DeviceNet CompactPCI Communication Interface Card

Catalog No. 1784-CPCIDS

To the Installer

The DeviceNet CompactPCI™ Communication Interface Card (catalog number 1784-CPCIDS) is a Compact Peripheral Component Interconnect (CompactPCI) card. The card is an open-bus interface that provides DeviceNet configuration and I/O scan capabilities.

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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.

Reproduction of the contents of this copyrighted publication, in whole or in part, without the written permission of Allen-Bradley Company, Inc., is prohibited.
Throughout this document we use notes to make you aware of safety considerations:

**ATTENTION**

This notation 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 the hazard
- recognize the consequences

**IMPORTANT**

This notation identifies information that is critical for successful application and understanding of the product.

**Rockwell Automation Support**

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, over 500 authorized distributors, and 260 authorized systems integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country around the world. Contact your local Rockwell Automation representative for:
- sales and order support
- product technical training
- warranty support
- support service agreements

**Obtain Pre-Sales Product Support**

If you need to contact Rockwell Automation for pre-sales product support, try one of the following methods:
- Call your local Rockwell Automation representative
- Network pre-sales support line, 1.440.646.3638 (3NET)
- Pre-Sales e-mail, RACle3net@ra.rockwell.com
Obtain Technical Product Support

If you need to contact Rockwell Automation for technical assistance, try one of the following methods:

<table>
<thead>
<tr>
<th>type of technical support</th>
<th>access at</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalized Service</td>
<td>Call your local Rockwell Automation representative</td>
</tr>
<tr>
<td>Post-sales Technical Support</td>
<td>1.440.846.5800</td>
</tr>
<tr>
<td>Email your questions to</td>
<td><a href="mailto:racleasktheexpert@ra.rockwell.com">racleasktheexpert@ra.rockwell.com</a></td>
</tr>
<tr>
<td>Internet site</td>
<td><a href="http://www.ab.com">www.ab.com</a></td>
</tr>
</tbody>
</table>

Related Publications

The table below lists publications that you may want to refer to for additional information. To view or download publications, visit www.theautomationbookstore.com or www.ab.com/manuals

You can purchase a printed manual by:
- contacting your local distributor or Rockwell Automation representative
- visiting www.theautomationbookstore.com and placing an order
- calling 800.963.9548 (USA/Canada) or 001.320.725.1574 (outside USA/Canada)

<table>
<thead>
<tr>
<th>title</th>
<th>publication number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Results with RSNetWorx for DeviceNet</td>
<td>9399-DNETGR</td>
</tr>
<tr>
<td>DeviceNet Cable System Planning &amp; Installation Manual</td>
<td>DN-6.7.2</td>
</tr>
<tr>
<td>DeviceNet Network Troubleshooting Guide</td>
<td>ABT-N100-TSJ20</td>
</tr>
<tr>
<td>DeviceNet System Overview</td>
<td>DN-2.5</td>
</tr>
<tr>
<td>DeviceNet PCI Communication Interface Card User Manual</td>
<td>1784-6.5.30</td>
</tr>
<tr>
<td>IOLinx SDK Data Sheet</td>
<td>NETS-SP010C-US-E</td>
</tr>
</tbody>
</table>

Purpose

Use this document to learn how to install and use the DeviceNet CompactPCI Communication Interface Card.
Audience
Read this manual before you install or use the DeviceNet CompactPCI Communication Interface Card. You should be familiar with DeviceNet technology.

System Requirements
You must use a Separated Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to comply with CE Low Voltage Directives.
In North America, use a UL listed or CSA Certified computer chassis. The DeviceNet network must use a UL listed or CSA Certified Class 2 power supply.
You also need:
- Windows NT 4.0 with Service Pack 5 or later or Windows 2000 with Service Pack 1 or later
- one open CompactPCI slot
- approximately 2 MB disk space
- RSNetWorx for DeviceNet V2.11.51 or later
- RSLinx V2.10.118 or later

Communication on DeviceNet
You must have IOLinx for the 1784-PCIDS Card or RSLinx application software to communicate on a DeviceNet network with a 1784-CPCIDS card.
For details about communicating on a DeviceNet network, see your application software documentation.

Compliance to European Union Directives
If this product has the marking, 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 Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and 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 50082-2 EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive


- For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the following Allen-Bradley publications:
  - Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1
  - Automation Systems Catalog, publication B111

This equipment is classified as open equipment and must be installed (mounted) in an enclosure during operation as a means of providing safety protection.

Use Care When Handling the Card

The card uses CMOS technology, which is highly sensitive to electrostatic discharge (ESD). ESD may be present whenever you are handling the card. Handling a card without any EDS protection can cause internal circuit damage that may not be apparent during installation or initial use.
Take these precautions to guard against electrostatic damage:

- Before handling the card, be sure to touch a grounded object such as a PC's metal chassis to discharge any built-up static charge.
- Avoid touching the backplane connector or interface connector pins.
- When the card is not in use, store it in the anti-static bag in which it was shipped.

**IMPORTANT** Remember, a computer with ac power disconnected is *not* a grounded object.

### Terminology

<table>
<thead>
<tr>
<th>this term</th>
<th>means</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeviceNet</td>
<td>networking standard maintained by Open DeviceNet Vendor Association</td>
</tr>
<tr>
<td>CompactPCI</td>
<td>Compact Peripheral Component Interconnect</td>
</tr>
<tr>
<td>1784-CPCIDS</td>
<td>DeviceNet CompactPCI scanner and messaging card</td>
</tr>
</tbody>
</table>

### Verify the Contents of Your 1784-CPCIDS Order

With this package you should receive:

- 1784-CPCIDS card
- terminal block connector
- driver and utility (IOLinx) CD for the 1784-CPCIDS card
- DeviceNet CompactPCI Communication Interface Card Installation Instructions, publication 1784-IN036B-EN-P
Introducing the 1784-CPCIDS Communication Interface Card

The 1784-CPCIDS Communication Interface Card, with appropriate software, is a Compact Peripheral Component Interconnect (CompactPCI) open-bus interface card.

Install the 1784-CPCIDS Card

**IMPORTANT**

Be certain that you know how to:

- install hardware in your computer
- configure the computer's options before you install the card

Consult your computer's documentation for specific information.
You need a Phillips-head or a flat-head screwdriver, depending on your system. To install the card:

1. Gain access to the computer’s expansion slots.

2. Insert the card into an open CompactPCI slot in the computer.

**IMPORTANT**

The 1784-CPCIDS card is 3.94” (100 mm) high and 6.3” (160 mm) long.

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**Access the Computer’s Expansion Slots**

To install the 1784-CPCIDS card, you must access the computer’s expansion slots. Refer to your computer’s user guide for instructions on how to:

1. Power down the host computer by turning off the power switch.

2. Select a vacant CompactPCI expansion slot.

3. Remove the slot’s expansion cover by loosening the screws on the top and bottom of the cover.
Insert the Card

To insert the card inside the computer:

1. Follow the card handling instructions on page 6.

2. Insert the 1784-CPCIDS card into the backplane connector until the ejector locks into the rail and card lock.

3. Tighten the top and bottom expansion cover screws.

4. Turn on the computer to make sure it powers up correctly.

Connect to the Network

This figure and table show the necessary network connections you make to the card. The label (on the retaining bracket) is color-coded for easy wiring.

<table>
<thead>
<tr>
<th>pin number</th>
<th>wire color</th>
<th>abbreviation</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>black</td>
<td>V-</td>
<td>24V dc power return</td>
</tr>
<tr>
<td>2</td>
<td>blue</td>
<td>CAN_L</td>
<td>data low - data line</td>
</tr>
<tr>
<td>3</td>
<td>bare</td>
<td>DRAIN</td>
<td>shield</td>
</tr>
<tr>
<td>4</td>
<td>white</td>
<td>CAN_H</td>
<td>data high - data line</td>
</tr>
<tr>
<td>5</td>
<td>red</td>
<td>V+</td>
<td>+24V dc</td>
</tr>
</tbody>
</table>
Install the 1784-CPCIDS Driver and IOLinx in Windows NT

**IMPORTANT** Be sure that your 1784-CPCIDS card is properly installed. Refer to Install the 1784-CPCIDS Card on page 8.

Uninstall the Previous Version of IOLinx

**IMPORTANT** Before you install the new driver and IOLinx, you must uninstall any earlier versions of IOLinx. If you do not currently have IOLinx installed, go to Install the New Driver and IOLinx on page 12.

1. Shut down all applications that use the IOLinx DeviceNet driver, including RSLinx and SoftLogix 5.

2. Click **Start** ⇒ **Settings** ⇒ **Control Panel**.

3. Double click the **Add/Remove Programs** icon.

4. Depending on which previous version of IOLinx was installed, double-click on one of the following to remove it:
   - **1784-PCIDS Drivers for IOLinx**
   - **IOLinx for the 1784-PCIDS Card**

5. Select **Yes** to uninstall IOLinx.

**TIP** If you are prompted to remove unused shared files, select **No to All**.
Install the New Driver and IOLinx

**IMPORTANT** We recommend that you exit all Windows programs before running this Setup program.

**TIP** The CD-ROM supports Windows Autorun. If you have Autorun configured, once the CD is inserted into the CD-ROM drive, the installation will automatically start at the first setup screen.

1. Insert the CD into the computer’s CD-ROM drive.
2. If Autorun is configured for your CD-ROM drive, go to step 5 on page 12.
3. Select **Start ⇒ Run**.
4. At the Run pop-up menu, type `d:\setup` where `d` is your CD-ROM drive letter.
5. You see the IOLinx for the 1784-PCIDS screen.
6. Click on **Install Products**. You see this screen:

![Screen showing install options]

7. Click on **Install IOLinx for the 1784-PCIDS Card**.

8. Follow the on-screen instructions to install IOLinx.
Install the 1784-CPCIDS Driver and IOLinx in Windows 2000 for the First Time

**IMPORTANT** Use this procedure only if this is the first time that you are installing the 1784-CPCIDS driver and IOLinx on this computer. Otherwise, use the Update the 1784-CPCIDS Driver and IOLinx in Windows 2000 procedure on page 18 instead of this procedure.

**IMPORTANT** Be sure that your 1784-CPCIDS card is properly installed. Refer to Install the 1784-CPCIDS Card on page 8.

**Install the New Driver**

1. When you boot up your computer for the first time after installing your 1784-CPCIDS card, you see the Found New Hardware Wizard.

2. Click Next.
3. Click on **Search for a suitable driver for my device (recommended)**.

4. Click **Next**.

5. Select **Specify a Location**.
6. Click **Next**.

<table>
<thead>
<tr>
<th>if</th>
<th>then</th>
</tr>
</thead>
<tbody>
<tr>
<td>you are installing from CD-ROM and Auto Insert Notification (a.k.a. Autorun) is enabled on your CD-ROM drive</td>
<td>insert the CD-ROM into the computer’s CD-ROM drive, the Setup Utility will start automatically. Click anywhere in the Wizard screen to bring it back on top of the Setup Utility window.</td>
</tr>
<tr>
<td>you are installing IOLinx from a compressed file</td>
<td>download IOLinx from <a href="http://www.ab.com/networks/iolinx">http://www.ab.com/networks/iolinx</a> and unzip the files into a temporary directory</td>
</tr>
</tbody>
</table>

7. In the Found New Hardware Wizard, click **Browse** and browse to this location:

   x:\IOLinx for DeviceNet\abpcids.inf

   where x is the drive where the installation files are stored.

8. Click **Open**.

9. Click **OK**.

10. Follow the on-screen instructions for installing the driver.

11. Go to the next section, Install IOLinx, on page 16.

**IMPORTANT** To ensure that the card works properly, you must install IOLinx as described on page 16.

**Install IOLinx**

**IMPORTANT** We recommend that you exit all Windows programs before running this Setup program.

**TIP**

The CD-ROM supports Windows Autorun. If you have Autorun configured, once the CD is inserted into the CD-ROM drive, the installation will automatically start at the first setup screen.
1. Insert the CD in the computer’s CD-ROM drive.

2. If Autorun is configured for your CD-ROM drive, go to step 5 on page 17.


4. At the Run pop-up window, type `d:\setup` where `d` is your CD-ROM drive letter.

5. You see the IOLinx for the 1784-PCIDS screen.

6. Click on Install Products. You see this screen:
7. Click on **Install IOLinx for the 1784-PCIDS Card**.

8. Follow the on-screen instructions to install IOLinx.

---

**Update the 1784-CPCIDS Driver and IOLinx in Windows 2000**

**IMPORTANT** Use this procedure only if you have previously installed the 1784-CPCIDS driver and IOLinx on this computer. If you have not previously installed the 1784-CPCIDS driver and IOLinx on this computer, use the Install the 1784-CPCIDS Driver and IOLinx in Windows 2000 for the First Time procedure on page 14 instead of this procedure.

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**Uninstall the Previous Version of IOLinx**

**IMPORTANT** Before you update the new driver and IOLinx, you must uninstall any earlier versions of IOLinx. If you do not currently have IOLinx installed, go to the Update the Driver procedure on page 19.

---

1. Shut down all applications that use the IOLinx DeviceNet driver, including RSLinx and SoftLogix 5.

2. Click **Start ⇒ Settings ⇒ Control Panel**.

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

4. Depending on which previous version of IOLinx was installed, double-click on one of the following to remove it:
   - **1784-PCIDS Drivers for IOLinx**
   - **IOLinx for the 1784-PCIDS Card**
5. Select **Yes** to uninstall IOLinx.

**TIP**

If you are prompted to remove unused shared files, select **No** to All.

6. Reboot the computer.

**Update the Driver**

1. Right-click on **My Computer**.

2. Select **Manage**.

3. On the Computer Management window that appears, select **Device Manager**.

<table>
<thead>
<tr>
<th>if</th>
<th>then</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOLinx version 1.14 or earlier was installed</td>
<td>go to step 4 on page 20</td>
</tr>
<tr>
<td>IOLinx version 1.15 or later was installed</td>
<td>go to step 5 on page 20</td>
</tr>
</tbody>
</table>
4. If IOLinx version 1.14 or earlier was installed, follow this procedure:
   a. Click on **Other Devices** to expand the list.

   b. Right-click on the **Network Controller** that corresponds to the 1784-CPCIDS card that you are updating and select **Properties**.
   c. Go to step 6.

5. If IOLinx version 1.15 or later was installed, follow this procedure:
   a. Select **Allen-Bradley PCI Family**.

   b. Right-click on the **Allen-Bradley 1784-PCIDS** that corresponds to the 1784-CPCIDS card you are updating and select **Properties**.
   c. Go to step 6.
6. Click on the **Driver** tab, then click **Update Driver**. You see the Upgrade Device Driver Wizard.

7. Click **Next**.

8. Select the **Display a list of known drivers for this device so that I can choose a specific driver** radio button.

9. Click **Next**.

<table>
<thead>
<tr>
<th>if</th>
<th>then</th>
</tr>
</thead>
<tbody>
<tr>
<td>you are installing from CD-ROM and Auto Insert Notification (a.k.a. Autorun) is enabled on your CD-ROM drive</td>
<td>insert the CD-ROM into the computer’s CD-ROM drive and the Setup Utility will start automatically. Click anywhere in the Wizard screen to bring it back on top of the Setup Utility window.</td>
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<tr>
<td>you are installing IOLinx from a compressed file</td>
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</tr>
</tbody>
</table>

10. Select the **Have Disk...** button.
11. Click **Browse** and browse to this location:

   \(x:\IOLinx\text{ for DeviceNet}\abpcids.inf\)

   where \(x:\) is the drive where the installation files are stored.

12. Click **Open**.

13. Click **OK**.

14. Follow the on-screen instructions for installing the driver.

**TIP**

When you close the Properties screen, you may be prompted to restart your computer. If you get this prompt, restart your computer before using this updated driver.

15. Go to the next section, Install IOLinx, on page 22.

**IMPORTANT**

To ensure that the card works properly, you must install IOLinx as described on page 22.

**Install IOLinx**

**IMPORTANT**

We recommend that you exit all Windows programs before running this Setup program.

**TIP**

The CD-ROM supports Windows Autorun. If you have Autorun configured, once the CD is inserted into the CD-ROM drive, the installation will automatically start at the first setup screen.

1. Insert the CD in the computer’s CD-ROM drive.

2. If Autorun is configured for your CD-ROM drive, go to step 5 on page 23.

3. Select **Start ⇒ Run**.
4. At the Run pop-up window, type d:\setup where d is your CD-ROM drive letter.

5. You see the IOLinx for the 1784-PCIDS screen.

6. Click on Install Products. You see this screen:

7. Click on Install IOLinx for the 1784-PCIDS Card.

8. Follow the on-screen instructions to install IOLinx.
Use the DeviceNet Test Application for the 1784-CPCIDS

Included with the IOLinx for 1784-PCIDS driver CD is a stand-alone test application (DNetTest.exe) that lets you diagnose simple problems over the network before the control application may be available for integration.

In addition, you can use the application to make certain that the 1784-CPCIDS module has been correctly installed and is functioning in the PC.

The test application provides the features described on pages 24 through 27, which include:

- configuring the port
- creating a view
- using scanner mode
- reading inputs
- writing outputs
- using the device status screen

Start the Test Application

The test application is automatically installed as part of the driver installation procedure, although it does not show up as a shortcut on your screen.

To start the test application, click **Start ⇒ Programs ⇒ Rockwell Software ⇒ IOLinx ⇒ IOLinx for DeviceNet ⇒ DeviceNet Test.**

The test application assumes that you have the card installed, the network is powered, and a scan list is loaded into the 1784-CPCIDS using RSNetWorx for DeviceNet V2.11.51 or later. If the driver cannot establish communication with the module, an error message is displayed.

Configure Port

You must configure the port the first time you use a 1784-CPCIDS card.

To configure the port, follow these steps:

1. Select **Configure Port...** from the Setup menu.

2. Select **Allen-Bradley 1784-PCIDS** from the DeviceNet Driver Selection dialog.

3. Click on **OK.**

4. Set Node Address (0 - 63).
5. Set Baud Rate (125/250/500 kbs).

6. Click **OK**. You see a dialog box that says Operation was successful followed by a similar message box that tells you that Port “DeviceNet Port A” has been configured.

**Create View**

To go online, follow these steps:

1. From the **Setup** menu, select **Create View**....

2. Select **Port Names**.

3. Select **Message Type (Input, Output, or Input/Output)**.

4. Select **Privilege (Read Only, Read/Write)**.

5. Click **OK**. You see a message box that tells you that Operation was successful.

**Scanner Mode**

The Port Mode window displays the current mode of the scanner: Run, Idle, No View.

Once you create a view, the Switch Mode button changes the mode between Run and Idle.
Read Inputs

Read Inputs lets you read as many as 2048 bytes from the input image table of the 1784-CPCIDS. A simple dialog box with scrolling capability (shown in the figure below) is displayed and is automatically updated when inputs change.

*NOTE* The hexadecimal number on the left side of the input or output table is the count in bytes.

Write Outputs

Write Outputs lets you write as many as 2048 bytes to the output image table of the scanner using manual data entry in a dialog box. The scanner must be in Run Mode for writes to be seen at the output device.

1. Select the desired byte(s).
2. Type in the desired value(s).
3. Press the **Write** button. The transfer is performed.
Use the Device Status Screen

The Device Status screen displays an Idle/Failure Table where you can double-click on a node to see its status, i.e., MAC ID, status code, and status info, e.g., device stopped communicating.

If you double-click on an empty node, you see the response, “OK or not in scan list.”

Interpret Status Indicators (LEDs)

The three status indicators on the card give you information about your network and its connections. This figure identifies each status indicator.

The tables on pages 28 through 29 outline the indicator condition and the corresponding status, and explain what each condition means to you.
I/O Status Indicator

This bi-color (green/red) LED provides information concerning the states of inputs and/or outputs.

<table>
<thead>
<tr>
<th>condition</th>
<th>status</th>
<th>indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>off</td>
<td>output(s) inactive</td>
<td>All Outputs are inactive.</td>
</tr>
<tr>
<td></td>
<td>input(s) inactive</td>
<td>All inputs are inactive.</td>
</tr>
<tr>
<td>green</td>
<td>output(s) active</td>
<td>One or more outputs are active and under control, and no outputs are faulted.</td>
</tr>
<tr>
<td></td>
<td>input(s) active</td>
<td>One or more inputs are active and producing data, and no inputs are faulted.</td>
</tr>
<tr>
<td>flashing green&lt;sup&gt;1&lt;/sup&gt;</td>
<td>output(s) idle</td>
<td>One or more outputs are idle and no outputs are active or faulted.</td>
</tr>
<tr>
<td>flashing red&lt;sup&gt;1&lt;/sup&gt;</td>
<td>output(s) faulted</td>
<td>One or more outputs are faulted, and may be in the fault state.</td>
</tr>
<tr>
<td></td>
<td>input(s) faulted</td>
<td>One or more inputs are faulted, and may be in the fault state.</td>
</tr>
<tr>
<td>red</td>
<td>output(s) forced off</td>
<td>One or more outputs are forced off (may be an unrecoverable fault).</td>
</tr>
<tr>
<td></td>
<td>input unrecoverable fault</td>
<td>One or more inputs has an unrecoverable fault.</td>
</tr>
</tbody>
</table>

<sup>1</sup> The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

Module (MOD) Status Indicator

This bi-color (green/red) LED provides device status. It indicates whether or not the device has power and is operating properly.

<table>
<thead>
<tr>
<th>condition</th>
<th>status</th>
<th>indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>off</td>
<td>no power</td>
<td>No power applied to device.</td>
</tr>
<tr>
<td>green</td>
<td>device operational</td>
<td>Device is operating in a normal condition.</td>
</tr>
<tr>
<td>flashing green&lt;sup&gt;1&lt;/sup&gt;</td>
<td>device in standby (device needs commissioning)</td>
<td>Device needs commissioning due to configuration missing, incomplete, or incorrect. Device may be in the standby state. Refer to the DeviceNet Specification, Volume II, Identity Object.</td>
</tr>
<tr>
<td>flashing red&lt;sup&gt;1&lt;/sup&gt;</td>
<td>recoverable fault</td>
<td>E.g., the device’s scan list configuration does not match the actual network configuration.</td>
</tr>
</tbody>
</table>

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Network (NET) Status Indicator

This bi-color (green/red) LED indicates the status of the communication link.

<table>
<thead>
<tr>
<th>condition</th>
<th>status</th>
<th>indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>unrecoverable fault</td>
<td>Device has an unrecoverable fault. Cycle power to the card by shutting down and cycling power to your computer. If the problem persists, the device may need to be replaced.</td>
</tr>
</tbody>
</table>

1 The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.
Specifications

General Specifications

<table>
<thead>
<tr>
<th>CompactPCI local bus</th>
<th>compliant to PICMG 2.0 R2.1 CompactPCI Core Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>mechanical form factor</td>
<td>CompactPCI 5V, 32-bit 3U 3.937&quot; (100 mm) H x 6.30&quot; (160 mm) L</td>
</tr>
<tr>
<td>driver compatibility</td>
<td>Windows NT 4.0 with Service Pack 5 or later or Windows 2000 with Service Pack 1 or later</td>
</tr>
<tr>
<td>power requirements PC</td>
<td>5V @ 625 mA max.</td>
</tr>
<tr>
<td>DeviceNet</td>
<td>+24V dc @ 90 mA max. Class 2</td>
</tr>
</tbody>
</table>

Environmental Conditions

| ambient slot temperature rating | 0 to 60 °C (32 to 140 °F) |
| non-operating | -40 to +85 °C (-40 to 185 °F) |
| ambient humidity rating | 5% to 95% without condensation |
| vibration (operating) | 0 to 70Hz, constant .012" displacement |
| shock | 70 to 500Hz, constant 2G acceleration |
| non-operating | 30G peak/11 ms |
| non-operating | 50G peak/11 ms |

Agency Certification

Certified Component Process Control Equipment
Certified Component, Class I, Division 2, Groups A, B, C, D
UL Recognized Industrial Control Equipment
Marked for all applicable directives

1 The DeviceNet power supply must be compliant with the requirements for CLASS 2 as defined in NFPA-70 National Electrical Code and/or CSA C22.1 Canadian Electrical Code, Part 1.
2 The operating parameters describe the environment within the CompactPCI slot. Refer to the documentation for your computer for environmental requirements. The 1784-CPCIDS card should not exceed those specifications.
3 Refer to the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
4 This equipment must be powered from UL Listed Information Technology Equipment, UL Listed Industrial Control Equipment, CSA Certified Information Technology Equipment, or CSA Certified Process Control Equipment.

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Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations:

Products marked “CL I, DIV 2, GP A, B, C, D” are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest “T” number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local authority that has jurisdiction at the time of installation.

EXPLOSION HAZARD –

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Substitution of components may impair suitability for Class I, Division 2.
- If this product contains batteries, they must only be changed in an area known to be nonhazardous.

Informations sur l'utilisation de cet équipement en environnements dangereux:

Les produits marqués -CL I, DIV 2, GP A, B, C, D- ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.

RISQUE D’EXPLOSION –

- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.
- Couper le courant ou s’assurer que l’environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe 1, Division 2.
- S’assurer que l’environnement est classé non dangereux avant de changer les piles.
Notes:
Notes:
Notes: