

Release Notes for PTC Tempo and PTC Harmony Thermal Cyclers

Software Version 3.1

March 2026

Contents

Introduction.....	2
Main Features	2
Updating PTC Tempo and PTC Harmony Thermal Cyclers	3
PTC Tempo and PTC Harmony Thermal Cyclers Documentation	5
Additional Information	5
Enhancements and Changes.....	7
Known Issues.....	8
Contacting Technical Support.....	14

Introduction

PTC Tempo and PTC Harmony are the newest generation of thermal cyclers from Bio-Rad™. Thermal cyclers are essential laboratory equipment for laboratories that run polymerase chain reaction (PCR) for sequencing, cloning, mutagenesis, and many other applications. The fully adjustable heated lid supports a wide range of vessels and sealers, including low-profile and high-profile PCR plates.

Bio-Rad's thermal cyclers include:

- PTC Tempo 96 thermal cycler
- PTC Tempo Deepwell thermal cycler
- PTC Tempo 384 thermal cycler
- PTC Tempo 48/48 thermal cycler
- PTC Harmony 96 thermal cycler
- PTC Harmony Deepwell thermal cycler

Main Features

The main features of the PTC Tempo and PTC Harmony thermal cyclers include:

- The ability to run and copy protocols, generate and export run reports and manage users based on user role (Admin or user)
- Authorization verification through user IDs and passwords to ensure appropriate permissions for specific functions
- The ability to lock the thermal cycler to protect in-progress protocol runs
- USB drive compatibility that provides an optional medium for protocol transfer and storage
- Programmable temperature gradient to quickly and easily identify optimal annealing temperatures
- Ethernet LAN compatibility that enables connectivity to your internal network for unlimited data access and storage on shared network drives

The main features of the PTC Tempo thermal cycler include:

- Connectivity to Bio-Rad's BR.io cloud platform to manage PCR protocol files and view run status. Using BR.io, you can:
 - Create PCR protocols

- Run them on your linked PTC Tempo thermal cycler
- View run status remotely
- Upload the run report to BR.io
- Share data, such as protocols and protocol runs, with authorized users within a designated group
- Reserve and control multiple PTC Tempo thermal cyclers from BR.io

For more information about Bio-Rad's BR.io, go to [BR.io](#). From the BR.io Home page, you can:

- Create a BR.io account
- Explore BR.io via video
- Access helpful BR.io user assistance pages
- Ability to integrate with laboratory automation systems using the PTC Tempo Automation API. For more information see the PTC Tempo Thermal Cycler API Reference Guide.
- Ability to activate PTC Tempo Security Edition. For more information about PTC Tempo Security Edition, see Enhancements and Changes, below.

Updating PTC Tempo and PTC Harmony Thermal Cyclers

This section explains how to update PTC Tempo and PTC Harmony thermal cyclers.

Note: Only Admin users can perform software and firmware updates on the thermal cyclers. Updates are performed via USB only.

You can access updates from Bio-Rad's Firmware & Software Updates web site. The update file for the thermal cyclers can include operating system and software and firmware updates. All updates for the thermal cycler are distributed in a single file.

Before updating the system, Bio-Rad recommends that you verify the current version installed on the thermal cycler. This section explains how to verify the installed version and how to update the thermal cycler.

To verify the current version of the thermal cycler software

1. Log in as any user.
2. On the Home screen, do one of the following:
 - a. Locate the currently installed version in the lower left of the screen.

- b. Tap Tools to view the Tools screen, then tap About and note the currently installed software version on the About screen.
- c. Ensure the version you are updating to is newer than the version currently installed.

To update PTC Tempo and PTC Harmony thermal cyclers

Note: Depending on the type of update, this process can take several minutes to complete.

1. In a browser, log in to the Firmware & Software Updates page at bio-rad.com/pcrupdates and download the update file onto a USB drive.

Note: Copy the update file into the root directory of the empty USB drive. Supported file system formats include exFAT, FAT32, and NTFS.

2. Insert the USB drive into a USB port on the thermal cycler.
3. On the Home screen, log in as an Admin user and tap Tools to open the Admin tools screen.
4. On the Admin tools screen, tap System Update to open the Software and Instrument Updates screen.

The System Update screen appears prompting you to confirm that a USB drive containing the upgrade file is inserted.

5. Tap Continue.

The thermal cycler verifies that the update file is newer than the software version currently installed. When the update file is verified, you are prompted to confirm the update.

6. Do one of the following:
 - To cancel the update, tap No.
 - To update the system, tap Yes and follow the prompts.

Important: While the update is in progress, do not shut down the thermal cycler and do not remove the USB drive.

Notes:

- Determining the operating system version can take time.
- When the update completes, the system automatically restarts. If a firmware update is required, the system restarts twice.

PTC Tempo and PTC Harmony Thermal Cycler Documentation

Bio-Rad's web site provides access to:

- Release Notes for PTC Tempo and PTC Harmony Thermal Cyclers (this document)
- PTC Tempo Thermal Cycler and PTC Harmony Thermal Cycler Instrument Guide

Important: The PTC Tempo Thermal Cycler and PTC Harmony Thermal Cycler Instrument Guide provides specific information about installing, setting up, and using the thermal cyclers.

To access documentation

1. In a web browser, log in to Bio-Rad.com and navigate to bio-rad.com/PTCTempo.
2. Scroll to the Documents section and select the PDF icon for document of choice.

The PDF opens in your web browser. You can then download the document to your computer.

Additional Information

Cybersecurity and Thermal Cyclers

Important: Cybersecurity is the protection of assets in cyberspace from cyberattacks. Cybersecurity is Bio-Rad's ability to secure its people, information, systems, and reputation in cyberspace. Cyberspace is the always-on, technologically interconnected world; it consists of people, organizations, information, and technology.

Fast reaction is important with cybersecurity issues! If you suspect that there might be a cybersecurity issue concerning your instrument or that cybersecurity has been breached at your site, contact your Bio-Rad representative for technical support immediately.

Running PTC Tempo Protocols on C1000 Touch Thermal Cyclers

You can run PTC Tempo and PTC Harmony protocols on C1000 Touch thermal cyclers as well as CFX Opus real-time PCR systems.

To run PTC Tempo or PTC Harmony protocols on C1000 Touch thermal cyclers

1. On the PTC Tempo thermal cycler, ensure the protocol file name meets the requirements for C1000 Touch thermal cyclers. See the C1000 Touch Thermal Cycler Instruction Manual for specific information.
2. Export the protocol file to an attached USB drive.

3. Insert the USB drive into a USB port on the C1000 Touch thermal cycler and navigate to that protocol.

Using Write-Protected (Read-Only) USB Drives with PTC Tempo and PTC Harmony Thermal Cyclers

PTC Tempo and PTC Harmony thermal cyclers do not recognize USB drives that are set as read-only through a computer's operating system.

USB drives that a user inserted into a computer and used the computer's operating system to set the properties of the USB drive to read-only are not recognized as read-only when inserted into the thermal cycler. Users can copy and save protocols to, and delete protocols from, such USB drives.

The thermal cyclers recognize only those USB drives that have an external manual switch as write-protected.

Running BR.io Protocols on PTC Tempo Thermal Cyclers with Long Protocol Names or Names That Contain Single Quotes in the Name

The PTC Tempo thermal cycler considers single quote marks (') as invalid characters. If your protocol name contains a single quote mark, it will be substituted with an underscore (_). The PTC Tempo thermal cycler does not support protocols names greater than 32 characters in length. If your protocol name contains more than 32 characters, the PTC Tempo thermal cycler truncates all characters after the 32nd.

Running Legacy Protocols with Long Protocol Names or That Contain Single Quotes in the Name

The PTC Tempo and PTC Harmony thermal cyclers consider single quote marks (') as invalid characters. Additionally, neither thermal cycler supports protocol names greater than 32 characters in length. If you are running a protocol from an attached USB drive or a shared network drive that contains a single quote mark and/or more than 32 characters in its name, you must return to the location of the original protocol and rename it before starting the run.

Note: In the case of running from a USB drive:

1. Remove the USB drive from the thermal cycler.
2. Insert the USB drive into the computer from which you copied the original protocol and rename the protocol.
3. Reinsert the USB drive into the thermal cycler and start your run again.

The Thermal Cycler Continues a Run In Progress after Power Is Restored Though Plate Has Been Removed

The thermal cycler continues the run that was in progress when power is restored after a power failure. This is as designed.

If the user manually opens the lid and removes the plate during the power failure and does not close the lid, the instrument does not detect that the lid is open and resumes the run.

In this case, when power is restored to the instrument, tap Run Status on the Home screen. On the Run Status screen, tap Stop Run to stop the run.

System Logs Display the Adjusted Date When the System Date Is Changed

If the system date is changed on the instrument, the system logs will show the newly adjusted date in the "Date" column. For example, changing the date from October 11 to October 10 will display October 10 in the system logs.

Starting a Protocol Run in BR.io When the PTC Tempo Instrument Is Locked

You cannot start a PTC Tempo run in BR.io if you are logged in to an unlocked PTC Tempo. Locking the instrument will keep you logged in. To start a new run, unlock the instrument and log out.

Enhancements and Changes

Version 3.1 of the PTC Tempo and PTC Harmony Thermal Cycler software includes the following change.

Introducing the PTC Harmony Thermal Cycler

The PTC Harmony thermal cycler is a reliable, cost-effective solution for performing PCR, incubations, enzymatic reactions, thermal activations and inactivations, and extended temperature holds. Samples are loaded by manually opening the cycler's lid to access the sample block. The PTC Harmony thermal cycler delivers the same thermal precision and ease of use as the PTC Tempo thermal cycler.

The PTC Harmony thermal cycler is available in two models:

- PTC Harmony 96 thermal cycler
- PTC Harmony Deepwell thermal cycler

Note: The PTC Harmony thermal cycler does not include BR.io cloud connectivity, automation, or PTC Tempo Security Edition.

Known Issues

PTC Tempo and PTC Harmony Thermal Cyclers

USB Protocols Might Not Display after Plugging in an NTFS-Formatted USB

Protocols on a USB might not display when a user plugs an NTFS-formatted USB into the instrument.

Workaround: Unplug the USB, then plug it back in.

Instrument in an Error State Displays Incorrect Dialog for an Incubate Run

The instrument might incorrectly display an invalid protocol dialog a user starts and Incubate run while the instrument is in an error state.

Workaround: Power off and restart the instrument.

Power Button Blinks Red after Software Update and System Reboot

The instrument power button might blink red if you do the following:

- Update the software
- Perform a factory reset
- Disable and reconfigure the USB drive

Workaround: Reboot the instrument by turning the instrument off using either the soft power button in the front or the power button in the back, and then turning it back on.

System Log Descriptions Become Illegible after Network Disconnection

System log descriptions might become illegible if a network disruption occurs while the instrument exports logs to PDF.

Workaround: Export the system log files as .txt to ensure the descriptions remain legible

Protocols Disappear from Protocol Browser after Exporting a Run Report to a USB

Protocols might disappear from the Protocol Browser after exporting a run report to a USB.

Workaround: Removing and reinserting the USB into the instrument will display the protocols.

Network Disconnection Interrupts Run Report Export

A network disconnection causes the thermal cycler to crash and interrupts the Export All process. After reconnecting, you can view exported run reports and export any unexported ones. No data is lost during the interruption.

Workaround: When the instrument is reconnected to the network, reboot the instrument and export the run reports again.

Run Report Viewer Back Button Is Unresponsive for Longer Reports

The Run Report viewer back button might become unresponsive after navigating to the end of a report that is longer than four pages.

Workaround: Scroll to the top of the report and tap the Back button.

Run Report Appears Empty for Second User If First User Logs Out Without Clearing Error

If an error occurs during a protocol run for User A, and User A logs out of the instrument without clearing the error, the run report will appear empty when User B logs in and views the report from the Run Status screen.

Workaround: Restart the instrument to clear the error message and run report.

Run Report Displays Incorrect Time after Instrument Power Failure

Run reports might not display the correct elapsed run time if the instrument shuts down after a power failure. However, the report Run Details section displays the correct start and end run times.

Workaround: Calculate the elapsed run time by subtracting the run's start time from the end time.

Run Status Screen and Run Report Generated after a Lid Error Are Incorrect

If a lid error occurs during a run, the thermal cycler stops the run. This is as designed.

However, the Run Status screen does not indicate that the run was stopped because an error occurred. Instead, the Run Status screen indicates that the run was stopped.

The associated run report does not indicate that an error occurred during the run. Instead, the run report indicates that the run completed with no errors and was stopped by the user.

An Error Message Appears after Clearing a Failure to Connect Message and Then Tapping the Back Button

The thermal cycler displays a Failure to Connect error message when the user attempts to save a protocol from the Save Protocol screen after network connection is lost. When the user taps OK to clear the error message and then taps Back on the Save Protocol screen to return to the Protocol Browser, the same error message appears again.

Workaround: Tapping OK on the second error message returns the user to the Protocol Browser correctly.

The Gateway Details Do Not Appear on the Network Settings Screen When Connected to Both a Wi-Fi Adapter and Ethernet Cable

The thermal cycler can connect to the Internet by a Bio-Rad-supplied Wi-Fi adapter or by Ethernet cable. If you connect to the internet using a Wi-Fi adapter and then insert an Ethernet cable into the thermal cycler, the instrument defaults to the Ethernet connection. However, the Gateway details do not appear on the Network Settings screen.

Workaround: Remove the Wi-Fi adapter to view the Gateway details.

Thermal Cycler Appears to Freeze When Opening Very Large Run Reports

The thermal cycler software becomes unresponsive when opening run reports that might be longer than 35 pages.

Workaround: If your run report might be longer than 35 pages, export the run report to an attached USB drive and open the report on a compatible computer.

Exported Run Reports More Than Several Pages in Length Display Formatting Issues

The top margin on the PDF of exported run reports that are greater than several pages in length gets smaller with each successive page. If the report is greater than 10 pages, the rows in the Run Details table are cut off.

Workaround: None.

Thermal Cycler Appears to Freeze after Tapping the Back Button on the Edit Protocol Screen

If a user selects a network protocol to edit and taps the Back button on the Edit Protocol screen, the thermal cycler appears disabled, and the screen is unresponsive.

After a period of time, the thermal cycler displays the Protocol Browser and the screen responds to touch commands.

Workaround: None.

Run Report Time Stamp Differs Between exFAT/NTSF and FAT32 Formatted USB Drives

Time stamps on run reports exported to a USB drive will differ between exFAT/NTSF USB and FAT32 USB drive formats. Run reports exported to an exFAT or NTFS formatted USB drive display timestamps with the local time the report was created or modified. Run reports exported to a FAT32 formatted USB drive will display timestamps with UTC time. Run Reports viewed on the instrument display the correct date time stamp. All other information in the exported run report are correct.

Workaround: None.

PTC Tempo Thermal Cyclers

Admin Unable to Delete a Non-BR.io Linked PTC Tempo Account If Other Accounts are Linked

An Admin might be unable to delete a PTC Tempo account that is not linked to BR.io if other accounts are linked to BR.io.

Workaround: Admins should first unlink all accounts from BR.io, delete the intended account, and then relink the remaining accounts to BR.io.

PTC Tempo Reboots If User Returns to the Home Screen Out While BR.io Protocols Are Loading

The PTC Tempo instrument reboots if you navigate back to the Home screen before all protocols created in BR.io have completely loaded onto the instrument.

Workaround: Wait for all BR.io-created protocols to load before navigating back to the Home screen.

PTC Tempo Unlinks Admin User from BR.io When Automation API is Activated

Activating the PTC Tempo automation API unlinks the user from BR.io, but the instrument still appears in the user's BR.io account.

Workaround: To remove the instrument from BR.io, relink the user account to BR.io, and then unlink.

PTC Tempo Run Report Does Not Upload to BR.io after a Run Completes

A reserved PTC Tempo might fail to upload a run report to BR.io after completing a protocol run. In this case, BR.io might display an "In Progress" status, and attempting to view the report in BR.io generates a "Report cannot be viewed" message. The system log on the instrument might also indicate that the instrument did not upload the run report to BR.io.

Workaround: To retrieve the run report, cancel the instrument reservation in BR.io or on the instrument, log out of the instrument, and log back in.

PTC Tempo Instrument Displays Error after Removing a Fleet Management Protocol Assignment

The PTC Tempo might display an error if you remove a Fleet Management protocol assignment in BR.io after assigning a protocol to multiple instruments, and then either stopping or skipping a step during a protocol run.

Workaround: You can unassign or reassign a protocol in BR.io after the run is completed.

Instrument Shutdown Delay Occurs after Fleet Management Run During Network Disconnection

If a network disconnection occurs after a Fleet Management protocol run completes, pressing the power button to shut down the instrument results in a delay.

Workaround: None. The instrument will eventually shut down.

System Logs Do Not Display a Description after Failed Run Report Upload to BR.io Due to Network Interruption

The PTC Tempo instrument system log might not display a description after failing to upload a run report to BR.io following a network disconnection. In this case, there is no loss of data.

Workaround: None. Refer to other system log entries for the description.

Network Disconnection Freezes PTC Tempo Security Edition Screen at "Export in Progress"

A network disconnection that interrupts the Export All process to a network drive causes the PTC Tempo to crash. After reconnecting, you can view exported run reports and complete any remaining exports. No data is lost during the interruption.

Workaround: To clear the frozen screen, turn the instrument off and then turn back on after a network disconnection.

Remaining Protocol Run Time Does Not Update Correctly on 48/48 Block A in BR.io

If you run protocols on both blocks of the PTC Tempo 48/48 simultaneously, the "Time Remaining" for Block A on the BR.io Instruments page might not update properly, showing a delay. Block B updates in real time.

Workaround: This issue does not impact the protocol run or result in data loss. Refresh the BR.io page to update the time for Block A.

PTC Tempo Displays an Incorrect Message after Successfully Connecting to Wi-Fi

After connecting to a Wi-Fi network, the PTC Tempo thermal cycler displays a message indicating that the system failed to connect to the network.

After tapping OK on the incorrect message, a successful connection message appears.

Workaround: None.

Run Reports Do Not Upload to BR.io If a Power Failure Occurs During the Run

If a user is connected to BR.io and a power failure occurs during a protocol run, the run report is not uploaded to BR.io. When power is restored, the run will continue. When the run completes the Run Status screen displays that a power failure occurred.

Note: The run report is saved on the instrument and can be exported to an attached USB drive.

Workaround: None.

The Gateway Details Do Not Appear on the Network Settings Screen When Connected to Both a Wi-Fi Adapter and Ethernet Cable

The PTC Tempo can connect to the Internet by a Bio-Rad-supplied Wi-Fi adapter or by Ethernet cable. If you have connected to the Internet by Wi-Fi adapter and then inserted an Ethernet cable into your PTC Tempo thermal cycler, the instrument defaults to Ethernet connection. However, the Gateway details do not appear on the Network Settings screen.

Workaround: Remove the Wi-Fi adapter to view the Gateway details.

PTC Tempo Run Report Does Not Upload to BR.io Protocol Run If a Power Failure Occurs While the Run Is in Progress

If a power failure occurs while the PTC Tempo thermal cycler is running a BR.io protocol that contains an apostrophe (') in the name, the thermal cycler does upload a run report to BR.io, but will resume the run when power is restored. The thermal cycler Run Report and the System Log both indicate that a power failure occurred.

Workaround: When power returns, the user can rerun the protocol.

Recommended: PTC Tempo thermal cyclers do not accept certain special characters including (') in the name of protocols. Rename BR.io protocols containing any special character to avoid this issue should a power failure occur.

Contacting Technical Support

Phone: 1-800-424-6723, option 2

E-mail: Support@bio-rad.com

For technical assistance outside the U.S. and Canada, contact your local technical support office or click the Contact us link at [bio-rad.com](https://www.bio-rad.com).

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage or retrieval system, without permission in writing from Bio-Rad Laboratories, Inc.

Bio-Rad Laboratories, Inc. reserves the right to modify its products and services at any time. This guide is subject to change without notice. Although prepared to ensure accuracy, Bio-Rad Laboratories, Inc. assumes no liability for errors or omissions, or for any damage resulting from the application or use of this information.

Bio-Rad is a trademark of Bio-Rad Laboratories, Inc.

All trademarks used herein are the property of their respective owner.

Copyright © 2026, Bio-Rad Laboratories, Inc. All Rights Reserved.