

RSLogix 500

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Preface

Purpose of this book

This Getting Results book provides you with information on how to install and navigate RSLogix 500. This guide includes troubleshooting information and tips on how to use RSLogix 500 effectively. It also explains how to access and navigate the online help.

Intended audience

We assume that you are a control engineer familiar with:

- IBM-compliant personal computers
- Microsoft® Windows® 95, Microsoft Windows 98®, or Microsoft Windows 2000™
- Rockwell Automation's class of SLC (small logic controllers).

Document conventions

This manual uses the following typographical conventions:

- **[Bold]** characters in brackets represent keystrokes used to execute a function. When more than one key is to be pressed at a time, the keys are separated by a plus sign. For example, **[Ctrl + v]** means hold down the **[Ctrl]** key and press the **[v]** key.
- **Bold** characters represent menu choices.
- `TEXT IN THIS FONT` represents characters that you should type.

Online help

If you need help while using RSLogix 500, use any of the following methods:

- choose Help from the menu bar
- click the Help button on any RSLogix 500 dialog
- press **[F1]** on any instruction, dialog box, or window view.

Commonly used terms

The following table defines terms commonly used in this book.

This term:	Represents this concept:
activation files	Hidden files in the root directory that allow the software to run. The software checks for these files before you have access to offline or online programming
archive	Backups of production files. Can be used for version control.
back up	Keep a copy of the current file before replacing that file with an updated version.
download	Restore a specified file to a specified processor. For example, when you download the current project file, you copy the file to a specified processor so the processor can begin running that file.
library	A file into which you store or from which you retrieve portions of ladder logic.
mnemonic	A term, usually an abbreviation that is easy to remember. The PLC instruction set is typically represented by a 3-letter mnemonic.
project	All of the files that make up the SLC 500 logic program including the documentation files.
upload	Access an SLC processor and save a copy of the project.
verification	An analysis of the ladder program files that result in the display of any programming errors.
zone	Portion of the ladder logic identified by a marker indicating the edited state of the file.

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Getting Started with RSLogix 500

Welcome to RSLogix 500

The RSLogix 500 software is a 32-bit Windows® ladder logic programming package for the SLC 500 and MicroLogix processors.

Operating in the Microsoft® Windows 95, Microsoft Window 98, Microsoft Windows 2000 and Windows NT™ environment, **RSLogix 500** is compatible with programs created with any of Rockwell Software's DOS-based programming packages. If you are using Windows NT, it must be Version 4.0 with Service Pack 4 or later.

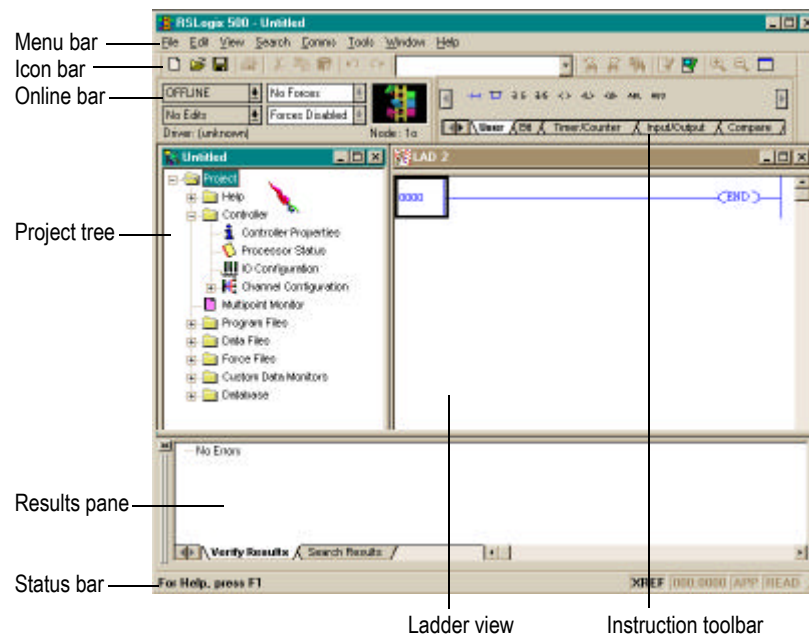
RSLogix 500 software functionality includes:

- a free-form ladder editor that lets you concentrate on the application logic instead of proper syntax as you write your program
- a powerful project verifier that you use to build a list of errors you can navigate to make corrections at your convenience
- drag-and-drop editing to quickly move data table elements from one data file to another, rungs from one subroutine or project to another, or instructions from rung to rung within a project
- search and replace to quickly change occurrences of a particular address or symbol
- a custom data monitor to view separate data elements together and observe interactions
- a point-and-click interface called a project tree that lets you access all the folders and files contained in your project
- trending and histogram functionality for monitoring and displaying process data
- SLC libraries for storing and retrieving portions of ladder logic for use across any of Rockwell Software's SLC programming software products.
- a compare utility that lets you graphically view project differences.

Exploring RSLogix 500

To navigate through the various windows and toolbars in RSLogix 500 more easily, you should understand what they contain and what functionality each provides.

When you open a project in RSLogix 500 you can expect to see:



- **Menu bar** - Select functionality from the menus that appear as you click each selection on this bar.
- **Icon bar** - The icon bar contains many functions that you will use repeatedly as you develop and test your logic program. If you want to know what any of the icons represent, RSLogix 500 can tell you. Just move your cursor to the icon. A floating ToolTip window will appear and tell you what the icon is used for.
- **Online bar** - Learn the operational mode and see whether you have online edits or forces installed at a glance. You can even view the driver and node number.

- **Project tree** - This view contains all the folders and files contained in your project. You can usually click an icon in this tree and then click the right mouse button for a menu that applies only to the icon selected. For example, if you click the right mouse button on a program file, you see options to rename the program file, open the program file, hide the program file, or reveal properties of the program file.
- **Status bar** - Look here for ongoing status information or prompts, as you use the software.
- **Results pane** - Displays the results of a Find All search or a verification procedure. You can hide this window view or separate it from the application window so that it can be placed anywhere on your screen.
- **Ladder view** - In this part of the application window you can view several program files at the same time. This is where you edit your ladder logic.
- **Instruction toolbar** - Displays instruction mnemonics in tabbed categories. When you click on a category tab the instruction toolbar just above it changes to show that category of instructions. Click an instruction to insert it in your ladder program.

Tip

You may find it more convenient to use a floating instruction palette from which you can select any instruction available to your processor. Click [Alt+4] to view the palette. You can resize the palette by dragging its lower edge.

Quick Start Steps

The following steps explain how to get up and running quickly with RSLogix 500 as soon as you install it.

Step 1 • Configure system communications

Do this before you begin a new project. The settings you establish with this step will remain with the project and will be applied when you attempt to download any logic program.

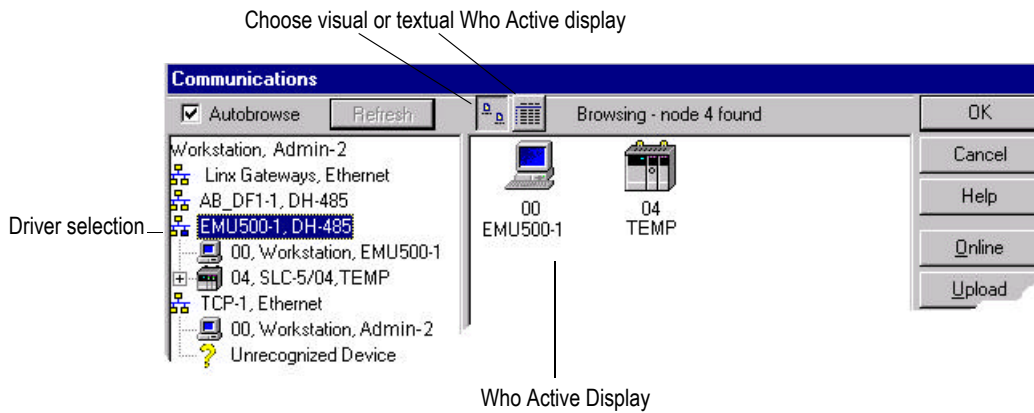
From the Comms menu, click System Comms. Then Select a driver from the list of drivers in the left pane of the Communications window. Clicking on a driver displays the devices available for connection in the right (Who Active) pane of the window.

If the driver list is empty, launch RSLinx by selecting the RSLinx.exe file from its resident directory on your hard drive. Once you have launched RSLinx, if the driver list is still empty, you must configure a driver.

Tip



If you need help configuring a driver you can receive step-by-step instructions from your RSLINX help file. To get RSLINX help: open RSLINX by clicking the RSLINX icon on your desktop, then from the Help menu click Quick Start. This displays the information you need to configure a driver.



To complete the configuration, click the processor you want to communicate with (in the Who Active pane). From this point you can go online or upload the ladder program from the selected processor to display it in RSLogix 500.

The figure above is only an example configuration using RSLogix Emulate 500 (EMU500-1) as the driver. Your configuration will vary.

For more detailed information about functionality available to you in the Communications dialog refer to chapter 3 in this book.

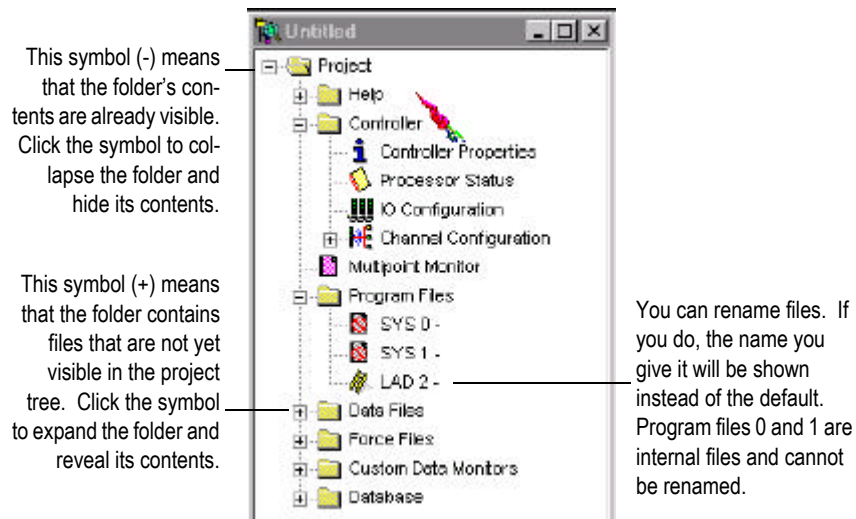
Step 2 • Create a new project or open an existing project

New Project

RSLogix 500 is based on projects. Projects are the complete set of files associated with your program logic. You create a project from the File menu by clicking New. RSLogix 500 prompts you for the type of processor you will communicate with and creates a project tree control. This project tree is your access point to program, data table, and database files.

Existing Project

From the File Menu, click Open. Use the dialog that appears next, to Open a ladder logic project and/or its associated database. Depending on the type of action (open or import) RSLogix 500 presents a default file extension. You may however, select a different file type to open or import. Make sure you have the correct type of file listed in the Files of Type drop-down listbox on the Open/Import SLC 500 Program window.



Tip



You can hide any program file (except system files) in the project tree. This can be useful once you've completed editing a program file and don't want to risk accidentally selecting it and making changes. Click on the file in the project tree and then select Hide from its context (right-mouse) menu.

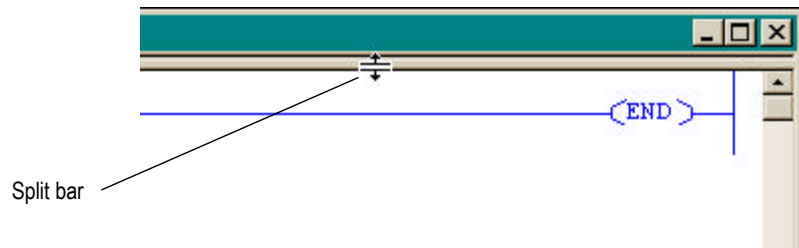
Tip



Compare project files easily by clicking Tools > Compare. Then select the projects you want compared. You can print the resulting graphical display or save it to a report and print it later.

Opening Multiple Files

To open multiple files within the same project you can split the viewing window.

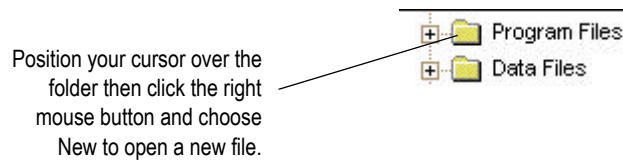


Use your pointing device to point to the split bar. The cursor turns into a double bar with two arrows. Drag the bar up or down to its new position allowing you to see two views of the window.

You cannot view program files from different projects with only a single RSLogix 500 application running on your computer. You must open more than one application to work on multiple projects at the same time. Once you have the project opened however, you can drag-and-drop instructions and data between them.

Step 3 • Create program and data table files

The project tree (also referred to as project directory) is your point-of-entry for creating new files or accessing existing files. To create a new file, right-click the program or data file icon and then select New from the menu. You will be prompted for information about the file.



Program files contain controller information, the main ladder program, and any subroutine programs. The number of program files you can have in your ladder project is determined by the type of controller you are using.

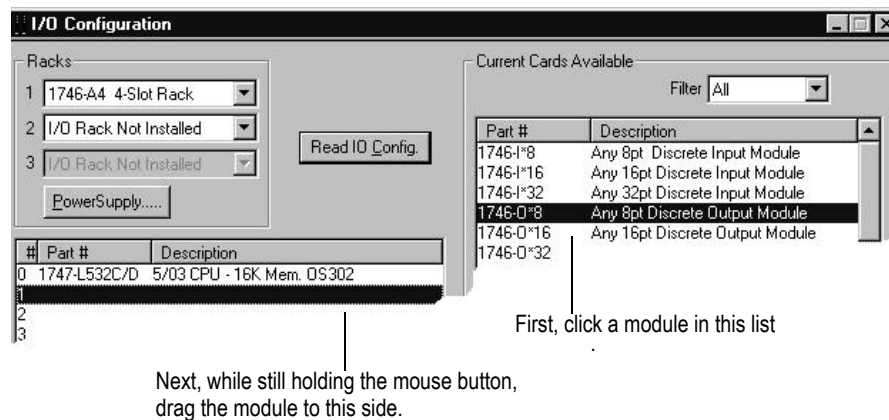
Data table files contain the status information associated with external I/O and all other instructions you use in your main and subroutine ladder program files. In addition, these files store information concerning controller operation. You can also use the files to store recipes and look-up tables if needed.

Step 4 • Define chassis and modules

After you have opened a project, you have to define your chassis, identify the I/O cards that you are using by indicating their slot position within the processor rack, and select a power supply for each rack in your configuration. A real application might have up to three racks and many I/O modules.

You perform these procedures in the I/O Configuration window. Access this window by double-clicking the I/O Configuration icon in the project tree. Then click a module in the list on the right side of the window and drag it into the slot where you want it to reside.

From the I/O Configuration window, click the Power Supply button to examine the loading on a rack based on the module configuration that you have selected.



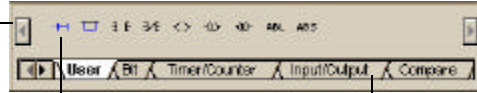
For more information about other tasks you can accomplish from the I/O Configuration window refer to chapter 4 in this book.

Step 5 • Enter a logic program

When you open a program file by double-clicking its icon in the project tree, the ladder file opens in the right side of the RSLogix 500 window. Usually program file #2, the main program file, will be opened when you open a project. If you have not begun to enter any ladder logic, only the end rung will show.

Click the end rung and then select the new rung icon from the user toolbar. To place an instruction on a rung, click its icon on one of the toolbars.

If there are too many instructions on the toolbar to see them all, use these arrows (right and left) to scroll through the list.



This is the “new rung” icon. Click it to place a new rung on your ladder.

Each of these tabs displays a different category of instructions in the toolbar. You can customize the categories.

You can place several instructions on a rung in sequence by clicking the icons one after another. RSLogix 500 places instructions from left to right.

RSLogix 500 supports a file-based editor. This means that you can:

- create and/or edit multiple rungs at a time
- enter addresses before you actually create data table files for your I/O
- enter symbols before you have assigned addresses for them in the database
- enter instructions without having to provide addresses until just before file validation occurs

To add addresses just click an instruction and then type the address in the empty field that appears above the instruction. With RSLogix 500 you can also drag and drop addresses from a data table file onto instructions in your ladder logic.

Remember to use the right mouse button to access functionality whenever possible. The right mouse button provides you with context menus that list editing options. And always remember that you can click F1 (or the Help button when available) on any instruction, or within any window to access help.

Keyboard users can press the [Shift + F10] key combination to access a right mouse menu.

Tip

You can select multiple rungs by holding down the [Ctrl] key and clicking the left mouse button on every rung you want to select. You can also select a range of rungs by holding down the [Shift] key and clicking the beginning rung and ending rung.

When you select rungs in this manner, RSLogix 500 remembers the order in which you made your selections, and pastes the rungs to the clipboard in that order. When you paste the rungs, the order in which you copied them is retained. For example if you click rung 11 and then [Shift] click rung 8 to copy a range of rungs, the rungs are copied to the clipboard from rung 11 to rung 8. Pasting these rungs will place them in the new location in this same order.

For more detailed information about the steps you follow to enter the ladder logic including information about branching, addressing, and performing program edits online, refer to chapter 5 in this book.

Step 6 • Add documentation to your logic instructions

You can use several method to add symbols and descriptions to addresses in the database.

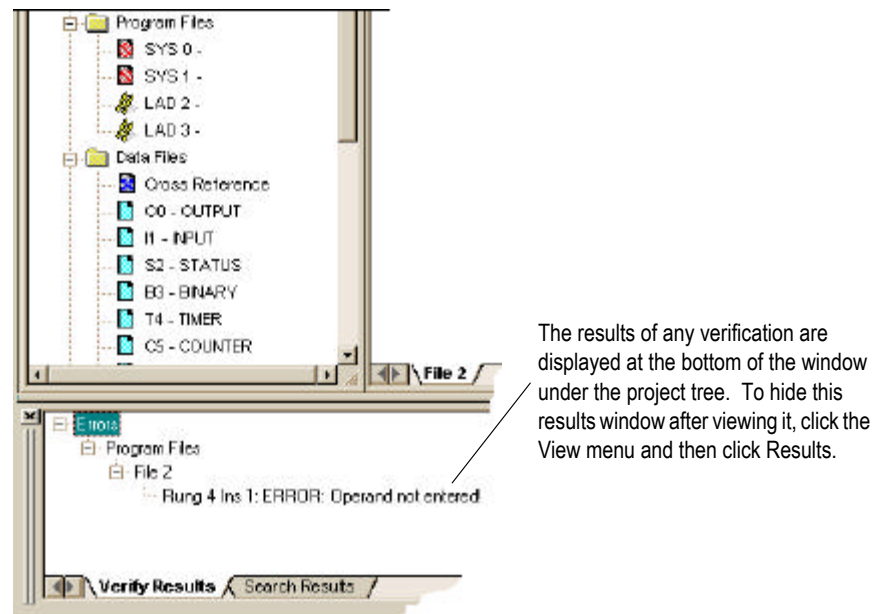
- Open the program file and add the documentation directly to the addresses instruction. Use the right mouse menu for this.
- Modify an address's assigned documentation in the data file. Double-click the data file in the project tree, and then click on an address within the grid that appears on the data file dialog. At the bottom of the dialog there are fields where you can enter the documentation for the address.
- Modify the database using the database editor. Double-click an icon in the database folder located in the project tree.
- Enter a symbol directly and later assign an address to the symbol using the database symbol/description editor.

For information about the database import and export options available to you refer to chapter 6 in this book.

Step 7 • Verify the program logic

When you are ready to build your project, you can validate a single program file or you can validate your entire project. Use the menu bar or the right mouse button menu to initiate this process.

After you initiate a verification, the Verify Results output window displays and gives you information about mistakes or omissions that may have occurred as you wrote your program logic.



Step 8 • Configure communication channel, download and go online

Tip



If you are developing the program offline, for example on a laptop remote from the site, and later plan to download and run the program on a specific processor (node) via a determined protocol, you may want to override system communication settings made in step 1. Do this from the Controller Properties window, Controller Communications tab. Settings made via this method will override any driver and node settings established in step 1, and should be completed before performing this step.

Before going online you have to define processor communication settings, such as baud rate, and also decide certain system and protocol controls. Depending on the type of processor that you are using and the method of communication (direct vs. networked or modem), the complexity of this procedure varies.

Double-click the channel configuration icon in the project tree to make these settings. If you need information about any parameter, click Help on the channel configuration window.

Finally, from the Comms menu, click Download to download the current offline program into the controller. RSLogix 500 will ask if you want to go online. Click Yes to go online; then select the operating mode.

Step 9 • Monitor data files

You can use RSLogix 500 to watch what is happening in your data table files. This procedure is called monitoring data table files.

While monitoring these files you can:

- define how your data file selection grid will display
- change values in the data table
- change the display radix
- show which addresses are used in your ladder logic
- switch between files
- quickly jump to another address in another data table file

Double-click the data file icon in the project tree that contains the data you want to monitor. You can have multiple data table files opened for monitoring at the same time. Just drag each data table window into viewing position by clicking on the title bar and moving the mouse. Release the mouse button to place the data table window.

You can also choose to cascade or tile all the windows opened in your RSLogix project by selecting a viewing option from the Window menu.

Data changes made offline only affect the disk file unless the program is restored to the processor.

Data changes made online only affect the processor file unless the program is saved or uploaded while online to update the disk file.

For other tips about how you can create and monitor lists of related addresses instead of accessing the data table files, refer to chapter 7 in this book.

Step 10 • Search and replace instructions

The Find option allows you to quickly locate instructions, addresses, and symbols (if they have been defined) in ladder program files. You can even search for edit zones within your logic program. If you want to automatically replace instructions and addresses with different ones, you can use the Replace option. Wildcards may be used in your search.

Begin any Find or Replace operation from the Search menu. Then type the mnemonic (XIC, TON, etc.), the address (B3/4, etc.) or a combination of both mnemonic and address (XIC B3/4) or mnemonic and symbol (XIC REPEAT) for the instruction you want to locate in the Find What text box.

An alternative method for searching is to click inside this box and type the numeric or symbolic address or the instruction mnemonic you want searched.



To learn the function of any icon, point to the icon without clicking. A tooltip like this will appear and briefly define the function.

Tip

You can quickly navigate to a program file, rung, address, symbol or data table file. Press [Ctrl+G] to display a Goto dialog.

Step 11 • Print a report

When you need a printed copy of what you've done in RSLogix 500, you need to print reports. There are many reports available and you can select which reports you want to print from the Report Options dialog. Select this dialog from the File menu.

Tip

To preview the way a ladder file will print, click Preview. You can scale up the image to make the instructions appear larger on the printed page or scale down the image so that in cases where many instructions are on a rung of logic, all the instructions can fit on the printed page.

Installing RSLogix 500

Introduction

This chapter explains how to install and start RSLogix 500 software. This chapter includes information on the following:

- system requirements
- installation methods
- installation procedures
- updating an existing installation
- starting procedures

After installing the software, we recommend that you read the release note located in the online help. The release note may contain more up-to-date information than was available when this document was published.

Important

If you are running Windows NT[®] and performing the tasks that you will read about in this chapter, you must have the Windows NT system administrator privileges and your user account must be a member of the local administrator user group. For more information, contact your system administrator.

System requirements

To effectively use RSLogix 500, your personal computer must meet the following hardware and software requirements:

Hardware requirements

- a Pentium[™] or Pentium-compatible microprocessor
- 32 MB of RAM for most processors except 64 MB of RAM recommended for 64Kbyte SLC 5/03, 5/04 or 5/05
- 10 MB of available hard disk space
- 16-color VGA Graphics Adapter 640x480 or greater resolution (256-color 800x600 optimal)
- a CD-ROM drive

- a 3.5-inch, 1.4 MB disk drive
- any Windows compatible pointing device

Software requirements

- The operating system must be one of the following:
 - a. Microsoft® Windows® 95
 - b. Microsoft Windows 98®
 - c. Microsoft Windows 2000™ (RSLogix 500 r4.00.00 is designed to be Windows 2000 Ready)
 - d. Windows NT 4.0 with Service Pack 4 or greater.

RSLogix 500 will not run under Windows 3.1, or Windows for Workgroups using the 32-bit extensions to these environments, or Windows NT 3.51 operating systems.

- You must use RSLinx™ version 2.00.175 or later communication software with all operating systems.

Installation methods

The RSLogix 500 software supports the following methods of installation:

- standalone workstation
- network

Standalone workstation

In a standalone workstation installation, you can install one or more Rockwell Software products to a single personal computer. Select the required Rockwell Software product and each required component for installation.

Network

The network installation allows multiple users to run one or more Rockwell Software products from a central network location. During the network installation, a system administrator installs one or more Rockwell Software products to a network location. Common application files, which are not specific to the operating system, are stored at this network location. These application files are then available to users of the network.

Tip

The Setup program creates the following subdirectory on the user-defined network location path: `x:\Program Files\Rockwell Software\RSLogix 500 English`. This subdirectory contains all of the application files required to run the product.

Installing RSLogix 500

To install RSLogix 500 software, perform the following steps:

Tip

While installing RSLogix 500 software, you will have the opportunity to specify a directory. The suggested default directory is: `x:\Program Files\Rockwell Software\RSLogix 500 English`. The language suffix changes for the different languages supported by RSLogix 500. While you can change the path, please note that the "RSLogix 500 English" portion of the path is fixed and cannot be altered.

We recommend that you use the default directory whenever possible. In procedures that appear throughout this document, we assume that you used the default name. If you did not use the default name, substitute the actual name you specified for the default name shown. Once you have installed the software remember to move your existing project files if necessary to the new project directory.

1. Start your Windows operating system if it does not start automatically.
2. Insert the RSLogix 500 CD-ROM into the CD-ROM drive.

If autorun is:	Then:
enabled	The Setup program starts automatically and the Welcome dialog box appears. Proceed to step 3

If autorun is:	Then:
disabled	Perform the following steps: <ol style="list-style-type: none"> a. Click Start, then click Run. The Run dialog box appears. b. In the Open field, type <code>x:\setup</code>, where <i>x</i> is the letter of the drive containing the RSLogix 500 CD-ROM. c. Click OK. The Welcome dialog box appears.

3. Follow the instructions that appear on the screen.
 - a. On the Welcome dialog box** - Read the RSLogix 500 introductory information, and then click **Next**.
 - b. On the Software License Agreement dialog box** - Read the entire Software License Agreement. Click **Yes** to accept and continue installation, or click **No** to decline and exit the installation.
 - c. On the Registration Information dialog box** - Type your name, the name of your company, the support ID number of your RSLogix 500 software, and then click **Next**.

Tip



You can find the support ID number on the product box label.

- d. On the Select Folder dialog box** - Select a directory location for the RSLogix 500 application files.

If you are installing to:	Then:
Standalone Workstation	Accept the default destination directory location, or select a new destination directory in which you want the RSLogix 500 files to be copied, then click Next .
Network	Specify a network destination directory in which you want the RSLogix 500 files to be copied, then click Next .

A dialog box appears, indicating that a RSLogix 500 subdirectory will be created in the specified destination directory. Click **Yes** to confirm, or **No** to exit.

e. On the Select Components dialog box - Select installation options. In the Product (left) pane, select the RSLogix 500 product(s) that you want to install. In the Product Options (right) pane, select the component(s) of each product that you want to install. Click **Next**.

f. On the Specify Start Menu Item dialog box - Accept the default program folder, or type the name of the program folder in which you want the RSLogix 500 application icons to appear. Click **Next**.

A dialog box appears, indicating the specified location of the RSLogix 500 icons in the Start menu. Click **Yes** to confirm, or **No** to exit.

g. On the RSLogix 500 dialog box - Confirm your previous selections, and then click **Next**. The Setup dialog box appears while files are being copied to the hard disk drive.

h. On the Setup Says! dialog box - Review the Rockwell Software contact information, then click **Next**.

i. On the Setup is Complete dialog box - Select the activation and readme viewing options and click **Finish**.

To begin activation, insert the Master disk into the 3.5-inch disk drive.

j. On the EVMOVE dialog box - Follow the instructions that appear on the screen to activate RSLogix 500 software. For more information on activation, see Appendix A.

k. On the Restart Windows dialog box - Specify the restart option for your operating system and click **Finish**. The installation is complete.

4. When you are finished installing the software, remove the RSLogix 500 CD-ROM from the CD-ROM drive and the RSLogix 500 Master disk from the disk drive. Store them in a safe place.

Important

When the network installation is complete, the system administrator should notify all users of the dedicated location where all of the Rockwell Software files have been installed.

In addition, the system administrator must share the applicable directories to enable the users to perform the installation procedure.

Running a network installation

As a user of a network installation, you can run one or more Rockwell Software products from a specified network location. To run RSLogix 500 software in this manner, perform the following steps:

1. Map a network drive, or navigate through Windows Explorer, to the network location provided by your system administrator. The default is: x:\Program Files\Rockwell Software\RSLogix 500 English (where x is the drive where the application files are installed).
2. Click **Start**, and then **Settings > Control Panel**.
3. From the Control Panel, double-click the Services icon.
The Services dialog box appears.
4. Select the RS500 software service, and then click **Start**.

Updating an existing installation

Perform the following steps to update an existing installation:

1. Insert the RSLogix 500 CD-ROM into the CD-ROM drive.

If autorun is:	Then:
enabled	The Setup program starts automatically and the Welcome dialog box appears. Proceed to step 3.
disabled	Perform the following steps: <ol style="list-style-type: none"> a. Click Start, then click Run. The Run dialog box appears. b. In the Open field, type x:\setup, where x is the letter of the drive containing the RSLogix 500 CD-ROM. c. Click OK. The Welcome dialog box appears.

2. On the Uninstall Required dialog box, confirm that the current version and the version to be installed are correct, then click **Next**.
3. Click **Yes** to confirm the uninstall procedure.
The Remove Programs from Computer dialog box appears.
4. Click **OK**.
The Welcome dialog box appears.

5. Follow the instructions that appear on the screen. For more information, see the “Installing RSLogix 500 Software” section in this chapter.

Tip



If activation was previously installed, it is not necessary to move the activation. If activation was not previously installed, insert the RSLogix 500 Master disk into the 3.5-inch disk drive and follow the instructions that appear on the screen. For more information on activation, see Appendix A.

Creating a floppy disk installation

You can create a floppy disk installation set for RSLogix 500 software. You would do this if the computer onto which you are installing the software does not have a CD-ROM reader.

To create a floppy disk installation:

1. Insert the RSLogix 500 CD-ROM into the CD-ROM drive.
2. If the setup program starts automatically, cancel it.
3. Perform the following steps:
 - a. Open My Computer, then open the CD-ROM drive.
 - b. In the window showing the contents of the CD-ROM drive, open the Disks folder.
 - c. Double-click the MAKDISKS.BAT file.
 - d. Follow the on-screen instructions.

Starting RSLogix 500 software

To start RSLogix 500 software:

As a:	Do the following:
Standalone workstation user	Click Start , and then select Programs > Rockwell Software > RSLogix 500 English > RS500 from the Start menu.
Network user	Double-click the product executable (for example, RS500.exe) located in the \RSLogix 500 English \System network subdirectory specified by your system administrator.

Troubleshooting installation

If RSLogix 500 does not start up or run properly, keep the following in mind:

- Do you have the correct version of RSLinx installed? The software requires RSLinx version 2.00.175 or later.
- Does your computer have enough memory? Check the hardware requirements on the first page of this chapter for memory requirements.

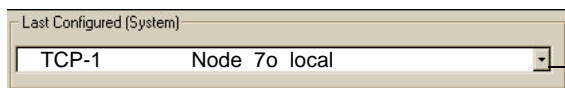
Configuring Communications

System communications vs. controller communications

Is there a difference?

There are two methods that you can use to supply communication parameters.

- Use the system communications dialog (accessed from the Comms menu by clicking System Comms) to indicate the communication configuration for a processor that you would like to connect to. This method of communication is not related to your project. In fact, typically you supply these parameters even before beginning work with a project. For example, you may want to upload an existing project from a processor and then modify that project in some way for use on another processor.
- Use the controller communications dialog (accessed by double-clicking the Controller Properties icon in the project tree and then selecting Controller Communications) if you want the driver and node settings that you enter to stay with the project. Often this is the case when you use a laptop computer and develop a project offline. You will want the driver and node information that you supply for use with your project to override system communication parameters when you later download the project to a specific processor.



Configuration parameters for all previous processor configurations are retained in this drop down list box on the controller configuration tab. Your parameters will vary.

On the controller communications dialog there is a drop-down list box that shows you the previous communication configurations that were used. You can look this list over to see if the driver and node of the processor you want to communicate with is listed. If you see it in the list, just double-click it to re-establish the parameters.

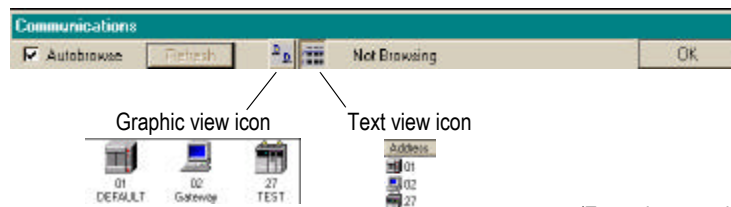
Who Active

Another convenience available from both communication dialogs is the Who Active function.

The Who Active function relies on the communication dialog's network display feature to show you what stations are connected on your SLC network. You can use this information for selecting stations to upload from, download to, or monitor online. You can also display statistics about how your communications are performing.

When you use RSLogix 500 to call for a Who Active, RSLogix 500 calls RSLinx and activates the Communications function. If RSLinx is not installed on your computer, RSLogix 500 calls the RSLinx Lite communication driver that is included in the RSLogix 500 software.

Once the Communications window is displayed you can choose to view your network configuration graphically or in text mode.

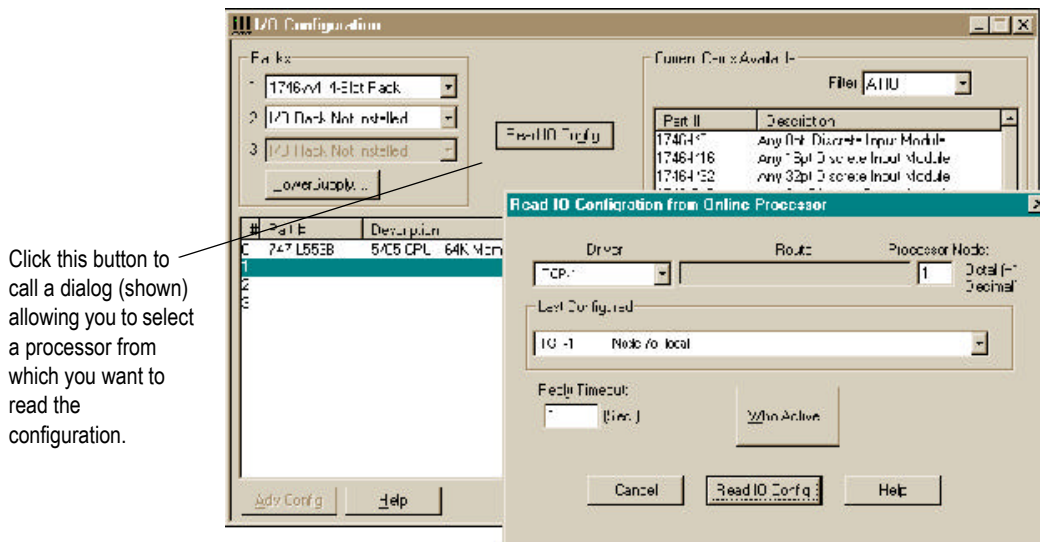


(Example network data)

Chassis and Module Setup

Introduction

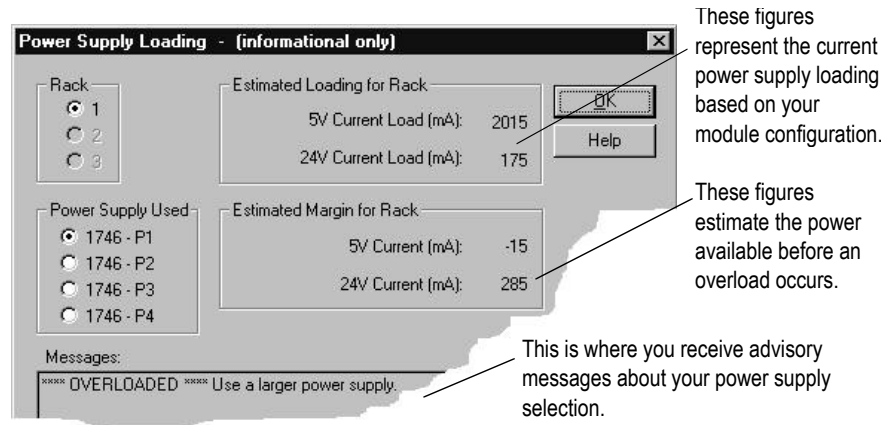
After you have opened a project, you have to define your chassis, identify the I/O cards that you are using by indicating their slot position within the processor rack, and select a power supply for each rack in your configuration. A real application might have up to three racks and many I/O modules.



The I/O Configuration dialog lets you do other tasks also.

- You can learn if the power supply you have planned to use will supply enough power for the modules you have placed in the rack.
- You can configure your analog and other specialty modules.
- You can automatically read the existing I/O configuration of a processor node on the network.

Power supply loading



Access the Power Supply Loading dialog by clicking Power Supply on the I/O Configuration dialog. The Power Supply Loading dialog is informational only. You cannot establish any settings on this dialog. Use it to examine the loading on a rack based on the module configuration that you have selected.

Analog and specialty module configuration

If you have a Specialty I/O Module in your configuration, you have to enter additional parameters so that the module can function properly in your program. You enter this information in the Advanced I/O Configuration window. Go to this dialog by clicking the Adv Config button on the I/O Configuration dialog.

Remember you can always click the Help button or press [F1] on a dialog if you are unfamiliar with any of the required parameters.

Automatic I/O configuration

If you are offline and have your System Communications configured for connection to an SLC 5/03™, SLC 5/04™ or SLC 5/05™ processor, you can enable the processor to automatically read the actual I/O configuration and reflect that information on the I/O Configuration window. This can save considerable time. To do this click the Read I/O Config button on the I/O Configuration dialog.

Entering Ladder Logic

Introduction

This chapter provides information that you can use to make editing your ladder logic easier.

Tip

Shortcut methods exist for most editing functions within RSLogix 500. You can access this list of shortcuts in the online help by searching the word "shortcuts" in the online help.

Backing up your work

Remember to back up your work as you develop your ladder logic programs. RSLogix 500 uses two types of backup files that you can access at any time, and provides you with an auto-recovery file in the case of a power failure. All of these files contain the entire description database associated with the project.

- Auto-Backup files are created automatically each time you save a project. You can preset how many backups should be retained for any project by entering a Number of Backups on the System Preferences tab of the System Options dialog. Reach this tab from the Tools menu. Then click Options and select the System Preference tab. Auto-backup files (saved as .RSS files) have the letters BAK and a series of numbers (000 to 999) appended to the filename. For example, an auto-backup created for project TEST.RSS might be identified as TEST_BAK000.RSS, and a more recent backup might be identified as TEST_BAK001.RSS.
- Compressed Format Backup files are typically generated for archiving or giving to another user. Compressed format backup files include the .RSS and all database files for the project compressed into a single .RS1 file. From the File menu click Backup Project to generate a compressed-format backup file.

Crash Recovery

If you experience a power interruption, RSLogix 500 provides you with a recent backup file containing current edits.

RSLogix 500 automatically creates file backups while you are working with a project and when you save the project. This auto-generated recovery file (internal RSS file) is only available to you the next time you open a project if you have a system crash or your power is interrupted. After attempting to open a project after a power failure RSLogix 500 prompts you with choices.

You can open:

- the auto-saved file, ensuring retention of any edits made before the power interruption.
- the last backup that you made, when you selected Save before the power interruption.

Tip

You must have saved or closed the file you are working on at least one time for the auto-recovery process to work. Therefore, it is good practice to save the file immediately after beginning a new project. This ensures that your auto-recovery process can begin properly.

You can set the interval time at which auto-recovery saves of your project will occur. Do this by making a setting in the Preferences dialog. The auto-recovery process ensures that you will be able to retain any work that had been done on the file between the time of the power interruption and the last manual save.

Quick entry of instructions

To make your programming tasks faster, RSLogix 500 lets you map any available alphabetic key (A-Z) on your computer keyboard to a ladder logic programming instruction.

Double-click the word Free anywhere in this list.

Then click a mnemonic from the drop down list to assign it to the keyboard key and make it a quick key.

Key	Instruction	Description
A	_Free	Undefined Key Map
B	BST	Branch
C	CTU	Count Up
D	GEQ	Grtr Than or Eq (A>=B)
E	_Free	Undefined Key Map
F	XIO	Examine if Open
G	_Free	Undefined Key Map
H	_Free	Undefined Key Map
I	ABL	Undefined Key Map
J	ABS	Undefined Key Map
K	ACB	Undefined Key Map
L	ACI	Output Latch
M	ACL	Undefined Key Map
N	ACN	Undefined Key Map
O	ACS	Output Energize
P	ADD	Undefined Key Map
Q	AEX	Undefined Key Map
	AHL	
	AIC	
	AND	
	ARD	

From the View menu click Properties. Then click Quick Key Mapping to access the mapping list. Make sure you have a program file window opened and active or you will not be able to select Properties from the View menu.

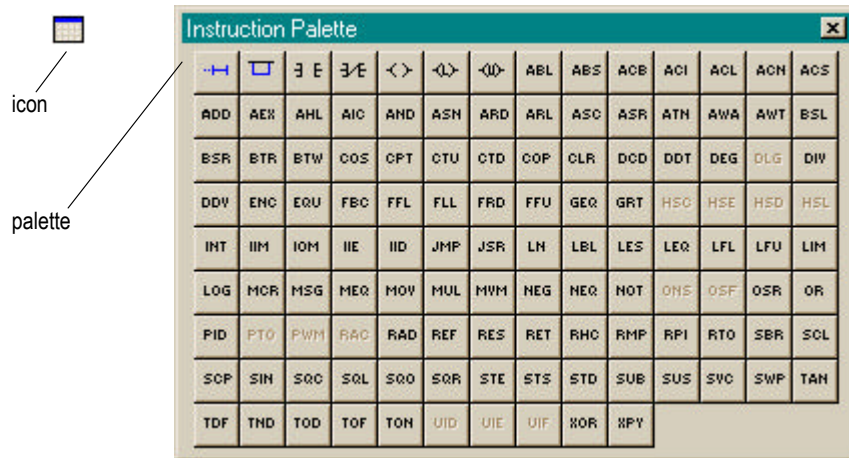
Tip



You can jump to any rung in your project by clicking the Search menu, and then clicking Goto. You can go to a rung in the current program file or you can go to a rung in another program file within the same project. Keyboard users can press the [Ctrl + G] key combination to access the Goto Rung dialog.

Floating instruction palette

As a convenience for selecting instructions RSLogix 500 lets you display a floating instruction palette. From the View menu click Instruction Palette or click the palette icon.



You may have to resize the palette for your screen. To do this click on the lower edge of the palette window and drag to an appropriate size.

Addressing

There are several different methods that you can use to address instructions. You can enter an address by:

- manually typing it in
- dragging addresses from data files or the CDM (Custom Data Monitor)
- using copy and paste from program to program

Tip



You can drag-and-drop rungs, branches, instructions, and addresses from file to file or from the database to a file. To drag-and-drop, position the mouse pointer over a file element, click and hold down the left mouse button and drag the element to another location, and then release the mouse button. Red boxes indicate valid locations; these turn green when properly selected.

Branching

Add a branch



Click this icon on the instruction toolbar to place a branch in your ladder logic. If your cursor is on an instruction, the branch is placed immediately to the right of the instruction. If your cursor is on the rung number, the branch is placed first on the rung.

Move a branch



Click on the upper left corner of a branch to move the entire branch structure to another location in your ladder logic program.

Expand a branch



Click the right leg of the branch, then drag the leg to the right or left. Valid release points will be visible on the ladder display.

Nested branches



Place the cursor at the upper left corner of a branch leg, click the right mouse button, and select Append New Branch to place another branch structure within the original branch structure.

Parallel branches



Place the cursor at the bottom left corner of a branch leg and click the right mouse button to Extend Branch Leg Up or Extend Branch Leg Down.

Copy branch leg



Click on the left edge of the branch leg you want to copy. In the picture at the left this is the center leg. Then click copy in the right mouse menu. Finally click on a rung or instruction in your logic and click paste from the right mouse menu to insert the rung leg

Copy entire branch structure



Select the right leg of the branch structure, then click copy in the right mouse menu. Finally click on a rung or instruction in your logic and click paste from the right mouse menu to insert the rung structure.

Delete a branch

Place the cursor at any location on the branch and click the right mouse button. Then click Delete. If you cut or delete a branch, all instructions on the branch are also deleted.

Branching restrictions

You are limited to a maximum of 75 parallel branches.

You are limited to a maximum of 4 nested branches. (SLC 5/02 and higher and MicroLogix).

Undo operation



The undo icon reverses your last action. You can use this icon to walk through (and undo) your previous actions one at a time. RSLogix 500 remembers up to 200 previous actions.

If you want to undo a move operation, you must click undo two times. This is because RSLogix 500 considers a move a series of two actions (copy and cut). You have to let RSLogix know that you want both the copy and the cut undone. If you click undo only one time when trying to undo a move, the move appears to be a copy, and you will see the moved element appear at both locations.

Online editing

The online editing function lets you monitor and correct your ladder program when your programming terminal is connected to a SLC 5/03, SLC 5/04 or SLC 5/05 processor. Only one programming device at a time can perform online edits of the program.

Online editing functions consist of inserting, replacing, and deleting rungs in an existing ladder program while online with the processor.

Within your logic program RSLogix 500 places zone markers in the margin to the left of the left rail. These letters signify edit zones and they indicate the type of ladder program edit that exists in the program.

Lower case zone markers indicate edits that exist only in the computer memory. Upper case zone markers indicate edits that exist in the processor memory. After successfully assembling the edited rungs, the zone markers disappear.

Tip

You can search for zone markers in your project the same way you might search for an instruction or an address. Do this via the Find dialog using the Special button.

Lower case zone markers

- e** (Offline and online, all controllers) These rungs are currently under edit within the computer RAM. If you are working offline, after a successful program verification the lower-case e will disappear and the edits will be incorporated into the program. If you are working online, after accepting the rung, the lower-case e will be replaced by an upper-case I indicating that the rung is now in the controller's memory and will be inserted into the program file.
 - i** (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs are to be inserted into the program. Rungs marked with a lower-case i currently exist in the computer memory and will not be entered into the controller until the rung is accepted (right mouse button selection). After the rung is accepted, the lower-case i is replaced by an upper-case I.
-

r (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs are to be replaced in the ladder program. Rungs marked with a lower-case r currently exist in the computer memory and will not be entered into the controller until the rung is accepted (right mouse button selection). An r marked rung is always preceded by an e marked rung. After the rung is accepted, the lower-case r will be replaced by an upper-case R.

d (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs are to be deleted from the ladder program. Rungs marked with a lower-case d indicate a deletion reflected in the computer memory. This deletion will not be reflected in the controller until the rung is accepted (right mouse button selection), at which time it will be replaced by an upper-case D.

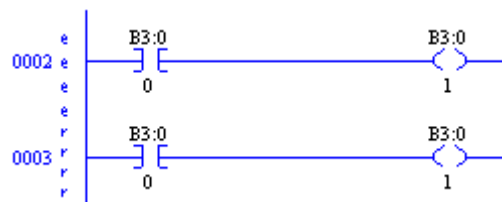
Upper case zone markers

-
- I** (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs have been inserted in the controller's logic program. You can test the edits by selecting the Edit menu and clicking Test Edits to see how the rung works in the online ladder program. Click Assemble Edits to finalize the rung insertion and complete the editing process.
-
- R** (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs have been replaced in the controller's logic program. Rungs marked with an upper-case R continue to function in the program until you select Test Edits to see how the new rung works in the online program. Select Assemble Edits to finalize the replacement and complete the editing process.
-
- D** (Online Editing, SLC 5/03, 5/04 and 5/05 controllers only) These rungs have been deleted in the controller's logic program. Rungs marked with an upper-case D continue to function in the program until you select Test Edits to see how the program functions without the rungs in the online program. Select Assemble Edits to finalize the deletion and complete the editing process.
-

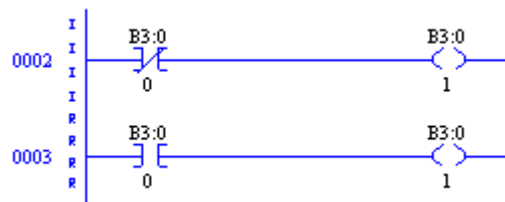
Online editing example

This example replaces an XIC instruction with an XIO instruction with the same address while online.

1. Select the rung in the program that requires editing and then from the Edit menu, select Start Rung Edits from the main menu or choose Start Rung Edits from the right mouse menu. A duplicate of the selected rung (preceded by the e edit zone marker) is shown in your program. This is the rung that all edits will be performed on. The r edit zone marker precedes the original rung (rung to be replaced). See the example below.



2. Make the edits to the rung. The lower-case edit markers do not change since they represent changes that only exist in the computer memory; these changes are not yet a part of the online program in the controller. (At this step you can click Cancel Rung Edits to cancel the edits you have made to the rung.)
3. Select Accept Rung. This changes the edit zone markers and places both rungs in the controller memory. The upper-case I represents the rung that has been inserted into the online program. The upper-case R represents the online rung that is to be replaced. At this time the R rung is still operating in the program.



4. Select Test Edits. The I-marked rung takes precedence. The program in the controller will operate with the inserted rung, and the R-marked rung will be ignored. (Alternately you can click Cancel Edits to cancel the accepted I-marked rung and retain the originally programmed R-marked rung instead.)
5. Select Assemble Edits. All edit zone markers disappear and the edits are incorporated into the online program. There is no Undo option after online edits have been assembled.

Going from online to offline with rungs under edit removes the RAM online edits. Make sure you have accepted edits before going offline if you want any changes retained in the processor.

Online editing restrictions

Your programming terminal must be connected to a SLC 5/03, SLC 5/04 or SLC 5/05 processor. During an online editing session you cannot:

- resize data table files
- create or delete program files
- change program file protection
- change index across file boundaries flag
- reconfigure the I/O
- select force protection

ASCII editing

ASCII Editing is a function of RSLogix 500 that lets you modify instructions using ASCII instruction mnemonics instead of having to modify instructions using the ladder editor.

A quick way to call the ASCII Editor is to double-click a rung number in the left margin. If you double-click a rung with logic already on it, you will see the mnemonics for the existing instructions and can modify or add to them. If you double-click an empty rung, you get an empty editing box into which you can type the mnemonics that represent the logic you want placed on the rung.

Tip

Another quick method to call the ASCII text editor is to click the rung number and then press the forward slash key (/) on your keyboard.

Configuring interrupts

Use interrupts to interrupt the scan of the main program to accomplish a certain task. Programming requires you to enter essential criteria for the interrupt to function properly. Depending on the processor you are using, this criteria is entered into the Status file by accessing it directly (All SLC processors and MicroLogix 1000 processors) or by entering the appropriate data in the Function File utility (MicroLogix 1200 and 1500 processors only).

Selectable Timed Interrupt

Use the selectable timed interrupt (STI) function to interrupt the scan of the main program file automatically, on a periodic basis, in order to scan a specified subroutine file. You can specify the time interval when your selectable timed interrupt routine will execute.

Processor Type:	Action:
All SLC and ML 1000	Select a program file for the STI by double-clicking the S2 data file icon in the project tree. Then click the STI tab and enter the information needed to define the STI. Press the Help button if you need more information.
ML1200 and ML1500	Select a program file for the STI by double-clicking the Function Files icon in the project tree. Then click the STI tab and enter the information needed to define the STI. Press the Help button if you need more information.

Discrete Input Interrupt

Use the Discrete Input Interrupt (DII) for high-speed processing applications or any application that needs to respond to an event quickly. This function allows the processor to execute a ladder subroutine when the input bit pattern of a discrete I/O card matches a compare value that you programmed.

Processor Type:	Action:
All SLC	Double-click the S2 data file icon in the project tree. Then click the DII tab and enter the information needed to define the DII. Press the Help button if you need more information.
ML1000 ML1200 ML1500	Unavailable with these processors.

Importing or Exporting the Documentation Database

Introduction

The import and export utilities are available from the Tools menu by clicking Database. Use the import functionality in RSLogix 500 when you want to apply documentation that already exists to a project you are currently developing in RSLogix 500. Use the export functionality in RSLogix 500 to make the database documentation that is part of your current RSLogix 500 project available to other projects.

When sharing RSLogix 500 database information with other RSI applications, like RSView 32, you must use the Save database as external file checkbox on the Save As dialog to make the database file available to that application. Access the Save As dialog by clicking File and then clicking Save As.

Import database

You can apply documentation to newly created logic files by importing existing database documentation. The existing documentation might come from:

- projects developed using Rockwell Software's Dos-based AI or APS programming software
- another project developed using RSLogix 500
- a spreadsheet application, like Microsoft Excel™ (saved as a .CSV file)
- an ASCII text file

Sometimes when you import a documentation database, there may be conflicting entries in the import file and the database. This is called a collision. Before you begin any import you can select if you want the imported database instance or the current database instance discarded if collisions occur.

A.I. project documentation database

Choose the Native Import option in the Database menu to import database documentation consisting of:

- address symbols and descriptions (.DSC files)
- page title and rung descriptions (.RPD files)

APS project documentation database

Choose the Native Import option in the Database menu to import database documentation consisting of:

- address symbols and descriptions
- page title and rung descriptions
- instruction comments

By default the file type selected for import is a .OP\$ file. The .OP\$ file is the database control file. It references individual database files (for example the symbol/description file or the page title/rung description file) that reside in the same directory as the .OP\$ file. After an import completes, RSLogix 500 creates a log file that informs you which database files successfully imported and which database files contained errors and could not successfully be imported.

RSLogix 500 documentation database

Choose the Native Import option in the Database menu to import database documentation consisting of:

- address symbols and descriptions
- page title and rung descriptions
- instruction comments
- symbol groups

By default the file type selected for import is a .CTD file. The .CTD file is the database control file. It references individual database files (for example the symbol/description file or the page title/rung description file) that reside in the same directory as the .CTD file. After an import completes, RSLogix 500 creates a log file that informs you which database files successfully imported and which database files contained errors and could not successfully be imported. For a complete list of RSLogix 500 file extensions for individual database documentation refer to the online help and search "file extensions."

CSV (Comma Separated Values) file

Choose the ASCII Import option in the Database menu to import database documentation contained in a .CSV file and consisting of:

- address symbols and descriptions
- instruction comments
- symbol groups

For an example of a .CSV file, refer to the online help and search "CSV format for import/export."

ASCII delimited text file

You can import documentation files that were created using RSLogix 500 software or AI software and exported and saved as ASCII delimited files. ASCII delimited means that the fields for each RSLogix 500 database record are enclosed in quote marks and separated by commas.

Choose the ASCII Import option in the Database menu to import database documentation contained in an ASCII delimited text file. Choose from:

- address symbols and descriptions (.EAS files)
- page title and rung descriptions (.ERP files)
- instruction comments (.EIC files)
- symbol groups (.ESG files)

Users can specify any extension instead of the default extension for each file type (shown above in parenthesis) when using Rockwell Software's AI or RSLogix 500 software.

An example of each of the above files can be found in the "ASCII Export" section of this manual.

Export database

Use the export functionality in RSLogix 500 to make the database documentation that is part of your current RSLogix 500 project available to other projects.

You can select the display format for descriptions in the exported file. Choose "treat descriptions as five, 15-character lines of text" if you are exporting a database that will be used by Rockwell Software's AI or APS programming packages.

You can export documentation to the following output formats:

- ASCII delimited RS500 format
- ASCII delimited AI format
- ASCII delimited APS format
- a comma separated value file (.CSV file)

After it has been exported, you can edit the ASCII file with a text editor, or load the file into another database.

When you export database documentation to AI or APS ASCII delimited format, the symbols, descriptions, and instruction comments may be truncated due to size restrictions imposed by the AI/APS databases. This may result in conflicts in the exported data.

RS500 ASCII delimited text file examples

The examples in this section show how the documentation would be represented in an exported ASCII text file, using the RS500 output format.

Each field in a line of ASCII text is enclosed by quotes and separated by a comma.

Address symbols and descriptions (.EAS files)

```
"B30","0","SYMBOL","description","","","","0","","","0","GROUP_NAME"
```

ASCII Field #	Maximum Length	Contents
1	39 characters	Address
2	--	Scope (0=global, 2-255=local program file #)
3	20 characters	Symbol
4	20 characters	Description line 1
5	20 characters	Description line 2
6	20 characters	Description line 3
7	20 characters	Description line 4
8	20 characters	Description line 5
9	12 characters	Device code (always 0 for addresses that are not real I/O)
10	9 characters	Device description above
11	9 characters	Device description below
12	--	Disable xref flag, (0=enabled, 1=disabled)
13	20 characters	Symbol group name

Page title and rung descriptions (.ERP files)

"RUNG000002-000002","page title","rung comment"

ASCII Field #	Maximum Length	Contents
1	39 characters	Data table address or rung identifier
2	--	Page title
3	20 characters	Rung description

Instruction comments (.EIC files)

"B3/0","XIC","ins comment"," "," "," "," "

ASCII Field #	Maximum Length	Contents
1	39 characters	Address
2	3 characters	Instruction type
3	20 characters	Comment line 1
4	20 characters	Comment line 2
5	20 characters	Comment line 3
6	20 characters	Comment line 4
7	20 characters	Comment line 5

Symbol groups (.ESG files)

"GROUP_NAME","description"

ASCII Field #	Maximum Length	Contents
1	20 characters	Symbol group name
2	80 characters	Symbol group description

A.I. ASCII delimited text file examples

These examples show how a line might appear in an ASCII text file exported using the AI output format. Each field in a line of ASCII text is enclosed by quotes and separated by a comma.

Address symbols and descriptions (.EAS files)

"B3/0","0","SYMBOL","description"," "," "," "," ","0"," "," ","0"

The field breakdown of AI ASCII delimited text is the same as shown for RS500 ASCII output format, except the symbol and description fields are limited to 15 characters and there is no symbol group field.

Page title and rung descriptions (.ERP files)

"RUNG002-0002","page title","rung comment"

The field breakdown of AI ASCII delimited text is the same as shown for RS500 ASCII output format.

APS ASCII delimited text file

APS documentation database files saved to ASCII text format contain keywords. Keywords tell the software whether the information immediately following the keyword is a rung comment, an instruction comment, an address comment, or a symbol. Symbol and address comment examples are shown below.

```
SYM      B3/0      SYMBOL
AC       B3/0      "descriptio"
```

Refer to your APS programming manual for a complete list of keywords and an explanation of how an APS ASCII text file is built.

CSV format

Search "CSV format for import/export" in the RSLogix 500 online help for complete details.

Monitoring Data

Introduction

RSLogix 500 provides you with several customized methods for monitoring data in your data table files.

- Multipoint Monitor
- Custom Data Monitor
- Histograms
- Data Logging (MicroLogix 1500LRP only)

The Multipoint Monitor and Custom Data Monitor methods let you compose lists of addresses that you monitor frequently, or lists of addresses with interrelated functionality, so that you can view, document, protect or even force the changing data values from a single source file.

When you are online, you can use histograms and trends to see how your program is behaving over time, by examining bits as the program runs in the SLC controller.

The data logging feature lets you use ladder logic to enable recording data for predefined sets of addresses. Your data can be date and time stamped.

Multipoint Monitor

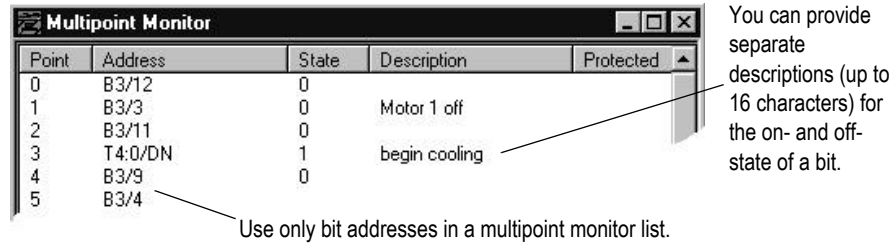
This is only available with MicroLogix 1000, SLC 5/03 - OS302, SLC 5/04 - OS401 and OS410, and SLC 5/05 controllers. The Multipoint Monitor function can only be used to monitor bit addresses. If you want to monitor word addresses as well as bit addresses, use the Custom Data Monitor.

Bit addresses in a multipoint list can come from any data table file. They do not have to be from the same data table file.

You can use a multipoint list to:

- change the on/off state of bits
- set and clear forces on I/O points
- define separate descriptions for on and off state
- write protect a bit

To access the Multipoint Monitor feature, double-click the Multipoint Monitor icon located in the project tree.



The offline multipoint list is stored in the project file. It is not part of the processor image. The online multipoint list is stored in the processor memory and is, therefore, cleared whenever the processor memory is cleared.

When using the MicroLogix controller, descriptions are always stored in the.RSS file. With the SLC 5/04 and SLC 5/05 controllers the descriptions are stored in the processor.

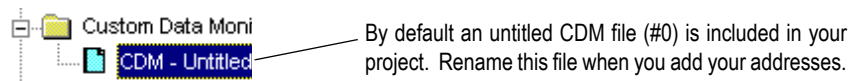
Custom Data Monitor (CDM)

This is available with all controllers. The Custom Data Monitor function can be used to monitor bit addresses and word addresses.

Addresses in a custom data monitor list can come from any data table file. They do not have to be from the same data table file.

Features of the custom data monitor include:

- CDM lists can contain bit addresses or word addresses.
- CDM lists can contain ASCII comments to help you clarify bit listings.
- You can define up to 255 (CDM) lists per project (0-254, inclusive).
- The CDM name is limited to 20 characters.
- The CDM description is limited to 59 characters.
- You can click and drag addresses from the data tables to the CDM file.
- You can use the [Ctrl] and [Shift] accelerator keys to drag more than one address at a time from the data tables.

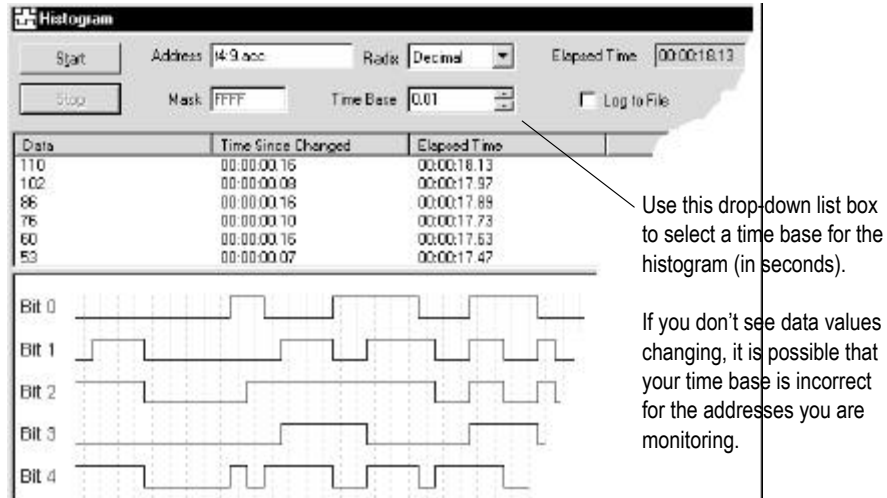


To access the Custom Data Monitor feature, double-click the CDM file icon located in the project tree.

Histograms

Use the histogram functionality in RSLogix 500 to get information about how an address's data value changes over time.

You must be online with the SLC controller to access the histogram function. From the Comms menu, click Histogram to display the Histogram dialog.



Data	Time Since Changed	Elapsed Time
110	00:00:00:16	00:00:18.13
102	00:00:00:08	00:00:17.97
96	00:00:00:16	00:00:17.89
76	00:00:00:10	00:00:17.73
60	00:00:00:16	00:00:17.63
53	00:00:00:07	00:00:17.47

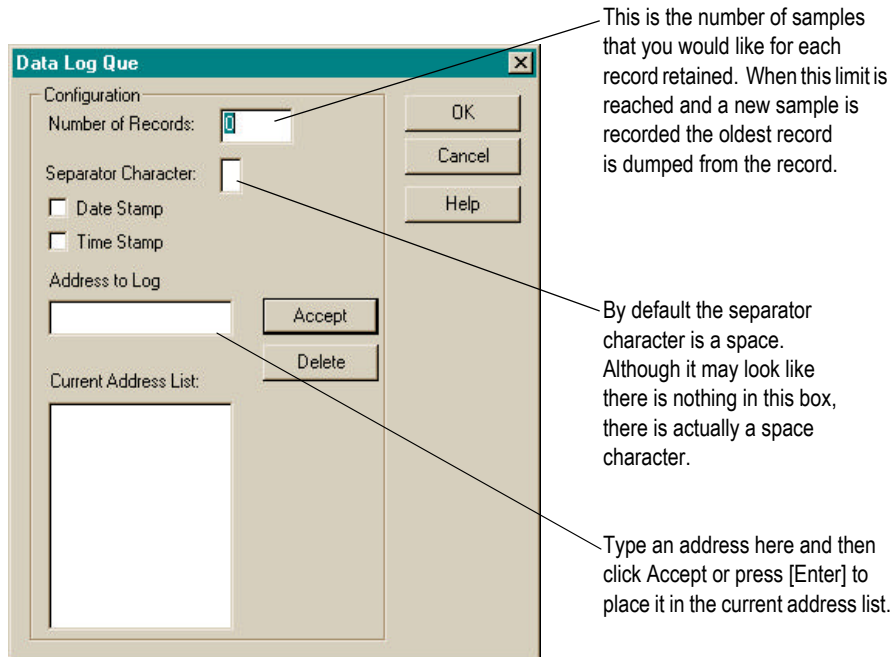
By clicking Start on this dialog, the histogram function sends a message to the SLC controller to begin logging data. Each time the address value changes, the controller stores the value for the address in a histogram buffer, logging both the new value and the time interval between value changes. This data is represented in the top portion of the histogram display window.

If you frequently log certain data, you can save the configuration and simply load it without having to enter new parameters each time. Use Save and Load (accessible from the right mouse menu) for this functionality.

Data Logging (MicroLogix 1500LRP only)

Use the data logging feature to define and edit data sets for later retrieval by a communication device. The data is retentive in the controller through power cycles.

Access data logging from the project tree by clicking the Configuration icon in the Data Logging folder. Then right-click on Data Log Configuration and select New from the context menu



Enable data logging for any queue when the DLG instruction in your ladder logic designating that queue goes from False to True.

Saving and Loading SLC Libraries

Introduction

SLC library files are ASCII text files of the processor memory that contain the ladder logic, data table file, and force tables. By exporting (saving to file) and importing (loading into a new project) these SLC files, you can reuse existing work. SLC files can be opened in any ASCII text editor and modified for use in your projects.

Things to remember about library files

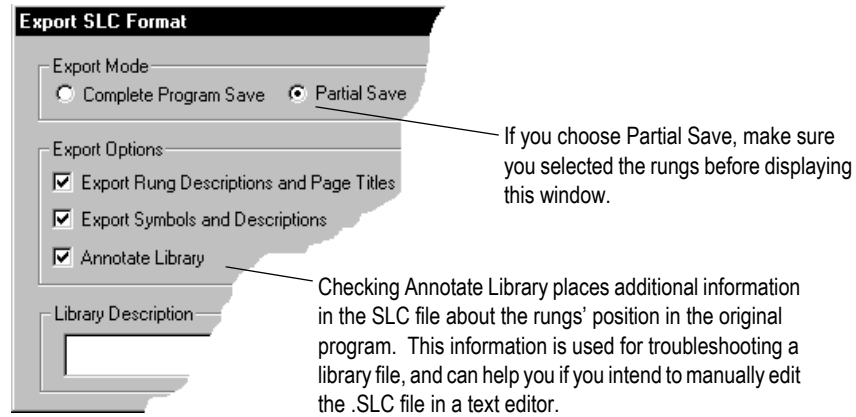
- Only verified project data can be saved to a .SLC file.
- Exported SLC libraries limit symbols to 15 characters. If you have a project file with database symbols that are 20 characters in length, exporting the project to a SLC library will truncate the symbols to 15 characters maximum.
- Graphics characters are not allowed.
- The file name of the ASCII file can contain up to eight characters consisting of (A-Z, 0-9, or the underscore character).
- The file extension of the ASCII processor memory file must be SLC.
- The text editor you use with an ASCII text file must produce only printable ASCII characters, with no control characters or hidden characters.

Tip

You can examine any error messages resulting after an import or export operation by examining the .LOG file. This file is stored in the directory named on the Preferences tab accessed by clicking the Tools menu and selecting Options. You can change this default directory.

Exporting libraries

You can save entire projects or partial libraries. To save a partial library, select the rungs you want to save in the library. If you select no rungs a complete save occurs. Then from the right mouse menu click Copy to SLC Library, and after supplying the path and filename, click Save.



You can place a description in the SLC file by typing the description in the Library Description field. This description appears when you import the library.

Importing libraries

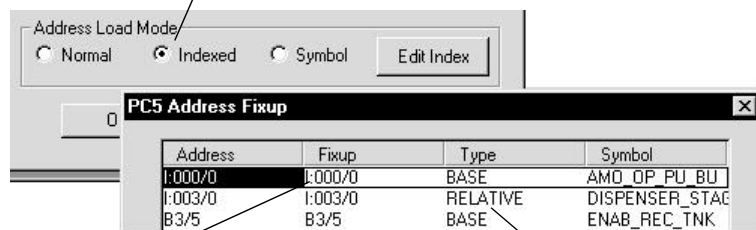
Importing a .SLC library converts the processor memory file, previously exported as a .SLC ASCII file, to the RSLogix 5 .RSP format.

Open the project into which you want to load the library. Then from the right mouse menu click Paste from SLC file.

If you are loading a complete program image into an existing project, data table values in the library will overwrite values in the base program, and incoming rungs will be appended to existing program files.

If you are loading a partial library, select the rung in your program that you want the library rungs to precede. The library rungs will always be placed before the rung you select. Data table values from the library will overwrite existing data table values for those addresses already present in the base project

Choose the indexed mode and then click the Edit Index button if you want to display a Fixup table from which you can adjust the addresses in the imported library so that there are no conflicts with the addresses in the base program.



If you change base address I:000/0 to I:016/00 (in the Fixup column) and press [Enter], the addresses that are relative to I:000/00 change to follow the change in the base. If there were more addresses relative to base address I:000/0, each one would be offset by the change applied to the octal base address. Relative addresses include all the addresses in the list of the same data file up to the next Base address.

You can change the type address. Double-click and select Base, Relative, or Global from the drop-down listbox. An address set to Global is not affected by indexing to a preceding base address.

Getting the Information You Need

Introduction

Use this chapter to review the sources of additional information on RSLogix 500 software, including online help, RSLogix 500 training, and technical support.

You can find out more information about RSLogix 500 software by consulting:

- RSLogix 500 online help
- RSLogix 500 training
- Technical support services

RSLogix 500 online help

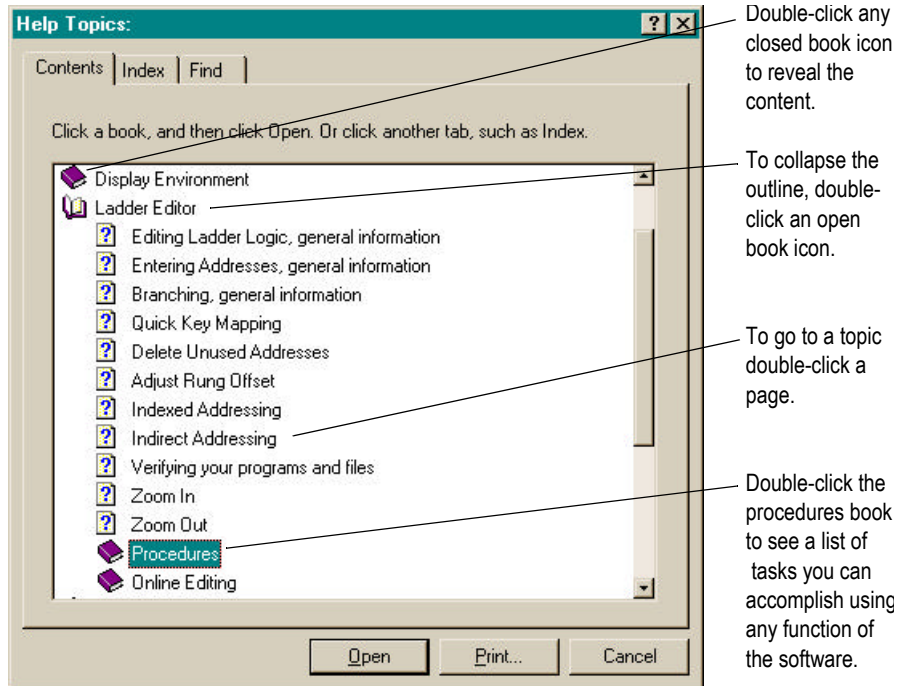
RSLogix 500 online help provides general overview information, a description of the fields on every dialog box, and step-by-step procedures for working with all of the features of RSLogix 500. To open online help while running RSLogix 500 you can:

- choose Help from the menu on the RSLogix 500 main window
- click the Help button on any RSLogix 500 dialog box
- press F1 on any instruction, dialog box, or window view
- expand the Help folder in the project tree and then double-click on any informative file listed to launch a help file.

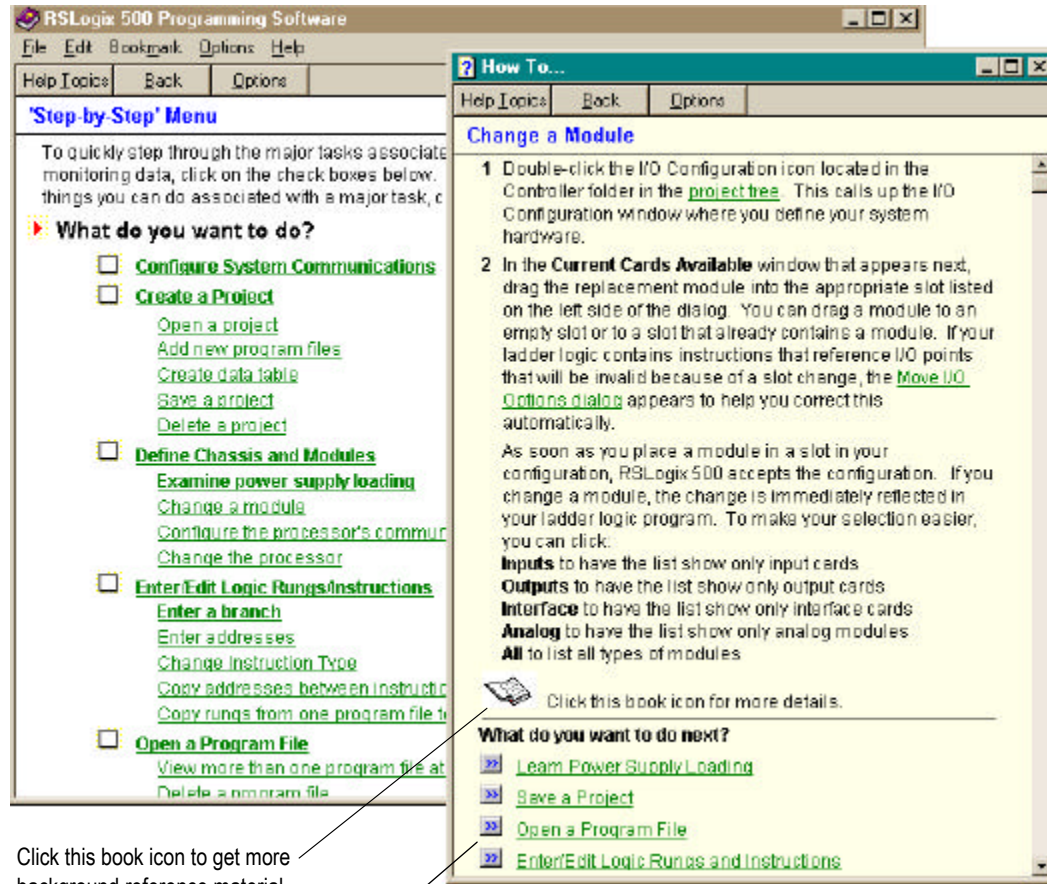
Opening an expandable table of contents

To open an outline of the entire RSLogix 500 online help system:

- click Help on the menu bar and then click Contents
- click the Help folder in the project tree and then double-click Contents



Learning RSLogix 500 step-by-step



Click this book icon to get more background reference material associated with any procedure.

Once you have completed reading the "How To" window, you can select another task from this list.

In Help you will find a Step-by-Step topic that asks what you want to do and lets you select from many of the tasks you might want to perform.

To quickly step through the major tasks associated with creating a project, going online, and monitoring data, click on the check boxes. If you want more information about some of the other things that you can do associated with a major task, click the specific procedure.

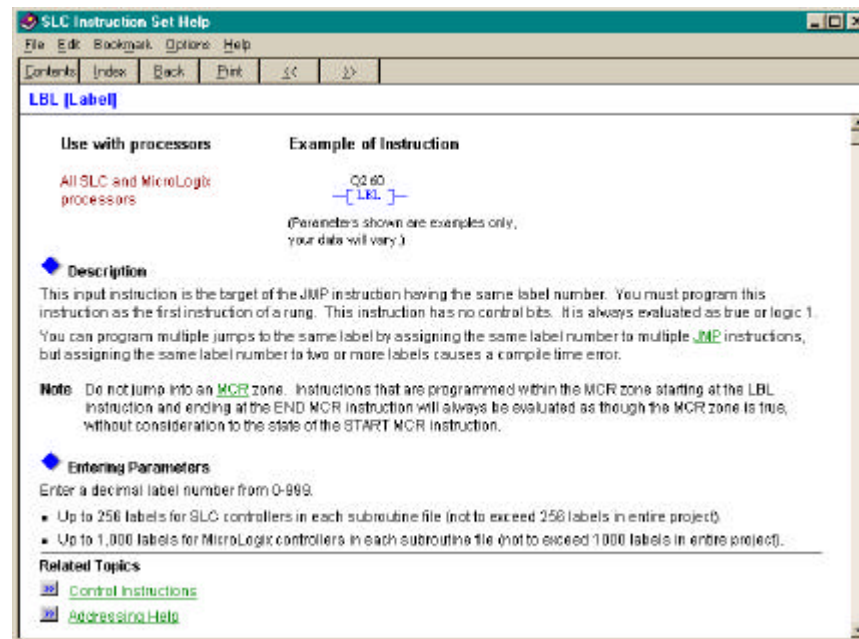
Quick tips about Windows Operating Systems and RSLogix 500

Windows operating systems provide some functionality you may not be familiar with. The RSLogix 500 online help can point out some shortcuts and navigational techniques that can make your work easier. Just select Understanding the Operating Environment from the contents page of the online help.

Instruction Set help

All of the instructions available to you in RSLogix 500 have context-sensitive help. You can click an instruction in your ladder logic for help about the parameters required or for information about why you might use one type of instruction instead of another.

Each topic in the instruction set online help also gives you information about which processors can use the instruction and an example of the instruction with sample parameters.



A

Activation

Rockwell Software's products are copy-protected. Only a computer with access to the activation key can run the software. The key is located in an activation file, which is originally located on the Master disk supplied with the RSLogix 500 product. The activation file contains one activation key per product. Each key contains one or more licenses depending on how many copies of the product you have purchased.

Tip

Store your Master disk in a safe place. If your activation becomes damaged, the Master disk may be the only means to run your software in an emergency.

During the setup process, the setup program gives you the opportunity to move the activation file from the Master disk to the root directory of the drive on which you're installing the software.

When you launch RSLogix 500, the software first checks your local hard drives, then network hard drives, and finally local floppy drives for activation. If the system fails to detect either the activation file or the Master disk, you will receive an error message stating that activation is required to run the RSLogix 500 software.

Tip

Systems attached to extensive networks can take quite a while to search for activation files on all available drives. You can use the CHECKDRIVES environment variable to specify and/or limit the drives your software checks for activation files and to specify the order in which they are checked. Refer to the activation utilities online help file by selecting **Help > Copy Protection**.

Protecting your activation files

Caution

Certain anti-virus software packages, such as Norton Anti-virus, can corrupt the activation files. Configure your anti-virus software to avoid checking the files EVRSI.SYS and 386SWAP.PAR.

To avoid damaging your activation files, do not perform the following operations with activation files on the hard drive.

- Restore from backup
- Upgrade the operating system
- Reinstall the same version of DOS
- Uninstall DOS
- Compress or uncompress the hard drive
- Turn off Windows for Workgroups 32-bit file access. If activation files were moved to a hard drive with 32-bit file access on, turning off 32-bit file access results in activation files being lost. (You can turn on 32-bit disk access and 32-bit file access in Windows for Workgroups without harming the activation file.)

Defragmentation utilities will not harm activation files.

Before running any type of utility that may modify the structure or organization of the hard drive, remove activation from the hard drive:

1. Use the Move Activation utility (EvMove) to move activation files from the hard drive to an activation disk.

Caution

Do not use the the Move Activation utility if Rockwell Software products are currently running. Ensure all software programs are closed before initiating the EvMove utility.

Run EVMOVE.EXE from your hard drive (located in C:\Program Files\Rockwell Software\RSUtil if you accepted the default directory location during installation).

2. Perform the hard disk operation.

3. Move the activation files back to the hard drive.

Caution

You must use the move utility, EvMove, to move activation files. Attempts to copy, move or e-mail an activation file by other means will damage the file.

Activating RSLogix 500

Depending on your needs, you can activate RSLogix 500 from any of the following:

Hard drive. The activation key resides on your computer's hard disk. Use this method if you will typically use RSLogix 500 on only one computer. This is the default method if you activate RSLogix 500 during installation. To run RSLogix 500 on a different computer, move the activation key back to the Master disk, and then to the hard drive of the new computer.

Diskette drive. The activation key resides on a floppy disk (activation disk). Use this method if you will typically use RSLogix 500 on more than one computer, for example, if you want to run RSLogix 500 on a desktop computer at some times and a portable computer at others.

Network drive. The activation keys reside on a network drive. Use this method if you have purchased multiple licenses of the software and want several users to be able to activate the software over a network. Refer to the online help for instructions on moving activation to a network drive (refer to the "Finding more information about activation" section in this chapter to access online help).

Running the activation utilities

The utilities for moving and resetting activation are called EvMove and Reset respectively. Reset is used when an activation file has been damaged. The EVMOVE.EXE and RESET.EXE files are located on your hard drive (located in C:\Program Files\Rockwell Software\RSUtil if you accepted the default directory location during installation). To run these programs, select **Start > Programs > Rockwell Software > Utilities > Move Activation** or **Reset Activation**.

Finding more information about activation

The online help (COPYPROT.HLP) provides more extensive information on activation including subjects such as:

KEYDISK. Set this environment variable to tell your computer to look for activation on floppy drives

CHECKDRIVES. Specify which drives to search for activation

network activation. Move activation to a network server to allow multiple users access to the activation

moving activation. See detailed instructions for moving activation

resetting activation. See detailed instructions for using the Reset utility to repair a damaged activation file

troubleshooting. Look up error messages, get problem-solving suggestions

You can access online help:

- from the **Help** button on one of the EvMove or Reset dialog boxes.
- from RSLogix 500 by selecting **Help > Copy Protection** from the main menu.
- without running either RSLogix 500 or the activation utilities. From the Windows Start menu, select **Programs > Rockwell Software > Utilities > Activation Help** (if you accepted the default directory location during installation).

Some common questions

Following are some common problems that people encounter with activation and their solutions.

My activation files were damaged. What should I do?

If you have lost the activation because the activation file is damaged, you need to reset activation. Follow the Reset Codes instructions on the Rockwell Software Technical Support web page, or call the technical support telephone number. The web page and telephone number are both listed on the inside front cover of this guide.

If you cannot obtain a reset code immediately, follow these instructions to use the Master disk to activate the software as a temporary solution.

To use the Master disk to activate software:

1. Set the KEYDISK environment variable to TRUE. (Please refer to the online help.)

2. Insert your Master disk in the floppy drive.
3. Run your software as usual. Your software will find the activation on the Master disk.

I accidentally deleted the software directory on my hard drive. Do I need to call Rockwell Software for replacement activation files?

No. Deleting the program files does not delete your activation. The activation files are not stored in the program directory; they are located in the root directory. Your activation files will not be lost unless you format the hard drive, tamper with hidden files in the root directory, or perform certain other hard drive operations (refer to the “Protecting your activation files” section in this chapter for more information).

To get the software running again, simply reinstall the software, but do not move the activation when given the opportunity.

Why can't I move activation to a new floppy disk on a Windows NT system?

It has to do with a disk modification that NT does not allow. If you have access to a Windows 95 or 98 machine, you can create a disk that will work under NT. Format a floppy and move any activation file to it under Windows 95 or 98. (You can move the activation back off the disk if you want to keep it where it was.) Then take that disk to your Windows NT machine and move the activation to it.

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