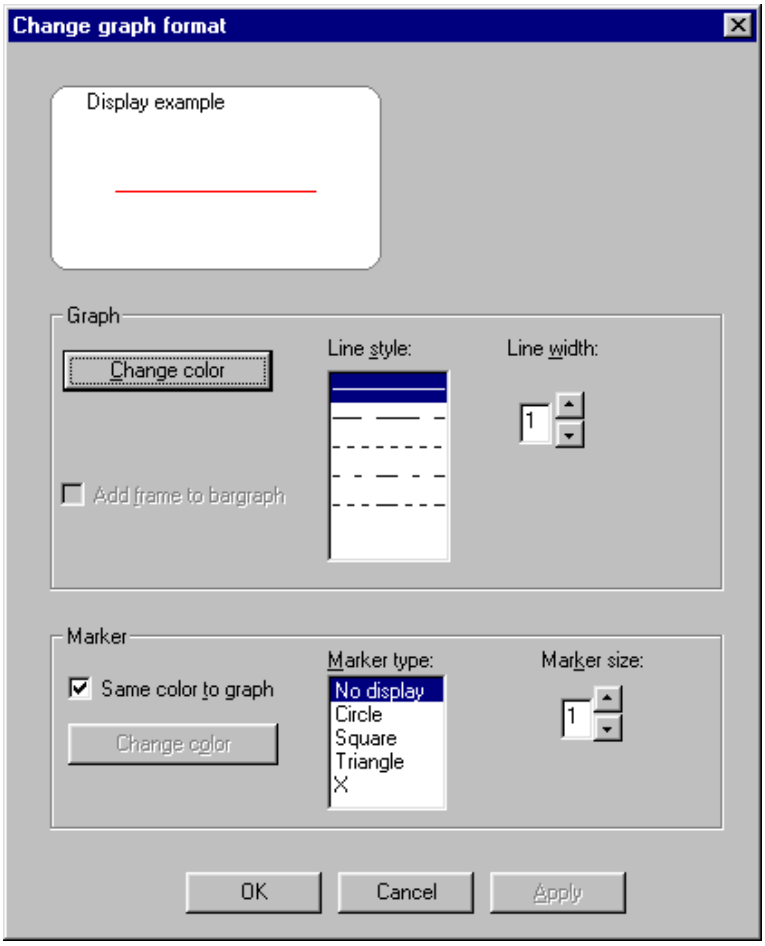
Select Data Name

Left-click on the data name of an item, and a list of selectable data names will appear. Select the name of the data to be displayed.



Change Graph Format

Left-click on the graph of an item, and the Change graph format dialog will appear. This box allows the line color, line style, line width, frame of bar graph, marker color, marker type, and marker size to be set.

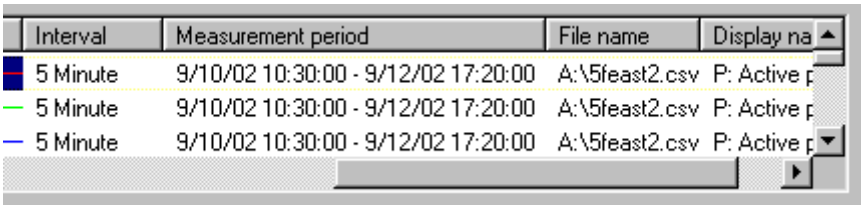


NOTE

Line styles can be changed only when line width is set to 1.

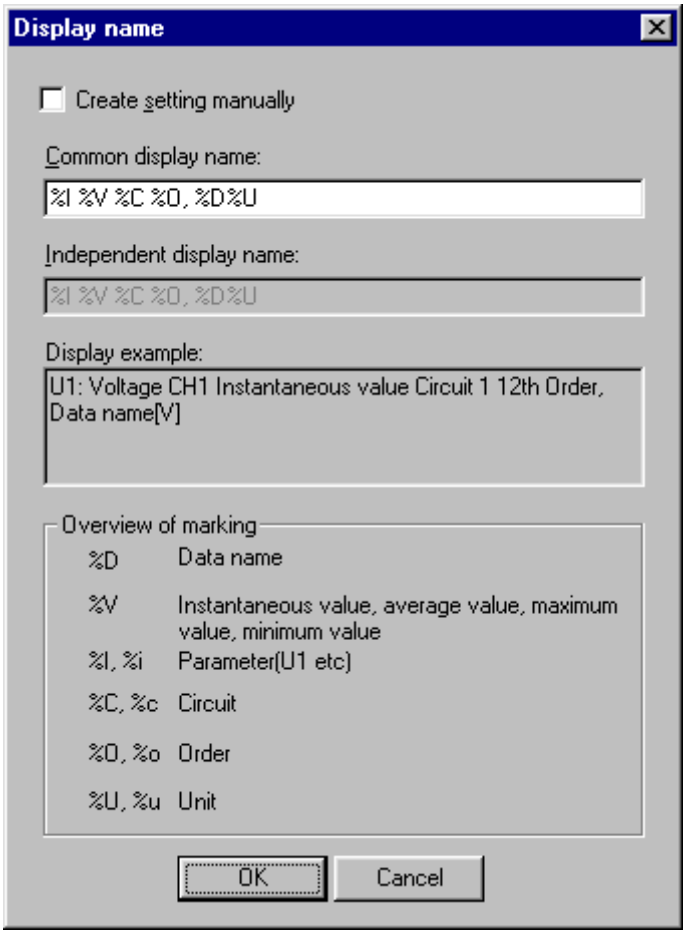
Show Measurement Interval/Period /File Name

Display the measurement interval, measurement period, and file name of the data.



Set Display Name

Set the name of each display item to be used in printout. Left-click on the display name of an item, and the Display name dialog will appear. Check the Create setting manually box to set the display name of each item separately. To use a common display format, choose symbols in the list to enter them in the Common display name text box.



(3) Set Data Interval

Set a data interval for the displayed data.

NOTE

- An interval smaller than the interval of the loaded data cannot be set. When multiple pieces of data have been loaded, a larger interval will be used.
- If the data interval is set to other than an integral multiple of the measurement interval, the display may not show the actual data.

(4) Set Display Time

Set the start time and the stop time of the data to be displayed in a graph.

NOTE

If the display start time is set to a time other than (measurement start time + a multiple of the measurement interval by an integer), the displayed time will differ from the actual time. Thus, measurements made immediately before the displayed time of each interval will be displayed as made at the actual time.

(5) Move Display Range

The display period may be changed by moving the scroll bar.

(6) Set Display Period

The display period may be changed by moving the slider for the display period.

NOTE

- A maximum of 336 measurements may be displayed on a graph display at any one time.
- Any changes in settings (3) to (6) above will be reflected in the settings for the summary screen.

(7) Measure with Cursor

Left-click in the graph display area, and the cursor will appear. The measurement of the point at which the cursor is located will be displayed. To move the cursor, left-click at a point to which the cursor is to be moved. The cursor can also be moved using the ← and → keys on the keyboard. To hide the cursor, left-click anywhere outside the graph display area.

NOTE

Cursor measurement is not available for 3D graphs.

4.2 Advanced Operation

(1) Set Vertical Axis

Select **Graph - Change vertical axis setting** on the menu bar to display the Vertical axis setting dialog.

Set Vertical Axis

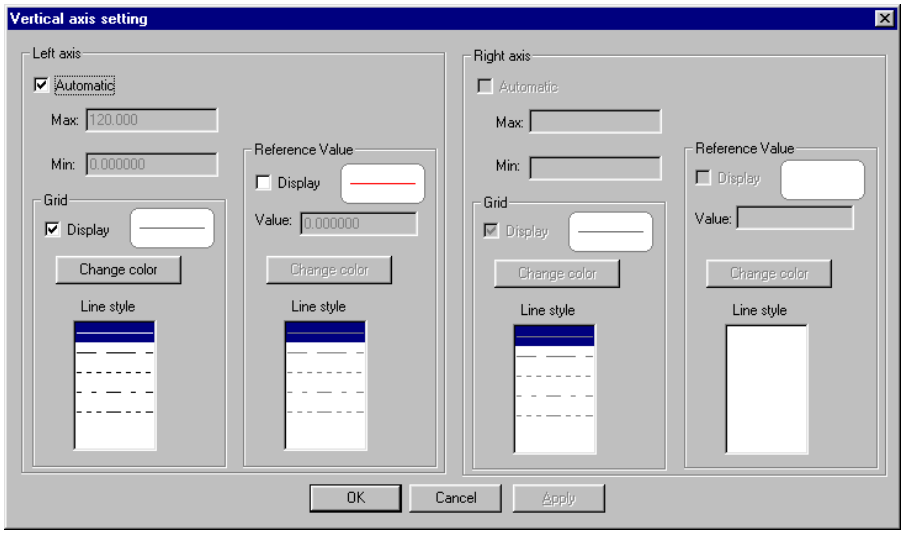
The vertical axis is normally set automatically, but can be changed manually. The upper limit and lower limit of the vertical axis are also changed using the sliders.

Set Grid

Show or hide the grid line. Set the color and line style.

Set Reference Value

Show or hide the reference value. Set the value, color, and line style.

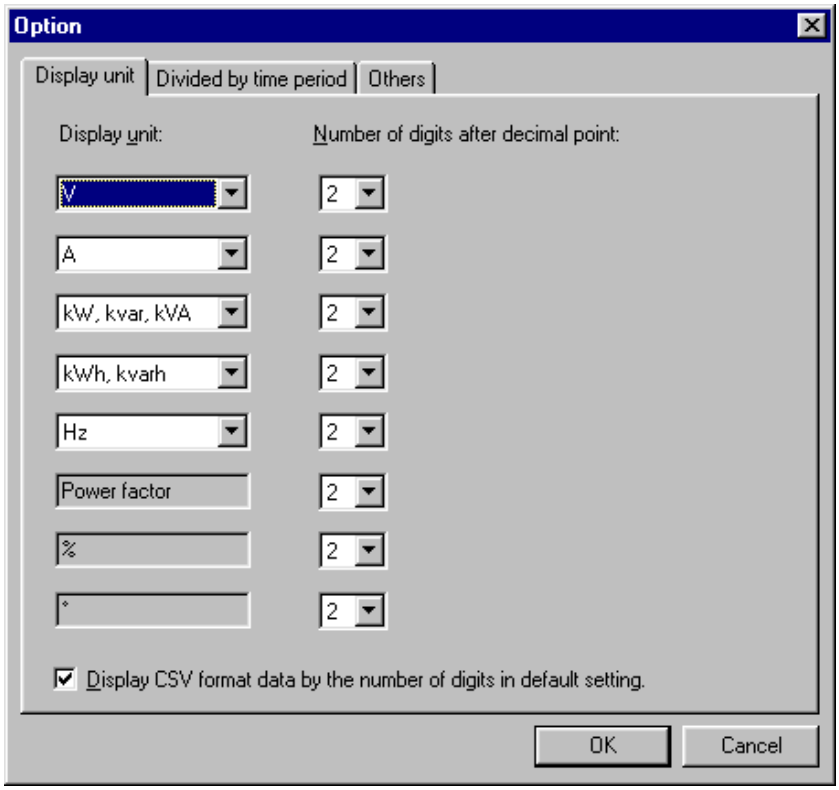


NOTE

The grid color of the time axis is determined by the grid color of the left axis.

(2) Change Display Unit

Select **Settings - Options - Display unit** on the menu bar. Set the display unit for the vertical axis and measurement value, and the number of decimals. When the Display CVS format data by the number of digits in default setting box is checked, cursor measurement values will be displayed using the setting for the measurement data, regardless of this setting.



(3) Change Background Color

The background color of the graph display area can be changed. Select **Settings - Options - Others** on the menu bar. Check the Change the background color box. Click Change color and choose a color in the Color dialog.

(4) Change Graph Display Interval

Change the interval at which a graph is updated. Choose the appropriate interval for the PC used. Select **Settings - Options - Others** on the menu bar. If too much time is required to load data, increase the interval.

(5) Set Time Scale of a Second or Less

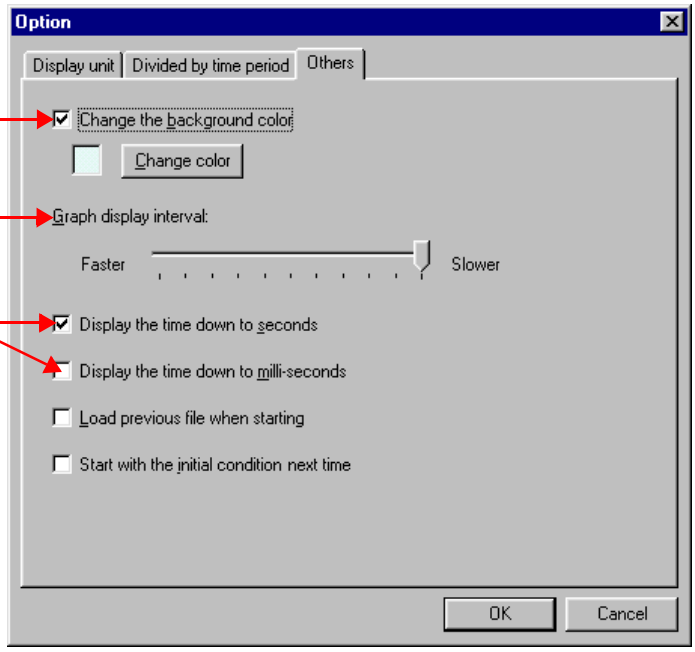
Set whether to show or hide the time scale of a second or millisecond. Select **Settings - Options - Others** on the menu bar. Set if necessary. Changes in this setting will be reflected in the time scale for the summary display and daily/weekly/monthly report display.

NOTE
The time scale of a millisecond will not be shown when short-term-interval (all wave) data is displayed at the data interval of "all wave."

Change the graph background color.

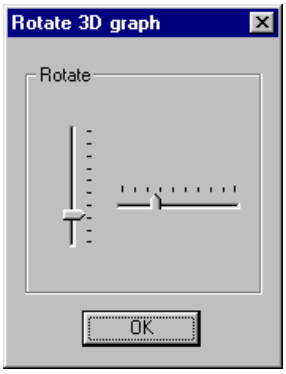
Change the graph update interval.

Set a time scale of a second or less.



(6) Display 3D Graph

Time-series graphs may be displayed in three dimensions. Select **Graph - 3D display** on the menu bar; the graph will be shown in 3D. A 3D graph can be rotated. Select **Graph - Rotate** to display the Rotate 3D graph dialog.

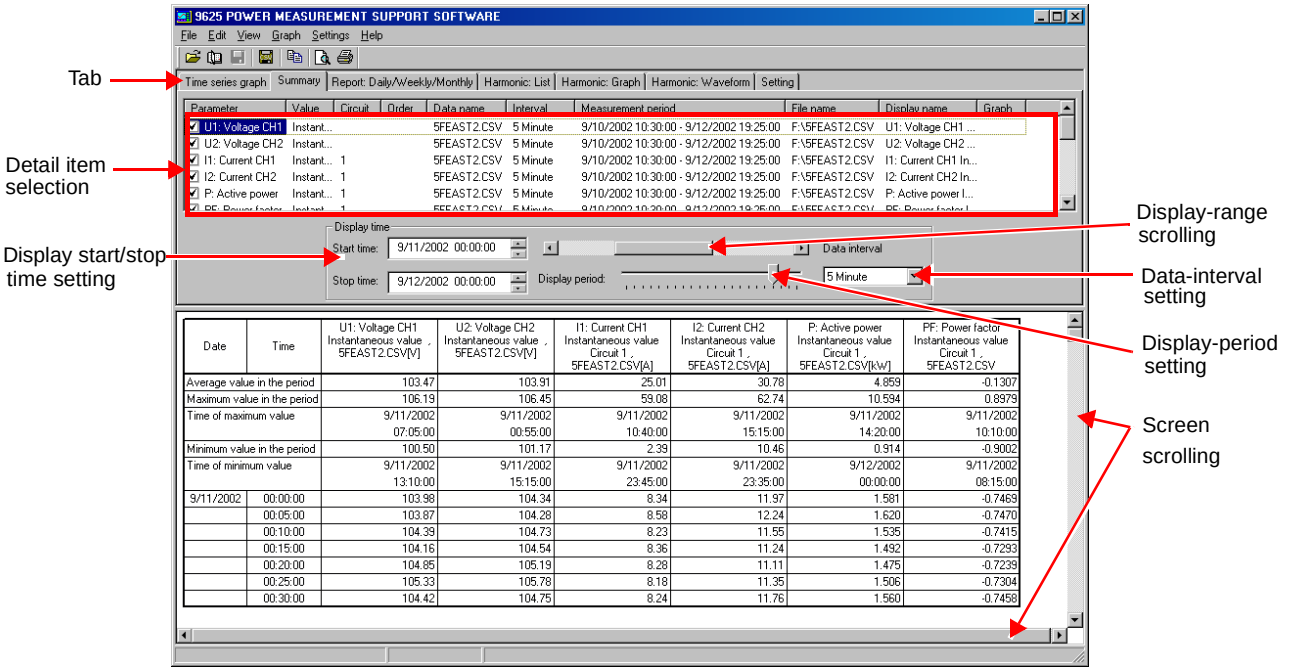


NOTE
Cursor measurement is not available when the graph is shown in 3D.

Displaying Summary

Chapter 5

Display a list of numerical values of selected data.
Click the **summary** tab to display.

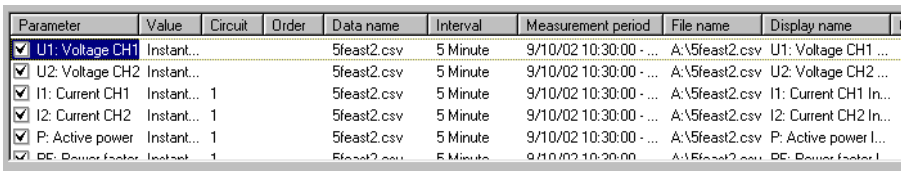


NOTE Invalid data is displayed as a blank.

5.1 Basic Operation

(1) Select Data Items to Display

Up to 16 items can be selected for display.



Parameter	Value	Circuit	Order	Data name	Interval	Measurement period	File name	Display name
U1: Voltage CH1	Instant...			5feast2.csv	5 Minute	9/10/02 10:30:00 - ...	A:\5feast2.csv	U1: Voltage CH1 ...
U2: Voltage CH2	Instant...			5feast2.csv	5 Minute	9/10/02 10:30:00 - ...	A:\5feast2.csv	U2: Voltage CH2 ...
I1: Current CH1	Instant...	1		5feast2.csv	5 Minute	9/10/02 10:30:00 - ...	A:\5feast2.csv	I1: Current CH1 In...
I2: Current CH2	Instant...	1		5feast2.csv	5 Minute	9/10/02 10:30:00 - ...	A:\5feast2.csv	I2: Current CH2 In...
P: Active power	Instant...	1		5feast2.csv	5 Minute	9/10/02 10:30:00 - ...	A:\5feast2.csv	P: Active power I...

Show/Hide Item
Check the box of each item to be displayed.

Select Display Item
Left-click on the parameter of an item, and a list of selectable parameters will appear.
Select an item to display from the list.

Select Data Type (Value)
Left-click on the value of an item, and a list of selectable data types (instantaneous, average, maximum, and minimum) will appear. Select a data type from the list.

Select Circuit No.
Left-click on the circuit of an item, and a list of selectable circuit numbers will appear. Select the circuit No. of the data to be displayed.

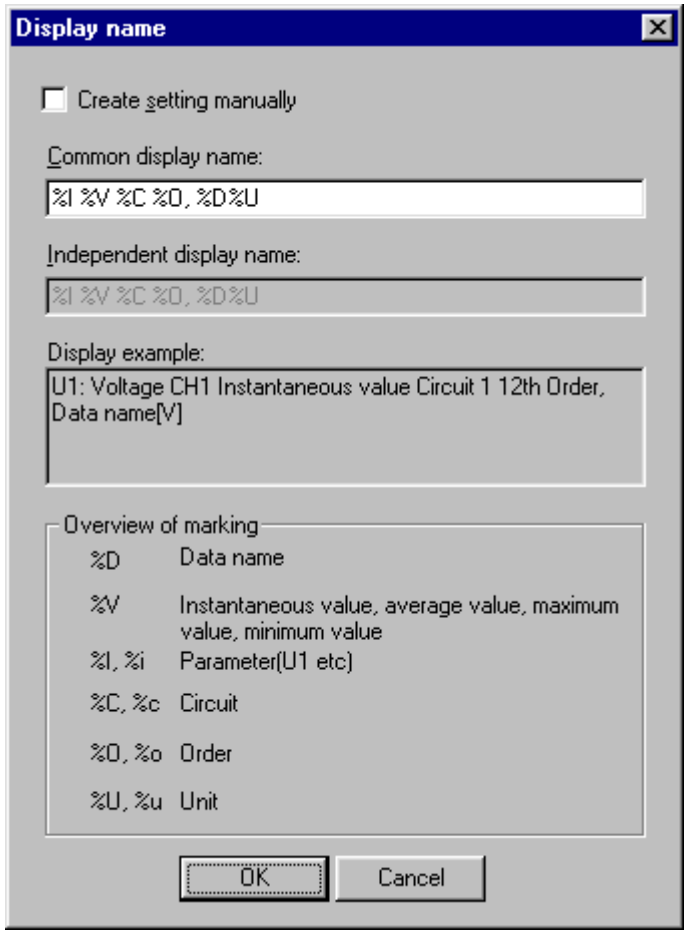
Select Order
Left-click on the order of an item, and a list of selectable orders will appear. Select the order of the harmonic data to be displayed.

Select Data Name
Left-click on the data name of an item, and a list of selectable data names will appear. Select the name of the data to be displayed.

Show Measurement Interval/Period/ File Name
Display the measurement interval, measurement period, and file name of the data.

Set Display Name

Set the name of each display item to be used in printout. Left-click on the display name of an item, and the Display name dialog will appear. Check the Create setting manually box to set the display name of each item separately. To use a common display format, choose symbols in the list to enter them in the Common display name text box.



(2) Set Data Interval

Set a data interval for the displayed data.

NOTE

- An interval smaller than the interval of the loaded data cannot be set. When multiple pieces of data have been loaded, a larger interval will be used.
- If the data interval is set to other than an integral multiple of the measurement interval, the display may not show the actual data.

(3) Set Display Time

Set the start time and stop time of data to be displayed as a summary.

NOTE

If the display start time is set to a time other than (measurement start time + a multiple of the measurement interval by an integer), the displayed time will differ from the actual time. Thus, measurements made immediately before the displayed time of each interval will be displayed as made at the actual time.

(4) Move Display Range

The display period may be changed by moving the scroll bar.

(5) Set Display Period

The display period may be changed by moving the scroll bar.

NOTE
Any changes in settings (2) to (5) above will be reflected in the settings for the time-series graph screen.

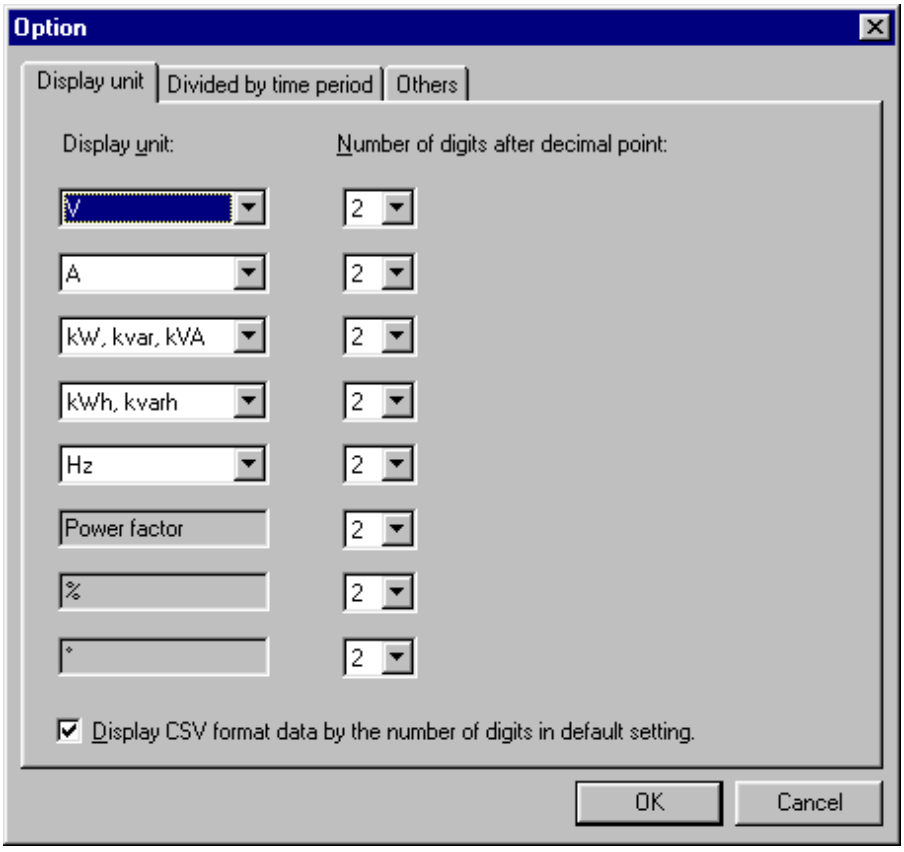
(6) Scroll Screen

The screen can be scrolled up and down and right and left using the vertical and horizontal scroll bars.

5.2 Advanced Operation

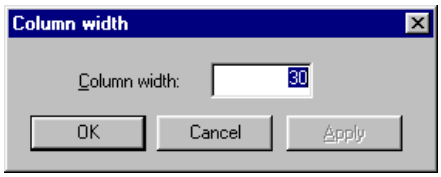
(1) Change Display Unit

Select **Settings - Options - Display unit** on the menu bar. Set the display units for numerical data and the number of decimals.
Any changes in these settings will be reflected in the vertical-axis settings of graph. When the Display CSV format data by the number of digits in default setting box is checked, numerical data in the CSV format will be shown with the number of decimals used for measurement by a measuring instrument.



(2) Change Column width

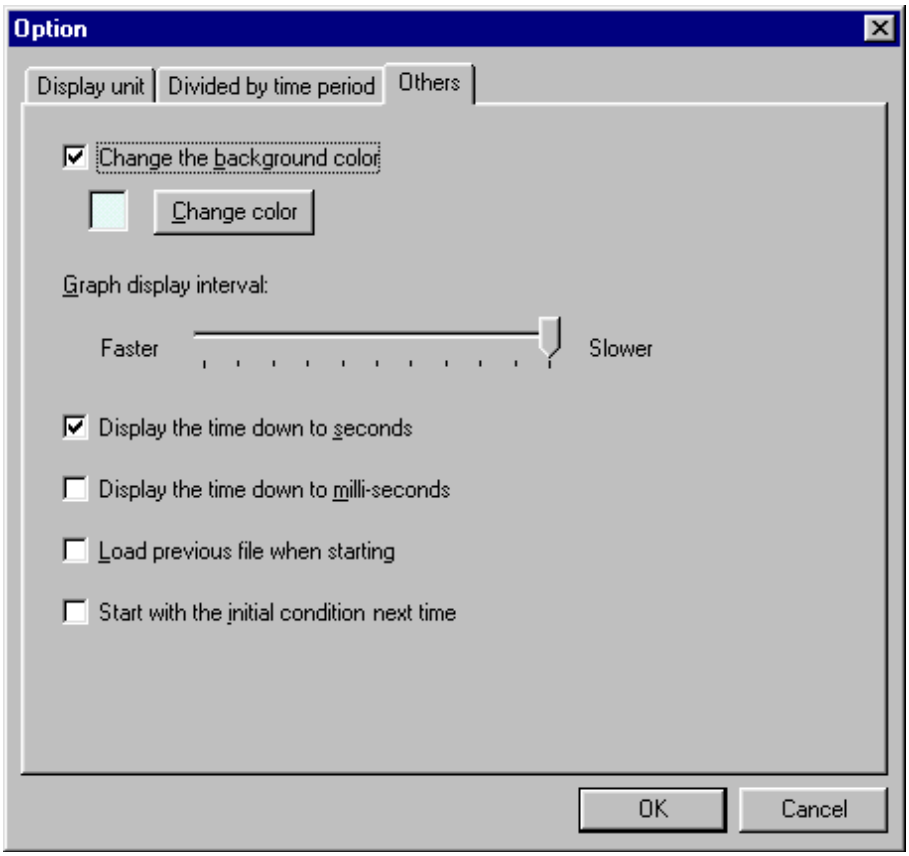
The column width can be changed. Select **View - Change column width** on the menu bar. Change the width in the Column width dialog.



(3) Set Time Scale of a Second or Less

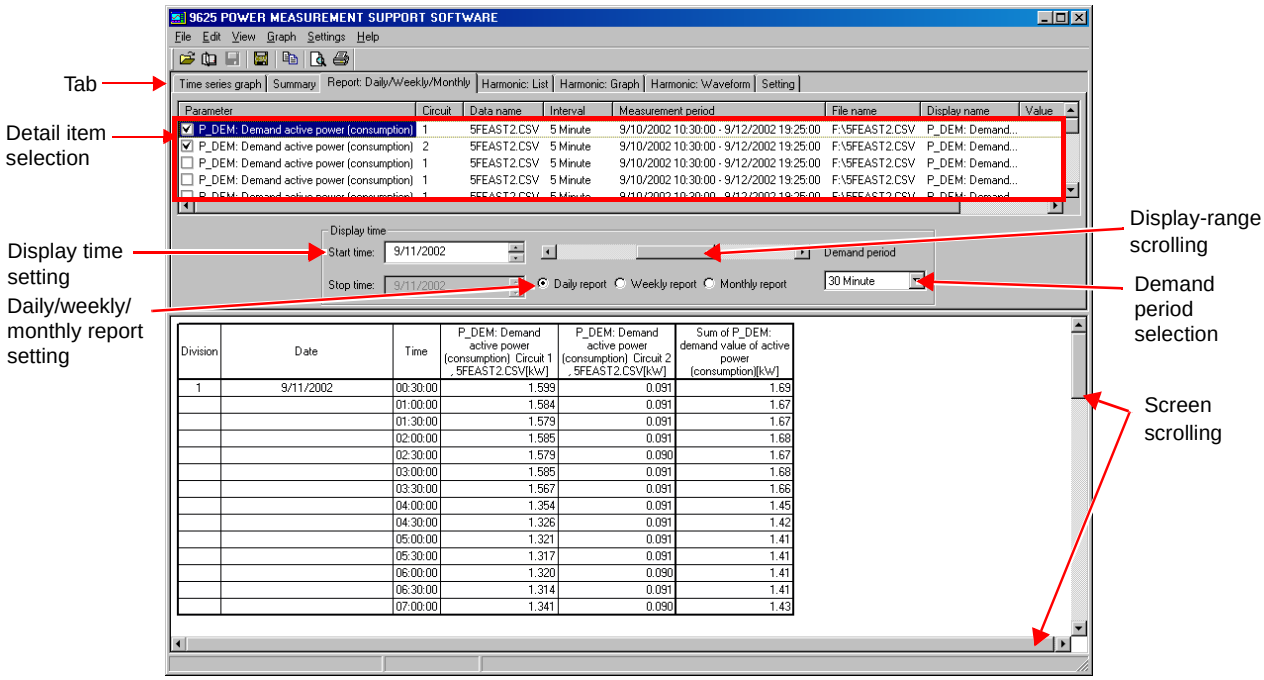
Set whether to show or hide the time scale of a second or millisecond. Select **Settings - Options - Others** on the menu bar. Set if necessary. Changes in this setting will be reflected in the time scale for the time-series graphic display and daily/weekly/monthly report display.

NOTE
The time scale of a millisecond will not be shown when the short-term-interval (all wave) data is displayed at the data interval of "all wave."



Chapter 6 Displaying the Daily, Weekly, or Monthly Report

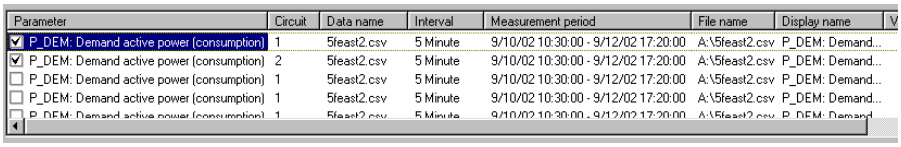
Display the daily, weekly, or monthly report of selected demand data. The daily report shows numerically the sum of measurements taken at intervals of 30 minutes or 1 hour for a day. The weekly report shows numerically the sum of measurements taken at intervals of one day for a week. The monthly report shows numerically the sum of measurements taken at intervals of one day for a month.
Click the **Report:Daily/Weekly/Monthly** tab to display.



6.1 Basic Operation

(1) Select Data Items to Display

Up to 16 items of demand data can be set for display.



Show/Hide Item Check the box of each item to be displayed.

Select Display Item Left-click on the parameter of an item, and a list of selectable parameters will appear.
Select an item to display from the list.

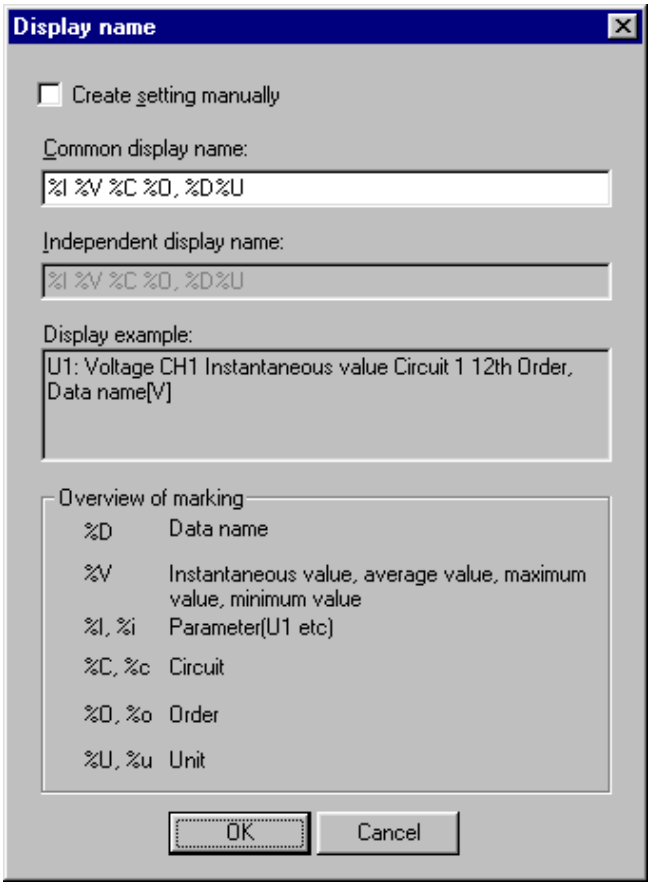
Select Circuit No. Left-click on the circuit of an item, and a list of selectable circuit numbers will appear. Select the circuit No. of the data to be displayed.

Select Data Name Left-click on the data name of an item, and a list of selectable data names will appear. Select the name of the data to be displayed.

Show Measurement Interval/Period/ File Name Display the measurement interval, measurement period, and file name of the data.

Set Display Name

Set the name of each display item to be used in printout. Left-click on the display name of an item, and the Display name dialog will appear. Check the Create setting manually box to set the display name of each item separately. To use a common display format, choose symbols in the list to enter them in the Common display name text box.



(2) Select Demand Period

Select a demand period for the data to be displayed at either 30 minutes or 1 hour.

NOTE

An interval smaller than the measurement interval of the loaded data cannot be set.

(3) Set Display Time

Set the start date of the daily, weekly, or monthly report to be displayed.

(4) Move Display Range

The display period may be changed by moving the scroll bar.

(5) Select Daily, Weekly, or Monthly Report

Select a report to be displayed from the daily, weekly, and monthly reports.

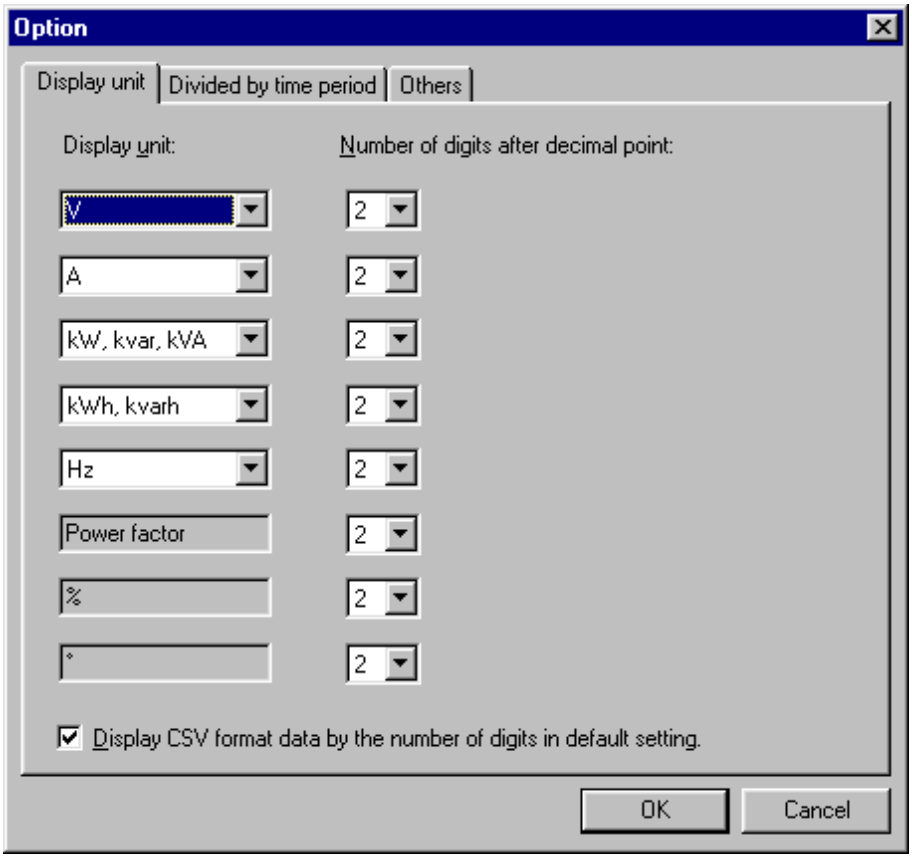
(6) Scroll Screen

The screen can be scrolled up and down and right and left using the vertical and horizontal scroll bars.

6.2 Advanced Operation

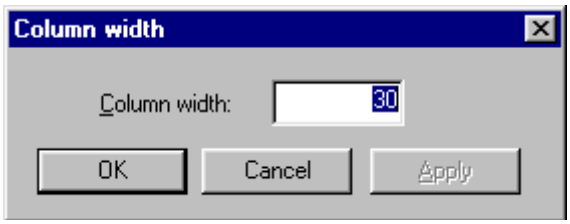
(1) Change Display Unit

Select **Settings - Options - Display unit** on the menu bar. Set the display unit for the vertical axis and measurement value, and the number of decimals. When the Display CSV format data by the number of digits in default setting box is checked, cursor measurement values will be displayed using the setting for the measurement data, regardless of this setting.



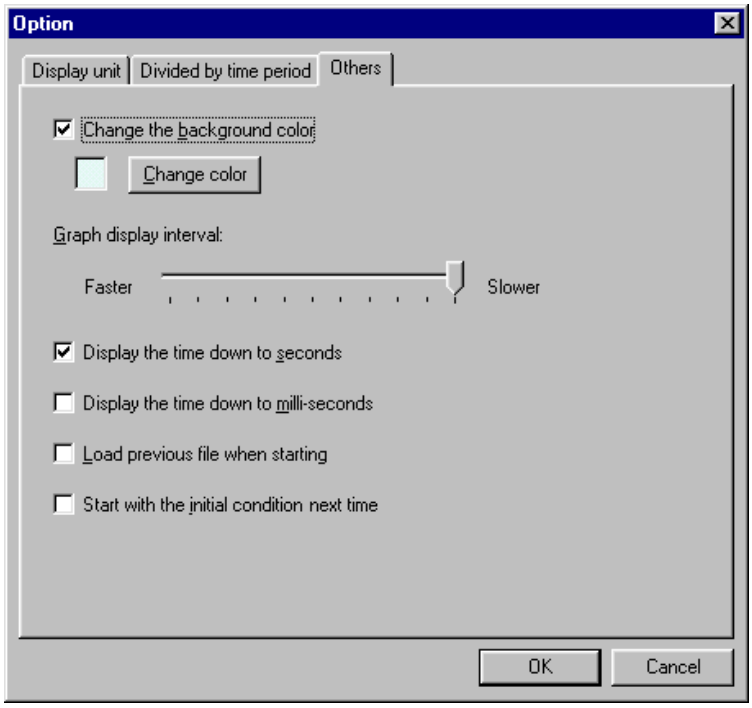
(2) Change Column width

The column width can be changed. Select **View - Change column width** on the menu bar. Change the width in the Column width dialog.



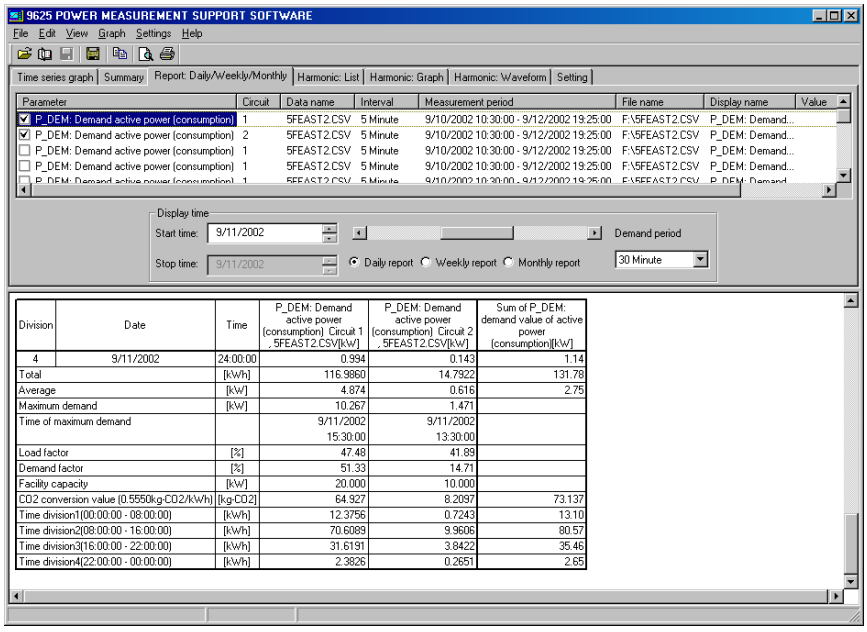
(3) Set Time Scale of a Second or Less

Set whether to show or hide the time scale of a second or millisecond. Select **Settings - Options - Others** on the menu bar. Set if necessary. Changes in this setting will be reflected in the time scale for the time-series graphic display and summary display.



(4) Sum Up Data

The total and average of demand values (active power), maximum demand, time of maximum demand, load factor, and demand factor will appear at the bottom of the data list. When multiple demand values (active power) are selected, the sum of the demand values (active power) will be shown in the last column.

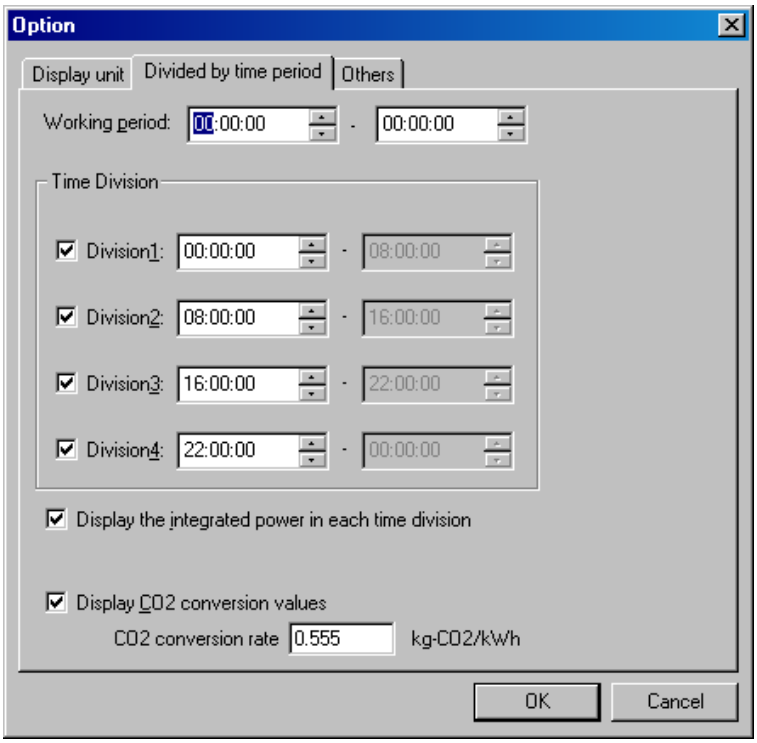


NOTE

To calculate the demand factor, the facility capacity must be set. Select **File - Load file** on the menu bar to display the Load data file dialog. Set the facility capacity for each load.

(5) Sum Per Time Segment

The operating hour can be set. In addition, the active energy per time segment may be displayed. Select **Settings - Options - Divided by time period** on the menu bar. Set the operating hour and time segment. The operating hour is set with a resolution of 30 minutes. It must not extend over two days.
Up to four time segments can be set. To display the active energy per time segment, check the Display the integrated power in each time division box.



(6) Display with CO_2 Conversion

Integrated active power [kWh] values can be converted for display as CO_2 (carbon dioxide exhaust) values.
Select **Settings - Options - Divided by time period** on the menu bar. Specify the CO_2 conversion rate.
To enable the displayed CO_2 conversion values, select the **Display CO_2 conversion values** check box.

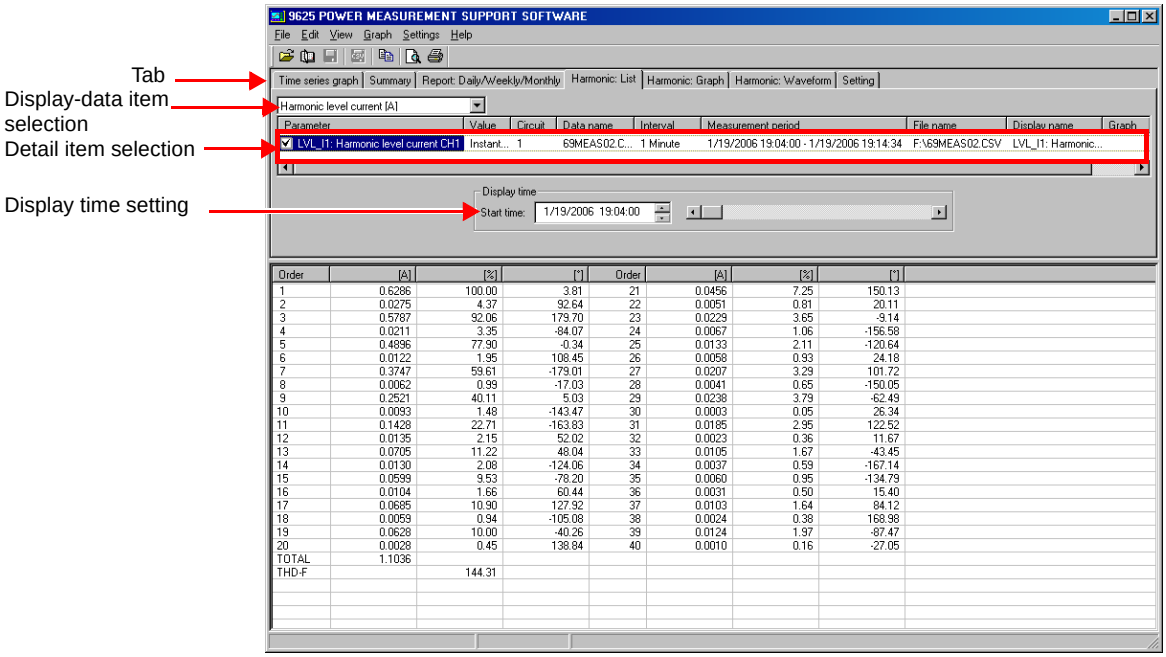
NOTE

- The CO_2 converted value is equivalent to the integrated active power [kWh] value multiplied by the CO_2 conversion rate.
- The initial setting of the CO_2 conversion rate is ”0.555 kg-CO_2/kWh” so that change the rate by yourself accordingly.

Displaying a Harmonic List

Chapter 7

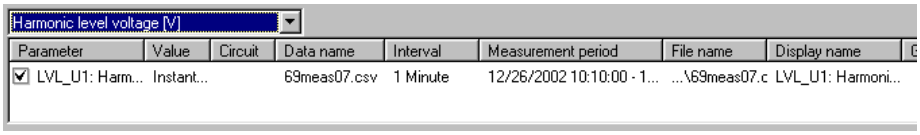
Display numerically the harmonic data of a selected time. The harmonic level, harmonic content, and phase angle are also displayed. A harmonic list cannot be displayed when the loaded data does not contain harmonic data.
Click the **Harmonic : List** tab to display.



7.1 Basic Operation

(1) Select Data Items to Display

Select the data items to be displayed.



(2) Select Detail Items

Select items to be displayed.

Show/Hide Item Check the box of an item to be displayed.

Select Display Item Left-click on the parameter of an item, and a list of selectable parameters will appear.
Select an item to display from the list.

Select Data Type (Value) Left-click on the value of an item, and a list of selectable data types (instantaneous, average, maximum, and minimum) will appear. Select a data type from the list.

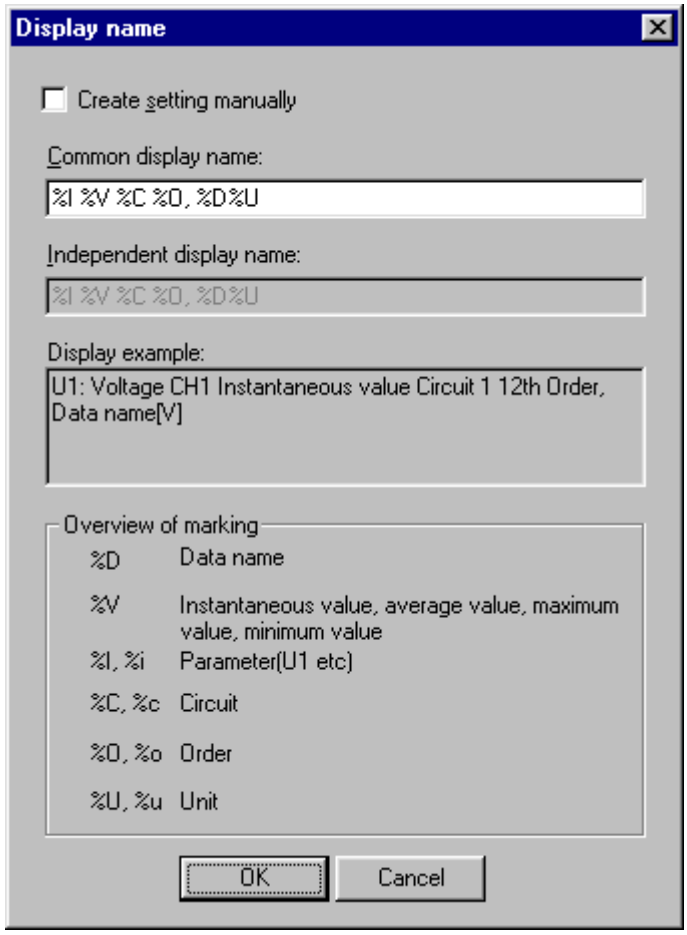
Select Circuit No. Left-click on the circuit of an item, and a list of selectable circuit numbers will appear. Select the circuit No. of the data to be displayed.

Select Data Name Left-click on the data name of an item, and a list of selectable data names will appear. Select the name of the data to be displayed.

Show Measurement Interval/Period/ File Name Display the measurement interval, measurement period, and file name of the data.

Set Display Name

Set the name of each display item to be used in printout. Left-click on the display name of an item, and the Display name dialog will appear. Check the Create setting manually box to set the display name of each item separately. To use a common display format, choose symbols in the list to enter them in the Common display name text box.



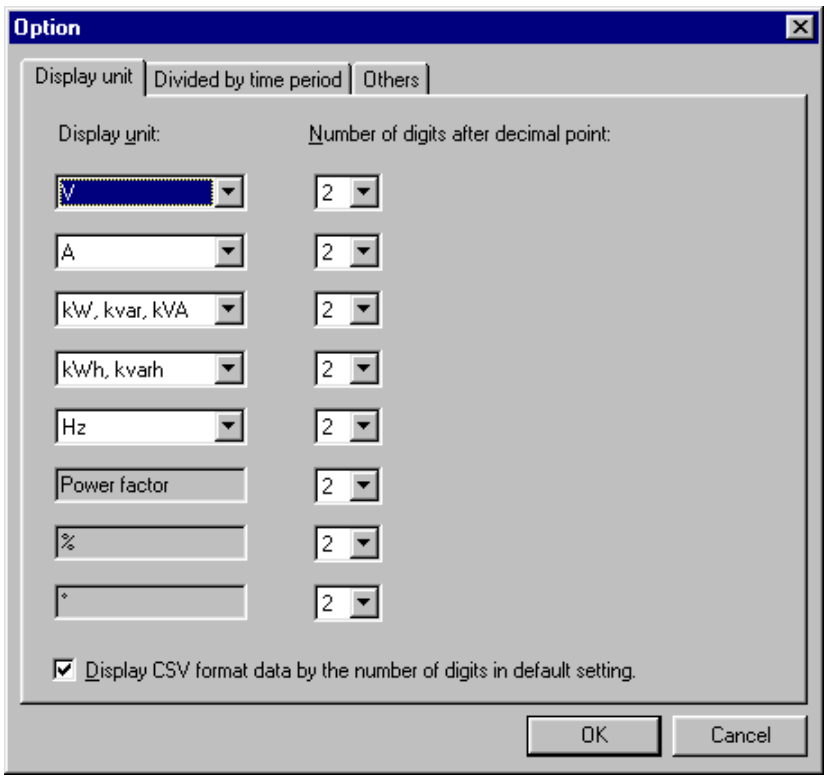
(3) Set Display Time

Set the display time by entering the time in the text box or moving the scroll bar.

7.2 Advanced Operation

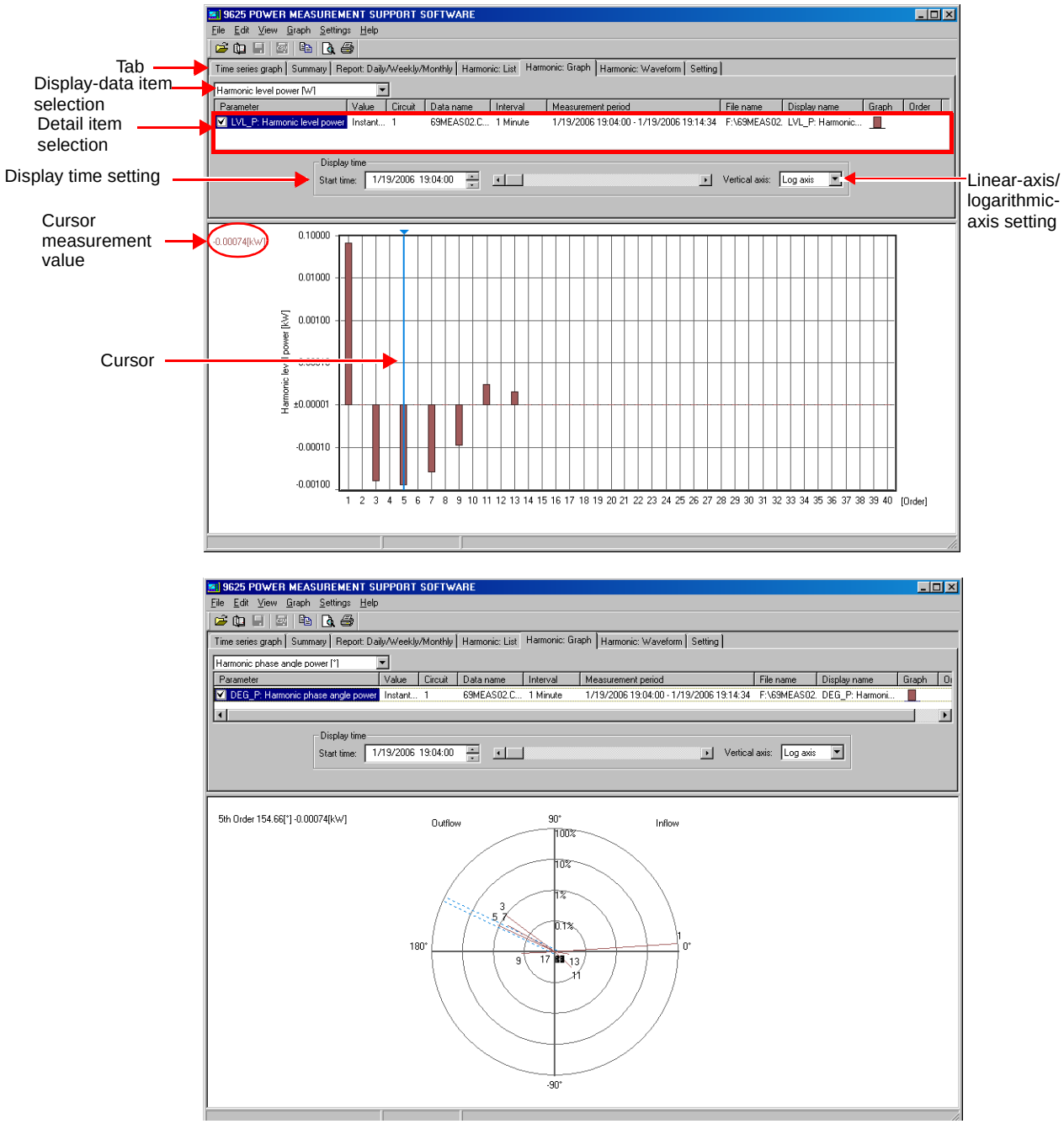
(1) Change Display Unit

Select **Settings - Options - Display unit** on the menu bar. Set the display unit for the vertical axis and measurement value, and the number of decimals. When the Display CSV format data by the number of digits in default setting box is checked, cursor measurement values will be displayed using the setting for the measurement data, regardless of this setting.



Displaying a Harmonic Graph Chapter 8

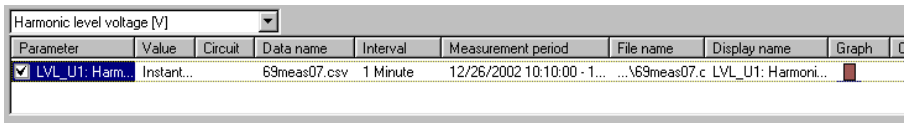
Display a bar graph of the harmonic data of a selected time. The data will be shown as a vector diagram when it is the harmonic-power phase angle. A harmonic graph cannot be displayed when the loaded data does not contain harmonic data.
Click the **Harmonic:Graph** tab to display.



8.1 Basic Operation

(1) Select Data Items to Display

Select the data items to be displayed.



(2) Select Detail Items

Select items to be displayed.

Show/Hide Graph Check the box of an item to be displayed.

Select Display Item Left-click on the parameter of an item, and a list of selectable parameters will appear.
Select an item to display from the list.

Select Data Type (Value) Left-click on the value of an item, and a list of selectable data types (instantaneous, average, maximum, and minimum) will appear. Select a data type from the list.

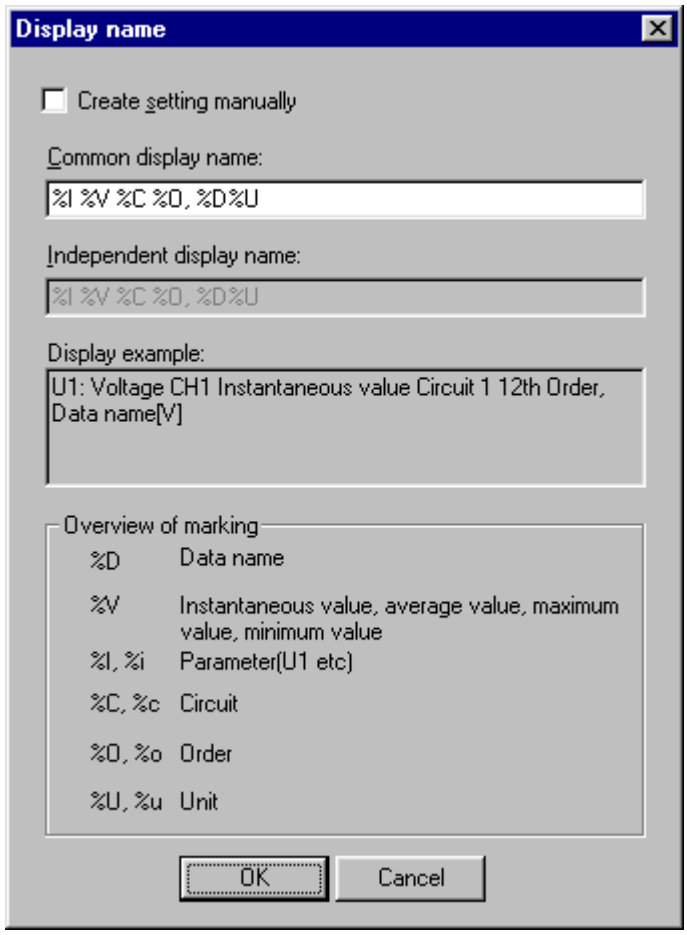
Select Circuit No. Left-click on the circuit of an item, and a list of selectable circuit numbers will appear. Select the circuit No. of the data to be displayed.

Select Data Name Left-click on the data name of an item, and a list of selectable data names will appear. Select the name of the data to be displayed.

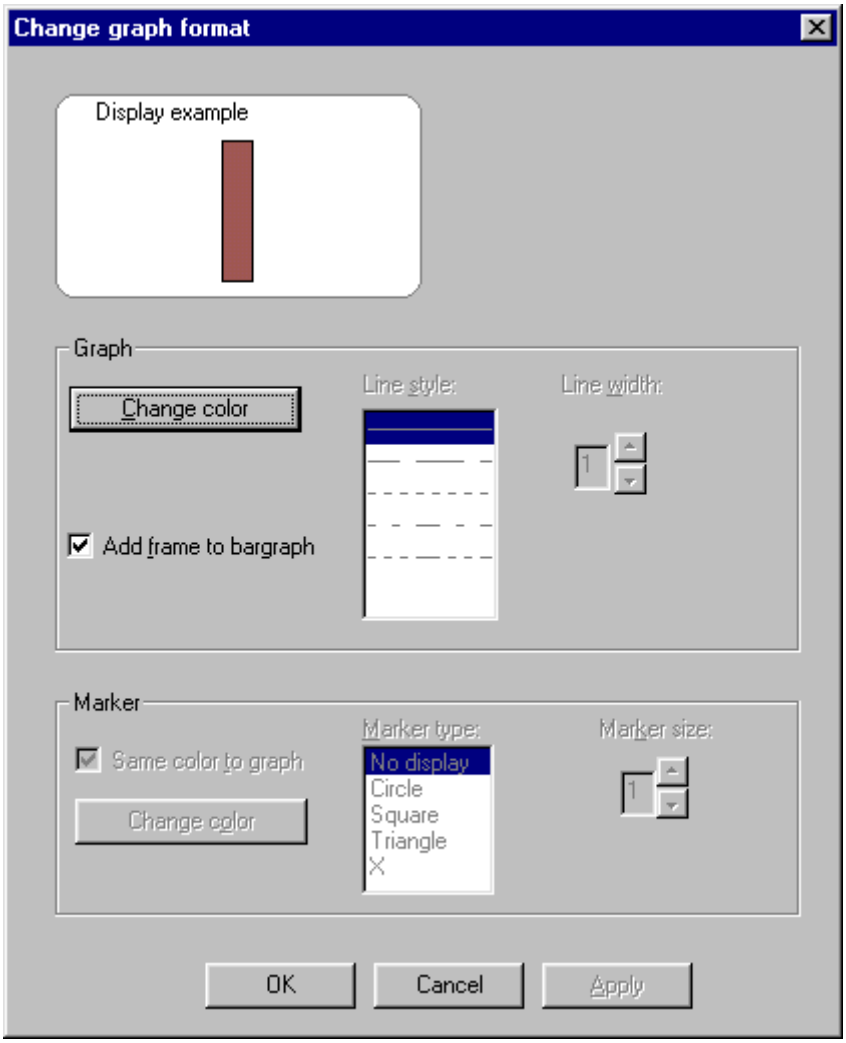
Show Measurement Interval/Period/ File Name Display the measurement interval, measurement period, and file name of the data.

Set Display Name

Set the name of each display item to be used in printout. Left-click on the display name of an item, and the Display name dialog will appear. Check the Create setting manually box to set the display name of each item separately. To use a common display format, choose symbols in the list to enter them in the Common display name text box.



Change Graph Format Left-click on the graph of an item, and the Change graph format dialog will appear. This box allows the color of the graph to be set.



(3) Set Graph Display Time

Set the display time by entering the time in the text box or moving the scroll bar.

(4) Set Linear/Logarithmic Axis

When the harmonic level or harmonic content is displayed, the linear axis or logarithmic axis can be chosen as the vertical axis.

(5) Measure with Cursor

Left-click in the graph display area, and the cursor will appear. The measurement of the point at which the cursor is located will be displayed. To move the cursor, left-click at the point to which the cursor is to be moved. The cursor is also moved using the ← and → keys on the keyboard. To hide the cursor, left-click anywhere outside the graph display area.

NOTE
Cursor measurement is not available for 3D graphs.

8.2 Advanced Operation

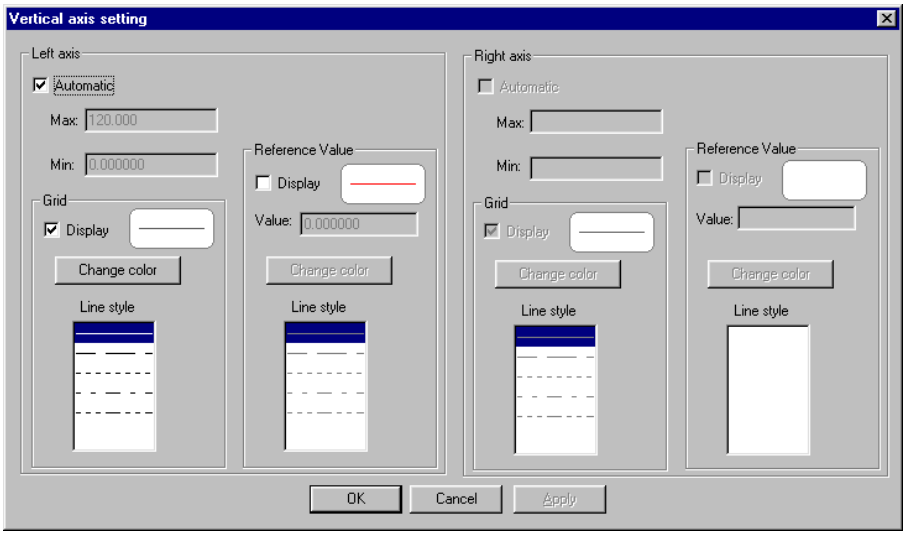
(1) Set Vertical Axis

Select **Graph - Change vertical axis setting** on the menu bar to display the Vertical axis setting dialog.

Set Vertical Axis
The vertical axis is normally set automatically, but can be changed manually in the case of a linear axis.

Set Grid
Show or hide the grid line. Set the color and line style.

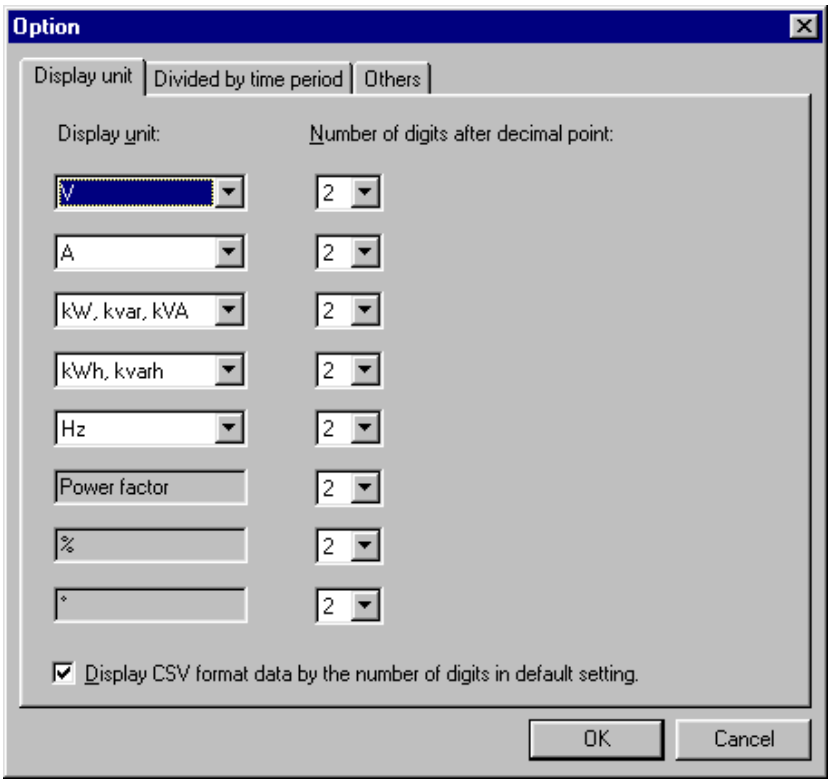
Set Reference Value
Show or hide the reference value. Set the value, color, and line style.



(2) Change Display Unit

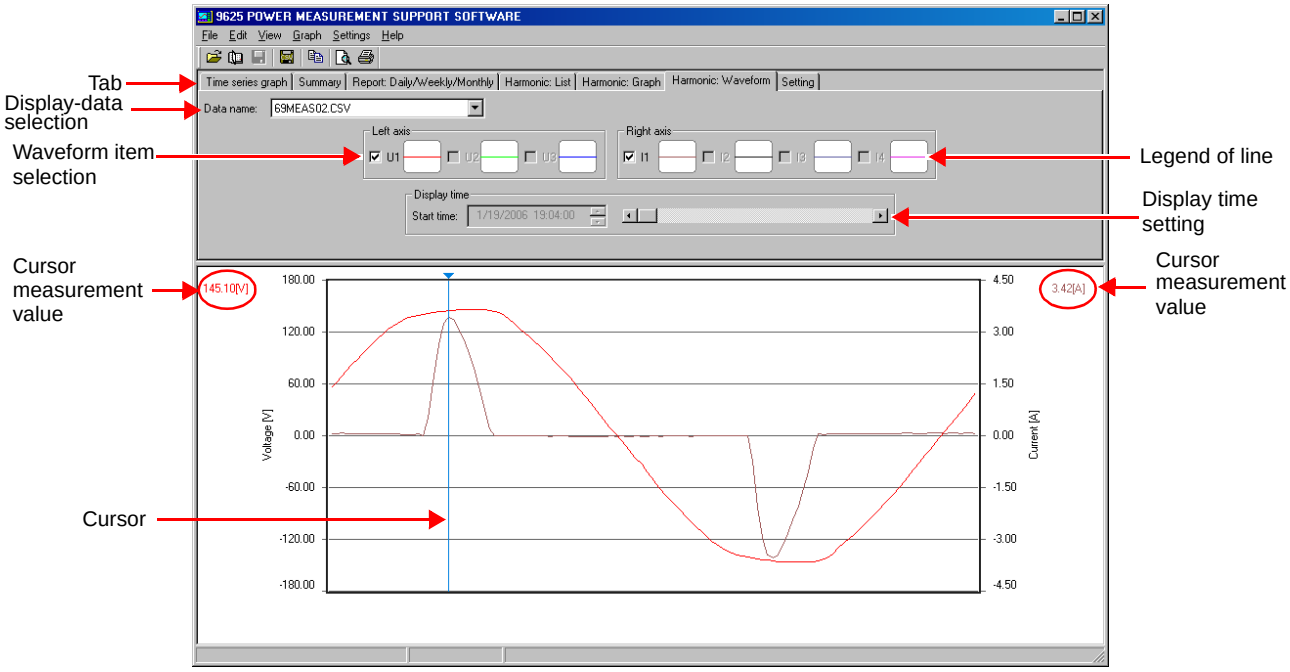
Select **Settings - Options - Display unit** on the menu bar. Set the display unit for the vertical axis and measurement value, and the number of decimals. When the Display CSV format data by the number of digits in default setting box is checked, cursor measurement values will be displayed using the setting for the measurement data, regardless of this setting.

NOTE
The setting of the number of decimals is ignored when a logarithmic axis is selected.



Chapter 9 Displaying a Waveform of Harmonic Measurement Data

Display waveforms of the voltage and current of the selected time. Waveforms will not be displayed if the loaded data does not contain waveform data.
Click the **:Weveform** tab to display.



9.1 Basic Operation

(1) Select Data Name to Display

Select the data name to be displayed.

(2) Select Waveform Display Item

Check the box of an item to be displayed, and its waveform will be shown. When an item has not been saved, the checked box will be displayed in gray.

(3) Set Waveform Display Time

Set the display time by moving the scroll bar for the display time.

NOTE

Time cannot be set by entering numeric values.

(4) Measure with Cursor

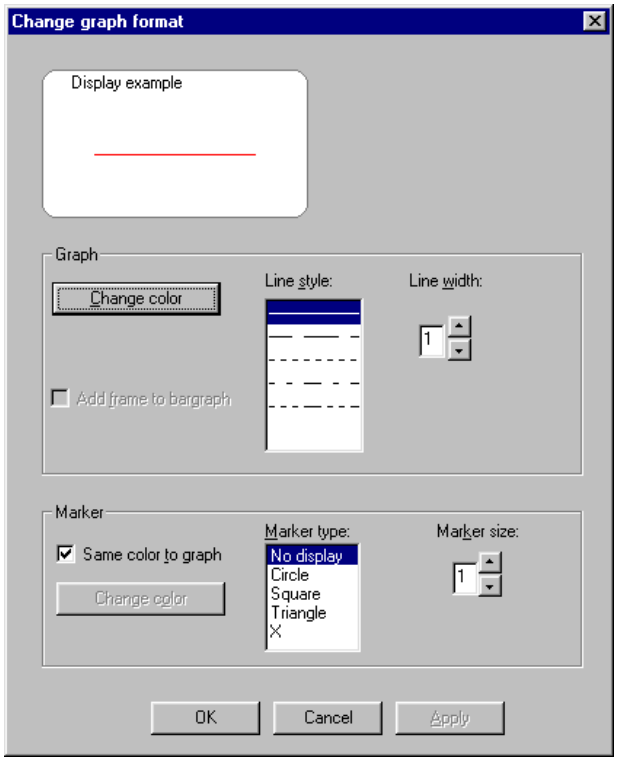
Left-click in the waveform display area, and the cursor will appear. The measurement of the point at which the cursor is located will be displayed. To move the cursor, left-click at the point to which the cursor is to be moved. The cursor is also moved using the ← and → keys on the keyboard. To hide the cursor, left-click anywhere outside the waveform display area.

NOTE

Cursor measurement is not available for 3D graphs.

(5) Change Graph Format

Click on the legend of line of an item, and the Change graph format dialog will appear. This box allows the line color of the graph, line style, line width, marker color, marker type, and marker size to be set.



9.2 Advanced Operation

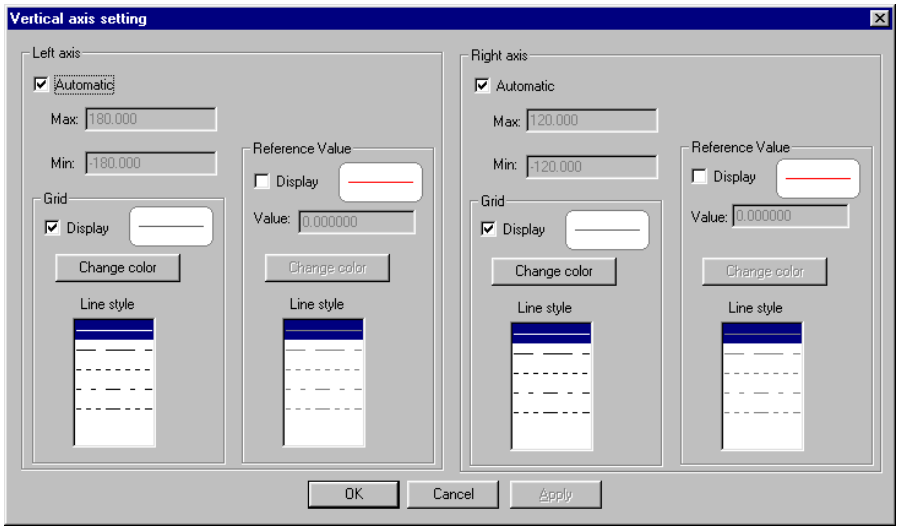
(1) Set Vertical Axis

Select **Graph - Change vertical axis setting** on the menu bar to display the Vertical axis setting dialog.

Set Vertical Axis
The vertical axis is normally set automatically, but can be changed manually.

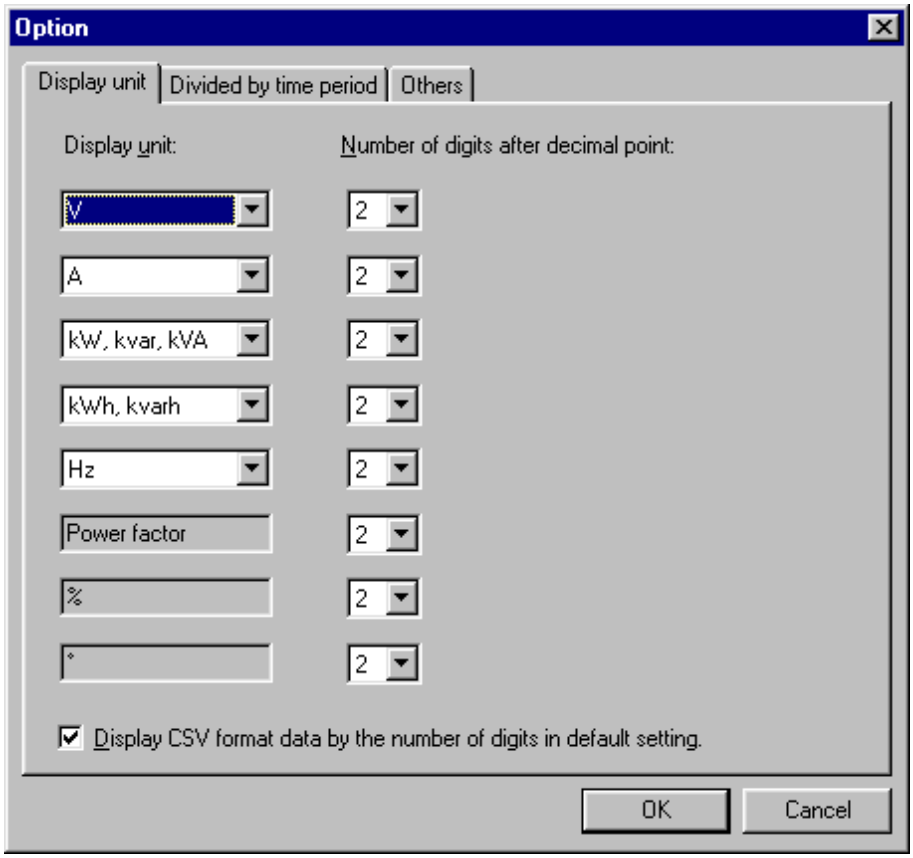
Set Grid
Show or hide the grid line. Set the color and line style.

Set Reference Value
Show or hide the reference value. Set the value, color, and line style.



(2) Change Display Unit

Select **Settings - Options - Display unit** on the menu bar. Set the display unit for the vertical axis and measurement value, and the number of decimals. When the Display CSV format data by the number of digits in default setting box is checked, cursor measurement values will be displayed using the setting for the measurement data, regardless of this setting.

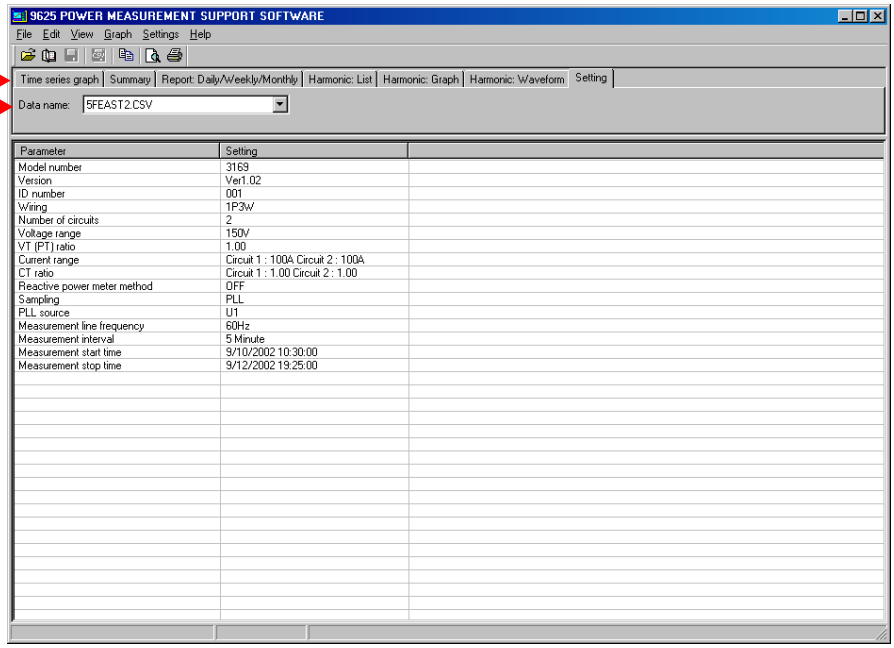


Displaying Settings

Chapter 10

Display the settings of measurement data
Click the **Setting** tab to display.

Tab
Measurement-data selection



10.1 Basic Operation

(1) Select Measurement Data

Select the name of data to be displayed from the loaded data files.

(2) Set Column Width

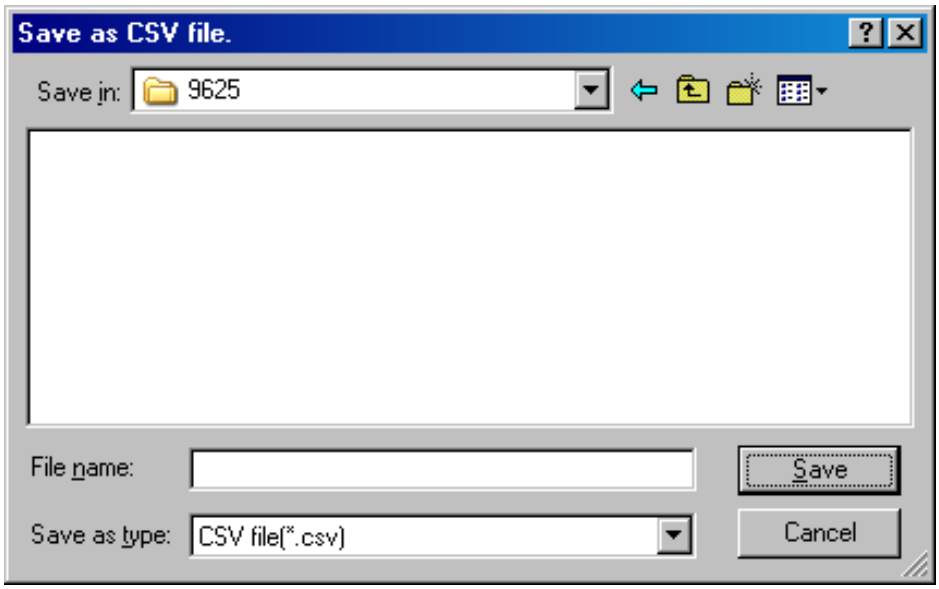
Place the cursor on the right edge of the column to be adjusted; the cursor will change to a cross.
Double-click to adjust the column width automatically, or click and drag the edge of the column to adjust the width manually.

Saving Data in CSV Format Chapter 11

The data of the displayed measurement item can be saved in a CSV format file from the following screens: Time-Series Graphic; Summary; Daily, Weekly and Monthly Report; and Harmonic Waveform.
Saved CSV files can be used to create reports using commonly available computer spreadsheet programs.

1. Select Screen
Display the screen from which to save data in CSV format.

2. Save in CSV format
Click the Save as CSV file button  or select **File - Save as CSV file** from the menu bar.
The Save as CSV file dialog appears.



Select the folder for saving the CSV file, enter a file name, and click 

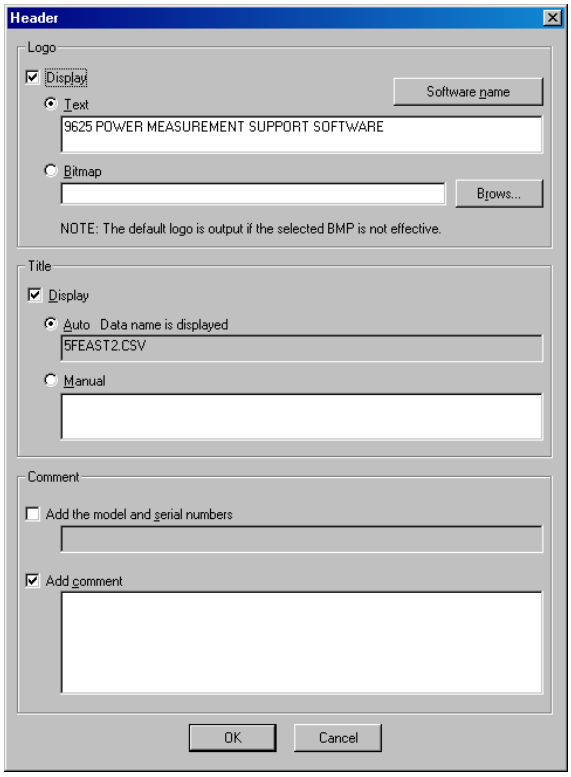
to save the data in CSV format.

Chapter 12 Printing

Print out the time-series graph screen, summary screen, daily/weekly/monthly report screen, harmonic-list/graph/waveform screen, and setting screen on the printer connected to the PC.

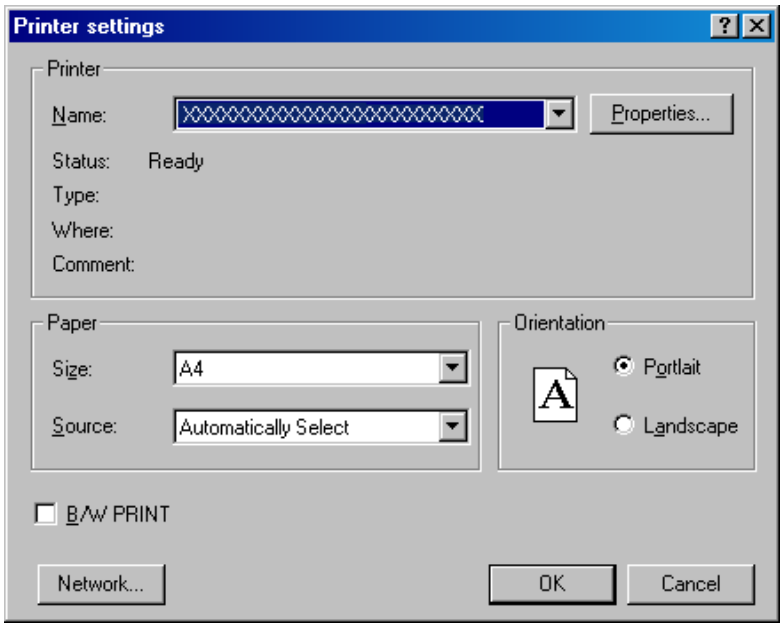
1. Select Screen
Display the screen to be printed.

2. Enter Printing Header
You can add a logo/title/comments to the printout.
Select **Settings - Header** on the menu bar.
The Header dialog will appear.



3. Set Printer

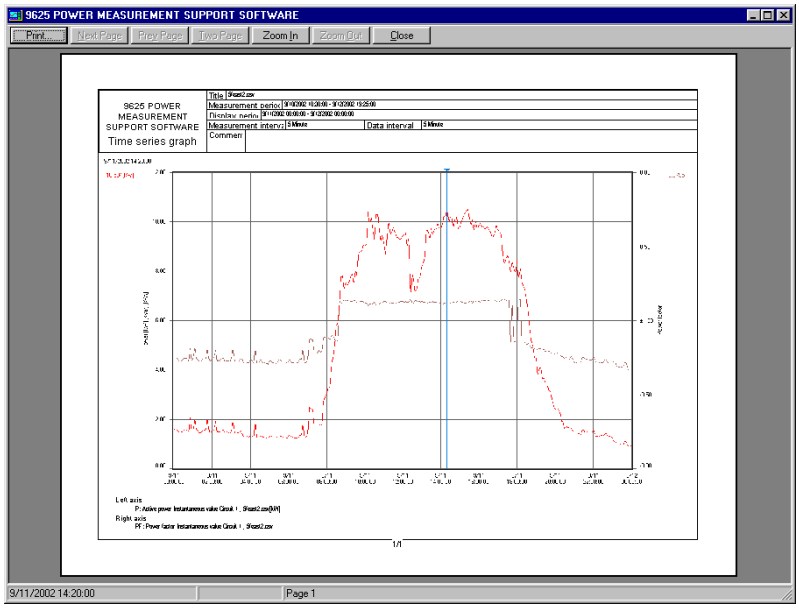
Set the printer, paper, and page orientation. Select **File - Printer settings** on the menu bar. The Printer Settings dialog will appear.



Either color or monochrome printing can be selected. To print in monochrome, check the B/W PRINT box.

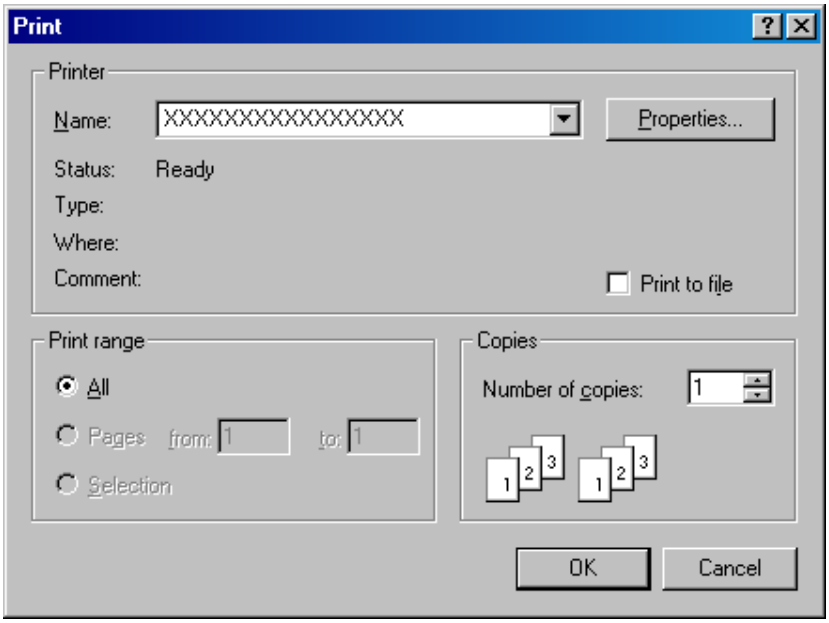
4. Display Print Preview

Click the Print preview button  or select **File - Print preview** on the menu bar. The print preview will appear. Check the preview.



5. Print

Click the Print button or select **File - Print** on the menu bar. The Print dialog will appear.



After confirming printer settings, click OK to start printing.

NOTE
Some colors selected on the screen might not be printed in monochrome.

HIOKI 9625 POWER MEASUREMENT SUPPORT SOFTWARE
Instruction Manual

Publication date: June 2006 Revised edition 1

Edited and published by HIOKI E.E. CORPORATION
Technical Support Section

All inquiries to International Sales and Marketing Department
81 Koizumi, Ueda, Nagano, 386-1192, Japan
TEL: +81-268-28-0562 / FAX: +81-268-28-0568
E-mail: os-com@hioki.co.jp
URL http://www.hioki.co.jp/

Printed in Japan 9625A981-01

HIOKI

HIOKI E. E. CORPORATION

HEAD OFFICE
81 Koizumi, Ueda, Nagano 386-1192, Japan
TEL +81-268-28-0562 / FAX +81-268-28-0568
E-mail: os-com@hioki.co.jp / URL http://www.hioki.co.jp/

HIOKI USA CORPORATION
6 Corporate Drive, Cranbury, NJ 08512, USA
TEL +1-609-409-9109 / FAX +1-609-409-9108

9625A981-01 06-06H

Printed on recycled paper