

This user's manual explains how to operate the Power Consumption Measurement Software.

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System Requirements

PC

- **CPU**
Pentium 4 1.5 GHz or higher (recommended)
- **Memory**
512 MB or more (recommended)
- **HDD**
500 MB or more of free space

Operating System

An English version of Microsoft Windows: Windows XP, Windows Vista, or Windows 7

Communication Port

- **GP-IB**
N.I. (National Instruments) PCIe-GPIB, PCI-GPIB, PCI-GPIB+, PCMCIA-GPIB, or PCMCIA-GPIB+ with driver NI-488.2 version 1.60 or later (however, version 2.3 is not supported)
- **RS-232**
An available COM port on the PC
- **Ethernet**
10BASE-T or 100BASE-TX Ethernet port
- **USB**
A USB revision 1.1 or later USB port

Display, Printer, and Mouse

Devices supported by the operating systems listed above

Applicable Measuring Instruments

This software can be used with the Yokogawa measuring instruments listed below. This user's manual describes the case in which this software is used in combination with the WT. For information about the handling precautions, functions, and operating procedures of each WT, see the respective manuals.

Model	Model Code	Supported WT Series Version	Current Input Type	Direct Input Measurement	Input Slot That This Software Can Use	External Input Measurement	Communication Device			
							GP-IB	RS-232	Ethernet	USB
WT210 ⁴	760401	Ver. 1.01 or later	1 type	Yes	Input slot 1 (channel 1) only	No	Yes (opt.)	Yes (opt.)	-	-
WT310	WT310	Ver. 4.01 or later	1 type	Yes	Input slot 1 (channel 1) only	No	Yes (select GP-IB or RS-232 ⁵)		Yes (opt.)	Yes(st'd)
WT500	760201 760202 760203	Ver. 1.01 or later	1 type	Yes ²	Input slot 1 (channel 1) only	Yes (opt, special model) ¹	Yes (opt.)	-	Yes (opt.)	Yes(st'd)
WT1600	760101	Ver. 2.01 or later	5 A input element	Yes	Input slot 1 (channel 1) only	No	Yes (select GP-IB or RS-232)		Yes (opt.)	-
			50 A input element	Yes ³						
			5 A/5 A input element	Yes (5 A)						
WT1800	WT1801 WT1802 WT1803 WT1804 WT1805 WT1806	Ver. 3.01 or later	5 A input element	Yes	Input slot 1 (channel 1) only	No	Yes	-	Yes	Yes
			50 A input element	Yes ³						
			5 A/5 A input element	Yes (5 A)						
WT3000	760301 760302 760303 760304	Ver. 1.01 or later	2 A input element	Yes	Input slot 1 (channel 1) only	No	Yes(st'd)	Yes (opt.)	Yes (opt.)	Yes (opt.)
			30 A input element	Yes ²						
			2 A/30 A mixed input element (special model)	Yes (2 A)						

1 You can perform this measurement by using a low current measurement box together with the WT.

2 The minimum range is 500 mA. Minute currents cannot be measured.

3 The minimum range is 1 A. Minute currents cannot be measured.

4 This product supports WT210 firmware version 1.10 or later.

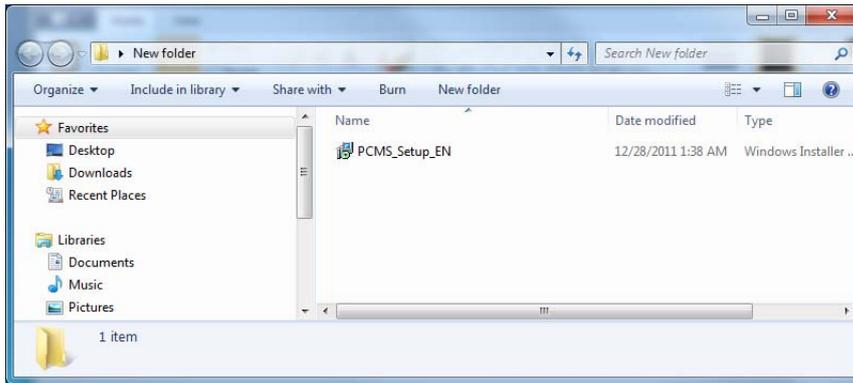
5 WT310 RS-232 is not supported.

Explanation of Functions

Item	Explanation
Communications with WT series	Select the communication method, and click OK to start communicating with the target WT. You can use the software to set the measurement conditions on the WT.
Measurement of power data defined in IEC62301	This software can be used to measure total harmonic distortion (THD), crest factor (voltage), voltage, frequency, power variation (from the maximum power value observed), and accumulated energy. In addition, while they are not required values, the apparent power, power factor and crest factor (current) are also measured as reference values.
Report entry	Information other than measured values (for example, information about the product) must also be included in reports. You can enter this other information.
Report preview	You can see a preview of the report that will be generated.
PDF output	You can print reports as PDF files.
Saving application settings	You can save the application settings (for example, the IP address) to text files.

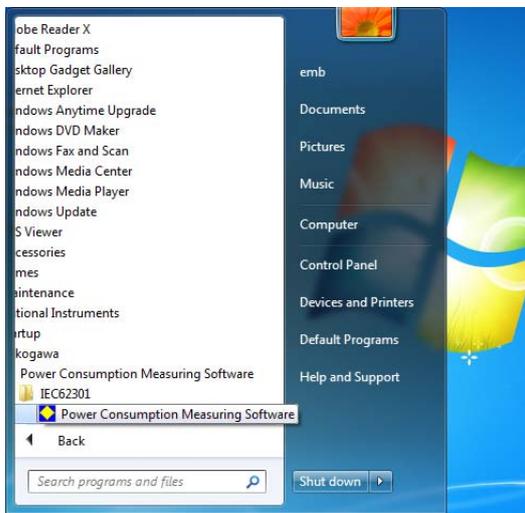
Installing the Software

Double-click "PCMS_Setup_EN.msi" in the folder that you downloaded.



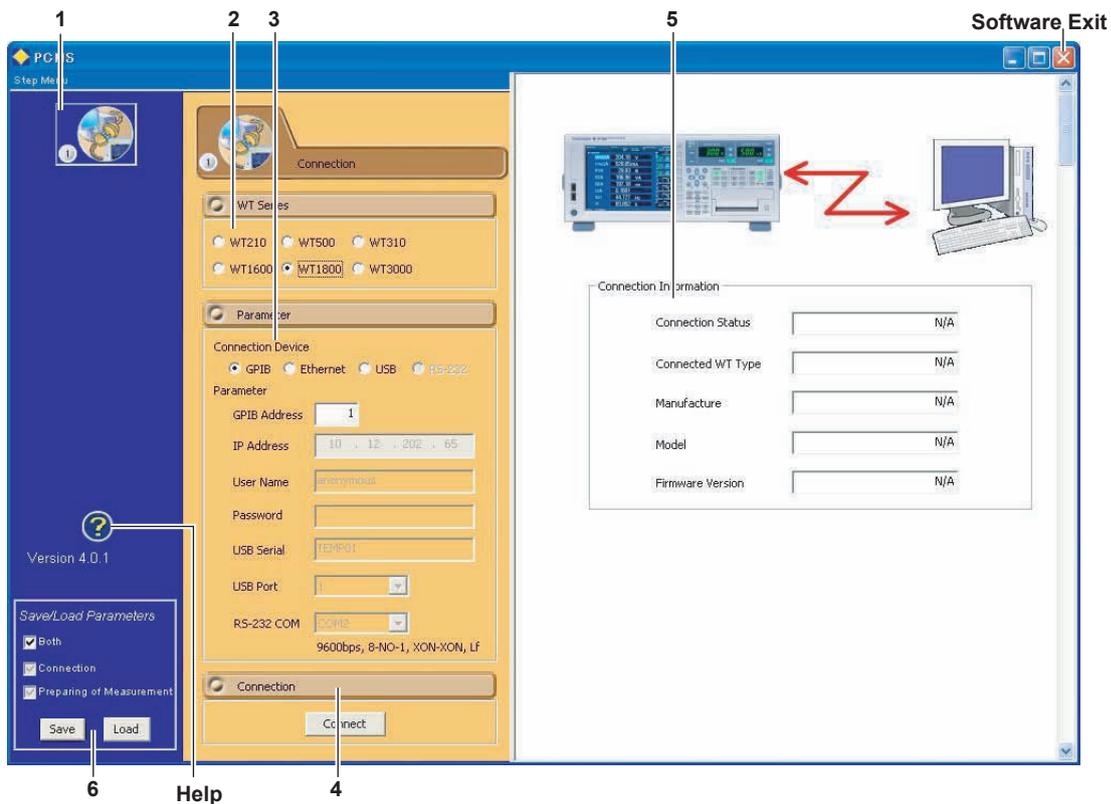
Starting the Software

On the taskbar, click Start, and then click the programs as shown below.



Establishing a Connection

Configuring and Establishing a New Connection between the PC and a WT



1 Click the connection icon.

2 Select the power analyzer.

Supported models:

- WT3000
- WT1800
- WT1600
- WT500
- WT310
- WT210

3 Select the communication interface. Selectable interfaces:

- WT3000 (GP-IB, Ethernet, RS232, and USB*)
- WT1800 (GP-IB, Ethernet, and USB*)
- WT1600 (GP-IB, Ethernet, and RS232)
- WT500 (GP-IB, Ethernet, and USB*)
- WT310 (GP-IB, Ethernet, and USB*)
- WT210 (GPIB and RS232**)

* This requires you to first install a USB driver. (Download the driver from the following URL.)
<https://y-link.yokogawa.com/YL007.po/>

** When you are using the RS232 interface, configure the WT settings as shown below.

- Mode: 488.2
- Handshaking: hand1
- Format: For 0
- Terminator: Lf
- Baud rate: 9600 bps

For details on the communication interface settings, see the power analyzer manual.

-
- 4 Click "Connect" to establish a connection between the PC and the WT.

Note

- The configuration and measurement operations described later in this manual can be performed once the software has automatically determined that communication is possible.
The power analyzer settings are changed so that they can be used with this application software. We recommend that you save the settings before you start the application software.
* An error message will appear if you attempt to connect to an unsupported model.
-

- 5 If the connection is established successfully, the power analyzer's information is displayed on the Connection Information screen.

- 6 See the next page.

Saving Setting

With this application, you can save setup information (such as the IP address) to a file. If you want to reuse the settings that you have configured, you can save and load them by using the controls in the lower left of the screen.



Procedure

1. Select the Both check box, Connection check box, or Measurement Preparation check box
 - Select Connection to save or load the information on the connection screen.
 - Select Measurement Preparation to save or load the information that you have to configure on the setup screen before measurement (see "Settings" on page 7).
 - Select Both to save or load both of the above sets of information.
2. Click Save to save the settings. Click Load to load settings. In either case, a dialog box for specifying the file to save or load (the file extension is .lot6) will be displayed.

Note

If you cannot perform save and load operations.

- To prevent software application malfunctions, you cannot perform save and load operations when measurements are in progress.
- You cannot perform load the connection parameter while connecting to the WT.

Files to which settings have been saved

- Do not set the file as a read-only file. The application software cannot access read-only files.
- If a setup file is lost, you will no longer be able to load the settings that it contained. Be sure to back up all important settings.

Saving Settings Automatically

Different from the features described above, this application software has a feature for automatically saving settings. Settings are saved when you exit the application and are loaded when the application starts again.

Automatically Saved File

PCMS.lot6 file is automatically saved at sub-folder of "Application Data" folder.

Note

Do not edit the PCMS.lot6 file directly. Doing so may cause the application software to malfunction. If you connect to a WT that is different than the one that you had previously connected to, the application software may not be able to load the current range

Settings

Set the rated voltage and frequency as well as the measurement mode, all of which are defined in IEC62301. Enter appliance details.

1 Select Preparing for Measurement display.

2 Select the region.

Options

- Europe, NorthAmerica, Japan (East), Japan (West), China, Australia and NewZealand, and Custom
When you select Custom, you can set the voltage and frequency

3 Set the standard.

Options

- IEC62301 Ed. 1
The software stops measuring when the measurement period (Period) elapses. Stability judgment is not performed.
- IEC62301 Ed. 2 (Auto)
Using the algorithm defined in IEC62301, the software performs stability judgments every 10 seconds and stops measuring when stability is reached. If stability is not reached in three hours, the software stops measuring at that point.
- IEC62301 Ed. 2 (Manual)
The software stops measuring when the measurement period (Period) or “cycle period × 10,” whichever is shorter, elapses. Stability judgment is not performed.

4 Set the measurement time.

When the standard is IEC62301 Ed. 1

Until the measurement period elapses, the software measures data that corresponds to the measurement modes (Stable and Unstable) defined in IEC62301.

The data for each measurement mode is included in the report.

You can set the measurement period to a value between 00:05:00 and 50:59:59.

Regardless of the measurement data, the software measures the data for the Stable and Unstable measurement modes.

- Stable

This mode measures the data that is used to judge whether the DUT meets the stable condition.*The measured result is included in the report next to “Power variation.”

- Unstable

This mode is for measuring the DUT under unstable conditions.

The measured result—the average power—is determined from the accumulated energy during measurement and is included in the report next to “Accumulated energy.”

- * Stable status condition

A variation of less than 5% (from the maximum value observed) in the measured power over 5 minute.

When the standard is IEC62301 Ed. 2 (Manual)

The software compares the measurement period with “cycle period × 10,” and stops measuring when the shorter of the two elapses.

You can set the measurement period to a value between 00:05:00 and 50:59:59.

5 Set the cycle period.

When the standard is IEC62301 Ed. 2 (Auto)

Set the cycle period as one of the conditions that is used to judge stability.

You can set the cycle period to a value between 00:01:00 and 01:59:50 in 10 seconds steps.

When the standard is IEC62301 Ed. 2 (Manual)

The software compares the measurement period with “cycle period × 10,” and stops measuring when the shorter of the two elapses.

You can set the cycle period to a value between 00:01:00 and 01:59:50 in 10 seconds steps.

6 Select the algorithms to enable.

Specify which stability judgment algorithms to enable. When Standard is set to IEC62301 Ed.2(Auto), the software uses the enabled algorithms to perform the stability judgment once every 10 seconds. The software stops measuring when one algorithm returns a positive stability judgment result. If you disable all the algorithms, the software will not be able to start measuring.

LR (Linear Regression)

This algorithm is valid for a period of 15 to 180 minutes after measuring starts.

It performs the judgment by excluding the measured data from the first third of the period.

The algorithm calculates the linear regression that approximates the measured power data and judges the device to be stable when the slope is smaller than the value defined by the standard.

CA (Cumulative Average)

This algorithm is valid for a period from the point 60 minutes after measuring starts.

It performs the judgment by excluding the measured data from the first third of the period.

This algorithm calculates the cumulative averages of the measured power data and judges the device to be stable when their maximum and minimum values are within the range defined by the standard, which uses the arithmetic mean as its reference.

SP1 (Section Compare (Power) 1)

This algorithm is valid for a given period from the point "10 minutes + 2 x cycle time x N" after measuring starts. "Cycle time x N" must be longer than 10 minutes, where N is an integer larger than 2.

It performs the judgment by excluding the measured data from the first 10 minutes of the period.

This algorithm splits the effective period into two periods, and then calculates the arithmetic means of the measured powers in each period. It uses the arithmetic means to calculate the rate of change of the power. The algorithm judges the device to be stable when the rate of change is smaller than the value defined by the standard.

SP2 (Section Compare (Power) 2)

This algorithm is valid for a period of 50 to 90 minutes after measuring starts.

It performs the judgment by excluding the measured data from the first 30 minutes of the period.

This algorithm splits the effective period into two periods, and then calculates the arithmetic means of the measured powers in each period. It uses the arithmetic means to calculate the rate of change of the power. The algorithm judges the device to be stable when the rate of change is smaller than the value defined by the standard.

SAE (Section Compare (Accumulated Energy))

This algorithm is valid for a period of 50 to 90 minutes after measuring starts.

It performs the judgment by excluding the measured data from the first 30 minutes of the period.

This algorithm splits the effective period into two periods, and then uses the measured integrated powers at the center points in each period to calculate the rate of change of the power. The algorithm judges the device to be stable when the rate of change is smaller than the value defined by the standard.

7 Select the crest factor.

The options are 3 and 6.

The current range options will change depending on the selected crest factor.

8 Select the current range.

Select appropriate current range from the menu. Auto range can not be used.

9 Enter report comments.

Refers to next page.

Settings (Report)

Text Entry (IEC62301Ed.1)

The details that have been entered in the dialog box are included in the report as shown below.

You can select which items are included in the report. By removing unnecessary items, you can simplify the report (see page 10).

Character codes other than ASCII are not supported.

The screenshot shows the 'Report Edit' dialog box with the following sections and fields:

- Appliance details:**
 - Brand:
 - Type:
 - Model:
 - Serial:
 - Product description, as appropriate
This is "Product"
 - Details of manufacture marked on the product (if any)
This is "Details"
- Test Parameters:**
 - Ambient temperature: degree
 - Information and documentation on the instrumentation
This is "Information"
- Test and laboratory details:**
 - Test Report No./reference:
 - Laboratory name and address
This is "Laboratory"
 - Test Officer
This is "Test Officer"
- Measure data, for each mode as applicable:**
 - Detail Measured Data
 Description of how the appliance mode was selected or programmed
This is "Description"
 - Any notes regarding the operation of the appliance (equipment)
This is "Any notes"
- Remarks column:**
 - Remarks column
This is "Remarks column"

Buttons: OK, Cancel

You can use the Report Preview to view the information that you have entered. See the next page for the format that this information is displayed in.

IEC 62301 Test Report

IEC62301 First Edition compliance

Appliance(equipment) Details

<Product description>
This is "Product..."
<Details of manufacture marked on the product>
This is "Details..."

Item	Appliance	Equipment
Brand	Appliance Brand	YOKOGAWA
Model	Appliance Model	WT1806-60
Type	Appliance Type	Firmware Ver.F2.00-X07
Serial Number	Appliance Serial	91KC22206
Rated voltage / frequency	100 V / 50 Hz	-
Voltage Range	-	100V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
This is "Information..."

Item	Data
THD *(Upper Limit)	1.960 % (2.000 %)
Crest Factor *(Range)	1.390 - 1.410 (1.34 - 1.49)
Ambient temperature	23.3 degree
Test voltage / frequency	103.900 V / 49.970 Hz

Measured data, for each mode as applicable

<Description of how the appliance mode>
This is "Description..."
<Any notes regarding the operation>
This is "Any notes..."

<u>Stable Measurement</u>		<i>period (00 :05 :00)</i>
Item	Data	
Power variation *(Upper Limit)	7.692 % (5.000 %)	
Max Power Value	2.470 W	
Last Power Value	2.370 W	

<u>Unstable load Measurement</u>		<i>period (00 :05 :00)</i>
Item	Data	
Accumulated energy	0.198 Wh	
Average Power	2.374 W	

Detail Measured data

Item	Data
Apparent Power	4.740 VA
Real Power Factor	0.501

Test and laboratory details

<Laboratory name and address>
This is "Laboratory..."
<Test officer(s)>
This is "Test Officer"

Item	Data
Test report No./reference	This is "..."
Date of test	12 / 12 / 2011 13:00

Remarks column

This is "Remarks column"

Selecting Which Items Are Included in the Report (IEC62301Ed.1)

By selecting and clearing the check boxes in the dialog box, you can specify which items are displayed in the report. An example of a report that is generated when all check boxes are cleared is shown below.

IEC 62301 Test Report

IEC62301 First Edition compliance

Appliance(equipment) Details

Item	Appliance	Equipment
Brand	Appliance Brand	YOKOGAWA
Model	Appliance Model	WT1806-60
Type	Appliance Type	Firmware Ver.F2.00-X07
Serial Number	Appliance Serial	91KC22206
Rated voltage / frequency	100 V / 50 Hz	-
Voltage Range	-	100V
Current Range	-	100mA

Test Parameters

Item	Data
THD *(Upper Limit)	1.960 % (2.000 %)
Crest Factor *(Range)	1.390 - 1.410 (1.34 - 1.49)
Ambient temperature	23.3 degree
Test voltage / frequency	103.900 V / 49.970 Hz

Measured data, for each mode as applicable

Stable Measurement *period (00 :05 :00)*

Item	Data
Power variation *(Upper Limit)	7.692 % (5.000 %)
Max Power Value	2.470 W
Last Power Value	2.370 W

Unstable load Measurement *period (00 :05 :00)*

Item	Data
Accumulated energy	0.198 Wh
Average Power	2.374 W

Test and laboratory details

Item	Data
Test report No./reference	This is "..."
Date of test	12 / 12 / 2011 13:00

Text Entry (IEC62301Ed2)

The details that have been entered in the dialog box are included in the report as shown below.

You can select which items are included in the report. By removing unnecessary items, you can simplify the report (see page 10).

Character codes other than ASCII are not supported.

The screenshot shows the 'Report Edit' dialog box with the following sections and fields:

- Appliance details:**
 - Brand: N/A
 - Type: N/A
 - Model: N/A
 - Serial: N/A
 - Product description, as appropriate: N/A
 - Details of manufacture marked on the product (if any): N/A
 - Name of mode: N/A
 - Mode category: Low power mode (Off mode)
- Test Parameters:**
 - Ambient temperature: [] degree
 - Other Ambient Information: N/A
 - Information and documentation on the instrumentation: N/A
- Test and laboratory details:**
 - Test Report No./reference: N/A
 - Applicant name and address: N/A
 - Laboratory name and address: N/A
 - Test Officer: N/A
 - Approver: N/A
- Measure data, for each mode as applicable:**
 - Detail Measured Data: N/A
 - If applicable, technical justification of inappropriateness for intended use: N/A
 - Any notes regarding the operation of the appliance (equipment): N/A
- Remarks column:**
 - Remarks column: N/A

Buttons: OK, Cancel

You can use the Report Preview to view the information that you have entered. See the next page for the format that this information is displayed in.

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
This is "Product..."
<Details of manufacture marked on the product>
This is "Details..."

Item	Appliance	Equipment
Brand	Appliance Brand	YOKOGAWA
Model	Appliance Model	WT1806-60
Type	Appliance Type	Firmware Ver.F2.00-X07
Serial Number	Appliance Serial	91KC22206
Rated voltage / frequency	100 V / 50 Hz	-
Voltage Range	-	100V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
This is "Information..."

Item	Data
Name of mode	N/A
Mode category	Low power mode(Off mode)
Cycle period	00:05:00
THD *(Upper Limit)	1.960 % (2.000 %)
Crest Factor *(Range)	1.390 - 1.410 (1.34 - 1.49)
Ambient temperature	23.3 degree
Other Ambient conditions	N/A
Test voltage / frequency	103.900 V / 49.970 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
This is "Any notes..."

Measured data

Item	Data
Measurement period	00:05:00 (Measure Period)
Power variation *(Upper Limit)	7.692 % (5.000 %)
Max Power Value	2.470 W
Last Power Value	2.370 W
Accumulated energy	0.198 Wh
Average Power	2.374 W

Detail Measured data

Item	Data
Apparent Power	4.740 VA
Real Power Factor	0.501

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
This is "Laboratory..."
<Test officer(s)>
This is "Test Officer"
<Approver>
N/A

Item	Data
Test report No./reference	This is "..."
Date of test	12 / 12 / 2011 13:00

Remarks column

This is "Remarks column"

Selecting Which Items Are Included in the Report (IEC62301Ed.2)

By selecting and clearing the check boxes in the dialog box, you can specify which items are displayed in the report. An example of a report that is generated when all check boxes are cleared is shown below.

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

Item	Appliance	Equipment
Brand	Appliance Brand	YOKOGAWA
Model	Appliance Model	WT1806-60
Type	Appliance Type	Firmware Ver.F2.00-X07
Serial Number	Appliance Serial	91KC22206
Rated voltage / frequency	100 V / 50 Hz	-
Voltage Range	-	100V
Current Range	-	100mA

Test Parameters

Item	Data
Name of mode	N/A
Mode category	Low power mode(Off mode)
Cycle period	00:05:00
THD *(Upper Limit)	1.960 % (2.000 %)
Crest Factor *(Range)	1.390 - 1.410 (1.34 - 1.49)
Ambient temperature	23.3 degree
Test voltage / frequency	103.900 V / 49.970 Hz

Measured data, for each mode as applicable

Measured data

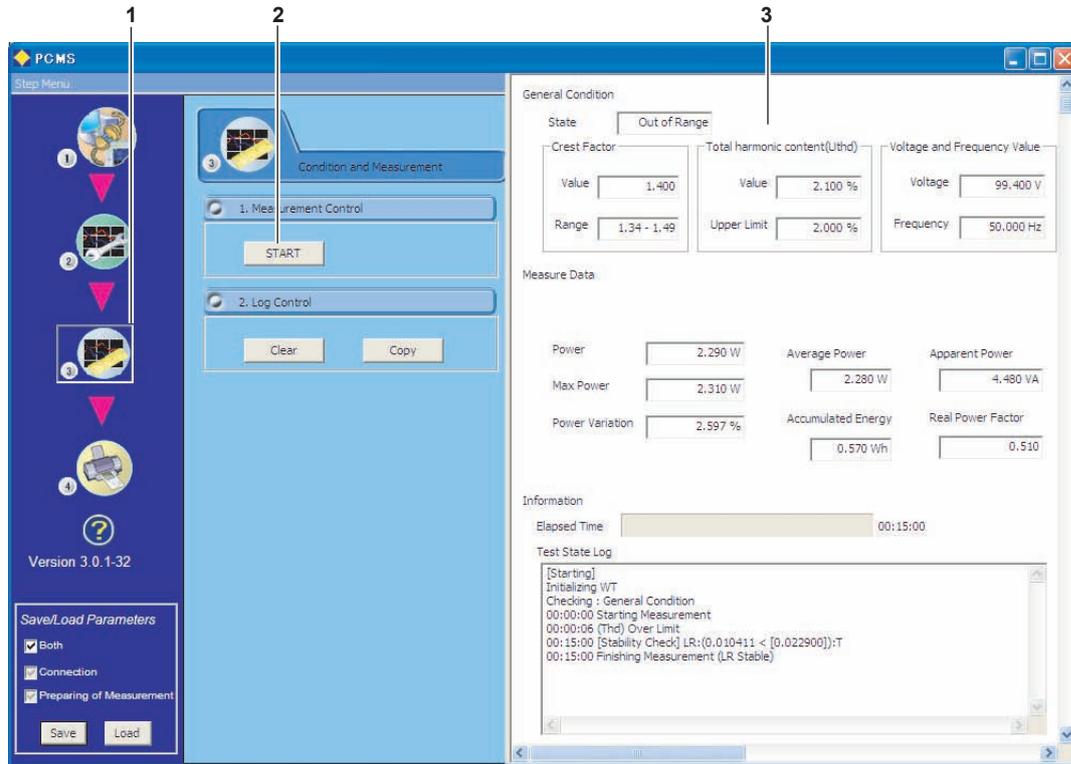
Item	Data
Measurement period	00:05:00 (Measure Period)
Power variation *(Upper Limit)	7.692 % (5.000 %)
Max Power Value	2.470 W
Last Power Value	2.370 W
Accumulated energy	0.198 Wh
Average Power	2.374 W

Test and laboratory details

Item	Data
Test report No./reference	This is "..."
Date of test	12 / 12 / 2011 13:00

Measurement

Starting test for power measurement. The software will stop testing automatically once the specified measurement time has been reached.



1 Select Condition and Measurement display.

2 Start the measurement

Click Start to start measuring (the button will change from "Start" to "Stop").

The software automatically stops measuring when the specified measurement stop conditions are met. The button will change back to "Start."

- To stop measuring before the measurement stop conditions are met, click Stop. In this situation, the measured data that was available when measuring was stopped is displayed on the screen and is applied to the report.
- The date used in the report corresponds to the time when Start was clicked.

3 The measured data and testing conditions are displayed.

General Conditions

[State]

When the CF or THD is outside the corresponding range defined in IEC62301, "Out of Range" is displayed.

In addition, an entry is recorded in the test state log when a value goes outside of its range.

[CF]

The measured crest factor (Value) and the range defined in IEC62301 (Range) are displayed here.

[Total harmonic content(Uthd)]

The measured THD (Value) and the upper limit of the range defined in IEC62301 (Upper limit) are displayed here.

[Voltage and Frequency Value]

The measured voltage and frequency are displayed here.

Measurement Data (When the IEC62301 Ed. 1 standard is selected)

Measure Data

State

Stable	Unstable	Detail Data
Power <input type="text" value="2.280 W"/>	Average Power <input type="text" value="2.279 W"/>	Apparent Power <input type="text" value="4.610 VA"/>
Max Power <input type="text" value="2.300 W"/>	Accumulated Energy <input type="text" value="0.190 Wh"/>	Real Power Factor <input type="text" value="0.495"/>
Power Variation <input type="text" value="2.174 %"/>		
Upper Limit <input type="text" value="5.000 %"/>		

[State]

If the variation (from the maximum value observed) in the measured power is within the range specified by IEC62301, "Stable" is displayed here. If the variation is outside of this range, "Unstable" is displayed here.

[Stable]

The measured power (Power), maximum power (Max. power), and power variation* (Power variation) as well as the upper limit defined by IEC62301 (Upper limit) are displayed here. The measured data is updated regardless of the state.

[Unstable]

The accumulated energy is displayed here in units of watts (Average power) and watt hours (Accumulated energy).

Measurement Data (When the IEC62301 Ed. 2 standard is selected)

The measured power, max power, power variation*, and accumulated energy are displayed.

The accumulated energy is displayed in units of watts (W) and watt hours (Wh).

For reference, the apparent power and real power factor are also displayed.

Information

[Elapsed Time]

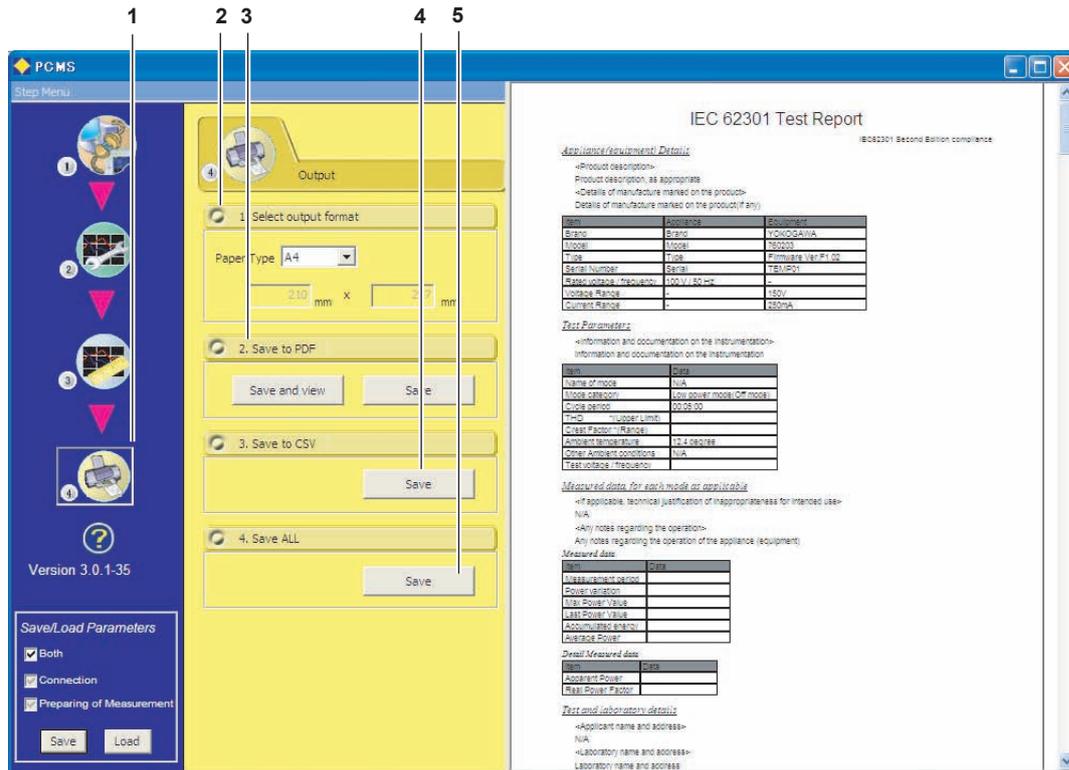
The elapsed measurement period is displayed here.

[Test State log]

A log of error messages and other information is displayed here.

*: $\text{Power Variation (\%)} = (\text{Max power} - \text{Min power}) / \text{Max power} \times 100$

Printing



- 1 Select Print display.
- 2 Select the paper size
Support size
 - A4
 - Letter
- 3 Generate a PDF file.
"Save and View"
Clicking this button displays a dialog box that you can use to specify the name of the file to save and the destination that you want to save it in. The saved PDF file is then opened.
"Save"
Clicking this button displays a dialog box that you can use to specify the name of the file to save and the destination that you want to save it in. The saved PDF file is not opened.
- 4 Execute the CSV output.
"Save"
Click this button to display a dialog box for specifying the file name and save destination.
The .CSV file contains measurement data. For details about the data format, see the next page.
- 5 Generate all related files.
"Save"
Click this button to display a dialog box for specifying the folder to save to. The setup file (PCMS_setting_lot6), PDF (PCMS_report.pdf), and CSV file (PCMS_meas.csv) will be saved to the specified folder.

Note

- PDF file may differ slightly from screen shot image.
- You need a PDF reader to view the PDF file that you have saved.
- This software uses the libHaru library to create PDF files.
<http://libharu.sourceforge.net/>
We would like to express our gratitude to the authors of the libHaru library.

CSV Data Format

The following information is output.

Information Section

Model:	Power analyzer model name
Serial Number	
Version:	The firmware version
Start Time:	Measurement start time (year, month, day, hour, minute, second)
Voltage Range	
Current Range	
Crest Factor:	3 or 6
Update Rate	
Standard:	Compliant standard
Period Time:	Measurement time; second; output when Standard is set to "IEC62301 Ed.1" or "IEC62301 Ed.2(Manual)"
Cycle Time:	Second; output when Standard is set to "IEC62301 Ed.2(Auto)" or "IEC62301 Ed.2(Manual)"
Algorithm:	Enabled algorithms (output when Standard is set to "IEC62301 Ed.2(Auto)")
Stop Factor:	Measurement stop conditions
Measure Period:	Measurement stopped because the specified measurement time elapsed.
Time Limit:	When Standard was set to "IEC62301 Ed.2(Auto)," measurement stopped because 3 hours of measurement time elapsed.
User Stop:	Measurement stopped because the user pressed STOP.
LR Stable:	Measurement stopped because stability was confirmed through the use of the LR algorithm.
CA Stable:	Measurement stopped because stability was confirmed through the use of the CA algorithm.
SP1 Stable:	Measurement stopped because stability was confirmed through the use of the SP1 algorithm.
SP2 Stable:	Measurement stopped because stability was confirmed through the use of the SP2 algorithm.
SAE Stable:	Measurement stopped because stability was confirmed through the use of the SAE algorithm.
COMM Error:	Measurement stopped because a communication error occurred during measurement.
DATA Error:	Measurement stopped because a data acquisition error occurred during measurement.
RANGE Error:	Measurement stopped because the voltage range setting or current range setting was too small.
Valid Period:	The start time—the number of seconds that have elapsed from the start of measurement—and end time—the number of seconds that have elapsed from the start of measurement—of the valid period

Data Section

Time:	The number of seconds that have elapsed from the start of measurement
Test Voltage(V)	
Test Frequency(Hz)	
THD:	Total harmonic distortion
Crest Factor U:	Voltage crest factor
Crest Factor I:	Current crest factor
Power(W):	Active power
Accumulated Energy(Wh)	
Real Power Factor	
Apparent Power(VA)	

Note

The data is separated by commas.

Output Example (Displayed in Excel)

20120106_1009_MeasData.xls										
A	B	C	D	E	F	G	H	I	J	
1	**INFO_BEGIN**									
2	Model	WT1806-06								
3	Serial Number	91 KC22198								
4	Version	F2.01								
5	Start Time	2012	1	6	10	9	38			
6	Voltage Range	100 V								
7	Current Range	10 mA								
8	Crest Factor	3								
9	Update Rate	200 MS								
10	Standard	IE62301 Ed2(Auto)								
11	Cycle Time	300								
12	Algorithm	LR	CA	SP1	SP2	SAE				
13	Stop Factor	User Stop								
14	Valid Period	0								
15	**INFO_END**									
16	**DATA_BEGIN**									
17	Time	Test Voltage(V)	Test Frequency(KHz)	THD	Crest Factor U	Crest Factor I	Power(W)	Accumulated Ener	Real Power Facto	Apparent Power(VA)
18	1	100.28	50.037	0	1.407	7.545	0	0.000001	0.004	1
19	1.2	100.25	50.033	0	1.407	6.048	0	0.000001	0.0048	1
20	1.4	100.3	50.034	0	1.407	6.741	0	0.000001	0.0038	1.01
21	1.6	100.23	50.032	0	1.407	7.25	0	0.000002	0.0041	1
22	1.8	100.28	50.036	0	1.406	7.987	0	0.000002	0	1
23	2	100.26	50.034	0	1.407	7.542	0	0.000002	-0.0006	1
24	2.2	100.28	50.036	0	1.407	6.444	0	0.000002	-0.0003	1
25	2.4	100.37	50.035	0	1.407	6.712	0	0.000002	0.0013	1
26	2.6	100.3	50.032	0	1.407	6.989	0	0.000001	-0.0024	1
27	2.8	100.26	50.036	0	1.406	7.335	0.01	0.000002	0.0062	1
28	3	100.22	50.034	0	1.406	6.818	0	0.000002	0.0038	1
29	3.2	100.25	50.036	0	1.406	6.52	0	0.000002	0.0021	1
30	3.4	100.34	50.034	0	1.407	6.926	0	0.000002	0.0006	1.01
31	3.6	100.3	50.034	0	1.406	9.247	0	0.000002	-0.0019	1
32	3.8	100.36	50.034	0	1.406	7.435	0	0.000002	0.0014	1
33	4	100.31	50.033	0	1.407	7.19	0	0.000002	-0.0022	1
34	**DATA_END**									
35										

Information Section

Data Section