



SLC 5/03™, SLC 5/04™ and SLC 5/05™ Processors Firmware/Operating System Upgrade

Introduction

Enclosed in this package is a firmware/operating system upgrade for your SLC 5/03, SLC 5/04 or SLC 5/05 processor. Take anti-static precautions when upgrading the firmware.



ATTENTION: PROMs are electrostatic sensitive devices. Do not handle without proper grounding precautions. Do not install PROM with power applied to the SLC 5/03 or higher processor.

If you upgrade an SLC 5/03 or higher processor, you will receive anomaly fixes as well as added functionality. Therefore, to make use of the additional functions, you need to resave your program off-line.

This product is CE compliant for all applicable directives when product or packaging is marked.

Installation Procedure

Follow the directions carefully. Refer to page 3 for component placement information.

1. Save the current processor program to your hard drive using your programming software.

Important: The user program is cleared as part of the operating system upgrade process. You must restore your program after loading the firmware upgrade. Also, all communication ports are returned to default parameters.

2. Remove the communication cable between the processor and your programming terminal.
3. Remove power from the chassis containing the processor.

Spare Allen-Bradley Parts



ATTENTION: Do not remove the processor from the SLC 500 chassis until all power is removed from the SLC 500 power supply.

4. Remove the processor from the chassis.
5. Plug the firmware upgrade pack into the memory module socket.
6. Move the operating system write-protect jumper (J4) to the unprotected, or program, position (see diagram on page 3).
7. Firmly seat the processor back into the chassis.
8. Apply power to the chassis containing the processor while watching the LED display. All the LEDs should flash on and then turn off. The download process of the firmware takes approximately 45 seconds. While the download is in progress, the RUN and FLT LEDs remain off. The other four LEDs — RS232, DH485 (DH+ on the SLC 5/04, ENET on the SLC 5/05), FORCE, and BATT — turn on and off in a walking bit sequence. If the download is successful, these four LEDs remain on together. If the FLT LED turns on and a combination of LEDs flash on and off indicating an error condition, refer to the troubleshooting information in this document.
9. Following the successful completion of the download, remove power from the chassis containing the processor.



ATTENTION: Do not remove the processor from the SLC 500 chassis until all power is removed from the SLC 500 power supply.

10. Remove the processor from the chassis.
11. *Carefully* remove the firmware upgrade pack and place it in the anti-static packaging it was shipped in.
12. Move the operating system write-protect jumper (J4) back to the protected position (see diagram on page 3).
13. Apply the enclosed firmware upgrade label to the processor nameplate.
14. Firmly seat the processor back into the chassis.
15. Attach the communication cable between the processor and your programming terminal.

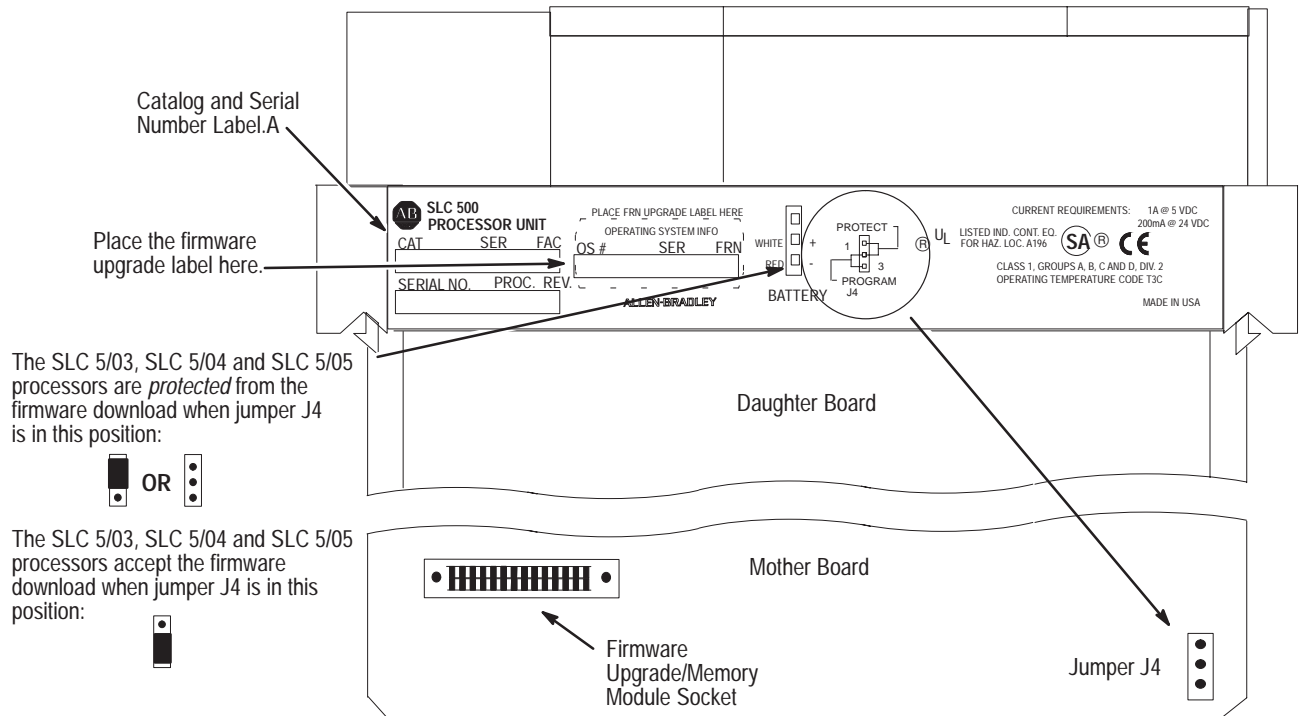
16. Apply power to the chassis containing the processor while watching the LED display. All the LEDs should flash on and then turn off except for the FLT LED which should remain flashing. If the FLT LED turns on and a combination of LEDs flash on and off indicating an error condition, refer to the troubleshooting information in this document.
17. Restore your program after loading the firmware upgrade.

Identifying Processor Errors while Downloading Firmware

The download process of the firmware takes approximately 45 seconds. While the download is in progress, the RUN and FLT LEDs remain off. The other four LEDs — RS232, DH485 (DH+ on the SLC 5/04, ENET on the SLC 5/05), FORCE, and BATT — turn on and off in a walking bit sequence. If the download is successful, these four LEDs remain on together.



ATTENTION: Jumper J4, located on the bottom corner of the motherboard, provides write protection from any download of a new operating system. The “out of the box” position of this jumper is “PROTECT,” or write protect. Without the jumper, the processors are write protected.



If the LEDs indicate:^①

POWER	RUN	FORCE
FLT	DH485	
BATT	RS232	

The Following Error Exists	Probable Cause	Recommended Action
Fatal Hardware Error	Major hardware failure due to noise, improper grounding, or poor power source.	Cycle power and see if the error repeats itself. If the error clears, you should be able to download the firmware. If the error persists, contact your Allen-Bradley representative.

If the LEDs indicate:^①

POWER	RUN	FORCE
FLT	DH485	
BATT	RS232	

The Following Error Exists	Probable Cause	Recommended Action
Corrupted Operating System Memory Module	The operating system on the Flash EPROM is corrupt.	Cycle power and see if the error repeats itself. If the error persists, either contact your Allen-Bradley representative for a new operating system memory module, or download the old operating system.

If the LEDs indicate:^①

POWER	RUN	FORCE
FLT	DH485	
BATT	RS232	

The Following Error Exists	Probable Cause	Recommended Action
Flash EPROM Failure	The processor flash is corrupt.	Cycle power and see if the error repeats itself. If the error clears, you should be able to download the firmware. If the error persists, contact your Allen-Bradley representative.

If the LEDs indicate:^①

POWER	RUN	FORCE
FLT	DH485	
BATT	RS232	

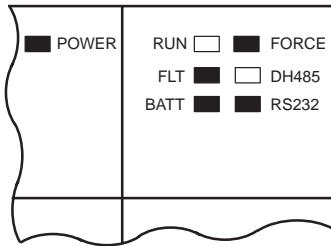
The Following Error Exists	Probable Cause	Recommended Action
Corrupt or Missing Operating System	The operating system is missing or has been corrupted.	Cycle power. If error clears, you should be able to download the firmware. If the error persists, contact your Allen-Bradley representative for a new operating system.

Refer to the following key to determine the status of the LED indicators:

<input type="checkbox"/>	Indicates the LED is OFF.
<input checked="" type="checkbox"/>	Indicates the LED is ON.

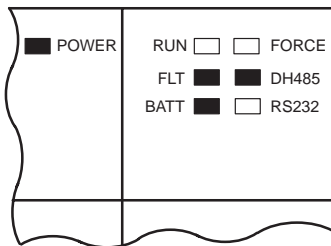
^① The DH485 LED on the SLC 5/03 processor is labeled DH+ on the SLC 5/04 processor and ENET on the SLC 5/05.

If the LEDs indicate:^①



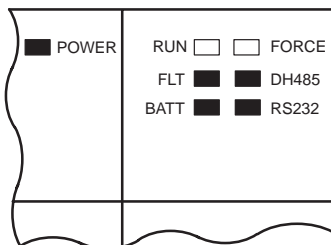
The Following Error Exists	Probable Cause	Recommended Action
Downloadable Operating System Failure	Failure during transmission of downloadable operating system.	Download the operating system.

If the LEDs indicate:^①



The Following Error Exists	Probable Cause	Recommended Action
Incompatible Platform	The upgrade of the operating system is incompatible with the processor hardware.	Use an operating system that is compatible with your processor hardware.

If the LEDs indicate:^①



The Following Error Exists	Probable Cause	Recommended Action
Memory Write Protected	An attempt was made to download the operating system onto write-protected memory.	Change the jumper on the SLC 5/03 and SLC 5/04 processors to the program position.

Refer to the following key to determine the status of the LED indicators:

- Indicates the LED is OFF.
- Indicates the LED is ON.

^① The DH485 LED on the SLC 5/03 processor is labeled DH+ on the SLC 5/04 processor and ENET on the SLC 5/05 processor.



Installation Instructions

SLC 5/03™ and SLC 5/04™ Processors Operating System Upgrade DO NOT USE!

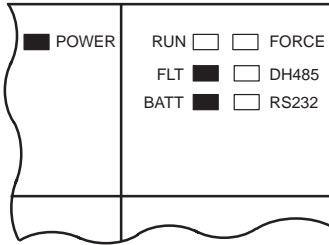
DO NOT USE!

Spare Allen-Bradley Parts

DO NOT USE!

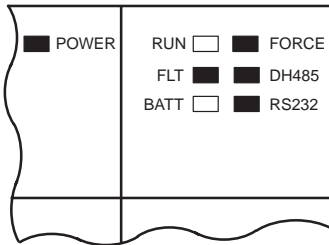
If the download is *not* successful, the FLT LED turns on and a combination of LEDs flash on and off indicating an error condition. The following LED diagrams and tables provide you with information regarding error messages, possible cause(s) for the error, and recommended action to take to resolve the error.

If the LEDs indicate: ①



The Following Error Exists	Probable Cause	Recommended Action
NVRAM error	Major hardware failure due to noise, improper grounding, or poor power source.	Cycle power and see if the error repeats itself. If the error clears, you should be able to download the firmware. If the error persists, contact your Allen-Bradley representative.

If the LEDs indicate: ①



The Following Error Exists	Probable Cause	Recommended Action
Hardware Watchdog Timeout	Major hardware failure due to noise, improper grounding, or poor power source.	Cycle power and see if the error repeats itself. If the error clears, you should be able to download the firmware. If the error persists, contact your Allen-Bradley representative.

Refer to the following key to determine the status of the LED indicators:

- Indicates the LED is OFF.
- Indicates the LED is ON.

① The DH485 LED on the SLC 5/03 processor is labeled DH+ on the SLC 5/04 processor and ENET on the SLC 5/05 processor.

SLC 500, SLC 5/03, SLC 5/04 and SLC 5/05 are trademarks of Rockwell Automation.



Allen-Bradley, a Rockwell Automation Business, has been helping its customers improve productivity and quality for more than 90 years. We design, manufacture and support a broad range of automation products worldwide. They include logic processors, power and motion control devices, operator interfaces, sensors and a variety of software. Rockwell is one of the world's leading technology companies.



Worldwide representation.

- Argentina • Australia • Austria • Bahrain • Belgium • Brazil • Bulgaria • Canada • Chile • China, PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic • Denmark • Ecuador • Egypt • El Salvador • Finland • France • Germany • Greece • Guatemala • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Ireland • Israel • Italy • Jamaica • Japan • Jordan • Korea • Kuwait • Lebanon • Malaysia • Mexico • Netherlands • New Zealand • Norway • Pakistan • Peru • Philippines • Poland • Portugal • Puerto Rico • Qatar • Romania • Russia-CIS • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa, Republic • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Yugoslavia

Allen-Bradley Headquarters, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414 382-2000 Fax: (1) 414 382-4444

Spare Allen-Bradley Parts