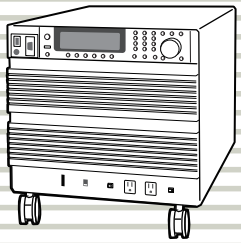
KIKUSUI PART NO. Z1-006-110, I0021101
Aug 2020

Setup Guide

AC Power Supply PCR-LE seriess

PCR500LE
PCR1000LE
PCR2000LE
PCR3000LE
PCR4000LE
PCR6000LE
PCR9000LE



Thank you for purchasing the PCR-LE Series AC Power Supply.

The PCR-LE Series is the evolution of Kikusui's proven PCR-LA Series of AC power supplies. The power supply contains a combination of a high-speed linear amplifier and an arbitrary waveform synthesizer to ensure high precision.

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 any of the accessories are 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.

Accessory

The attached power cord varies depending on the input-voltage-range setting of the power supply at the time of shipping.

Rated voltage: 125 Vac
PLUG: NEMA5-15
[85-10-1030]

or

Rated voltage: 250 Vac
PLUG: CEE7/7
[85-AA-0005]

or

Rated voltage: 250 Vac
PLUG: GB1002
[85-10-0791]

☐ Power cord (1pc.)
This is only included with the PCR500LE.

☐ Setup Guide (1pc.)

☐ CD-ROM (1 pc.)

☐ Quick Reference
(Japanese:1 pc.
English: 1 pc.)

☐ Safety information (1pc.)

☐ Heavy object warning label
Not included with the PCR500LE
If necessary, attach to the product.
PCR1000LE: A8-900-154
PCR2000LE: A8-900-155
PCR3000LE: A8-900-157
PCR4000LE: A8-900-157
PCR6000LE: A8-900-158
PCR9000LE: A8-900-158

KIKUSUI ELECTRONICS CORP.
1-1-3 Higashiyamata, Tsuzuki-ku, Yokohama,
224-0023, Japan
Tel: +81-45-482-6353
Fax: +81-45-482-6261
www.kikusui.co.jp/en

Features

The PCR-LE Series is equipped with the following features.

- Various power supply simulations

  Power line abnormalities such as outages and voltage dips can be simulated. This is a basic feature for power-supply-environment testing.

- Various measurements

  The rms voltage and current, the peak voltage and current, the active power, apparent power, and power factor of the output can be measured. Harmonic analysis (up to the 40th harmonic) can be performed on the output current.

- DC output

  The PCR-LE Series can generate DC output and AC + DC output. This makes it possible to use the PCR-LE Series in a wide variety of fields, including chemistry and physics.

- Sequences

  The output voltage, frequency, and waveform can be changed over time. Power-supply-environment testing can be automated.

  In addition to the AC output sequences, DC output and AC + DC output sequences are also available. A variety of standard tests can also be performed.

- Sensing and regulation adjustment

  Even if the load device is at a remote location, the PCR-LE Series can stabilize the voltage across the load by correcting for voltage drops.

  There are two types of sensing: hard sensing and soft sensing. The different types of sensing are used depending on the load conditions and how you will use the PCR-LE Series.

- Output current control

  The output limit function can be used to limit the output current (rms) to a fixed value to perform continuous operation. Continuity tests on electrical equipment (such as switchboards, breakers, and wiring devices) can be performed under stable conditions.

- Power management function (power saving function)

  A sleep function, which turns the power units off to reduce power consumption when output is not generated for the specified length of time, and a power-saving function, which operates the power units at the bare minimum settings as required by the supply load, are available.

- Memory function

  Up to 99 entries of output frequency, voltage (AC or DC), and waveform bank settings can be saved to the internal memory.

  The contents of internal memory, panel settings, power line abnormality simulations, sequence data, and waveform bank data can be saved to a USB memory device.

- External communications

  The PCR-LE Series can be controlled remotely through its RS232C interface. If an optional interface board is used, the PCR-LE Series can be controlled remotely through USB, GPIB, and LAN interfaces.

- Single-phase, three-wire output/ Theree-phase output (Optional)

  Use of the optional 2P05-PCR-LE allows the outputs of two PCR-LEs to be connected in series for use as single-phase, three-wire system power supplies. Use of the optional 3P05-PCR-LE allows the outputs of three PCR-LEs to be connected in star connection for use as three-phase system power supplies

- Master-Slave parallel control (Optional)

  The PD05M-PCR-LE/PD05S-PCR-LE option enables the PCR-LE Series to be operated in parallel (except for the PCR500LE and PCR1000LE; up to five units or within 27 kVA of power; different models can be mixed).

- External analog signal control (optional)

  The EX05-PCR-LE/EX06-PCR-LE option enables you to control the PCR-LE2 Series output using external analog signals.

  .

About the PCR-LE Documentation

These manuals are intended for users of the PCR-LE Series AC Power Supply and their instructors.

Explanations are given under the presumption that the reader has knowledge related to electric safety tests.

You can view the PDF file using Adobe Reader 6.0 or later.

The HTML can be viewed using the following browser.

Browser: Microsoft Internet Explorer 9.0 or later

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 this manual, it will be replaced. If the manual gets lost or soiled, a new copy can be provided for a fee. To replace or purchase a manual, 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.

Notations used in the PCR-LE manual

In the PCR-LE manual, the PCR-LE Series AC Power Supply is also referred to as the PCR-LE Series and the PCR-LE.

The term “PC” is used to refer generally to both personal computers and workstations.

The screen captures used in this manual may differ from the actual screens that appear on the PCR-LE. The screen captures are merely examples.

The following markings are used in the explanations in the 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.

- DESCRIPTION -

Explanation of terminology or operation principle.

(SHIFT+key name)

Indicates an operation that requires you to press a key indicated in blue characters (the lower row of text to the left of the key) while holding down the SHIFT key.

Contents of the Included CD-ROM

Put 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.

Accompanying CD-ROM contains following the items.

- KI-VISA x.x.x
- IVI-COM
- Operation Manual

Click the “PCR-LE” of "See the Manual" to move to the Manual page.

Documentation Structure

The PCR-LE Series manual comprises the following documentation.

■ User's Manual -Basic-

- Front panel and Rear panel
- Panel Operation Basics
- Selecting the Output Mode
- Setting the Output Voltage/ Frequency
- Turning Output On and Off
- Displaying Measurement Values
  How to switch the display of measured value.
- Setting Limits
  Limits can be placed on the PCR-LE output voltage setting and frequency setting. They prevent damage to the load caused by mistaken operations and limit the current that flows through the load. You can set limits in advance according to the load conditions.
- Using Protection Functions
  The PCR-LE has the following protection functions.
  Input voltage drop protection
  Overheat protection (OHP)
  Overload protection
  Internal semiconductor protection (OCP)
  Output undervoltage protection (UVP)
  Output overvoltage protection (OVP)
- Using Memory
  You can store data to the PCR-LE's internal memory and save data to a USB memory device.

■ User's Manual -Specifications-

Specifications contains the electrical specifications and outline drawings.

■ User's Manual -Appendix-

- Glossary, Operation Characteristics, Output and load
- Peak hold current measurement
- Sequence tutorial
- Option
- Factory Default Settings
- Maintenance
- Troubleshooting
- Alarms and Trouble
- Error Message

■ Setup Guide (This guide)

This guide is intended for first-time users of the product. It gives an overview of the product, connecting procedures, etc. Please read through and understand this guide before operating the product.

■ Quick Reference

The quick reference briefly explains the panel description and the basic operation of the product.

■ Safety information

This document contains general safety precautions for this product. Keep them in mind and make sure to observe them.

■ Programming Sheet

- Table for Recording Power Line Abnormality Simulation Operation Settings (XLS)
- Table for Recording Sequence Operation Settings (XLS)

■ User's Manual -Advanced-

- Using the synchronization Function
  The synchronization function synchronizes the frequency and phase of the PCR-LE output voltage with a 50 Hz or 60 Hz input power supply.
- Using the Voltage Compensation Function
  The compensation function compensates for voltage drops in the load cables when the load is connected to the PCR-LE over a long distance.
- Using Power Line Abnormality Simulations
  In AC mode, you can simulate power supply line errors by stopping the PCR-LE output and decreasing and increasing the voltage (to simulate voltage dips and pops).
- Using the Sequence Function
  A sequence is a series of settings - values such as the output voltage, frequency, and time - that are saved in advance and are then recalled and automatically carried out in order at a later time.
- Using the Harmonic Current Analysis Function
  You can perform harmonic analysis of the output current.
- Generating Special Waveforms (Waveform bank)
  You can generate peak-clipped sine waveforms.
- Setting the Output Impedance
  The PCR-LE output impedance (output resistance) is approximately 0 Ω. Commercial power supplies have an impedance (resistance) of several milliohms to several ohms. You can set the PCR-LE output impedance. This enables you to simulate the same environment as that which is provided by commercial power supplies.
- Setting Soft Starts (The voltage rise time)
  To prevent the output from being turned off (the alarm from being activated) and the voltage from dropping due to the load device's inrush current that exceeds the rated capacity of the PCR-LE, you can control the inrush current by having the output voltage rise gradually when the output is turned on.
- Fixing the Internal Vcc
  To minimize loss in the linear amplifier section, the PCR-LE automatically adjusts the linear amplifier supply voltage (Vcc) to a level that is suitable for the output voltage. You can fix the Vcc voltage of the PCR-LE. This is useful when you want to prioritize the output voltage response over the product's efficiency.
- Selecting the Response
  The PCR-LE uses a high-speed amplifier. Depending on the load circuits (especially in the case of capacitive loads) and the wiring conditions, the output may become unstable may oscillate. You can set the response speed of the internal amplifier according to the load conditions and how you will use the PCR-LE.
- Using the Power Management Functions
  The PCR-LE has the following two power management functions: a sleep function and a power-saving function
- External analog signal control (optional)
  You can use the optional analog signal interface board to control the product with external analog signals.

■ Communication Interface Manual

This manual contains details about remote control.

Interface manual is written for readers with sufficient basic knowledge of how to control instruments using a personal computer.

PCR-LE Series models

The PCR-LE Series generates single-phase output. The following models are available

Model	Rated output capacity	Maximum output current	
		With 100 V output	With 200 V output
PCR500LE	500 VA	5 A	2.5 A
PCR1000LE	1 kVA	10 A	5 A
PCR2000LE	2 kVA	20 A	10 A
PCR3000LE	3 kVA	30 A	15 A
PCR4000LE	4 kVA	40 A	20 A
PCR6000LE	6 kVA	60 A	30 A
PCR9000LE	9 kVA	90 A	45 A

Precautions Concerning Installation

When installing this product, be sure to observe the precautions provided in “Precautions Concerning Installation Location” in the Safety information manual. Items specific to this product are given below.

- When you install the product, be sure to observe the temperature and humidity ranges indicated below.

  Operating temperature range: 0 °C to 50 °C (32 °F to 122 °F)

  Operating humidity range: 20 %rh to 80 %rh (no condensation)
- When you store the product, be sure to observe the temperature and humidity ranges indicated below.

  Storage temperature range: -10 °C to 60 °C (14 °F to 140 °F)

  Storage humidity range: 90 %rh or less (no condensation)
- Allow at least 20 cm of space between the air inlet/outlet and the wall (or obstacles).
- Fix PCR6000LEs and PCR9000LEs to the floor using L-shaped or other similar brackets.

  Base Hold Angles (OP03-KRC) are available as options.

Precautions When Moving the Product

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

- Raise the stopper.

  Moving the product with the stopper lowered may cause injuries due to the product falling over. (The PCR500LE, PCR1000LE, and the PCR2000LE do not have a stopper.)
- Unlock the casters (on all products excluding the PCR500LE).
- Do not move the product by yourself (on all products excluding the PCR500LE).

  Be sure to have two or more people move the product. Exercise special care when carrying the product over a slope or across steps.

  Hold the product from underneath.

  Check the product’s weight before you transport it. The weight is displayed in the bottom of the rear panel.

  If you are using a forklift, be sure to slide the forks under the bottom of the product, check that the product is stable, and then raise the product.

  If you are using a band or similar item to raise the product with a crane, be sure to slide the band under the bottom of the product, check that the product is stable, and then raise the product.
- When you move the product, do not tip the product on its side or turn it upside down.

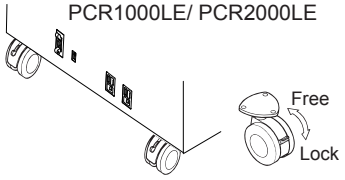
Locking the casters and using the stopper (on all products excluding the PCR500LE)

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 stopper to fix the product in place, and lock the casters. The PCR1000LE and PCR2000LE do not have stoppers.

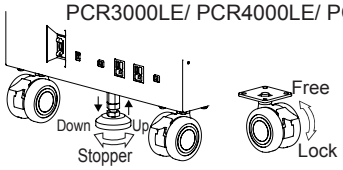
Looking down at the stopper from above, turning the stopper to the left (counterclockwise) raises the stopper, and turning the stopper to the right (clockwise) lowers the stopper.

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

PCR1000LE/ PCR2000LE



PCR3000LE/ PCR4000LE/ PCR6000LE/ PCR9000LE

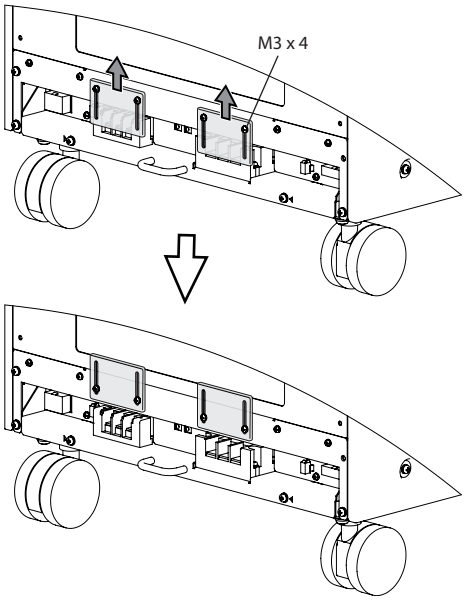


Handling the Terminal Block Tray (PCR1000LE - PCR9000LE)

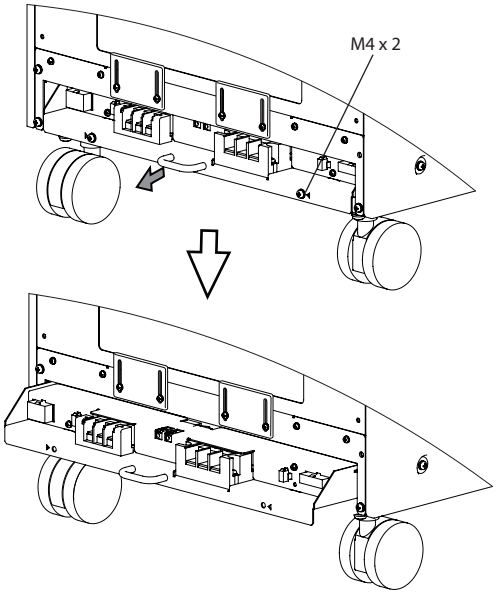
The PCR-LE Series AC INPUT, OUTPUT terminal block, SENSING terminal block, and J1 to J4 connectors are designed so that they can only be wired after you first pull out the terminal block tray. The terminal box covers ensure that you don't touch the unwired terminals. Use a Phillips-head screwdriver to insert and remove the screws.

1 **Check that the POWER switch is turned off.**

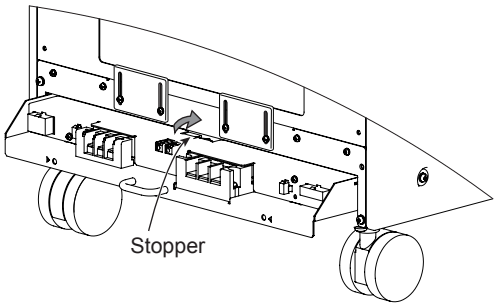
2 **Loosen the four terminal box cover screws, and then slide the two covers up.**



3 **Remove the two terminal block tray screws, and then pull the tray out.**



4 **Pull out the stopper to lock the terminal block tray in place.**

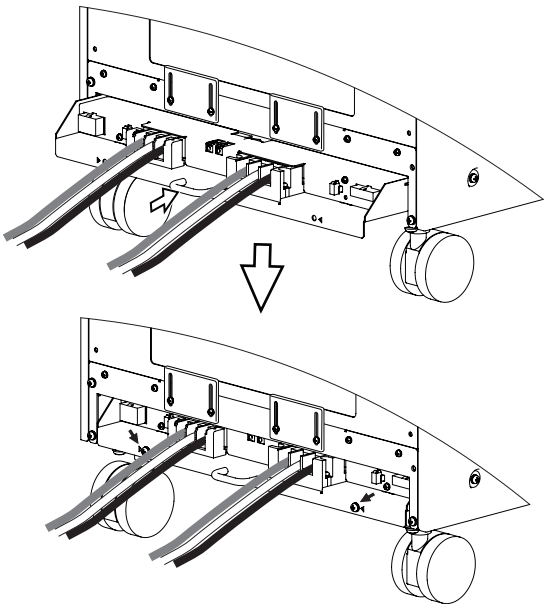


5 **Connect the wires and cables to the terminal block and connectors as necessary.**

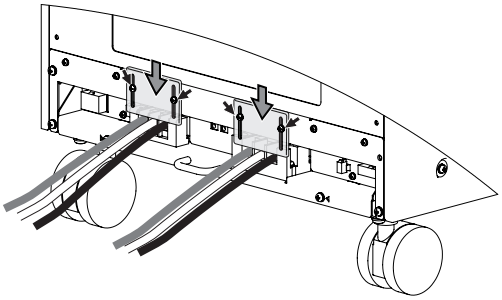
6 **Return the stopper to its previous position.**

7 **Return the terminal block tray to its previous position, and then attach the two screws that you removed in step 3**

If you do not insert the terminal block tray all the way into its storage compartment, an electric current will not flow through the PCR-LE even if the POWER switch is turned on.



8 **Slide the two terminal box covers down until they are touching the wires, and then use the four screws to fix the terminal box covers in place.**



Connecting the PCR500LE Power Cord

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.**
- **Connect the protective conductor terminal to earth ground.Connect the protective conductor terminal to earth ground.**
- **For the connected switchboard, select a breaker that has a cut-off current that can handle the maximum input current of the product**

⚠ CAUTION

If the voltage distortion of the AC power line is large, the product may malfunction. The PCR-LE Series cannot be connected to a generator or a similar device.

- Note -

- Use the supplied power cord to connect to the AC line.
  If the supplied power cord cannot be used because the rated voltage or the plug shape is incompatible, have a qualified engineer replace it with an appropriate power cord that is 3 m or less in length. If obtaining a power cord is difficult, contact your Kikusui agent or distributor.
- The power cord with a plug can be used to disconnect the product from the AC power line in an emergency. Connect the plug to an easily accessible power outlet so that the plug can be removed from the outlet at any time. Be sure to provide adequate clearance around the power outlet.
- Do not use the supplied power cord with other instruments.

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

The product can receive a nominal power supply voltage in the range of 100 Vac to 120 Vac or 200 Vac to 240 Vac at a frequency of 50 Hz or 60 Hz.

2 **Check that the POWER switch is turned off.**

3 **Connect the power cord to the AC INPUT inlet on the rear panel.**

4 **Insert the power cord plug into the outlet.**

Connecting the power cord (PCR1000LE - PCR 9000LE)

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.**
- **Connect the protective conductor terminal to earth ground.**
- **Turn off the circuit breaker of the switchboard before you connect the power cord.**
- **Do not use the product with the terminal box covers removed.**

Risk of electric shock or fire.

- **For the connected switchboard, select a breaker that has a cut-off current that can handle the maximum input current of the product**
- **Have a qualified engineer connect the power cord to the switchboard.**

⚠ CAUTION

If the voltage distortion of the AC power line is large, the product may malfunction. The PCR-LE Series cannot be connected to a generator or a similar device.

Inside the product, protective circuits such as input fuses are connected to match the polarity of the input terminal. Be sure to match the colors of the wires and the input terminals to connect the wires correctly.

PCR500LE - PCR6000LE (Single-phase, 200 V input):
L, N, and ⏚ (GND) - GND
PCR6000LE, PCR9000LE (Three-phase, 200 V input):
R, S, T, and ⏚ - GND)
PCR6000LE, PCR9000LE (Three-phase, 400 V input):
R, S, T, N, and ⏚ - GND)

- Note -

The POWER switch can be used to disconnect the product from the AC power line in an emergency. Provide enough space around the POWER switch to ensure that it can be turned off at any time.

A power cord is not supplied with the PCR-LE Series.

Input power cords are available as options. When you are wiring the switchboard, attach crimping terminals that match the screws of the switchboard that has been connected by a qualified engineer.

If you will not use one of the optional input power cords, prepare a power cord that meets the following specifications.

		Cable	Nominal cross-sectional area	Input terminal
Single-phase, 200 V input	PCR1000LE	Heavy PVC jacketed three-core cable Alternatively, three single-core cables	5.5 mm^2 or more	M4
	PCR2000LE	Three single-core cables	8 mm^2 or more	M5
	PCR3000LE		14 mm^2 or more	M8
	PCR4000LE		22 mm^2 or more	M8
	PCR6000LE		14 mm^2 or more	M8
Three-phase, 200 V input	PCR6000LE	Four single-core cables	14 mm^2 or more	M5
	PCR9000LE			
Three-phase, 400 V input	PCR6000LE	Five single-core cables	5.5mm^2 or more	M5
	PCR9000LE			

■ Tightening torque of input terminal connecting screws

	Tightening torque [N•m]
M4	1.2
M5	2.0
M8	5.5

Connecting the power cord (PCR1000LE - PCR 9000LE) (Cont.)

Pull out the terminal block tray, and then connect the power cord.

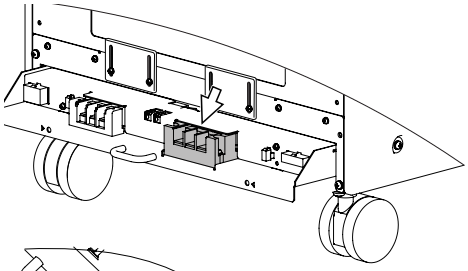
1 **Check that the AC power line meets the nominal input rating of the product.**

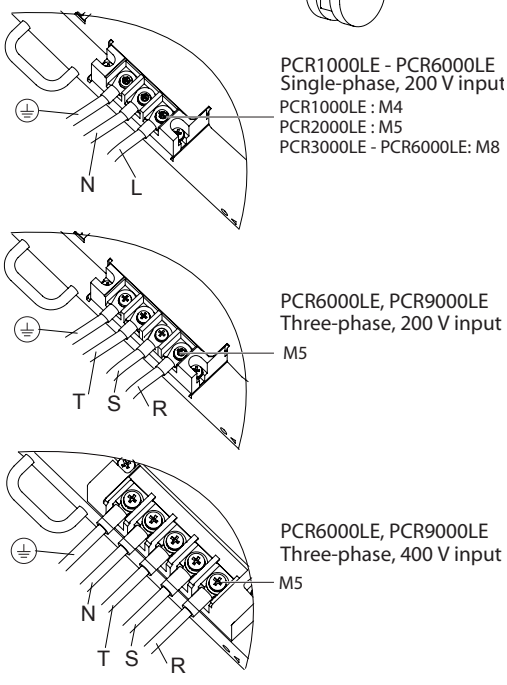
The product can receive a nominal power supply voltage:
PCR500LE - PCR4000LE (Single-phase, 200 V input):
100 Vac to 120 Vac or 200 Vac to 240 Vac
PCR6000LE (Single-phase, 200 V input):
200 Vac to 240 Vac
PCR6000LE, PCR9000LE (Three-phase 200 V input):
200 Vac to 240 Vac (Line Voltage)
PCR6000LE, PCR9000LE (Three-phase, 400 V input):
220 Vac to 240 Vac (Phase Voltage)
Frequency: 50 Hz or 60 Hz.

2 **Check that the POWER switch is turned off.**

3 **Pull out the terminal block tray.**

4 **Securely connect the power codes to corresponding terminals of AC INPUT terminal block.**





5 **Turn off the switchboard's breaker.**

6 **Securely connect the power codes to corresponding terminals of switchboard's breaker.**

7 **Return the terminal block tray to its previous position.**

If you do not insert the terminal block tray all the way into its storage compartment, an electric current will not flow through the PCR-LE Series even if the POWER switch is turned on.

8 **Turn on the switchboard's breaker.**

Turning the Power On

Turning the POWER switch on

Turn the power on without the load connected.

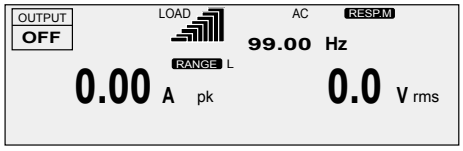
1 **Check that nothing is connected to the OUTPUT terminal block on the rear panel and the outlets on the front panel.**

2 **Check that the power cord is connected correctly.**

3 **Check that the POWER SELECTOR switch is set to "MASTER."**

4 **Flip the POWER switch to the (|) side to turn the PCR-LE Series on.**

The firmware version is displayed for a few seconds. If no errors are detected, the home position (the basic screen) appears.



If the POWER switch is turned on for the first time after purchasing the PCR-LE Series, the PCR-LE Series starts up using factory default settings. For all other cases, the PCR-LE starts up using the settings that were in use the last time that the POWER switch was turned off.

You can set the output on/off state at power on. For details, see "User's Manual -Basic-" on the accompanying CD-ROM.

If "ALARM" or an error number is displayed, see "Alarms and Trouble" on the accompanying CD-ROM.

Turning the POWER switch off

Flip the POWER switch to the (◯) side to turn the PCR-LE Series off.

When the POWER switch is turned on, all items except for the following items take on the values that were in use the last time that the POWER switch was turned off.

Waveform bank contents from number 24 to number 63

Output on/off state

If the POWER switch is turned off immediately after the settings have been changed, the last settings may not be stored.

⚠ CAUTION

Risk of malfunction. After turning the POWER switch off, wait at least 5 seconds before turning it back on.

Connecting the Load

The maximum current that the PCR-LE Series can generate varies depending on the model. It also varies depending on the PCR-LE Series' voltage mode, load type, and status. Ensure that the output power capacity is sufficient for the load capacity. The maximum output currents (in AC mode—AC rms, with an output voltage of 1 V to 100 V or 2 V to 200 V, and with a load power factor of 0.8 to 1) for the different models are shown in the table.

	PCR 500LE	PCR 1000LE	PCR 2000LE	PCR 3000LE	PCR 4000LE	PCR 6000LE	PCR 9000LE
L range	5 A	10 A	20 A	30 A	40 A	60 A	90 A
H range	2.5 A	5 A	10 A	15 A	20 A	30 A	45 A

- DESCRIPTION -

When the POWER switch is on, even if the output is off, a dangerous voltage exists between the output terminal (L or N) and the chassis (G-ground). To eliminate the voltage between the output terminal and the chassis, connect N and G of the OUTPUT terminal block.

■ Tightening torque of output terminal connecting screws

	Output terminal	Tightening torque [N•m]
PCR500LE	M4	1.4
PCR1000LE	M4	1.2
PCR2000LE		
PCR3000LE	M5	2.0
PCR4000LE		
PCR6000LE	M8	5.5
PCR9000LE		

Connecting the Load (Cont.)

Connecting to the OUTPUT terminal block

■ Preparing wires

Use noncombustible wires that have diameters that correspond to the output current to connect to the load.

Requirements of single-core wires that are used to connect to the load

Nominal cross-sectional area[mm^2]	AWG	(reference cross-sectional area; mm^2)	Allowable current* (A; at Ta = 30 °C, 86 °F)
0.9	18	(0.82)	17
1.25	16	(1.31)	19
2	14	(2.08)	27
3.5	12	(3.31)	37
5.5	10	(5.26)	49
8	8	(8.37)	61
14	6	(13.3)	88
22	4	(21.15)	115

* Excerpt from Japanese laws related to electrical equipment.

The values vary depending on conditions such as the wire covering (insulator), the wire material (allowable temperature), and whether there are multiple cores in the cable. For cables other than those specified in this table, consult with a qualified engineer.

⚠ WARNING

Risk of electric shock. Before you connect cables to the OUTPUT terminal block, be sure to turn the POWER switch off, and then remove the power plug from the outlet or turn off the switchboard.

- Note -

The L and N terminals of the OUTPUT terminal block are isolated from the input power supply. The polarity does not constitute a problem in terms of safety. The polarity matters in synchro mode (in which the product is synchronized with the input power supply) and DC mode, so check the polarity of the load before you connect it to the product. You can use either L or N to ground the product.

In DC mode and AC+DC mode, N is the reference. When N has a positive polarity, L is positive electric potential. When N has a negative polarity, L is negative electric potential.

Connecting cables (PCR500LE)

When shipped from the factory, the cover is attached using its upper holes so that the OUTPUT terminals are not exposed.

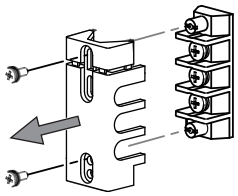
⚠ WARNING

Risk of electric shock. Do not use the terminal block with the terminal cover removed.

1 **Check that the POWER switch is turned off.**

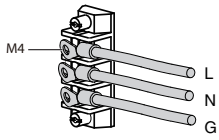
2 **Check that the power cord is disconnected from the outlet.**

3 **Remove the terminal cover that is attached to the OUTPUT terminal block.**

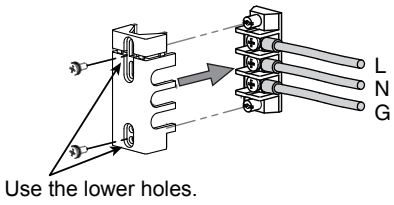


4 **Securely connect the load cables to the OUTPUT terminal block.**

If the load has a ground (GND) terminal, be sure to connect it to the G terminal of the PCR-LE Series OUTPUT terminal block. Be sure to use a wire that is greater than or equal to the diameter of the wires used to connect the load.

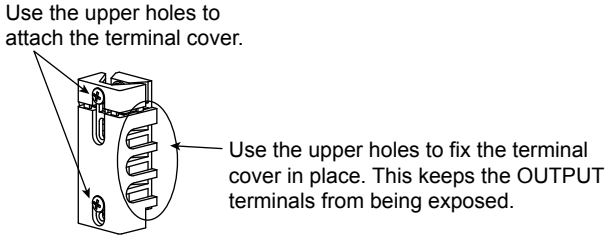


5 **Use the lower holes to attach the terminal cover that you removed in step 3 .**



Twist the load wires (L and N), and connect between the output terminal and load with the shortest wires possible. If you cannot twist the wires, we recommend that you run the wires alongside each other and tie them together at several points with cable ties.

When you are not using the OUTPUT terminal block, attach the terminal cover.



Connecting cables(PCR1000LE - PCR9000LE)

Pull out the terminal block tray, and then connect the load cables.

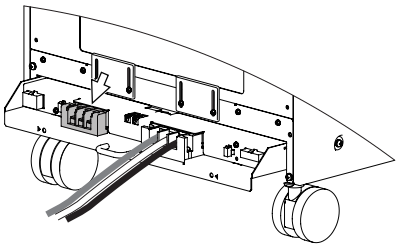
1 **Check that the POWER switch is turned off.**

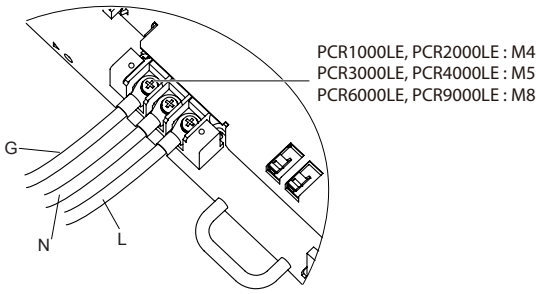
2 **Check that the breaker of the switchboard is off.**

3 **Pull out the terminal block tray.**

4 **Securely connect the load cables to the OUTPUT terminal block.**

If the load has a ground (GND) terminal, be sure to connect it to the G terminal of the PCR-LE Series OUTPUT terminal block. Be sure to use a wire whose diameter is greater than or equal to the diameter of the wires used to connect the load.





5 **Return the terminal block tray to its previous position.**

If you do not insert the terminal block tray all the way into its storage compartment, an electric current will not flow through the PCR-LE Series even if the POWER switch is turned on.

Twist the load wires (L and N), and connect between the output terminal and load with the shortest wires possible. If you cannot twist the wires, we recommend that you run the wires alongside each other and tie them together at several points with cable ties.

When the load is located at a remote location

If the load is located at a remote location, the PCR-LE may need be controlled remotely.

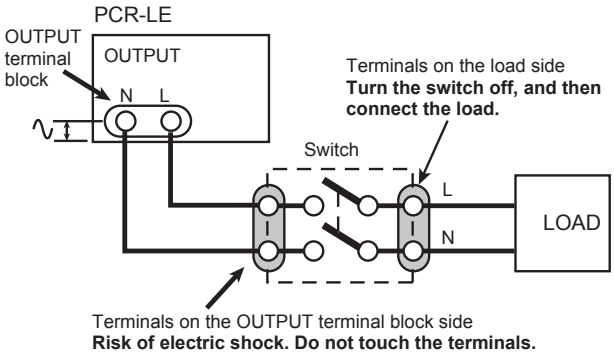
Remote control can be used to turn the output off, but it cannot be used to turn the POWER switch off. If you want to connect the PCR-LE Series to a load that is located at a remote location, install a switch between the OUTPUT terminal block and the load to prevent electric shock. Then, turn that switch off.

⚠ WARNING

Risk of electric shock.

- **Before you install the switch between the OUTPUT terminal block and the load, be sure to turn the POWER switch off and remove the power plug from its outlet or turn off the breaker of the switchboard.**
- **The current rating of the switch must be greater than or equal to the maximum current of the PCR-LE Series.**
- **For the switch circuit, use a two-pole type switch that can cut off the L and N wires simultaneously.**
- **Be sure to turn the switch off before connecting the load to the terminal at the load end of the switch.**
- **Do not touch the switch terminals when the POWER switch is on. Do not touch the switch terminals when the POWER switch is on. Before you connect cables to the OUTPUT terminal block, be sure to turn the POWER switch off, and then turn off the switchboard.**

Before you connect the cables, be sure to turn the POWER switch off and remove the power plug from its outlet or turn off the breaker of the switchboard.



Connecting the Load (Cont.)

Connecting to the front-panel outlets

The PCR-LE Series can generate power from the OUTPUT terminal block on the rear panel and the outlets on the front panel. The specifications of the front-panel outlets are not regulated. Their performance may decrease.

⚠ CAUTION

The maximum rated voltage of the front-panel outlets is 250 Vac.

Max. output voltage: 250 Vac(rms)

Maximum output current:

10 Aac (rms) per outlet (on models other than the PCR500LE)

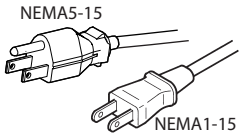
5 Aac (rms) total for the two outlets on the PCR500LE

10 Aac (rms) total for the two outlets on the PCR1000LE

Do not disconnect the load when the maximum rated voltage of the outlets has been exceeded or in DC mode. Doing so may cause the product to malfunction.

On the PCR-LE Series (excluding the PCR500LE and PCR1000LE), if an overcurrent is detected, the breaker trips, and the output is cut off.

The outlets are designed for power plugs like those shown below.



The output current may be lower than the maximum output current due to the output voltage, the output frequency, and the load power factor.

For example, on the PCR1000LE, if the output voltage is 115 V, the load power factor is 0.7, and the output frequency is 50 Hz, the total maximum output current for the two outlets is 7.61 A. If an output current of 5 A is drawn from one of the outlets, the maximum output current that can be drawn from the other outlet is 2.61 A.

1 **Turn the POWER switch off.**

2 **Connect the power cord of the load device to a front-panel outlet.**

环境保护使用期限

Environment-friendly Use Period

该标记为适用于在中华人民共和国销售的电子信息产品的环境保护使用期限。

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产品的废弃请遵守有关规定。

产品的制造年月可以在以下网址中确认。

http://www.kikusui.co.jp/pi/

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
印刷电路板组装品	×	○	○	○	○	○
显示器	×	○	○	○	○	○
内部接线	○	○	○	○	○	○
外壳	×	○	○	○	○	○
底盘组装品	×	○	○	○	○	○
辅助设备	○	○	○	○	○	○

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