

# RSNetWorx & RSNetWorx MD

for DeviceNet, ControlNet, and EtherNet/IP



## Technical Data

The NetLinX™ Open Network Architecture is the Rockwell Automation strategy of using open networking technology for seamless, top-floor to shop-floor integration. NetLinX is founded upon the use of the producer/consumer model of data exchange, where data is identified rather than attached to explicit source and destination addresses. Based on this identification process, receivers determine whether or not they are to consume and process a particular message. This model provides superior support for seamless data sharing and the most efficient mechanism by which input and output data exchanges can occur.

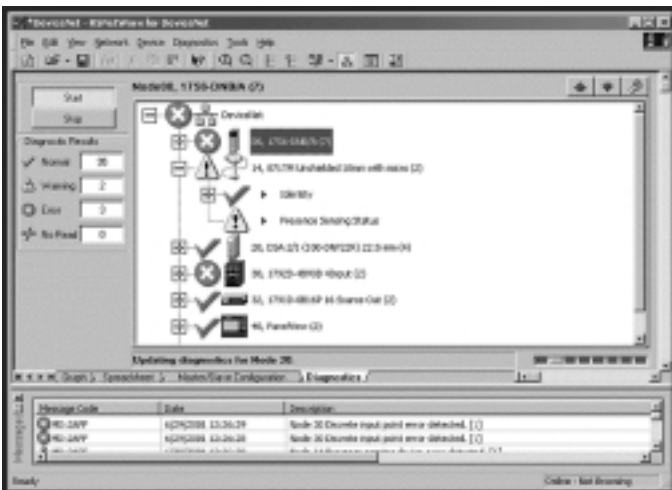
The NetLinX architecture includes the DeviceNet™, ControlNet™, and EtherNet/IP™ networks. These three networks speak a common language (Control and Information Protocol - CIP) and share a universal set of communication services that can be seamlessly integrated into an automation system that includes anything from the simplest device to the Internet, helping you to improve flexibility, reduce installation costs, and increase productivity. And since the ControlNet, DeviceNet and EtherNet/IP networks use a common application layer protocol, they also support real-time I/O messaging, configuration and diagnostics over the same network – resulting in faster start-ups and superior diagnostics.

RSNetWorx™ software configures and manages the communications between those devices on the DeviceNet, ControlNet, or EtherNet/IP networks. A version of RSNetWorx is available for each of these networks, allowing you to take maximum advantage of the synergy between the networks while also leveraging the unique characteristics of each network. Additionally, each RSNetWorx package can be paired with the optional new RSNetWorx MD add-on, providing you with advanced maintenance and diagnostics capabilities. Together, this unified design, configuration, and maintenance strategy allows you to achieve maximum productivity with your network installation and greatly reduce the learning curve associated with deploying and maintaining an automation application.

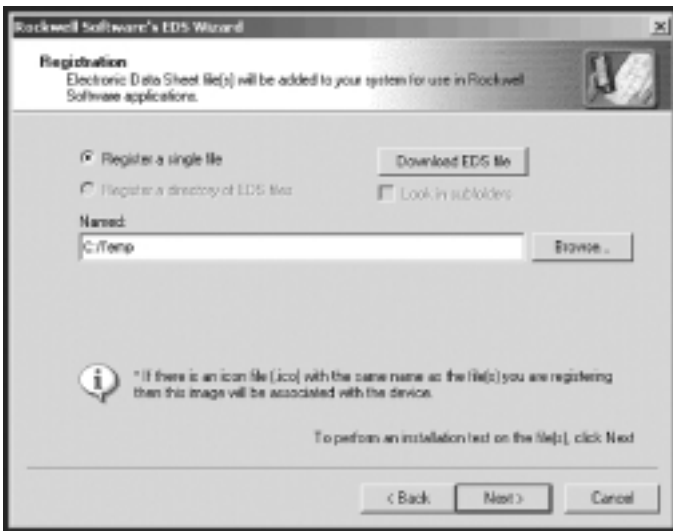
### RSNetWorx Common Features

RSNetWorx for DeviceNet, ControlNet, and EtherNet/IP provide you with many common features. Using RSNetWorx, you can:

- Browse a network automatically and determine what is present on that network via the industry-leading RSLinx communication package (the RSNetWorx installation CD-ROM includes RSLinx).
- Use the Electronic Data Sheet (EDS) services provided by the software to configure device parameters and to install support for new devices. The EDS subsystem enables multi-vendor interoperability on each of the networks.
- Define the input/output information exchanges that will take place on the network.
- Configure peer data exchanges (for example, controller to controller).



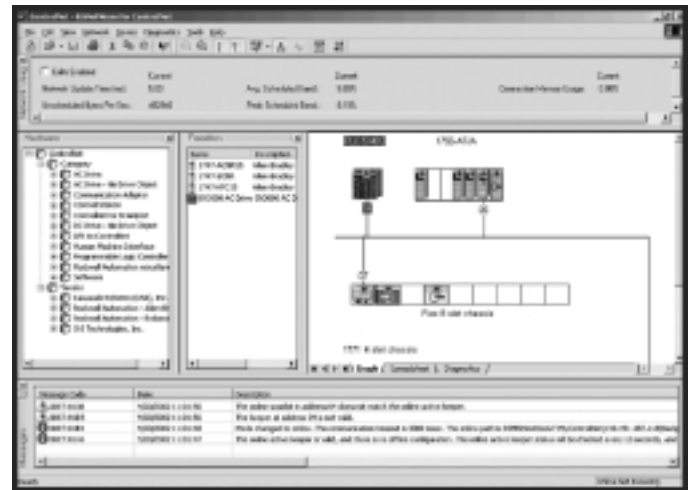
The new RSNetWorx MD add-on is available for RSNetWorx for DeviceNet, ControlNet, and EtherNet/IP!



The EDS Wizard allows you to easily add new EDS files and retrieve updated EDS files from the Web and/or your local computer to support devices on DeviceNet, ControlNet, and EtherNet/IP.

- Maintain complete control over the mapping of information being exchanged between your controller and devices on the network. The software has “auto-map” capabilities that will automatically perform this mapping for you, or you can manually adjust the mapping.
- Define the components of your network (including chassis-based devices) in two different ways: offline and online. In “online” mode, you can either drag and drop devices to the network or let the software determine the actual devices that are present on the network. In “offline” mode, you can drag and drop devices into the network view to specify the devices that will be present on a physical network. When complete, you save this configuration to a file that can subsequently be downloaded to the actual network.
- Recover from hardware failures in a straightforward and consistent manner using single commands to upload or download individual devices, or the whole network.
- Increase your productivity by viewing error, warning, and informational messages immediately and taking corrective action steps that are available for all messages.
- Utilize a common graphical user interface (GUI), including common controls, views, toolbar icons and menu items, increasing your efficiency with each product.
- Store an entire configuration in a single file. This provides for easier management of your network configurations.

- Produce HTML-formatted reports for scanner, device, and network configuration settings, which can easily be incorporated into your system documentation.
- Utilize the RSNetWorx Answer Station (available from the RSNetWorx Help menu), which is a handy resource to the most up-to-date information about RSNetWorx and its uses. You can reach this site directly at <http://www.software.rockwell.com/assistance/rsnetworx/>.
- View a comprehensive product tutorial to help you get the most value from the software as quickly as possible.
- Access online versions of related software and hardware manuals directly from RSNetWorx.
- Leverage a comprehensive online help system to improve your experience with the software.
- Obtain a network-wide health assessment of your network, easily determine the source and severity of diagnosed conditions, and view corrective action information that will lead you through the steps needed to resolve the problem (via the RSNetWorx MD add-on).



Define the devices on your network online or offline using a common graphical user interface.

## RSNetWorx MD - You don't analyze the diagnostic data, MD does!

RSNetWorx MD is a Maintenance and Diagnostic subsystem that provides automatic diagnostic analysis and troubleshooting information for the DeviceNet, ControlNet,



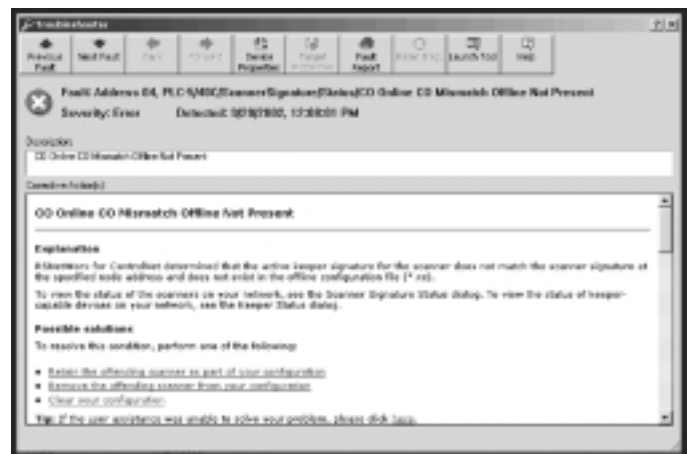
The most severe diagnostic health indication is bubbled up to the highest level in the tree so you can immediately see if there are any problems on the network.

and EtherNet/IP networks. RSNetWorx MD is informed of the available diagnostic data via network and device specific data files, so you don't configure any device specific diagnostic information within RSNetWorx MD; it is simply installed with RSNetWorx. All diagnostic analysis occurs via any communication path supported by RSLinx (including local connections to the target network as well as any remote routes provided by RSLinx Gateway, Ethernet to ControlLogix Gateway, and Passthrough drivers). And best of all, RSNetWorx MD does not require you to be a network protocol or device expert! As an add-on to the standard RSNetWorx packages, the advanced maintenance and diagnostic features are coupled with the proven configuration management features already provided by RSNetWorx, resulting in the most capable network management software package on the market!

The RSNetWorx MD add-on provides many additional features to those already available with RSNetWorx for DeviceNet, ControlNet, and EtherNet/IP. Using RSNetWorx MD, you can:

- Query devices on your network automatically for diagnostic attributes, distilling the results of that scan into Normal, Warning, or Error indicators on the RSNetWorx MD user interface.
- Troubleshoot faulted diagnostic attributes, providing device diagnostic information as well as corrective action procedures.

- View a historical diagnostic log within the Message view in RSNetWorx. When RSNetWorx MD detects diagnostic events, time-stamped notifications are displayed in the Message view. These notifications include the detection of Warning or Error diagnostic conditions, as well as transitions back to the Normal state.
- Configure a particular device directly from the Troubleshooter dialog, as well as the classic method of using the main RSNetWorx interface.
- Navigate large networks (containing numerous devices with complex diagnostics) quickly and easily through diagnostic accelerators to find the next or previous fault.
- View connection diagnostic information for the devices on your network (ControlNet and EtherNet/IP only).
- View physical media diagnostic information for the devices on your network (ControlNet only).
- Increase or decrease the diagnostic timing rate (amount of time between queries of the devices on your network), controlling the network bandwidth consumed by diagnostics.
- Launch associated applications (for example, RSLogix 5000, DriveExecutive Lite, Scanlist Configuration Tool, etc.) directly from the Troubleshooter dialog so that you can quickly resolve the specific problem.



Just a click away from the problem notification is a wealth of information that describes the issue in more detail and defines corrective action steps.

## RSNetWorx for DeviceNet

The DeviceNet network is an open low-level network that provides connections between simple industrial devices (such as sensors and actuators) and higher-level devices (such as PLC controllers and computers). The DeviceNet network uses the proven Control and Information Protocol (CIP) to provide the control, configure, and data collection capabilities for industrial devices. The DeviceNet network is a flexible network that works with devices from multiple vendors.

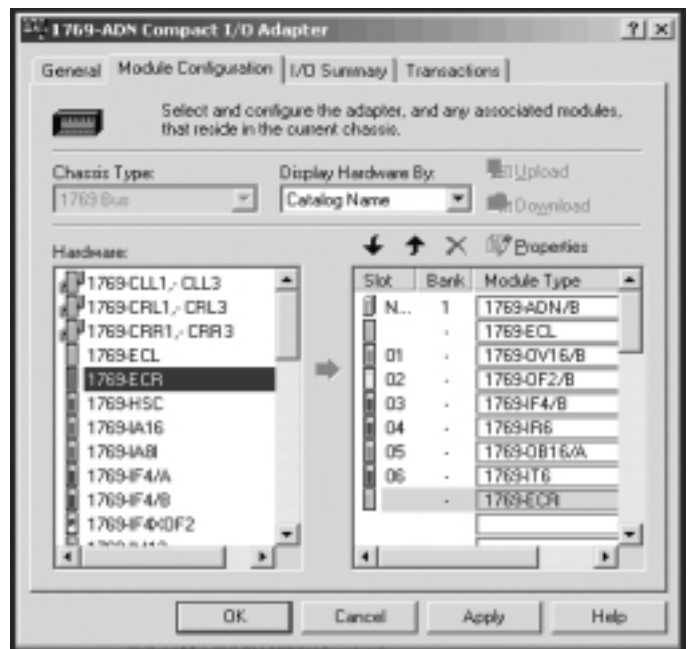


Scanner configuration is simple using the convenient property page interface.

In addition to the common RSNetWorx and RSNetWorx MD capabilities mentioned earlier, with RSNetWorx for DeviceNet you can:

- Define configuration settings for devices on the DeviceNet network through a convenient property page interface driven by EDS files for multi-vendor interoperability.
- Configure scanners (Rockwell Automation and third party) that use the Allen Bradley DeviceNet libraries.
- Control over the mapping of information being exchanged between your controller and devices on the network down to the bit level.
- Configure all of the properties of chassis-based devices from a simple property page interface.

- Configure the Automatic Device Replacement (ADR) feature that is present within select Rockwell Automation DeviceNet scanners. ADR allows the scanner to automatically restore configuration data to a device, once a failed device has been replaced on the network.
- Take advantage of the Producer/Consumer model of information exchange employed by DeviceNet to share inputs between multiple controllers.
- Access DeviceNet networks (via RSLinx) that you are directly connected to, or you can route to Ethernet or ControlNet. Additionally, with PLC-5® and SLC controllers you can “pass through” the backplane to the DeviceNet scanner and out onto the DeviceNet network.
- Use the Quick Connect feature, which allows a faster connection time between a Quick Connect supported scanner and a Quick Connect supported slave device. For more information, see the ODVA specification.
- Use the Faulted Address Recovery (FAR) feature, which allows you to recover any devices that support the faulted node recovery protocol with duplicate node addresses on your DeviceNet network. In addition, you can customize the criteria for detecting faulted devices and “blink” the network LEDs on DeviceNet devices so that they can be easily located on your control system.

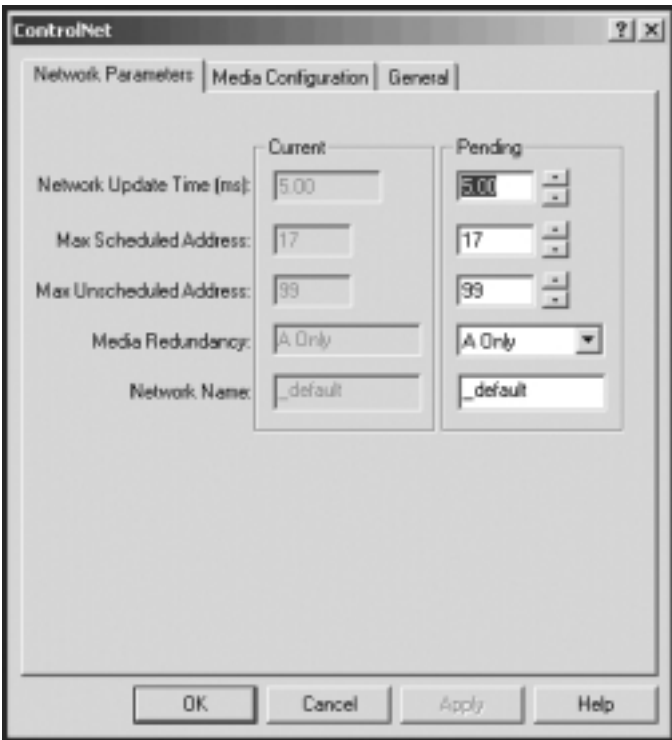


Define and configure chassis-based DeviceNet devices quickly and easily.

## RSNetWorx for ControlNet

The ControlNet network is an open, state-of-the-art control network that meets the demands of real-time, high-throughput applications. The ControlNet network uses the proven Control and Information Protocol (CIP) to combine the functionality of an I/O network with a peer-to-peer network, providing high-speed performance for both functions.

A ControlNet network gives you deterministic, repeatable transfers of all mission-critical control data in addition to supporting transfers of non-time-critical data. Program uploads, downloads, and messaging do not interfere with the scheduled delivery of data.

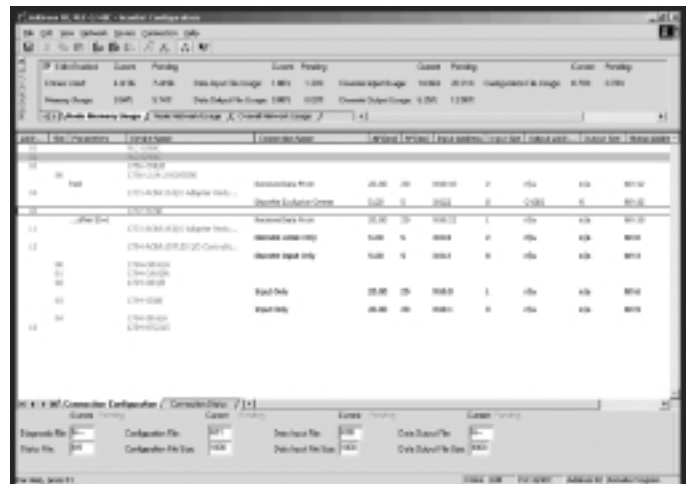


Configure network-wide parameters, including physical media, which are recognized by all of the ControlNet devices on your network.

In addition to the common RSNetWorx and RSNetWorx MD capabilities mentioned earlier, with RSNetWorx for ControlNet you can:

- Configure scanners such as PLC-5C's and 1747-SCNR's, as well as third party scanners, that support and implement the ControlNet open specification for scanner configuration.
- Configure and manage network-wide parameters that are shared by all devices.

- Configure multiple types of connections, including Exclusive Owner, Input Only, Listen Only, and Redundant.
- View input and output data (for example, field wiring or voltage settings).
- View device and network utilization to maintain device and network efficiency.
- View the connections to/from a target device, helping you to solve design time issues by accessing the control information.
- Quickly configure and maintain your network by leveraging the Keeper Status and Scanner Signature Status dialogs.
- Integrate offline with RSLogix 5000 (version 12 or later) so that ControlNet configurations that include ControlLogix processors can be validated offline.
- Support a PLC-5 Hot Backup system, which transfers process control to a secondary system without interrupting the machine and/or process operation (guarding your application against shutdowns caused by a processor failure).
- Configure media options (copper, fiber, fiber ring) and media redundancy.
- Perform deterministic, repeatable transfers of data to/from digital and analog I/O.
- View the results of the network-wide coordinated schedule generated by RSNetWorx to control when information exchanges occur.

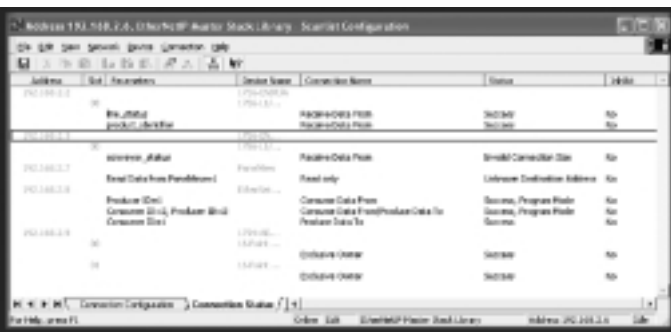


Insert, modify and delete connections between ControlNet devices.

- Create, modify, and delete connection entries in a scanner with a scanlist (for example, a PLC-5C processor, 1747 scanner, or third-party scanner) via the Scanlist Configuration Tool. In addition, you can establish connections among other devices and their respective I/O components (identifying data types, sizes, and timing intervals) and then map that information to the data table.
- Establish multicast of inputs, outputs, and peer-to-peer data for improved network efficiency.
- Take advantage of the Producer/Consumer model of information exchange to enable shared inputs and redundant owners of outputs.

### RSNetWorx for Ethernet I/P

The EtherNet/IP network is an open industrial networking standard that supports both real-time I/O messaging and message exchange. This network utilizes commercial, off-the-shelf Ethernet hardware (for example, switches and routers) and is fully compatible with the Ethernet TCP/IP protocol suite. This network also uses the proven Control and Information Protocol (CIP) to provide control, configuration, and data collection capability.



Using the Scanlist Configuration Tool, configure and view the status of EtherNet/IP connections.

In addition to the common RSNetWorx and RSNetWorx MD capabilities mentioned earlier, with RSNetWorx for EtherNet/IP you can:

- Configure third party scanners that support and implement the EtherNet/IP open specification for scanners.
- Configure the devices on your network using host names or IP addresses.

- Configure multiple types of connections, including Exclusive Owner, Input Only, Listen Only, and Redundant.
- View input and output data (for example, field wiring or voltage settings).
- Create, modify, and delete connection entries in a scanner with a scanlist (for example, an EtherNet/IP scanner) via the Scanlist Configuration Tool.
- View the connections to/from a target device, helping you to solve design time issues by accessing the control information.
- Establish multicast of inputs and peer-to-peer data for improved network efficiency.
- Define and configure chassis-based devices quickly and easily with an improved graphical user interface.
- Take advantage of the Producer/Consumer model of information exchange to enable shared inputs and redundant owners of outputs.
- Establish a network configuration that can be diagnosed using RSNetWorx MD, which provides vital troubleshooting content that you can use to keep your automation system up and running efficiently.



Chassis configuration is painless using the step-by-step interface.

## Hardware Requirements

The following are Hardware Requirements for using RSNetWorx:

- Intel® Pentium® microprocessor
- CD-ROM drive
- 3.5-inch disk drive
- 16-color VGA graphics adapter with 640 x 480 or greater resolution (800 x 600 resolution recommended)
- Mouse or other Windows®-compatible pointing device
- See the following table for minimum RAM and hard disk space requirements:

	DeviceNet	ControlNet	EtherNet/IP
<b>Minimum RAM</b>	32 MB of RAM	32 MB of RAM	32 MB of RAM
<b>Hard disk space</b> <sup>1,2</sup>	65 MB of available space on the hard drive; 105 MB if you want to install all of the options available; an additional 125 to 460 MB to install the EDS files (depending on the sets of EDS files that you install).	95 MB of available hard disk space; 148 MB if you want to install all of the options available; an additional 20 to 45 MB to install the EDS files (depending on the sets of EDS files that you install).	99 MB of available hard disk space; 105 MB if you want to install all of the options available; an additional 9 to 20 MB to install the EDS files (depending on the sets of EDS files that you install).

1. As future revisions of RSNetWorx are released, these requirements may change.

2. These sizes are based on a Microsoft FAT file system. A Microsoft NTFS file system will use much less space.

## Software Requirements

The following are Software Requirements for using RSNetWorx:

- RSNetWorx software can be used with Microsoft Windows 98, Microsoft Windows ME, Microsoft Windows NT 4.0 (Service Pack 6 or later), Microsoft Windows 2000, Windows 2000 Terminal Server, Microsoft Windows XP, and Citrix operating systems. Contact Rockwell Automation Technical Support if you require support for the Microsoft Windows 95 operating system.
- RSLinx version 2.40 (or later).
- RSLogix 5 version 4.0 (or later); version 5.50 (or later) recommended.
- RSLogix 5000 version (any version) for online integration; version 12 (or later) for offline integration on ControlNet.
- Adobe™ Acrobat™ Reader installed to use the product manuals feature. You can install the reader from the RSNetWorx CD.
- Microsoft Internet Explorer 4.0 (or later) to use the online help.

## Cabling and Installation Options

When installing and commissioning your DeviceNet, ControlNet, or EtherNet/IP networks, please consult the following manuals or more information:

- **DeviceNet** - DeviceNet Cable System Planning and Installation Manual (DN-6.7.2)
- **ControlNet** - ControlNet Coax Cable System Planning and Installation Manual (1786-6.2.1)
- **EtherNet/IP** - EtherNet/IP Media Planning and Installation Manual (ENET-IN001A-EN-P)

## Catalog Numbers

Configuration only		Configuration plus Maintenance and Diagnostics	
RSNetWorx for DeviceNet	<b>9357-DNETL3</b>	RSNetWorx MD for DeviceNet	<b>9357-DNETMD3E</b>
RSNetWorx for ControlNet	<b>9357-CNETL3</b>	RSNetWorx MD for ControlNet	<b>9357-CNETMD3E</b>
RSNetWorx for EtherNet/IP	<b>9357-ENETL3</b>	RSNetWorx MD for EtherNet/IP	<b>9357-ENETMD3E</b>

RSNetWorx products are also available in various bundled offerings. These bundles include all RSNetWorx Configuration only products and all RSNetWorx Configuration plus Maintenance and Diagnostics products. In addition, you can also purchase RSNetWorx bundled with your favorite RSLogix editor (5, 500, or 5000). Add-ons are also available to update your existing RSNetWorx Configuration only product to include the Maintenance and Diagnostics functionality. Please contact your Rockwell Automation distributor to select the product offering that is right for you.

## Rockwell Software

For more information on the latest pricing or a demonstration of any Rockwell Software package, please contact your local Rockwell Automation sales office or Allen-Bradley distributor. For the very latest on Rockwell Software products, visit our website at:

[www.software.rockwell.com](http://www.software.rockwell.com)

[www.rockwellautomation.com](http://www.rockwellautomation.com)

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