



KIKUSUI

PART NO. Z1-005-850, IB025075
Oct. 2015

Setup Guide

Large-Capacity DC Electronic Load
Load Pack System

PLZ-4W LP Series

PLZ9004W LP

PLZ11004W LP

PLZ13004W LP

PLZ-4WH LP Series

PLZ9004WH LP

PLZ11004WH LP

PLZ13004WH LP

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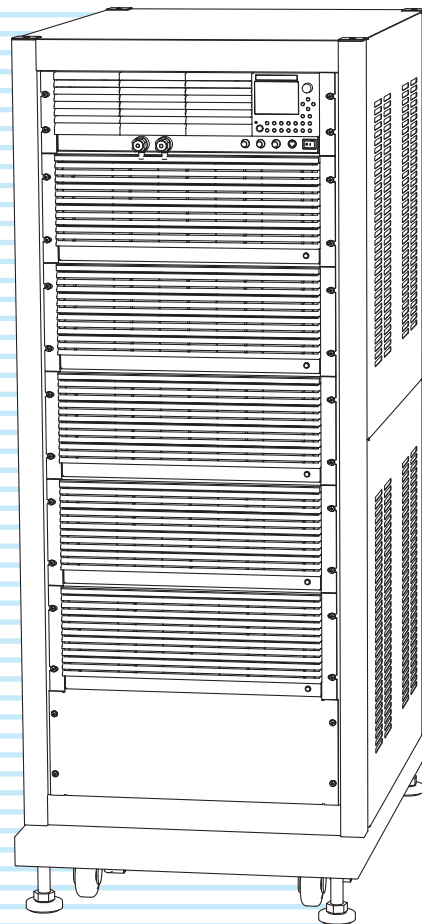
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About the Manuals

These manuals are intended for users of the PLZ-4W LP Series and PLZ-4WH LP Series Large-Capacity DC Electronic Loads and their instructors. Explanations are given under the presumption that the reader has knowledge of power supplies.

Every effort has been made to ensure the accuracy of this manual. However, if you have any questions or find any errors or omissions, please contact your Kikusui agent or distributor.









If you find any misplaced or missing pages in the manuals, they will be replaced. If the manual gets lost or soiled, a new copy can be provided for a fee. In either case, please contact your Kikusui agent or distributor. At that time, inform your agent or distributor of the "Part No." written on the front cover of this manual.

After you have finished reading this manual, store it so that you can use it for reference at any time.









Manual construction

PDF and HTML files are included in the accompanying CD-ROM. Adobe Reader 9.2 or later is required to view the PDF files. Microsoft Internet Explorer 9 or later is required to view the HTML files.

■ PLZ-4W LP series construction

- Master Unit PLZ-4W Series User's Manual 
This manual provides an overview of the PLZ1004W and notes on usage. It also explains how to configure it, operate it, perform maintenance on it, and so on.
After reading the Setup Guide and the PLZ-4W LP is ready for use, read this manual to use the available features effectively.
- Specifications 
This document describes the specifications of the PLZ-4W LP series.
- Communication Interface Manual  (partially in PDF)
This manual explains how to control the product remotely using SCPI commands. The interface manual is written for readers with sufficient basic knowledge of how to control measuring instruments using a PC.
The command list is provided in PDF format.
- PLZ-4W Series Quick Reference  
The quick reference briefly explains the PLZ-4W panel and the basic operation of it.
- Setup Guide   (this guide)
This guide is intended for users who are using the PLZ-4W LP series for the first time. It includes covers topics related to setting up the product such as preparing the product, connecting the EUT, and connecting various connectors.
- Booster PLZ2004WB Operation Manual 
This manual explains how to clean the PLZ2004WB. Read this manual, and clean the PLZ2004WB periodically.

■ PLZ-4WH LP series construction

- Master Unit PLZ-4WH Series User's Manual 
This manual provides an overview of the PLZ1004WH and notes on usage. It also explains how to configure it, operate it, perform maintenance on it, and so on.
After reading the Setup Guide and the PLZ-4WH LP is ready for use, read this manual to use the available features effectively.
- Specifications 
This document describes the specifications of the PLZ-4WH LP series.
- Communication Interface Manual  (partially in PDF)
This manual explains how to control the product remotely using SCPI commands.
The interface manual is written for readers with sufficient basic knowledge of how to control measuring instruments using a PC.
The command list is provided in PDF format.
- PLZ-4WH Series Quick Reference  
The quick reference briefly explains the PLZ-4WH panel and the basic operation of it.
- Setup Guide   (this guide)
This guide is intended for users who are using the PLZ-4WH LP series for the first time. It includes covers topics related to setting up the product such as preparing the product, connecting the EUT, and connecting various connectors.
- Booster PLZ2004WHB Operation Manual 
This manual explains how to clean the PLZ2004WHB. Read this manual, and clean the PLZ2004WHB periodically.

Firmware versions that this manual covers

This manual covers firmware versions 1.0X.

For information on how to check the current firmware version, see below.

- PLZ-4W LP series: Section 2.7, "Checking the ROM Version," in the PLZ-4W Series User's Manual
- PLZ-4WH LP series: "Checking the ROM Version" in the PLZ-4WH Series User's Manual

When contacting us about the product, please provide us with the following information.

- Model (marked in the top section of the front panel)
- Firmware version
- SPEC number
PLZ-4W LP series: SPEC20944
PLZ-4WH LP series: SPEC20943
- Serial number (marked in the bottom section of the rear panel)

KIKUSUI ELECTRONICS CORP.

1-1-3, Higashiyamata, Tsuzuki-ku,
Yokohama, 224-0023, Japan
TEL: +81-45-593-7570 Fax: +81-45-593-7571

WEBSITE

<http://www.kikusui.co.jp/en>

The newest version of the PLZ-4W LP and PLZ-4WH LP manuals can be downloaded from Download service of Kikusui website.



Product Overview

- PLZ-4W LP series
The PLZ-4W LP series is a large current capacity model with a PLZ1004WS¹ DC Electronic Load and PLZ2004WB Electronic Load Boosters mounted on a dedicated rack. Up to six PLZ2004WB boosters can be mounted. Large capacity can be achieved at low cost.
- PLZ-4WH LP series
The PLZ-4W LP series is a large-voltage, large-capacity model with a PLZ1004WHS² DC Electronic Load and PLZ2004WHB Electronic Load Boosters mounted on a dedicated rack. Up to six PLZ2004WHB boosters can be mounted. Large capacity can be achieved at low cost.

Both the PLZ-4W LP series and PLZ-4WH LP series can be controlled externally using external analog signals and controlled remotely using RS232C, GPIB, or USB.

- 1 The maximum number of boosters that can be connected in parallel is different from the PLZ1004W. The operation is the same as with the PLZ1004W.
- 2 The maximum number of boosters that can be connected in parallel is different from the PLZ1004WH. The operation is the same as with the PLZ1004WH.

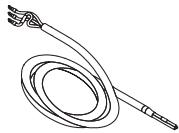
Checking the Package Contents

When you receive the product, check that all accessories are included and that the accessories have not been damaged during transportation.

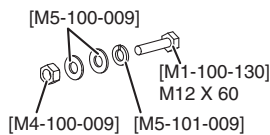
If something is damaged or missing, contact your Kikusui agent or distributor.

We recommend that you save all packing materials, in case the product needs to be transported at a later date.

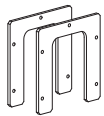
PLZ-4W LP series



- Power cable (1 pc.)
[85-10-0630]



- Load input terminal screw set (8 sets)



- Lock plate for flat braided copper wires (2 sheets)
[Q1-100-124]

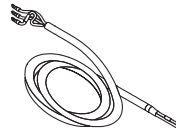
- Heavy object warning label (1 pc.)
If necessary, attach to the product.
[A8-900-158]

- CD-ROM (1 disc)

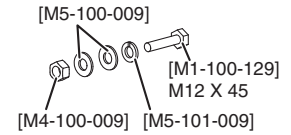
- Setup Guide
(this guide, 1 pc.)

- Quick reference
(Japanese 1 sheet, English 1 sheet)

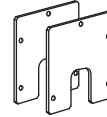
PLZ-4WH LP series



- Power cable (1 pc.)
[85-10-0630]



- Load input terminal screw set (4 sets)



- Lock plate for flat braided copper wires (2 sheets)
[Q1-100-119]

- Heavy object warning label (1 pc.)
If necessary, attach to the product.
[A8-900-158]

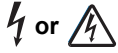
- CD-ROM (1 disc)

- Setup Guide
(this guide, 1 pc.)

- Quick reference
(Japanese 1 sheet, English 1 sheet)

Safety Markings

For the safe use and safe maintenance of this product, the following symbols are used throughout this manual and on the product. Note the meaning of each of the symbols to ensure the safe use of the product. (Some symbols are not used depending on the product.)



Indicates that a high voltage (over 1000 V) is used here. Touching an area marked with this symbol without taking proper precautions may cause a fatal or serious electric shock. If you must touch an area marked with this symbol, ensure that the area is safe before you do so.

DANGER

Indicates an imminently hazardous situation which, if ignored, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if ignored, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if ignored, may result in damage to the product and other property.



Indicates a prohibited act.



Indicates a warning, caution, or danger. When this symbol is marked on the product, see the relevant section in this manual.



Protective conductor terminal.



Chassis (frame) terminal.



On (power supply).



Off (power supply).



In position of a bi-stable push control.



Out position of a bi-stable push control.

Safety Precautions

The following safety precautions must be observed to avoid fire hazards, electric shock, accidents, and device failures. Keep them in mind and make sure to observe them.

Using the product in a manner that is not specified in this manual may impair the protection functions provided by the product.



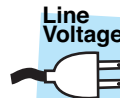
Users

- This product must be used only by qualified personnel who understand the contents of this operation manual.
- If unqualified personnel are to use the product, be sure the product is handled under the supervision of qualified personnel (those who have electrical knowledge). This is to prevent the possibility of personal injury.



Purpose of use

- Never use the product for purposes other than the product's intended use.
- This product is not designed or manufactured for general home or consumer use.



Input power

- Always use the product within the rated input line voltage range.
- Use the power cable provided to apply power. For details, see the respective page in this manual.
- This product conforms to IEC Overvoltage Category II (energy-consuming equipment that is supplied from a fixed installation).



Cover

- Some parts inside the product are hazardous. Do not remove the external cover.



Grounding

- This product conforms to IEC Safety Class I (equipment that has a protective conductor terminal). To prevent electric shock, be sure to connect the protective conductor terminal of the product to electrical ground (safety ground).



Operation

- If you notice a malfunction or abnormality in the product, stop operation immediately, and turn off the switchboard breaker. Make sure the product is not used until it is completely repaired.
- Make sure that load cables and other cables that run current have sufficient current capacity.
- Do not disassemble or modify the product. If you need to modify the product, contact your Kikusui agent or distributor.



Maintenance and inspection

- To prevent electric shock, be sure turn off the switchboard breaker before carrying out maintenance or inspection. Do not remove the external cover.
- Check periodically that there are no tears or breaks in the power cable.
- If the panel needs cleaning, gently wipe it using a soft cloth with water-diluted neutral detergent. Do not use volatile chemicals such as benzene or thinner.
- To maintain the performance and safe operation of the product, we recommend periodic maintenance, inspection, cleaning, and calibration.

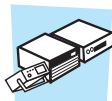


Service

- Kikusui service engineers will perform internal service on the product. If the product needs adjustment or repairs, contact your Kikusui agent or distributor.



Precautions about the Installation Location



Be sure to observe the following precautions when installing the product.

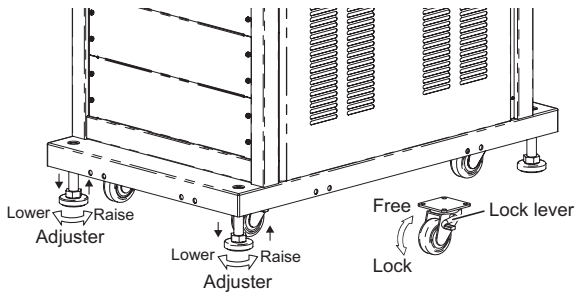
- Do not use the product in a flammable atmosphere. Risk of explosion or fire. Do not use the product near alcohol, thinner, or other combustible materials, or in an atmosphere containing such vapors.
- Avoid locations where the product is exposed to high temperatures or direct sunlight. Do not install the product near a heater or in areas subject to drastic temperature changes.
 - Operating temperature range:
 - 0 °C to +40 °C (32 °F to 104 °F)
 - Storage temperature range:
 - 25 °C to +70 °C (-13 °F to 158 °F) (PLZ-4W LP series)
 - 20 °C to +70 °C (-4 °F to 158 °F) (PLZ-4WH LP series)
- Avoid humid environments. Do not install the product in high-humidity locations, such as near a boiler, humidifier, or water supply.
 - Operating humidity range:
 - 20 %rh to 85 %rh (no condensation)
 - Storage humidity range:
 - 90 %rh or less (no condensation)
 Condensation may form even within the operating humidity range. If this happens, do not use the product until the condensation dries up completely.
- Be sure to use the product indoors. This product is designed for safe indoor use.
- Do not install the product in a corrosive atmosphere. Do not install the product in a corrosive atmosphere or in environments that contain a high concentration of sulfuric acid mist. This may cause corrosion of various conductors or reduce the quality of the connector contacts inside the product, and this could lead to malfunction, failure, and possibly fire.
- Do not install the product in a dusty location. Dust accumulation can lead to electric shock or fire.
- Do not use the product in a poorly ventilated location. The product uses forced air cooling. It sucks air through the inlet holes on all its panels except for the rear panel, and then expels air through its rear panel. Secure adequate space around the product's inlet and outlet holes to prevent the possibility of fire caused by accumulation of heat. Allow at least 20 cm of space between the air inlet/outlet and the wall (or obstacles). Hot air (approximately 20 °C, 68 °F, hotter than the ambient temperature) is expelled from the outlet holes. Do not place objects that are affected by heat near the air outlet.
- Do not place objects on top of the product. Placing heavy objects on top of the product may cause it to malfunction.
- Do not install the product on an inclined surface or in a location subject to vibrations. The product may fall or tip over and cause damage and injury.
- Do not use the product in a location subject to strong magnetic or electric fields or in a location where the input power supply signal contains large amounts of distortion or noise. Doing so may cause the product to malfunction.
- Do not use this product near highly sensitive measuring instruments or receivers. Noise generated by this product may affect other devices.
- Use the product in an industrial environment. Using this product in a residential area may interfere with radio and TV broadcast reception. In such case, users may need to take special measures to reduce the electromagnetic radiation.
- If you are using a product with casters, be sure to apply the caster stoppers.

Fixing the product in place

This product has casters on its bottom side, so it is easy to move the product. To ensure that the product is not moved accidentally while it is being operated, use the adjusters to fix the product in place, and lock the casters.

Looking down at the adjuster from above, turning the adjuster to the left (counterclockwise) raises it, and turning it to the right (clockwise) lowers it.

Lowering the lock lever on a caster locks the caster, and raising the lock lever unlocks the caster.



Precautions When Moving the Product



Note the following points when moving the product to the installation location or when transporting the product.

- Turn off the POWER switch.
Moving the product with the POWER switch turned on may cause electric shock or damage to the product.
- Remove all wiring from the product.
Moving the product with the cables connected may cause wires to break or injuries due to the product falling over.
- Have an appropriate number of people (never just one) move the product. The weight of the product is indicated on the rear panel and in the "Specifications" manual.
- Unlock the casters and raise the adjusters.
Moving the product without raising the adjusters may cause injuries due to the product falling over.
- When you are moving the product from one location to another, if you must leave it unattended, be sure to use the caster locks and the adjusters to ensure that the product stays in place.
- When transporting the product, be sure to use the original packing materials. Otherwise, damage may result from vibrations or from the product falling during transportation.
- Be sure to include this manual and other related manuals.

Notations Used in This Guide

- In this guide, large-capacity DC electronic loads PLZ9004W LP, PLZ11004W LP, and PLZ13004W LP are referred to as the PLZ-4W LP or the PLZ-4W LP series.
- In this guide, large-capacity DC electronic loads PLZ9004WH LP, PLZ11004WH LP, and PLZ13004WH LP are referred to as the PLZ-4WH LP or the PLZ-4WH LP series.
- The following markings are used in the explanations in this manual.

WARNING

Indicates a potentially hazardous situation which, if ignored, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if ignored, may result in damage to the product or other property.

NOTE

Indicates information that you should know.

See

Indicates a reference to detailed information.

Contents of the Included CD-ROM

Load the included CD-ROM into the CD-ROM drive. In a few moments, a start window will appear. If the start window does not appear, open the CD-ROM folder in Windows Explorer, and then double-click index.html to display the start window.

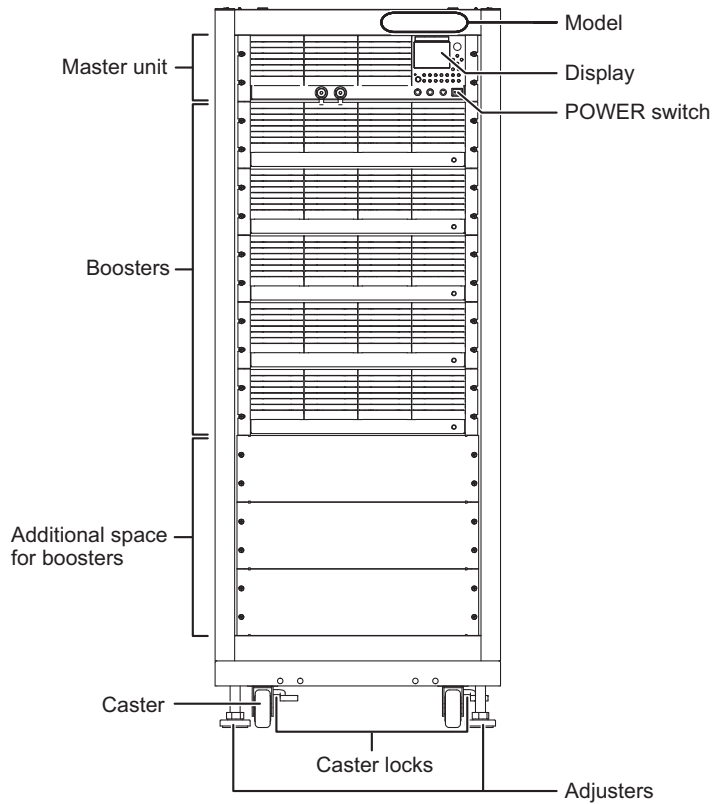
The CD-ROM contains the following items.

- Application software
PLZ applications and samples (a VISA library is required to use the application software)
- Driver
KI-VISA
- PLZ-4W LP Series Operation Manual
PLZ-4W Series User's Manual (PDF)
PLZ-4W Series Quick Reference (PDF)
PLZ2004WB Operation Manual (PDF)
PLZ-4W LP Series Setup Guide (PDF)
Communication Interface Manual (HTML, partially in PDF)
- PLZ-4WH LP Series Operation Manual
PLZ-4WH Series User's Manual (PDF)
PLZ-4WH Series Quick Reference (PDF)
PLZ2004WHB Operation Manual (PDF)
PLZ-4WH LP Series Setup Guide (PDF)
Communication Interface Manual (HTML, partially in PDF)

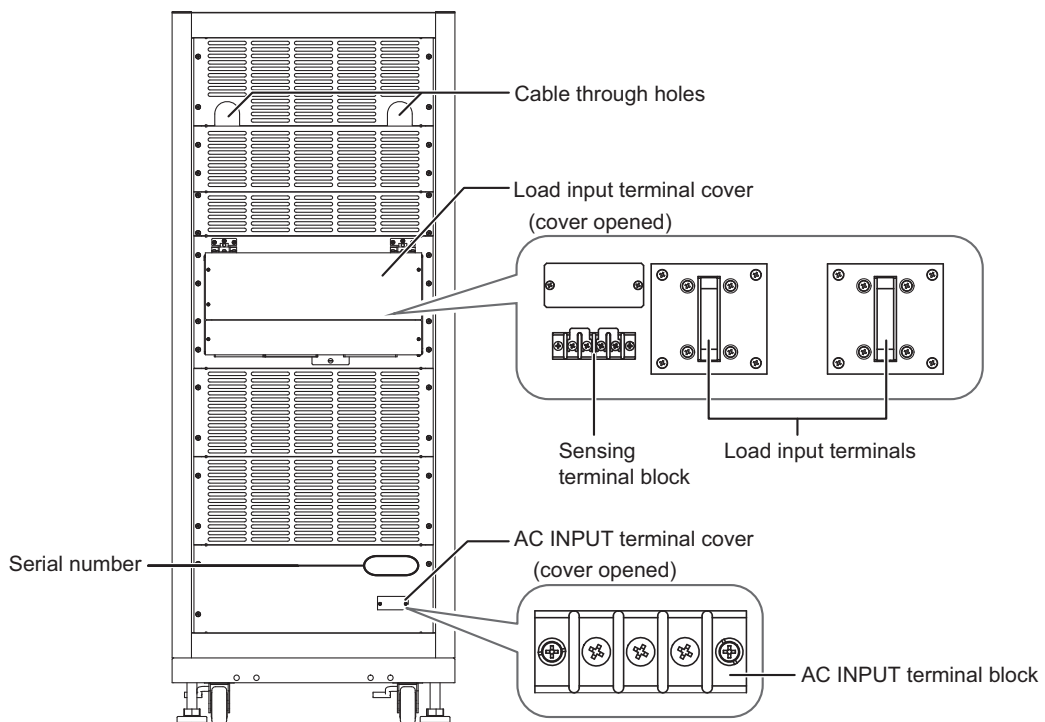
Component Names

PLZ-4W LP series (an example: PLZ11004W LP)

Front panel



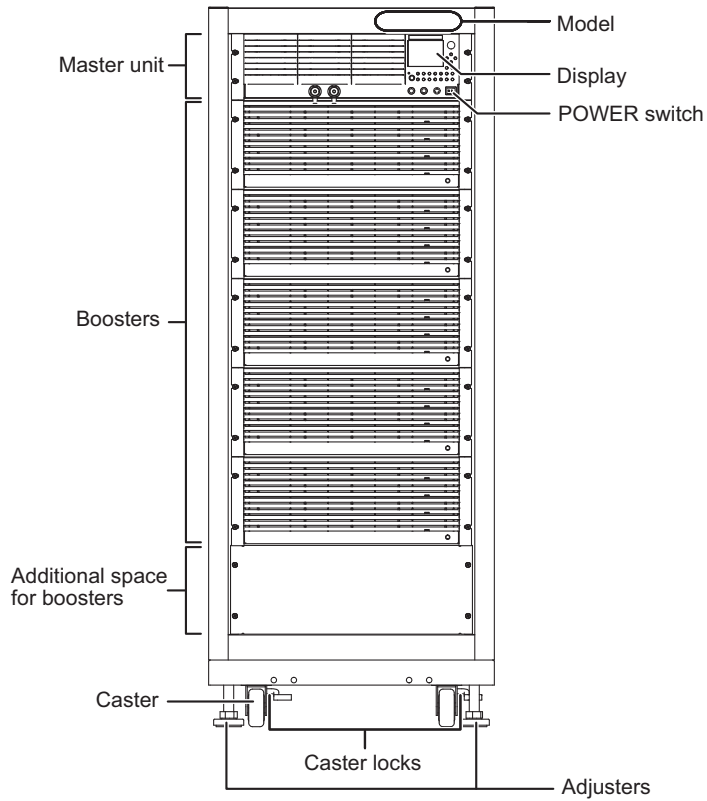
Rear panel



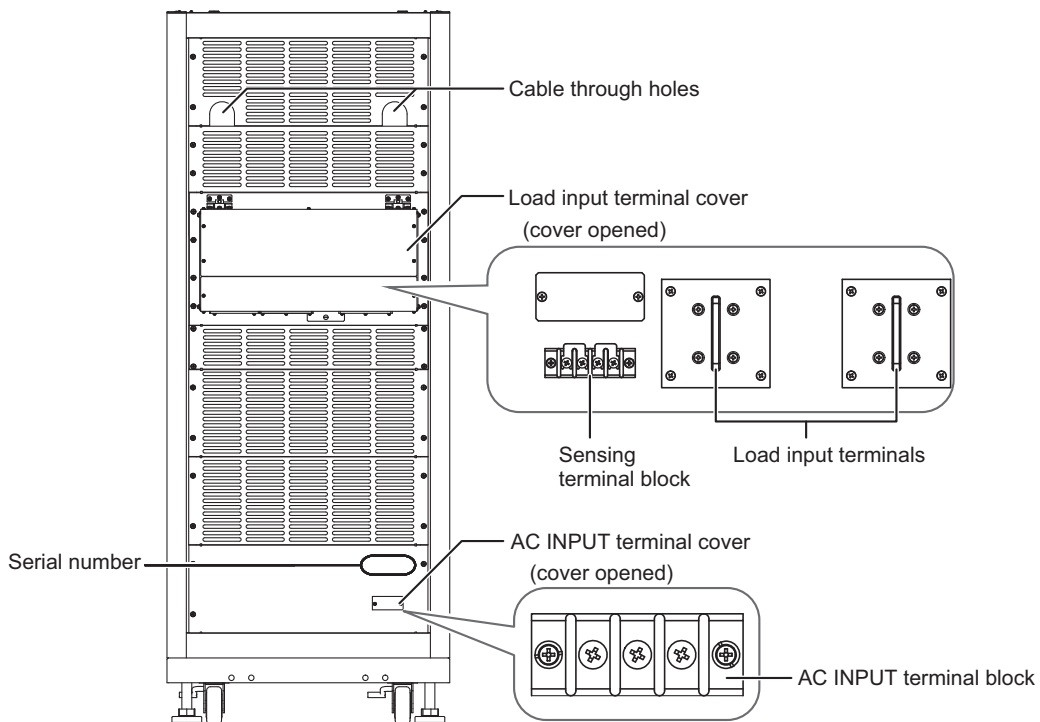
Component Names (continued)

PLZ-4WH LP series (an example: PLZ11004WH LP)

Front panel



Rear panel



1 Preparation

This chapter describes how to connect the power cable and how to turn the power on and off.

Connecting the Power Cable

This product conforms to IEC Overvoltage Category II (energy-consuming equipment that is supplied from a fixed installation).



WARNING

Risk of electric shock.

- **This product conforms to IEC Safety Class I (equipment that has a protective conductor terminal). Be sure to earth ground the product to prevent electric shock.**
- **The product is grounded through the power cable ground wire. Connect the protective conductor terminal to earth ground.**
- **Before you connect the power cable, turn off the switchboard breaker (a switch that cuts off the power supply from the switchboard).**
- **Be sure to have a qualified engineer make the connection to the switchboard.**

Risk of electric shock or fire.

- **The switchboard breaker must meet the requirements shown below.**



CAUTION

Inside the product, protective circuits are connected to match the polarity of the input terminal. Be sure to connect the L, N, and ⊕ (GND) terminals correctly between the switchboard and the product.



NOTE

- Use the supplied power cable to connect to the AC power line.
- In an emergency, turn off the switchboard breaker to separate the product from the AC power line.

■ Switchboard breaker requirements

- Only use the breaker with this product.
- Keep the breaker readily accessible at all times.
- Indicate that the breaker is dedicated for use with this product and that it is used to disconnect the product from the AC power line.

■ Connection procedure

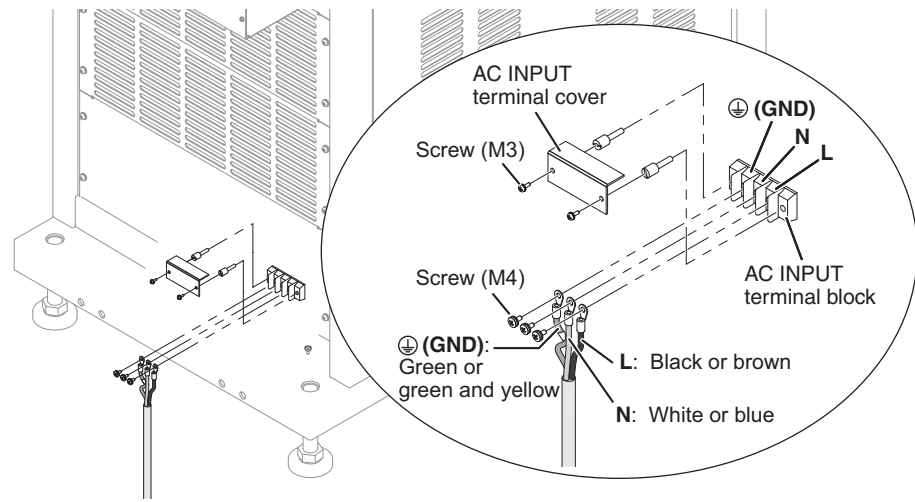
1 Check that the AC power line meets the nominal input rating of the product.

The product can receive a nominal line voltage in the range of 100 Vac to 240 Vac at 50 Hz or 60 Hz (frequency range: 47 Hz to 63 Hz).

2 Check that the POWER switch is turned off (O).

3 Connect the power cable to the AC INPUT terminal block on the rear panel.

Be sure to connect the L, N, and ⊕ (GND) terminals correctly.



4 Turn off the switchboard's breaker.

5 Connect the L, N, and ⊕ (GND) wires of the power cable to the matching terminals on the switchboard.

Attach a crimping terminal that is appropriate for the screw on the switchboard that you are connecting to, and securely connect it to the switchboard.

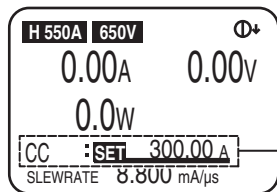
Turning the Power On



PLZ-4WH series example

- 1 Check that the power cable is connected correctly.**
- 2 Check that nothing is connected to the load input terminals (DC INPUT) on the front and rear panels.**
- 3 Turn the POWER switch on (I).**
- 4 Check that the display is ready to accept basic setting input.**

Measurements (areas where the unit is A, V, and W) indicate zero. The word “SET” appears highlighted below the measurements. You can enter the basic setting in the selected operation mode.



Constant current (CC) mode is selected on this screen. Therefore, you can enter the current (which is the basic setting).

Basic setting input condition

- 5 Press LOAD.**

Check that the LED above the key lights.
- 6 Press LOAD again.**

Check that the LED above the key turns off.

NOTE

- The phrase “load on” refers to a condition in which a current is running through the product. “Turning the load on” refers to the operation of running a current through the product. The phrase “load off” refers to a condition in which a current is not running through the product. “Turning the load off” refers to the operation of stopping a current from running through the product.
- This product saves the panel settings (except the load on/off condition) that are in use immediately before the POWER switch is turned off. If you turn the power on, the product starts in the same state as it was in the last time that it was turned off.

Initial settings

As shown in the following table, the initial settings of this product are different from the factory default settings of individual PLZ series power supplies (PLZ1004W and PLZ1004WH). If you initialize this product to its factory default settings, the factory default settings of individual PLZ series power supplies will be applied, so be sure to change the items in the following table.

| Item | Value | |
|--------------------|------------------------------|---|
| Parallel operation | Configuration > Master/Slave | Operation MASTER |
| | | Booster PLZ9004W LP and PLZ9004WH LP: 4 PLZ11004W LP and PLZ11004WH LP: 5 PLZ13004W LP and PLZ13004WH LP: 6 |

When the product does not start properly

If the product does not start when the power is turned on, follow the appropriate remedy shown below. If following the remedy does not solve your problem, contact your Kikusui agent or distributor.

| Condition | Remedy |
|------------------------------------|---|
| Nothing is shown on the display. | Check the power cable connection, and turn the POWER switch off and then back on. See the references below, and adjust the display contrast. <ul style="list-style-type: none"> • PLZ-4W LP series: See section 4.3, "Operation Panel," in the PLZ-4W Series User's Manual. • PLZ-4WH LP series: See "Panel Operation Basics" in the PLZ-4WH Series User's Manual. |
| Odd current or power is displayed. | Turn off the POWER switch and then back on. |
| An alarm is occurring. | A protection function has been activated. See the references below, and eliminate the root cause of the alarm. <ul style="list-style-type: none"> • PLZ-4W LP series: See section 5.3, "Types of Protection Functions," in the PLZ-4W Series User's Manual. • PLZ-4WH LP series: See "Protection Functions" in the PLZ-4WH Series User's Manual. |

Turning the Power Off

Turn the POWER switch off (O).

CAUTION

After you turn the POWER switch off, wait at least 5 seconds after the fan stops before you turn the POWER switch back on. Repeatedly turning the POWER switch on and off at short intervals can cause damage to the inrush current limiter. Furthermore, this will shorten the service life of the POWER switch, internal input fuse, and other components.

NOTE

This product saves the panel settings (except the load on/off condition) that are in use immediately before the POWER switch is turned off. If you turn the power on, the product starts in the same state as it was in the last time that it was turned off. If the power is turned off immediately after the settings have been changed, the last settings may not be stored.

2 Connecting the EUT

This chapter describes how to connect the EUT to the product.

Connecting the Load Cables

Using load cables, connect the EUT to the product through the load input terminals on the rear panel.

The load input terminals on the front panel are for using the PLZ1004W or PLZ1004WH in a standalone manner. Do not use the load input terminals on the front panel of this product.

Selecting the load cable



WARNING

- **Risk of fire. Use load cables whose capacity is adequate for the product's rated input current.**
- **Risk of electric shock. Use load cables with a voltage rating that meets or exceeds the product's isolation voltage. The isolation voltage of the PLZ-4W LP series is ± 500 Vdc, and that of the PLZ-4WH LP series is ± 750 Vdc.**



CAUTION

Use load cables with a core diameter that is appropriate for the amount of current being used and with sturdy, flame-resistant insulation.

If the load cable resistance is large, a large voltage drop may occur when current flows through the cables. This may result in the load input terminal voltage being lower than the minimum operating voltage of this product. Refer to the table below, run multiple cables in parallel to provide adequate wiring for the current.

| Nominal cross-sectional area (mm ²) | AWG (reference cross-sectional area; mm ²) | Allowable current ¹ (A; Ta = 30 °C) | Kikusui-recommended current (A) |
|---|--|--|---------------------------------|
| 50 | 1/0 (53.49) | 190 | - |
| 60 | 2/0 (67.43) | 217 | - |
| 80 | 3/0 (85.01) | 257 | 200 |
| 100 | 4/0 (107.2) | 298 | - |
| 125 | - | 344 | - |
| 150 | - | 395 | 300 |
| 200 | - | 469 | 400 |
| 250 | - | 556 | - |
| 325 | - | 650 | 600 |
| 400 | - | 745 | - |
| 500 | - | 842 | - |

¹ Excerpt from Japanese laws related to electrical equipment.



NOTE

A cable's temperature is determined by the resistive loss based on the current, the ambient temperature, and the cable's external thermal resistance. The above table shows the current capacity of heat-resistant vinyl cables that have a maximum allowable temperature of 60 °C when one of the cables is separated and stretched out horizontally in air in an ambient temperature of 30 °C. The current must be reduced under certain conditions, such as when vinyl cables that have a low heat resistance are used, when the ambient temperature is 30 °C or greater, or when cables are bundled together and little heat is radiated.

Connecting the load cables

Using load cables, connect the EUT to the product through the load input terminals on the rear panel.



WARNING

Risk of electric shock.

- Do not touch load input terminals when the output is turned on.
- The load input terminals on the front panel are connected internally to the load input terminals on the rear panel. The voltage applied to the terminal on one side is transmitted directly to the terminal on the other side.



CAUTION

Risk of damage.

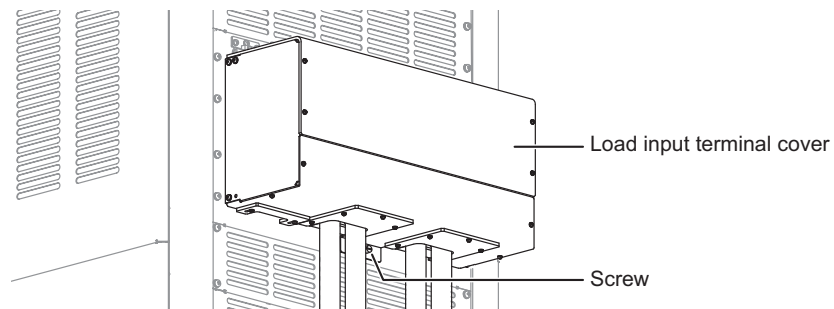
- Do not connect the EUT to the load input terminals while the product's load is turned on.
- Do not use the load input terminals on the front panel.

Risk of overheating.

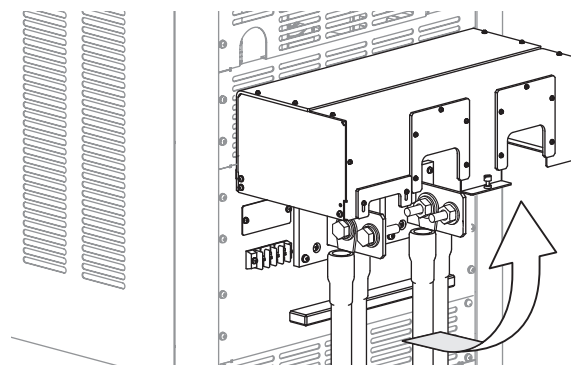
- Attach crimping terminals to the cables, and use the supplied screws to connect the cables.

1 Check that the product's **POWER** switch is turned off (○).

2 Loosen the screws holding the load input terminal cover on the rear panel of this product.



3 Open the load input terminal cover.



PLZ11004WH LP example

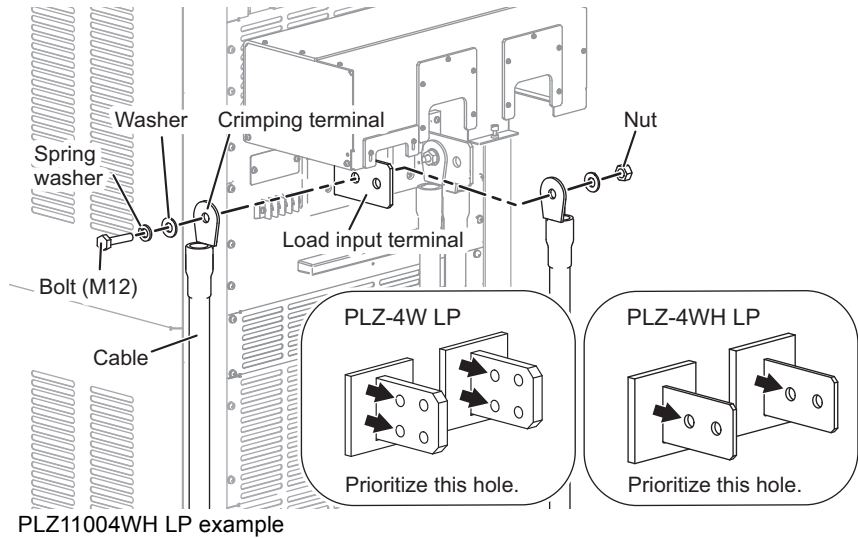
4 Connect cables or flat braided copper wires to the load input terminals.

Use the supplied nuts, washers, and spring washers to secure the cables or wires in place.

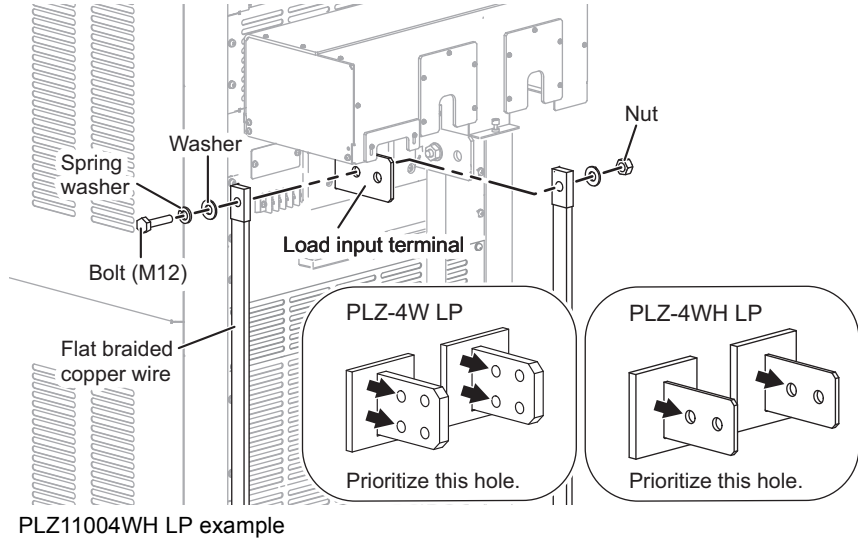
Give precedence to the load input terminal holes closer to the product for connecting the cables or wires.

• Connecting cables

For cables, use crimping terminals that are appropriate for the bolts (M12) that are to be used.



• Connecting flat braided copper wires



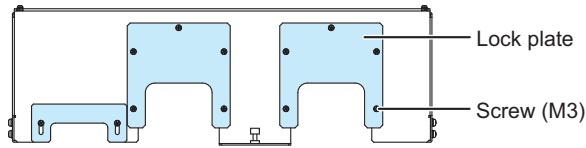
See p. 17

To connect sensing cables, see "Using Remote Sensing".

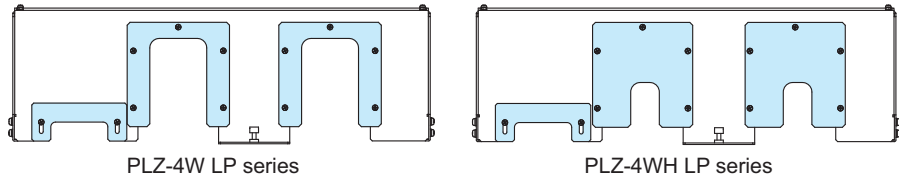
5 Apply the appropriate lock plates for the load terminal input terminal covers.

There are lock plates for cables and lock plates for flat braided copper wires. If necessary, switch to the appropriate lock plates.

For cables (when shipped from factory)

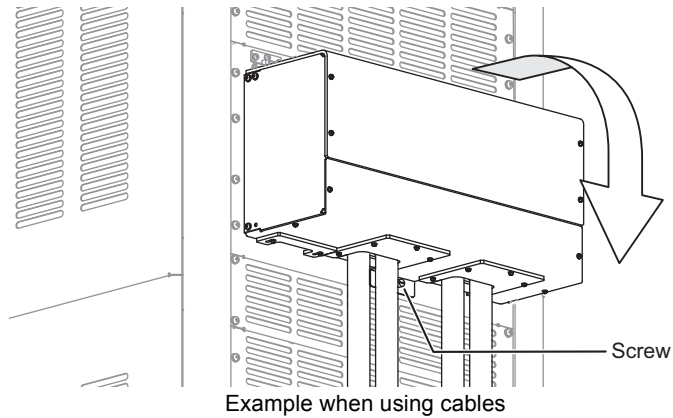


For flat braided copper wires



6 Close the load input terminal covers, and fasten them with screws.

Fasten the covers correctly to prevent them from moving.



Using Remote Sensing

Remote sensing is used to compensate for the voltage drop that occurs in load cables. Remote sensing improves the transient characteristics of constant resistance (CR), constant voltage (CV), and constant power (CP) operation modes, which stabilizes operation.

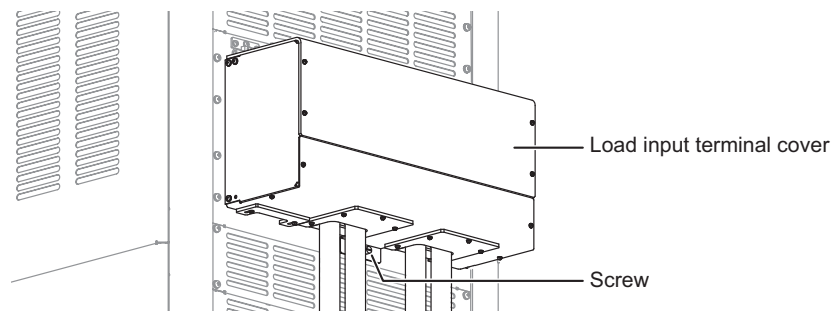
To use remote sensing, connect the sensing terminals of the product to the EUT with sensing cables.

CAUTION

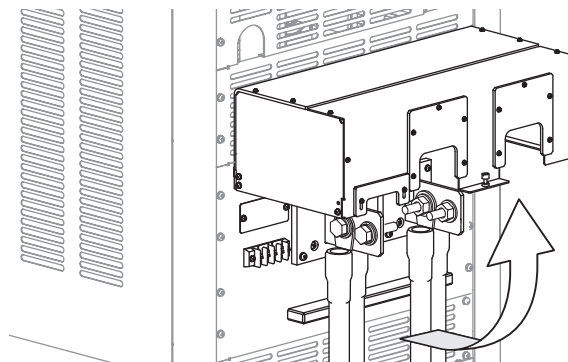
- Risk of damage to the internal circuitry. Never wire the sensing terminals while the master unit is turned on.
- If the remote sensing cables come loose while remote sensing is in use, the product and EUT may break. Be sure to connect the cables securely.
- If you are not using remote sensing, be sure to attach the two short bars to the sensing terminals.

1 Check that the product's POWER switch is turned off (O).

2 Loosen the screws holding the load input terminal cover on the rear panel of this product.



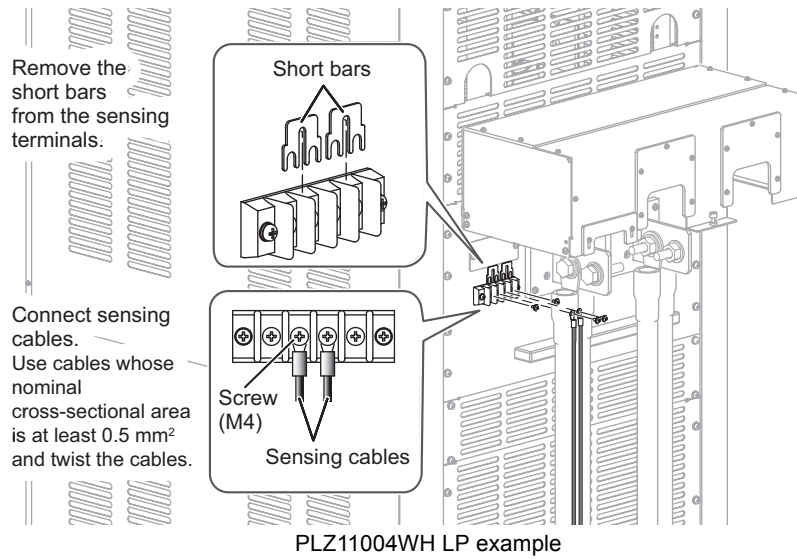
3 Open the load input terminal cover.



PLZ11004WH LP example

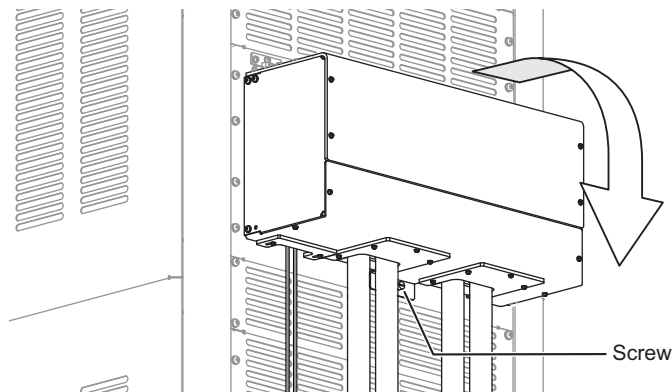
4 Connect sensing cables to the sensing terminals.

Remove the two short bars from the sensing terminals, and then connect the cables using the product screws.



5 Close the load input terminal covers, and fasten them with screws.

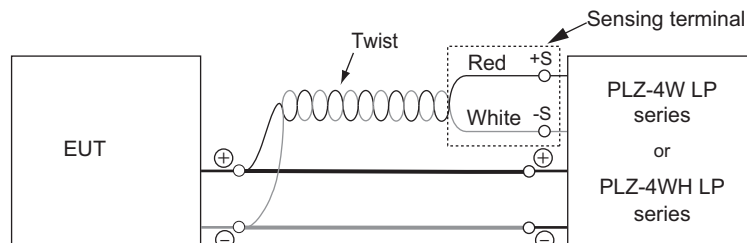
Fasten the covers correctly to prevent them from moving.



6 Connect the sensing cables to the EUT.

Connect the cables as shown in the figure.

Connect the cables as close to the EUT as possible.



3 Connecting External Devices

This chapter describes how to connect an external controller when you want to control the product externally.

Connecting an External Controller

You can control the PLZ-4W LP series externally through the J1 connector on the rear panel of the master unit. You can control the PLZ-4WH LP series externally through the EXT CONT connector on the rear panel of the master unit. For details on external control and how to perform it, see below.

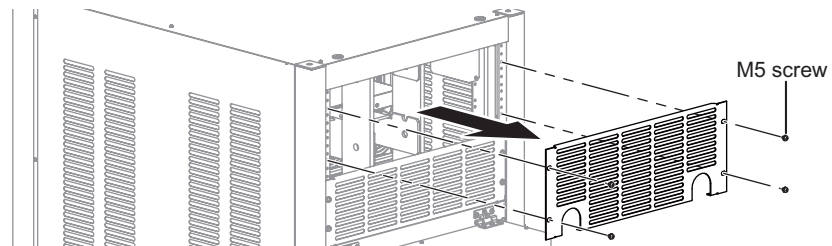
- PLZ-4W LP series: See the PLZ-4W Series User's Manual.
- PLZ-4WH LP series: See the PLZ-4WH Series User's Manual.



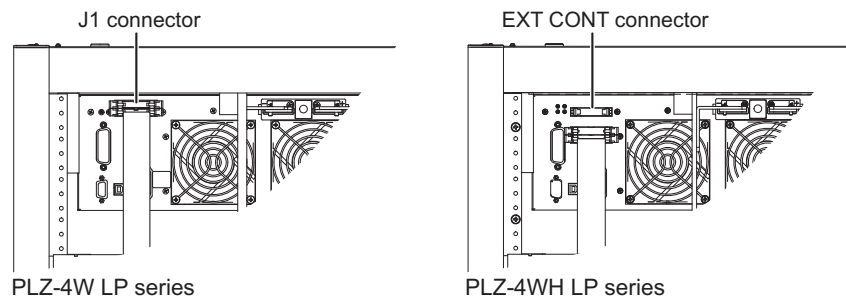
Risk of electric shock. Before you remove the rear panel or wire the J1 or EXT CONT connector, be sure to cut off the power supply from the EUT and turn off the product.

1 Cut off the power supply from the EUT, and turn off (○) the product's POWER switch.

2 Remove the topmost rear panel.
You can now see the rear panel of the master unit.

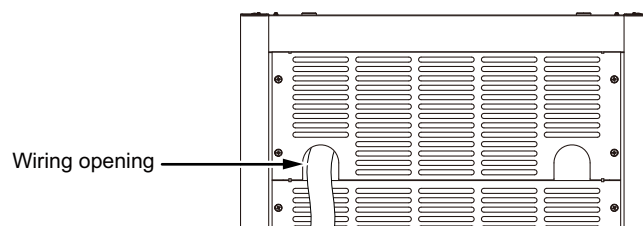


3 Remove the protection component attached to the connector, and connect the cable.



4 Attach the rear panel that you removed in step 2 .

Run the cable that you connected to the connector through the opening at the bottom of the rear panel.



Connecting a Remote Controller

In addition to using the front panel, the product can be controlled remotely through the available interfaces. To perform remote control, an interface connector on the rear panel of the master unit is used. For details on remote control and how to perform it, see below.

- PLZ-4W LP series: See the PLZ-4W Series User's Manual.
- PLZ-4WH LP series: See the PLZ-4WH Series User's Manual.

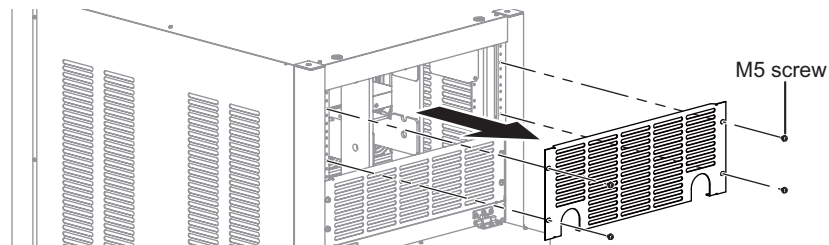


WARNING Risk of electric shock. Before you remove the rear panel or connect to an interface connector, be sure to cut off the power supply from the EUT and turn off the product.

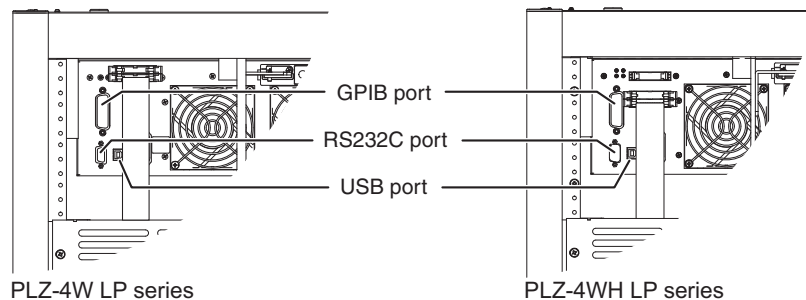
1 Cut off the power supply from the EUT, and turn off (O) the product's POWER switch.

2 Remove the topmost rear panel.

You can now see the rear panel of the master unit.

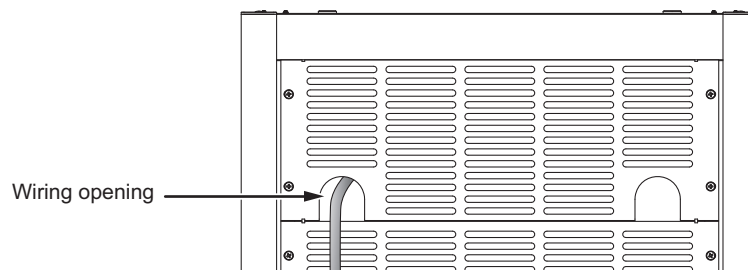


3 Connect a cable to the interface connector that you want to use.



4 Attach the rear panel that you removed in step 2 .

Run the cable that you connected to the interface connector through the opening at the bottom of the rear panel.



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有毒有害物质或元素名称及含有标示

Name of hazardous materials and symbol of element in the equipment and quantity

| 部件名称 | 有毒有害物质或元素 | | | | | |
|--|-----------|---------|---------|---------------|-------------|---------------|
| | 铅 Pb | 汞 Hg | 镉 Cd | 六价铬 Cr(VI) | 多溴联苯 PBB | 多溴二苯醚 PBDE |
| PLZ1004W, PLZ1004WH (Electronic Load) | × | ○ | ○ | ○ | ○ | ○ |
| PLZ2004WB, PLZ2004WHB (Electronic Load) | × | ○ | × | ○ | ○ | ○ |
| KRB3-TOS, KRB4 (Rack Mount Bracket) | × | ○ | ○ | ○ | ○ | ○ |
| PC01-PLZ-4W / PC02-PLZ-4W (I/F Cable) | × | ○ | ○ | ○ | ○ | ○ |
| KRC273L / LP01-KRC (Cabinet Rack) | ○ | ○ | ○ | ○ | ○ | ○ |
| 内部接线 | × | ○ | ○ | ○ | ○ | ○ |
| 外壳 | × | ○ | × | ○ | ○ | ○ |

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