



Allen-Bradley

NetLinx
ControlNet
Communication
Card
(Cat. No. 1784-PCC)

ControlNet

Installation 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), 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.

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.

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Summary of Changes

Summary of Changes

This release of the 1784-PCC installation instructions contain new and updated information about Windows NT®. You will see change bars, as shown to the left of this paragraph, throughout this manual to help you quickly identify revisions.

Other information was revised extensively. For those chapters that contain all new information, or extensively revised information, you will find a change bar in the margin of the table of contents and not within the chapters themselves.

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About This Manual

Use this manual to install and use the ControlNet® PC card (PCMCIA interface), catalog number 1784-PCC. This interface enables a system to communicate on a ControlNet network.

Who Should Read This Manual

The information in this manual is intended for users who are:

- familiar with Windows 95®, Windows® 98, or Windows NT
- experienced with ControlNet configuration software and the ControlNet network


Abbreviations Used in This Manual

Throughout this manual, we abbreviate some terms. Use the following table to become familiar with our terminology.

This abbreviation	Means
PCMCIA	Personal Computer Memory Card International Association.
I/O	I/O is an abbreviation for "Input and Output".
Input Data	This data is produced by a ControlNet device and collected by the communication module and made available for a host platform to read.
Output Data	This data is produced by a host platform that is written to the communication module's memory. This data is sent by the communication module to ControlNet devices.
IRQ	Interrupt Request
PC	Personal Computer.

Conventions Used in This Manual


You will see the following conventions used in this document:

Convention	Shows
9 pt. courier	screen displays and prompts
10 pt. times bold	menu options
9 pt. courier bold	text you type
	window buttons you should click with the mouse cursor
text in all caps (ENTER)	keys you press

Important: Driver and firmware versions that appear in the screen captures in this manual are not necessarily the latest version available. The version you use should be the version that appears in the screen capture or a later version.

In this document, we refer to the ControlNet PC card as the 1784-PCC card.

European Communities (EC) Directive Compliance

If this product has the  mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 5001082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1.

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

About the PCC Card

What This Chapter Contains

Read this section to familiarize yourself with **PC card** technology and the 1784-PCC card. The following table describes what this chapter contains and where to find specific information.

For information about	See page
what is PCMCIA	1-1
what is a PC card	1-1
use of the 1784-PCC card	1-3
how to obtain support	1-3
inserting the 1784-PCC card	1-4
multiple tones	1-5

What Is PCMCIA?

The Personal Computer Memory Card International Association (PCMCIA) developed a standard for credit-card size personal computer (**PC**) cards. The PCMCIA standard defines an architecture and communication method for these **PC cards**.

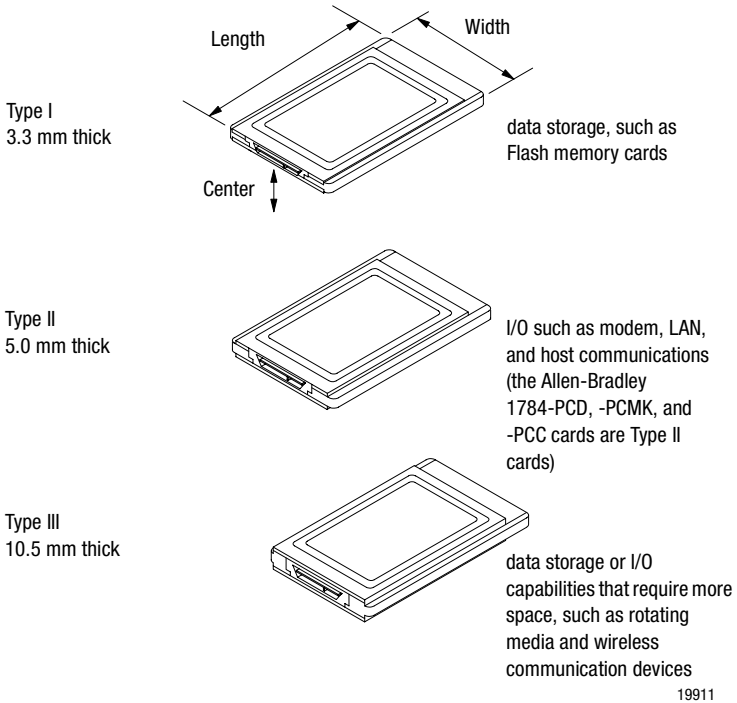
PC cards developed under Release 1.0 of the PCMCIA standard are used for data storage. PC cards developed under Release 2.0 of the PCMCIA standard can be used for both I/O and data storage.

What Is a PC Card?

Since personal computers have become smaller, a need for smaller storage media developed. The PC card is a small form-factor adapter that can add memory, storage, and I/O capabilities to these smaller computers.

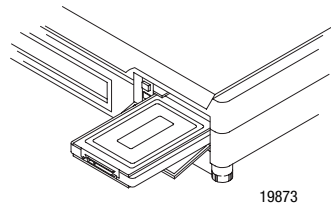
All PC cards measure the same length and width (54 mm x 85.6 mm), but differ in thickness at the center. The thickness at the connector end and along the rails is the same for all types of PC cards.

Currently there are three types of PC cards:




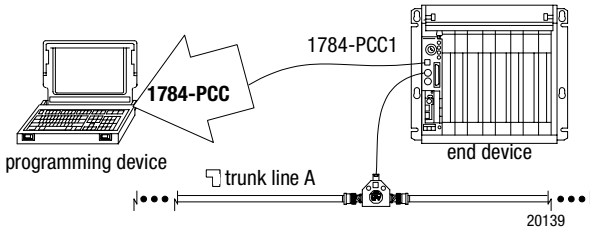
Important: If the PCMCIA slot in your computer is thick enough to accommodate a Type III card, then it can also accommodate a Type I or II card.

All three types of PC cards use the same 68-pin connector. The pins are in two parallel rows of 34 pins. When inserted into the PCMCIA slot on your computer, the connector mates with a single molded socket.



Use of the 1784-PCC Card

Use the ControlNet communication card (1784-PCC) to connect a programming device to any intelligent device (i.e., workstation, PLC®, processor, scanner, or adapter) on the ControlNet through the Network Access Port ().



Important: Your computer must be PCMCIA 2.1 compliant to support the 1784-PCC card. To verify that your computer is PCMCIA 2.1 compliant, see your computer's user manual.

Obtain Support

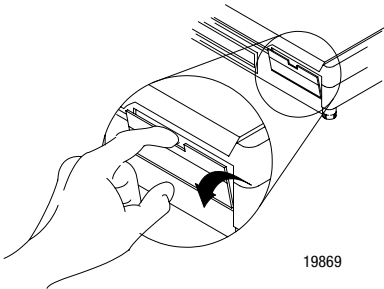
For additional support using the 1784-PCC card, access these Rockwell Automation technical support services.

Technical Support	Access
Internet Web Site	http://www.ab.com — as a registered member, open to http://www.ab.com/mem/technotes/techmain.html
Fax-back system	440.646.5436 (requires a touch-tone telephone)
Telephone	440.646.3638 (Pre-sales Technical Support) 440.646.5800 (Post-sales Technical Support)

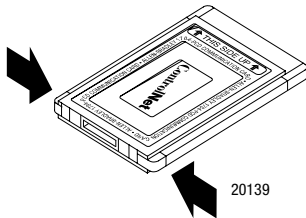
Insert the Card

Important: If you are using Windows 95 or 98, you can insert or remove the 1784-PCC card from a powered computer. If you are using Windows NT or another operating system, shut down the computer before inserting or removing the 1784-PCC card.

▶ The following diagrams show a PCMCIA 2.1 compliant system. If you are using another computer, your installation may be slightly different.

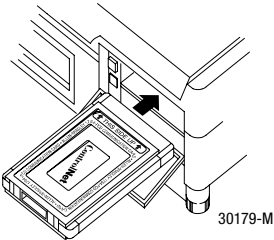


1. Open the door to the PCMCIA slot. Some slots do not have doors.



2. Grasp the card by the edges with the logo facing upward and the 68-pin connector facing into the PCMCIA slot.

Important: If you have more than one slot in your computer, you can insert the 1784-PCC card into any empty slot. Check your computer's documentation for the slot numbers. You can use the other available slots for other PC cards such as network or modem cards.



3. Insert the card into the PCMCIA slot and slide the card in until it is firmly seated in the connector. Some computers have an ejector button that pops out when the card is seated in the connector.

If the computer is configured properly, your sound/speaker is enabled, and you installed the 1784-PCC card successfully, you hear multiple tones when you insert a card or boot the computer.

Multiple Tones

If you insert multiple PC cards, you may hear more than one tonal notification per card. Windows 95/98 detects devices during the power up process, and adjusts the device resources accordingly. This results in sounding multiple tones. When the system changes settings, for example, removing a card, the tones will sound again for each change.

Before You Begin

What This Chapter Contains

The following table describes what this chapter contains and where to find specific information.

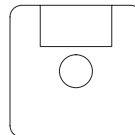
For information about	See page
verifying package contents	2-1
system requirements	2-2
making backups	2-2

Verify Package Contents

Make sure that you have these items before you discard any packing material. If an item is missing or incorrect, contact your local sales representative.



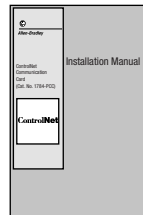
1784-PCC card



1784-PCC installation utility disk



1784-PCC1 cable



installation manual
(publication 1784-5.34)

30185-M

System Requirements

operating system	Microsoft® Windows 95/98 or NT 4.0
application software	<ul style="list-style-type: none">• RSNetWorx for ControlNet software• RSLinx 2.0 or later for Windows 95/98• RSLinx 2.1 or later for Windows NT
memory for computer resources	8 MB or higher
memory for card resources	4kB
IRQ	1 available IRQ
hard disk space	300K
diskette drive	one 3.5" diskette drive
PCMCIA slot	one Type II slot

Make Backups

It is always a good idea to make backup copies of your diskettes. Before you install the 1784-PCC or any driver, we recommend that you make a backup copy of the setup disk.

Install and Use the 1784-PCC Card on Windows 95/98

What This Chapter Contains

Read this chapter to learn how to operate the 1784-PCC card on Windows 95/98. The following table describes what this chapter contains and where to find specific information.

For information about	See page
installing the card's driver on Windows® 95/98	3-2
stopping the card in Windows 95/98	3-4
removing the card drivers in Windows 95/98	3-5

Install the Card's Driver on Windows 95/98

Follow the procedure below to install or update the Windows 95/98 driver for the 1784-PCC/B card.

Important: Right click on the My Computer icon on your Windows desktop. Select the General tab and locate the number "4.00.950" on the third line. If this number is **not** followed by an alpha character, then be aware that the screens you see may look slightly different than the ones shown in this manual.

1. With Windows 95/98 running, insert the card into the PCMCIA slot by following the directions in Chapter 1, "Insert the Card." You see a message telling you that new hardware was found.

You see:



2. Insert the installation diskette into the floppy disk drive.
3. Click to begin the install/upgrade.

You see a message telling you that the system is searching for a driver for the new device.

You see:



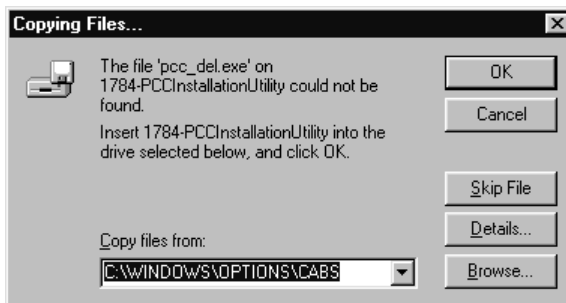
4. Click to install/upgrade the driver.


You may see the following message:



- a. If you have not already done so, insert the diskette into the floppy disk drive and press ENTER or click .

You see:





- b. In the Copy files from box, specify the drive (usually a:) that corresponds to your floppy disk drive.
- c. Press ENTER or click .



After the system has finished copying files, you should hear two upward tones that indicate the card is ready to use. If you do not hear these tones, check to see that your speakers/sound are enabled. If they are, see Chapter 6, “Troubleshooting the Card in Windows 95/98.”

Stop the Card in Windows 95/98

In Windows 95/98, before you remove the 1784-PCC card from its socket, you should stop the communication to it. To do this:

1. Click with your right mouse button on the PC Card icon in the taskbar.
2. Select Adjust PC Card Properties.
3. Click on the 1784-PCC card you want to stop in the list of PC cards.
4. Click on .
5. When you see the window that states that you may safely remove this device, press ENTER or click .
6. Remove the 1784-PCC card from the PCMCIA slot.

Alternately, to stop the card, you can do the following:

1. Click with your left mouse button on the PC Card icon in the taskbar.
2. Click on the 1784-PCC card you want to stop in the list of PC cards.
3. Click on .
4. When you see the window that states that you may safely remove this device, press ENTER or click .

Remove the Card's Driver in Windows 95/98

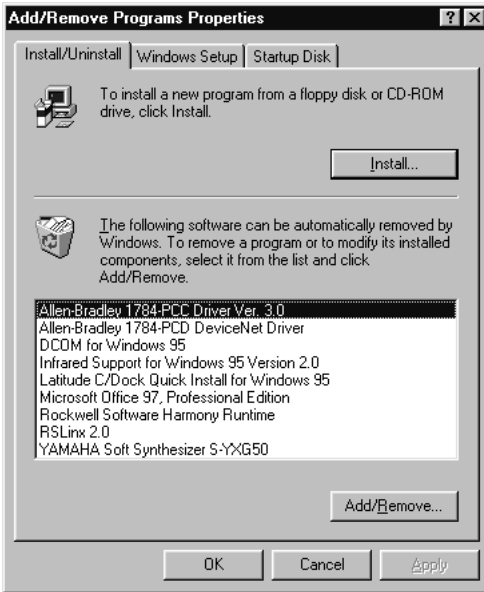
You can access the uninstaller through Windows 95/98's Add/Remove programs applet to remove the card's driver from your system.

1. Stop the PCC card as described on page 3-4.
2. Access the Control Panel by selecting:



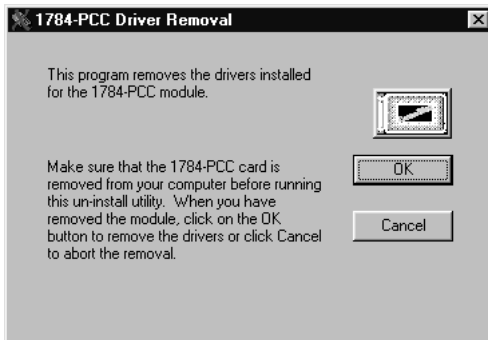
3. Double-click on the Add/Remove Programs icon.

4. Select Allen-Bradley 1784 PCC Driver Ver. 3.0.



5. Click the **Add/Remove...** button.

You see:



6. Remove the 1784-PCC card before continuing. The system gives you the opportunity to cancel the operation before deleting any files.

7. Press ENTER or click **OK** to remove the driver.

Install and Use the 1784-PCC Card on Windows NT

What This Chapter Contains

Read this chapter to learn how to operate the 1784-PCC card on Windows NT. The following table describes what this chapter contains and where to find specific information.

For information about	See page
installing the card's driver on Windows NT	4-3
removing the card's driver on Windows NT	4-9

Before You Begin

Read the following **before** you install your 1784-PCC series B card or later.



ATTENTION:

- The 1784-PCC series B interface card and NT Driver are designed for use in notebook PCs equipped with NT 4.0 from the original manufacturer and certified by Microsoft.
 - If your PC is not certified, it may not be compatible for use with the 1784-PCC series B card under NT 4.0.
-

Determine NT Certification

If you received your PC from the manufacturer with NT already installed then it is probably NT-certified. However, the manufacturer may have installed software such as SytemSoft or Softex that potentially can cause difficulties.

To determine if your PC is NT-certified, visit Microsoft's web page at the following URL: <http://www.microsoft.com/windows/compatible>. At this site, verify that your PC is listed as 'NT-Performance Tested'. If it is, then it is NT-certified.

Alternatively, you can visit the PC manufacturer's web page (e.g., Dell, NEC, or IBM) to see if your PC is listed as NT-certified.

If you have a non-certified machine and need to upgrade to a series B card, Call Rockwell Automation Technical Support at 440.646.5800.

Install the Card's Driver on Windows NT

Be aware of the following important points before installing the Windows NT driver for the 1784-PCC/B card.

Important: Before you can install the driver for the 1784-PCC/B card, you must be logged in as an administrator of the machine. Being an administrator gives you permission to install or make changes to the machine software. If you try to install the driver without being an administrator, you will get error messages and the driver will not install.

- You must be running Windows NT 4.0 with Service Pack 3 or later.
- You can use only one 1784-PCC card at a time in Windows NT.
- You must have RSLinx 2.1 or later.
- This driver does NOT currently work with SystemSoft®'s CardWizard Windows NT plug & play software.
- If you have Softex/Phoenix's Windows NT plug and play PC card Controller software:
 - you must upgrade the PC Card Controller Software to version 2.35 or later for the 1784-PCC driver to function with Softex.
 - The temporary patch, `softex.zip`, is available for download from the following URL: <http://www.ab.com/mem/technotes/download.html>.
 - to get a Softex upgrade, you will need to contact either your computer manufacturer or Softex directly:
 - on the Internet: <http://www.eden.com/~softex/>
 - by phone: 512.452.8836
 - by FAX: 512.795.8702

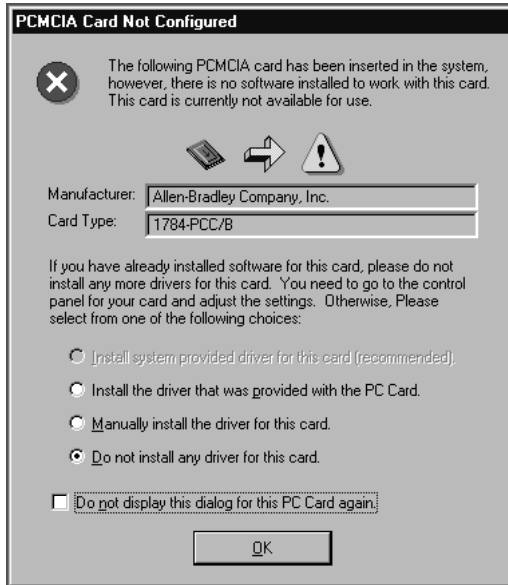
Follow the procedure below to install the Windows NT driver for the 1784-PCC/B card.

Important: You are required to insert the 1784-PCC card in order for the installation to work properly. We recommend that you insert the 1784-PCC card only when your system is not powered. Once you have installed the driver and you insert the 1784-PCC card into the slot, we do not recommend that you remove the 1784-PCC card while Windows NT is running.

1. Start the install process with your machine off.
2. Insert the 1784-PCC/B card.
3. Turn your machine on and logon as an administrator.

Important: Remember, in order for the installation process to run correctly, you must have (administrator) privileges to install the software.

Important: If you have Softex on your system, you may get the following message:

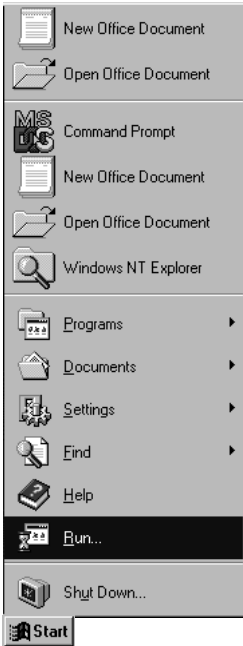


If you get this message, choose the **Do not install any driver for this card** option and press **ENTER** or click **OK**. You will still need to install the driver as outlined in these instructions.

4. Insert the installation diskette into the floppy disk drive.

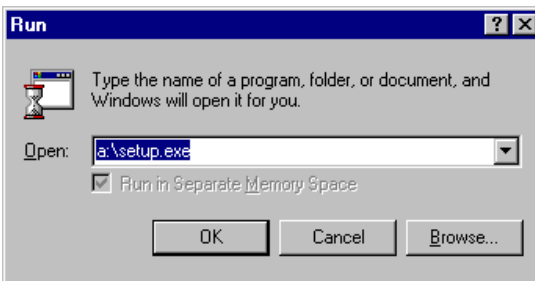
Important: We strongly recommend that you exit all Windows programs before running this utility. We cannot guarantee that data will not be lost.

5. Access the Run window by selecting:



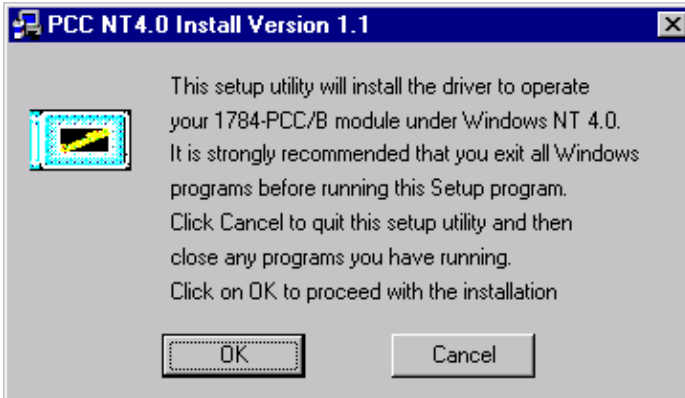
The Run dialog box appears.

6. Type the path `a:\setup.exe`.
Substitute `a:\` for the drive of your floppy disk, i.e `b:\`.



7. Press ENTER or click .

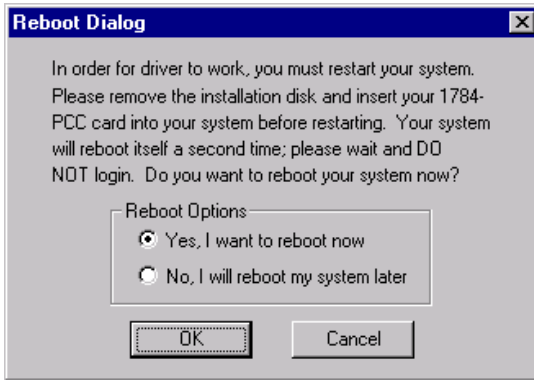
You see:




Important: If you have programs running, click to exit the installation process and exit the programs. After you exit the programs, start the install process over.

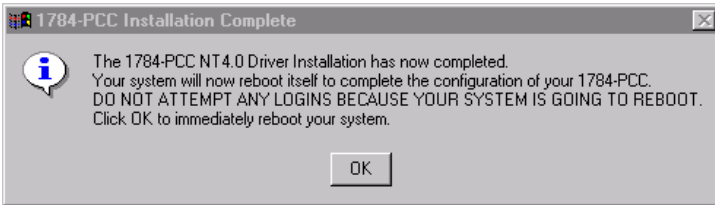
8. Press ENTER or click to continue with the installation.


When this portion of the installation is complete, you see:



- 9. Remove the install diskette from your floppy drive.
- 10. Press ENTER or click  to reboot your system.

Your login screen appears. Do not login, wait and you see:



The driver installation is now complete and your system will automatically restart after you click .

- 11. Click .

Remove the Card's Drivers in Windows NT

You can access the uninstaller through Windows NT's Add/Remove programs applet to remove the card's drivers from your system.

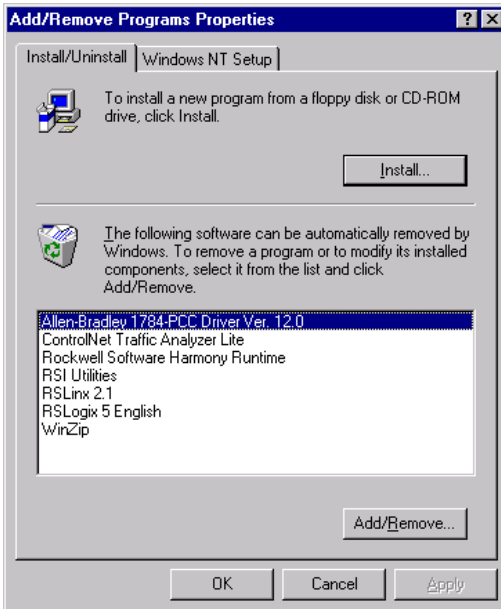
1. Access the Control Panel by selecting:



2. Double-click the Add/Remove Programs icon.

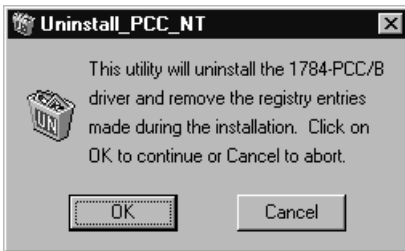


3. Select Allen-Bradley 1784 PCC Driver Ver. 12 or later.



4. Click the **Add/Remove...** button.

You see:



You do not have to remove the card. The system gives you the opportunity to cancel the operation before deleting any files.

5. Click **OK** to uninstall the driver.

6. Close the Control Panel.

Connect the 1784-PCC Card to the Network

What This Chapter Contains

Read this chapter to connect the 1784-PCC card to the network and to understand network communication. The following table describes what this chapter contains and where to find specific information.

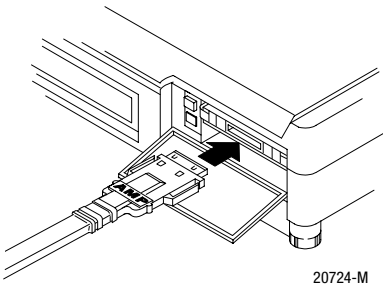
For information about	See page
connecting the card to the ControlNet network	5-1
communicating with the card on the ControlNet network	5-2

Connect the Card to the ControlNet Network

These instructions assume that you have:

- installed your application software
- inserted the card (Chapter 1)
- installed the 1784-PCC drivers (Chapter 3 for Windows 95/98, Chapter 4 for Windows NT)

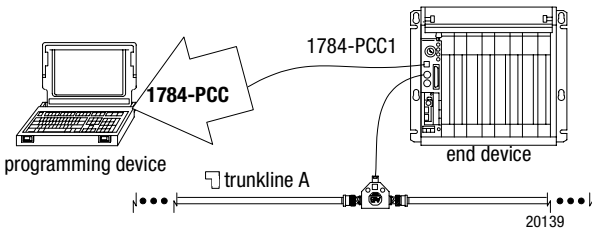
Important: The following diagrams show a PCMCIA 2.1 compliant system. If you are using another computer, your installation may appear slightly different.



1. Attach the smaller end of the 1784-PCC1 cable to the 1784-PCC card.



The silver side should face upward as you connect the cable to the 1784-PCC card.



2. Attach the other end of the 1784-PCC1 cable to any intelligent device (i.e., workstation, PLC processor, scanner, or adapter) on ControlNet through its Network Access Port.

Communicate with the Card on the ControlNet Network

The 1784-PCC card communicates on the ControlNet network through a standard application programming interface (API) known as **RSLinx™** from Rockwell Software, Inc. If you need additional information about this software package or about communicating on the ControlNet network, refer to the ControlNet Cable System Planning and Installation Manual, publication number 1786-6.2.1 or contact your Rockwell Automation representative.

Refer to the following table for the version of **RSLinx** you will need for your operating system.

Operating System	Version of RSLinx
Windows 95/98	2.0 or later
Windows NT	2.1 or later

Troubleshooting the 1784-PCC Card in Windows 95/98

What This Chapter Contains

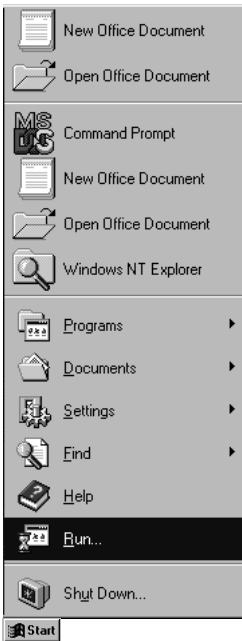
The following table describes what this chapter contains and where to find specific information.

For information about	See page
running the test application in Windows 95/98	6-2
troubleshooting the card's driver in Windows 95/98	6-4

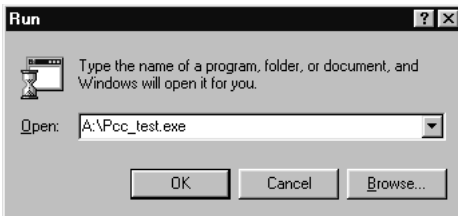
Run the Test Application in Windows 95/98


To test your installation, you should now run the test application provided on the installation utility disk. To do this, do the following:

1. Access the Run window by selecting:



2. In the window that appears, type **A:\Pcc_test.exe**.



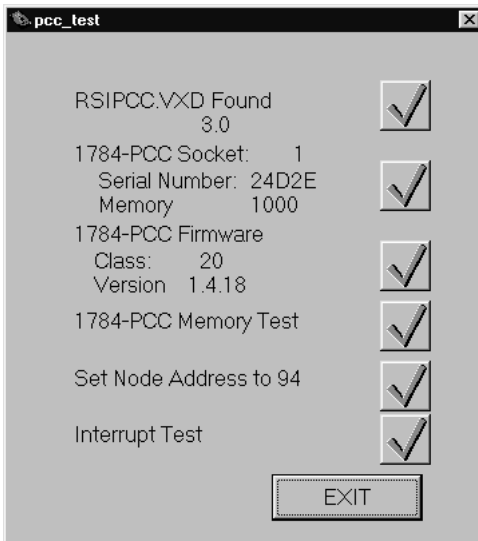
3. Press ENTER or click .
4. Select the PCC card to test. If you have only one PC card installed, you will be able to select only that card.

You see:



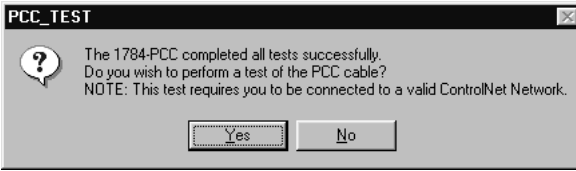
5. Press ENTER or click . The test application starts.

You should see the following window. If you do not see the following window, see the “Troubleshooting the Card’s Installation” section on the next page or contact your Allen–Bradley service representative for assistance.



You should see a green check mark in each of the boxes. If you do not see six green check marks or you do not see the message the 1784-PCC completed all tests successfully, contact your Allen–Bradley service representative for assistance.

6. Then you see the following window:



7. Click or . You must be connected to a ControlNet network to test the PCC cable.

Troubleshoot the Card Installation in Windows 95/98

If you find that there is no PC card icon in the Control Panel, this could be an indication that the PCMCIA socket hardware or drivers were not installed properly. This situation prevents Windows 95/98 from locating the PC card. To resolve this problem, contact the computer manufacturer.

Enabling the PC Card Icon in Taskbar in Windows 95/98

The PC card icon in the Taskbar lets you know the status of your PC card, and lets you stop processing before you remove or change PC cards. You can display this icon within the Taskbar on your Windows 95/98 desktop. You will see this icon only when there is one or more PC card(s) installed in the computer.

To set up the PC card icon within the Taskbar:

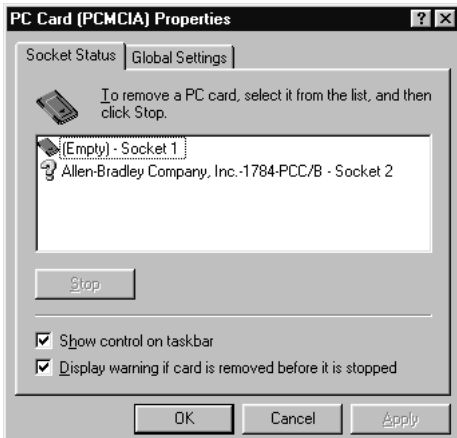
1. Access the Control Panel by selecting:



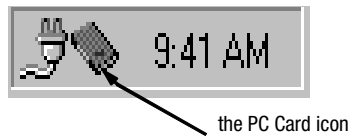
2. Double-click the PC card (PCMCIA) icon.

3. When the PC card Properties dialog box appears, click `Show control` on taskbar.

If you do not see these dialog boxes, contact the computer manufacturer.



4. Press ENTER or click `OK`. The PC card icon appears in the Taskbar.

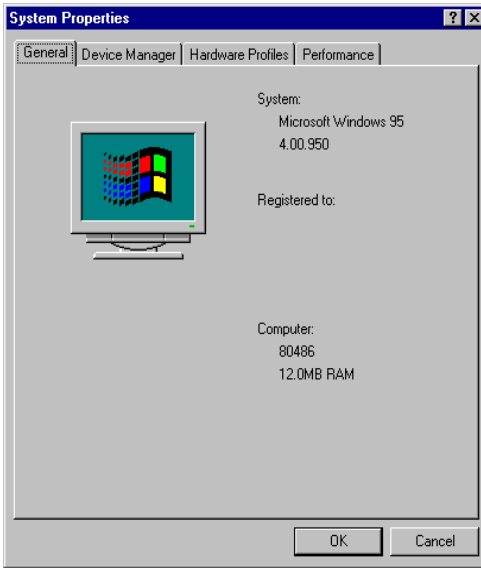


The Driver Still Does Not Work in Windows 95/98

Use the following procedures to resolve any other driver issues.

1. Insert your 1784-PCC card into your system.
2. Click the My Computer icon with the right mouse button.

3. Select Properties from the menu. The System Properties dialog box appears.



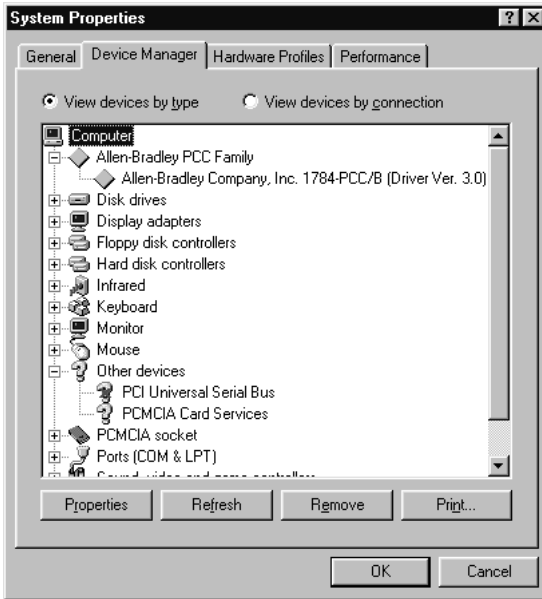
4. Click the Device Manager tab.


All of the devices within the system are displayed.

5. Scroll through the devices and search for the Allen–Bradley PCC Family line.

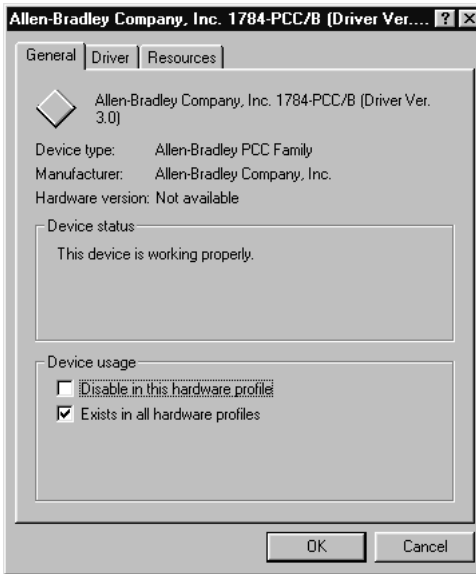
If this line has a plus sign, click the plus sign to expand the item.

The Allen-Bradley 1784-PCC device should be listed.



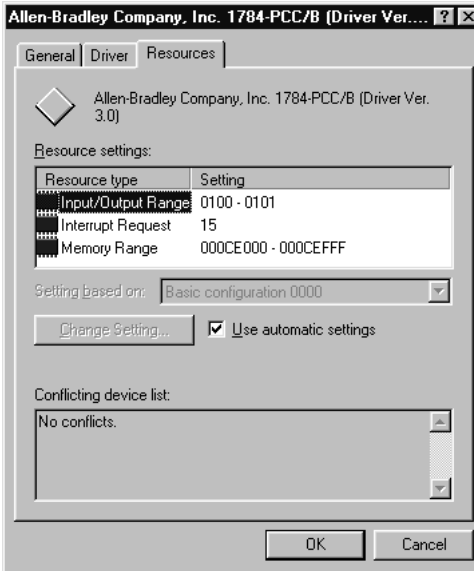
6. Select Allen-Bradley Company, Inc. 1784-PCC/B (Driver Ver. 3.0).
7. Click the  push button.

You see:



If Code 10 (conflicting memory resources) is reported in the Device status dialog box, continue with the following steps.

8. Click the Resources tab in the Properties dialog box.



Verify that there are no resource conflicts listed in the Conflicting Device list. You also should verify that you have assigned an interrupt to the 1784-PCC card. If you have not, then you need to do so. You may have to disable a device to make an interrupt available.

9. If there are conflicts, you may need to alter the settings of devices involved in the conflict to get the 1784-PCC card to function properly. Try unchecking the Use automatic settings box and then changing the interrupt or memory resources.

If there are no conflicts, continue with the following steps.

10. Return to the Device Manager and scroll through the list to find PCMCIA sockets.

11. Double-click PCMCIA sockets to expand it.

12. Click on the PCMCIA controller used by your system.

13. Click Properties. Verify that the socket controller is enabled in the hardware profile you are using.

If:	Then:
the device status says, "This device is not present, not working properly, or does not have all drivers installed, code 10."	click the Resources tab and check the Conflicting Device list for possible hardware conflicts.
the device status does not say, "This device is working properly."	or you may want to verify that the Use Automatic Settings option is enabled. you have a general PCMCIA problem and you should contact your computer manufacturer for a resolution.

Troubleshooting the Card in Windows NT

What This Chapter Contains

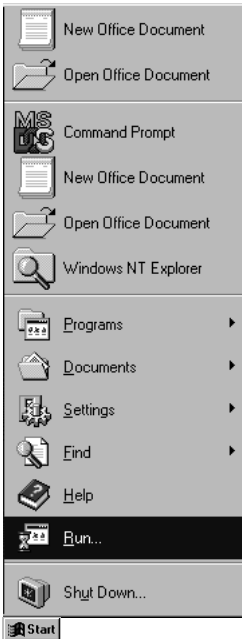
The following table describes what this chapter contains and where to find specific information.

For information about:	See page:
run the test application in Windows NT	7-2
check the driver in Windows NT	7-4

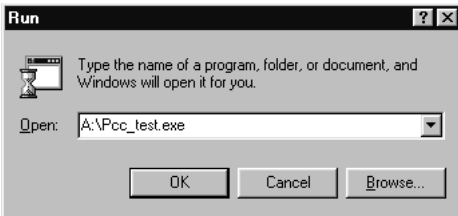
Run the Test Application in Windows NT

To test your installation, you should now run the test application provided on the installation utility disk. You must have rebooted your system after installing the driver prior to running this test application. To do this, do the following:

1. Access the Run window by selecting:

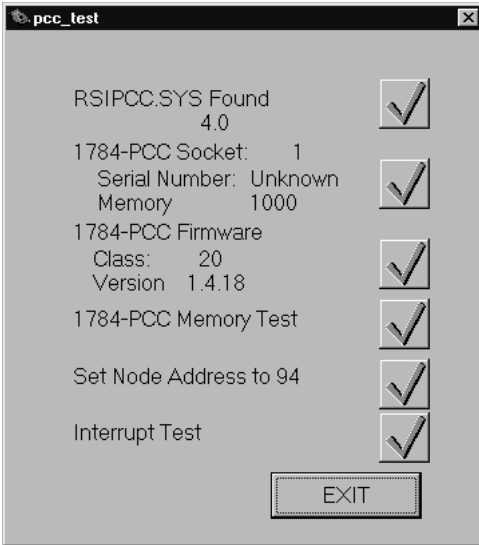


2. In the window that appears, type **A:\Pcc_test.exe**.



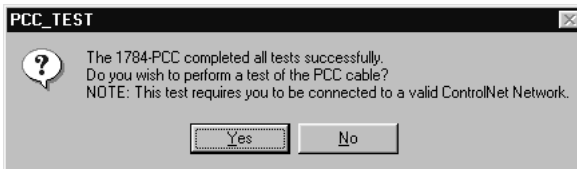
3. Press ENTER or click .

You should see the following window. If you do not see the following window, contact your Allen–Bradley service representative for assistance.



You should see a green check mark in each of the boxes. If you do not see six green check marks or you do not see the message the 1784-PCC completed all tests successfully, contact your Allen–Bradley service representative for assistance.

4. Then you see the following window:



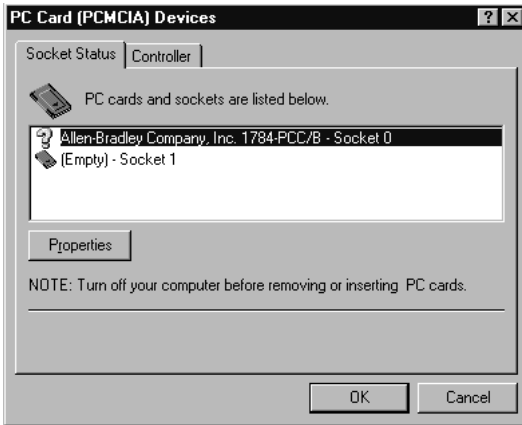
5. Click or . You must be connected to a ControlNet network to test the PCC cable.

Check the Driver in Windows NT

Use the following procedure to check the driver in Windows NT. The following screens apply to PC's without Softex.

1. Access the Control Panel and double-click the PC card (PCMCIA) icon. If you are using Softex, double-click on their PC card icon.

You see:



2. Select the PC card and click .

You see:



3. Verify that the Device Status says that the device is working properly. If you see that the device is not working properly, contact technical support or your local Allen-Bradley office.

Specifications

1784-PCC

PCMCIA Type	Type II form-factor network adapter card
PCMCIA Standard	Compliant to PCMCIA Standard, release 2.1
Power Requirements	5V dc @ 225 mA maximum
Conductor	Category 2 ²

Environmental Conditions	Operating ¹	Non-operating
Slot Temperature	0-50° C (32-122° F)	-40-85° C (-40-185° F)
Humidity	5-95% without condensation	5-95% without condensation
Vibration	0-70 Hz constant .012" displacement 70-500 Hz, constant 2 G acceleration	N/A
Shock	30 G peak/11 ms	50 G peak/11 ms

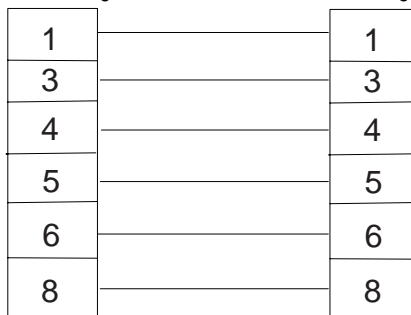
Agency Certification
(when product or packaging
is marked)



marked for all applicable directives

1784-PCC1

Total length of cable	120 cm	
Pin Assignments	PC card Plug	ControlNet Plug



¹The operating parameters describe the environment within the PCMCIA slot. Refer to the documentation for your computer for environmental requirements. The 1784-PCC card should not exceed those specifications.

²Refer to the ControlNet Cable System Planning and Installation Manual, publication 1786-6.2.1, for information about Category 2 wiring.

Glossary of PCMCIA Terms

adapter

The hardware that connects the computer bus to the 68-pin PC card sockets in the PCMCIA slot. *See also* socket.

application programming interface (API)

The set of services that an operating system makes available to programs that run under it.

enabler

Software used to control PC cards. There are three types of enablers: generic (which can control many different types of cards), specific (which is designed for a specific manufacturer's PC card), and point enabler (which is designed for a specific manufacturer's PC card but does not require Card and Socket Services).

Network Access Port (NAP)

Physical Layer variant that allows a temporary node to be connected to the link by connection to the NAP of permanent node.

PC card

Credit-card size, 68-pin add-in cards that were designed to meet PCMCIA standards.

socket

The 68-pin physical connection in the PCMCIA slot in your computer that connects to the 68-pins on the PC card.

Socket Services

The software interface that manipulates the PC cards, sockets, and adapters. *See also* PC cards, sockets, adapters.

type

Refers to the physical size of the PC card. There are three types of cards that have the same length and width (54 mm x 85.6 mm). The cards differ in thickness in the center, but have identical thickness at the connector end and long the rails. This lets you use all three types in the same PCMCIA slot, if the slot is thick enough in the center.

Type I

A 3.3 mm thick PC card that is used for memory enhancements, such as Flash memory cards. *See also* PC card.

Type II

A 5 mm thick PC card that is used for I/O features such as modem, LAN, and host communications. *See also* PC card.

Type III

A 10.5 mm thick PC card that is used for memory enhancements or I/O capabilities that require more space, such as rotating media and wireless communication devices. *See also* PC card.

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