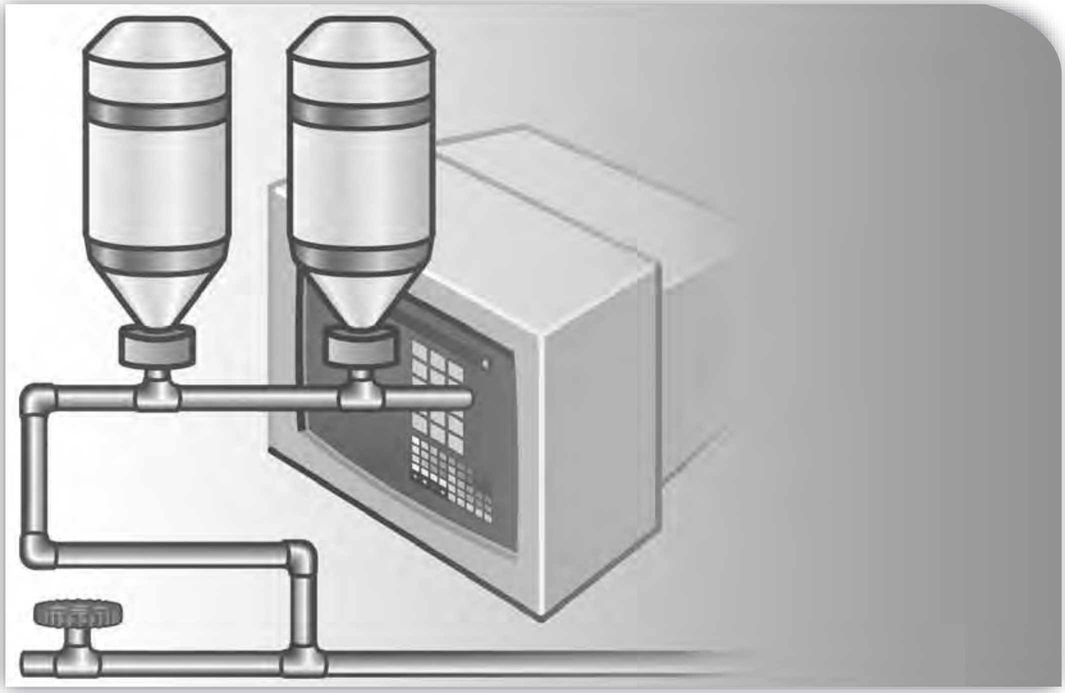
LISTEN.
THINK.
SOLVE.℠

RSView® 32



GETTING RESULTS GUIDE

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Allen-Bradley • Rockwell Software

Rockwell Automation

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Chapter

1

Installing and activating RSView32

About RSView32

RSView32™ is a Windows®-based software program for creating and running data acquisition, monitoring, and control applications.

Designed for use in Microsoft® Windows Server 2003, Windows XP, Windows 2000 and Windows Vista environments, RSView32 contains the tools you need for creating all aspects of a human-machine interface, including real-time animated graphic displays, trends, and alarm summaries. RSView32 integrates easily with Rockwell Software, Microsoft, and other third-party products to maximize the power of ActiveX®, VBA, OLE, ODBC and OPC® technologies.

Determining system requirements

The hardware and software you use with RSView32 depends on the demands your project places on the system. The greater the demand, the more powerful a system you need.

The recommendations below are based on field experience. It is possible that your application will operate on a platform below these recommendations.

In the following tables, the demands your project places on the system are represented by points. Total your points in step 1, and then use the table in step 2 to determine the hardware and software you need.

Step 1 ■ Total your points

For	If you are	Add points
RSView32 project	running displays, or editing your project using RSView32 Works	2
	using more than 30,000 tags	2
	using more than 5,000 tags	1
	changing displays, on average, more than 5 times per minute	1
	using more than 200 objects in displays	2
	using ActiveX controls in displays	2
Alarms	monitoring more than 1,500 tags for alarms	2
	monitoring more than 300 tags for alarms	1
Active Display System, or OPC simultaneously active clients	using typically more than 5 active clients	2
	using at least 1 client	1
Data log or historical trends	logging less than 100 tags in 1 model	1
	logging between 100 and 1,000 tags in 1 model	2
	logging to more than 1 model	2
Event detector, derived tags, or real-time trends	using any	1
VBA	using any	2
Add-ons	using any, for each one	1
Total your points here		

Step 2 ■ Determine the recommended system configuration

For this number of points	Minimum hardware you need	Minimum software you need
8 or more	Pentium® II 400 MHz 128 MB RAM	Windows® XP Professional* or Windows 2000 Professional** or Windows Server 2003*** or Windows Vista**** or Windows 7 Professional or Windows Server 2008*****
6 to 7	Pentium II 300 MHz 128 MB RAM	Windows XP Professional* or Windows 2000 Professional** or Windows Server 2003*** or Windows Vista**** or Windows 7 Professional or Windows Server 2008*****
3 to 5	Pentium 200 MHz 64 MB RAM	Windows XP Professional* or Windows 2000 Professional** or Windows Server 2003***
1 to 2	Pentium 100 MHz 24 MB RAM	Windows 2000 Professional***

Important: The hardware should meet or exceed the minimum hardware requirements of the operating system you will run.

*	With Service Pack 1 or later.
**	With Service Pack 3 or later.
***	With Service Pack 1 or later.
****	With Service Pack 1 or later.
*****	With Service Pack 2.

Installing RSView32 and the user's guides

The steps below explain how to install the RSView32 software and user's guides from a CD-ROM to your computer. If you choose not to install the user's guides, you can view them from the CD-ROM.

Installing RSView32 on Windows Server 2003, Windows XP, Windows 2000 and Windows Vista

As part of the installation process, RSView32 creates program folders and modifies registry entries. In order to make these modifications, the currently-logged-in user must have administrator rights on the computer on which RSView32 is installed.

Installing RSView32

Follow these instructions to install RSView32 on Windows Server 2003, Windows XP, Windows 2000 and Windows Vista.

To install RSView32

1. Close all open Windows programs.
2. Place the RSView32 CD-ROM in your CD-ROM drive. The CD-ROM should start running automatically.

   If the CD-ROM does not start automatically, run D:\SETUP.EXE where D is the drive containing the CD-ROM.
3. In the RSView32 window, click the button for the option you want to install.
4. Follow the on-screen instructions.
5. During installation, you will be prompted to activate RSView32. If activation is present from an earlier version of RSView or RSView32, click Next.

   If you removed the activation or if you are installing RSView32 for the first time, insert the Activation disk in the diskette drive and click Activate. For details about activation, see "Activating RSView32" on page 5.
6. When installation is complete, restart Windows. If you do not restart Windows now, be sure to restart it before running RSView32 for the first time.

Installation summary

The default installation does the following:

- installs RSView32 in \Program Files\Rockwell Software\RSView
- adds a Rockwell Software\RSView32 folder to your list of programs. This folder contains the shortcuts for RSView32.
- installs the ODBC drivers for Watcom SQL® 4.0 in the system directory of your operating system. Only Watcom SQL 4.0 is supported with RSView32. Other versions may not function correctly. Check the ODBC Data Source Administrator in the Windows Control Panel for version numbers.

Activating RSView32

Rockwell Software uses activation files to activate its Windows-based software packages. You can activate RSView32 by using FactoryTalk Activation software to download and transfer activation files.

FactoryTalk® Activation

FactoryTalk Activation provides a secure, software-based system for activating Rockwell Software products and managing software activation files. With FactoryTalk Activation, there is no need for a physical “master disk” or any physical media; instead, activation files are generated and distributed electronically.

Important: EvRSI activation is replaced by FactoryTalk® Activation in this release. If you are using EvRSI activation, please contact your local Rockwell Automation Sales office or Technical Support for information on migrating your activations to FactoryTalk® Activation. For Rockwell Automation Technical Support in the U.S. call (440)646-3434. Outside the U.S. see http://www.rockwellautomation.com/locations/.

Finding more information about FactoryTalk Activation

You can find detailed information, instructions, and troubleshooting tips in the FactoryTalk Activation Help.

After installing and launching the FactoryTalk Activation software, click **Help** or **Learn More . . .** to open FactoryTalk Activation Help.

Activation keys

The following table lists the activation keys for the RSView32 products.

This key	Is for this product
RSView.D100K	RSView32 Works, 100,000 tag database
RSView.D32K	RSView32 Works, 32,000 tag database
RSView.D5K	RSView32 Works, 5,000 tag database
RSView.D1500	RSView32 Works, 1,500 tag database
RSView.D300	RSView32 Works, 300 tag database
RSView.D150	RSView32 Works, 150 tag database
RSView.D75	RSView32 Works, 75 tag database
RSView.R100K	RSView32 Runtime, 100,000 tag database
RSView.R32K	RSView32 Runtime, 32,000 tag database
RSView.R5K	RSView32 Runtime, 5,000 tag database
RSView.R1500	RSView32 Runtime, 1,500 tag database
RSView.R300	RSView32 Runtime, 300 tag database
RSView.R150	RSView32 Runtime, 150 tag database
RSView.R75	RSView32 Runtime, 75 tag database

Using the FactoryTalk Activation Manager

The FactoryTalk Activation tool is used to obtain the activation files needed to activate your software. It can also be used to borrow activations from servers having available activations, return activations back to servers, re-host activations, etc.

To open the FactoryTalk Activation Manager:

On the Windows Start menu, click Programs > Rockwell Software > FactoryTalk Activation > FactoryTalk Activation Manager.

To use the FactoryTalk Activation Manager:

1. In the FactoryTalk Activation Manager, click the Home tab then click Get New Activations, or you may click Manage Activations tab, then click Get New Activations.
2. Select the Activation Method to be used.

   To provide the software's Serial Number and Product Key, identify the activation server's Host ID, and download activation files, follow the instructions in the manager.
3. Save the activation file or files.

   Activation files must have a .lic extension. You can save the files to the default location:

   On Windows 2003 and Windows XP the default location for FactoryTalk activation files is:.C:\Documents and Settings\All Users\Shared Documents\Rockwell Automation\Activations

   On Windows 7 Professional and Windows Vista the default location for FactoryTalk activation files is:C:\Users\Public\Documents\Rockwell Automation\Activations"

For details, click Help in the top left corner of the page.

Protecting activation files

Activation files are simple text files that must have a .lic extension. The activation key for RSView32 is called RSVMSGR.PRO.

As long as the .lic extension is retained, you can copy or rename an activation file without harming it. However, tampering with text inside the activation file can disable your Rockwell Software products.

If an activation file is damaged or deleted, contact Rockwell Automation Technical Support.

For safekeeping, keep an original set of your activation files on backup media. Use descriptive names for the files, so that you can identify them later, and copy them back to the appropriate computers.

Activation files are locked to the Host IDs of the computers (or dongles) that need them. Activation will fail for Rockwell Software products on a computer where the specified Host ID is not recognized by the activation file.

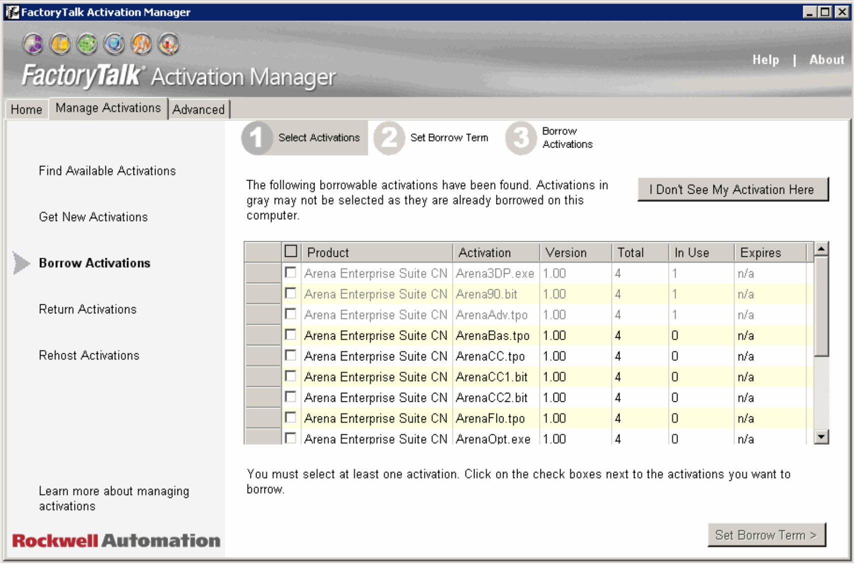
Using borrowed activations

RSView32 supports borrowed activations for development computers. A borrowed activation is retrieved from a pool of available activations on the activation server, and expires after a specified length of time. Once a borrowed activation is checked out to a particular computer, the computer can disconnect from the network. When the time limit expires, the associated software on the computer is no longer activated, and the activation automatically becomes available again from the server's activation pool. A borrowed activation can also be returned to the activation server manually before the time limit expires.

To borrow activations from a server:

1. Connect your computer to the network where the activation server is located.
2. Run the FactoryTalk Activation Manager and then click the **Manager Activations** tab.
3. Click the Manage Activations tab, and then click Borrow Activations tab.To borrow a single activation, click the checkbox that corresponds to the activation you want to borrow, and then click **Set Borrow Term**. To borrow more than one activation, click additional checkboxes for the activations you want to borrow and then click **Borrow**. If you do not see the activations you want to borrow, click **I Don't See My Activation**

Here. The Activations in gray may not be selected as they are already borrowed by your computer.

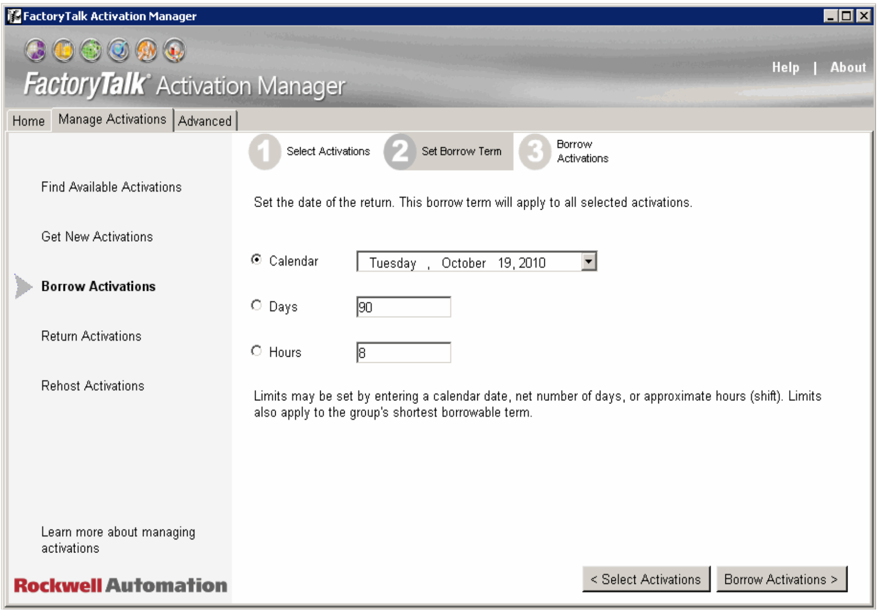

FactoryTalk Activation Manager
Help | About
FactoryTalk® Activation Manager
Home
Manage Activations
Advanced
1 Select Activations
2 Set Borrow Term
3 Borrow Activations
Find Available Activations
Get New Activations
Borrow Activations
Return Activations
Rehost Activations
Learn more about managing activations
I Don't See My Activation Here
Set Borrow Term >
Rockwell Automation

The following borrowable activations have been found. Activations in gray may not be selected as they are already borrowed on this computer.

☐	Product	Activation	Version	Total	In Use	Expires
☐	Arena Enterprise Suite CN	Arena3DP.exe	1.00	4	1	n/a
☐	Arena Enterprise Suite CN	Arena90.bit	1.00	4	1	n/a
☐	Arena Enterprise Suite CN	ArenaAdv.tpo	1.00	4	1	n/a
☐	Arena Enterprise Suite CN	ArenaBas.tpo	1.00	4	0	n/a
☐	Arena Enterprise Suite CN	ArenaCC.tpo	1.00	4	0	n/a
☐	Arena Enterprise Suite CN	ArenaCC1.bit	1.00	4	0	n/a
☐	Arena Enterprise Suite CN	ArenaCC2.bit	1.00	4	0	n/a
☐	Arena Enterprise Suite CN	ArenaFlo.tpo	1.00	4	0	n/a
☐	Arena Enterprise Suite CN	ArenaOpt.exe	1.00	4	0	n/a

You must select at least one activation. Click on the check boxes next to the activations you want to borrow.

4. In the Set Borrow Term window, set the time of the return by entering a calendar date, net number of days, or approximate hours (shift). The default Calendar date is the maximum borrow term for the activation or group of activations.


FactoryTalk Activation Manager
FactoryTalk Activation Manager
Help | About
Home
Manage Activations
Advanced
1 Select Activations
2 Set Borrow Term
3 Borrow Activations
Find Available Activations
Get New Activations
Borrow Activations
Return Activations
Rehost Activations
Learn more about managing activations
Rockwell Automation
< Select Activations
Borrow Activations >

Set the date of the return. This borrow term will apply to all selected activations.

● Calendar: Tuesday , October 19, 2010

○ Days: 90

○ Hours: 8

Limits may be set by entering a calendar date, net number of days, or approximate hours (shift). Limits also apply to the group's shortest borrowable term.

To return a borrowed activation before it expires:

1. Connect to the network and run the FactoryTalk Activation Manager.
2. On the Manage Activations tab, click **Return Activations**, select the borrowed activations you want to return.
3. Click the **Return Activations** button.

To open the Activation Help:

To open FactoryTalk Activation Help. Open FactoryTalk Activation Manager, click Help or Learn More . . .

FactoryTalk® Activation Grace Period

FactoryTalk Activation provides customers with access to critical software components for a grace period of 7 days regardless of availability of valid activations.When a product is successfully activated, all grace period records will be cleared and the product will proceed with valid activations.

- During the grace period, FactoryTalk Activation will display a warning message box to the user and log a diagnostic warning message to FactoryTalk Diagnostics every four hours if no valid activation key is detected.
- Once the grace period expires, RSView32 will enter demo mode. However, until RSView32 is restarted, it will continue to run as in the grace period.
- RSView32 Personalized version can be successfully activated with both RSView32 Personalized activations and RSView32 Protected activations.

Starting RSView32

You can start RSView32 manually or you can set up RSView32 to start automatically when Windows starts.

The steps below describe how to start RSView32 on Windows 2000 or later.

Starting RSView32 manually

To start RSView32 in Windows

- Click the Windows Start button, select All Programs, (or Programs, in Windows 2000), Rockwell Software, RSView32, and then click RSView32 Works.

Starting RSView32 automatically

To automatically start RSView32 Works each time Windows starts, include an RSView32 Works shortcut in the Windows StartUp folder. You can also open a project when Windows starts.

To add RSView32 to the StartUp folder in Windows 2000

1. Click the Windows Start button, select Settings, and then click “Taskbar & Start Menu.”

2. In the Taskbar and Start Menu Properties dialog box, click the Advanced tab.
3. Click Add. The Create Shortcut wizard opens.
4. To start RSView32 Works when Windows starts, browse to the location of the RSV32.exe file, and then click the file name.

   The path is \Program Files\Rockwell Software\RSView\RSV32.exe.
5. To start RSView32 Works and open a project when Windows starts, specify the path to RSView32 and to the project. For example, to specify a project called Norm's Bakery, type:

   "C:\Program Files\Rockwell Software\RSView\RSV32.exe"
   "C:\Program Files\Rockwell Software\Samples\Norm's Bakery\Norm's Bakery.rsv"

   If the path contains spaces, you must enclose it in double quotes.
6. Click OK, and then click Next.
7. In the Select Program Folder dialog box, select the Startup folder, and then click Next.
8. Specify a name for the shortcut (for example, RSView32).
9. Click Finish, and then click OK.

For more information, see your Windows documentation.

To add RSView32 to the StartUp folder in Windows Server 2003, Windows XP and Windows Vista

1. Click the Windows Start button and select All Programs.
2. Right-click the Startup folder and select Open.
3. Browse to the location of the RSV32.exe file.

   The path is \Program Files\Rockwell Software\RSView\RSV32.exe.
4. Right-click the file name and select Create Shortcut. The shortcut will be created in the same location as the RSV32.exe file.
5. Drag the shortcut into the Startup folder.

For more information, see your Windows documentation.

Ensuring your system has sufficient virtual memory

Windows uses virtual memory to extend the physical memory installed in a computer. It does this by moving information from RAM to disk if the information has not been used recently. When the information is required by an application, the information is then moved back into RAM. This process of moving information from RAM to disk is called swapping.

To guarantee that Windows will have enough virtual memory to run RSView32 and other applications, you can force Windows to reserve a specific amount of disk space for use as virtual memory. While the amount of virtual memory needed depends completely on your application and what other programs are running, the following recommendations should be sufficient in most cases.

It is better to use a permanent swap file than to use a temporary swap file. With a permanent swap file, you specify how much disk space can be used. This avoids any disk problems that could occur if a temporary swap file becomes too large.

By default, Windows Server 2003, Windows XP and Windows 2000 use a permanent swap file, but you can change the size of this file.

To set up a permanent swap file, specify the virtual memory setting.

To specify a virtual memory setting in Windows 2000

1. On your desktop, right-click the My Computer icon, and then click Properties.
2. Click the Advanced tab, and then click Performance Options.
3. Under Virtual Memory, click Change.
4. If you have more than one hard drive, select the hard drive you want the swap file to be located on. Preferably, this should be the hard drive with the fastest access time.
5. Under Paging file size for selected drive, specify 192 MB as the Initial Size and 384 MB or more as the Maximum Size.
6. Click Set, and then click OK.

To specify a virtual memory setting in Windows Server 2003 and Windows XP

1. On your desktop, right-click the My Computer icon, and then click

Properties.

2. Click the Advanced tab, and then under Performance, click the Settings button.
3. In Performance Options dialog box, click the Advanced tab.
4. Under Virtual Memory, click Change.
5. If you have more than one hard drive, select the hard drive you want the swap file to be located on. Preferably, this should be the hard drive with the fastest access time.
6. Under Paging file size for selected drive, specify 192 MB as the Initial Size and 384 MB or more as the Maximum Size.
7. Click Set, and then click OK.

To specify a virtual memory setting in Windows Vista

1. Click the Windows Start button and select Control Panel>System.
2. Inthe left pane, click Advanced System Settings.
3. In the System Settings dialog box, click the Advanced tab, and then click the Settings button under Performance.
4. In the Performance Options dialog box, select the Advanced tab.
5. Under Virtual Memory, click Change, and then select the Custom Size button.
6. If you have more than one hard drive, select the hard drive you want the swap file to be located on. Preferably, this should be the hard drive with the fastest access time.
7. Under Paging file size for selected drive, specify 192 MB as the Initial Size and 384 MB or more as the Maximum Size.
8. Click Set, and then click OK.

Uninstalling RSView32

To uninstall RSView32, use the Uninstall RSView32 program.

To uninstall RSView32

1. Click the Windows Start button, point to Settings, and click Control Panel.
2. Double-click Add/Remove Programs, select RSView32 7.60.00, and click Add/Remove.
3. Follow the on-screen instructions.
4. When the Uninstall program is complete, restart Windows.

Chapter

2

Getting started

Welcome to RSView32

RSView32™ is Windows®-based software for developing and running human-machine interface applications.

Designed for use in Microsoft® Windows Server 2003, Windows XP, Windows 2000 and Windows Vista environments, RSView32 gives you all the tools you need to create and run effective monitoring and supervisory control applications.

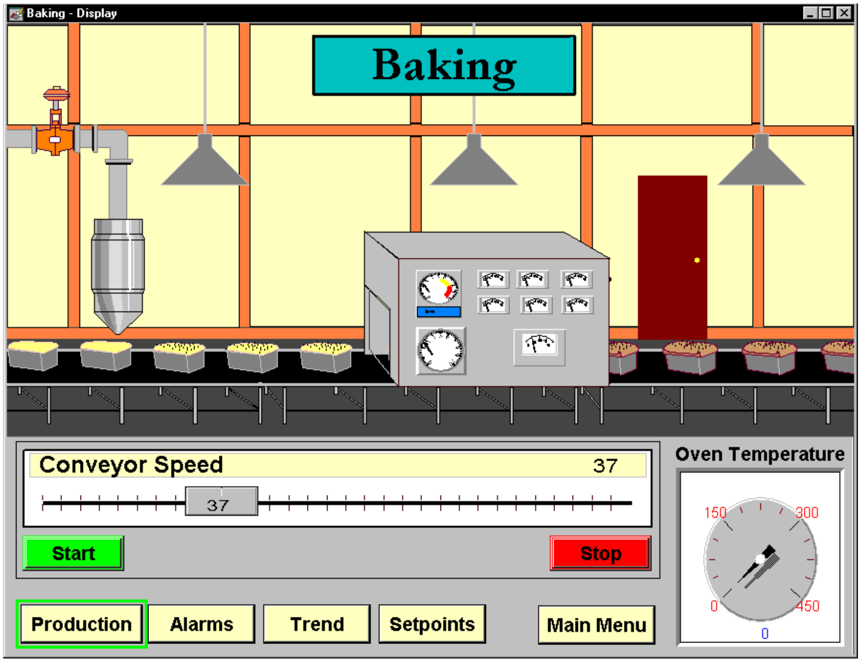
RSView32 Works contains both development and runtime software. Use this software to develop and run RSView32 applications.

RSView32 Runtime contains only runtime software. Use this software to run applications developed in RSView32 Works.

RSView32 Works

RSView32 Works contains editors for creating a complete human-machine interface application and contains software for running the applications you create. Use the editors to create applications that are as simple or as sophisticated as you need. When you have finished developing your application, switch to run mode or use RSView32 Runtime (which is included with RSView32 Works and uses less memory), and run your application.

Use the Graphic Display editor to create graphical displays of your process.


Baking - Display
Baking
Conveyor Speed
37
37
Start
Stop
Production
Alarms
Trend
Setpoints
Main Menu
Oven Temperature
150
300
0
450
0

With RSView32, you can:

- use the RSView32 ActiveX® and OLE container capabilities to take advantage of advanced technology. For example, embed Visual Basic® or other ActiveX components in RSView32 graphic displays to extend the capabilities of RSView32.
- create and edit displays with tools native to the Microsoft programs you are using now. With sophisticated object-oriented graphics and animation, plus simple drag-and-drop and cut-and-paste techniques, application configuration is simplified.
- use the RSView32 Object Model and VBA to share data with other Windows programs such as Microsoft Access and Microsoft SQL Server, interoperate with other Windows programs such as Microsoft Excel, and customize and extend RSView32 to fit your unique needs
- use graphics from the RSView32 graphic libraries or import files from other drawing packages such as CorelDRAW®, and Adobe® Photoshop®
- develop your application quickly using RSView32 productivity tools such as the Project Documentor, Project Transport Wizard, Command Wizard, Tag Browser, and Object Smart Path™ (OSP)

- avoid entering information twice. Import an Allen-Bradley® PLC or SLC™ database with the PLC Database Browser. Or browse for tags in third-party OPC® servers. To import ControlLogix® tags, use the Logix 5000 Tag Import utility.
- use the RSView32 alarm notification capability to monitor process incidents with multiple levels of severity. Create multiple alarm summaries to provide specific alarm data rather than viewing the alarms for the entire system.
- create trends that show process variables plotted against time. Display real-time or historical data with up to 16 pens (tags) in each trend.
- log data simultaneously to multiple log files or remote ODBC databases to provide various records of production data. Bring the logged data directly into other third-party programs such as Microsoft Excel and Crystal Reports® without converting files.
- lock users into the RSView32 application by disabling Windows keys
- use the electronic signature verification and authorization feature to verify the identity of the operator before an action can occur. This feature allows you to meet the security standards required for regulated manufacturing applications, for example those required for US Government 21 CFR Part 11 compliance.

RSView32 Runtime

RSView32 Runtime contains the software for running RSView32 applications. RSView32 Runtime also contains a sub-set of the RSView32 Works editors, so you can edit selected parts of a project at runtime. RSView32 Runtime is bundled with RSView32 Works or can be purchased separately.

With RSView32 Runtime, your application uses less memory to run.

Quick Start steps

The following steps explain how to get up and running with RSView32. To work with RSView32, you must complete steps 1 and 2 in the specified order. The other steps can be completed in any order.

Step 1 ■ Create a project

Create the project that you will run. A project is a folder on your hard disk that contains, among other things, the RSView32 project file (*.RSV).

For details, see Chapter 3, *Creating and working with projects*.

Step 2 ■ Set up communications in RSView32

Establish communications between RSView32 and the hardware and devices you are using.

For communications with most Allen-Bradley devices as well as SoftLogix™ 5 devices, RSView32 uses a direct driver connection. RSView32 uses the drivers in RSLinx®.

To set up direct driver communications to devices, set up a channel and node and, optionally, a scan class.

For communications with other local and remote devices, RSView32 uses OPC or DDE connections.

OPC (OLE for process control) allows RSView32 to act as a client or server, allowing peer-to-peer communication between different RSView32 stations, as well as other OPC servers.

RSView32 uses standard or high-speed AdvanceDDE™ (dynamic data exchange) data formats to communicate with DDE servers and DDE clients such as Microsoft Excel.

To set up OPC or DDE communications, set up an OPC or DDE node.

For details, see Chapter 4, *Setting up communications*.

Step 3 ■ Create graphic displays, trends, and alarm summaries

Create graphic displays that represent your process. Build your graphic displays in a variety of ways:

- use the RSView32 drawing tools to create graphic objects and text. You can create simple objects such as ellipses and rectangles, or create more complex objects such as trends and alarm summaries. You can also embed ActiveX objects.
- drag and drop ready-made objects from the RSView32 libraries into a display
- import objects or entire images that have already been created in other drawing packages such as CorelDRAW

Create graphic displays, trends, and alarm summaries in the Graphic Display editor.

For details, see Chapter 5, *Creating displays, trends, and alarm summaries.*

Step 4 ■ Set up tags

Create tags in any combination of ways:

- create tags as needed using the Tag Browser
- create a complete tag database in the Tag Database editor
- import an existing Allen-Bradley PLC or SLC database using the PLC Database Browser
- import ControlLogix tags using the Logix 5000 Tag Import utility
- browse for tags in third-party OPC servers

For details, see Chapter 6, *Creating tags.*

Step 5 ■ Set up logging

Set up activity, alarm, and data logging to have a permanent record of what is happening when your system is running.

Set up activity logging in the Activity Log Setup editor. Set up alarm logging in the Alarm Log Setup editor. Set up data logging in the Data Log Setup editor.

All logged information is stored in dBASE® IV (.DBF) format and can be viewed with third-party software such as Microsoft Excel, Crystal Reports, and Visual FoxPro®. For data logging, you can also use the ODBC storage format to store data directly in an ODBC-compliant database.

For details, see Chapter 7, *Setting up logging and security.*

Step 6 ■ Secure your system

Set up security at the:

- **Project level** so you control which users or groups of users have access to which features.

  In addition, at the project level, you can use the signature button to verify and track actions such as tag writes and running commands. This feature, together with other RSView32 security features, allows you to meet the security standards required for regulated manufacturing applications, for example those required for US Government 21 CFR Part 11 compliance.

- **System level** so you lock users into your RSView32 application. For Windows Vista, Windows Server 2003, Windows XP and Windows 2000, set up system-level security using the Win2K XP DeskLock tool, included on the RSView32 Resources CD-ROM. These tools are also available from the Windows Start menu, on the RSView32 Tools menu.

For details, see Chapter 7, *Setting up logging and security*.

Step 7 ■ Customize and integrate RSView32 with other applications

Use the RSView32 Object Model with Visual Basic or Visual Basic for Applications (VBA) to customize and extend the capabilities of RSView32, and to integrate RSView32 with other applications. Some ways you might do this include:

- **Networking**. If your RSView32 application includes logic to switch between redundant PLCs, you can use the RSView32 Object Model with Visual Basic or VBA to include node information in a graphic display. This lets you indicate the station number of the active PLC, and allows an operator to take corrective action if a PLC goes offline.

- **Tag management**. Write a VBA program to modify alarm information, such as thresholds and severities, each time a different product is manufactured on a multipurpose production line.

- **User and access control**. Within a VBA program, check the security code for an engineer or operator, and then allow the VBA program to change alarm configurations, or display only status information, depending on the person’s level of access.

- **Alarms.** Write your own alarm detection algorithms using Visual Basic or VBA, and then add alarm events to RSView32, to respond to your algorithms for annunciation, logging, printing, and for display in alarm summaries.
- **Data logging.** Use the RSView32 Object Model and other object models to collect data from multiple sources, such as expert systems, self-tuning PID algorithms, and tags, and then view the data in trends. You can also filter data for your own needs by reading from one data log model, and then writing to another data log model.
- **Activity logging.** Use the RSView32 Object Model with Visual Basic or VBA to log specific operator actions for tracking and documentation purposes. Write activity information to customized categories for sorting and analysis.
- **Application interfacing.** Use the RSView32 Object Model to interface with the object models of other applications. For example, you can use the Microsoft Excel object model to create a report in a worksheet, to add statistical formulas for analysis, and then print the report.

Chapter

3

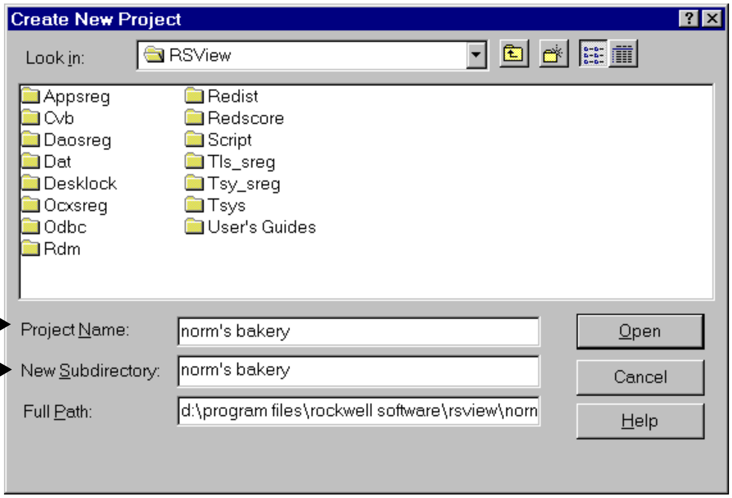
Creating and working with projects

Creating a project

New

To begin working in RSView32™, you need to create a project (also referred to as an application). For more information about projects, see “What is a project?” on page 26.

To create a project, click the New button on the toolbar or click New on the File menu.


Create New Project
Look in:
RSView
Appsreg
Cvb
Daosreg
Dat
Desklock
Ocxsreg
Odbc
Rdm
Redist
Redscore
Script
Tls_sreg
Tsy_sreg
Tsys
User's Guides
Open
Cancel
Help

Project Name: norm's bakery

New Subdirectory: norm's bakery

Full Path: d:\program files\rockwell software\rsview\norn

The project name, including the path, can be up to 200 characters long.

To specify a different name for the subdirectory, type it here.

After you create a new project, a Project Manager appears displaying the name of the project.

What is a project?

A project consists of a folder on your hard disk that contains, at a minimum, the following items:

- project file (*.RSV)
- tag folder
- comprf (communications profile) folder
- cache folder

The *.RSV file contains general project information such as a list of project components and their directory locations and version numbers. By default, all project components are located locally in folders under the project folder, but they can also be located in other directories or shared with other projects running on other computers.

Project files

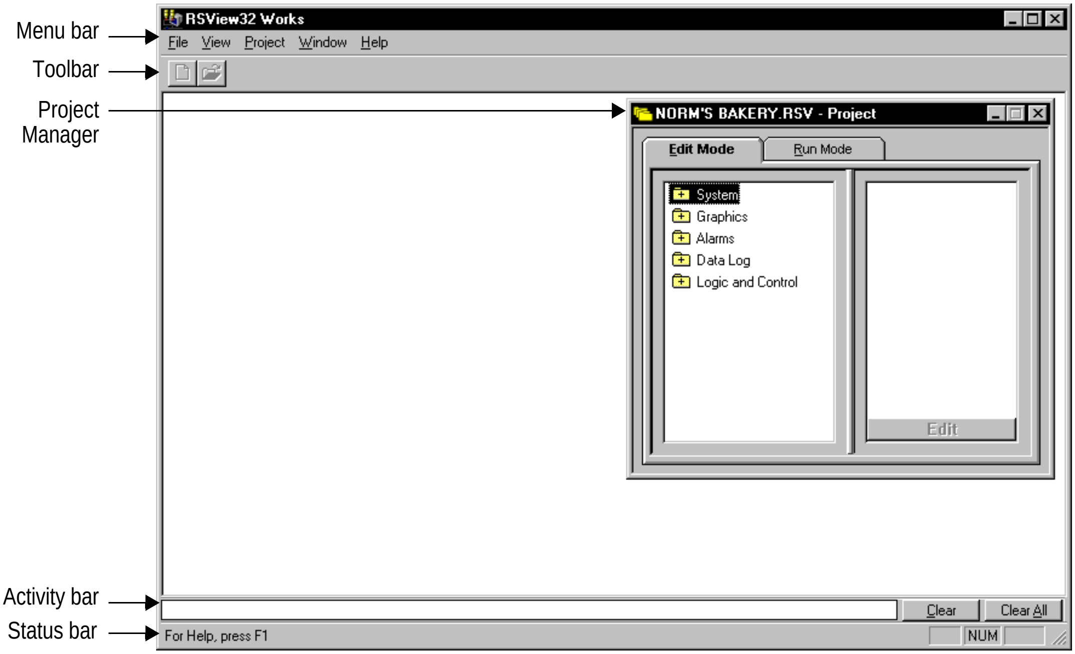
The following table lists the default RSView32 folders.

Folder	Contents	File extensions
project name	RSView32 project file, security and user account files, and the folders described below	.rsv, .sec, .act
project name\actlog	Activity log files	.dbf
project name\almlog	Alarm log files	.dbf
project name\als	Alarm summary files	.als
project name\cab	ActiveX® control setup files	.cab
project name\cache	RSView32 internal files	.ctl, .dat, .idx
project name\comprf	Internal information on channels, nodes, and scan classes	.csv, .ctl

Folder	Contents	File extensions
project name\dlglog	Data log models Data log files Information for current file set Information for historical file sets	.mdf .dbf .dns .dlg
project name\dts	Derived tag files	.dts
project name\eds	Events files	.eds
project name\gfx	Graphic display files	.gfx
project name\key	Global key files	.key
project name\mcr	Macro files	.mcr
project name\par	Parameter files	.par
project name\rcp	Recipe files	.rcp
project name\tag	Tag database files Tag cache file	.db, .ctl, .dat .cac
project name\tgs	Tag monitor files	.tgs
project name\vba	RSView32 VBA code files	.vba

Exploring the RSView32 main window

Once you create a project in RSView32, you will see the RSView32 main window.

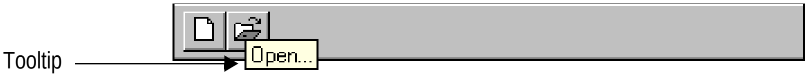

Menu bar
Toolbar
Project Manager
Activity bar
Status bar
RSView32 Works
File View Project Window Help
NORM'S BAKERY.RSV - Project
Edit Mode
Run Mode
System
Graphics
Alarms
Data Log
Logic and Control
Edit
Clear
Clear All
For Help, press F1
NUM

The menu bar

The menu bar contains the menu items for the active window. Each editor has its own set of menus.

The toolbar

The toolbar contains buttons for commonly used menu items so you can quickly access the items without opening the menu. When you point to a button on the toolbar, the button name is displayed in a tooltip.


Tooltip
Open...

The Project Manager

The Project Manager contains the editors for creating and editing the components that will make up your project. For more information about the Project Manager, see "Working in the Project Manager" on page 31.

The activity bar

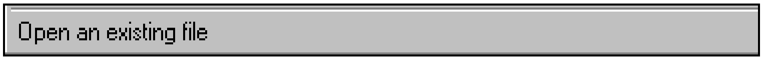
The activity bar shows system activities. To log activities to the activity bar, the Activity Bar check boxes must be selected in the Activity Log Setup editor. For details, see Chapter 8, *Configuring Activity Logging*, in the online *RSView32 User's Guide*.

The status bar

The status bar provides different kinds of information depending on where the pointer is and what RSView32 is doing. It can provide information on:

- the active window or selected tool

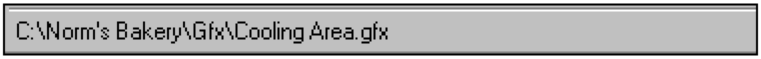
  For example, if you position the pointer over the Open button, the following message appears in the status bar:

  Open an existing file

- the location of a project component

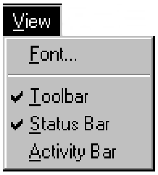
  For example, if you select a component in the Project Manager, the status bar shows the path to the component, such as:

  C:\Norm's Bakery\Gfx\Cooling Area.gfx

Showing and hiding the toolbar, status bar, and activity bar

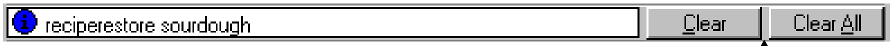
You can display or hide the toolbar, status bar, and activity bar using the items on the View menu. If there is a checkmark beside the item, the bar is visible. If there is no checkmark, the bar is hidden.



The toolbar and status bar are visible, but the activity bar is not.

Using the activity bar

You can detach the activity bar from the RSView32 main window and move the bar anywhere on the screen. However, you can attach the bar only to the bottom of the main window. To move the bar when it is not attached, grab the title bar and drag.


reciperestore sourdough

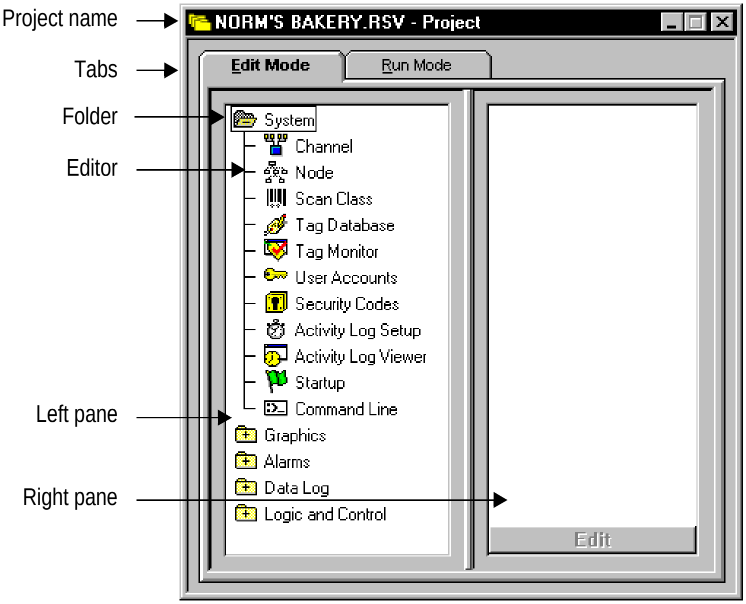
To detach the activity bar, place the pointer between the buttons, and drag the mouse.

When the bar is not attached to the window, you can resize it. To show more messages, grab the bottom of the bar and drag to make it bigger.

To clear the most recent message in the activity bar, click Clear. To clear all the messages in the activity bar, click Clear All.

Working in the Project Manager

Each time you create a project, a Project Manager appears showing the project name.


Project name
Tabs
Folder
Editor
Left pane
Right pane
NORM'S BAKERY.RSV - Project
Edit Mode
Run Mode
System
Channel
Node
Scan Class
Tag Database
Tag Monitor
User Accounts
Security Codes
Activity Log Setup
Activity Log Viewer
Startup
Command Line
Graphics
Alarms
Data Log
Logic and Control
Edit

The Project Manager window is divided into two panes. When you first create a project, the left pane appears with a series of folders and the right pane is empty. As you create project components, they are displayed in the right pane.

The parts of the Project Manager are described below.

Tabs

The Project Manager contains tabs so you can easily switch between edit and run modes. The Edit Mode tab contains the editors for developing your project. The Run Mode tab contains the components that you can use at runtime. Switching between the two tabs allows you to test your project quickly as you create it.

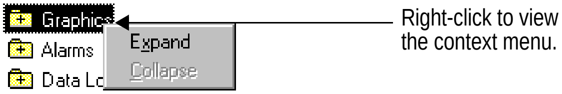
In run mode, you can run individual project components, or you can run the entire project. When you are in this mode, you see what users of your project will see. Double-click a component to run it.

For detailed information about running a project, see Chapter 18, *Running your project*, in the online *RSView32 User's Guide*.

Folders

The Project Manager uses folders to organize editors. To open or close a folder, do one of the following:

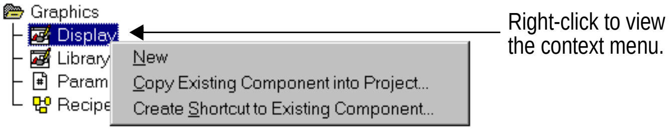
- double-click the folder
- press Enter to either open or close the folder depending on its current state
- select the folder, right-click to open the context menu, and then click Expand or Collapse


Graphics
Alarms
Data Lo
Expand
Collapse
Right-click to view the context menu.

Editors

Editors are for creating or configuring project components. To open an editor, do one of the following:

- double-click the editor's icon
- select the editor's icon, right-click to open the context menu, and then click New or Show


Graphics
Display
Library
Param
Recipe
New
Copy Existing Component into Project...
Create Shortcut to Existing Component...
Right-click to view the context menu.

The context menu contains New if you can create a component with the editor and contains Show if you cannot create a component with the editor.

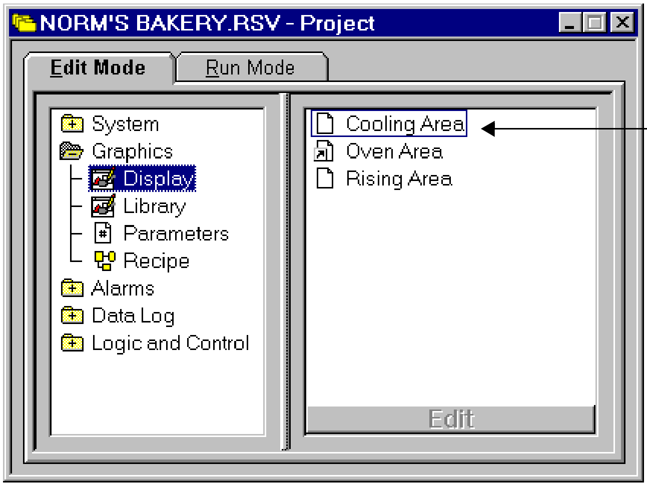
The following table describes each editor.

Use this editor	To
Channel	Specify channels for direct driver communication with devices. Channels must be set up before you configure nodes for direct driver devices.
Node	Assign names and define attributes for the direct driver devices, OPC® servers, or DDE servers that RSView32 will communicate with.
Scan Class	Set up the rate for scanning tags that communicate with direct driver devices.
Tag Database	Create tags and set up alarms.
Tag Monitor	Display the realtime values of a tag or group of tags.
User Accounts	Assign security codes to users to limit access to a project.
Security Codes	Assign security codes to commands and macros.
Activity Log Setup	Specify the type of system activity you want to log and where, when, and how you want it logged.
Activity Log Viewer	View activity log files.
Startup	Specify how your project will look and what will run when the project starts.
Command Line	Open a command line for entering RSView32 commands.
Display	Create graphic displays.
Library	Drag and drop objects from the graphic libraries into your graphic displays.

Use this editor	To
Parameters	Create a parameter file for use with graphic displays containing tag placeholders, so you can use the same graphic displays with different tags.
Recipe	Create a recipe file for use with graphic displays containing a recipe field.
Alarm Setup	Configure where, when, and how you want alarm messages logged.
Alarm Log Viewer	View historical alarm information.
Alarm Summary	Specify the alarm information you want displayed and create a format for that information.
Suppressed List	Display a list of tags for which alarm notification is suppressed.
Data Log Setup	Create data log models, specifying where, when, and how you want selected tag values logged.
Derived Tags	Create tags whose values are derived from other tags and functions.
Events	Create events, which are expressions that trigger commands or macros.
Macro	Create macros to run a series of RSView32 commands.
Global Keys	Remap your keyboard to run RSView32 commands.
Visual Basic® Editor	Create VBA code to do conditional branching, issue RSView32 commands, or link RSView32 data to other applications.

Components

Components appear in the right pane of the Project Manager. A component is a reference to a physical file. The component can reference a file in a folder under the project directory, a file outside of the project directory, or a file on another computer.


NORM'S BAKERY.RSV - Project
Edit Mode
Run Mode
System
Graphics
Display
Library
Parameters
Recipe
Alarms
Data Log
Logic and Control
Cooling Area
Oven Area
Rising Area
Edit

These components were created with the Graphic Display editor.

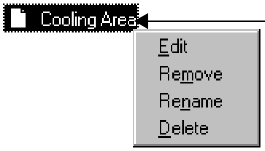
Displaying components

To display components, select an editor. Any components created with the editor appear in the right pane of the Project Manager.

Opening components

To open a component, do one of the following:

- double-click the component
- select the component, and then click the Edit button in the Project Manager
- select the component, right-click to open the context menu, and then click Edit


Cooling Area
Edit
Remove
Rename
Delete

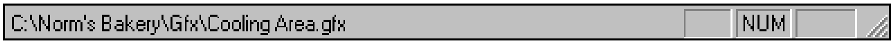
Right-click to view the context menu.

For detailed information about using the Remove, Rename, and Delete menu items, see Chapter 1, *Working with projects*, in the online *RSView32 User's Guide*.

Viewing component locations

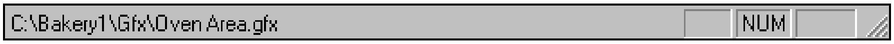
Components can reference files in different locations. To view the location of the component's file, select the component in the Project Manager, and then check the location displayed in the status bar.

The component Cooling Area is located at:



C:\Norm's Bakery\Gfx\Cooling Area.gfx

The component Oven Area is located at:

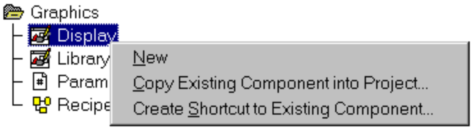


C:\Bakery1\Gfx\Oven Area.gfx

Using the same component in more than one project

The same files can be used in more than one project by adding components to a project using one of two options. When you add a component in the Project Manager using the Copy Existing Component into Project option, you are creating a copy of the file in the project. When you add a component using the second option, Create Shortcut to Existing Component, you are not creating a copy of the file in the project. Instead, you are creating a path to the file's location outside of the project. The advantage of this method is that there is only one copy of the file, and changes made to it are available to all projects using the file.

To add a component, select the editor that was used to create the desired component, right-click to display the context menu, and then click Copy Existing Component into Project or click Create Shortcut to Existing Component.


Graphics
Display
Library
Param
Recipe
New
Copy Existing Component into Project...
Create Shortcut to Existing Component...

In the dialog box, locate the component you want to add and click Open. The component appears in the right pane of the Project Manager. Files that are located outside of the project have an arrow symbol on the component icon, as shown on the previous page for the Oven Area component.

Hints for working in editors

When developing a project, you will use many different editors, but they have many similar features and often require similar information. Knowing how to use these features saves time.

Using the context menus

The Project Manager and the Graphic Display editor use context menus. To open a context menu, right-click the mouse.

Using the Selection button

...

Selection button

The Selection button appears beside data-entry fields. You can type information into the fields, or you can click the Selection button to open a list containing valid entries for the field.

Entering tag names

Many editors require a tag name. Tags are stored in the tag database and their names are then used in other parts of RSView32. You do not have to create tags before you work in other editors.

To supply a tag name, use any of these methods

- type the name of a tag that already exists in the tag database
- click the ... (Selection) button or Tags button, whichever is available, to open the Tag Browser where you can select, create, or edit a tag
- type the name of a tag that is not yet created. When you try to save, you are prompted to create the tag. You do not have to create the tag to use the tag name, but be sure to create the tag later or errors will be reported at runtime.

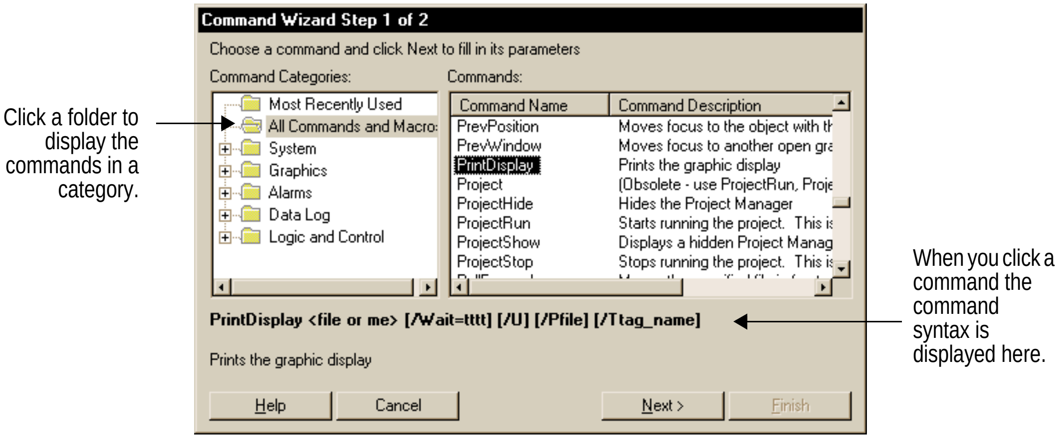
For detailed information about tags, see Chapter 4, *Creating tags*, in the online *RSView32 User's Guide.*

Using RSView32 commands

Many editors require an RSView32 command. Commands allow you to control RSView32 at runtime. Most commands accept parameters for added precision and control. You can also create a list of RSView32 commands in a macro and use the macro name in places where commands are required.

Using the Command Wizard

The Command Wizard helps you select and build commands.


Command Wizard Step 1 of 2
Choose a command and click Next to fill in its parameters
Command Categories:
Commands:
Most Recently Used
All Commands and Macro
System
Graphics
Alarms
Data Log
Logic and Control
Help
Cancel
Next >
Finish

Command Name	Command Description
PrevPosition	Moves focus to the object with t
PrevWindow	Moves focus to another open gr
PrintDisplay	Prints the graphic display
Project	(Obsolete - use ProjectRun, Proj
ProjectHide	Hides the Project Manager
ProjectRun	Starts running the project. This i
ProjectShow	Displays a hidden Project Manag
ProjectStop	Stops running the project. This i

PrintDisplay <file or me> [/Wait=tttt] [/U] [/Pfile] [/Ttag_name]

Prints the graphic display

Click a folder to display the commands in a category.

When you click a command the command syntax is displayed here.

To open the Wizard, do one of the following:

- click the ... (Selection) button beside any action field or in the command line
- double-click in an action field or, in the Macro editor, in any area of the window
- click the Commands item on the Edit menu

For detailed information about RSView32 commands, see Appendix A, *RSView32 Commands*, in the online *RSView32 User's Guide*, or see online help.

Using expressions

Many editors use expressions to compute values based on tags and functions. Expressions can be complex logical expressions, or they can be tag names.

For detailed information about expressions, see Chapter 14, *Creating expressions,* in the online *RSView32 User's Guide.*

Using the Project Documentor

The Project Documentor is a utility that provides you with detailed information on RSView32 projects. This utility is a browser that allows you to view the contents of the project's components and the tags used in these components. You can also print and export the information.

For more information, see the Project Documentor Help, included on the RSView32 Resources CD-ROM, and also available from the RSView32 Tools menu on the Windows Start menu.

Using the Project Transport Wizard

The Project Transport wizard lets you:

- rename a project
- copy a project
- delete a project
- back a project up to a .zip file
- restore a project that has been backed up to a .zip file.

For more information, see the Transport Help, included on the RSView32 Resources CD-ROM, and also available from the RSView32 Tools menu on the Windows Start menu.

Using components from ControlView projects

Many components, such as graphic displays or tag databases, can be imported from a ControlView™ or ControlView Builder project into RSView32. For more information, see the ControlView Project Import Wizard Help, included on the RSView32 Resources CD-ROM, and also available from the RSView32 Tools menu on the Windows Start menu.

For a description of how RSView32 differs from ControlView and ControlView Builder, see Appendix C, *Differences Between RSView32 and ControlView,* in the online *RSView32 User's Guide*.

Chapter

4

Setting up communications

Using direct driver communications

For communications with most Allen-Bradley® devices, RSView32™ uses a direct-driver connection. RSView32 uses the drivers in RSLinx® to communicate with Allen-Bradley devices.

To communicate with SoftLogix™ 5 programmable controllers, you must use an RSLinx driver.

You must use the version of RSLinx that came with your RSView32 software. This version has been tested for compatibility with RSView32. Other versions may not function correctly.

If you are not using Allen-Bradley devices—for example, if you are using Siemens or Modicon devices—use OPC® or DDE communications. For details, see "Using OPC and DDE communications" on page 43.

Windows Service Packs

If your operating system is Windows Server 2003, use Service Pack 1 or later.

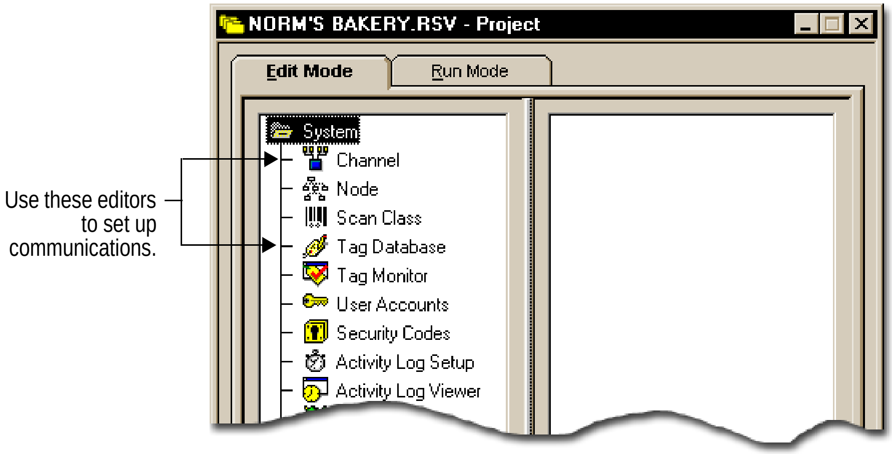
If your operating system is Windows XP Professional Edition, use Service Pack 1 or later.

If your operating system is Windows® 2000 Professional or Windows 2000 Server, use Service Pack 4.

If your operating system is Windows Vista Business (32-Bit) or Windows Vista Home Basic (32-Bit), use Service Pack 1 or later.

Communications editors

To set up direct-driver communications, open the System folder in the Project Manager, and use the editors shown below.


NORM'S BAKERY.RSV - Project
Edit Mode
Run Mode
System
Channel
Node
Scan Class
Tag Database
Tag Monitor
User Accounts
Security Codes
Activity Log Setup
Activity Log Viewer

Use these editors to set up communications.

Setting up direct driver communications

1. Start RSLinx and then configure and load the appropriate communications driver.
2. Start RSView32 and create or open a project.
3. In the Channel editor, select a channel and assign the appropriate network and the RSLinx driver to it.
4. In the Node editor, create nodes for each programmable controller you wish to communicate with. In the Data Source field, select Direct Driver.
5. If you want to change the default rate at which nodes are scanned, edit the scan classes in the Scan Class editor. This step is optional.
6. In the Tag Database editor, create tags. In the Data Source Type field, choose Device. In the Node Name field, choose one of the nodes you have created. In the Scan Class field, choose a scan class. In the Address field, specify the physical memory location in the programmable controller.
7. Check that communications are working. For details, see “Checking that communications are working” on page 44.

Using OPC and DDE communications

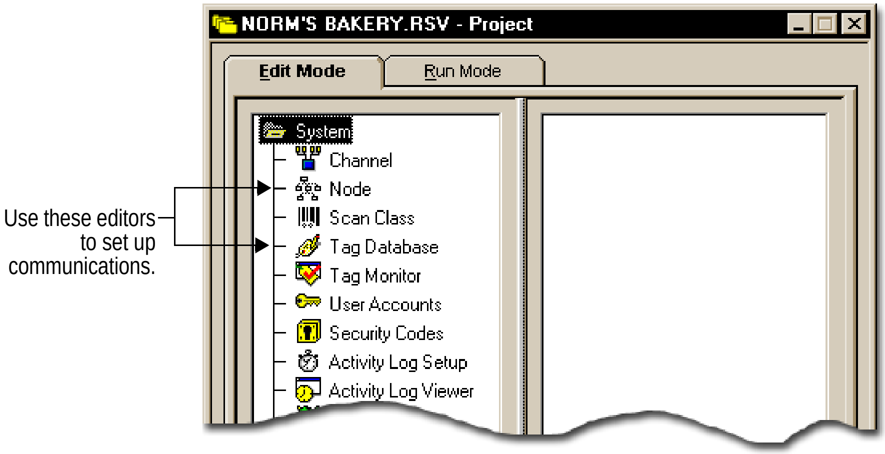
For communications with a wide range of local and remote devices, RSView32 uses OPC or DDE connections. OPC (OLE for process control) allows RSView32 to act as a client or server, allowing peer-to-peer communication between different RSView32 stations, as well as other OPC servers such as KEPServerEnterprise™. RSView32 can browse tags in other OPC servers, and also provides for OPC tag browsing of RSView32 tags. RSView32 supports OPC 1.0 and OPC 2.0.

RSView32 uses standard or high-speed AdvanceDDE™ (dynamic data exchange) data formats to communicate with DDE servers and DDE clients such as Microsoft Excel.

If you are not using Allen-Bradley devices—for example, if you are using Siemens or Modicon devices—you can use OPC or DDE to communicate with the devices.

Communications editors

To set up OPC or DDE communications, open the System folder in the Project Manager, and use the editors shown below.

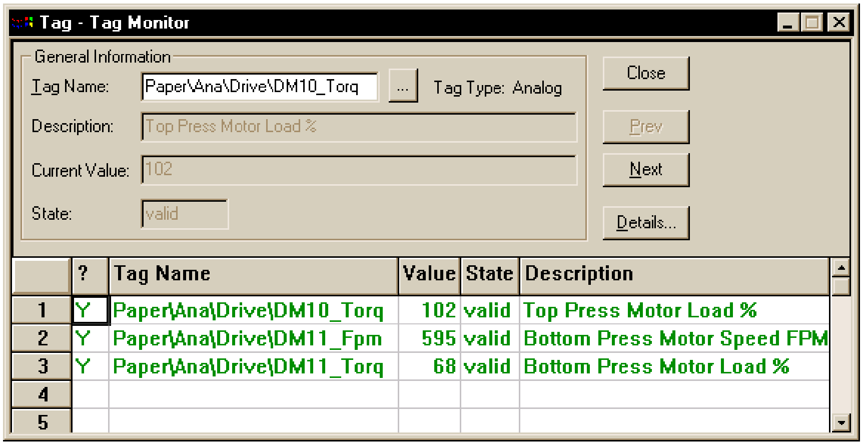

NORM'S BAKERY.RSV - Project
Edit Mode
Run Mode
System
Channel
Node
Scan Class
Tag Database
Tag Monitor
User Accounts
Security Codes
Activity Log Setup
Activity Log Viewer
Use these editors to set up communications.

Setting up communications with OPC and DDE servers

1. Start the OPC or DDE server.
2. Start RSView32 and create or open a project.
3. In the Node editor, create nodes for each OPC or DDE server and/or topic you wish to communicate with. In the node's Data Source field, select OPC Server or DDE Server, according to which type you are using.
4. In the Tag Database editor, create tags. In the Data Source Type field, choose Device. In the Node Name field, choose the OPC or DDE nodes that you have created. In the Address field, specify the name of the tag in the OPC server, or specify the DDE item.
5. Check that communications are working. For details, see "Checking that communications are working" next.

Checking that communications are working

The simplest way to check if communications are working is to use the tag monitor. The tag monitor shows tag values and states. If you have not created a tag, use the Tag Browser in the tag monitor to create the tag.



Tag Name: Paper\Ana\Drive\DM10_Torq

Tag Type: Analog

Description: Top Press Motor Load %

Current Value: 102

State: valid

	?	Tag Name	Value	State	Description
1	Y	Paper\Ana\Drive\DM10_Torq	102	valid	Top Press Motor Load %
2	Y	Paper\Ana\Drive\DM11_Fpm	595	valid	Bottom Press Motor Speed FPM
3	Y	Paper\Ana\Drive\DM11_Torq	68	valid	Bottom Press Motor Load %
4					
5					

When communications are working, the Value column contains a value and the State column says Valid.

Follow the steps below to check communications for direct driver, OPC, and DDE devices.

To check communications for an existing tag

1. In the RSView32 Project Manager, open the System folder, double-click Command Line, and then enter ComStatusOn to start logging communication errors.
2. In the RSView32 Project Manager, open the System folder, and then open the Tag Monitor.
3. In the Tag Name column, type the name of a tag that you have created, and then press Enter.

   If communications are working, a value will appear in the Value column and Valid will appear in the State column. If communications are not working, an error will appear in the State column, and an error message will appear in the activity bar.

To check communications for a new tag

1. In the RSView32 Project Manager, open the System folder, and then open the Tag Monitor.
2. On the View menu, click Form.
3. Click the ... (Selection) button beside the Tag Name field to open the Tag Browser, and then click New Tag.
4. Type a tag name, and then choose a tag type. Under Data Source Type, click Device. For Node Name, click the ... (Selection) button to display a list of the nodes you've created, and then select a node. In the Address field, type a programmable controller address for direct-driver communications, the name of a tag in the OPC server, or a DDE item. Click OK.
5. The newly created tag is selected in the Tag Browser. Click OK.

   If communications are working, a value will appear in the Value column and Valid will appear in the State column.

If communications are not working

- Check that the communication driver is properly configured.

  To verify that the device you are trying to communicate with has been detected, in RSLinx use RSWho.

  If the device appears in RSWho but a tag value is not displayed in RSView32, close your project, close RSView32, and then close RSLinx. Restart RSView32, reopen the project, and then open the tag monitor again. (RSLinx starts automatically when you restart RSView32.)

- For details about the type of communication errors you are experiencing, type ComStatusOn at the command line, then view the activity log in the Activity Log Viewer. To log communication errors, the Communications category must be selected in the Activity Log Setup editor. For details, see Chapter 8, *Configuring activity logging*, in the online *RSView32 User's Guide*.

Chapter

5

Creating displays, trends, and alarm summaries

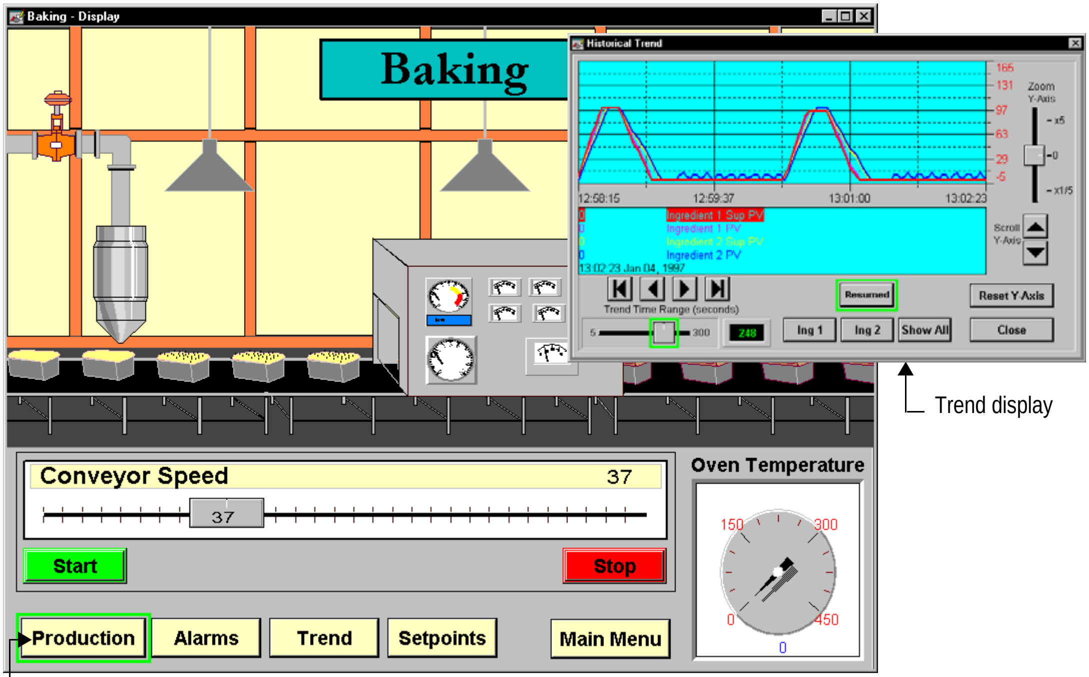
Creating and editing graphic displays

You can create any number of graphic displays as part of an RSView32™ project. A graphic display represents the operator's view of plant activity. It can show system or process data and provide operators with a way to write values to an external device such as a programmable controller or server.

A graphic display is made up of graphic objects. To add objects to a display, you can:

- create objects using the editor's drawing tools
- drag and drop objects from another display or a graphic library
- copy and paste objects from another Windows® application
- import objects or entire displays created in other drawing packages such as CorelDRAW®, and Photoshop®

- embed ActiveX® and OLE objects.



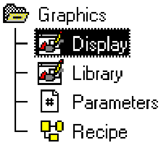
Baking - Display
Baking
Historical Trend
165
131
97
63
29
-5
Zoom Y-Axis
x5
0
x1/5
12:58:15
12:59:37
13:01:00
13:02:23
Ingredient 1 Sup PV
Ingredient 1 PV
Ingredient 2 Sup PV
Ingredient 2 PV
13:02:23 Jan 04, 1997
Scroll Y-Axis
Trend Time Range (seconds)
5
300
248
Resumed
Reset Y Axis
Ing 1
Ing 2
Show All
Close
Conveyor Speed
37
37
Start
Stop
Oven Temperature
150
300
0
450
0
Production
Alarms
Trend
Setpoints
Main Menu

Trend display

Buttons for opening other displays

Some objects have animation attached to them so they change appearance to reflect changes in plant activity. To attach animation, you must specify one or more tags that will control the object's appearance and specify how the appearance will change as the tag's values change

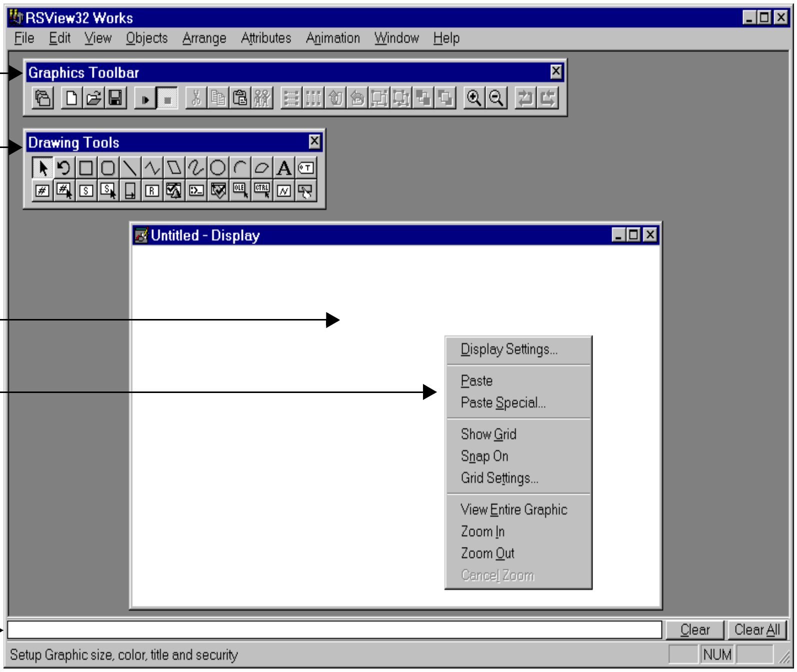
Creating a new graphic display



Graphics
Display
Library
Parameters
Recipe

To create a new graphic display, double-click the Graphic Display editor icon in the Project Manager.

When the editor opens, you are presented with a new, blank display ready for you to begin work. The editor is your drawing space in which you can create any type of display you like.


RSView32 Works
File Edit View Objects Arrange Attributes Animation Window Help
Graphics Toolbar
Drawing Tools
Untitled - Display
Display Settings...
Paste
Paste Special...
Show Grid
Snap On
Grid Settings...
View Entire Graphic
Zoom In
Zoom Out
Cancel Zoom
Clear
Clear All
Setup Graphic size, color, title and security
NUM

Move these toolbars anywhere you want. To see more toolbars, use the View menu.

Drawing area.

To see what actions you can perform, right-click to open the context menu.

When you test run a graphic display, the activity bar provides runtime information. To hide the activity bar, click the Project Manager, open the View menu, and then click Activity Bar.

Saving and naming the graphic display

To save the graphic display, click the Save button. In the Save As dialog box, type a name for the display. The name can be up to 200 characters long (including the path) and can include spaces.

Types of displays

You can create any type of display in the Graphic Display editor. For example, you can create a full-screen display that serves as a main menu for all the other displays, or you can create a small display that pops up when required. What makes displays appear different to users is the display's type, size, and behavior.

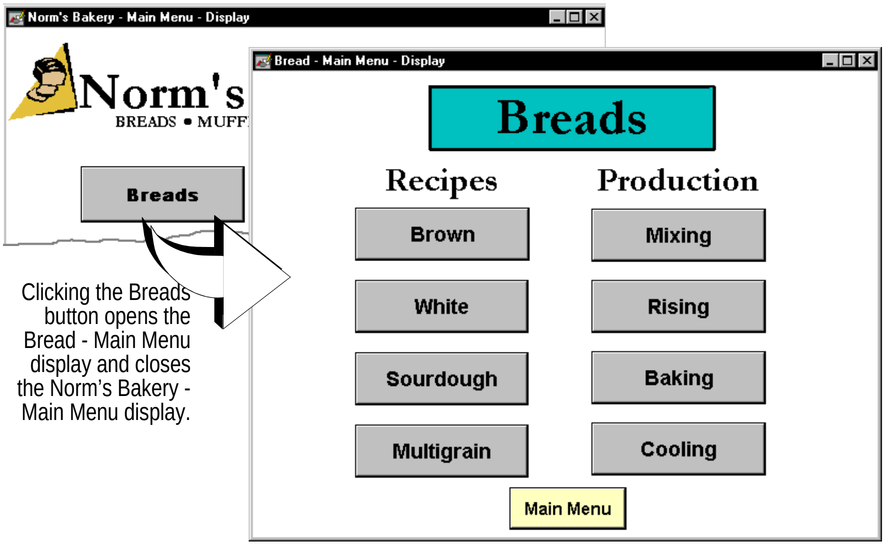
The type of display you choose determines how the display interacts with other displays on the screen:

- `Replace` is the default display type. Use this option if you want the graphic display to replace other open graphic displays when it opens. RSView32 will close any graphic display that the newly opened display overlaps. This way you don't need to issue separate commands to close the other displays.
- `On Top` is used to keep the graphic display on top at all times. It will remain on top even if another display has focus. However, if more than one graphic display of the On Top type is open at once, the display that has focus, or had the most recent focus, appears on top.
- `Overlay` is used if the graphic display doesn't need to replace others or appear on top. The display will layer with other displays, overlapping some and being overlapped by others as the focus changes between multiple displays. Overlay displays always appear behind On Top displays, and are replaced by Replace displays. Use Overlay with care, because keeping multiple displays open can affect system performance.

You specify the display type in the Display Settings dialog box in the Graphic Display editor. Choose Display Settings on the context menu (shown on page 49) to open the dialog box.

Opening and closing displays

RSView32 uses commands to open and close displays. To open a display, use the Display <*file*> command. To close a display, you can use the Replace display type (so that opening a new display causes other open displays to close), or use the Abort <*file*> command to explicitly close a display.


Norm's Bakery - Main Menu - Display
Norm's
BREADS • MUFF
Breads
Bread - Main Menu - Display
Breads
Recipes
Production
Brown
Mixing
White
Rising
Sourdough
Baking
Multigrain
Cooling
Main Menu

Clicking the Breads button opens the Bread - Main Menu display and closes the Norm's Bakery - Main Menu display.

In the above example, the display type for the Bread - Main Menu display is Replace, so that the Norm's Bakery - Main Menu display closes automatically (is replaced) when the Bread - Main Menu display opens. The following command has been assigned to the Breads button:

Display *Bread - Main Menu*

When a user clicks the Breads button, the Bread - Main Menu display opens and the Norm's Bakery - Main Menu display closes.

If the Bread - Main Menu display uses the Overlay or On Top display type, and you want the Norm's Bakery - Main Menu display to close when the user opens the Bread - Main Menu display, assign two commands to the Breads button:

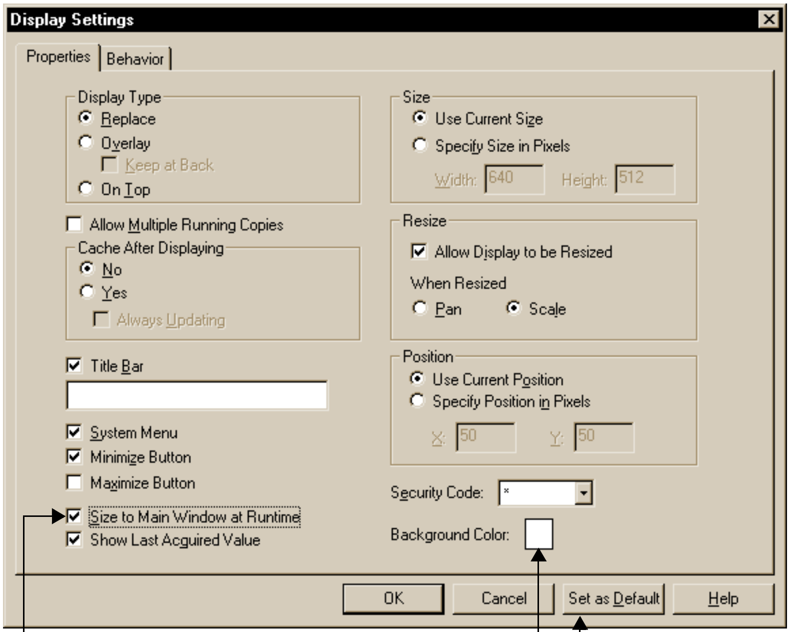
Abort *Norm's Bakery - Main Menu*

Display *Bread - Main Menu*

Choosing a background color and display size

You can change a display's background color and size any time during the drawing process. You can also set your own defaults so the Graphic Display editor opens just the way you want. Setting a default is one way to give your graphic displays a consistent look and feel.

Specify the background color and display size in the Display Settings dialog box. Right-click an empty area of the display and then click Display Settings on the context menu.



Display Type
- ● Replace
- ○ Overlay
  - ☐ Keep at Back
- ○ On Top

☐ Allow Multiple Running Copies

Cache After Displaying
- ● No
- ○ Yes
  - ☐ Always Updating

☑ Title Bar

☑ System Menu
☑ Minimize Button
☐ Maximize Button
☑ Size to Main Window at Runtime
☑ Show Last Acquired Value

Size
- ● Use Current Size
- ○ Specify Size in Pixels

Width: 640 Height: 512

Resize
- ☑ Allow Display to be Resized

When Resized
- ○ Pan
- ● Scale

Position
- ● Use Current Position
- ○ Specify Position in Pixels

X: 50 Y: 50

Security Code: *

Background Color:

You'll probably want to specify Size to Main Window at Runtime for most displays.

Specify the background color.

To make your choices the default for all new displays, click Set as Default.

Choosing a display size

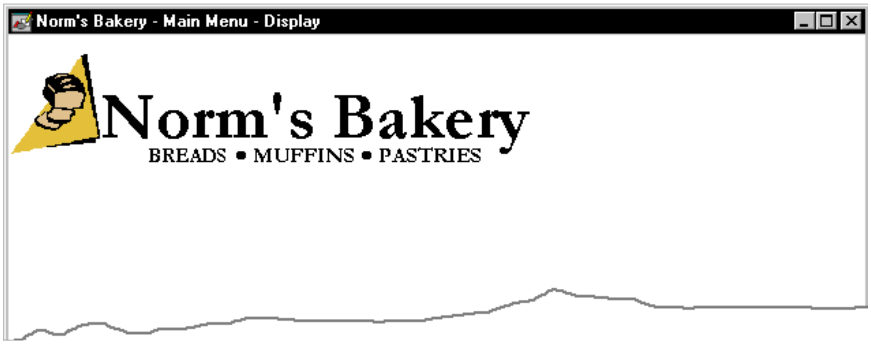
For most displays, use the Size to Main Window at Runtime option. Any display that uses this option is automatically scaled to occupy all of the RSView32 main window. You only need to specify the window size for smaller displays, such as pop-up or tiled displays.

Importing a graphic

You might like to include graphics you've already created in other applications. RSView32 imports many different graphic file types, including .BMP, .WMF, .DXF, and .JPG, so you can import images such as logos, photographs, or drawings of a machine or process.

You can import .DXF files generated by AutoCAD® version 12 or earlier directly. You must export .DXF files generated by AutoCAD version 13 or later to .WMF format and then import the .WMF files into RSView32.

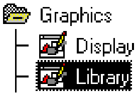
To import a file, click the File menu and then click Open. Select the type of file to import in the Files of type field, locate the file you want to import, and then click Open.


Norm's Bakery - Main Menu - Display
Norm's Bakery
BREADS • MUFFINS • PASTRIES

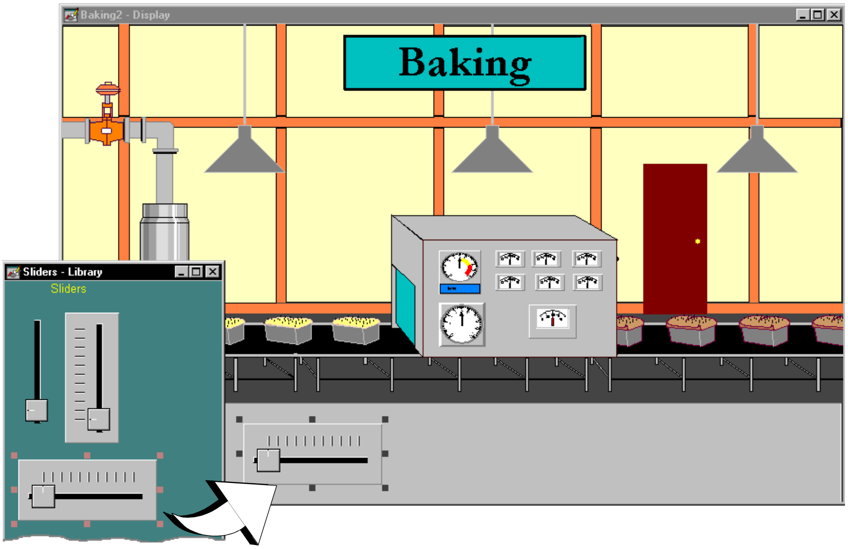
The Norm's Bakery logo was imported into the graphic display.

Viewing the libraries and samples

Before you start drawing objects, look at the graphic libraries and samples included with RSView32. The libraries and samples contain hundreds of objects that you can drag and drop into your display, saving you drawing time. Some of the objects might not be exactly what you need, but you can change them in any way you want—resize them, reshape them, change their color, and so on.



To see a list of the libraries, click the Library icon in the left pane of the Project Manager. The library components are listed in the right pane of the Project Manager.



Instead of drawing a slider, drag and drop it from the Sliders library.

Many library objects already have animation configured for them. When you drag and drop an object into a display, all animation attached to the object is retained. You can use the animation as is, but you will usually want to change the tag name associated with the animation. To change the tag name, use tag substitution.

Using tag substitution

With tag substitution, you can replace some or all of the tag, expression, or command references in a graphic display. Select an object or group of objects, right-click to open the context menu, and then click Tag Substitution.

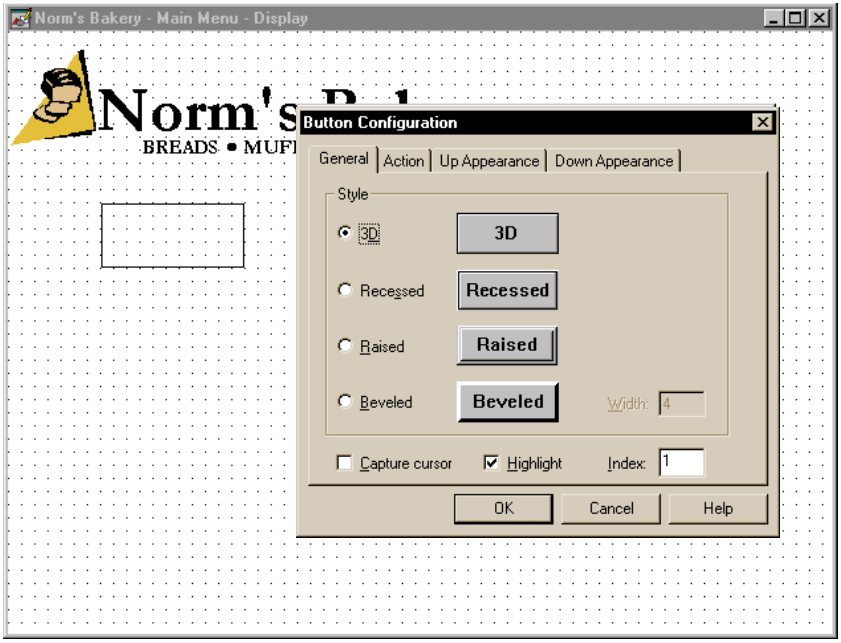
Creating a button

Button tool

Use the Button tool to create, label, and specify an action for a button. You can create four different styles of button, and can attach any RSView32 command to the button to create the button's action.

The button's appearance is up to you. The fonts, colors, and fill styles available for other graphic objects are also available for button objects. You can also import a graphic image for the button so you can label the button with a symbol or picture.

To create buttons that are the same size, create one button, and then duplicate it. To edit the duplicated button, double-click it to open the Button Configuration dialog box.


Norm's Bakery - Main Menu - Display
Norm's Ba
BREADS • MUF
Button Configuration
General
Action
Up Appearance
Down Appearance
Style
3D
Recessed
Raised
Beveled
OK
Cancel
Help

Style:
● 3D
○ Recessed
○ Raised
○ Beveled

Width: 4

☐ Capture cursor
☑ Highlight

Index: 1

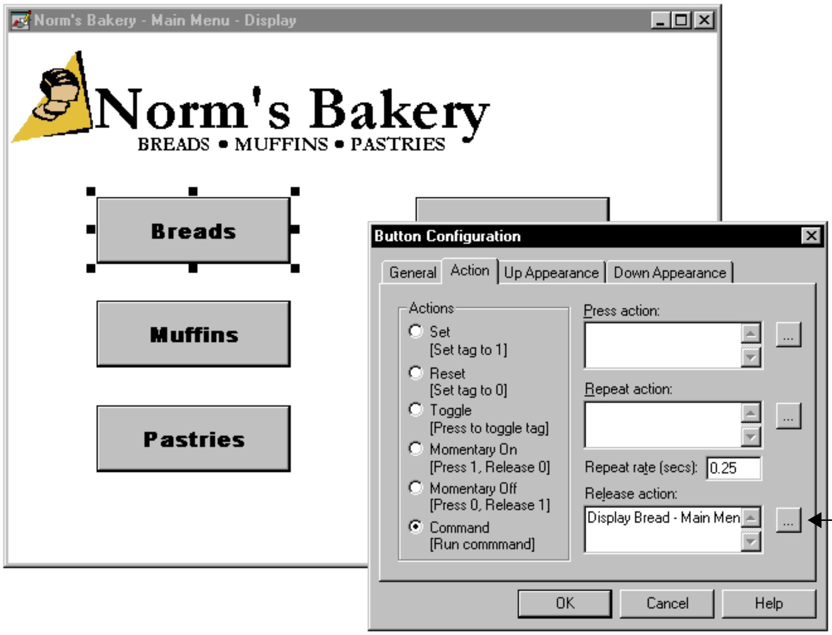
The grid is helpful when drawing objects. To use the grid, right-click an empty area of the display, and then click Grid Settings.

Adding an action to the button

Users expect buttons to perform actions, and the most common button actions are opening and closing displays.

To specify an action for a button, double-click it. In the Button Configuration dialog box, click the Action tab and then specify a command. For a complete list of RSView32 commands and their actions, use the Command Wizard, or see the online help.

In the example below, a display called Bread - Main Menu has been created and is used with the Display command. At runtime, when a user clicks the Breads button, the Bread - Main Menu display opens.


Norm's Bakery - Main Menu - Display
Norm's Bakery
BREADS • MUFFINS • PASTRIES
Breads
Muffins
Pastries
Button Configuration
General
Action
Up Appearance
Down Appearance
Actions
Press action:
Repeat action:
Release action:
OK
Cancel
Help

Actions:
- ○ Set [Set tag to 1]
- ○ Reset [Set tag to 0]
- ○ Toggle [Press to toggle tag]
- ○ Momentary On [Press 1, Release 0]
- ○ Momentary Off [Press 0, Release 1]
- ● Command [Run commmand]

Repeat rate (secs): 0.25

Release action: Display Bread - Main Men

Click this button to open the Command Wizard and create a command.

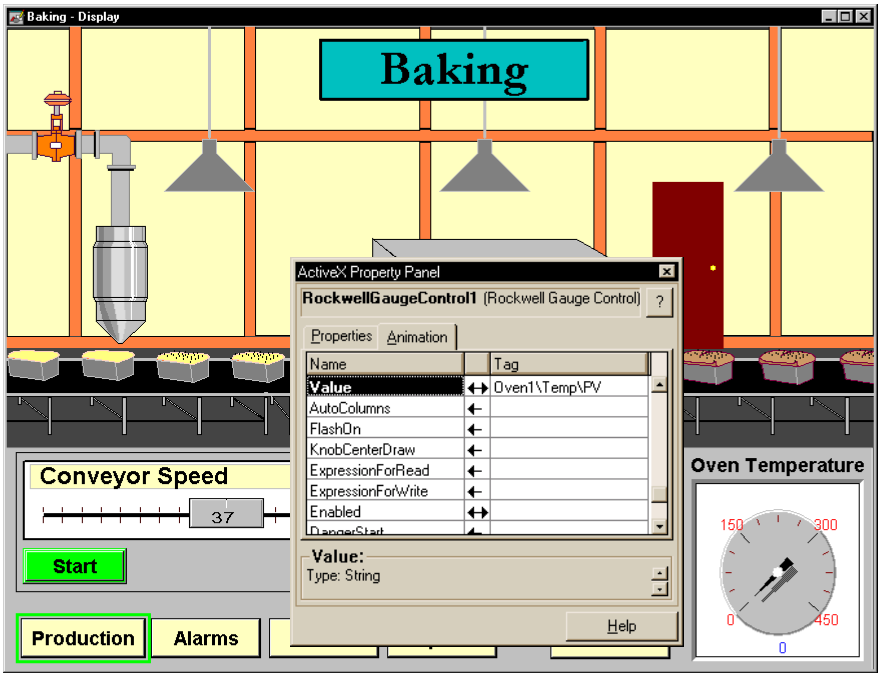
Embedding an ActiveX object

ActiveX objects are supplied independently of RSView32 through products such as Microsoft® Visual Basic® (version 4.0 or later). When an ActiveX object is embedded in a display, RSView32 can use the object's features by linking the object's properties to RSView32 tags and by linking the object's events and methods to RSView32 commands.

The Baking display requires a gauge for monitoring oven temperature. Instead of drawing the gauge, the designer uses the Rockwell Software gauge object and attaches an RSView32 tag to the gauge's Value property. At runtime, the gauge's needle changes position to reflect the tag's value.

ActiveX tool

To embed an ActiveX object, use the ActiveX tool. Drag the mouse to draw a box about the size you want for the object and release the mouse. In the Insert an ActiveX Control dialog box, double-click an ActiveX object. To link the object to an RSView32 tag, use the ActiveX Property Panel dialog box. Select the object, right-click to open the context menu, point to ActiveX, and then click Property Panel.


Baking - Display
Baking
ActiveX Property Panel
Properties
Animation
Conveyor Speed
37
Start
Production
Alarms
Oven Temperature
150
300
0
450
0
Help

RockwellGaugeControl1 (Rockwell Gauge Control)

Name		Tag
Value	↔	Oven1\Temp\PV
AutoColumns	←	
FlashOn	←	
KnobCenterDraw	←	
ExpressionForRead	←	
ExpressionForWrite	←	
Enabled	↔	
DangerStart	←	

Value:
Type: String

Select the property you want to link to a tag, and then type, or browse for the RSView32 tag name.

You can view an object’s properties, methods, and events in two ways:

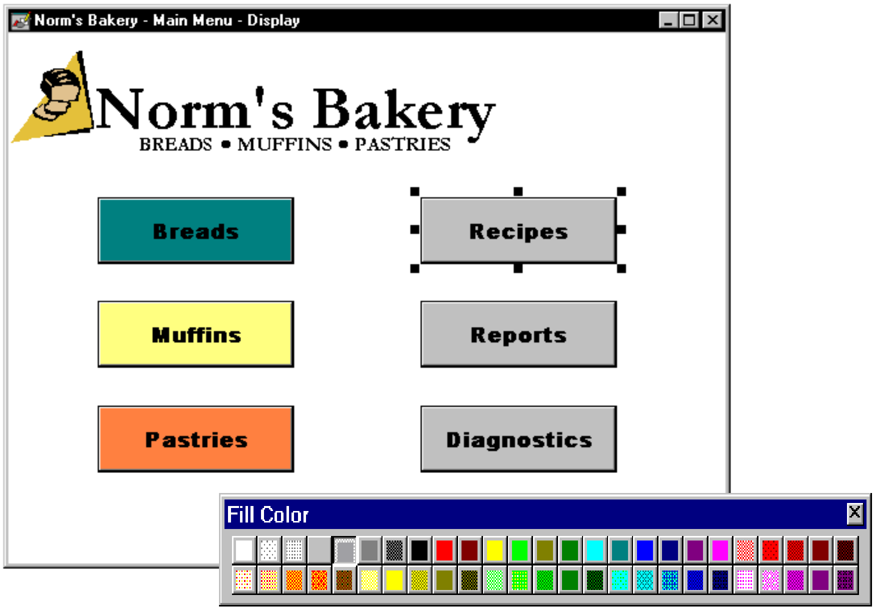
- to view the object’s properties, select the object, and then click ActiveX Property Panel on the View menu
- to view the properties, methods, and events through RSView32, select the object, right-click to display the context menu, point to Animation, point to ActiveX Control, and then click Properties, Events, or Methods

If you frequently use ActiveX objects in your displays you might want to add the icons for the objects you use to the ActiveX Toolbox. For more information, see Chapter 11, *Creating graphic displays*, in the online *RSView32 User’s Guide*.

Adding color to objects

You can change the color of objects before or after you draw them. Objects can have two colors—line color and fill color. Line color applies to the outline of an object, and to text. Fill color applies to the inside of an object.

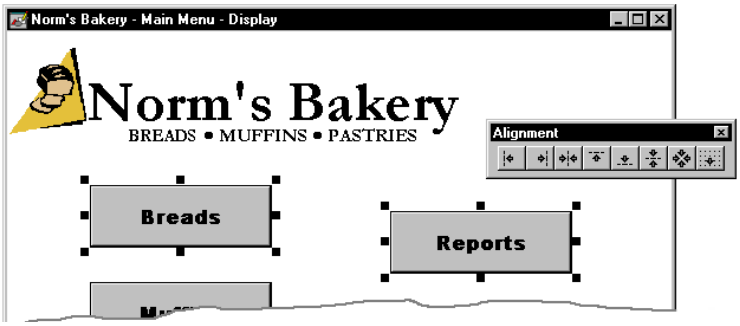
To show the color palettes, click them on the View menu. Like toolbars, the color palettes can be placed anywhere on the screen and can be attached to any edge of the window. To apply color to an object, select the object and then click a new color on the appropriate color palette.


Norm's Bakery - Main Menu - Display
Norm's Bakery
BREADS • MUFFINS • PASTRIES
Breads
Recipes
Muffins
Reports
Pastries
Diagnostics
Fill Color

When you select an object, the object's fill color is selected in the Fill Color palette.

Arranging the objects

Once you've created two or more objects, you can arrange them. You can align them, space them, and group them. To select multiple objects, click one object and Ctrl-click other objects. You can also select multiple objects by holding the mouse down and dragging. As you drag, a selection box appears around the objects; release the mouse when the box includes all the objects you want.


Norm's Bakery - Main Menu - Display
Norm's Bakery
BREADS • MUFFINS • PASTRIES
Alignment
Breads
Reports

To show the Alignment toolbar, click Alignment Toolbar on the View menu.

Aligning objects

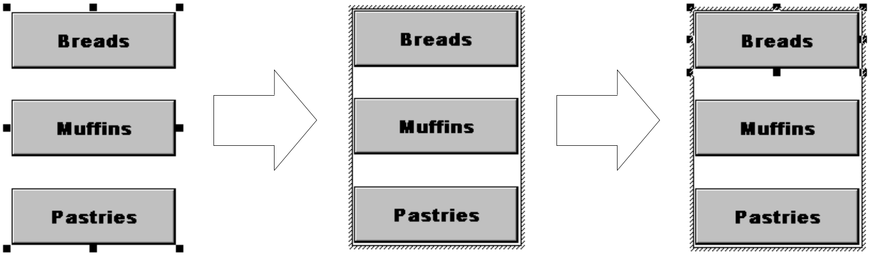
Objects are aligned based on their relative positions. In the example above, clicking Align Top aligns the top of the Reports button to the top of the Breads button. Clicking Align Bottom aligns the bottom of the Breads button to the bottom of the Reports button.

Spacing objects

Spacing objects ensures there is an equal amount of space between each object. Objects are spaced based on the distance between the outside edges of the two outer-most objects. Use the buttons on the toolbar to space objects vertically and horizontally.

Grouping objects

Grouping objects makes individual objects into a single object. Once objects are grouped, you can still work with the individual objects using group editing.



Click to select the group.

Double-click to edit the group.

Click an object to select and edit it.

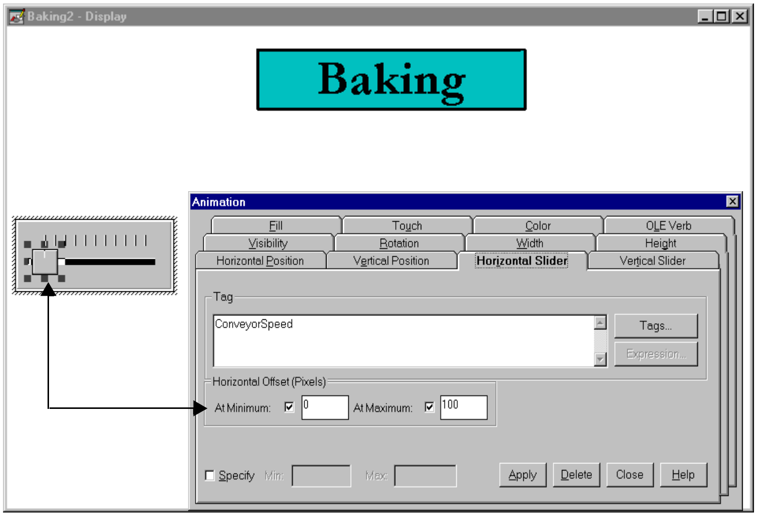
Animating objects

Most graphic objects can have animation attached to them. Groups of objects can also have animation. You can attach as many types of animation as you like. For example, apply both width and height animation to an object so it looks like it is moving out of or into the display as it grows and shrinks.

Using Object Smart Path

Attaching animation to objects is easy with Object Smart Path™ (OSP). With OSP, you define an object's range of motion by dragging the object—there's no pixel counting involved.

OSP works through the Animation dialog box. The Animation dialog box can stay open all the time, so you can move between it and the graphic display. To open the Animation dialog box, select an object, right-click to display the context menu, click Animation, and then click a type of animation.


Baking2 - Display
Baking
Animation
Fill
Touch
Color
OLE Verb
Visibility
Rotation
Width
Height
Horizontal Position
Vertical Position
Horizontal Slider
Vertical Slider
Tags...
Expression...
Min:
Max:
Apply
Delete
Close
Help

Tag: ConveyorSpeed

Horizontal Offset (Pixels)
At Minimum: ☑ 0
At Maximum: ☑ 100

☐ Specify

The slider is shown in its At Minimum position. Whenever the tag associated with the slider is at its minimum, the slider is in this position.

To set up the object’s start position, place the object where you want it to start, and then click At Minimum in the Animation dialog box. To set up the object’s end position, drag the object to where you want it to end, and then click At Maximum in the Animation dialog box.

Copying and pasting animation

You can copy the animation from one object and paste it on another object. If the object has more than one type of animation, all animation is copied and pasted. To copy animation, select the object with the desired animation, right-click to open the context menu, and click Copy Animation. To paste animation, select the object you want to paste animation to, right-click to open the context menu, and then click Paste Animation.

Test Mode

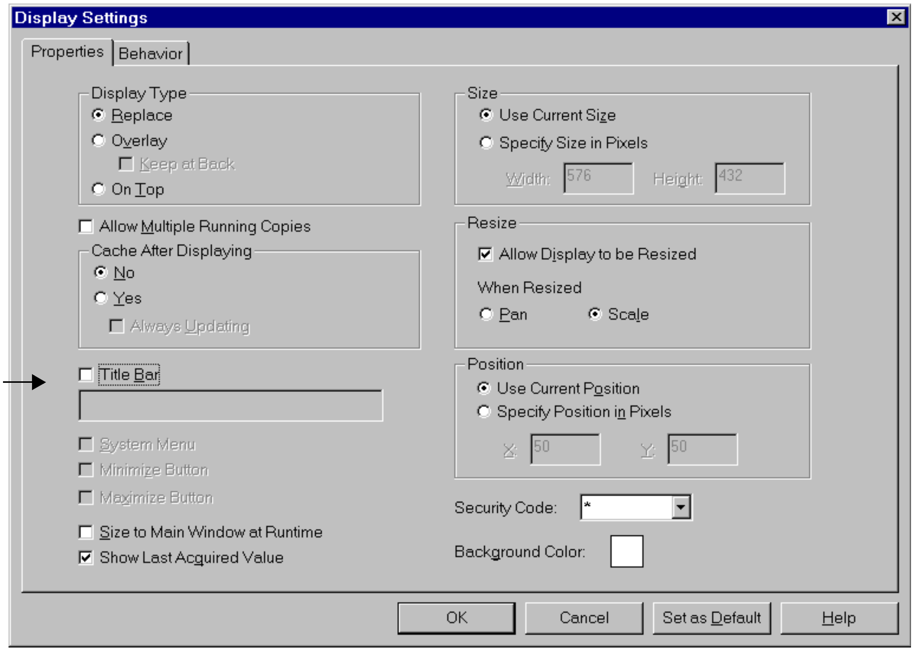
Normal Mode

Testing the animation

To test the animation in a display, use test mode. In test mode, RSView32 collects data from the data source and animates your display. However, test mode does not change the size or position of your display. When you're finished testing, return to normal mode to continue editing. To switch between normal and test mode, click the buttons on the toolbar or click the options on the View menu.

Setting up runtime appearance

You can specify how each graphic display will appear at runtime. You can specify the display type, window style, and window size and position. The window style includes whether the window will have a title bar and, if so, what the title bar will say and what buttons it will include.



Display Type
- ● Replace
- ○ Overlay
  - ☐ Keep at Back
- ○ On Top

☐ Allow Multiple Running Copies

Cache After Displaying
- ● No
- ○ Yes
  - ☐ Always Updating

☐ Title Bar

☐ System Menu
☐ Minimize Button
☐ Maximize Button

☐ Size to Main Window at Runtime
☑ Show Last Acquired Value

Size
- ● Use Current Size
- ○ Specify Size in Pixels

Width: 576 Height: 432

Resize
- ☑ Allow Display to be Resized

When Resized
- ○ Pan
- ● Scale

Position
- ● Use Current Position
- ○ Specify Position in Pixels

X: 50 Y: 50

Security Code: *

Background Color:

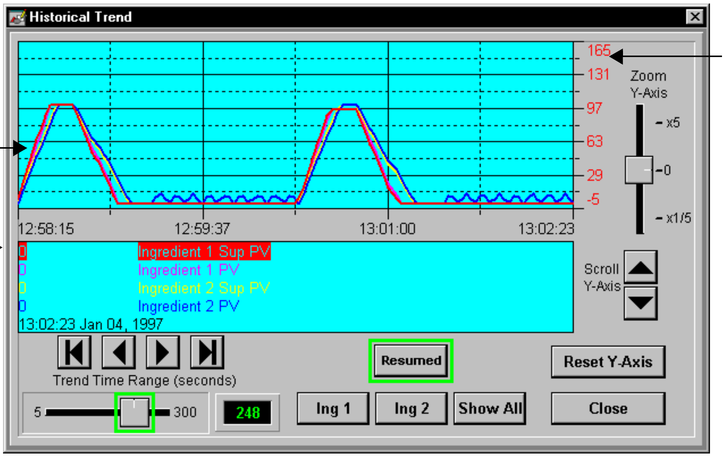
If you don't include a title bar, you cannot have items such as the Minimize button that are part of the title bar.

Creating a trend

A trend is a visual representation of realtime or historical tag values, which provides operators with a way to track plant activity as it is happening.

With RSView32 trends, you can:

- plot data for up to sixteen tags in each trend object
- plot constant values as well as tag values
- use shading to emphasize when a tag crosses a reference value
- use realtime data from tags or use historical data from log files
- use data from a local or remote computer


Historical Trend
165
131
97
63
29
-5
Zoom
Y-Axis
x5
0
x1/5
12:58:15
12:59:37
13:01:00
13:02:23
0 Ingredient 1 Sup PV
0 Ingredient 1 PV
0 Ingredient 2 Sup PV
0 Ingredient 2 PV
13:02:23 Jan 04, 1997
Scroll
Y-Axis
Resumed
Reset Y-Axis
Trend Time Range (seconds)
5
300
248
Ing 1
Ing 2
Show All
Close

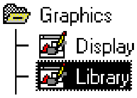
Each line, or pen, represents a tag value.

Each pen's tag name appears in the legend.

The numbers along this axis represent the minimum and maximum values for the tag selected in the legend.

The sliders and buttons around the trend are graphic objects created separately from the trend but are important because they control the trend at runtime. You can find these objects in the Trends library.

You can drag and drop a trend from a graphic library into your display, or you can create a trend with the Trend drawing tool.


Graphics
Display
Library

To use a trend from the graphic libraries, click the Library icon in the left pane of the Project Manager, and then double-click Trends in the right pane of the Project Manager. Select all or part of the trend and drag and drop it into your display. Use tag substitution to update the tags associated with the trend. For details, see “Using tag substitution” on page 54.

Trend tool

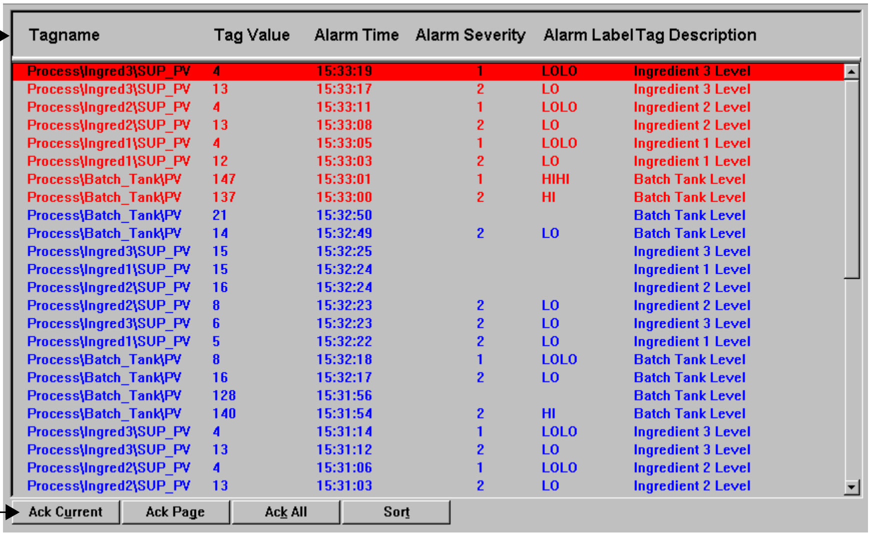
To create a trend, click the Trend tool. Drag the mouse to draw a box about the size you want for the trend and then release the mouse. In the Trend dialog box, set up the trend.

For detailed information about trends, see Chapter 13, *Configuring trends*, in the online *RSView32 User's Guide*.

Creating an alarm summary

An alarm summary displays the alarm information recorded in the computer's memory. The summary is completely configurable, so you can determine what and how alarm information is displayed.

Although you can add many headings, too much information can be overwhelming.



Tagname	Tag Value	Alarm Time	Alarm Severity	Alarm Label	Tag Description
Process\Ingred3\SUP_PV	4	15:33:19	1	LOLO	Ingredient 3 Level
Process\Ingred3\SUP_PV	13	15:33:17	2	LO	Ingredient 3 Level
Process\Ingred2\SUP_PV	4	15:33:11	1	LOLO	Ingredient 2 Level
Process\Ingred2\SUP_PV	13	15:33:08	2	LO	Ingredient 2 Level
Process\Ingred1\SUP_PV	4	15:33:05	1	LOLO	Ingredient 1 Level
Process\Ingred1\SUP_PV	12	15:33:03	2	LO	Ingredient 1 Level
Process\Batch_Tank\PV	147	15:33:01	1	HIHI	Batch Tank Level
Process\Batch_Tank\PV	137	15:33:00	2	HI	Batch Tank Level
Process\Batch_Tank\PV	21	15:32:50			Batch Tank Level
Process\Batch_Tank\PV	14	15:32:49	2	LO	Batch Tank Level
Process\Ingred3\SUP_PV	15	15:32:25			Ingredient 3 Level
Process\Ingred1\SUP_PV	15	15:32:24			Ingredient 1 Level
Process\Ingred2\SUP_PV	16	15:32:24			Ingredient 2 Level
Process\Ingred2\SUP_PV	8	15:32:23	2	LO	Ingredient 2 Level
Process\Ingred3\SUP_PV	6	15:32:23	2	LO	Ingredient 3 Level
Process\Ingred1\SUP_PV	5	15:32:22	2	LO	Ingredient 1 Level
Process\Batch_Tank\PV	8	15:32:18	1	LOLO	Batch Tank Level
Process\Batch_Tank\PV	16	15:32:17	2	LO	Batch Tank Level
Process\Batch_Tank\PV	128	15:31:56			Batch Tank Level
Process\Batch_Tank\PV	140	15:31:54	2	HI	Batch Tank Level
Process\Ingred3\SUP_PV	4	15:31:14	1	LOLO	Ingredient 3 Level
Process\Ingred3\SUP_PV	13	15:31:12	2	LO	Ingredient 3 Level
Process\Ingred2\SUP_PV	4	15:31:06	1	LOLO	Ingredient 2 Level
Process\Ingred2\SUP_PV	13	15:31:03	2	LO	Ingredient 2 Level

The button bar can contain a variety of buttons and can be placed on any edge of the alarm summary.

The summary can list up to 1,000 alarm entries. As new alarms occur, they appear at the top of the list. When the summary becomes full, one alarm is removed from the bottom of the list for each new alarm that appears at the top. Alarms are also removed when they are out-of-alarm and acknowledged.

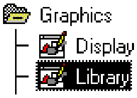
Filter alarms

To limit the information included in an alarm summary, filter out the information you don't want. You can filter information by tag name, tag type, alarm severity, and alarm state.

Assign colors to alarms

You can configure alarm incidents to be a different color. For example, you might configure alarms of low severity as blue, medium severity as yellow, and high severity as red. When the alarm is displayed, the operator can tell an alarm's severity at a glance. You can also configure different blink styles for different alarm severities, as well as for Out of Alarm and Fault State messages.

You can drag and drop an alarm summary from a graphic library into your display or you can create an alarm summary with the Alarm Summary tool.



To use an alarm summary from the graphic libraries, click the Library icon in the left pane of the Project Manager. The libraries are listed in the right pane of the Project Manager. Double-click the Alarm Information library to open it. Select the alarm summary and drag and drop it into your display.

Alarm
Summary tool

To create an alarm summary, click the Alarm Summary tool. Drag the mouse to draw a box the size you want for the alarm summary and then release the mouse. You will be presented with a blank alarm summary. To add headings, click the Insert menu. To add buttons, click Buttons on the Format menu.

Chapter

6

Creating tags

What is a tag?

A tag is a logical name for a variable in a device or in local memory (RAM). Tags that receive their data from an external source such as a programmable controller or server are referred to as device tags. Tags that receive their data internally from RSView32™ are referred to as memory tags.

Tags are stored in the tag database and their names are then used in other parts of RSView32. You can create tags in a combination of ways. You can:

- create tags as needed
- create many tags at once
- import tags from an Allen-Bradley® PLC database or from ControlLogix®
- create tags using the RSView32 Object Model and Visual Basic® or Visual Basic for Applications. For more information about using the RSView32 Object Model, see Chapter 8, *Using the RSView32 Object Model and VBA*. Also see Help.

RSView32 provides for OPC® 2.0 browsing of RSView32 tags.

Tag types

RSView32 uses the following tag types:

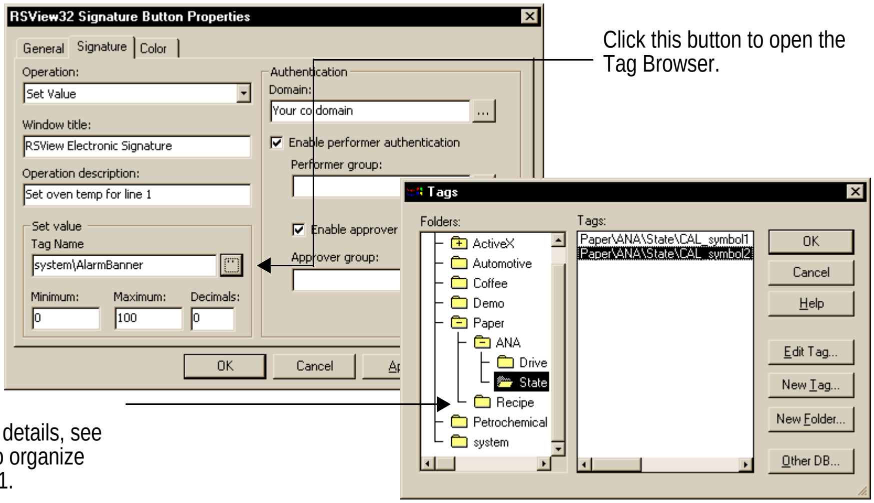
- **Analog tags** store a range of values.
- **Digital tags** store 0 or 1.
- **String tags** store ASCII strings, a series of characters, or whole words. The maximum string length is 255 characters.

- `System tags` store information generated while the system is running, including alarm information and the system time and date. RSView32 creates system tags when a project is created and stores the tags in the system folder in the tag database. You cannot edit or write to system tags, but you can use them anywhere you would use any other tag.

Creating tags as needed

You can create tags as you need them while working in other editors. To create a tag, do one of the following:

- in any field requiring a tag or an expression, type a tag name. If the tag doesn't exist in the tag database, you will be prompted to create the tag when you try to save. You can use the tag name without creating the tag, but be sure to create the tag later or errors will occur at runtime.
- click the Tags or ... (Selection) button, whichever is available, to open the Tag Browser. Use the Tag Browser to select, create, and edit tags.



RSView32 Signature Button Properties

Operation: Set Value
Window title: RSView Electronic Signature
Operation description: Set oven temp for line 1
Set value
Tag Name: system\AlarmBanner
Minimum: 0
Maximum: 100
Decimals: 0
Authentication
Domain: Your co domain
☑ Enable performer authentication
Performer group:
☑ Enable approver
Approver group:

Tags

Tags:
Paper\ANA\State\CAL_symbol1
Paper\ANA\State\CAL_symbol2

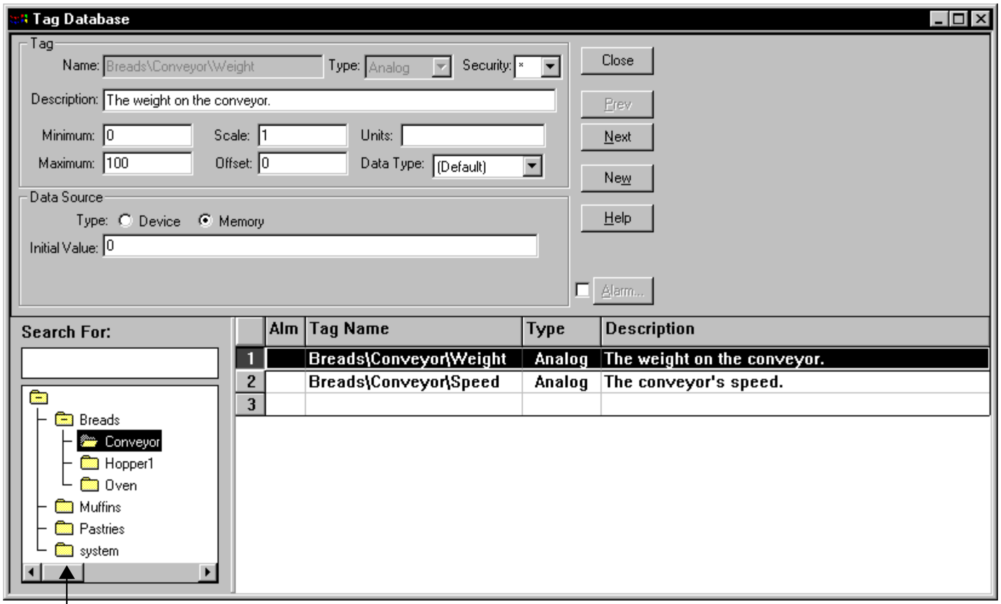
General
Signature
Color
...
OK
Cancel
Ap
Folders:
ActiveX
Automotive
Coffee
Demo
Paper
ANA
Drive
State
Recipe
Petrochemical
system
OK
Cancel
Help
Edit Tag...
New Tag...
New Folder...
Other DB...

Click this button to open the Tag Browser.

Organize tags into folders. For details, see "Using folders to organize tags" on page 71.

Creating many tags at once

To create many tags at once, use the Tag Database editor. You can organize tags into groups using folders. Using folders speeds up database creation because you can duplicate a folder and its tags in a single operation. For example, if you have several similar machines that require the same tags, you can create a folder called Machine1 and define its tags. To create the tags for Machine2, duplicate the folder and change the node name or address of each tag in the new folder.



Name: Breads\Conveyor\Weight
Type: Analog
Security: *
Description: The weight on the conveyor.
Minimum: 0
Scale: 1
Units:
Maximum: 100
Offset: 0
Data Type: (Default)
Type: ○ Device ● Memory
Initial Value: 0
☐ Alarm...

	Alm	Tag Name	Type	Description
1		Breads\Conveyor\Weight	Analog	The weight on the conveyor.
2		Breads\Conveyor\Speed	Analog	The conveyor's speed.
3				

Organize tags into folders. For details, see "Using folders to organize tags" on page 71.

You can also import tags created in other applications. To import tags, use the Database Import and Export Wizard. The Database Import and Export Wizard is available from the RSView32 Tools menu (on the Start menu, select Programs, Rockwell Software, RSView32 Tools, Database Import and Export Wizard).

For more information about using the wizard, see Database Import and Export Help.

Importing tags from an Allen-Bradley PLC database

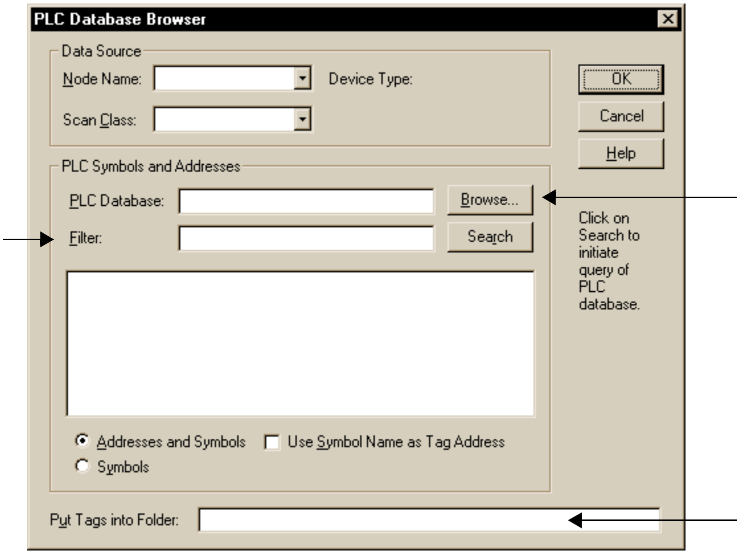
Button in Tag Database editor

You can selectively import tags from an Allen-Bradley PLC database into the RSView32 tag database. Tags imported in this way are copied into the database—they are not shared with the source database. This means changes to tags in RSView32 do not affect the database from which they've been imported and vice-versa.

Other DB...

Button in Tag Browser

To open the PLC Database Browser, click the Other DB button in the Tag Browser, or click the DB Browser button on the toolbar in the Tag Database editor.


PLC Database Browser
Data Source
Node Name:
Device Type:
Scan Class:
OK
Cancel
Help
PLC Symbols and Addresses
PLC Database:
Browse...
Filter:
Search
Put Tags into Folder:

● Addresses and Symbols ☐ Use Symbol Name as Tag Address
○ Symbols

Click on Search to initiate query of PLC database.

Filter and search for the tags you want to import.

To locate your database, click Browse.

To specify or create a folder for the tags, type the folder name here.

Importing ControlLogix tags

To import ControlLogix tags, use the Logix 5000 Tag Import utility. The Logix 5000 Tag Import utility is located on the RSView32 Tools menu (on the Start menu, select Programs, Rockwell Software, RSView32 Tools, Logix 5000 Tag Import).

For information about using the utility, see the Logix 5000 Tag Import Help.

Using folders to organize tags

To organize tags, create a folder and include tags that are related to one another. To separate the folder name from the rest of the tag name, use a backlash (\). For example, tags in the folder called Breads would start with Breads\. For greater organization, you can nest folders; for example, Breads\Baking\Oven.

For more information about organizing your tag database, see "Designing a database" on page 98.

Chapter

7

Setting up logging and security

Logging information

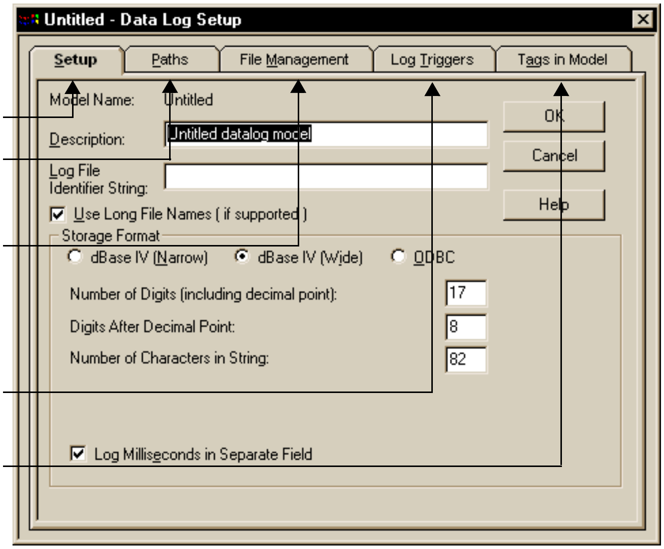
You can log:

- Activities. The activity log records information about various types of system activity, including command or macro usage, tag writes, system messages and errors, and communication errors. If you use the electronic signature button, the activity log records the name and comment of the operator who initiates the button's action, and, if required, the name and comment of the supervisor who authorizes the action.

  To set up activity logging, use the Activity Log Setup editor. To set up the electronic signature button, use the Graphic Display editor.
- Alarms. The alarm log records alarm incidents, including when a tag goes into alarm, when a tag goes out of alarm, and when an alarm is acknowledged. The name of the user who acknowledged the alarm is also logged. To set up alarm logging, use the Alarm Log Setup editor.
- Data (tag values). The data log records specific tag values, or data, under certain conditions. These conditions are defined by a data log model. To set up data logging, use the Data Log Setup editor.

Setting up logging

Activity logging, alarm logging, and data logging use similar editors to set up logging. For each type of logging, specify where to store log files, when to create and delete log files, and what particular information to log. The illustration below shows the Data Log Setup editor.



Model Name: Untitled
Description: Untitled datalog model
Log File Identifier String:
☑ Use Long File Names (if supported)
Storage Format
○ dBase IV (Narrow) ● dBase IV (Wide) ○ ODBC
Number of Digits (including decimal point): 17
Digits After Decimal Point: 8
Number of Characters in String: 82
☑ Log Milliseconds in Separate Field

Set up general aspects of the model.

Specify where to log the data to.

Specify when to create and delete log data.

Specify when to log tag values.

Specify which tags to log.

With data logging, you also specify which storage format you want—narrow dBASE IV, wide dBASE IV, or ODBC. This is not an option with the other types of logging.

For each type of logging, you can create up to 26 log files per day. As files are created, they are automatically named based on the date the file was created and the type of data it contains. For data logging only, if you choose to use long file names you can create up to 9,999 log files per day.

Viewing logged information

There are several ways to view logged information:

- **Activities**. View activity information in the Activity Bar and the Activity Log Viewer.
- **Alarms**. View alarm information in the Alarm Log Viewer and in alarm summaries.
- **Data (tag values)**. View tag data in realtime and historical trends. Realtime trends show data as it is being collected. Historical trends show data from a log file or ODBC database.

All logged information is stored in dBASE® IV (.DBF) format, which can easily be displayed or analyzed in third-party software such as Microsoft® Excel, Crystal Reports®, and Visual FoxPro® without file conversions or importing and exporting.

For data log only, you also have the option of storing data using the ODBC storage format, and viewing the data in an ODBC-compliant relational database application.

For activity and alarm logging, you have the option of exporting data to an ODBC-compliant database, and viewing the data in an ODBC-compliant relational database application.

Securing your system

You can set up security at the project level and the system level.

Project-level security controls which users or groups of users have access to certain features in your project. For example, you might not want all users to be able to change tag values, so you would restrict access to tags. You can also restrict access to graphic displays and RSView32 commands.

You can also use the signature button to verify and track actions such as tag writes and running commands. This feature, together with other RSView32™ security features, allows you to meet the security standards required for regulated manufacturing applications, for example those required for US Government 21 CFR Part 11 compliance.

System-level security locks users into your RSView32 project so they cannot exit to Windows®.

Setting up project-level security

Setting up security codes and user accounts

The first step in setting up security is assigning security codes. You can limit access to any RSView32 command, graphic display, or tag by assigning a security code to it. There are 17 codes—an asterisk (*) and the letters A through P. The asterisk allows unlimited access, and the letters limit access.

Assign security codes in the following places:

Assign a security code to	In the
An RSView32 command	Security Codes editor
A graphic display	Display Settings dialog box in the Graphic Display editor

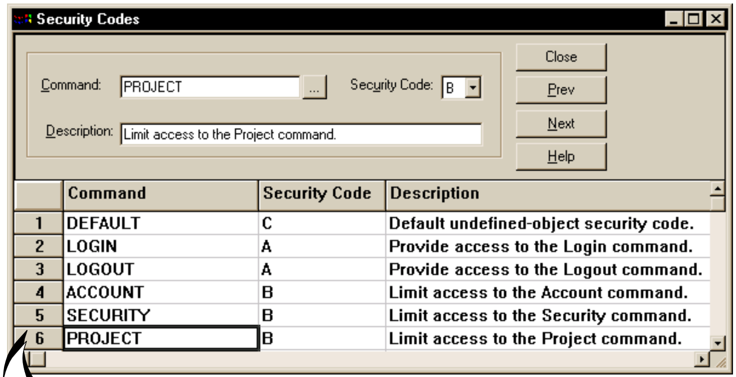
Assign a security code to	In the
A tag	Tag Database editor

Once you have assigned the security codes, you can then assign the codes to users or groups of users. In this way, you can limit users' ability to run commands, open displays, and write to tags. Use the User Accounts editor to assign security codes to users.

When adding users to RSView32, you can enter user names and passwords in the User Accounts editor, or, if you are using Windows Vista, Windows Server 2003, Windows XP or Windows 2000, you can use the Windows user list instead of creating a custom list in RSView32. No matter which method you use, you still have to assign security access to the individual users.

Security is active whenever a project is loaded. If no user is logged into the project, the default user (from the User Accounts editor) is active.

Assign security codes to commands . . .



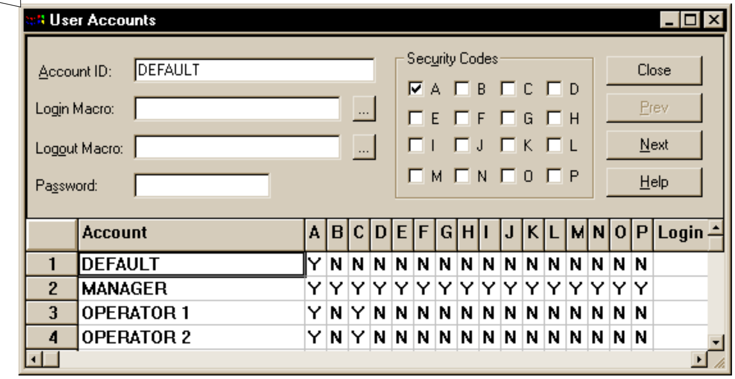
Command: PROJECT

Security Code: B

Description: Limit access to the Project command.

	Command	Security Code	Description
1	DEFAULT	C	Default undefined-object security code.
2	LOGIN	A	Provide access to the Login command.
3	LOGOUT	A	Provide access to the Logout command.
4	ACCOUNT	B	Limit access to the Account command.
5	SECURITY	B	Limit access to the Security command.
6	PROJECT	B	Limit access to the Project command.

. . . and then assign codes to users.



Account ID: DEFAULT

Login Macro:

Logout Macro:

Password:

Security Codes

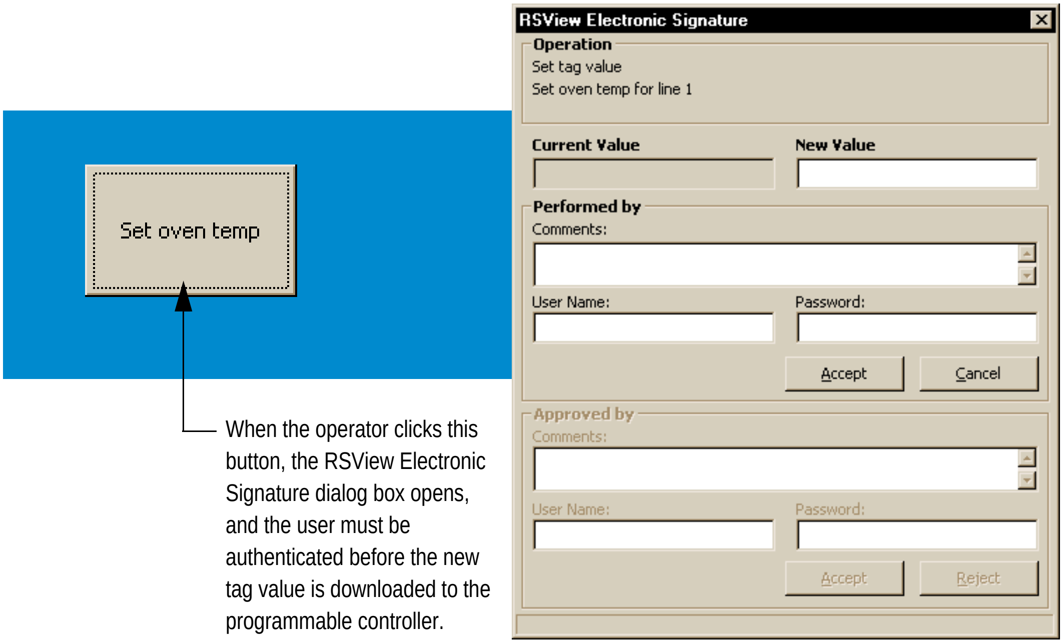
☑ A ☐ B ☐ C ☐ D
☐ E ☐ F ☐ G ☐ H
☐ I ☐ J ☐ K ☐ L
☐ M ☐ N ☐ O ☐ P

	Account	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Login
1	DEFAULT	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
2	MANAGER	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
3	OPERATOR 1	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	
4	OPERATOR 2	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	

In the above example, the Default user has access only to security code “A”. That way, when no user is logged in, there is no access to any part of the project other than the Login and Logout commands. The manager has access to all security codes, so is able to access all parts of the project. The operators have access only to security codes “A” and “C”.

Setting up electronic signature buttons

In addition to limiting access on a tag-by-tag or command-by-command basis, you can use the electronic signature button to keep track of who initiates actions such as tag writes and running commands. You can also require that the action is approved by a pre-authorized verifier before the action is initiated.


Set oven temp
RSView Electronic Signature
Operation
Current Value
New Value
Performed by
Comments:
User Name:
Password:
Accept
Cancel
Approved by
Comments:
User Name:
Password:
Accept
Reject

Set tag value
Set oven temp for line 1

When the operator clicks this button, the RSView Electronic Signature dialog box opens, and the user must be authenticated before the new tag value is downloaded to the programmable controller.

You can use the electronic signature button to secure these operations:

- setting a tag value
- issuing an RSView32 command

Add the electronic signature button to your graphic displays in the Graphic Display editor.

At runtime, the operator must enter a name, password, and comment before the action assigned to the button is initiated. Optionally, you can also require that a supervisor approve the action by entering a name, password, and comment. The names and comments are recorded in the activity log, allowing you to keep a permanent record of who initiated the actions and why.

Setting up system-level security

System-level security locks users into your RSView32 project so they can't exit to the Windows operating system or switch to other Windows programs. To set up system-level security, set up your displays as described below and use the additional security appropriate for your operating system.

Setting up displays

No matter which operating system you're using, you can help prevent users from going outside of the RSView32 project by setting up your displays as follows:

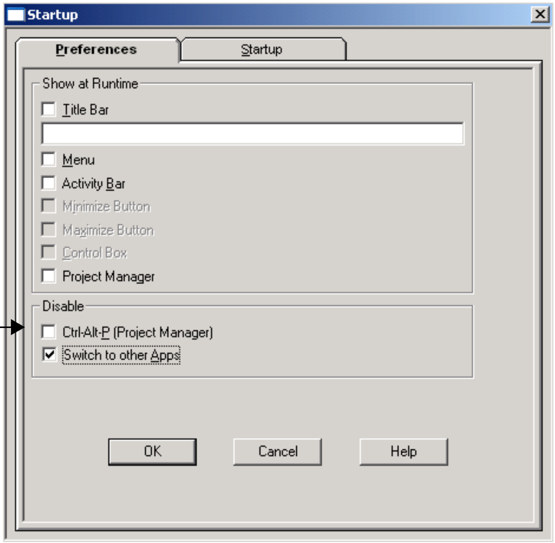
- do not include title bars or minimize and maximize buttons on graphic displays by clearing the appropriate check boxes in the Display Settings dialog box in the Graphic Display editor
- ensure RSView32 occupies the entire screen by maximizing RSView32 and removing the Windows taskbar.

  To maximize RSView32, place a shortcut to RSView32 in the Windows startup folder, and set the shortcut's run setting to Maximized. For details about creating shortcuts, see your Windows documentation.

  To remove the taskbar in Windows Vista, Windows Server 2003, Windows XP and Windows 2000, clear the Always on top check box and select the Auto hide check box in the Taskbar Properties dialog box.

Disabling Windows shortcut keys

To disable the shortcut keys, use the Startup editor.



☐ Title Bar
☐ Menu
☐ Activity Bar
☐ Minimize Button
☐ Maximize Button
☐ Control Box
☐ Project Manager
☐ Ctrl-Alt-P (Project Manager)
☑ Switch to other Apps

Check all these boxes to disable access to the Project Manager and to disable the Windows shortcut keys.

Replacing the desktop in Windows Vista, Windows XP, Windows 2000 and Windows 2003

The Win2K XP DeskLock tool is included on the RSView32 Resources CD, and on the RSView32 Tools menu (on the Start menu, select Programs, Rockwell Software, RSView32 Tools, and then the tool for your operating system).

This tool can have far-reaching effects on your operating system. The DeskLock tool replaces the standard Windows Vista, Windows XP, Windows 2000 and Windows 2003 logon and desktop with a customized desktop. The desktop is intended to prevent operators from having access to operating system functions such as restarting Windows or shutting down tasks.

Before using the DeskLock tool, read the DeskLock Help file completely.

Chapter

8

Using the RSView32 Object Model and VBA

About the RSView32 Object Model and VBA

The RSView32™ Object Model and Microsoft® Visual Basic® for Applications (VBA) provide a complete development environment for customizing and extending the capabilities of RSView32.

For example, use the RSView32 Object Model and VBA to:

- create code (VBA subroutines) that does conditional branching
- tie RSView32 data to other third-party applications such as Microsoft Access or Microsoft SQL Server
- control RSView32 from within a VBA subroutine by issuing RSView32 commands

To customize and extend the capabilities of RSView32, use the:

VBA integrated development environment. The Microsoft Visual Basic for Applications integrated development environment (IDE). Use the IDE to create, run, and debug VBA subroutines, and then call these subroutines from within RSView32.

RSView32 Object Model. A group of objects that represent features of RSView32. By creating VBA code that interacts with the RSView32 objects, you can manipulate RSView32 and automate processes.

How RSView32 uses VBA code

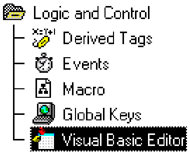
RSView32 uses the term “code” to refer to a VBA subroutine. You can run VBA code from anywhere you can run an RSView32 command. For example, in the RSView32 Events editor, create an event to run VBA code when an alarm occurs, or in the RSView32 Graphic Display editor, create a button that runs VBA code when the button is selected.

The VBA integrated development environment

RSView32 includes Microsoft Visual Basic for Applications. Use the VBA integrated development environment (IDE) to create, test, and debug VBA subroutines, and then run these subroutines from within RSView32.

This chapter provides a brief description of the IDE but does not include detailed information about VBA—it is assumed that you are familiar with the VBA environment and programming language. This chapter highlights aspects of VBA that are unique to RSView32 and describes how to use VBA from within RSView32. For information about how to access VBA information, see "Using VBA Help" on page 96.

Opening the IDE window

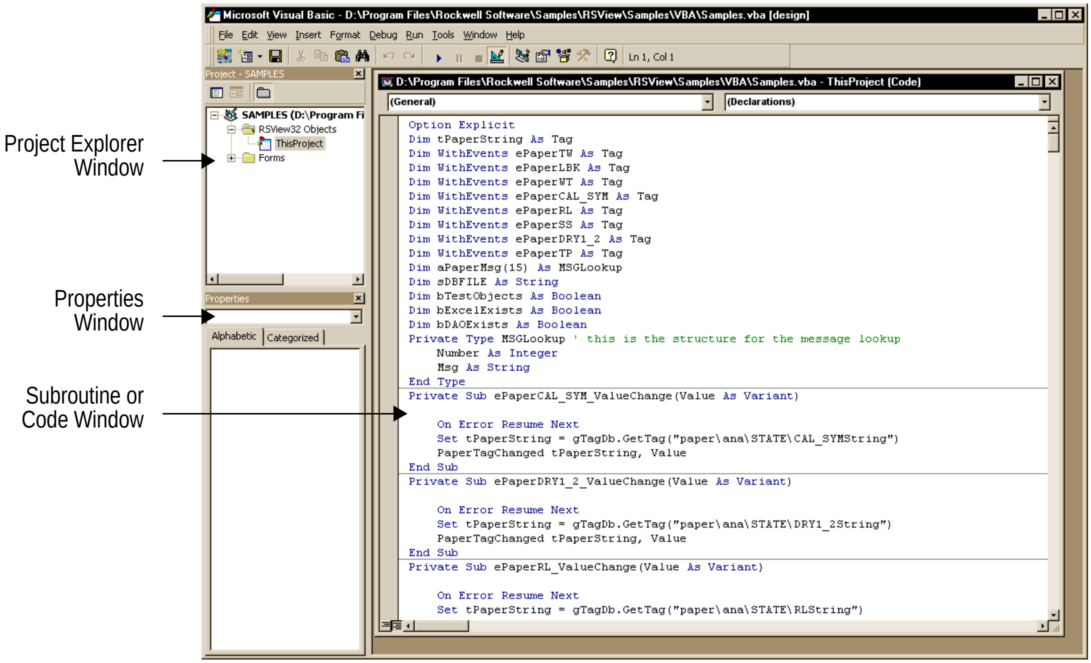


To open the VBA IDE:

1. In the RSView32 Project Manager, open the Logic and Control folder.
2. Open the VBA IDE by doing one of the following:
   - double-click Visual Basic Editor
   - right-click Visual Basic Editor, and then click Show

Parts of the IDE window

The illustration below shows the main parts of the IDE window. Each part is then described in more detail.


Project Explorer Window
Properties Window
Subroutine or Code Window
Microsoft Visual Basic - D:\Program Files\Rockwell Software\Samples\RSView\Samples\VBA\Samples.vba [design]
File Edit View Insert Format Debug Run Tools Window Help
Ln 1, Col 1
Project - SAMPLES
SAMPLES (D:\Program Fi
RSView32 Objects
ThisProject
Forms
Properties
Alphabetic
Categorized
D:\Program Files\Rockwell Software\Samples\RSView\Samples\VBA\Samples.vba - ThisProject (Code)
(General)
(Declarations)

```
Option Explicit
Dim tPaperString As Tag
Dim WithEvents ePaperTW As Tag
Dim WithEvents ePaperLBK As Tag
Dim WithEvents ePaperWT As Tag
Dim WithEvents ePaperCAL_SYM As Tag
Dim WithEvents ePaperRL As Tag
Dim WithEvents ePaperSS As Tag
Dim WithEvents ePaperDRY1_2 As Tag
Dim WithEvents ePaperTP As Tag
Dim aPaperMsg(15) As MSGLookup
Dim sDBFILE As String
Dim bTestObjects As Boolean
Dim bExcelExists As Boolean
Dim bDAOExists As Boolean
Private Type MSGLookup ' this is the structure for the message lookup
    Number As Integer
    Msg As String
End Type
Private Sub ePaperCAL_SYM_ValueChange(Value As Variant)

    On Error Resume Next
    Set tPaperString = gTagDb.GetTag("paper\ana\STATE\CAL_SYMString")
    PaperTagChanged tPaperString, Value
End Sub
Private Sub ePaperDRY1_2_ValueChange(Value As Variant)

    On Error Resume Next
    Set tPaperString = gTagDb.GetTag("paper\ana\STATE\DRY1_2String")
    PaperTagChanged tPaperString, Value
End Sub
Private Sub ePaperRL_ValueChange(Value As Variant)

    On Error Resume Next
    Set tPaperString = gTagDb.GetTag("paper\ana\STATE\RLString")
```

Project Explorer Window

When you start the Visual Basic Editor for the first time, it creates a VBA project with the same name as the RSView32 project. This project contains an RSView32 Objects folder, which contains an object called ThisProject, that represents all the subroutines written for this VBA project. The object can contain any number of subroutines, and these subroutines are visible from within the RSView32 Command Wizard.

You can create additional VBA objects and user forms, but these are not directly accessible from within RSView32. To use the subroutines in these objects and to use the user forms, you must call them from subroutines that exist in the VBA project object, ThisProject.

Properties Window

This window lists the property settings for the user forms and the objects on those forms. You cannot call forms directly from RSView32. To use a form, call the form from a subroutine in the VBA project object, ThisProject.

Subroutine or Code Window

This window is where you write and edit your VBA subroutines. When you are creating VBA code that you want to call from within RSView32, be sure the project in the VBA code window is ThisProject. The title bar of the code window displays the path and name of the project that is open.

Quick Start steps

There are only two main steps to using the RSView32 Object Model and VBA. These are:

Step 1 ■ Create your VBA code

Using the Visual Basic programming language, create subroutines in the code window for ThisProject. Create subroutines that work with the RSView32 objects.

For details, see VBA Help. For information about accessing Help for VBA, see "Using VBA Help" on page 96.

Step 2 ■ Call your VBA code from within RSView32

In RSView32, call the subroutines in ThisProject to trigger actions in response to events. To call a subroutine, issue the RSView32 VbaExec <*subroutine name*> command from a macro, an Action field, or a command line.

For details, see "Running VBA code" on page 87.

What is a subroutine?

A subroutine is RSView32's term for a Visual Basic subroutine. When you start the Visual Basic Editor, an object called ThisProject is created in the Project Explorer Window. This object can contain any number of subroutines and these subroutines can be called directly from RSView32. The subroutines you create can use other VBA subroutines, functions, user forms, classes, and modules.

When to use VBA code instead of an RSView32 macro

With an RSView32 macro, you can create a list of RSView32 commands that will run in response to an action. VBA code allows you to do much more. For example, with VBA code you can:

- create conditional logic
- perform operations other than executing commands, such as adding tags to the RSView32 database
- reference third-party object models such as the Microsoft Access database model
- use VBA user forms that contain native VB and ActiveX® controls

A macro, however, is still useful. When all you need is to issue a series of RSView32 commands, a macro is the most efficient way to do this.

For VBA code examples, see Help for the Object Browser. For information about accessing Help for the Object Browser, see "Opening Help from the Object Browser" on page 94.

Running VBA code

To run VBA code, issue the VBAExec <*subroutine name*> command. Use this command in any of the following places:

- in a field that requires you to enter an action. For example, use the VBAExec command in the Action field of the button object so when a user selects the button, VBA code runs.
- in a macro
- in a command line

The syntax for the command is:

VBAExec <*subroutine name*> [*parameter 1*], [*parameter 2*]

where

subroutine name—is the name of any subroutine in the ThisProject object. The subroutine name is not case sensitive.

parameter—is any parameter that a particular subroutine requires. Separate parameters with commas. The parameter can be of any data type, except Object.

VBA code can also be triggered by an event from an Activity, Tag, or Tags object.

How RSView32 runs VBA code

VBA subroutines run on a first-in, first-out basis. Each subroutine runs to completion before the next subroutine is started. For that reason, do not create subroutines that wait for user input before proceeding because if a user does not respond, all processing of subroutines stops. For example, if you create a dialog box that requires user input and no one responds to that dialog box, all processing of subroutines stops until the user input is received (although RSView32 continues to run normally).

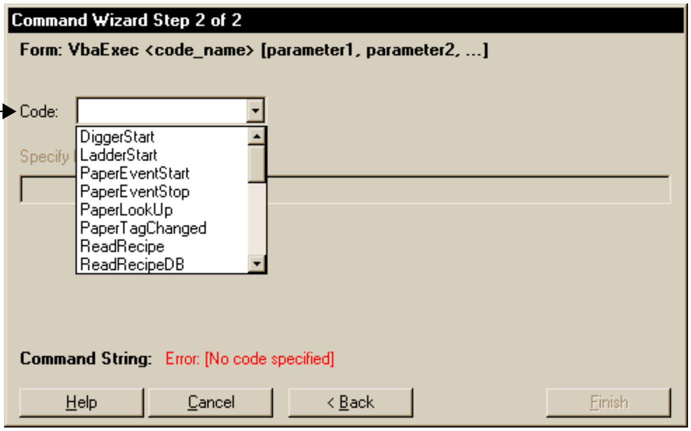
If the subroutine you are running contains events, they continue to be fired, even after the subroutine has run. To stop events from firing, you must set the value of the event variable to Nothing before exiting the subroutine. See Help for an example. To locate the Help topic, on the Contents tab of the RSView32 Help dialog box, double-click RSView32 Object Model, double-click Examples, and then double-click Tag Events.

Viewing VBA subroutines

VBA subroutines you create are listed in the RSView32 Command Wizard. This list of subroutines is not visible anywhere else in RSView32.

To view the list of subroutines:

1. Open the Command Wizard by doing any one of the following:
   - double-click in an Action field or, in the Macro editor, double-click anywhere in the editor
   - click the … button beside an Action field or any field requiring an RSView32 command
   - click Commands on the Edit menu in the Command Line, Security Codes editor, Events editor, and Macro editor
2. In the Command Wizard, click Logic and Control, click Visual Basic Editor, click Runtime, and then click VbaExec.
3. In the Command Wizard window, click Next. This will take you to Step 2 of the Wizard where you'll be able to see the list of subroutines in the Subroutine list.



Command Wizard Step 2 of 2

Form: VbaExec <code_name> [parameter1, parameter2, ...]

Command String: Error: [No code specified]

Code:
Specify
DiggerStart
LadderStart
PaperEventStart
PaperEventStop
PaperLookUp
PaperTagChanged
ReadRecipe
ReadRecipeDB
Help
Cancel
< Back
Finish

Scroll through this list to see the subroutines in the project.

Opening the VBA IDE for editing

You can open the VBA IDE for editing by issuing the VbaEdit [*subroutine name*] command. Like the VBAExec command, you can enter this command in any Action field, in a macro, and in a command line.

The syntax for the command is:

VbaEdit [*subroutine name*]

where *subroutine name* is the name of any VBA subroutine in the project. If you do not specify a subroutine name, the VBA IDE opens at the first subroutine. If you specify a subroutine name, the VBA IDE opens with the cursor at the specified Sub statement. The subroutine name is not case sensitive.

You can also open the VBA IDE by double-clicking Visual Basic Editor in the Logic and Control folder.

The RSView32 Object Model

The RSView32 Object Model contains OLE automation objects that represent RSView32 features. Using these objects, you can interact with an RSView32 project by running one of the subroutines you have created.

The RSView32 Object Model contains the following objects:

`Activity`. This object represents the RSView32 Activity Log. Use this object to log activities to the RSView32 activity log file and, if RSView32 is set up to do so, to the activity bar or printer.

`AnalogTagAlarmCfg`. Use this object to read and write an analog tag's alarm configuration information.

`AlarmThreshold`. This object represents one of the eight alarm thresholds for an analog tag. Use this object to read and write an analog tag's alarm threshold configuration information.

`AlarmThresholds`. This object represents all of the available alarm thresholds for an analog tag. Use this object to read and write an analog tag's alarm threshold configuration information.

`Application`. This object represents the RSView32 application. Use this object to get information about the RSView32 application.

`Channel`. This object represents an RSView32 channel. Use this object to read and write a channel's configuration information.

`Channels`. This object represents all of the available channels. Use this object to get a Channel object.

`Command`. This object represents the RSView32 command server. Use this object to issue an RSView32 command.

`DataLog`. This object represents the RSView32 data log system. Use this object to access the RSView32 data log system.

`DataLogModel`. This object represents a data log model in your project. Use this object to add records, access files for the data log model, read records, and write to records.

`DataLogModelCfg`. Use this object to configure a data log model in your project.

`DataLogModels`. This object represents all of the data log models in your project. Use this object to add a new model, copy an existing model, get a model, and remove a model.

`DataLogNarrowRecord`. This object represents one record of a narrow-format data log model. Use this object to manage the tag information (value, status, and name) for the record and to share data with a DataLogWideRecord object.

`DataLogNarrowRecords`. This object represents all of the DataLogNarrowRecord objects in a data log model. Use this object to get a DataLogNarrowRecord object.

`DataLogTagValue`. This object represents the Tag Name, Value and Status information for a data log tag or record. A wide format database record (DataLogWideRecord) has a collection of DataLogTagValue objects for each record. The narrow format database record (DataLogNarrowRecord) has only one DataLogTagValue object for each record.

`DataLogTagValues`. This object represents all of the DataLogTagValue objects in a wide data log record. Use this object to maintain a collection of data log value objects (column pairs of value/status for a given tag) in a wide format database record.

`DataLogWideRecord`. This object represents one record of a wide-format data log model. Use this object to manage the tag information (value, status, and name) for the record.

`DataLogWideRecords`. This object represents all of the DataLogWideRecord objects in your model. Use this object to get a DataLogWideRecord object.

`DigitalTagAlarmCfg`. Use this object to read and write a digital tag's alarm configuration information.

`Folder`. This object represents a folder in the RSView32 tag database. Use this object to navigate to other folders or tags in the tag database.

`Folders`. This object represents all of the folders contained in a folder. Use this object to navigate to other folders. You can create and delete folders using this collection.

`Node`. This object represents an RSView32 node. Use this object to read and write a node's configuration information.

`Nodes`. This object represents all of the configured nodes. Use this object to get a Node object. You can create and delete nodes using this collection.

`ODBCAdministrator`. Use this object to list the available ODBC data sources, and to create and validate tables within an existing data source.

`Project`. Use this object to retrieve information about the currently-loaded RSView32 project and to access other RSView32 objects.

`Security`. Use this object to retrieve security information about the current user, or to change the current user (that is, to log the current user out, and to log another user in).

`Tag`. This object represents an RSView32 tag. Use this object to read and write a tag's value, and read and write tag configuration information.

`TagDb`. This object represents the RSView32 tag database. Use this object to create and delete RSView32 tags; to create, delete, and duplicate folders, and to get or query for Tag objects.

`Tags`. This object represents a group of tags. Use this object to work with tags as a collection.

For detailed information about the properties, methods, and events of these objects, see Help for the Object Browser. For information about accessing Help for the Object Browser, see "Opening Help from the Object Browser" on page 94.

Global object variables

A global object variable is a predefined object that is available, for convenience, to all subroutines. RSView32 creates these objects when it creates a VBA project. Use these objects as you would any other RSView32 object.

The following global object variables are available:

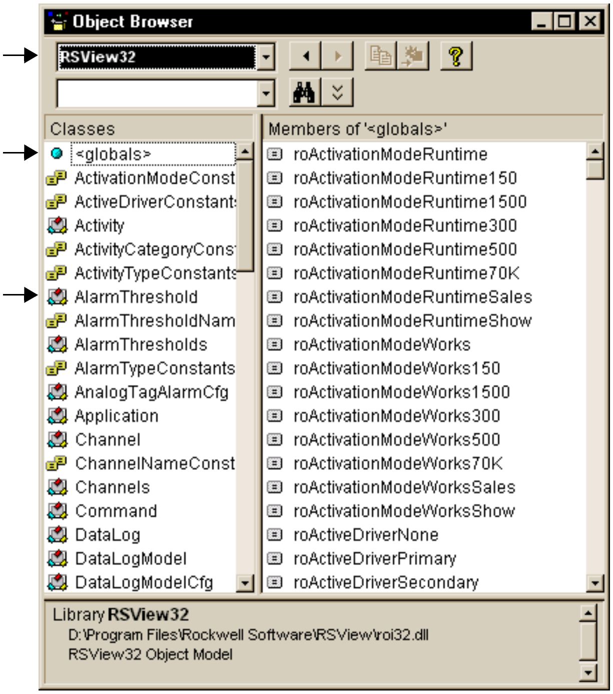
- gActivity
- gChannels
- gCommand
- gDataLog
- gNodes
- gODBCAdministrator
- gProject
- gSecurity
- gTagDb

Viewing the objects

Use the Object Browser to view the RSView32 objects in the VBA IDE.

To open the Object Browser, do one of the following:

- right-click anywhere in the Code window, and then click Object Browser on the popup menu
- on the View menu, click Object Browser
- press F2



Select RSView32 to display only RSView32 objects.

Select globals to view all RSView32 constants.

Select any object to view its properties, methods, and events.

RSView32

Classes

- <globals>
- ActivationModeConst
- ActiveDriverConstant:
- Activity
- ActivityCategoryCons
- ActivityTypeConstants
- AlarmThreshold
- AlarmThresholdNam
- AlarmThresholds
- AlarmTypeConstants
- AnalogTagAlarmCfg
- Application
- Channel
- ChannelNameConst
- Channels
- Command
- DataLog
- DataLogModel
- DataLogModelCfg

Members of '<globals>'

- roActivationModeRuntime
- roActivationModeRuntime150
- roActivationModeRuntime1500
- roActivationModeRuntime300
- roActivationModeRuntime500
- roActivationModeRuntime70K
- roActivationModeRuntimeSales
- roActivationModeRuntimeShow
- roActivationModeWorks
- roActivationModeWorks150
- roActivationModeWorks1500
- roActivationModeWorks300
- roActivationModeWorks500
- roActivationModeWorks70K
- roActivationModeWorksSales
- roActivationModeWorksShow
- roActiveDriverNone
- roActiveDriverPrimary
- roActiveDriverSecondary

Library **RSView32**
D:\Program Files\Rockwell Software\RSView\roi32.dll
RSView32 Object Model

To view the global object variables, select RSView32 in the first list.

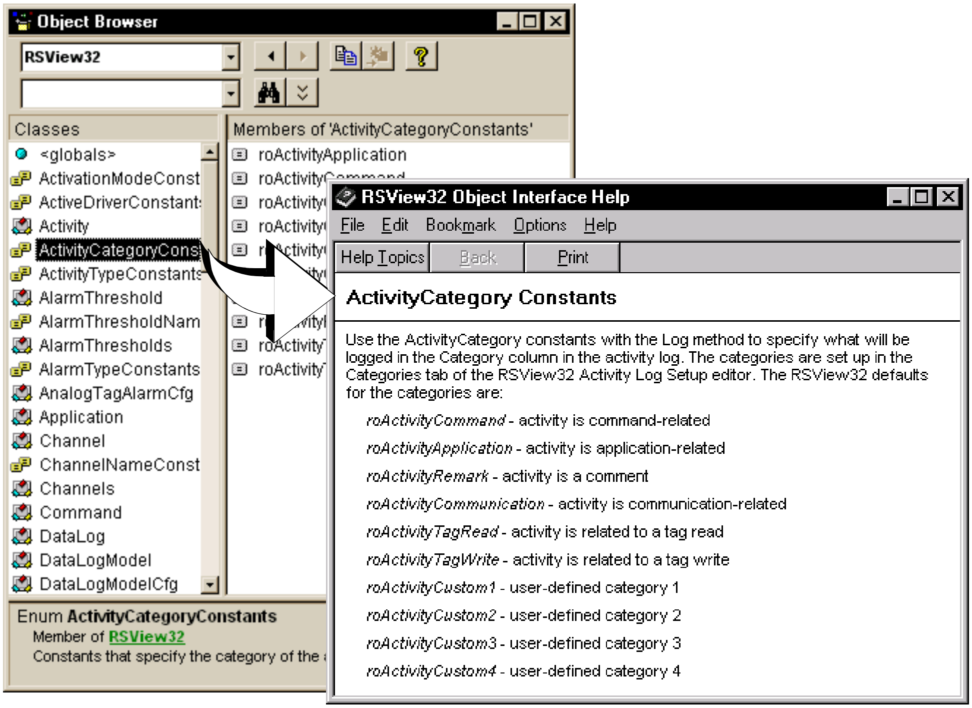
Getting Help on RSView32 objects

RSView32 contains Help for every RSView32 object, including a detailed description of the object's properties, methods, and events. To open Help, select an item in the Object Browser, and then press F1or the ? key on the keyboard.

Opening Help from the Object Browser

To open Help from the Object Browser:

1. Open the Object Browser.
2. In the list at the top of the window, select RSView32.
3. Under Classes or Members, highlight an item and then press F1 or the ? key on the keyboard.


Object Browser
RSView32
Classes
<globals>
ActivationModeConst
ActiveDriverConstant
Activity
ActivityCategoryCons
ActivityTypeConstants
AlarmThreshold
AlarmThresholdNam
AlarmThresholds
AlarmTypeConstants
AnalogTagAlarmCfg
Application
Channel
ChannelNameConst
Channels
Command
DataLog
DataLogModel
DataLogModelCfg
Members of 'ActivityCategoryConstants'
roActivityApplication
roActivity
RSView32 Object Interface Help
File
Edit
Bookmark
Options
Help
Help Topics
Back
Print

Enum **ActivityCategoryConstants**
Member of RSView32
Constants that specify the category of the

ActivityCategory Constants

Use the ActivityCategory constants with the Log method to specify what will be logged in the Category column in the activity log. The categories are set up in the Categories tab of the RSView32 Activity Log Setup editor. The RSView32 defaults for the categories are:

roActivityCommand - activity is command-related

roActivityApplication - activity is application-related

roActivityRemark - activity is a comment

roActivityCommunication - activity is communication-related

roActivityTagRead - activity is related to a tag read

roActivityTagWrite - activity is related to a tag write

roActivityCustom1 - user-defined category 1

roActivityCustom2 - user-defined category 2

roActivityCustom3 - user-defined category 3

roActivityCustom4 - user-defined category 4

To view the contents for the entire Help file for the RSView32 Object Model:

1. Follow the steps above to open a Help topic.
2. In the Help window, click Help Topics.

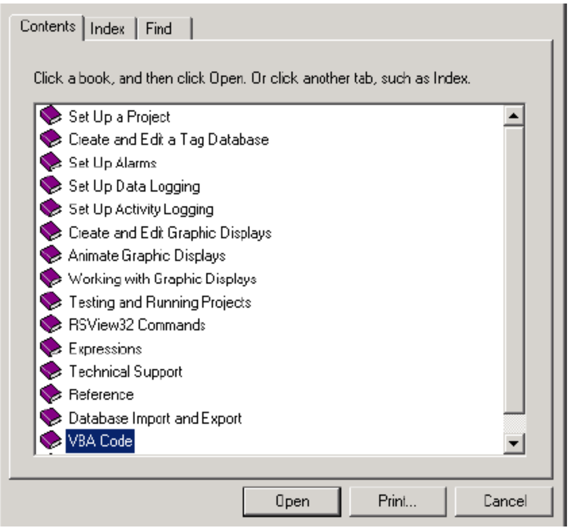
Opening Help from the Code Window

To open Help from the Code Window, in a line of code, highlight an RSView32 object name or highlight an RSView32 object's property or method, and then press F1.

Opening Help from the RSView32 Help Contents window

To open VBA Code Help from RSView32 Help:

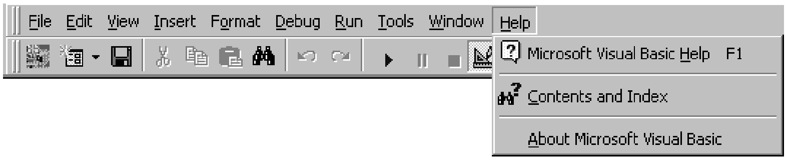
1. On the RSView32 menu bar, click Help, and then click Contents.
2. In the Contents window, double-click VBA Code for an overview, or double-click RSView32 Object Model for details about the objects.


Contents
Index
Find
Click a book, and then click Open. Or click another tab, such as Index.
Set Up a Project
Create and Edit a Tag Database
Set Up Alarms
Set Up Data Logging
Set Up Activity Logging
Create and Edit Graphic Displays
Animate Graphic Displays
Working with Graphic Displays
Testing and Running Projects
RSView32 Commands
Expressions
Technical Support
Reference
Database Import and Export
VBA Code
Open
Print...
Cancel

Using VBA Help

VBA comes with its own Help. To access this Help, do any one of the following:

- click Help on the toolbar, and then click a menu item


File
Edit
View
Insert
Format
Debug
Run
Tools
Window
Help
Microsoft Visual Basic Help F1
Contents and Index
About Microsoft Visual Basic

- in any area of the IDE, press F1

VBA documentation

If you're new to Visual Basic, you might want to look at the following Microsoft publications:

- Visual Basic Getting Started
- Visual Basic Programmers Guide

Chapter

9

Planning a project

The planning process

A well-designed project requires planning. To help you plan, this chapter provides guidelines for:

- understanding the process you're automating
- collecting data
- designing a database
- designing graphic displays
- using trends
- designing a secure system

Understanding the process

Gather information from a variety of sources so you have a complete and detailed understanding of the process you're automating.

Specifically, you should:

- talk to operators and other experts who are going to use the system. Find out what information they need to optimize plant operations.
- talk to management and MIS (Management Information Systems) staff to find out what information they need to support planning decisions
- break up each section of the process into its constituent parts
- determine what type of communications you'll be using—direct driver, OPC®, or DDE communications
- determine which process variables need to be accessed and identify their locations in the programmable controllers

Collecting data

When planning data collection, design your system so only essential data is collected. Limiting data collection is important because collection activities require substantial processing power and generate a lot of traffic on the communication channel or network.

Keep data collection requirements in mind when designing the layout of the programmable controller data tables and the tag database. Ideally, tag addresses should reference contiguous blocks of programmable controller data tables to reduce highway traffic and optimize system response.

Designing a database

Take the time to plan your tag database. A good design helps reduce the time required for maintenance and can improve programmable controller-to-RSView32 response time.

Collect information

Before you begin creating the database, collect the following information:

- flowcharts of your processes (or process and instrument diagrams)
- list of programmable controller data table or register addresses your project will be accessing
- alarm requirements (for more detail, see “Planning alarms” below)

Organize tags

Before creating tags:

- develop naming conventions for tags, choosing names that are familiar and logical to everyone. This makes troubleshooting easier.
- group related tags

  Group tags in the way that makes most sense for your application. For example, group all similar devices or group related areas of the plant floor.

  When creating tags, place related tags into folders. For greater organization, nest folders.

Planning alarms

Before configuring alarms, plan:

- what conditions will trigger alarms
- how operators will be notified of those alarms
- what information you want alarm messages to contain
- what actions will occur in response to those alarms
- which alarms will require additional actions that you can supply using a macro

Planning graphic displays

When planning displays, determine the best way for users to navigate through your displays and develop a template to establish a common look and feel for your displays.

Develop a hierarchy of displays

A hierarchy is a series of graphic displays that provide progressively more detail as users move through them. A hierarchy should meet the needs of the various users, including managers, supervisors, and operators.

Well-organized graphic displays present information clearly and consistently and guide users through the system. Before designing individual graphic displays, plan an overall display hierarchy and plan how users will navigate through the hierarchy.

Create a template to ensure consistency

It is possible to keep a consistent appearance among all the displays in a project by presenting the same pieces of information in the same place on each display. To ensure uniformity, develop a display with common elements that acts as a template. Each time you develop a new display, start with a copy of the template.

For example, the template could contain:

- company logo
- title
- date and time
- navigational buttons

When designing displays, practicing good visual design principles helps users and increases their efficiency. Aim for these important design principles:

Consistency

- Be consistent with your use of symbols and color.
- Be consistent with button labels and button placement.

  When you design several displays, place the same kinds of buttons in the same positions. For example, if you have a Start button in a certain position in one display, don't put a Stop button in the same position in the next display.

Clarity

- Use symbols that are easily recognizable. For example, use the conventional ISA symbols for tanks and valves.
- Don't overload the screen with information.
- Use standard, clear terminology, and avoid abbreviations or acronyms that the user might not understand.
- Use colors with recognizable meanings. For example, in North America the colors red and green often mean stop and start. Keep color meanings consistent by assigning red only to Stop buttons, and green only to Start buttons.

  Some people are color blind to red and green so don't rely on color alone to establish meaning.
- Use high contrast color combinations, such as yellow on blue.

Usability

- If you're designing for a touch screen, don't place important buttons where they'll be blocked by a pop-up window. The user can't press a covered button. Also, ensure the button is large enough for users to touch easily.
- Ensure there is always a clear way to move between displays.

Using trends

When planning trends, consider how they will be used. For example, will the trend be used to:

- analyze process trends
- monitor production efficiency
- archive process variables to ensure compliance with government regulations

Based on such considerations, you can determine:

- which tags need to be plotted on the same trend
- which tags need to be logged by using a historical trend

Designing a secure system

When deciding on your security requirements, consider whether to:

- restrict access to every project component to prevent accidental changes or is limited access enough
- restrict access to certain plant areas
- have everyone log on
- design your system to meet the security standards required for US Government 21 CFR Part 11 compliance

Based on these considerations, you can set up security for individual users or groups of users. For example, you might want to set up groups of users, such as a manager group and a worker group.

Customizing the system, and integrating with other applications

Automating application configuration

When planning your application, determine which routine maintenance activities you could automate using the RSView32 Object Model with Visual Basic® or Visual Basic for Applications (VBA). For example, you might want to have RSView32 generate tags automatically, allowing you to add similar product lines to your plant quickly and easily.

Using data with other applications

If you regularly require RSView32 data for use in programs such as Microsoft® Excel, or PowerPoint, consider using VBA to extract the data from RSView32 automatically.

Customizing the system

Adding alarm events

You can write your own alarm detection algorithms using PLC logic, Visual Basic or VBA, and you can then create events in RSView32 to respond to the algorithms.

Validating operator input

To validate operator input, use the RSView32 Object Model with Visual Basic or VBA. In Visual Basic or VBA, create your own pop-up dialog boxes for data entry. Use Visual Basic or VBA logic to validate the operator's input, for example to ensure that the value an operator enters for a tag falls within 10% of the value of another tag.

Another option is to use the electronic signature button, which allows you to specify a range of values for operator input. You can also set up the button so that the operator's data must be approved by a supervisor before the button's action is initiated. You can use the button to initiate tag writes and to run commands.

Designing intuitive graphic displays

Use the RSView32 Object Model to populate VBA form objects with data, for use in graphic displays. For example, use list boxes or combo boxes in graphic displays to allow operators to select options such as recipe items.

Chapter

10 Getting the information you need

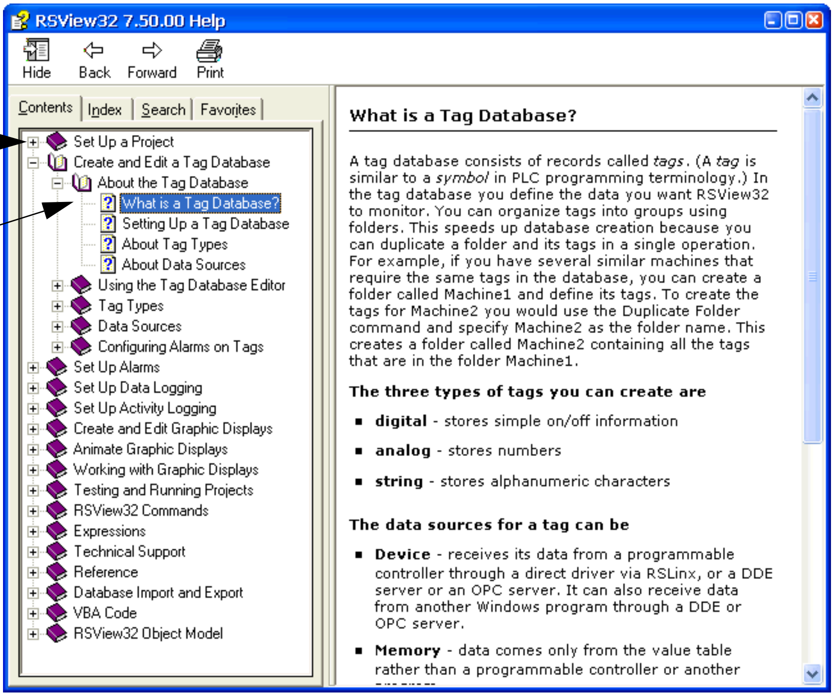
Using RSView32 Help

RSView32 Help provides step-by-step procedures and reference information for working with all the features in RSView32. To open Help while RSView32 is running:

- click the Help button on any window
- on the RSView32 menu bar, click Help, and then click Contents
- press the F1 key

Viewing the Help contents

For an overview of RSView32 Help, click the Contents tab.


RSView32 7.50.00 Help
Hide
Back
Forward
Print
Contents
Index
Search
Favorites
Set Up a Project
Create and Edit a Tag Database
About the Tag Database
What is a Tag Database?
Setting Up a Tag Database
About Tag Types
About Data Sources
Using the Tag Database Editor
Tag Types
Data Sources
Configuring Alarms on Tags
Set Up Alarms
Set Up Data Logging
Set Up Activity Logging
Create and Edit Graphic Displays
Animate Graphic Displays
Working with Graphic Displays
Testing and Running Projects
RSView32 Commands
Expressions
Technical Support
Reference
Database Import and Export
VBA Code
RSView32 Object Model

To open a book, double-click the book.

To go to a topic, click the topic.

What is a Tag Database?

A tag database consists of records called *tags*. (A *tag* is similar to a *symbol* in PLC programming terminology.) In the tag database you define the data you want RSView32 to monitor. You can organize tags into groups using folders. This speeds up database creation because you can duplicate a folder and its tags in a single operation. For example, if you have several similar machines that require the same tags in the database, you can create a folder called Machine1 and define its tags. To create the tags for Machine2 you would use the Duplicate Folder command and specify Machine2 as the folder name. This creates a folder called Machine2 containing all the tags that are in the folder Machine1.

The three types of tags you can create are

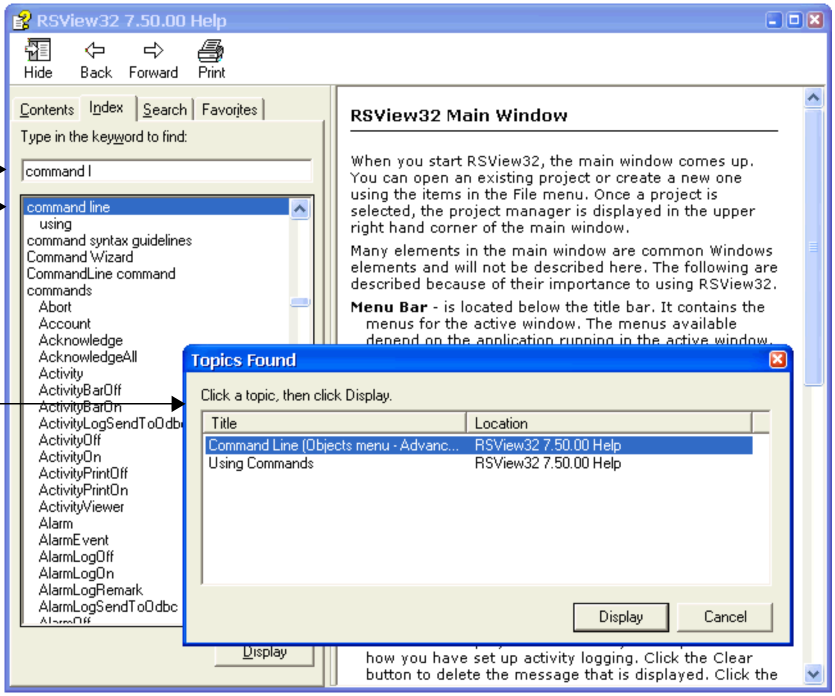
- **digital** - stores simple on/off information
- **analog** - stores numbers
- **string** - stores alphanumeric characters

The data sources for a tag can be

- **Device** - receives its data from a programmable controller through a direct driver via RSLinx, or a DDE server or an OPC server. It can also receive data from another Windows program through a DDE or OPC server.
- **Memory** - data comes only from the value table rather than a programmable controller or another

Using the index

The Help index is similar to an index in a book, listing keywords for topics in Help. To see the index, click the Index tab.



As you type a word here, index entries are listed below.

To go to a topic, double-click it here or click Display.

If the index entry refers to more than one topic, the Topics Found box opens. Select a topic and double-click it, or click Display.

Type in the keyword to find:

command l

command line
  using
command syntax guidelines
Command Wizard
CommandLine command
commands
  Abort
  Account
  Acknowledge
  AcknowledgeAll
  Activity
  ActivityBarOff
  ActivityBarOn
  ActivityLogSendToOdbc
  ActivityOff
  ActivityOn
  ActivityPrintOff
  ActivityPrintOn
  ActivityViewer
  Alarm
  AlarmEvent
  AlarmLogOff
  AlarmLogOn
  AlarmLogRemark
  AlarmLogSendToOdbc

RSView32 Main Window

When you start RSView32, the main window comes up. You can open an existing project or create a new one using the items in the File menu. Once a project is selected, the project manager is displayed in the upper right hand corner of the main window.

Many elements in the main window are common Windows elements and will not be described here. The following are described because of their importance to using RSView32.

Menu Bar - is located below the title bar. It contains the menus for the active window. The menus available depend on the application running in the active window.

how you have set up activity logging. Click the Clear button to delete the message that is displayed. Click the

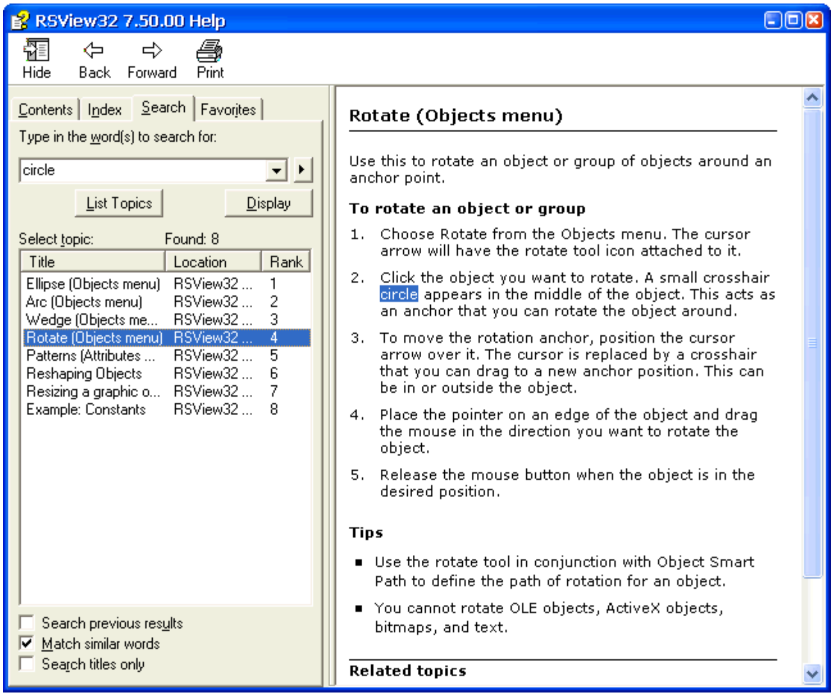
Topics Found

Click a topic, then click Display.

Title	Location
Command Line (Objects menu - Advanc...	RSView32 7.50.00 Help
Using Commands	RSView32 7.50.00 Help

Finding words or topics

To search the entire text of the Help, click the Search tab. Type in the word or words to search for and click List Topics.



Type in the word(s) to search for:

circle

Select topic: Found: 8

Title	Location	Rank
Ellipse (Objects menu)	RSView32 ...	1
Arc (Objects menu)	RSView32 ...	2
Wedge (Objects me...	RSView32 ...	3
Rotate (Objects menu)	RSView32 ...	4
Patterns (Attributes ...	RSView32 ...	5
Reshaping Objects	RSView32 ...	6
Resizing a graphic o...	RSView32 ...	7
Example: Constants	RSView32 ...	8

☐ Search previous results
☑ Match similar words
☐ Search titles only

Rotate (Objects menu)

Use this to rotate an object or group of objects around an anchor point.

To rotate an object or group

1. Choose Rotate from the Objects menu. The cursor arrow will have the rotate tool icon attached to it.
2. Click the object you want to rotate. A small crosshair circle appears in the middle of the object. This acts as an anchor that you can rotate the object around.
3. To move the rotation anchor, position the cursor arrow over it. The cursor is replaced by a crosshair that you can drag to a new anchor position. This can be in or outside the object.
4. Place the pointer on an edge of the object and drag the mouse in the direction you want to rotate the object.
5. Release the mouse button when the object is in the desired position.

Tips

- Use the rotate tool in conjunction with Object Smart Path to define the path of rotation for an object.
- You cannot rotate OLE objects, ActiveX objects, bitmaps, and text.

Related topics

Scroll through the list to find the term you're looking for. When you find the term, double-click it to go to that topic, or click Display.

To get Help on using the Search tab, right-click a field, and then click What's This?

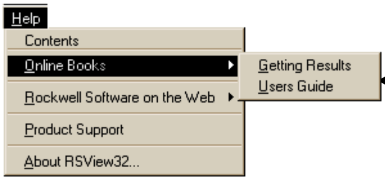
Using the RSView32 online user's guides

The complete *RSView32 User's Guide*, *RSView32 Runtime User's Guide*, and *RSView32 Getting Results* manuals are included on the RSView32 CD-ROM with the Adobe® Acrobat® Reader® software for viewing the guides. The *RSView32 User's Guide* and *RSView32 Runtime User's Guide* provide more detail about the topics presented in this *Getting Results* manual. You can print all or part of the guides, and you can copy text and graphics from the guides and paste them into other documents.

Viewing the guides

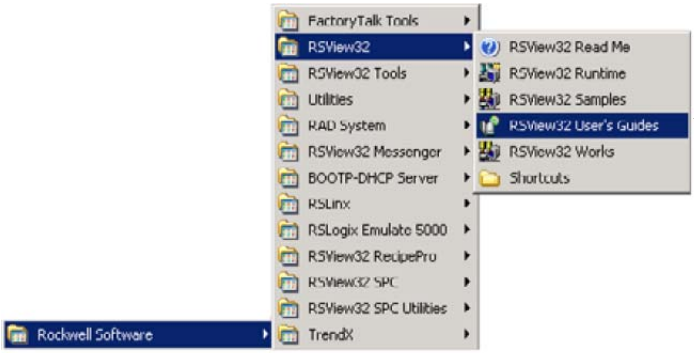
If you installed the user's guides when you installed RSView32™, you can access them by clicking Help, Online Books, and then by clicking either Getting Results, or Users Guide.

If you are using RSView32 Runtime, the Online Books menu will show Runtime Users Guide instead of Users Guide.


Help
Contents
Online Books
Rockwell Software on the Web
Product Support
About RSView32...
Getting Results
Users Guide

To view the RSView32 online books, click one of these items.

If you installed the user's guides when you installed RSView32, you will also have an icon for them in the Rockwell Software group.


FactoryTalk Tools
RSView32
RSView32 Tools
Utilities
RAD System
RSView32 Messenger
BOOTP-DHCP Server
RSLinx
RSLogix Emulate 5000
RSView32 RecipePro
RSView32 SPC
RSView32 SPC Utilities
TrendX
Rockwell Software
RSView32 Read Me
RSView32 Runtime
RSView32 Samples
RSView32 User's Guides
RSView32 Works
Shortcuts

To view the RSView32 user's guides, click this item.

If you did not install the guides, you can view them from the CD-ROM.

To view the user's guides from the CD-ROM

1. Insert the RSView32 CD-ROM into your CD-ROM drive. The CD-ROM should start running automatically.

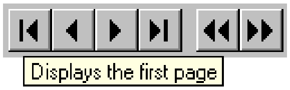
   If the CD-ROM does not start automatically, run D:\SETUP.EXE where D is the drive containing the CD-ROM.

2. In the RSView32 window, click the View the RSView32 User's Guides button.

Moving around in the user's guides

Use any of the following methods to move through the user's guides:

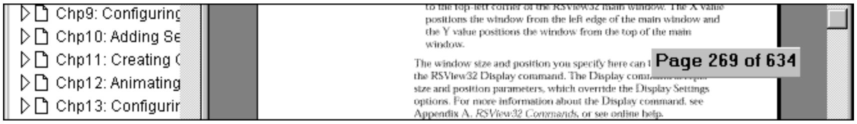
- click a chapter bookmark on the left side of the window
- click a button on the toolbar. Each button has a tooltip that tells you the action the button will perform


Displays the first page

- click the button at the bottom of the window and, when the Go To dialog box opens, specify the page you'd like to go to

Page 1 of 634

- click the scroll bar button on the right side of the window. When you click the button, the page number appears


Chp9: Configuring
Chp10: Adding Se
Chp11: Creating (
Chp12: Animating
Chp13: Configurir
Page 269 of 634

positions the window from the left edge of the main window and the Y value positions the window from the top of the main window.

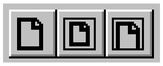
The window size and position you specify here can
the RSView32 Display command. The Display com
size and position parameters, which override the Display Settings options. For more information about the Display command, see Appendix A, *RSView32 Commands*, or see online help.

Zooming in and out

Use any of the following methods to zoom in and out of pages:

- click the Zoom tool on the toolbar to change the pointer to the Zoom pointer. To zoom in on a particular paragraph or graphic, click the Zoom pointer anywhere on the page.

- click a button on the toolbar. Each button has a tooltip that tells you the action the button will perform.

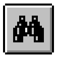


- click the button on the bottom of the window and then specify a zoom ratio

Finding information

You can search the user's guide for a particular word or phrase.

To find a word or phrase



Find tool

1. Do one of the following:
   - on the toolbar, click the Find tool
   - on the Tools menu, click Find
2. In the Find dialog box, type the word or phrase you want, and then click Find.

   The word or phrase is highlighted in the text. To find another instance of the word or phrase, click Find Again on the Tools menu.

Printing pages

You can print selected text, single pages, or an entire guide.

To print selected text

1. On the File menu, click Print Setup, then select and set up the printer you will use.
2. Do one of the following:

Text selection tool

   - on the toolbar, click the text selection tool, and then select the text you want to copy
   - on the Tools menu, click Select Text, and then select the text you want to copy
3. On the File menu, click Print.
4. In the Print dialog box, ensure the correct printer is selected, click Selection, and then click OK.

To print one or more pages

1. On the File menu, click Print Setup to select and set up the printer you will use.
2. On the File menu, click Print.
3. In the Print dialog box, ensure the correct printer is selected, click Current Page or specify Start and End pages, and then click OK.

Using the online guide for the reader

For more information about the Adobe Acrobat Reader, see the Adobe Acrobat online guide. To open the online guide while Adobe Acrobat Reader is running, click Help on the menu bar and then click Reader Online Guide.

Technical support

If you have a question about RSView32, please consult this guide, the RSView32 Help, or the RSView32 online user's guides. Or, click Help, Rockwell Software on the Web, and then click the name of the web page you want to view. To use Rockwell Software on the Web, you must have a web browser installed on your computer and a current internet connection.

If you can't find the answers, contact Rockwell Software Technical Support:

Telephone	440-646-3434
Internet support	www.rockwellsoftware.com or
	www.support.rockwellautomation.com

Support staff are available Monday through Friday from 8 A.M. to 5 P.M. Eastern time, except on holidays.

When you call

When you call, be at a computer and be prepared to provide the following information:

- the product serial number

  You can find this number on the Activation disk label, or, on the RSView32 menu, click Help, and then click About RSView32.

- the product version number

  You can find this number online. On the RSView32 menu, click Help, and then click About RSView32.

- the type of hardware you are using
- the exact wording of any messages that appeared on your screen
- a description of what happened, what you were doing when the problem occurred, and how you tried to solve the problem

You may also be required to provide information about the RSView32 add-ons and updates that are installed on your computer.

1. With the Project Manager window active, click Help, About RSView32.
2. Click Add-ons to view the list of installed add-ons. Click Updates to view the list of installed updates.

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