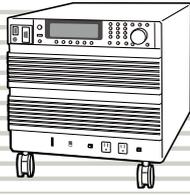


Firmware Update Guide for PCR-LE Series

PCR500LE
PCR1000LE
PCR2000LE
PCR3000LE
PCR4000LE
PCR6000LE
PCR9000LE



This guide describes how to update the PCR-LE Series firmware.
The applicable firmware is Ver. 2.00 and later.

Be Sure to Read the Following

When you update the firmware, be sure to follow the precautions listed below. If you ignore these precautions, the firmware may not be updated correctly, and the PCR-LE Series may need to be repaired.

Caution

- Do not use this update file to specially made or modified PCR-LE Series. Contact your Kikusui agent or distributor for updating.
- Check the firmware version of the PCR-LE Series that you want to update. This update file cannot be used on firmware Ver. 1.99 or earlier. PCR-LE Series with firmware Ver. 1.99 or earlier requires hardware alteration. Contact your Kikusui agent or distributor for details.
- In a PCR-LE system that uses options such as the three-phase output driver, the firmware of all the PCR-LE units that make up the system must be the same.
- Only use the standard features of your Windows operating system (Windows Explorer) to copy the firmware file. If you use a commercially available file management tool, the firmware file may not be copied correctly.
- During the update process, be careful not to disconnect the power line from the PCR-LE series.
- After updating, reset the PCR-LE Series to its factory default settings. If you do not start the PCR-LE series with the factory default settings, it may malfunction.

Preparation

Items to Have Ready

- USB memory device that has a capacity less than or equal to 16 GB
The PCR-LE Series cannot detect a USB memory device whose capacity is larger than 16 GB. Refer to the PCR-LE Series manual, and whenever possible, use a USB memory device whose operation has already been confirmed (see the listed manufacturer name, model number, and capacity information in the PCR-LE Series manual).
- Update file (PCRLE.bin)
Download the update file from the Kikusui Electronics Corporation website.
- Windows PC
Use the Windows XP or later operating system. You cannot use any other operating systems.

Checking the USB memory device operation

1 Turn the PCR-LE Series POWER switch on.

The firmware version will be displayed for a few seconds. Check that the version is appropriate (Ver. 2.xx and later).



Check the version.

2 Insert the USB memory device into the PCR-LE Series USB port.

3 Check that the message "USB Memory found" appears on the display.

The message will disappear after a few seconds. If you miss the message, remove the USB memory device once, and insert it again.

If the message still does not appear, use a different device.

Copying the update file

After confirming that the USB memory device can be used, copy the update file (PCRLE.bin) on your PC to the device's root directory.

Do not change the file name. If you change the file name, the PCR-LE Series will not be able to detect it.

Updating the Firmware (Updating a standalone PCR-LE)

If updating a PCR-LE system that uses option, see on page 3 "Updating the Firmware (Updating a PCR-LE system that uses options)".

1 While holding down CONFIG (SHIFT+OPR MODE), turn the POWER switch on.

The message 'Firmware version-up: "standby"' appears at the bottom of the display.



2 Insert the USB memory device containing the update file into the PCR-LE Series USB port.

When the PCR-LE Series detects the update file, a short beep is generated, and updating starts.



While updating, the progress (0 % to 100 %) is displayed. Do not turn the PCR-LE Series POWER switch off or remove the USB memory device while the updating is in progress. If you do, updating will fail, and the PCR-LE Series will not be able to start from that point.

When the updating is complete, a longer beep is generated. A check code appears in the lower right of the display.

3 Check that the check codes of the BIN (update file) and ROM (internal Flash ROM) are the same.

The check codes do not have to match the code in the figure below. Updating is successful if the two codes are the same.

At this point, the firmware version indication does not change.



4 Remove the USB memory device, and turn the POWER switch off.

5 To start the PCR-LE Series with the factory default settings, hold down MEMORY, and turn the POWER switch on.

6 Check that the updated firmware version is the same as the version indicated for the update file on the Kikusui Electronics Corporation website.



Updated version

This completes the firmware update process.

After updating, use the PCR-LE Series manual that corresponds to the updated version. Download the corresponding manual from the Kikusui Electronics Corporation website.

If your PCR-LE2 Series doesn't start even though you followed the procedure written here or if there are any items that are not clear, contact your Kikusui agent or distributor.

Updating the Firmware (Updating a PCR-LE system that uses options)

If updating a standalone PCR-LE, see on page 2 "Updating the Firmware (Updating a standalone PCR-LE)".

Updating is possible even when the following options are installed.

- Single-phase three-wire output driver
- Three-phase output driver
- Parallel operation driver

You can update the PCR-LE Series units that make up a system in any order, but update all the units one unit at a time.

1 On all PCR-LE Series units that make up the system, set the POWER SELECTOR switch to the MASTER side.

This is to prevent the power-sync function from operating. If you are not using this function, proceed to step 2.

2 While holding down CONFIG (SHIFT+OPR MODE), turn the POWER switch on.

The message 'Firmware version-up: "standby"' appears at the bottom of the display.



3 Insert the USB memory device containing the update file into the PCR-LE Series USB port.

When the PCR-Series detects the update file, a short beep is generated, and updating starts.



While updating, the progress (0 % to 100 %) is displayed. Do not turn the PCR-LE Series POWER switch off or remove the USB memory device while the updating is in progress. If you do, updating will fail, and the PCR-LE Series will not be able to start from that point.

When the updating is complete, a longer beep is generated. A check code appears in the lower right of the display.

4 Check that the check codes of the BIN (update file) and ROM (internal Flash ROM) are the same.

The check codes do not have to match the code in the figure below. Updating is successful if the two codes are the same.

At this point, the firmware version indication does not change.



5 Remove the USB memory device, and turn the POWER switch off.

6 For each PCR-LE Series unit that makes up the system, perform steps 2 to 5 above.

7 Return the POWER SELECTOR switches to their original positions.

8 To start the system with the factory default settings, on the controller PCR-LE Series, hold down MEMORY, and turn the POWER switch on.

The controller PCR-LE Series corresponds to the U-phase unit of a single-phase three-wire output system or a three-phase output system and the master unit of a master-slave parallel operation system.

By resetting the controller PCR-LE Series to its factory default condition, all other PCR-LE Series units in the system will be set to their factory default conditions.

9 Check that the updated firmware version on the controller PCR-LE Series is the same as the version indicated for the update file on the Kikusui Electronics Corporation website.



Updated version

10 Press CONFIG (SHIFT+OPR MODE) and then MODEL ID (F5).

11 Press the appropriate function keys on the V-phase and W-phase units or the slave unit to check that the firmware versions are appropriate.

This completes the firmware update process.

After updating, use the PCR-LE Series manual that corresponds to the updated version. Download the corresponding manual from the Kikusui Electronics Corporation website.

If your PCR-LE Series doesn't start even though you followed the procedure written here or if there are any items that are not clear, contact your Kikusui agent or distributor.

If Updating Fails

This section lists representative symptoms and remedies for update failures.

■ The message 'Firmware version-up: "standby"' remains on the display, and updating does not start.

- Remove the USB memory device, and on your PC, check that the update file is in the root directory and that the file name is PCRLE.bin.
- Restart the PCR-LE Series. Insert the USB memory device, and check whether the message "USB Memory found" appears. If it does not, use a different USB memory device.

■ The message 'Firmware version-up: "Error(error code)"' appears.



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CPU Version : 2.00
Firmware version-up: "Error (-10301)"
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- Updating failed. Note the error code, and turn the PCR-LE Series POWER switch off. You will not be able to continue with the updating. You will not be able to revert to the previous version either. Contact your Kikusui agent or dealer.

■ The check codes after updating are not the same.

- Restart the PCR-LE Series, and update the firmware again.
- While holding down CONFIG (SHIFT+OPR MODE), turn the POWER switch on. If the message 'Firmware version-up: "standby"' does not appear, updating failed. Contact your Kikusui agent or dealer.

Caution

If updating fails, turn the POWER switch off, and do not turn it on again. Doing so may make the problem worse.

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The newest version of the operation manual can be downloaded from Download service of Kikusui website.