



# HIOKI

2003

## 9625

# POWER MEASUREMENT SUPPORT SOFTWARE

Power Measuring Instruments



## Graphically process measurement data from Model 3169-20/21 easily on a PC!

The Model 9625 POWER MEASUREMENT SUPPORT SOFTWARE application provides easy graphical processing on a computer of measurement data saved on the Models 3169-20/21 and 3166 CLAMP ON POWER HiTESTERS.

3169-20/21



3166



Power Data & Harmonic Data

Power Data & Harmonic Data



The 9625 handles both power and harmonic measurement data simultaneously.

## Features

### ■ Time Series Graph Display Function

Measurement data can be displayed as a time series graph. Demand data measured in different series can be overlaid on the display.

### ■ Summary Display Function

Measurement data can be displayed directly in table form.

### ■ Daily, Weekly and Monthly Report Display Function

Daily, weekly and monthly reports of demand data can be displayed.

### ■ Harmonic Analysis Function

Display harmonic measurement data as a graph, list or waveform. (Also compatible with the harmonic measurement data captured by Model 3166.)

### ■ Print Function

Each screen can be printed.



ISO14001  
JQA-E-90091



<http://www.hioki.co.jp/>

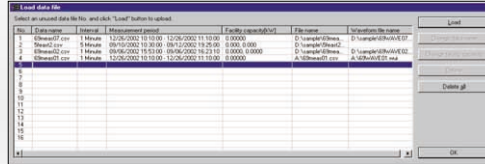
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## Easily display and print various screens such as graphs and spreadsheet tables

### Step 1. Load measurement data

Load up to 16 data sets from the 3169-20/21 or 3166 at once. Measured numerical values and waveform data are recognized and displayed automatically.

1. Loading and deleting data, and changing data names, can be done easily.
2. Multiple sets of measurement data can be loaded and managed in a single file.



### Step 2. Select the display (screen) type

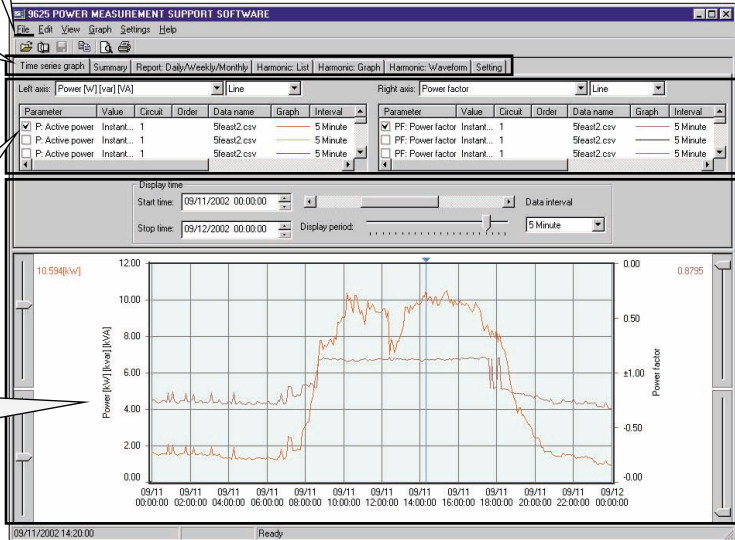
Select from time series graph, summary, daily, weekly or monthly report, harmonic list, harmonic graph, harmonic waveform or settings.

### Step 3. Select display items (two-axis display is possible)

1. Select the data items (up to 16) to display.  
For graph displays, the type of graph (line or bar) can be selected.
2. Enter details for data display. (data item names, levels, etc.)

### Step 4. Set the start/stop times and data interval to be displayed

1. Set the data period to display. (start/stop time and data interval)
  - The displayed period can be easily changed by scrolling.

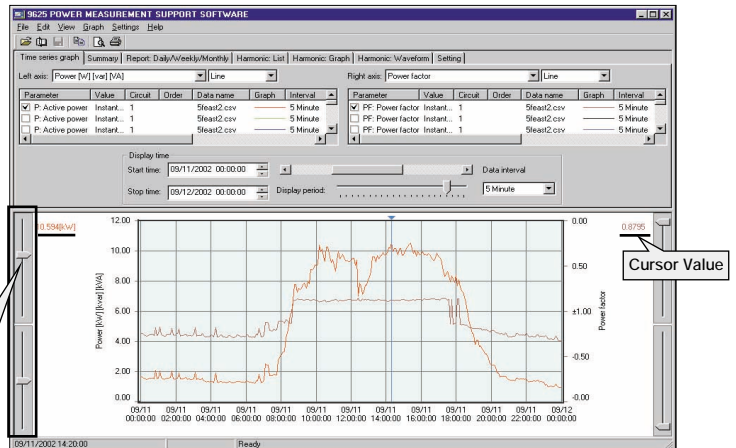


### Time Series Graph Display Function (two-axes display possible)

The displayed graph can be set to suit particular start/stop times and data intervals. Harmonic time series graphs can be displayed.

#### Convenient Functions

- (1) The horizontal (time) axis can be easily scrolled to show the desired range.
- (2) Upper and lower limits (measurement values) of the vertical axis can be easily set and changed.  
\* Graph type (line, bar or stacked bar), line type (such as solid or dashed), color and details of upper and lower numerical values can be set.
- (3) Any desired numerical data value on a graph can be confirmed and displayed by cursor movement.
- (4) The display can be switched between 2D and 3D graphs.



### Summary Display Function

#### Summary

Displays a summary of the data values between specified start/stop times, at the specified data interval.

#### Convenient Functions

- (1) In addition to measurement values within the period being displayed, the summary shows period, maximum, minimum and average values.
- (2) Measurement data names and measurement units can be edited in the summary.

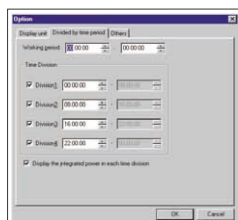
Date	Time	U1 Voltage CH1 Instantaneous value Steady2.csv [V]	U2 Voltage CH2 Instantaneous value Steady2.csv [V]	I1 Current CH1 Instantaneous value Steady2.csv [A]	I2 Current CH2 Instantaneous value Steady2.csv [A]	P Active power Instantaneous value Circuit 1 [W]	PF Power factor Instantaneous value Circuit 1
	Average value	103.47	103.91	25.01	30.76	4.699	0.930
	Maximum value	106.10	106.45	59.09	62.74	10.994	0.899
	Time of maximum value	09/11/2002 07:05:00	09/11/2002 07:11:00	09/11/2002 10:30:00	09/11/2002 10:30:00	14.200	09/11/2002 10:10:00
	Minimum value	100.50	101.17	2.39	10.46	0.914	0.900
	Time of minimum value	09/11/2002 13:10:00	09/11/2002 13:10:00	09/11/2002 22:35:00	09/12/2002 00:00:00	08.150	09/11/2002 08:15:00
09/11/2002	00:00:00	103.99	104.34	8.34	11.97	1.581	0.745
	00:05:00	103.97	103.97	8.98	12.24	1.626	0.747
	00:10:00	104.20	104.20	7.93	11.85	1.526	0.745
	00:15:00	104.16	104.16	8.36	11.24	1.482	0.725
	00:20:00	104.95	104.95	8.28	11.11	1.475	0.729
	00:25:00	106.33	106.33	8.18	11.25	1.506	0.734
	00:30:00	104.42	104.42	8.24	11.76	1.560	0.748
	00:35:00	104.48	104.48	8.17	11.51	1.536	0.745

### Daily, Weekly or Monthly Report Display

Displays a summary covering the total values in daily, weekly or monthly reports.

#### Convenient Functions

- (1) The time axis for each total scrolls to easily change the totalized period.
- (2) The total time range of measurement data can be totalized in up to four sections per time period.



Division	Date	Time	P DEM Demand active power (consumption) Circuit 1 Steady2.csv [W]	P DEM Demand active power (consumption) Circuit 2 Steady2.csv [W]	PF DEM Demand power factor Circuit 1 Steady2.csv	Sum of P DEM Demand value of active power (consumption) [W]
4	09/11/2002	23:00:00	1.261	0.090	0.722	1.441
		23:30:00	1.051	0.090	0.708	1.141
		24:00:00	24.000	0.984	0.688	1.137
Total			116.860	14.262		131.29
Average			4.874	0.616		5.43
Maximum demand			10.267	1.471		
Time of maximum demand			09/11/2002 15:30:00	09/11/2002 13:30:00		
Load factor			47.48	41.89		
Demand factor			70.67	14.71		
Facility capacity			10.000	10.000		
Time division(00:00:00 - 08:00:00)			12.756	0.724		13.10
Time division(08:00:00 - 16:00:00)			70.669	9.966		80.93
Time division(16:00:00 - 22:00:00)			31.679	3.942		36.46
Time division(22:00:00 - 00:00:00)			2.828	0.269		2.69

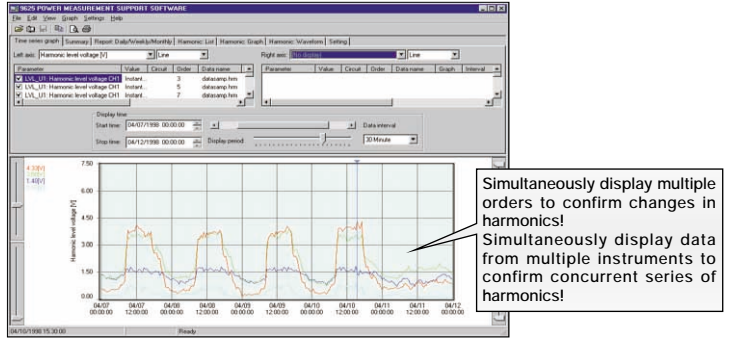
**Harmonic Display Function** Harmonic data measured by the 3169-20/21 and 3166 can be displayed in various ways

**Harmonic Time Series Display**

While displaying a time series graph, select the harmonic item for the vertical axis to display a time series graph of harmonics.

**Convenient Functions**

- (1) Up to 32 graphs can be displayed simultaneously using 2-axes display.  
For one circuit measurement, up to 32 orders can be graphed. Using multiple instruments, time series of harmonics can be easily compared.
- (2) Any desired chronological detail can be easily confirmed using the cursors on the graph.



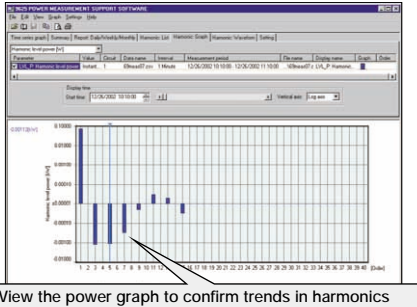
**Harmonic List Display**

Displays harmonic data for the selected display item as a list.

Order	Amplitude	Phase	THD	Distortion
1	1.0000	0.0000	0.0000	0.0000
2	0.1500	90.0000	0.0150	0.0150
3	0.0800	180.0000	0.0080	0.0080
4	0.0500	270.0000	0.0050	0.0050
5	0.0300	0.0000	0.0030	0.0030
6	0.0200	90.0000	0.0020	0.0020
7	0.0150	180.0000	0.0015	0.0015
8	0.0100	270.0000	0.0010	0.0010
9	0.0080	0.0000	0.0008	0.0008
10	0.0060	90.0000	0.0006	0.0006
11	0.0050	180.0000	0.0005	0.0005
12	0.0040	270.0000	0.0004	0.0004
13	0.0030	0.0000	0.0003	0.0003
14	0.0020	90.0000	0.0002	0.0002
15	0.0015	180.0000	0.00015	0.00015
16	0.0010	270.0000	0.0001	0.0001
17	0.0008	0.0000	0.00008	0.00008
18	0.0006	90.0000	0.00006	0.00006
19	0.0005	180.0000	0.00005	0.00005
20	0.0004	270.0000	0.00004	0.00004
21	0.0003	0.0000	0.00003	0.00003
22	0.0002	90.0000	0.00002	0.00002
23	0.00015	180.0000	0.000015	0.000015
24	0.0001	270.0000	0.00001	0.00001
25	0.00008	0.0000	0.000008	0.000008
26	0.00006	90.0000	0.000006	0.000006
27	0.00005	180.0000	0.000005	0.000005
28	0.00004	270.0000	0.000004	0.000004
29	0.00003	0.0000	0.000003	0.000003
30	0.00002	90.0000	0.000002	0.000002
31	0.000015	180.0000	0.0000015	0.0000015
32	0.00001	270.0000	0.000001	0.000001

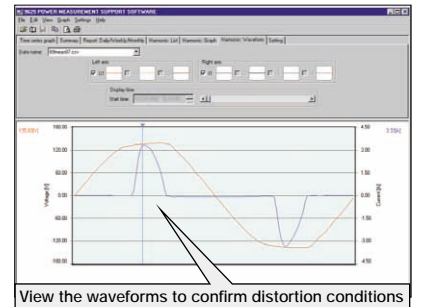
**Harmonic Graph Display**

Displays harmonic data for the selected display item as a bar graph.



**Harmonic Waveform Display**

Displays the voltage and current waveforms upon which harmonic data is based.



**Settings Display Function**

When you select a data name to be load, the measuring instrument model and setting conditions at measurement time are displayed. Measurement data and measurement conditions can be managed at the same time.

Parameter	Setting
Model number	3169
Version	Ver1.02
ID number	001
Wiring	1P3W/
Number of circuits	2
Voltage range	150V
VT ratio	1.00
Current range	Circuit 1: 100A Circuit 2: 100A
CT ratio	Circuit 1: 1.00 Circuit 2: 1.00
Reactive power meter method	OFF
Sampling	PLL
PLL source	UT
Measurement line frequency	50Hz
Measurement interval	5 Minute
Measurement start time	09/10/2002 10:30:00
Measurement stop time	09/12/2002 19:25:00

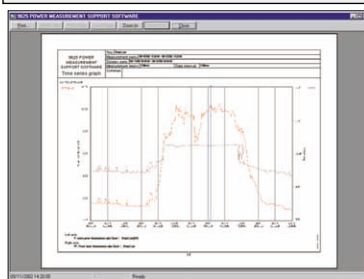
**Print Function**

Reports and screen copies of the displayed screen can be easily printed.

**Convenient Functions**

- (1) Printing results can be confirmed by print preview.
- (2) When creating a report, screen data can be copied and pasted into a commercial word processor program.

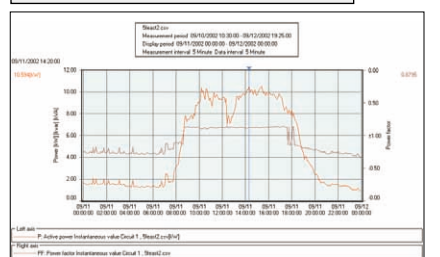
Preview printing to confirm print results before printing



Produce daily, weekly or monthly reports by one-touch report printing

Date	Time	Value 1	Value 2	Value 3	Value 4
09/10/2002	10:30:00	1.0000	0.1500	0.0800	0.0500
09/11/2002	10:30:00	1.0000	0.1500	0.0800	0.0500
09/12/2002	10:30:00	1.0000	0.1500	0.0800	0.0500

Graph copying is also a one-touch operation



**9625 Specifications**

**General Specifications**

Supported instrument models : 3169-20, 3169-21 and 3166 (CLAMP ON POWER HiTESTERS)  
 Operating environment : Computer: PC-AT compatible (DOS/V machine)  
 CPU: Pentium 200 MHz or higher  
 Memory: 128 MB or more (recommended)  
 Hard disk: 128 MB or more free space  
 Display: XGA (1024x768) or higher  
 Disc device: CD-ROM drive (for installation)  
 Operating system: Windows95/98, NT4.0, 2000, Me, XP (English edition)  
 Internet Explorer 4.0 or later

Supplied Media : One CD-R disc

## ■ 9625 Specifications

### ■ Functional Specifications

#### [Data Load/Save Functions]

	Loading data	File extension	Data format	Data contents
3169-20/21	Data file	CSV	CSV	Instantaneous value, average value, maximum value, minimum value, integrated value, demand value, harmonic
	Waveform data file	WUI	Binary	Instantaneous waveform
	Short-interval data file	BIN	Binary	Instantaneous values
3166	Integrated measurement data file	ITG	CSV	Instantaneous value, integrated value
	Demand measurement data file	DEM	CSV	Instantaneous value, maximum value, minimum value, demand value
	Harmonic measurement data file	HRM	CSV	Instantaneous value, average value, maximum value
	Waveform data file	WUI	Binary	Instantaneous waveform
	Setting file	SET	-	
9625	Combined file	DAT	Binary	

	Save data	File extension	Data format	
9625	Combined file	DAT	Binary	

Maximum data capacity : Up to 528 MB per data set (total composite data up to 1.5 GB)

#### [Time Series Graph Display Function]

Graph display item : Voltage, current, active power, reactive power, apparent power, power factor, frequency, Integrated value(active power, reactive power), demand, harmonic (level, content ratio, phase angle, total value, THD)

Y-axis upper/lower limit setting : The display position (upper and lower display limits) of the vertical (Y) axis of a graph can be set by scroll bar or by specifying values.

Interval setting : Select each cycle, or 0.1, 0.2, 0.5, 1, 2, 5, 10, 15 or 30 sec.; 1, 2, 5, 10, 15 or 30 min.; or 1, 2, 3, 4, 6, 8 or 12 h; or 1 day

Display period range setting : An optional analysis period can be specified from the overall measurement data period

(1) Analysis start date and time (YMD, HMS) is specified numerically  
(2) Analysis stop date and time (YMD, HMS) is specified numerically  
Display of measurement data period (measurement start and stop date and time)

Reference value setting : Display set standard value

Graph type selection : Line, bar, 2-axes and 3-dimensional

Graph line type & color setting : Line type and display color can be set for each data set, and marker display is possible

Stacked bar graph display : Up to 16 types of data series (demand value, demand quantity) can be displayed in an overlay graph

Cursor measurement : Measurement values can be displayed by the cursor

Data display units setting : Engineering units (m, k, M, G, etc.) can be selected

#### [Summary Display Function]

Display item selection : Select the items to display in the summary

Daily, weekly and monthly report display : Displays a report for the specified daily weekly or monthly period

Load factor calculation display : Calculates the load factor and demand factor as a daily, weekly or monthly report, and displays the results

Independent time range totalizing : Specify up to four time ranges and totalize data for each time range independently

#### [Harmonic Display Function]

Waveform display : Displays waveform data for a specified time

List display : Displays a list of harmonic data for a specified time

Graph display : Display a bar graph of harmonic data for a specified time

Cursor measurement : Displays the value at the cursor with waveform and graph displays

#### [Setting Display Function]

Setting display : Displays a list of the setting conditions

Loads setting conditions from a data file (3169-20/21)

Loads setting conditions from a settings file (3166)

#### [Copy Function]

Copies to the clipboard : Each display can be copied to the clipboard

#### [Print Function]

Printing a displayed time series graph : Previews and prints the contents displayed on a time series graph

Printing a displayed summary : Previews and prints the contents displayed in a summary

Printing a harmonic display : Previews and prints the contents displayed in a harmonic spreadsheet

Printing the settings display : Previews and prints the contents displayed in the settings display

Comment entry : Text comments can be entered in any printout

Printing support : Any color or monochrome printing supported by the operating system

#### [Display Language]

Language : English

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