Flash Wizard Programming Instructions for XL200 Controllers – Version 3 and higher – no LCD

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Required Equipment

- Windows PC or laptop computer
- "Straight-through" RS232 programming cable (or USB-to-RS232)
    - No longer than 6' (1.8 M)
    - RS232 pintout
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      5 – 5
- XL200 Series machine controller
- 24VDC Power

XL200 Series Software and Hardware Versions

The XL200 Series machine controller can be field flashed with new software versions, and it can be flashed with different software models. The software model and version supported by any XL200 controller depends on the hardware revision of the unit.

As products are developed, tested, and then subjected to the realities of a manufacturing environment - improvements are made in terms of reliability and performance. New features and functions desired by customers are added and refined.

The process of evolving hardware is tracked by a Revision Letter at AMS Controls. In terms of the XL200 Series machine controller, there is a CPU Board Revision Letter and an Input/Output (I/O) Board Revision Letter. The CPU board dictates the highest software version supported by a particular unit, and the I/O board revision indicates whether the unit supports open loop software, closed loop software, or both.

V1 and V2 Controllers: Rev. A & B I/O boards could only support open loop or closed loop, but not both. This means if you own a XL200 controller with a Rev. A or Rev. B I/O board, you must have AMS change out the board in order to go from open loop to closed loop software, or closed loop to open loop software.

V3, V4, V5 Controllers: All I/O boards Rev. C and later support both open loop and closed loop software. You need only flash the unit with the desired software model.

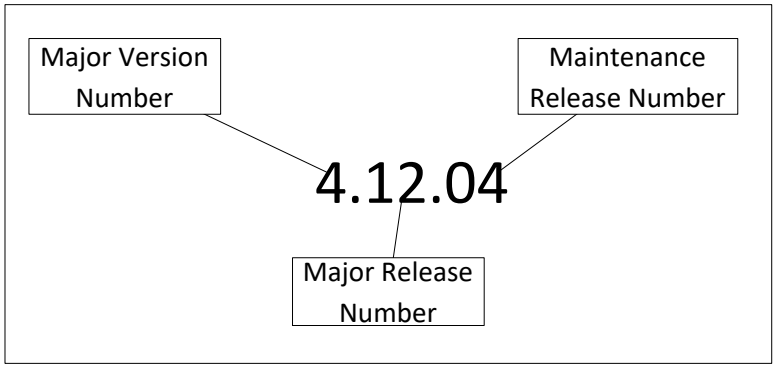
Latest Release by Version

Software versions 1, 2, 3 are no longer supported or developed. Versions 4 and 5 are currently supported and are being developed concurrently for most features. Some features may show up in version 5 software that will never be available in version 4 software, due to the limitations of the older hardware revision (this was also the case between v3 and v4, v2 and v3).

Major Software Version Number	Final Release Version
V1	V1.11 (open loop models), V1.13 (closed loop models)
V2	V2.71.01 (all models)
V3	V3.79.03 (all models)
V4	Check with AMS for latest version
V5	Check with AMS for latest version

What does the software version number mean?

Software versions are expressed as 3 sets of numbers separated by "points" (.). The first number refers to the *major software version* and often ties the version to a specific hardware revision. The second number is a *major release version*. Every so often, the Engineering Department at AMS generates a "new release" that includes any new developments, features, functions and bug fixes since the last release. The last number is a *maintenance release version*, usually created in situations where a customer is experiencing a serious bug that affects production, or has paid for a new feature that they desire immediately.



Software Version Breakdown

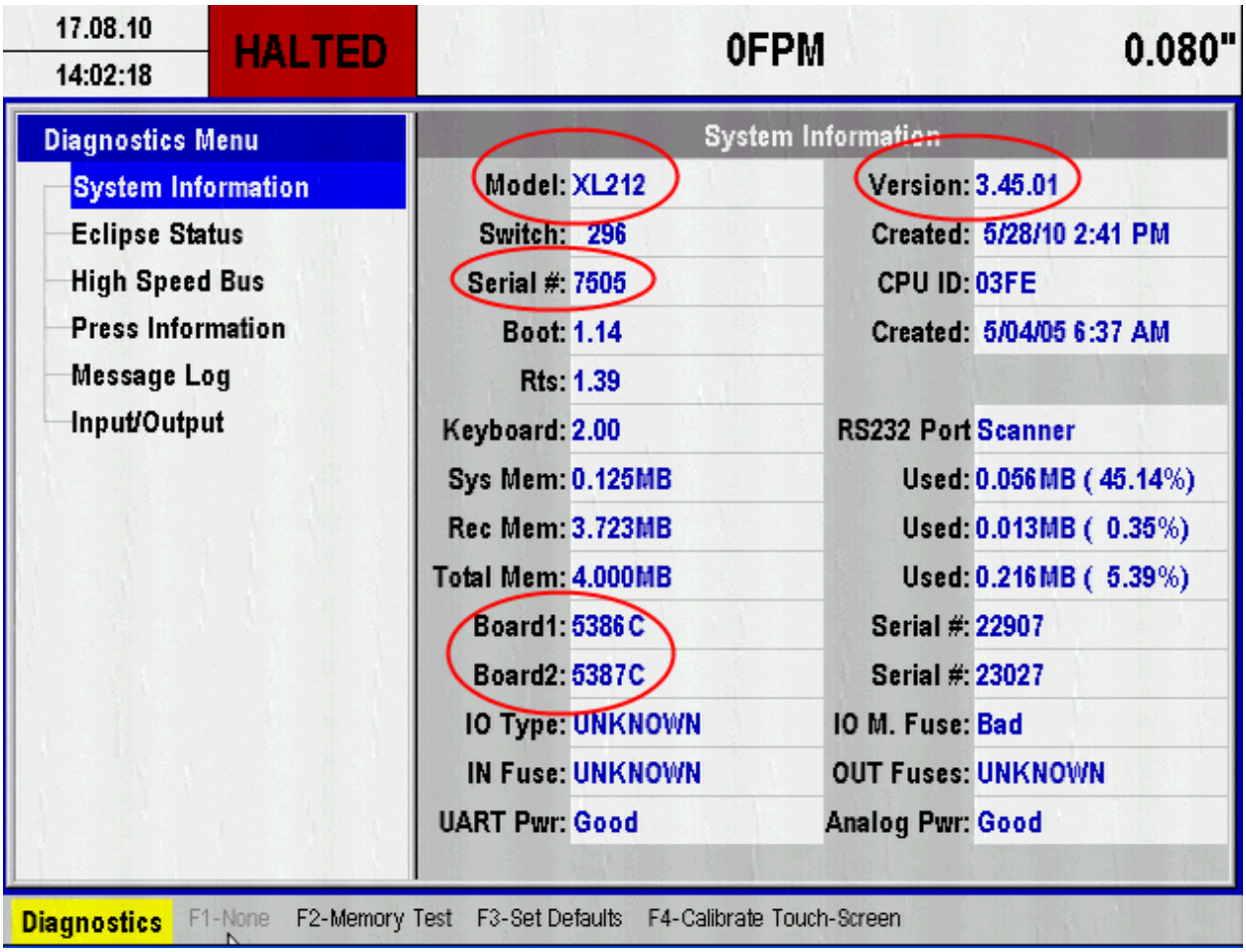
XL200 Series Software Flashing Procedure

Before attempting to flash a XL200 Series machine controller, users must contact AMS Controls for the appropriate flash file. The Flash Wizard software will usually be included in what is sent, or it can be downloaded from the AMS Controls website.

In order to create a flash file, AMS Technical Support Specialists must know the hardware version, current software model, desired software model, software version, and serial number of the controller

to be flashed. Often, the Specialist can find most of this information with only the serial number of the controller, assuming adequate records have been kept and updated.

Version 2 and higher software models display all their pertinent information in a single menu – Diagnostics\System Information. A screenshot or picture of the system information screen will be requested by our support team to provide the correct file.



XL200 System Information Menu

When the flashing software and new flash file are received, the flash file name should match the new software model, version and serial number. For instance, XL212_v3_45_01_sn7505.FMF.

Flashing Software by Revision and Version

Different software versions and hardware revisions have slightly different procedures. Please verify your specific hardware and software versions to be sure you're using the correct procedure.

Authorization codes were always required by the original **XL200 Flash Program** software. Later, **Flash Wizard** was created and would often allow the user to program the XL200 Series machine controller without the need for an authorization code.

Flash Wizard does not require an authorization code if the software model does not change. That is, if the controller's software version is the only change, no code is required. If the software model will change with the flash, the user will be required to contact AMS Controls for an authorization code, unless AMS was contacted for the flash file, originally. Technical Support Specialists can embed the controller's serial number in the flash file so that **Flash Wizard** will not prompt for an authorization code.

V3, V4, V5 Software for hardware with NO LCD

XL200 Series machine controllers can only be flashed with software using the **Flash Wizard** program from AMS Controls. **Flash Wizard** is free software that can be downloaded from the AMS Controls website. Typically, a Support Technician will include a copy of **Flash Wizard** with the file to be flashed into the controller.

When using **Flash Wizard**, a Support Technician can embed the unit's serial number in the flash file when it's created. If this is done, the user will not be required to obtain an authorization code from AMS Controls. If this is not done, the user must begin the flash process in order to receive an authentication code. This code is given to a Support Technician who will generate the authorization code.

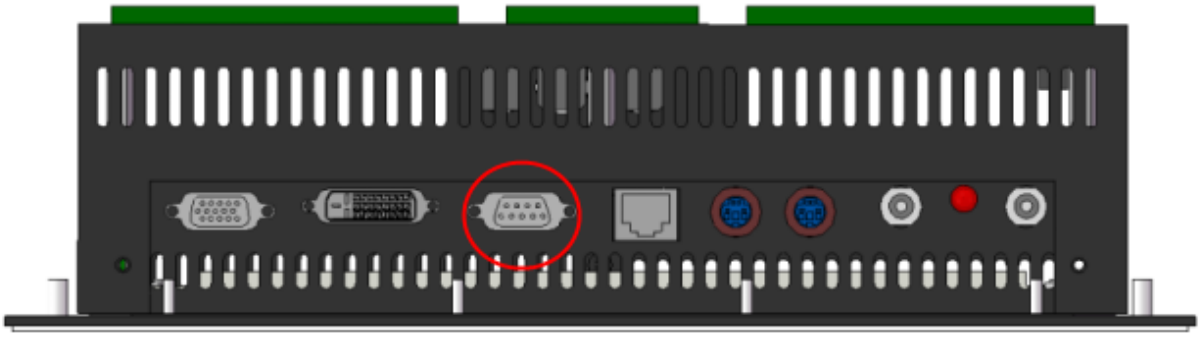
To flash a controller with V4 or higher software and no LCD:

*****Good News*****

For controllers using V4 and later software with no LCD, the controller's boot sector remains untouched. Even if the flash process fails before completion, or if power is lost, the controller can always recover by beginning the software flash portion again. The controller <u>does not</u> require special programming at AMS Controls.

1. Remove power from the XL200 Series machine controller.
2. If the XL200 is on an Eclipse network that communicates via RS485, disconnect the B connector from the back of the XL200 controller before continuing with the flash process. If the local Eclipse network connects via Ethernet directly to the controller, there is no need to disconnect the Ethernet cable.
3. Connect the laptop to the XL200 using the RS232 cable. The laptop should be plugged into AC power. Most laptops switch to a "low power" mode when running on battery power. This can interfere with Com Port communication.

The RS232 cable should plug into the 9 pin port on top of the XL200 controller.



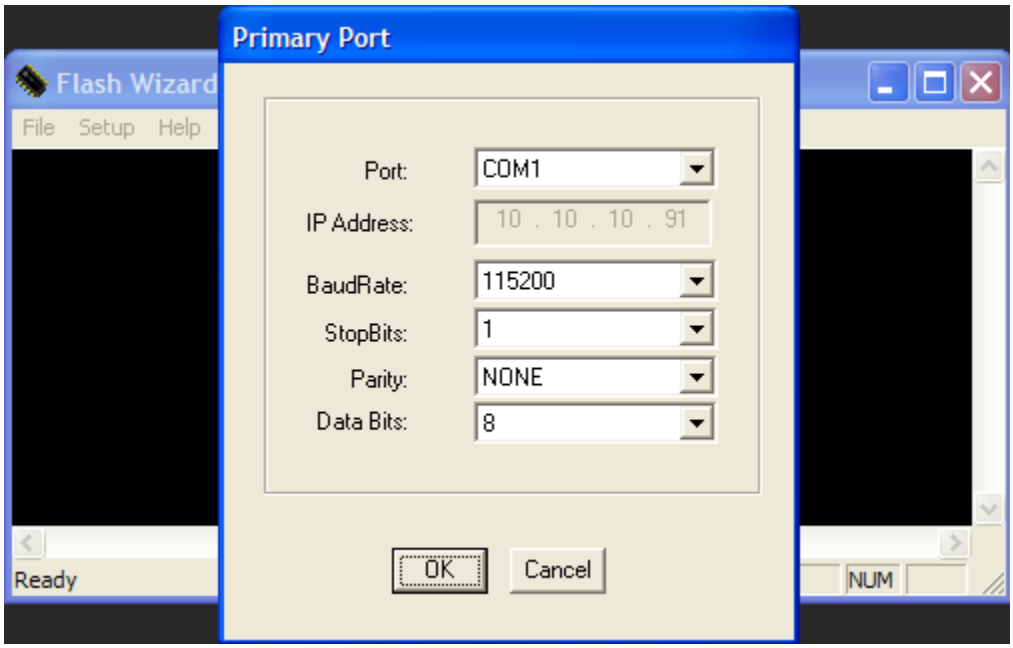
RS232 Port

4. Start the Flash Wizard software.

Flash Wizard software

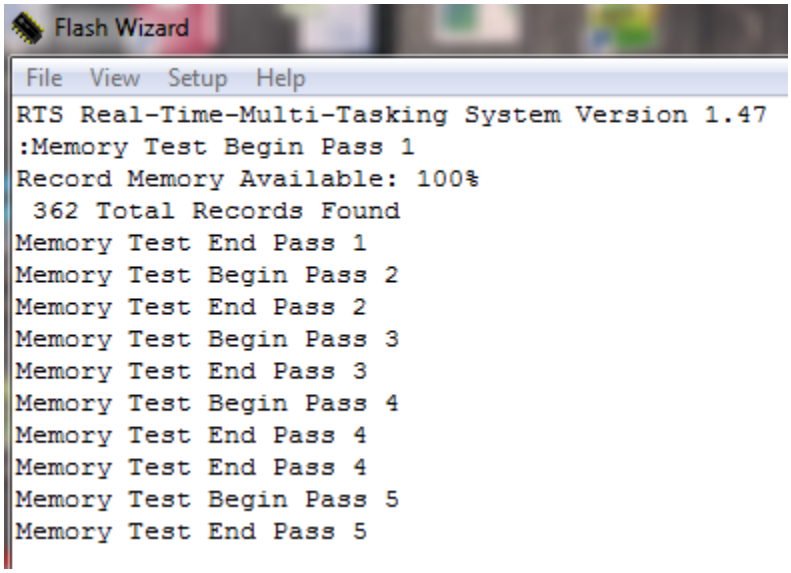
5. If this is the first time running Flash Wizard on the current laptop/PC, then navigate to Setup\Port on the menu bar to configure the software for the correct communications port. Otherwise, skip to Step 6.

   Only the port number should change in the dialog. The other settings are default, and will always be correct for flashing a XL200 Series machine controller.

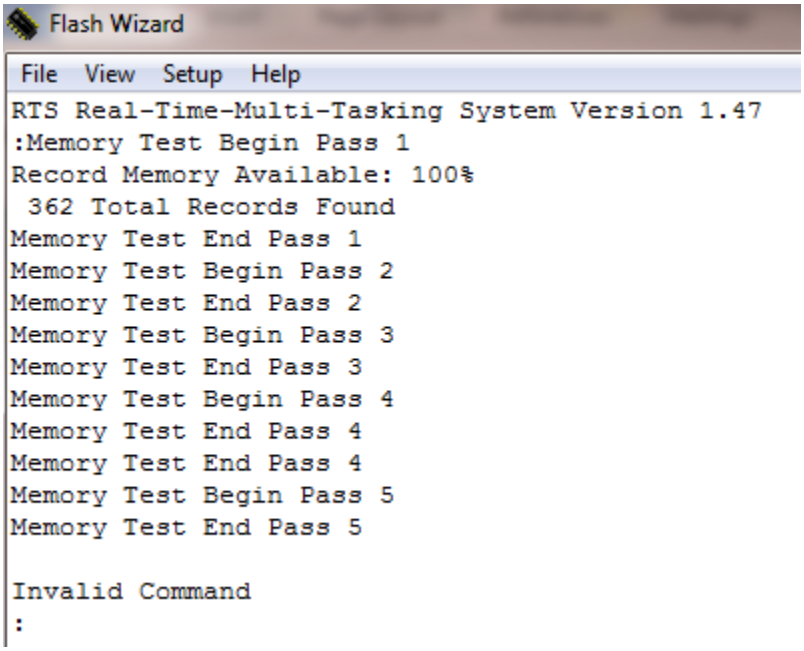


Port Setup Menu

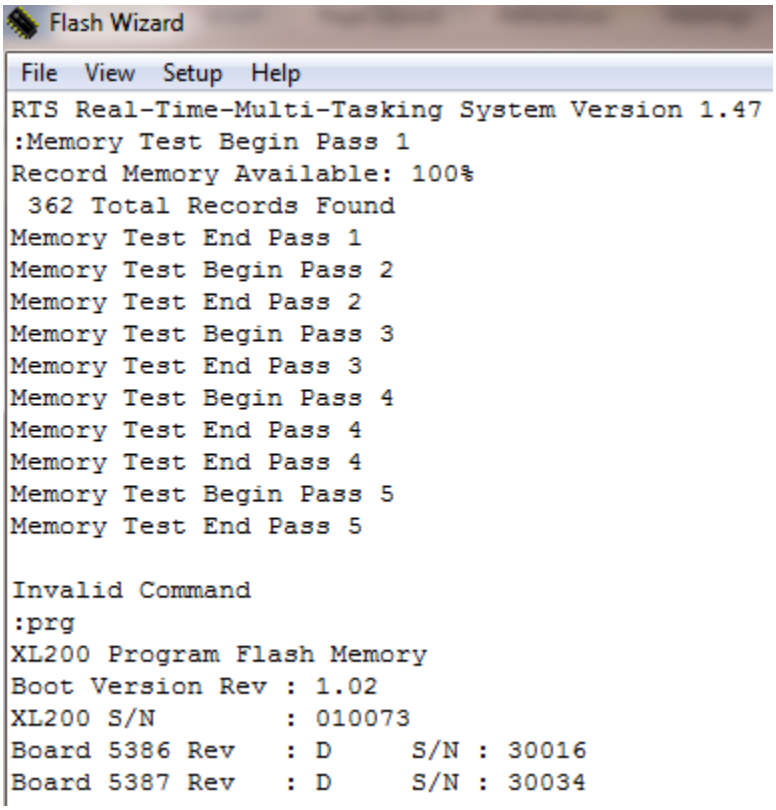
6. With the XL200 and laptop connected and Flash Wizard already running on the laptop, put the controller into Program Flash Memory mode. On the Rev. D hardware model with no LCD, this is accomplished as follows:
    a. Power up the controller, you should see something similar to the following screen.



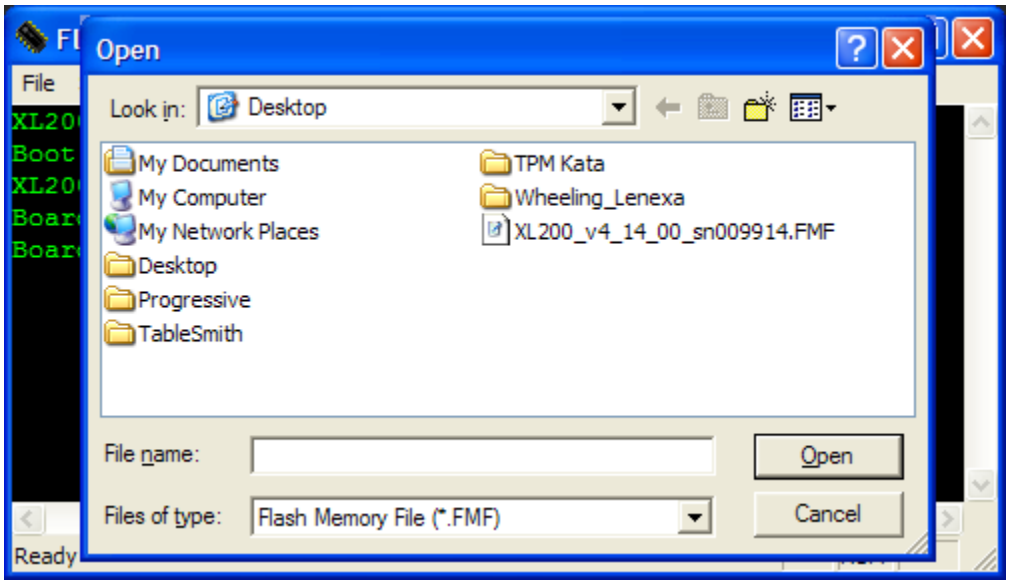
b. Press Ctrl-D, then press Enter. You should see the following screen.



c. Type prg then hit enter. You should see something similar to the following screen and your controller will be in Program Flash Memory mode.

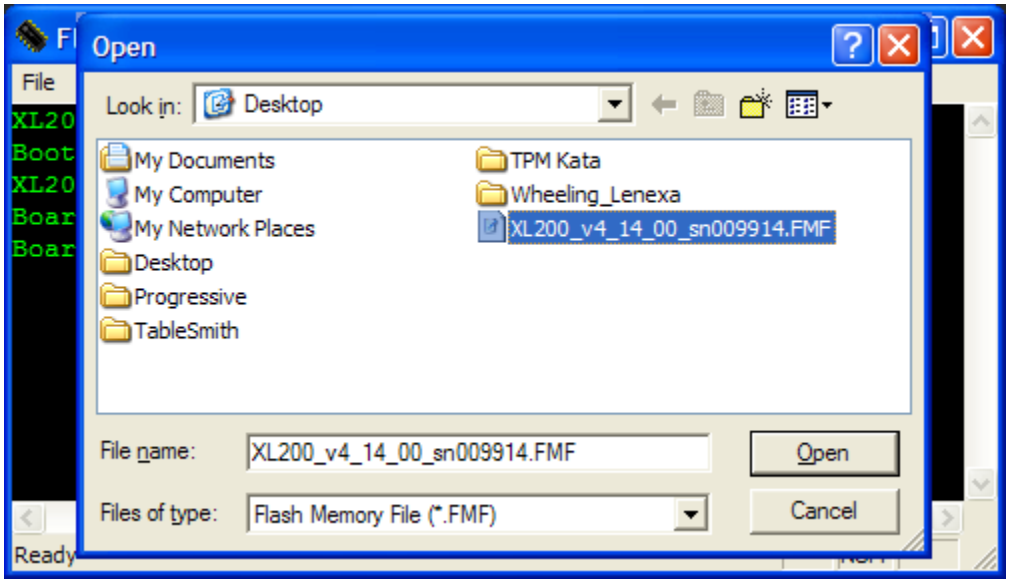


7. Navigate to File\Flash XL200 Series. The Open dialog box will appear.



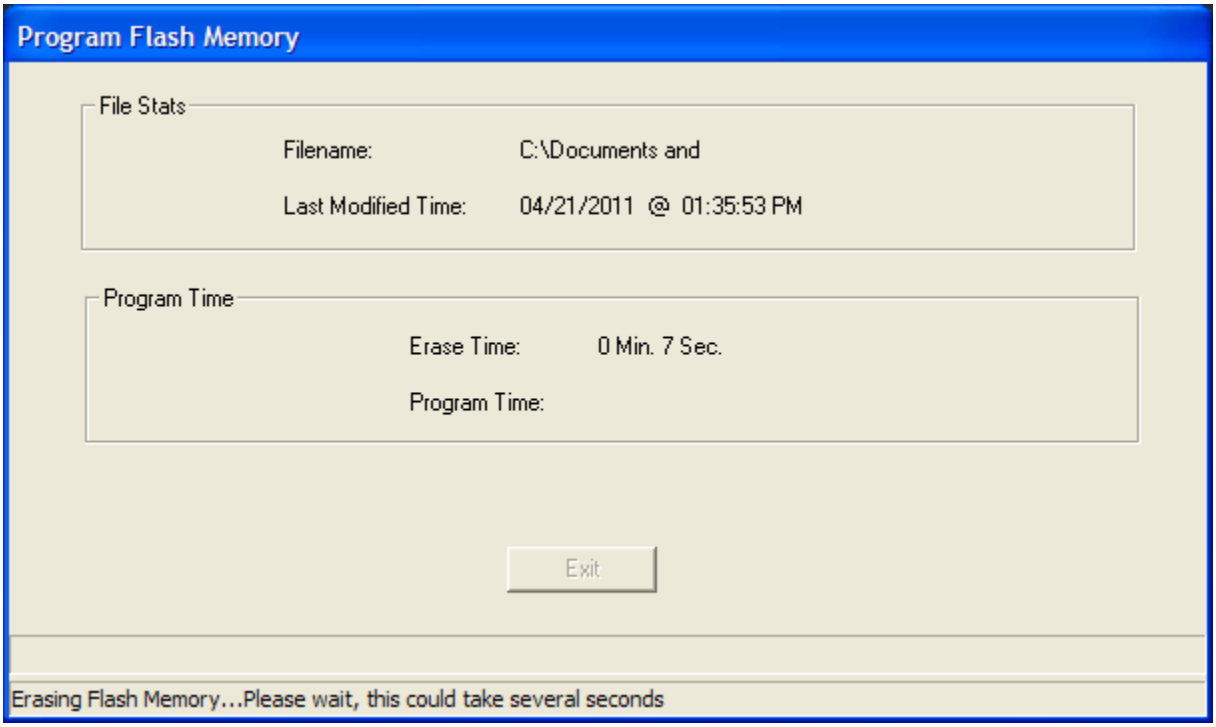
Open Dialog Allows Correct Flash File to be Selected

8. Navigate to the desired flash file and select it through the Open Dialog box.



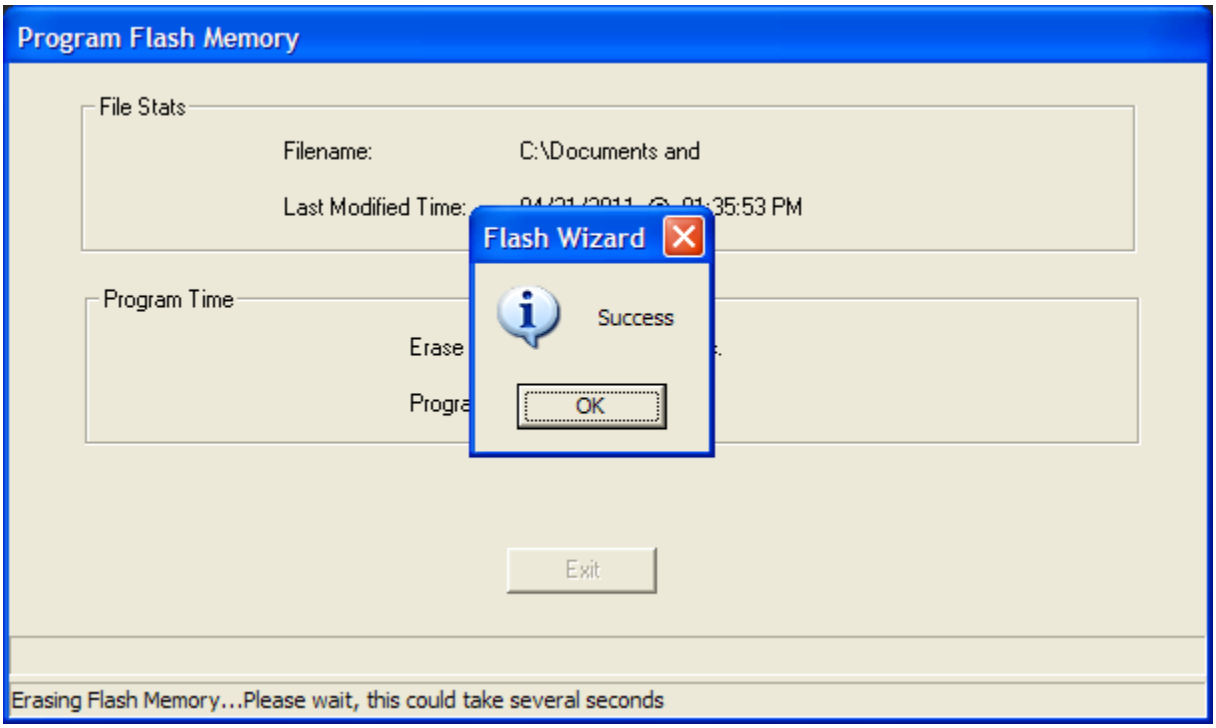
Flash File Selected and Ready to Open

9. Click the Open button and Flash Wizard will begin the flash process. If the purpose of the flash is to change software models, the user must obtain a file from AMS Controls that has the controller's serial number embedded within the flash file, or an authorization code will be required.



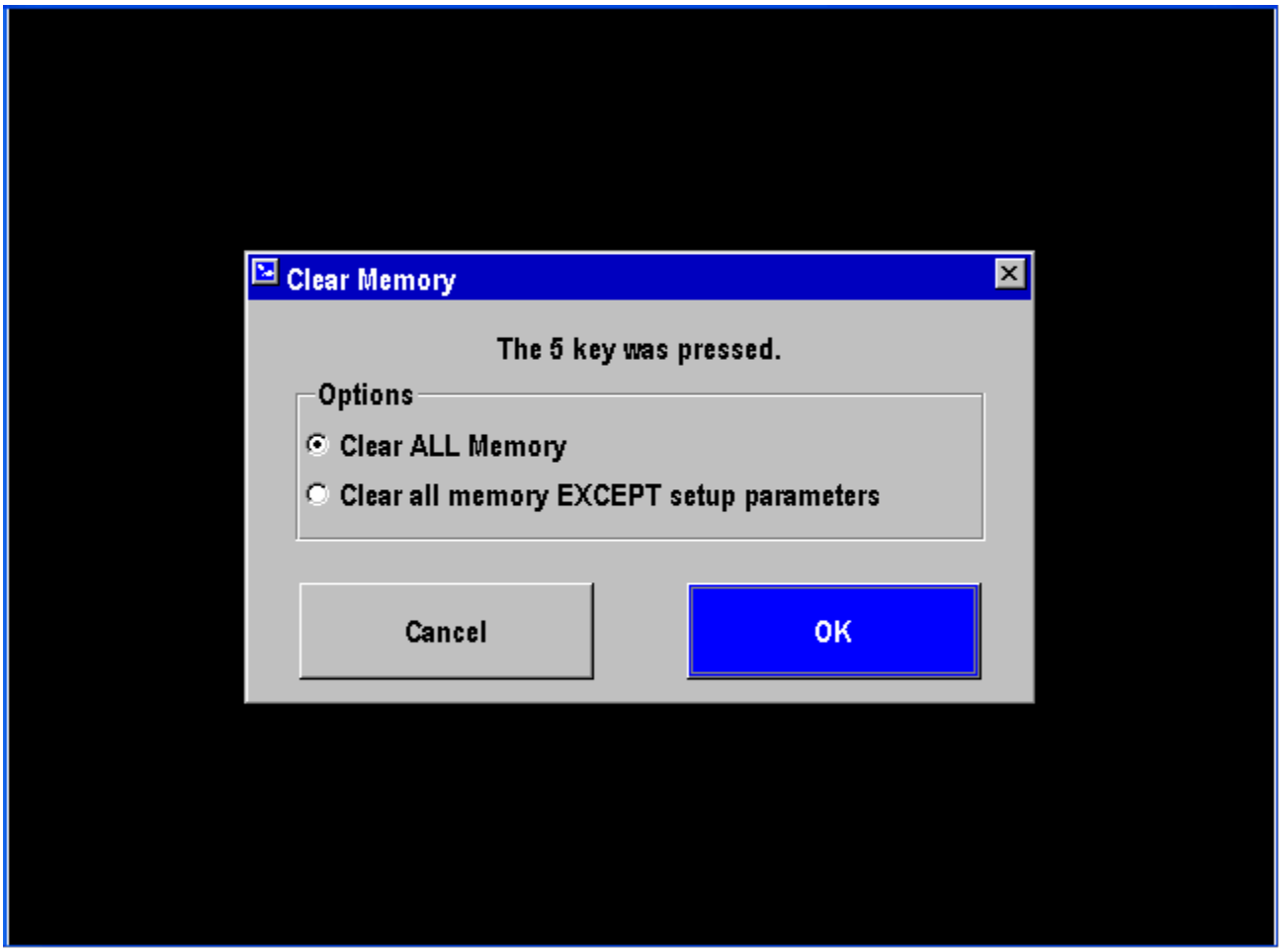
Existing Flash Programming is Erased Before New Flash Programming Begins

10. Once the flash process is complete, the *Success* dialog box will appear.



Flash Process Complete

11. Click the OK button on the Success dialog box.
12. Click the Exit button on the Program Flash Memory window.
13. Close Flash Wizard.
14. Remove power from the XL200 Series machine controller.
15. If the B connector was removed in Step 2, re-insert the B connector at this time. Otherwise, skip to Step 16.
16. Turn on power to the controller. Answer whatever on-screen prompts are required to fully boot the unit to the Status menu.
17. Turn controller power off.
18. Press and hold the number “5” key on the keypad. While holding the “5” key down, re-apply power to the unit. Continue holding the “5” key until the following message is displayed:



Clearing Memory after Flashing

19. Select the option for “Clear ALL Memory” and navigate to the OK button. Press the Enter key on the keypad.
20. Once the controller reboots, re-enter the unit’s Eclipse data and let Eclipse download parameters, jobs, etc. into the controller. If the XL200 is not connected to Eclipse parameters, jobs, etc. must be re-entered by hand.