Allen-Bradley 1747-L542/B

Allen-Bradley 1747-L542/B SLC500 Processor User Manual

Model: 1747-L542/B REV3

1. Introduction

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of the Allen-Bradley 1747-L542/B REV3 SLC500 Processor. The SLC500 series is a family of small, chassis-based, modular programmable controllers, designed for industrial control applications. This specific processor unit includes the 1747-OS401/B operating system and key, enabling robust and reliable control.


SLC 5/04 CPU
RUN
FORCE
FLT
DH+
BATT
RS232
RUN
REM
PROG

Figure 1: Front view of the Allen-Bradley 1747-L542/B SLC500 Processor, showing indicator lights and key switch.

2. Setup and Installation

2.1 Mounting the Processor

The 1747-L542/B processor is designed to be installed into a compatible SLC500 chassis. Ensure the chassis is securely mounted in a suitable industrial enclosure, providing adequate ventilation and protection from environmental factors.

Figure 2: Top view of the processor, illustrating its compact design for chassis integration.

2.2 Wiring and Connections

Connect the processor to the power supply and communication modules within the SLC500 chassis. Ensure all connections are firm and correctly seated. Refer to the chassis documentation for specific wiring diagrams.

Figure 3: Side view revealing the internal circuit board and components, highlighting the modular design for maintenance and expansion.

2.3 Initial Configuration

Upon initial power-up, the processor will load the 1747-OS401/B operating system. Use the provided key to set the processor mode (RUN, REM, PROG) as required for your application. For programming, set the key to PROG and connect via the RS232 port.

3. Operating the Processor

3.1 Indicator Lights

The front panel features several indicator lights:

- **RUN:** Illuminates when the processor is in Run mode and executing the user program.
- **FLT (Fault):** Illuminates when a major fault occurs. Refer to the troubleshooting section for details.
- **BATT (Battery):** Illuminates when the battery voltage is low, indicating a need for replacement.
- **FORCE:** Illuminates when an I/O point is being forced.
- **DH+:** Indicates activity on the Data Highway Plus communication port.
- **RS232:** Indicates activity on the RS232 communication port.

3.2 Key Switch Positions

The key switch on the front panel controls the processor's operating mode:

- **RUN:** The processor executes the user program. No program changes can be made.
- **REM (Remote):** The processor mode can be changed via programming software (e.g., RSLogix 500).
- **PROG (Program):** The processor is in Program mode, allowing program upload, download, and modifications. The processor does not execute the user program in this mode.

4. Maintenance

4.1 Battery Replacement

When the BATT indicator illuminates, the processor's battery needs replacement to retain memory during power loss. Power down the chassis, carefully remove the processor, and replace the battery according to the instructions in the full SLC500 hardware manual. Use only approved replacement batteries.

4.2 Cleaning

Periodically inspect the processor and chassis for dust and debris. Use a soft, dry cloth or compressed air to clean the unit. Ensure power is disconnected before cleaning.

5. Troubleshooting

5.1 FLT Indicator

If the FLT indicator is illuminated, a major fault has occurred. Common causes include:

- Programming errors.
- Hardware failures in I/O modules.
- Communication errors.

To diagnose, connect to the processor with programming software (e.g., RSLogix 500) and check the fault status. Clear the fault after resolving the issue.

5.2 Processor Not Responding

If the processor is unresponsive, check the following:

- Ensure the chassis has power.
- Verify the key switch position is appropriate for the desired operation.
- Check communication cables and settings.

6. Specifications

Key technical specifications for the Allen-Bradley 1747-L542/B SLC500 Processor:

Feature	Detail
Model Number	1747-L542/B
Series	SER B
Revision	REV 3
Type	CPU Processor

Feature	Detail
Operating System	1747-OS401/B
SKU	D516005
Product Dimensions	8 x 8 x 1.5 inches
Weight	10.4 ounces
Processor Count	1
Processor Core Count	1
Secondary Cache	0.51 MB

Figure 4: Close-up view of the product label, showing model number, series, revision, and operating system details. The serial number is 211P0EQ6SD.

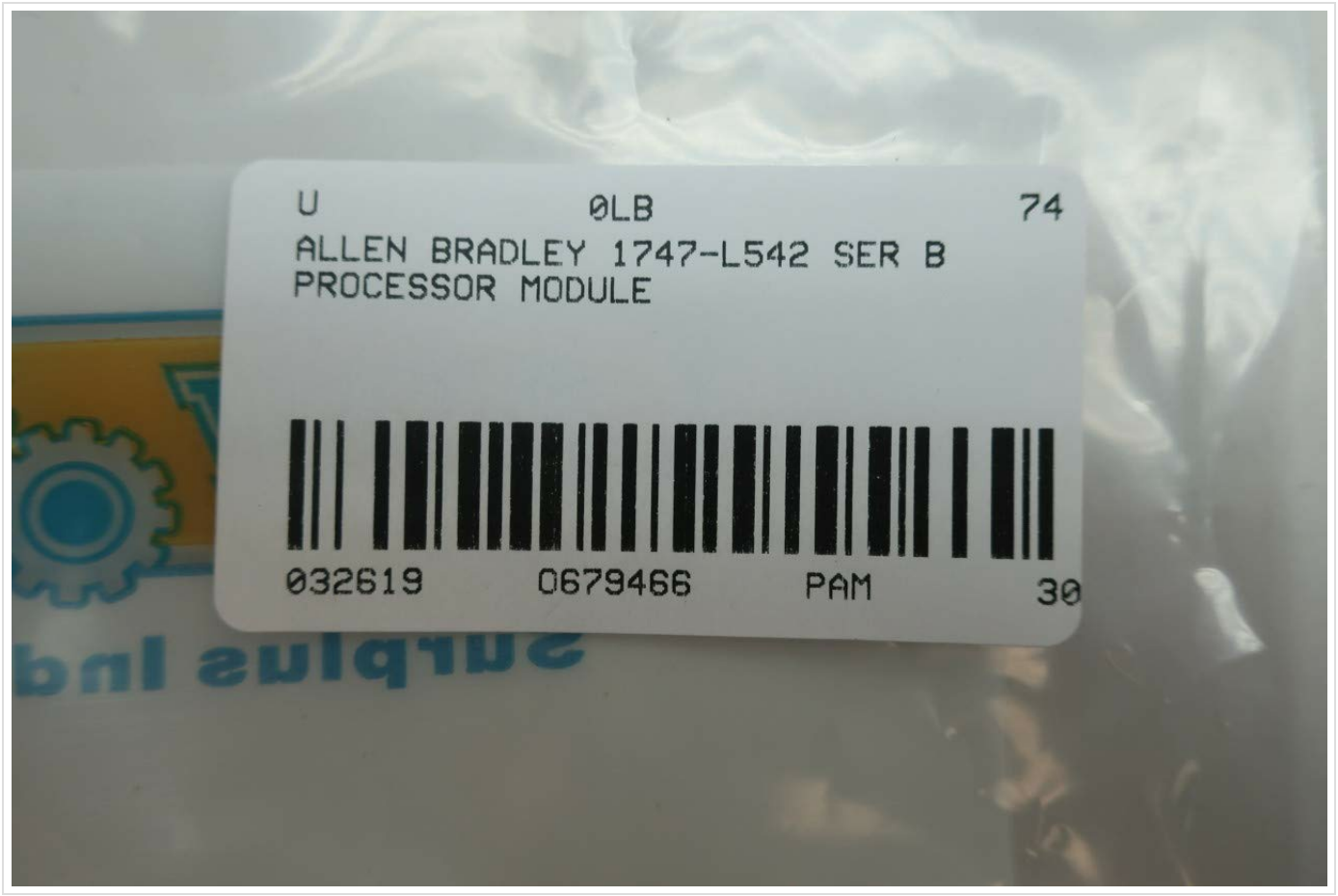


Figure 5: Barcode label indicating the Allen-Bradley 1747-L542 Series B Processor Module. The part number is 0679466.

7. Warranty Information

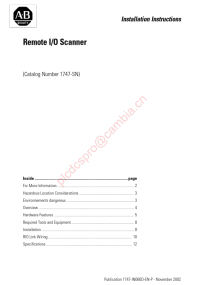
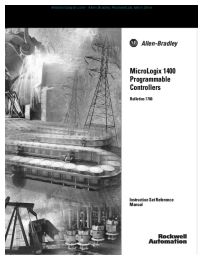
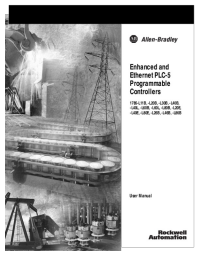
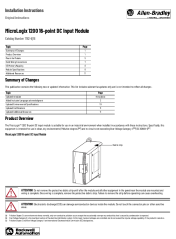
This Allen-Bradley product is covered by the standard manufacturer's warranty. For specific terms and conditions, please refer to the official Allen-Bradley warranty statement or contact your authorized distributor. Warranty coverage typically addresses defects in materials and workmanship under normal use.

8. Technical Support

For technical assistance, detailed documentation, or advanced troubleshooting, please contact Allen-Bradley customer support or your local authorized Rockwell Automation distributor. Online resources, including knowledge bases and forums, are also available on the Rockwell Automation website.

- **Rockwell Automation Website:** www.rockwellautomation.com
- **Local Distributor:** Refer to the Rockwell Automation website for a distributor locator.

Related Documents - 1747-L542/B

	SLC to CompactLogix Programming Migration Guide - Rockwell Automation A comprehensive guide for migrating SLC programs and I/O to CompactLogix systems, detailing the process, requirements, and considerations for a smooth transition. This document provides insights into leveraging existing infrastructure while minimizing costs and risks.
	Allen-Bradley 1747-SN Remote I/O Scanner Installation Instructions This document provides installation instructions for the Allen-Bradley 1747-SN Remote I/O Scanner. It covers product overview, hardware features, installation procedures, RIO link wiring, hazardous location considerations, and technical specifications.
	MicroLogix 1400 Programmable Controllers Instruction Set Reference Manual This comprehensive manual provides detailed information on the MicroLogix 1400 Programmable Controllers, including instruction set reference, I/O configuration, memory management, function files, and communication protocols. Designed for engineers and technicians, it covers essential aspects for programming and operating these industrial automation devices.
	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual Comprehensive user manual for Allen-Bradley's Enhanced and Ethernet PLC-5 programmable controllers. This guide details system design, operation, maintenance, communication protocols (Ethernet, DH+, Remote I/O, Extended-Local I/O), I/O addressing, programming features, and troubleshooting for industrial automation applications.
	MicroLogix 1200 16-point DC Input Module Installation Instructions Comprehensive installation guide for the Allen-Bradley MicroLogix 1200 16-point DC Input Module (1762-IQ16), covering mounting, wiring, specifications, and safety precautions for industrial environments.
	Micro800 Programmable Controller Family Selection Guide - Allen-Bradley Selection guide for Allen-Bradley Micro800 programmable controllers and Micro850 expansion I/O modules, detailing power requirements, specifications, and module types for industrial automation.