



**Allen-Bradley**

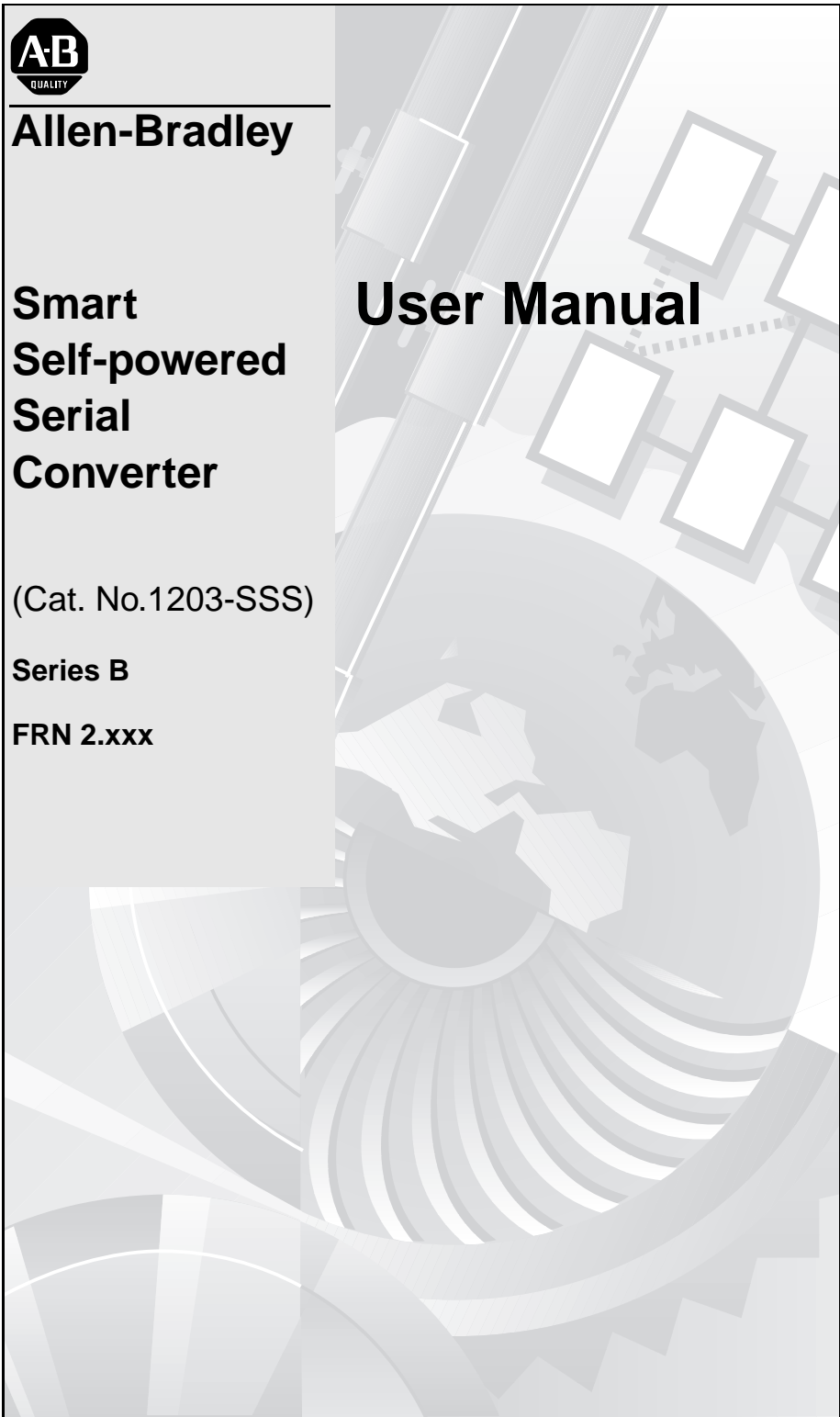
**Smart  
Self-powered  
Serial  
Converter**

(Cat. No.1203-SSS)

**Series B**

**FRN 2.xxx**

**User Manual**



## Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office or online at <http://www.ab.com/manuals/gi>), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual we use notes to make you aware of safety considerations:



**ATTENTION:** Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss.

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Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

**Important:** Identifies information that is critical for successful application and understanding of the product.



**TIP:** Identifies information that is helpful, but not necessary, in completing a task.

# About This Manual

## Objectives

Read this preface to become familiar with the rest of the manual.

Topic	Page
<a href="#">Related Documentation</a>	<a href="#">P-1</a>
<a href="#">Conventions Used in this Manual</a>	<a href="#">P-1</a>
<a href="#">Rockwell Automation Support</a>	<a href="#">P-2</a>

## Related Documentation

For Information On:	Refer to:	Publication
1203-SSS (Series A)	Smart Self-powered Serial Converter User Manual	1203-5.14
DF1 Protocol	DF1 Protocol and Command Set Reference manual	1770-6.5.16
DriveTools32™	DriveTools32 Getting Started Manual	9303-5.23
DriveExplorer™	DriveExplorer User Manual	9306-5.0

Supporting documentation can be obtained from your local Rockwell Automation office or distributor. It can also be viewed online at: <http://www.ab.com/manuals>.

## Conventions Used in this Manual

The following conventions are used throughout this manual:

- Parameter names are shown in bold typeface and follow the format **Pxxx - [\*]**. The P denotes parameter. The xxx represents the parameter number. The \* represents the parameter name.
- Menu commands are shown in bold type face and follow the format **Menu > Command**. For example, if you read “Select **File > Open**,” you should click the **File** menu and then click the **Open** command.

## Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, over 500 authorized distributors, and over 250 authorized systems integrators located through the United States alone. In addition, Rockwell Automation representatives are in every major country in the world.

### Local Support

Contact your local Rockwell Automation representative for:

- Sales and order support.
- Technical training.
- Warranty support.
- Support service agreements.

### Technical Assistance

If you need to contact Rockwell Automation for technical assistance, please review the information in [Chapter 4](#) first. If you still have questions, then call your local Rockwell Automation representative.

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## Overview

### Objectives

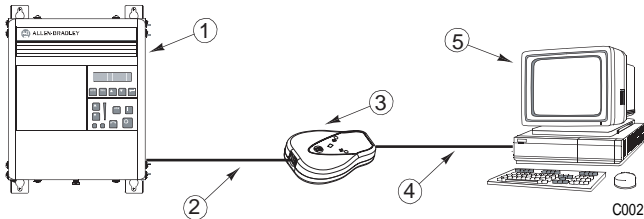
Chapter 1 provides general information about the serial converter.

Topic	Page
<a href="#">About Serial Connections</a>	1-1
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### About Serial Connections

The converter provides a serial connection to a SCANport™ product.

**Figure 1.1 Example Serial Connection**



Number	Device	Description
1	Product	Refer to <a href="#">Compatible SCANport Products</a> in this chapter.
2	SCANport Cable	This connection supports the communications with a SCANport product and provides power to the converter. A 1202-C10 SCANport cable is included with the converter.
3	Converter	The converter provides a temporary electronic communications interface between a computer with an RS-232 serial port and a SCANport product.
4	Serial Cable	This connection uses the full-duplex RS-232 DF1 protocol. A 1203-SFC serial cable is included with the converter.
5	Computer	The computer runs a software package that supports the RS-232 DF1 protocol such as DriveTools32 or DriveExplorer.

## Features of the Serial Converter

Features of the serial converter (series B) include the following:

- Three LEDs are used to indicate the status of the module.
- Baud rates of 9600 bps, 19.2Kbps, and 38.4Kbps are supported.
- The converter receives power from the SCANport connection on the product. An outside power source is not needed.

## Firmware Version

The convention for identifying firmware releases is FRN X.xxx.

FRN = Firmware Release Number

X = Major Release Number

xxx = Minor Update Number

This manual is for Firmware releases 2.xxx.

## Compatible SCANport Products

The serial converter can be used with Allen-Bradley SCANport products, including the following:

SCANport Product	SCANport Product
1305 AC Drive (Drive firmware 2.xx or later)	1394 Servo Drive
1336 FORCE™ Drive	1397 DC Drive
1336 IMPACT™ Drive	1557 Medium Voltage Drive
1336 PLUS Drive	2364 Regenerative DC Bus Supply Unit
1336 PLUS II Drive	SMC Dialog Plus™
1336 REGEN Line Regeneration Package	SMP-3 Smart Motor Protector
1336 SPIDER Drive	

## Equipment Supplied with the Converter

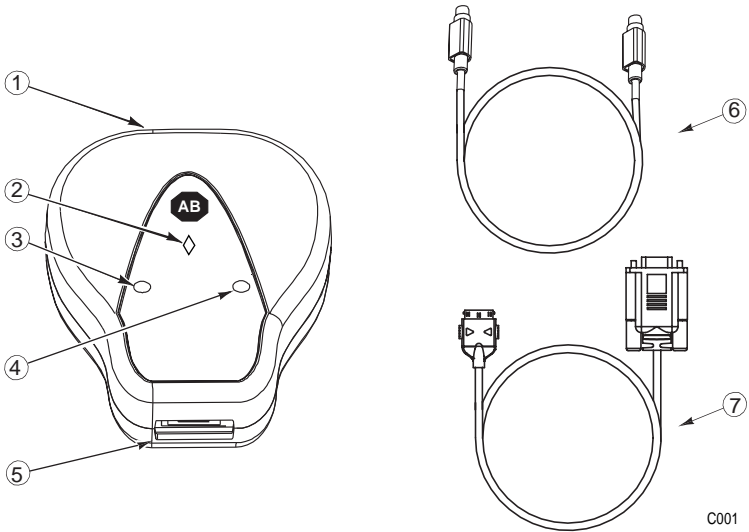
When you unpack the serial converter, verify that the package includes:

- 1203-SSS converter.
- 1203-SFC serial cable.
- 1202-C10 SCANport cable.
- DriveExplorer Lite CD.



## Parts of the Serial Converter

Figure 1.2 Parts of the Converter



C001

#	Part	Description
1	SCANport Connection	Standard SCANport 8-pin circular mini-DIN connector. The 1202-C10 SCANport cable is plugged into this connector.
2	Status LED	LED that indicates module operation. Refer to <a href="#">Chapter 4</a> .
3	RX LED	LED that indicates when data is received from the host computer. Refer to <a href="#">Chapter 4</a> .
4	TX LED	LED that indicates when data is sent from the converter to the computer. Refer to <a href="#">Chapter 4</a> .
5	RS-232 Serial Port	Locking low profile connector. The 1203-SFC serial cable is plugged into this connector.
6	1202-C10 SCANport Cable	SCANport cable (1 m) with male-to-male connectors. (Included with the converter.)
7	1203-SFC Serial Cable	Serial cable (2 m) with a locking low profile connector to connect to the converter and a 9-pin sub-miniature D female connector to connect to a personal computer. (Included with the converter.) <b>Tip:</b> This cable can also be used to make a serial connection to a 1203-CN1 or 1203-GU6 module.
Not Shown	DriveExplorer Lite CD	CD including the DriveExplorer Lite applications and documentation. (Included with the converter.)

## Required Equipment and Tools

To configure the converter or SCANport product, we recommended that you use a computer running DriveExplorer. You can use a Windows™ terminal emulation program (e.g., HyperTerminal) or a VT-100 compatible terminal to configure the converter, but you cannot configure a connected SCANport product with either of these tools.

## Safety Precautions

Please read the following safety precautions carefully.



**ATTENTION:** Risk of injury or equipment damage exists. Only personnel familiar with drive and power products and the associated machinery should plan or implement the installation, start-up, configuration, and subsequent maintenance of the product using a serial converter. Failure to comply may result in injury and/or equipment damage.



**ATTENTION:** Risk of injury or equipment damage exists. If the serial converter is transmitting control I/O to the SCANport product (indicated by a solid green diamond LED), the SCANport product may fault when you remove or reset the serial converter. Determine how your SCANport product will respond before removing or resetting a connected serial converter.



**ATTENTION:** Risk of injury or equipment damage exists. **P4 - [Comm Flt Action]** lets you determine the action of the converter and connected SCANport product if communications are disrupted. By default, this parameter faults the SCANport product. You can set this parameter so that the SCANport product continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a hazard of injury or equipment damage.

## Quick Start

This section is designed to help experienced users start using the serial converter. If you are unsure how to complete a step, refer to the referenced chapter.

Step	Action	Refer to
1	Review the safety precautions for the converter.	<a href="#">Chapter 1</a>
2	Install the converter.	<a href="#">Chapter 2</a>
3	Configure the converter parameters.	<a href="#">Chapter 3</a>

## Installing the Serial Converter

### Objectives

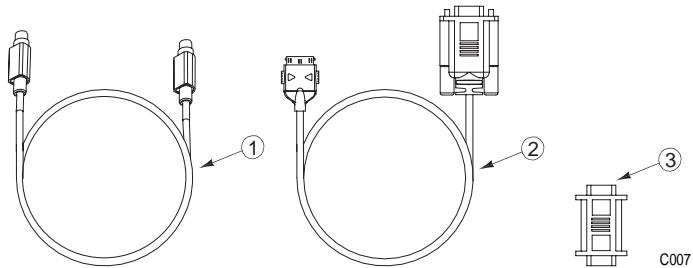
Chapter 2 provides instructions for installing the serial converter.

Topic	Page
<a href="#">Selecting Cables</a>	<a href="#">2-1</a>
<a href="#">Installing the Serial Converter</a>	<a href="#">2-2</a>
<a href="#">Removing the Serial Converter</a>	<a href="#">2-2</a>

### Selecting Cables

The following cables are shipped with each converter. They are all you should need to connect it to a SCANport product and computer.

Figure 2.1 Supplied Cables



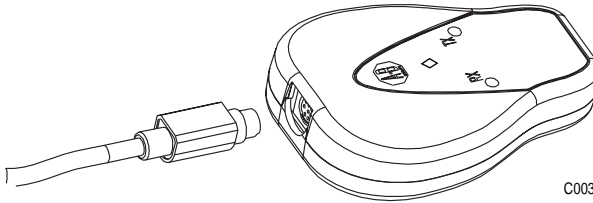
Number	Description	Catalog Number
1	SCANport cable to connect the converter to a drive.	1202-C10
2	Serial cable to connect the converter to the computer.	1203-SFC
3	If you are connecting the converter to an HPC (handheld PC) or PPC (Palm-sized PC), you must use either a null cable converter or a standard computer null cable with two male 9-pin sub-miniature D connectors. These must be purchased separately.	1203-SNM (if needed) (sold separately)

**Important:** To provide proper termination of the serial cable shield, the chassis of the computer should be properly grounded. If it is not possible or practical to ground this, then a ground wire should be connected to the serial cable shield at the shell of the 9-pin sub-miniature D connector.

## Installing the Serial Converter

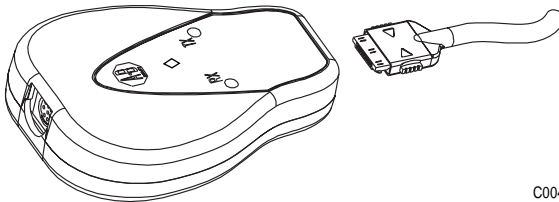
1. Connect the converter to the product using the SCANport cable.

Figure 2.2 Connecting a SCANport Cable to the Converter



2. Connect the converter to the computer using the serial cable.

Figure 2.3 Connecting a Serial Cable to the Converter



3. Apply power to the SCANport product. The converter receives its power from the SCANport product, so the SCANport product must be powered before the converter will operate.

The diamond light on the converter flashes green to indicate that the converter is properly installed and receiving power. If it does not illuminate, refer to [Chapter 4](#).

## Removing the Serial Converter



**ATTENTION:** Risk of injury or equipment damage exists. If the serial converter is transmitting control I/O to the SCANport product (indicated by a solid green diamond LED), the SCANport product may fault when you remove or reset the serial converter. Determine how your SCANport product will respond before removing or resetting a connected serial converter.

1. Disconnect the SCANport cable from the product and then from the converter. To disconnect it, gently push it in and then pull it out.
2. Disconnect the serial cable from the converter and then the computer.

## Configuring the Serial Converter

### Objectives

Chapter 3 provides information about configuring the serial converter.

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<a href="#">Accessing Parameters in a Converter</a>	<a href="#">3-1</a>
<a href="#">Using DriveExplorer</a>	<a href="#">3-2</a>
<a href="#">Using Terminal Emulation Software</a>	<a href="#">3-3</a>
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<a href="#">Setting the Fault Action</a>	<a href="#">3-9</a>
<a href="#">Resetting the Converter</a>	<a href="#">3-10</a>

### Factory-Default Settings

The factory-default settings of the serial converter are the following:

Feature	Default Setting	Parameter
Node Address	1	<b>P2 - [DF1 Address]</b>
Serial Port Rate	9600 bps	<b>P3 - [Serial Port Rate]</b>
Fault Action	Fault	<b>P4 - [Comm Flt Action]</b>

### Accessing Parameters in a Converter

The serial converter stores parameters and other information in its own non-volatile memory. You must, therefore, access the converter to view and edit its parameters. The following table lists tools that you can use to access the converter and edit its parameters.

Tool	Refer To
DriveExplorer software	page <a href="#">3-2</a> in this manual
Terminal emulation software	page <a href="#">3-3</a> in this manual
VT100-compatible terminal	Documentation for the terminal

## Using DriveExplorer

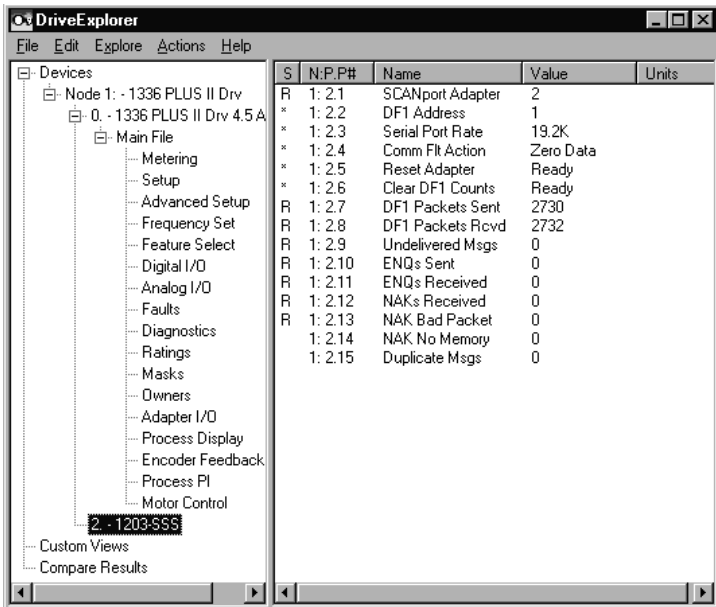
With DriveExplorer software, you can edit parameters in both the serial converter and the connected SCANport product. DriveExplorer Lite is shipped with converter. It is a free, limited-featured version of DriveExplorer.

### DriveExplorer Lite Quick Start

This section is designed to help users start using DriveExplorer Lite. If you are unsure how to complete a step, refer to the online help (select **Help > Help Topics**) or the DriveExplorer User Manual, Publication 9303-5.0, which is included on the CD.

Step	Action
1	Select <b>Explore &gt; Configure Communication</b> . Select the communications port and baud rate that you are using. Select either checksum and accept the default time for the time-out.
2	Select <b>Explore &gt; Connect &gt; Local</b> . A node eventually appears under Devices.
3	In the left pane, click the + signs to expand the tree. Click the SCANport product or converter to display its parameters in the right pane. Double-click a parameter to edit it.

Figure 3.1 DriveExplorer



## Using Terminal Emulation Software

This section provides detailed instructions on how to use terminal emulation software to access the converter so that you can view and edit converter parameters or view the converter event queue.

A variety of terminal emulation programs can be used to establish a serial connection between a computer and the converter. The following instructions describe how to establish the initial serial connection to the converter using a computer running HyperTerminal—terminal emulation software provided with most Windows operating system.

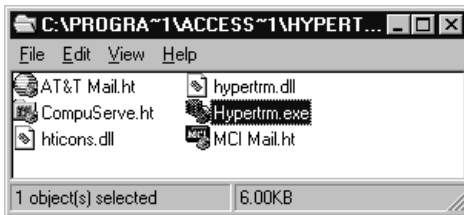
**Important:** The following instructions use screen captures from Windows 95 HyperTerminal. If you are using Windows NT™ or Windows 98 HyperTerminal, screens may differ.

### To use HyperTerminal to access the converter

1. Verify that the converter is installed correctly. Refer to [Chapter 2](#).
2. On the Windows 95 desktop, click the **Start** button, and then select **Programs > Accessories > HyperTerminal** to display the HyperTerminal dialog box ([Figure 3.2](#)). Your dialog box may look slightly different.

On the Windows NT desktop, click the **Start** button, and then select **Programs > Accessories > HyperTerminal** to display the Connection dialog box (Refer to [Figure 3.3](#)). Then, go to step 6.

**Figure 3.2** HyperTerminal Dialog Box in List View

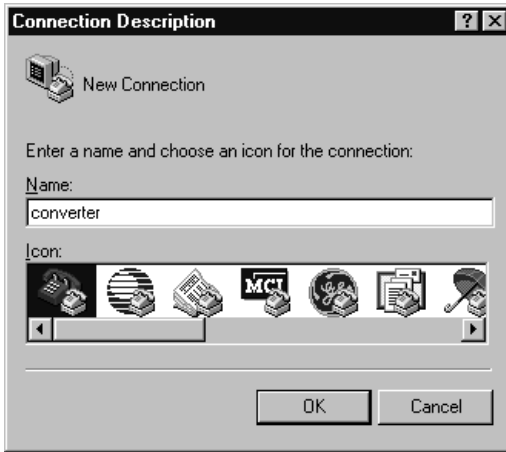


S001

3. Double-click **Hypertrm.exe**.

The Connection Description dialog box appears in the HyperTerminal workspace.

**Figure 3.3** Connection Dialog Box



S002

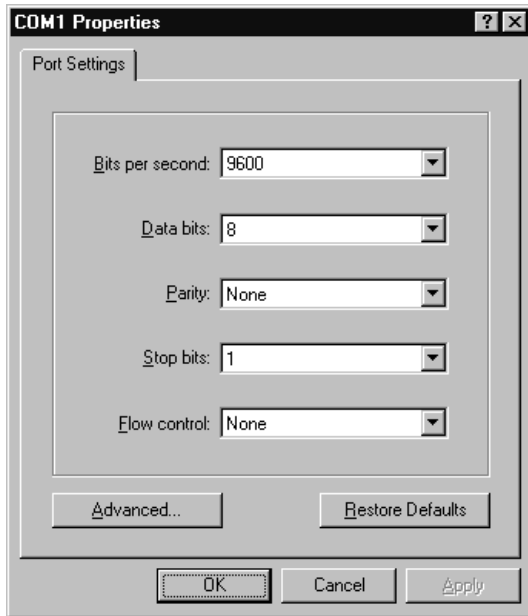
4. In the Name box, type any name (e.g., converter), and then select any icon in the Icon box.
5. Click **OK** to display the Phone Number dialog box.
6. In the Connect Using box, select the communications port that you intend to use (usually COM1 or COM2).
7. Click **OK** to display the Properties dialog box.



8. Select the settings shown in [Figure 3.4](#).

**Important:** If you have previously set **P3-[Serial Port Rate]** to 19.2K or 38.4K, select that value in the Bits per second box.

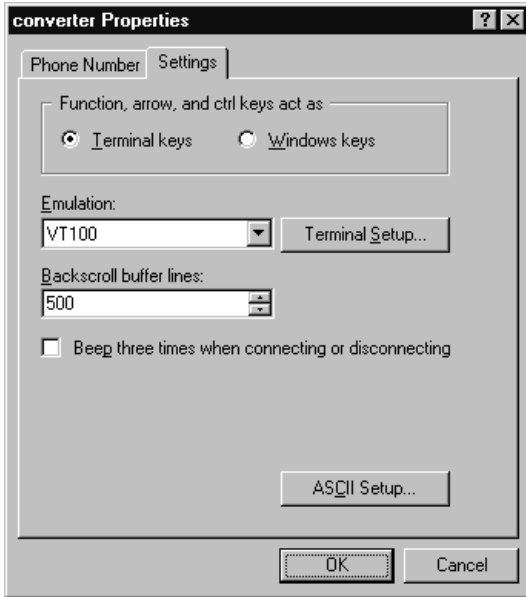
Figure 3.4 Properties Dialog Box



S004

9. Click **OK**. A blank HyperTerminal workspace appears.
10. Select **File > Properties** to display the Properties dialog box.
11. Click the **Settings** tab. See [Figure 3.5](#).
12. Under Function, arrow, and ctrl keys act as, select **Terminal keys**.
13. In the Emulation box, select **VT100**.

Figure 3.5 Properties Dialog Box



S005

14. Click **OK** to display the HyperTerminal workspace.

**TIP:** Select **File > Save** to save the HyperTerminal configuration that you just created. In future connections, you can select the saved configuration and quickly connect to the converter.

15. Press the **Enter** key until the main menu appears.

Figure 3.6 Main Menu

```

Main Menu - Enter Number for Selection
1> Display Setup Parameters
2> Display Event Queue
3> Update FLASH Program
  
```

What do you want to do?	Page
Set up terminal emulation software	<a href="#">3-3</a>
Edit the DF1 address, serial port rate, or fault action	<a href="#">3-7</a> through <a href="#">3-9</a>
View the event queue	<a href="#">4-3</a>
View DF1 data	<a href="#">4-4</a>
Update the firmware	<a href="#">C-1</a>

## Key Strokes for Terminal Emulation Software

Key	Description
0 – 9	In the main menu, keys 1 – 3 select a menu option. In the parameter screen, keys 0– 9 enter a value.
Esc	Display the main menu or abort changes to a parameter.
↑ or ↓	Scroll through parameters or events.
→ or ←	Scroll through the values for a parameter.
Enter	Save a value for a parameter.

## Setting the DF1 Address

The DF1 address is the address that the converter is using on the serial network. If you have multiple nodes on a serial network, each node needs a unique DF1 address. The factory-default DF1 address is 1.

### To set the DF-1 address

1. In the main menu ([Figure 3.6](#)), press **1** to display the parameters.
2. Press ↑ or ↓ to scroll to **P2 - [DF1 Address]**.

**Figure 3.7 DF1 Address Parameter**

```
Press the UP ARROW or DOWN ARROW key to scroll
through the parameter list. Press the LEFT ARROW or
RIGHT ARROW key to modify parameter values. Press
the ENTER key to save a new value.

2> DF1 Address = 1
```

3. Press → or ← to scroll to the desired value, and then press **Enter**.
4. Reset the converter. Refer to [Resetting the Converter](#) in this chapter.

## Setting the Serial Port Rate

The serial port rate, sometimes called baud rate, is the speed at which the computer and converter communicate. You can select a serial port rate of 9600, 19.2K, or 38.4K with the serial converter (Series B). The factory-default serial port rate is 9600.

**Important:** If you change the serial port rate in the converter, you must set your software to use the same serial port rate.

### To set the serial port rate

1. In the main menu ([Figure 3.6](#)), press **1** to display the parameters.
2. Press  $\uparrow$  or  $\downarrow$  to scroll to **P3 - [Serial Port Rate]**.

**Figure 3.8 Serial Port Rate Parameter**

Press the UP ARROW or DOWN ARROW key to scroll through the parameter list. Press the LEFT ARROW or RIGHT ARROW key to modify parameter values. Press the ENTER key to save a new value.

```
3> Serial Port Rate = 9600
```

3. Press  $\rightarrow$  or  $\leftarrow$  to scroll to the desired value, and then press **Enter**.
4. Reset the converter. Refer to [Resetting the Converter](#) in this chapter.
5. Set the serial port rate in your software to match the new serial port rate in the converter.

## Setting the Fault Action

By default, when communications are disrupted (e.g., a serial cable is disconnected) and control I/O is being transmitted, the converter and connected SCANport product respond by faulting. You can set the following actions:

Action	Description
Fault	The SCANport product is faulted.
Zero data	The SCANport product is sent 0 for output data after a communications disruption. This does not command a stop.
Hold last state	The SCANport product continues in its present state after a communications disruption.



**ATTENTION:** Risk of injury or equipment damage exists.

**P4 - [Comm Flt Action]** lets you determine the action of the converter and connected SCANport product if communications are disrupted. By default, this parameter faults the SCANport product. You can set this parameter so that the SCANport product continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a hazard of injury or equipment damage.

### To change the fault response configuration

1. In the main menu ([Figure 3.6](#)), press **1** to display the parameters.
2. Press **↑** or **↓** to scroll to **P4 - [Comm Flt Action]**.

**Figure 3.9 Comm Flt Action Parameter**

```
Press the UP ARROW or DOWN ARROW key to scroll
through the parameter list. Press the LEFT ARROW or
RIGHT ARROW key to modify parameter values. Press
the ENTER key to save a new value.
```

```
4> Comm Flt Action = Fault
```

3. Press **→** or **←** to scroll to the desired value, and then press **Enter**.
4. Reset the converter. Refer to [Resetting the Converter](#) in this chapter.

## Resetting the Converter

After you change a parameter, you must reset the serial converter for the new setting to take effect. You can reset it by removing and then reapplying power or by using **P5 - [Reset Adapter]**.



**ATTENTION:** Risk of injury or equipment damage exists. If the serial converter is transmitting control I/O to the SCANport product (indicated by a solid green diamond LED), the SCANport product may fault when you remove or reset the serial converter. Determine how your SCANport product will respond before removing or resetting a connected serial converter.

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### To reset the converter

1. In the main menu ([Figure 3.6](#)), press **1** to display the parameters.
2. Press  $\uparrow$  or  $\downarrow$  to scroll to **P5 - [Reset Adapter]**.

**Figure 3.10** Reset Parameter

Press the UP ARROW or DOWN ARROW key to scroll through the parameter list. Press the LEFT ARROW or RIGHT ARROW key to modify parameter values. Press the ENTER key to save a new value.

```
5> Reset Adapter = Enable
```

3. Press  $\rightarrow$  or  $\leftarrow$  to scroll to **Enable**, and then press **Enter** to reset the converter.

# Troubleshooting the Serial Converter

## Objectives

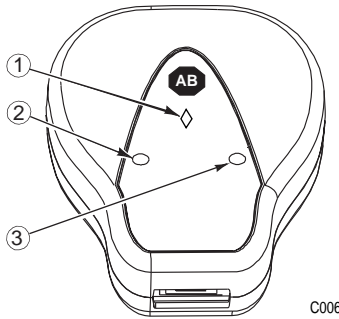
Chapter 4 provides information to troubleshoot the serial converter.

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<a href="#">Viewing and Clearing DF1 Data</a>	4-4
<a href="#">Troubleshooting Potential Communications Problems</a>	4-5

## Understanding the LEDs

The serial converter reports its status using LEDs. See [Figure 4.1](#).

Figure 4.1 LEDs on the Serial Converter



#	LED	Description	Refer To
1	Diamond	Converter status	<a href="#">Diamond LED on 4-2</a>
2	RX	Converter is receiving data	<a href="#">RX LED on 4-2</a>
3	TX	Converter is transmitting data	<a href="#">TX LED on 4-2</a>

## Diamond LED



**ATTENTION:** Risk of injury or equipment damage exists. If the serial converter is transmitting control I/O to the SCANport product (indicated by a solid green diamond LED), the SCANport product may fault when you remove or reset the serial converter. Determine how your SCANport product will respond before removing or resetting a serial converter.

Status	Cause	Corrective Action
Off	Converter is not powered.	<ul style="list-style-type: none"> <li>Verify that cables are securely connected.</li> <li>Verify that the SCANport product is powered.</li> </ul>
Flashing Green	Converter is operating and not transmitting control I/O.	<ul style="list-style-type: none"> <li>No Action. Removing or resetting the converter will not cause a serial fault in the SCANport product.</li> </ul>
Solid Green	Converter is operating and is or was transmitting control I/O.	<ul style="list-style-type: none"> <li>No Action. Removing or resetting the converter may cause a serial fault in the SCANport product.</li> </ul>
Flashing Red	The SCANport product has not acknowledged the converter.	<ul style="list-style-type: none"> <li>Verify that cables are securely connected.</li> </ul>
Solid Red	Link Failure. The SCANport product does not allow port configuration or I/O.	<ul style="list-style-type: none"> <li>Verify that cables are securely connected.</li> <li>Verify that the SCANport product is configured to allow I/O through the port.</li> <li>Replace the SCANport cable.</li> <li>Power cycle the SCANport product.</li> </ul>
Orange		<ul style="list-style-type: none"> <li>Contact Rockwell Automation Technical Support.</li> </ul>

## RX LED

Status	Cause	Corrective Action
Off	Converter is not receiving data.	<ul style="list-style-type: none"> <li>Verify that data is being transmitted.</li> <li>Verify that cables are securely connected and that the SCANport product is powered.</li> </ul>
Flashing Green	Converter is receiving data from the computer.	<ul style="list-style-type: none"> <li>No action.</li> </ul>

## TX LED

Status	Cause	Corrective Action
Off	Converter is not transmitting data.	<ul style="list-style-type: none"> <li>Verify that data is being transmitted.</li> <li>Verify that cables are securely connected and that the SCANport product is powered.</li> <li>Verify that the computer software is configured to use the same serial port rate as the converter.</li> </ul>
Flashing Green	Converter is transmitting data to the computer.	<ul style="list-style-type: none"> <li>No action.</li> </ul>



## Viewing and Clearing the Event Queue

It is normal for a the converter event queue to contain events. If you encounter unexpected communication problems, you can access the event queue and view the most recent events.

In order to view and clear events, you must access the main menu in the converter. Refer to [Accessing Parameters in a Converter](#) in [Chapter 3](#).

### To view the event queue

1. In the main menu, press **2** to select Display Event Queue.
2. Press  $\uparrow$  or  $\downarrow$  to scroll through events in the event queue. The most recent event can be found at **2 > Event Queue 1**.

**Figure 4.2 Example Event Queue**

```
Press the UP ARROW or DOWN ARROW key to scroll
through the parameter list. Press the LEFT ARROW or
RIGHT ARROW key to modify parameter values. Press
the ENTER key to save a new value.

2R> Event Queue 1 = Pin ID Change
```

### Events

Events	Description
Adapter Reset	The converter issued this because it was reset or power cycled.
Clear SP Fault	The SCANport product issued this because a fault was cleared in it.
Clear SP Warning	The SCANport product issued this because a warning was cleared in it.
Empty Queue	No event is in the queue.
Message Time-out	The converter issued this because it did not receive a response to a message within the time-out interval.
No SCANport Ping	The converter issued this because no SCANport pings were detected within a 2 second period. This event may be caused by a broken cable or a broken converter.
Pin ID Change	The converter issued this because the SCANport Pin ID was changed. This event is normal after a power cycled or reset.
SCANport Bus Off	The converter issued this because its SCANport CAN chip went bus off. This event may be caused by loose or broken cables or by noise.
SCANport Fault	The SCANport product issued this because it was faulted. See its fault queue.
SCANport Reset	The SCANport product issued this because it was reset.
SCANport Warning	The SCANport product issued this because it had a warning.
SP Pin ID = 7	The converter issued this because its Pin ID has a value of 7. It should have a value between 1 and 6. This event may be caused by a loose or broken cable.

### To clear the event queue

1. In the main menu, press **2** to select Display Event Queue.
2. Press  $\uparrow$  or  $\downarrow$  to scroll to **1 > Clr Event Queue**.
3. Press  $\rightarrow$  or  $\leftarrow$  to select **Enable**, and then press **Enter** to clear the event queue.

**Figure 4.3 Reset Event Queue**

Press the UP ARROW or DOWN ARROW key to scroll through the parameter list. Press the LEFT ARROW or RIGHT ARROW key to modify parameter values. Press the ENTER key to save a new value.

```
1> Clr Event Queue = Enable
```

### Viewing and Clearing DF1 Data

If you encounter unexpected communications problems or are creating an application that uses DF1 data, you can view the communications and DF1 data in the converter. Parameters 6 through 15 store this data.

In order to view and clear DF1 data, you must access the main menu in the converter firmware. Refer to [Accessing Parameters in a Converter in Chapter 3](#).

### To view DF1 data

1. In the main menu, press **1** to select Display Setup Parameters.
2. Press  $\uparrow$  or  $\downarrow$  to scroll through the DF1 parameters. Parameters 6 through 15 contain DF1 data. For a description of each parameter, refer to Appendix B.

**Figure 4.4 Example Parameter Display**

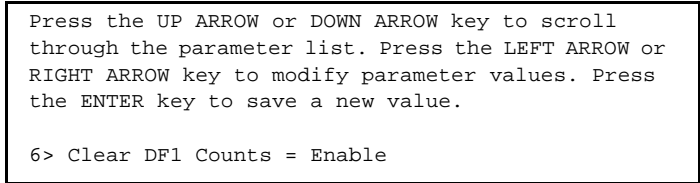
Press the UP ARROW or DOWN ARROW key to scroll through the parameter list. Press the LEFT ARROW or RIGHT ARROW key to modify parameter values. Press the ENTER key to save a new value.

```
7R> DF1 Packets Sent = 0
```

### To clear DF1 data

1. In the main menu, press **1** to select Display Setup Parameters.
2. Press  $\uparrow$  or  $\downarrow$  to scroll to **P6 - [Clear DF1 Counts]**.
3. Press  $\rightarrow$  or  $\leftarrow$  to select **Enable**, and then press **Enter** to clear the DF1 data.

**Figure 4.5 Example Parameter Display**



## Troubleshooting Potential Communications Problems

Description	Action
<p>You are unable to establish a connection between your computer and the converter.</p>	<ul style="list-style-type: none"> <li>• If the diamond LED is off, verify that your SCANport cable is securely connected and that the SCANport product is powered.</li> <li>• Verify that your software and converter are both configured to use the same serial port rate (baud rate).</li> </ul>
<p>After changing the serial port rate, you are no longer able to communicate with the converter and connected SCANport product. For example, in HyperTerminal, meaningless text appears on the screen when you press Enter. In DriveExplorer, parameter values are not updated.</p>	<p>Reset the serial port rate in the software. Instructions are included here for resetting the serial port rate in HyperTerminal and DriveExplorer. If you are using a different software application, refer to its user manual.</p> <p><b>HyperTerminal</b></p> <ol style="list-style-type: none"> <li>1. Select <b>File &gt; Properties</b>, and then click <b>Configure</b>.</li> <li>2. Select the new baud rate, and then click <b>OK</b>.</li> <li>3. Save and close HyperTerminal.</li> <li>4. Double-click on your HyperTerminal file (*.ht) to restart HyperTerminal.</li> <li>5. Press <b>Enter</b> until the main menu appears.</li> </ol> <p><b>DriveExplorer</b></p> <ol style="list-style-type: none"> <li>1. Select <b>Explore &gt; Configure Communication</b>.</li> <li>2. Select the new baud rate. DriveExplorer should start updating values again. If it does not, restart DriveExplorer.</li> </ol>
<p>You set a new serial port rate, but the converter is still using the old serial port rate.</p>	<ul style="list-style-type: none"> <li>• Reset the adapter. Refer to <a href="#">Chapter 3</a>.</li> </ul>

**Notes:**

## Specifications

### Objectives

Appendix A provides the specifications for the serial converter.

### Converter Specifications

Category		Specifications
Electrical	Consumption <sup>(1)</sup>	60mA at +12V DC
Environmental	Temperature Operating Storage	0 to +50°C (32 to 122°F) -40 to +85°C (-40 to 185°F)
	Relative Humidity	5 to 95% non-condensing
	Vibration Operating Non-Operating	2.5G @5Hz-2KHz 5 G @5Hz-2KHz
	Shock Operating Non-Operating	30 G peak acceleration, 11(+/-)ms pulse width 50 G peak acceleration, 11(+/-)ms pulse width
	Communications	Protocol
Communications	Serial Port Rate	9600 19.2K 38.4K
	Data Bits	8
	Parity	None
	Stop Bits	1
	Flow Control	None
	Error Detection	CRC or BCC (Auto-Detected) <sup>(2)</sup>
	Regulatory Compliance	UL CE
Mechanical	Dimensions	103.5 x 73.4 x 23.6 mm (4.08 x 2.89 x 0.93 in)
	Weight	2.5 oz. (0.09 g)

<sup>(1)</sup> The serial converter draws the required power from the connected SCANport product. An external power source is not required.

<sup>(2)</sup> When using DriveExplorer, you can select either CRC or BCC as the checksum.

**Notes:**

## Serial Converter Parameters

### Objectives

Appendix B provides information on the serial converter parameters.

### Parameters

Parameter Name and Description	Details
<b>1 - [SCANport Adapter]</b> Identifies the SCANport product port number to which the converter is connected.	Default: N/A Type: Read Only Minimum: 0 Maximum: 7 Reset Required: No
<b>2 - [DF1 Address]</b> Sets the DF1 Node Address for the converter. This is a decimal value. <sup>(1)</sup>	Default: 1 Type: Read/Write Minimum: 0 Maximum: 127 Reset Required: Yes
<b>3 - [Serial Port Rate]</b> Sets the serial port rate for the DF1 serial port on the converter. <sup>(1)</sup>	Default: 9600 Type: Read/Write Values: 9600 19.2K 38.4K Reset Required: Yes
<b>4 - [Comm Flt Action]</b> Sets the action that the converter and SCANport product take if the converter detects that DF1 serial communications are disrupted. This setting is effective only if control I/O is transmitted through the converter. <sup>(1)</sup>	Default: Fault Type: Read/Write Values: Fault Zero Data Hold Last Reset Required: Yes



**ATTENTION:** Risk of injury or equipment damage exists. **P4 - [Comm Flt Action]** lets you determine the action of the converter and connected SCANport product if communications are disrupted. By default, this parameter faults the SCANport product. You can set this parameter so that the SCANport product continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a hazard of injury or equipment damage.

<b>5 - [Reset Adapter]</b> If this parameter is set to enable, the adapter is reset. If it is set to Set Defaults, the parameters in the adapter are reset to their factory-default settings.	Default: Ready Type: Read/Write Values: Ready Enable Set Defaults Reset Required: No
--	---



**ATTENTION:** Risk of injury or equipment damage exists. If the serial converter is transmitting control I/O to the SCANport product (indicated by a solid green diamond LED), the SCANport product may fault when you remove or reset the serial converter. Determine how your SCANport product will respond before removing or resetting a connected serial converter.

Parameter Name and Description	Details	
<b>6 - [Clear DF1 Counts]</b> If this parameter is set to enable, all DF1 statistical parameters (numbers 7 through 15) are set to 0.	Default: Ready Type: Read/Write Values: Ready Enable No	Reset Required: No
<b>7 - [DF1 Packets Sent]</b> Displays the number of DF1 packets sent by the converter. The value of this parameter is normally about equal to the value of <b>P8 - [DF1 Packets Rcvd]</b> .	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>8 - [DF1 Packets Rcvd]</b> Displays the number of DF1 packets received by the converter. The value of this parameter is normally about equal to the value of <b>P7 - [DF1 Packets Sent]</b> .	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>9 - [Undelivered Msgs]</b> Displays the number of DF1 messages that were sent but not acknowledged. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>10 - [ENQs Sent]</b> Displays the number of ENQ characters sent by the converter. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>11 - [ENQs Received]</b> Displays the number of ENQ characters received by the converter. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>12 - [NAKs Received]</b> Displays the number of NAK characters received by the converter. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>13 - [NAK Bad Packet]</b> Displays the number of NAKs sent by the converter because of corrupt packets (improper protocol messages) as determined by the converter. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>14 - [NAK No Memory]</b> Displays the number of NAKs sent by the converter because it did not have sufficient memory to buffer the incoming messages. The converter runs out of memory if a command has not completed and there is no place to save the new commands. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	
<b>15 - [Duplicate Msgs]</b> Displays the number of duplicate messages sent by the converter. This value contains the total number of consecutive messages received by this device with the same TNS (Transaction Sequence) number. <sup>(2)</sup>	Default: 0 Type: Read Only Minimum: 0 Maximum: 65535 Reset Required: No	

(1) After editing this parameter, you must reset the converter. Refer to [Chapter 3](#).

(2) This value is normally 0. If it is not 0 and you are having communications problems, use a lower baud rate or replace the 1203-SFC serial cable.



## FLASH Updates

### Objectives

Appendix C provides information on updating the firmware in the converter by performing a FLASH.

Topic	Page
<a href="#">Preparing for a FLASH Update</a>	<a href="#">C-1</a>
<a href="#">Performing a FLASH update</a>	<a href="#">C-2</a>
<a href="#">Troubleshooting Potential FLASH Problems</a>	<a href="#">C-3</a>

### Preparing for a FLASH Update

Please take the following precautions to ensure a successful FLASH:

- Obtain the new firmware version from Rockwell Automation. Save it to the hard drive of the computer. Do not attempt to perform a FLASH from a floppy disk.
- Use a computer running terminal emulation software that supports XMODEM transfers (e.g., HyperTerminal).
- Note parameter values. Updates may reset parameters to defaults.
- Close all programs except the terminal emulation program that you are using to FLASH the converter. Disable the screen saver and antivirus programs so that they do not start during the FLASH.
- If you are using a laptop computer, turn off the FIFO buffers in HyperTerminal. In HyperTerminal, select **File > Properties** to display the Properties dialog box. Click **Configure**, and then click **Advanced**. Ensure that a check mark does not appear next to Use FIFO buffers.

## Performing a FLASH update

1. In the main menu (Figure 3.6), press **3** to Update FLASH program.

**Figure 4.6 FLASH Menu**

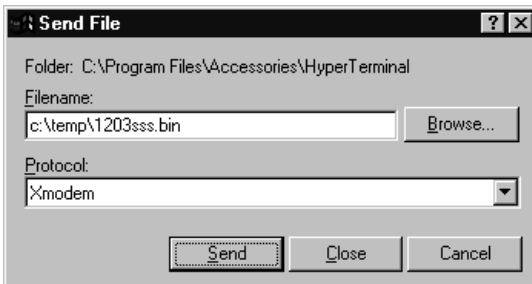
To update the FLASH memory, you need a terminal program capable of downloading a binary file using the XMODEM protocol and a FLASH update file from Rockwell Automation. When you press 'Y' to signal that you are ready to proceed, the terminal program will start displaying the letter 'C'. This signals the XMODEM protocol that the download may proceed. You then have one minute to start the transfer. Press CTRL-X to cancel an update started by mistake. Are you ready to proceed? (Y/N)



**ATTENTION:** Hazard of injury or equipment damage exists. When you perform a FLASH update, the SCANport product will fault if it is receiving control I/O from the converter. Verify that the SCANport product has stopped safely or is receiving control I/O from an alternate source before beginning a FLASH update.

2. If the FLASH can be completed safely, type **Y**. The letter “C” repeatedly appears. It is the Xmodem prompt and continues to appear until you send a binary file.
- Important:** Press Ctrl + X to cancel a FLASH update procedure.
3. Select **Transfer > Send File** to display the send file dialog box.
  4. Click **Browse** and navigate to the FLASH file.
  5. Double-click the file. Its name appears in the Filename box.
  6. In the Protocol box, select Xmodem.

**Figure 4.7 Example Send File Dialog Box**



7. Click **Send**. A dialog box appears to report the progress of the download. When it is complete, the message “Operation Complete” flashes, and then the main menu appears.

## Troubleshooting Potential FLASH Problems

Description	Corrective Action
“Transfer Cancelled by Remote System” message appears and the FLASH is not completed.	<ul style="list-style-type: none"><li>• Restart HyperTerminal and redo the FLASH procedure. Try this a couple times.</li><li>• Download a HyperTerminal PE update from the Hilgraeve (<a href="http://www.hilgraeve.com">http://www.hilgraeve.com</a>). Then, perform the FLASH procedure.</li></ul>
The X-Transfer Send for dialog box appears, but the FLASH file is not transferred.	<ul style="list-style-type: none"><li>• Verify that you have selected the Xmodem protocol in the Send file dialog box.</li><li>• Verify that the new file is on you hard disk. Do not attempt to FLASH from a floppy disk.</li><li>• Verify that you are sending the file within 60 seconds of pressing Y to confirm that you want to perform the FLASH.</li></ul>
After completing a FLASH, you are unable to communicate with the converter. For example, meaningless text appears on the HyperTerminal screen.	<ul style="list-style-type: none"><li>• Set the serial port rate to 9600. If parameters are changed during a FLASH update, all parameters are set to their default settings.</li></ul>

**Notes:**

## **B BCC**

Block Check Character. An error detection scheme where the 2's complement of the 8-bit sum (modulo-256 arithmetic sum) of all data bytes in a transmission block. It provides a means of checking the accuracy of each message transmission.

## **C CRC**

Cyclic redundancy check. An error detection scheme where all of the characters in a message are treated as a string of bits representing a binary number. This number is divided by a predetermined binary number (a polynomial) and the remainder is appended to the message as a CRC character. A similar operation occurs at the receiving end to prove transmission integrity.

## **D DF1 Protocol**

A peer-to-peer link layer protocol that combines features of ANSI X3.28-1976 specification subcategories D1 (data transparency) and F1 (two-way simultaneous transmission with embedded responses).

### **DriveExplorer**

An easy-to-use software application designed for Microsoft Windows 95, Windows 98, Windows NT (4.0 or greater), and Windows CE (2.0 or greater) operating systems. This application is a tool for monitoring and configuring Allen-Bradley products and adapters. A free version of DriveExplorer Lite is included with the serial converter. Information about DriveExplorer can be accessed at:  
<http://www.ab.com/drives/driveexplorer>

### **DriveTools32**

A software suite designed for Microsoft Windows 95, Windows 98, and Windows NT (4.0 or greater) operating systems. This software suite provides a family of tools that you can use to program, monitor, control, troubleshoot, and maintain Allen Bradley products. Information about DriveTools32 can be accessed at:  
<http://www.ab.com/drives/drivetools32>

## **F FLASH Update**

The process of updating firmware in the converter.

## **H**    **Hold Last State**

When communications are disrupted (e.g., serial cable is disconnected), the converter and SCANport product can respond by holding last state. Hold last state results in the SCANport product receiving the last data received via the DF1 connection before the disruption. If the SCANport product was in RUN mode and using the reference from the converter, it will continue to run at the same reference.

## **S**    **SCANport**

A standard peripheral communications interface for various Allen-Bradley drives and power products.

### **SCANport Peripheral**

A device that provides an interface between SCANport and a network. It is often referred to as an adapter. For example, the serial converter is a SCANport peripheral.

### **SCANport Product**

A device that uses the SCANport communications interface to communicate with one or more peripheral devices. For example, a motor drive such as a 1336 PLUS II is a SCANport product. In this manual, a SCANport product is also referred to as “product.”

### **Serial Converter**

The serial converter provides an electronic communications interface between any Allen-Bradley SCANport product and a computer with an RS-232 port. This converter uses a full-duplex RS-232 DF1 protocol. The serial converter may also be referred to as “1203-SSS converter,” “adapter,” “converter,” or “SCANport peripheral.”

## **Z**    **Zero Data**

When communications are disrupted (e.g., serial cable is disconnected), the converter and SCANport product can respond with zero data. Zero data results in the SCANport product receiving zero as values for command data. If the SCANport product was in RUN mode and using the reference from the converter, it will stay in run mode but at zero reference.

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**Notes:**

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