User's Manual

POWERCERT
PC parameter setting tool
(For the PR300, UPM100, and UPM101)

POWERCERT

YOKOGAWA ◆
Yokogawa Electric Corporation

Foreword

Thank you for purchasing the POWERCERT Power and Energy Meter.

This manual explains how to set up the POWERCERT PC Parameter Setting Tool and use it basically on Windows. Please read this manual carefully before operating the PC Parameter Setting Tool to ensure its correct use.

After you have read this manual, keep it in a safe place where it can be referred to anytime a question arises.

For specifications and operations of the product, refer to the user's manual provided with the product.

This manual does not explain the basic operations of operating system. For the basic operations of the operating system, read the user's guide of Windows.

Notes

- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the performance and functions.
- Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact your nearest YOKOGAWA dealer.
- Copying or reproducing all or any part of the contests of this manual without the permission of Yokogawa Electric Corporation is strictly prohibited.
- Yokogawa Electric Corporation shall not be held responsible by any party for any losses or damage, direct or indirect, caused by the use or any unpredictable defect of the product.

Copyright

Yokogawa Electric Corporation holds the copyright to the software.

Trademarks

- All the brands or names of Yokogawa Electric's products used in this manual are either trademarks or registered trademarks of Yokogawa Electric Corporation.
- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Adobe and Adobe Acrobat are trademarks of Adobe Systems Incorporated (Adobe Systems).
- Ethernet is a registered trademark of XEROX Corporation in the United States.
- Other company names and product names used in this manual are either registered trademarks or trademarks of their respective holders.

Revisions

1st Edition May 2006
2nd Edition Feb 2008

POWERCERT
PC parameter setting tool

IM 77C01Y01-01E   2nd Edition

CONTENTS

1. Before Using the Software

1.1 Overview of the Configuration Software

The POWERCERT PC Parameter Setting Tool is the software having the following functions.

Function

- Send and receive the parameter settings.
- Set the display pattern (for the PR300 only).
- Set and reset the energy value online.
- Save the setup data to a file.
- Edit the setup data.
- Print the setup data.

Flow of Operation
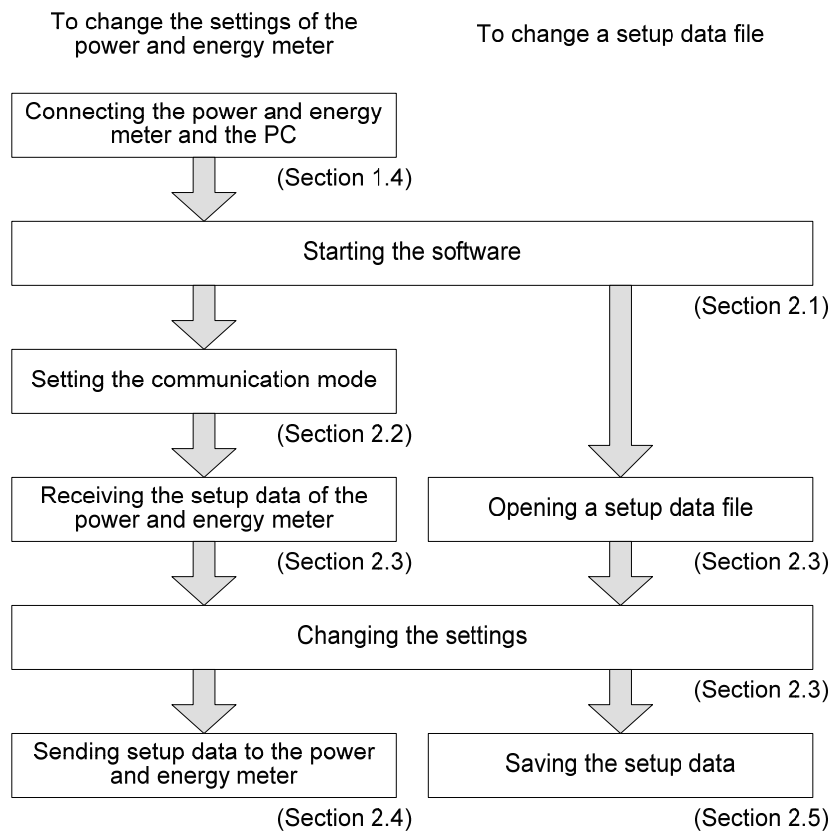
The flow of operation of the software is shown below.

Figure1.1   Flow of Operation

1.2   PC System Requirements

Table1.1   PC System Requirements

PC	IBM PC/AT compatible model (DOS/V PC)
OS	Windows 2000 Professional (English version) (Service Pack 2 or later)
	Windows XP Professional (English version) (Service Pack 2 or later)
	Windows Vista Home Premium 32 bit version or Business 32 bit version (English version)
CPU	800 MHz Pentium III or higher recommended. (Windows 2000 Professional, Windows XP Professional)
	3 GHz Pentium IV or higher recommended. (Windows Vista Home Premium/ Business)
Memory	256 MB or more (Windows 2000 Professional, Windows XP Professional)
	2 GB or more (Windows Vista Home Premium/Business)
Hard Disk	Free disk space of 10 MB or more.
Communication Port	An RS-232 port (for Modbus/RTU) or an Ethernet port (for Modbus/TCP) supported by the OS.
	For communication connection by Modbus/RTU (RS-485), use the RS-232/RS-485 communication converter.
	Yokogawa's ML2 RS-232C/RS-485 converter recommended.
Display	A display supported by the OS with 800 x 600 resolution and 32000 colors or better.
	1024 x 768 resolution and 65536 colors recommended.
Printer	A printer supported by the OS. An appropriate printer driver for the OS is also required.
Others	A mouse connectable to a PC and supported by the OS.

1.3 Installing the Software

Switch on a PC. Start Windows. Log onto Windows as an administrator.

Exit memory resident programs such as virus protection programs before installation.

When reinstalling the software, uninstall it first.   Double-click "Add/Remove Programs" in the Control Panel and uninstall the software. As necessary, back up the setup data files with .P3D and .U1D extension.
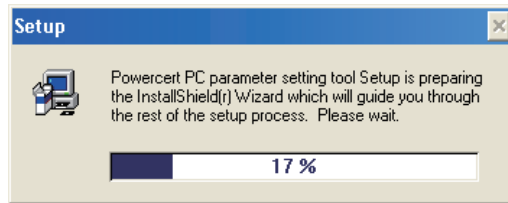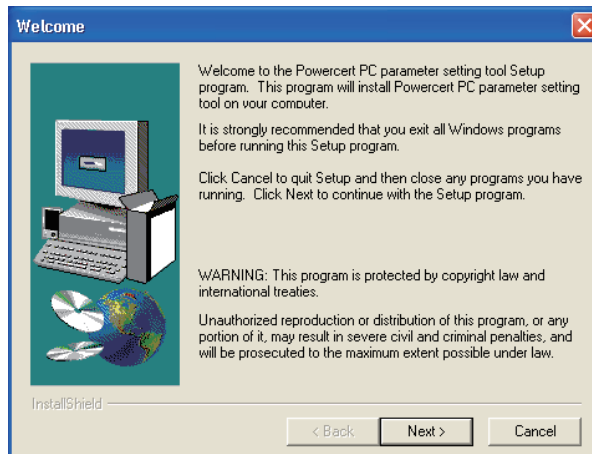
Download the Setup File from the following URL.

`http://www.yokogawa.com/ns/pr300/download/`

After downloading, decompress the File and follow the following steps for setup.

Please execute the setup by the shallow directory. (ex. C:\Powercert\ )

Step1 Double-click **Setup.exe**.

Step2 To start the installation process, click **Next**. To cancel starting the installation process, click **Cancel**.
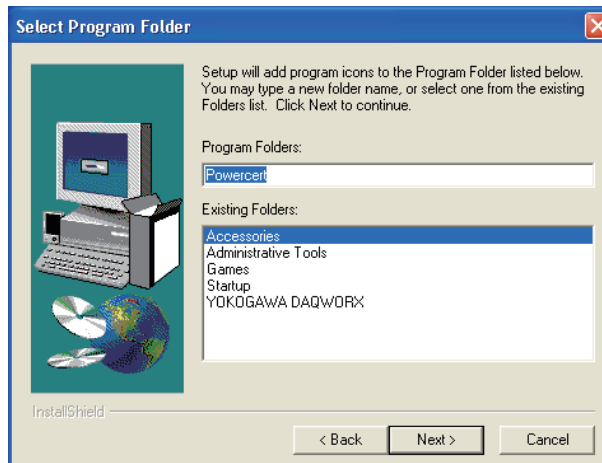

**Step3** Type your name and the company name you work for. Click **Next**.
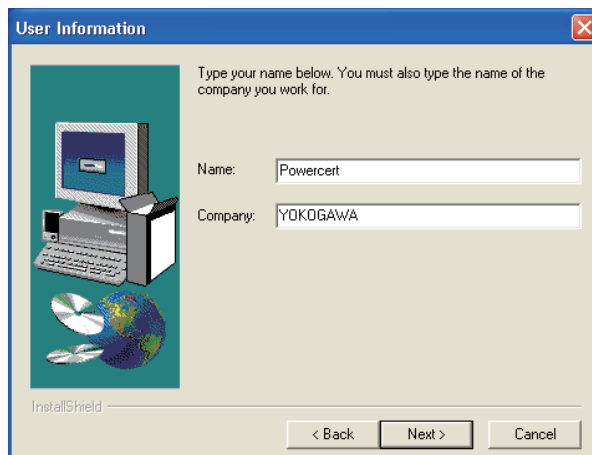
Step4 Confirm the directory to be installed, then click **Next**. To install to a different directory, click **Browse** and select another directory to be installed.
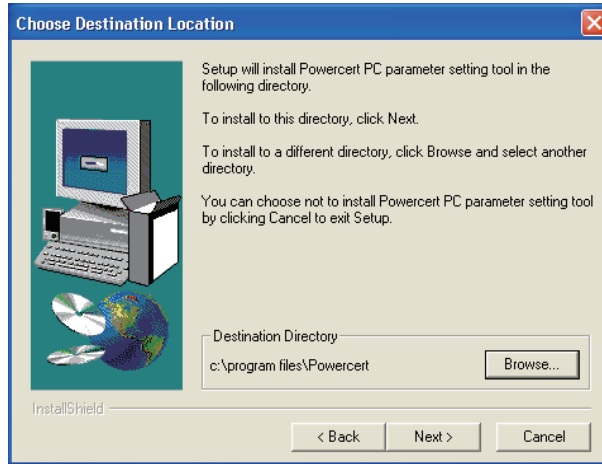
Step5 Set up a folder name of the program icon. The initial value is **Powercert**. Click **Next** to start the installation process.
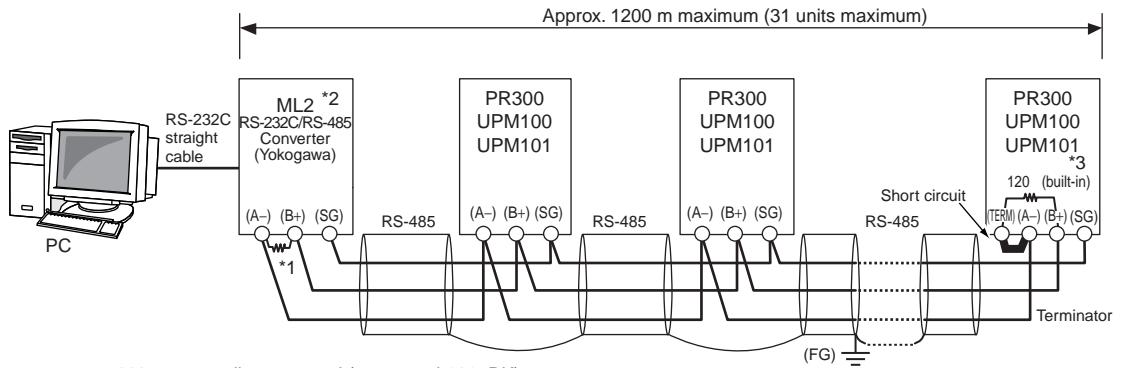

Step6 Click **Finish** to complete the installation process.
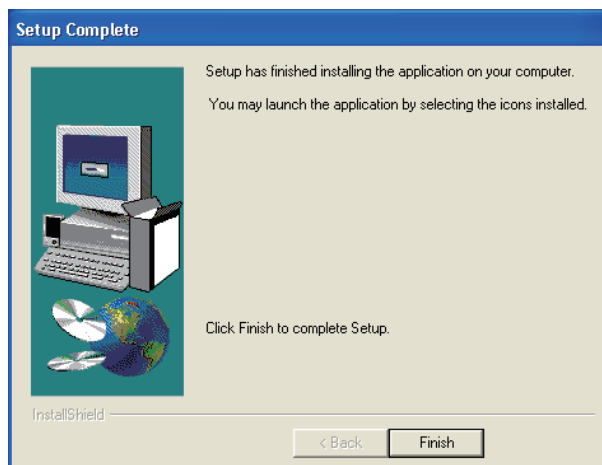
1.4 Connecting the Power and Energy Meter and the PC

The following three methods are available for connecting the power and energy meter and the PC.

Serial Communication Connection

*1 120 Ω externally connected (parts no.: L3035RK)
Use the resistor externally connected without using the built-in resistor of ML2.
Make resistance of the terminator the same as that of the resistor.
*2 When connecting the ML2, use it without returning an echo.
For details, refer to the ML2 RS232-C/RS-485 Converter User's Manual (IM 77J04L02-01E).
*3 For the UPM100 and UPM101, 120 Ω resistors are not built in.

Set the communication method of PR300, UPM100 and UPM101 to Modbus/RTU.

Notes:
The PR300 employs a two-wire system for RS-485 communication.
SG: The SG terminal is connected to match the signal level of the RS-485 communication line.
FG: All shielded wires must be connected and then grounded at one place to provide noise protection for RS-485 communication lines.

Figure1.2   Example of Serial Communication Connection

Ethernet Communication Connection (for the PR300 Only)
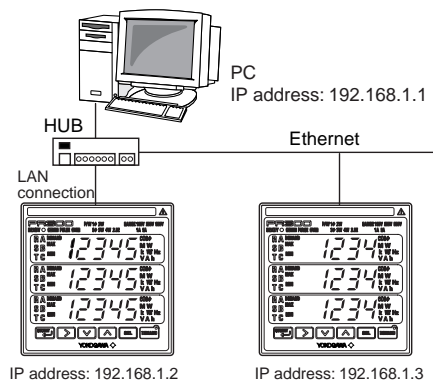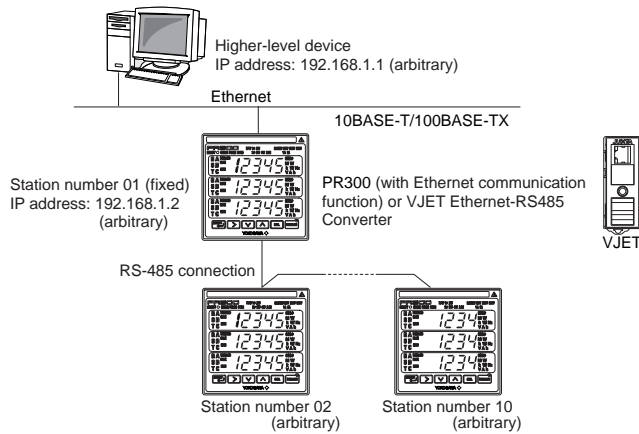

Figure1.3   Example of Ethernet Communication Connection

Connection Using Ethernet-serial Gateway Function (for the PR300 Only)

Figure1.4   Example of Connection Using Ethernet-serial Gateway Function

For details of connection, refer to the user's manual of each product.

About the connection to the UPM100	UPM100 Power Monitor User's Manual <Installation>: IM 77C01H01-01E Communication connection in Chapter 4, "External Wiring"
About the connection to the UPM101	UPM101 Power Monitor User's Manual <Installation>: IM 77C01J01-01E Communication connection in Chapter 4, "External Wiring"
About the connection to the PR300	PR300 Power and Energy Meter Startup Manual <Installation>: IM 77C01E01-02E Communication connection in Section 2.6, "Other Wiring" or PR300 Power and Energy Meter User's Manual: IM 77C01E01-01E Communication connection in "Other Wiring" in Section 1.3, "Wiring"

The terminal numbers for communication of each product are as follows

Terminal symbol Model	A(-)	B(+)	SG
ML2	3	4	5
PR300	18	19	20
UPM100/UPM101	10	9	8

2. Configuring the Power and Energy Meter

2.1 Starting/Closing the Software and Showing Version Information

Starting the Software

From the task bar, click **Start**, point to **All programs** > **Powercert**, and choose **PC parameter setting tool**. The software starts.
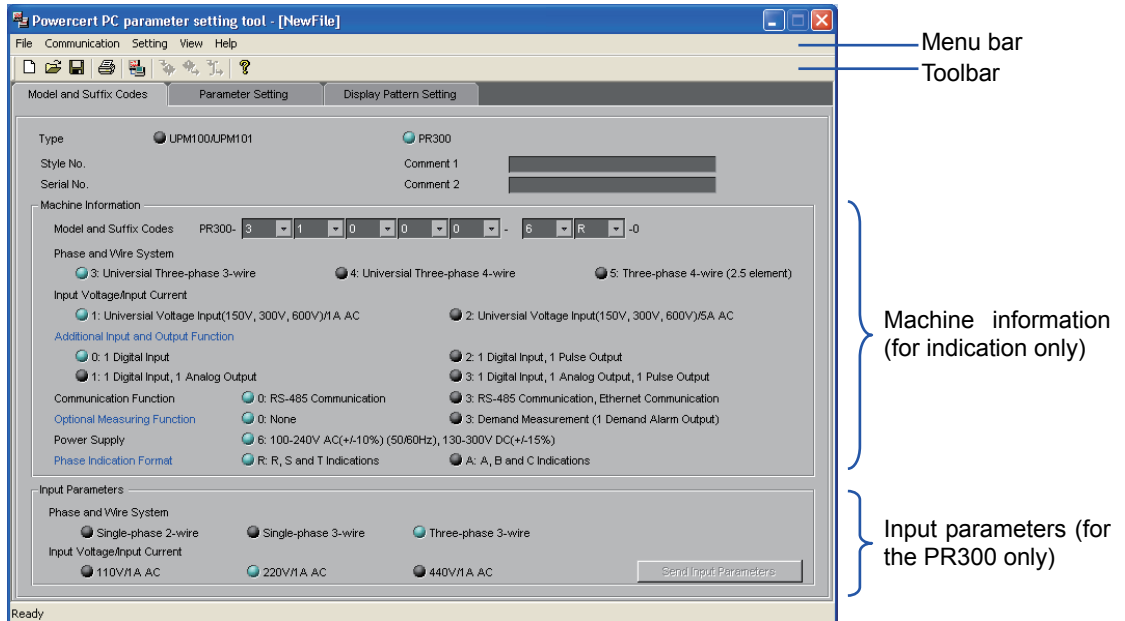
Figure2.1   Model and Suffix Codes Screen (Example Screen of the PR300)

Closing the Software

From the **File** menu, choose **Exit**, or click the **X** button.

The configuration software window closes.

Showing Version Information

From the **Help** menu, choose **About**. You can also click the About icon ( ) on the toolbar. The About dialog box opens.
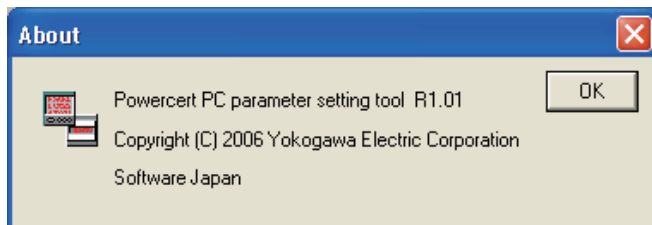
Figure2.2   Version Information

Click **OK** to close the **About** dialog box.

2.2 Setting the Communication Mode for Connecting to the Power and Energy Meter

Modbus/RTU (serial communication) and Modbus/TCP (Ethernet communication) are available as communication mode.

1. From the **Communication** menu, choose **Communication Setting**. You can also click the Communication Setting icon on the toolbar. The **Communication Setting** dialog box opens.

2. Select the communication mode. Set the communication setting according to the device. To execute the automatic detect, set the items other than the station number then click **Automatic Detect**.
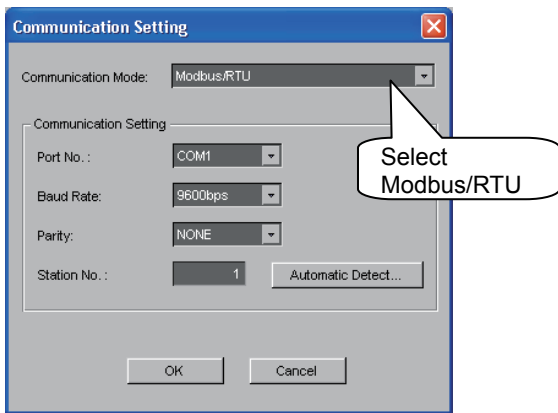
Figure2.3   Serial Communication Setting Screen
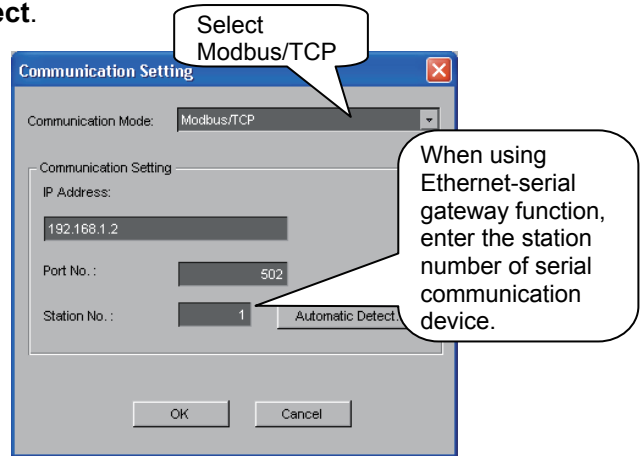
Figure2.4   Ethernet Communication Setting Screen
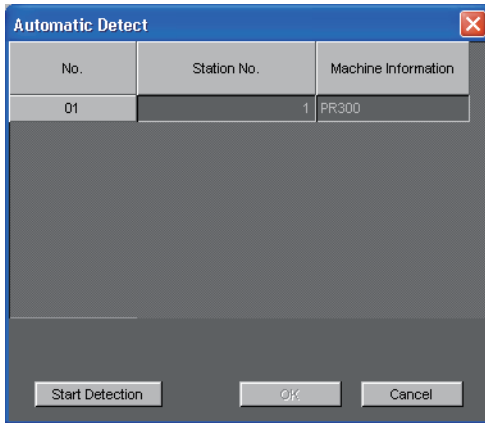
Figure2.5   Serial Communication Setting Screen

Automatic Detect:

1. Click **Start Detection**.
2. The connected devices are displayed. Then click the No. of device to be set.
3. Click **OK**.

3. Click **OK**

The dialog box closes, and the communication between the PC and the power and energy meter is enabled.   Click **Cancel** to cancel the settings and close the dialog box.

Note

After starting the software, be sure to confirm the communication settings and click **OK**. Then **Receive Setting**, **Send Setting**, and **Integral Energy** of the **Communication** menu can be selected.

2.3 Receiving the Setup Data or Creating New Setup Data

The following three methods are available for starting to create setup data.

• Receive the setup data of the power and energy meter.

• Open a setup data file.

• Create new setup data.

Receiving the Setup Data of the Power and Energy Meter

Before carrying out the following procedure, check to see that the communication mode and parameters are set correctly. For details, see Section 2.2, "Setting the Communication Mode for Connecting to the Power and Energy Meter."

1. From the **Communication** menu, choose **Receive Setting**. You can also click the Receive Setting icon on the toolbar. A confirmation dialog box for receiving settings opens.
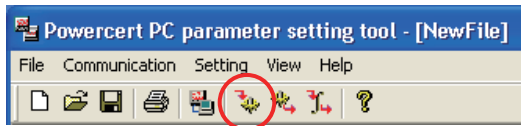
2. Click **OK**.

The reception starts. When the reception of the settings is complete, a message appears to indicate it.
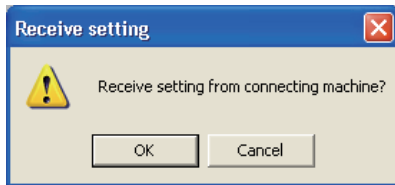
3. Click **OK**.
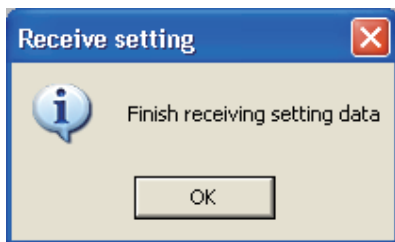
4. The received setup data is displayed.
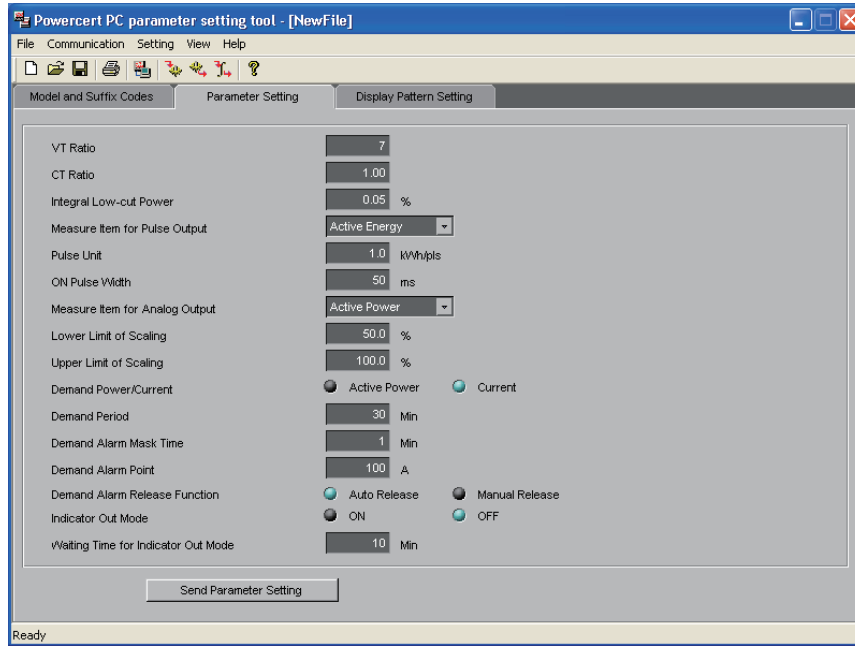
Figure2.6   Parameter Setting Screen (Example Screen of the PR300)
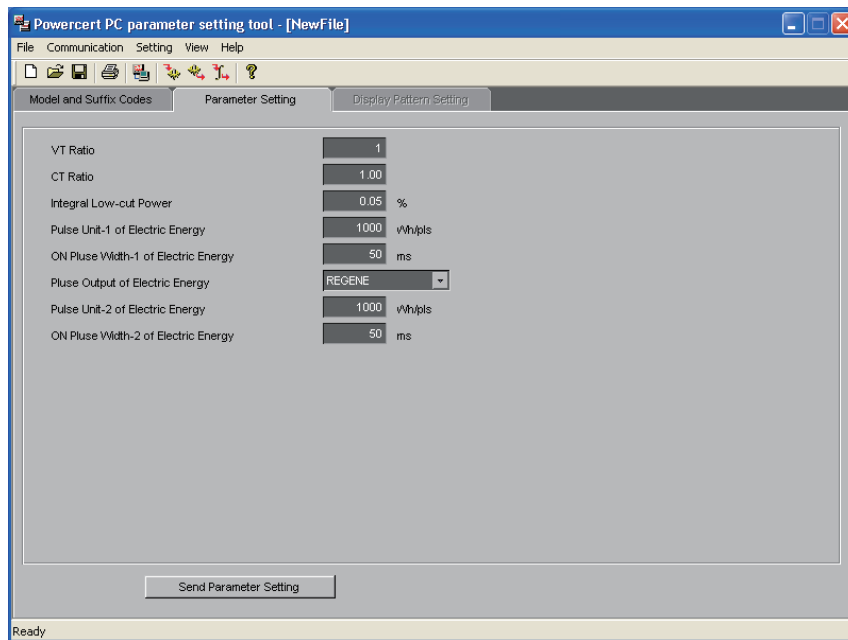
Figure2.7   Parameter Setting Screen (Example Screen of the UPM100/UPM101)
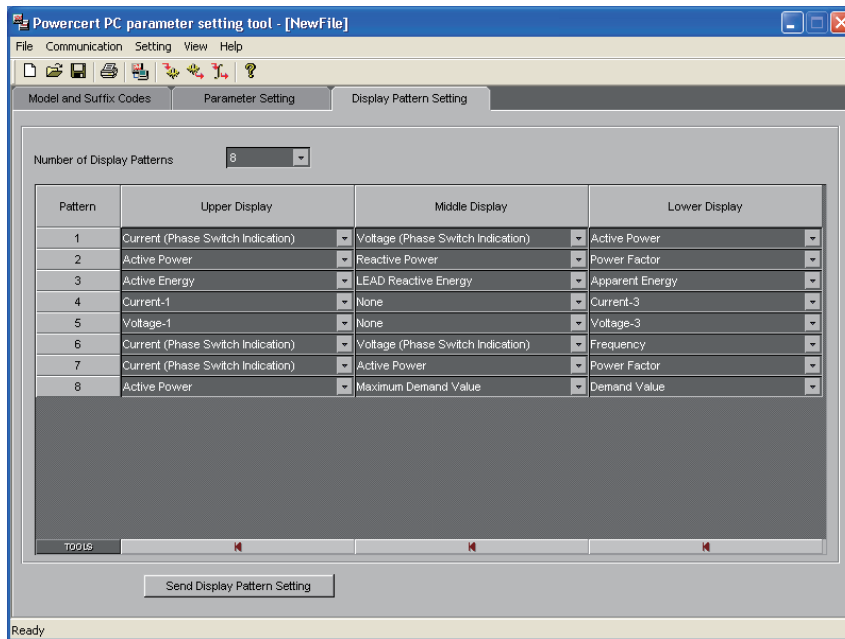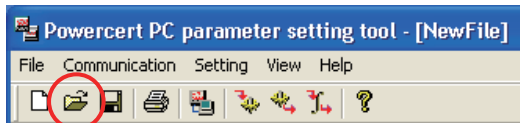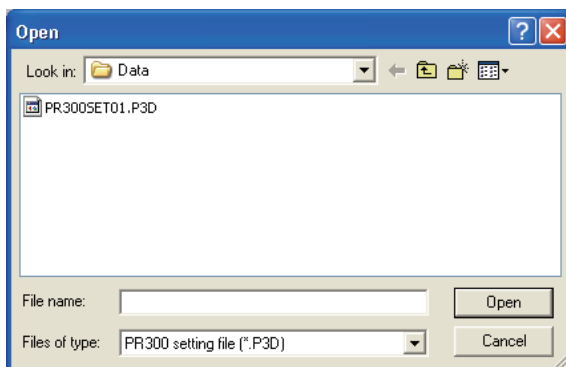
Figure2.8   Display Pattern Setting Screen (for the PR300 Only)

Opening a Setup Data File

1. From the **File** menu, choose **Open**. You can also click the Open icon on the tool
bar. The Open dialog box opens.

2. Select the desired file, and click **Open**.

The setup data is displayed.

Note

The extensions to setup data files are .P3D for the PR300 and .U1D for the UPM100/UPM101.

Creating New Setup Data

1. From the **File** menu, choose **New**. You can also click the New icon on the toolbar.
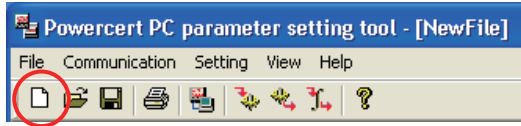
2. Set the machine information of the power and energy meter.

If the set machine information is not correct, the setup data cannot be sent correctly.
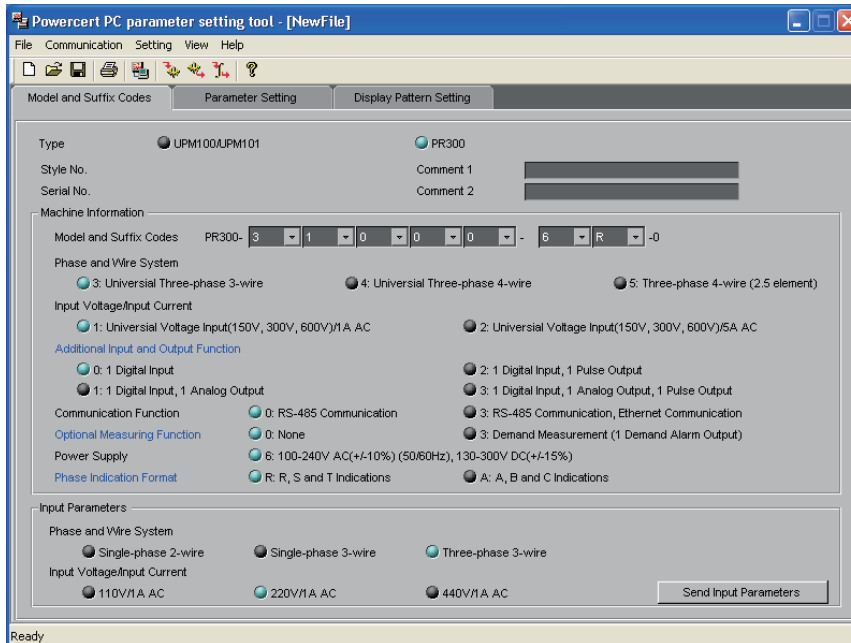
Figure2.9   Model and Suffix Codes Screen (Example Screen of the PR300)

2.4 Sending the Setup Data

The following four methods are available for sending the setup data.

• Send the input parameters (for the PR300 only).

• Send the parameter setting.

• Send the display pattern setting (for the PR300 only).

• Send collectively (input parameters, parameter setting, and display pattern setting)

Note

To send the setup data, set the communication and machine information correctly.
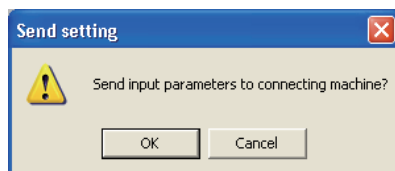
Sending the Input Parameters (for the PR300 Only)

Send only the input parameter data to the device.

1. Set the input parameters, and then click **Send Input Parameters**.

A confirmation dialog box for sending the setting opens.
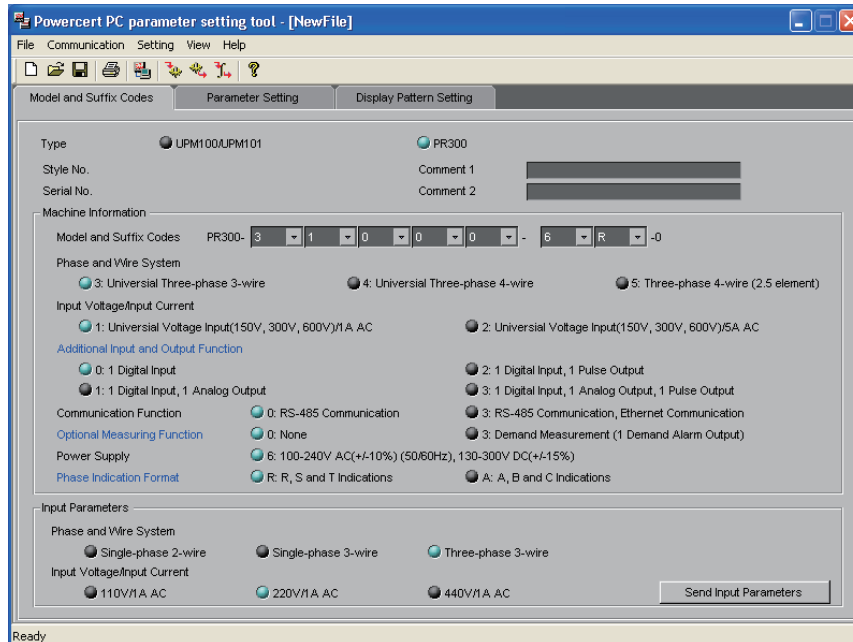
2. Click **OK**.

The sending starts. When the sending of the input parameters is complete correctly, a message appears to indicate it.
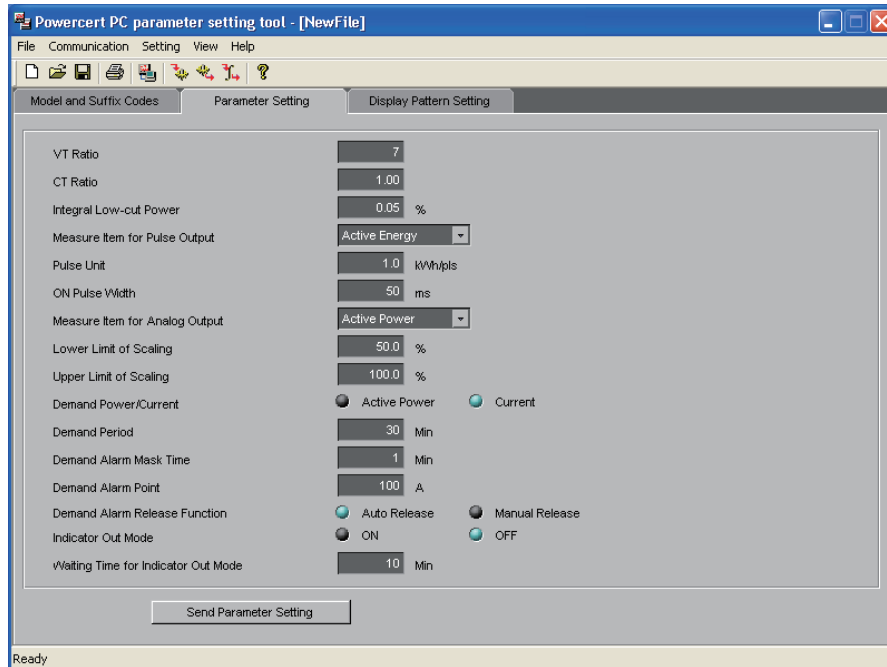
3. Click **OK**.
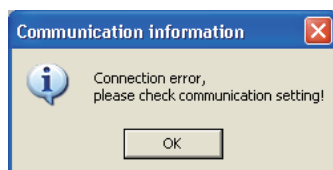
Sending the Parameter Setting
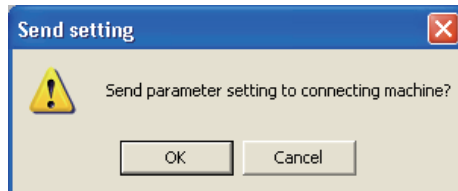
Send the parameter setting data to the device.

1. Set the parameter setting, and then click **Send Parameter Setting**.

A confirmation dialog box for sending the setting opens. (The figure below shows the Example Screen of the PR300.)
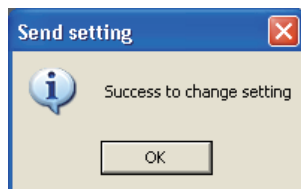

2. Click **OK**.

The sending starts. When the sending of the parameter setting is complete correctly, a message appears to indicate it.
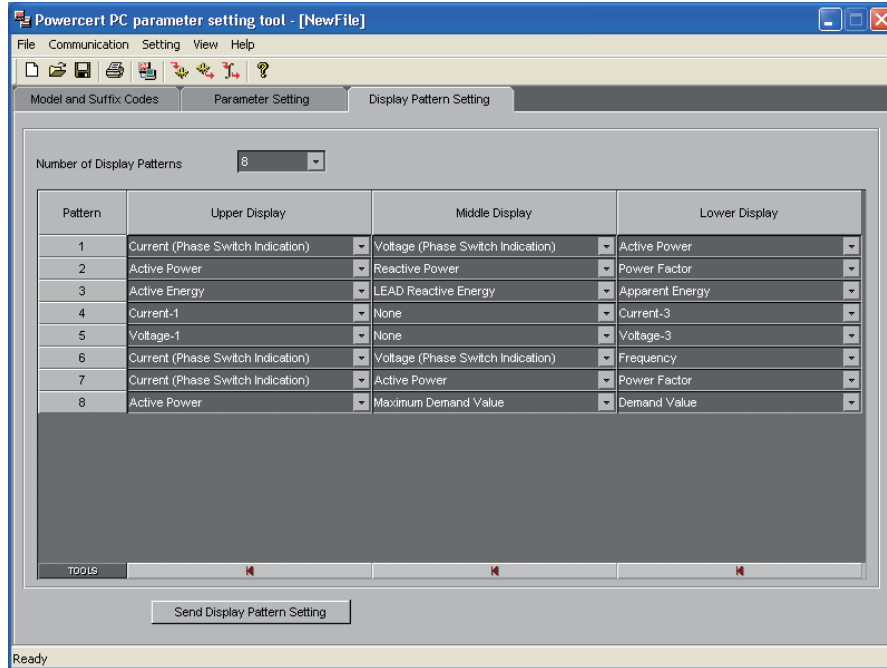

3. Click **OK**.

# Sending the Display Pattern Setting (For the PR300 Only)

Send the display pattern setting data to the device.

1. Set the display pattern, and then click **Send Display Pattern Setting**.

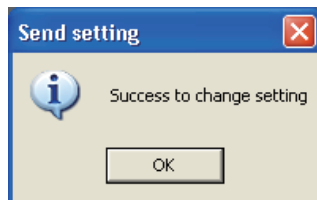A confirmation dialog box for sending the setting opens.

2. Click **OK**.

The sending starts. When the sending of the display pattern setting is complete correctly, a message appears to indicate it.
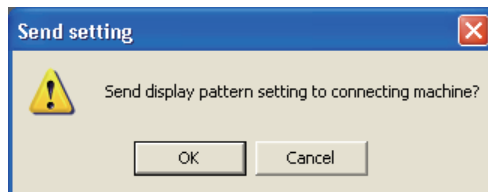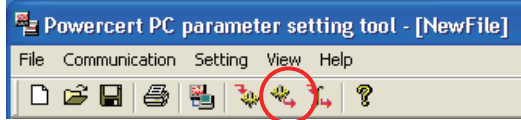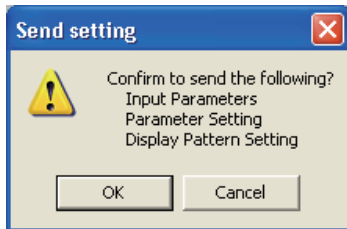

3. Click **OK**.

Sending Collectively (Input Parameters, Parameter Setting, and Display Pattern Setting)

1. From the **Communication** menu, choose **Send Setting**. You can also click the Send Setting icon on the toolbar. A confirmation dialog box for sending the setting opens.
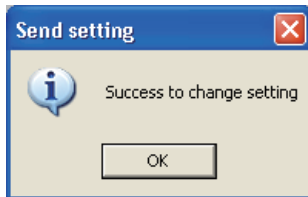

2. Click **OK**.

The sending starts. When the sending of the input parameters, parameter setting, and display pattern setting is complete correctly, a message appears to indicate it.
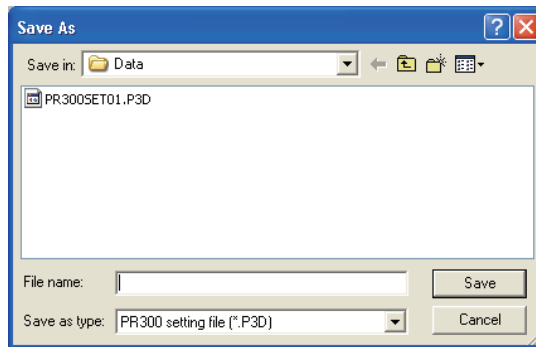

3. Click **OK**.

2.5 Saving the Setup Data

Saving to a File by Specifying a Name

The setup data (input parameters, parameter setting, and display pattern setting) can be saved to a file by specifying the file name.

Note

The extensions to setup data files are .P3D for the PR300 and .U1D for the UPM100/UPM101.

1. From the **File** menu, choose **Save As**.

The Save As dialog box opens.

2. Specify the save destination, enter the file name, and click **Save**.

The setup data is saved.

Saving (Overwriting) to the File

From the **File** menu, choose **Save**. You can also click the Save icon on the toolbar. The setup data is saved (overwritten).
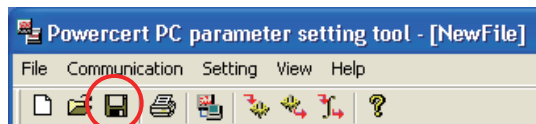
2.6   Printing the Setup Data

Previewing the Print

You can preview the print layout before actually printing the data.

From the **File** menu, choose **Print Preview**. The print preview window opens.
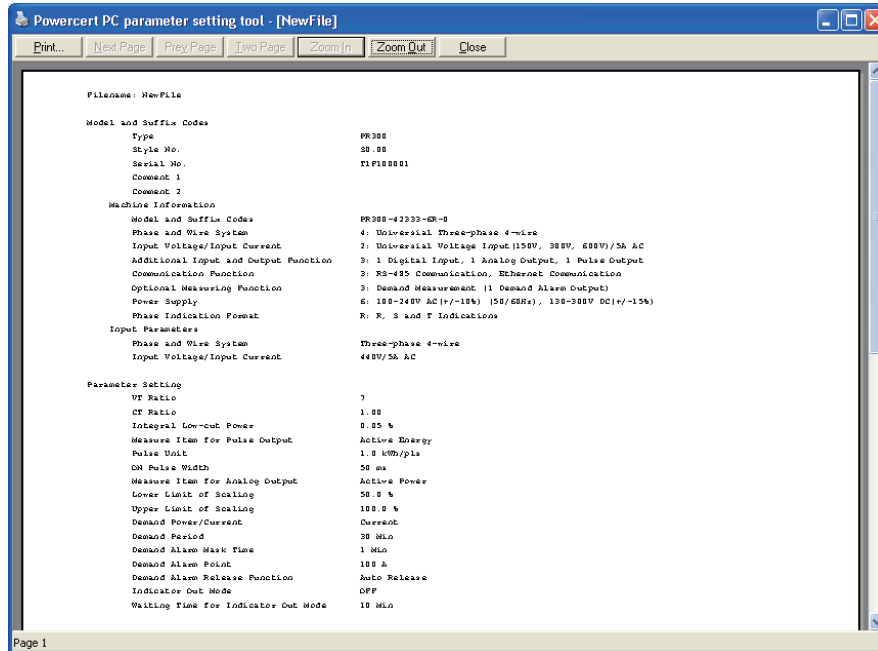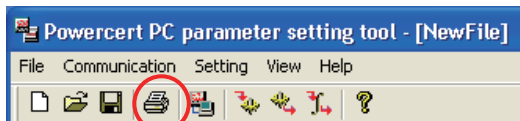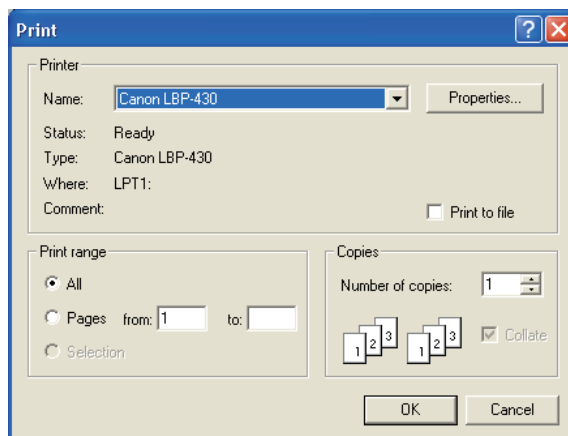

Figure2.10   Print Preview Screen (Example Screen of the PR300)

Printing

1. From the **File** menu, choose **Print**. You can also click the Print icon on the toolbar.
The Print dialog box opens.

2. Click **OK** to execute printing.
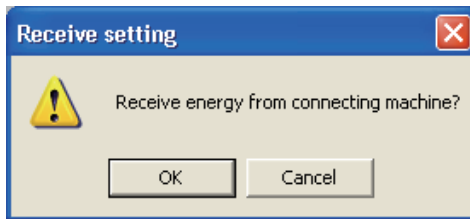
3. Receiving or Setting the Energy Value

Before carrying out the following procedure, check to see that the communication mode and parameters are set correctly. For details, see Section 2.2, "Setting the Communication Mode for Connecting to the Power and Energy Meter."

1. From the **Communication** menu, choose **Integral Energy**. You can also click the Integral Energy icon on the toolbar. A confirmation dialog box for receiving setting opens.
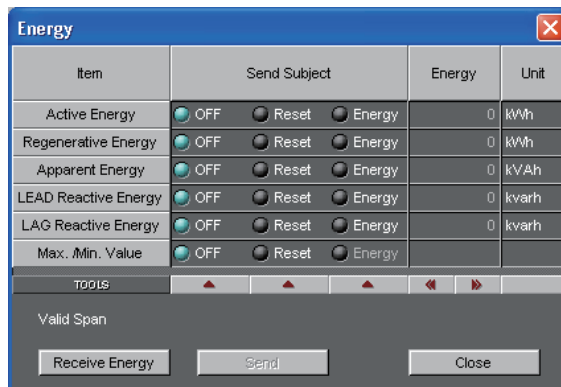

2. Click **OK**.

The reception starts. When the reception of the energy value is complete, a message appears to indicate it.

3. Click **OK**.

The received setup data is displayed.

Figure3.1   Energy Value Reset Screen

Sending the energy value:

1. Click the item in the **Send Subject**.

2. Enter the energy value when sending the energy value.

3. Click **Send**.

Note

Use the energy value setting when the energy value needs to be set to the device in advance.