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Chapter 1

Introduction

The Powerware® PowerVision® Data Acquisition Terminal (DAT) can monitor the alarm/status information from many different types of electrical or environmental equipment, such as an uninterruptible power supply (UPS), a power distribution unit (PDU), an engine generator, or a computer room air conditioning unit. The PowerVision DAT can make this information available for viewing through the PowerVision Facility Edition software.

The PowerVision DAT reads the alarm/status information from any connected equipment that provides a contact closure (relay) and sends the information to PowerVision over an Ethernet network connection. The equipment status includes information such as output voltage, engine status, or load power, and whether or not these contacts are in a normal or alarm (abnormal) condition.

Up to 16 alarm/status signals can be connected to the PowerVision DAT in any combination. For example, 16 different equipment types can each provide one signal, or four equipment types can provide four signals each. Multiple PowerVision DAT devices may be used on the same Ethernet network if there are more than 16 alarm/status conditions to monitor from all of the various equipment types around the facility. The PowerVision DAT is preconfigured for two equipment types with eight channels each.

The PowerVision DAT also provides the following features:

- Attaches to the Powerware Environmental Monitoring Probe (EMP) to display temperature and humidity readings.
- Allows user configuration of alarm input labels and Internet Protocol (IP) information directly through the front panel.
- Mounts in an equipment rack or in its own wall-mount rack. The wall-mount rack's configurable openings allow for easy installation of flexible electrical conduit that connects to the monitored equipment.
Figure 1. Complete Electrical Power Train Monitoring
Chapter 2  Installation

This section explains:

- Equipment inspection
- Installation planning
- Installation in a rack or on a wall
- Installation and connecting of wiring

Inspecting the Equipment

If any pieces were damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: (1) File with the carrier within 15 days of receipt of the equipment; (2) Send a copy of the damage claim within 15 days to your service representative.

PowerVision DAT Kit

The PowerVision DAT kit includes:

- PowerVision DAT device
- Power supply [approximately 1” × 2” × 4” (2.54 × 5.08 × 10.16 cm), with a low-voltage, 6-ft (1.8m) power cable]
- Power cord, 6-ft (1.8m), North American
- Four #10-32 × 1/2” truss-head screws (for standard 19-inch rack mount installation)
- Powerware Software Suite CD
- *Powerware PowerVision DAT User’s Guide*
- “Start Here” Checklist and PowerVision DAT Wiring Diagram
NOTE The wiring to attach the PowerVision DAT to the industrial equipment is not part of the PowerVision DAT kit.

NOTE The cable for connecting the PowerVision DAT to the Ethernet connection is not supplied. Use a standard RJ-45 Ethernet cable.

To inspect the PowerVision DAT:

1. Locate the PowerVision DAT.
2. Verify that the following numbers are the same on the top of the PowerVision DAT and the shipping carton:
   - part number
   - serial number
   - MAC address
3. Record the serial number on the separate “Start Here” Checklist.
4. Check that the cable extender shelf is firmly attached to the PowerVision DAT (see Figure 3).
5. Check for any bent paneling or loose screws.

Figure 2. The PowerVision DAT (Front View)
Figure 3. The PowerVision DAT (Rear View)

Figure 4. The PowerVision DAT (Top View)
Environmental Monitoring Probe Kit

If you ordered the optional EMP, the kit includes:

- Powerware EMP device
- 6-ft (1.8m) RJ-45 cable for attaching the EMP to the PowerVision DAT
- Environmental Monitoring Probe User’s Guide
- Two tie wraps
- Sheet metal screw and matching wall anchor
- Double-sided Velcro® tape

Wall-Mount Kit

**NOTE** Mounting fasteners are not supplied. Obtain the appropriate hardware according to the type of wall and weight of the wall-mount unit and installed components [approximately 25 lb (11.3 kg) total].

If you ordered the wall-mount option, the kit includes:

- Assembled sheet-metal housing, including base unit, cover, power supply shelf, and four knock-out panels
- Installation drawing for mounting the housing on a wall and installing the PowerVision DAT in the housing

Planning for Installation

Before beginning the installation, read this section to learn about the PowerVision DAT wiring and to plan how to wire your equipment to the PowerVision DAT. Fill out the separate “Start Here” Checklist to help install the PowerVision DAT successfully.

**NOTE** This guide describes only the wire connections to the PowerVision DAT. For instructions on how to connect and route the wiring from your equipment to the PowerVision DAT, refer to the literature supplied with the equipment. For help with defining the routing of the wires, consult the maintenance personnel at the site.
Types of Installation

There are three types of installation, depending on the site's equipment availability.

Minimum Installation

A minimum installation simply sets up the PowerVision DAT for future wiring. The site may not yet have equipment to connect or a communication network installed.

To set up the PowerVision DAT, complete the tasks in the installation instructions to install the PowerVision DAT (mechanical portion), install the EMP (optional), and apply power to the PowerVision DAT.

Partial Installation

Use a partial installation for the site if there is some equipment installed with signal wires also installed and identified. Some signal wires might be installed, but not yet attached to any equipment. A communication network may not be available yet.

Complete all the tasks in the installation instructions except those tasks involving the communication network.

Full Installation

Use a full installation for the site if all equipment is installed, all equipment signal wires are installed and labeled, and a communication network is installed and operating.

Complete all the tasks in the installation instructions.
Wiring Concepts

Many machines have switches or relay contacts that provide information about the operation of the machine. For example, a generator may have relay contacts that indicate the generator is on or operating properly. Any contacts you want to monitor need to be connected to the PowerVision DAT as shown in Figure 5.

![Figure 5. Relay Contacts (Shown Operated)](image)

The contact may be normally open (NO) or normally closed (NC). The equipment must have dry contacts (that is, the equipment must not provide any voltage to the contacts).

Part of installing the PowerVision DAT is to configure the PowerVision DAT for the equipment that is connected to it. Is the device a generator or something else? What does the switch mean when the contact is open (is the equipment on or off)?

Let’s say the generator provides a relay contact for signaling when its engine runs too fast. You can wire the generator’s “Engine Over Speed” output to the PowerVision DAT’s connectors. You can then configure the alarm name through the PowerVision DAT interface. That input displays through the PowerVision software.

You can wire as many of the generator’s signal outputs to the PowerVision DAT as you like and you can see them displayed through the PowerVision software. The PowerVision software automatically shows the correct equipment icon and status channels, with the correct labels and values.

While you can configure basic information at the PowerVision DAT front panel, you can configure more detailed information through the PowerVision software. See “Interfacing with PowerVision Software” on page 49 for details.
Completing the PowerVision DAT Wiring Diagram

**NOTE** It is important to complete the wiring diagram fully and accurately. A complete wiring diagram reduces the time needed to configure the PowerVision DAT and the PowerVision software.

Record the following information on the separate PowerVision DAT Wiring Diagram (on the back of the “Start Here” Checklist):

- Identify the equipment (device names) that have available alarm/status contacts to be connected to the PowerVision DAT.
- Identify which channel(s) on the PowerVision DAT the equipment contacts can connect to.
- Identify the data the equipment can send to the PowerVision DAT. Locate the name of the alarm/status contact(s) on the equipment itself or in the user manual supplied with the equipment.
- Determine how that data appears as a message on the PowerVision DAT (and, optionally, on the PowerVision software connected through a network).
Example Wiring Diagram

Read the following example of how to complete the separate PowerVision DAT Wiring Diagram. Then use the list of predefined words (see page 11) to help you fill in your own information on the separate PowerVision DAT Wiring Diagram.

NOTE  The italicized text in the example represents user-supplied data.

Table 1. Wiring Diagram Example

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Contact Name Message</th>
<th>Normal Condition Open/Closed</th>
<th>Wire Color</th>
<th>DAT Channel Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator Room 1</td>
<td>Output Voltage</td>
<td>Open</td>
<td>Green</td>
<td>Open/Closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generator Room 2</td>
<td>Fuel Low</td>
<td>Closed</td>
<td>White</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>

This example shows that the generator in room 1 (Generator Room 1) is connected to the PowerVision DAT’s channel 01. When the contact is open, the generator is running and producing a regular output voltage and is the normal condition. When the contact is closed, something is wrong with the generator’s output voltage and is the alarm condition. The generator may not be running or a breaker may be open. The combined Label 1 and Label 2 names describe the condition when the contact is in the normal condition.

For this example, the signal cable has a red wire connected to one side of the contact and a green wire to the other side of the contact. At the PowerVision DAT, the cable is connected to the channel 01 connector. The red wire is connected to contact 1 and the green wire to contact 2. Therefore, channel 01 provides the status of whether the generator (Generator Room 1) is running.
Device Names and Labels

When configuring the channels, you can select predefined words for the device name, label 1, and label 2 (see Table 2).

**Table 2. Predefined Words**

<table>
<thead>
<tr>
<th>Device Names</th>
<th>PF2 Flywheel</th>
<th>Switchgear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Conditioner</td>
<td>Generator</td>
<td></td>
</tr>
<tr>
<td>ATS</td>
<td>Intergy SM50</td>
<td>Security Alarm</td>
</tr>
<tr>
<td>CellWatch</td>
<td>Leak Detection</td>
<td>Smoke Detection</td>
</tr>
<tr>
<td>Fire Detection</td>
<td>PDU</td>
<td>Static Switch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labels 1 and 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Current</td>
<td>Inverter Over</td>
</tr>
<tr>
<td>Auxiliary Emergency</td>
<td>Level Power</td>
</tr>
<tr>
<td>Battery Engine</td>
<td>Load Pressure</td>
</tr>
<tr>
<td>Bypass Failure</td>
<td>Low Rectifier</td>
</tr>
<tr>
<td>Charger Frequency</td>
<td>Off Speed</td>
</tr>
<tr>
<td>Circuit Breaker Fuel</td>
<td>Oil Temperature</td>
</tr>
<tr>
<td>Closed Fuse</td>
<td>On Under</td>
</tr>
<tr>
<td>Compressor High</td>
<td>Open Voltage</td>
</tr>
<tr>
<td>Coolant Input</td>
<td>Output</td>
</tr>
</tbody>
</table>

You can also modify a copy of a predefined word.

**NOTE** *Words must be 24 characters or less, including spaces.*

For example, editing the predefined device name “Generator” and using predefined labels “Fuel” and “Low” could display an alarm condition “Fuel Low” for the “Generator 2” generator.
The Importance of Device Names

**NOTE** You must use the same device name for all channels associated with a specific device. Use the exact same name, including spelling and spaces.

**NOTE** If you modify or create a device name, ensure that all the associated channels have their device name spelled exactly the same.

The PowerVision software uses each device name as a top group name. All the channels associated with a device name are listed under that top group.

For example, if the device is a generator identified as Generator 1, and you are configuring the PowerVision DAT channels 04, 05, and 06 to monitor the generator’s voltage, speed, and temperature, then all three channels should have the same device name (Generator 1). The PowerVision software groups and displays the information in the PowerVision Tree View window as:

```
Generator 1
  Channel 01
  Channel 02
  Channel 03
```

Note that in this view there is no identification of the PowerVision DAT channels 04, 05, and 06 or what conditions they are monitoring. The Tree View shows only that there are three channels associated with the device named Generator 1. The identification and monitoring details are available through the PowerVision software’s Properties list for each channel.

**NOTE** There is no correlation between the PowerVision DAT channel numbers and the PowerVision software channel assignments. To prevent any confusion, always keep a copy of the separate PowerVision DAT Wiring Diagram at the remote PowerVision site.
Creating Good Labels

The Label 1 and Label 2 entries create a true string message for the PowerVision software. This message describes what condition is being monitored for the channel.

For example, Label 1 “Voltage” and Label 2 “On” for the PowerVision DAT channel 04 creates a message of “Voltage On” that displays when channel 04 is true (in a normal state). This message displays in the PowerVision software in the Value field for that channel:

<table>
<thead>
<tr>
<th>Channel</th>
<th>State</th>
<th>Value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 01</td>
<td>Normal</td>
<td>Voltage On</td>
<td>Digital</td>
</tr>
</tbody>
</table>

Note that, for this example, the PowerVision DAT channel 04 is reported in the PowerVision software as the device’s first channel (channel 01).

NOTE There is no correlation between the PowerVision DAT channel numbers and the PowerVision software channel assignments. To prevent any confusion, always keep a copy of the separate PowerVision DAT Wiring Diagram at the remote PowerVision site.

You can use the PowerVision software to change or enhance the messages (Label 1 and Label 2 names) for each channel. For example, you can create a false string message that displays when a channel is false (in an alarm state). For more information, see “Interfacing with PowerVision Software” on page 49.
Mounting Installation

The PowerVision DAT is designed for flexible configurations and can be installed in rack-mount or wall-mount applications. The optional wall-mount unit is intended for use in industrial environments where open racks are not practical.

If you are installing the PowerVision DAT in a rack, continue to the following section, “Rack-Mount Setup;” otherwise, continue to “Wall-Mount Setup” on page 15.

Rack-Mount Setup

The PowerVision DAT can be installed in standard 19-inch relay racks and needs only 1U of rack space.

1. Select the proper holes in the rail for positioning the PowerVision DAT in the rack. If needed, install clip nuts (customer-supplied) over the holes (see Figure 6).

![Figure 6. Installing the Clip Nuts](image)

2. Secure the PowerVision DAT to the rack with the supplied #10-32 × 1/2” truss-head screws. Insert the screws through the clip nuts if installed in Step 1 (see Figure 7).
Wall-Mount Setup

Refer to the installation drawing included with the wall-mount kit.

1. Locate an area of the wall on which to mount the unit. The area must have:
   - A buffer of approximately 1 ft (0.3m) of clear space around the unit to provide clearance for removing the cover.
   - A 120 Vac power outlet (or 220 Vac if using a locally-obtained high voltage power cord) within 2–3 ft (0.6–0.9m) of the unit.
   - Alignment with any rigid conduit run to the wall-mount unit, if applicable.

2. Obtain and install the appropriate mounting fasteners according to the type of wall and the weight of the wall-mount unit and installed components [approximately 25 lb (11.3 kg) total]. This hardware is not included with the wall-mount kit.

3. Remove and save the 16 screws holding the wall-mount cover.
4. Identify the keyhole slots on the back of the wall-mount unit. Use these slots as a template to mark where to place the mounting fasteners on the wall.

5. Secure the wall-mount unit to the wall.

6. Remove the nuts on the mounting studs inside the wall-mount unit and mount the PowerVision DAT on the studs. Secure the PowerVision DAT with the nuts (see Figure 8).

7. Mount the power supply on the small shelf inside the wall-mount unit. Secure with tie wraps.

![Figure 8. Wall-Mount Setup](image)

8. When installing the data and communication cables (detailed in the next section), ensure that the cables have approximately 2 ft (0.6m) of free wire inside the wall-mount unit.

   The wall-mount unit has standard conduit size knockouts for strain relief. Use a strain relief (not included) for the appropriate type of wire or conduit. You may need to temporarily remove the bottom conduit plate to allow the power cord to exit. See Figure 9.
When all installation is complete (including installing the cables, detailed in the next section), replace the wall-mount cover. Secure with the screws removed in Step 3.
Wiring Installation

**NOTE** This guide describes only the wire connections to the PowerVision DAT. For instructions on how to connect and route the wiring from your equipment to the PowerVision DAT, refer to the literature supplied with the equipment. For help with defining the routing of the wires, consult the maintenance personnel at the site.

This section contains instructions on how to:

- Connect the industrial equipment to the PowerVision DAT
- Connect the PowerVision DAT to the network
- Install the EMP (optional)
- Install the power supply
Connecting the Industrial Equipment

1. Hold the PowerVision DAT so that you can view the back of the device (the side with nine green 6-position connectors).

   - Eight connectors can be wired to equipment to provide data to the PowerVision DAT. The last connector to the right is for power. See Figure 10.

   - Four other ports are to the far left (see Figure 11).

![Figure 10. The PowerVision DAT (Rear View)](image-url)
2. Pull one of the green connectors out of the PowerVision DAT for a closer look (see Figure 12).

Each green connector has six screw connections that accept 16–28 AWG wires. Three screw connections (one of which is not used) make a data channel, giving each connector two data channels.
3. Compare the connector to the drawing on the top of the PowerVision DAT and to the completed separate PowerVision DAT Wiring Diagram to understand what channel and type of contact are used for the positions on the connector.

Notice that each connector represents two channels, and each channel uses only two of the three available screw connections. Each channel can be wired to a switch or relay contact on a machine. Each connector, therefore, can be wired to two different equipment switches or relay contacts.

4. Replace the green connector.
5. Select a signal wire, and strip the insulation approximately 0.25” (0.6 cm) from the end (see Figure 13).

6. Refer to the separate PowerVision DAT Wiring Diagram and to the wiring chart (located on the top of the unit), and loosen the screw on the appropriate green connector. (Pull out the green connector if it’s easier to handle away from the unit.)

7. Slip the bare wire into the connector, and tighten the screw.

8. Replace the connector if you pulled it out to attach the wire.

9. Repeat Steps 5 through 8 for each signal wire.

   If you do not need to use a connector for wiring, leave the empty connector installed on the PowerVision DAT as a placeholder for future use.
10. (Optional) For an extra secure connection, use cable ties to fasten each wire to the cable extender shelf. Holes are stamped in the shelf for this purpose.

11. (Optional) For ease of future maintenance, use a marking pen to label each channel number on its connector.

Connecting to the Network

12. If you are using the PowerVision DAT with the PowerVision software, plug the end of the RJ-45 network cable into the connector on the PowerVision DAT labeled “Ethernet 10BaseT” (see Figure 14).

13. Plug the other end of the RJ-45 network cable into an Ethernet outlet.
Installing the EMP (optional)

NOTE  You do not need to refer to the Environmental Monitoring Probe User's Guide, included with the EMP kit, for this installation.

14. If you are installing an optional EMP, plug one end of the EMP cable into the EMP sensor and the other end into the connector on the PowerVision DAT labeled “EMP” (see Figure 15).

![Figure 15. EMP Installation](image)

15. Use the EMP mounting hardware (supplied with the EMP kit) as needed to attach the sensor in its permanent location.

NOTE  The contacts on the EMP sensor are not used with the PowerVision DAT.
Installing the Power Supply

16. The power supply has a low-voltage DC power wire that ends in a green connector. Push the green power connector into the last connector to the right (the power location) on the PowerVision DAT (see Figure 16).

**NOTE** Ensure that you plug the power connector into the power location (the last connector to the right), not into any of the channel locations.

![Figure 16. Power Supply Installation](image_url)

17. Plug one end of the power cord into the power supply. Plug the other end into the wall outlet.

The PowerVision DAT starts operating, and the display screen on the front panel of the PowerVision DAT displays messages while the PowerVision DAT initializes. Then the PowerVision DAT main screen displays, showing a default date and time similar to the example shown in Figure 17.

![Figure 17. Main Screen](image_url)
18. Verify that the colon in the default time is blinking, indicating that the PowerVision DAT is operating. If the colon is not blinking, see “Troubleshooting” on page 61.

19. If you connected the PowerVision DAT to an Ethernet network, verify that the $\text{□}$ indicator is illuminated, indicating the PowerVision DAT is successfully connected to the network. If the indicator is not on, see “Troubleshooting” on page 61.
Chapter 3 | Front Panel Configuration

This section describes how to configure the PowerVision DAT.

Front Panel Display

The front panel of the PowerVision DAT has a two-line Liquid Crystal Display (LCD), six pushbuttons, and two Light Emitting Diode (LED) indicators, as shown in Figure 18.

![Figure 18. PowerVision DAT Front Panel](image-url)

Use the pushbuttons to navigate through the menus and select entries:

- Up
- Left
- Escape
- Down
- Right
- Enter

The indicators display network status when illuminated:

- \( \text{green} \) (green)  The PowerVision DAT is connected to an Ethernet network.
- \( \text{red} \) (red)  The PowerVision DAT is communicating with the network.

**NOTE**  The PowerVision DAT does not have a physical On/Off switch. The unit turns on when the power cord is plugged into a power outlet.
Pressing ▲ or ▼ repeatedly scrolls through the following screens:

**PowerVision DAT**
The date and time appear on this screen.

**Temperature and Humidity**
(if the optional EMP is installed)

**Channel Status** displays all 16 channel contacts in a Boolean format (1 or 0). By default, all contacts are active and open (1). Zero (0) represents a closed contact. An asterisk (*) represents a deactivated channel.

**System Configuration**
Pressing ◀ while viewing this screen displays the system configuration menus (such as password and IP address).

**Channel Setup**
Pressing ◀ while viewing this screen displays the channel setup menus (such as device name, labels, and normal condition).

**Alarm Status** displays all 16 channel alarm states in Boolean format. Zero (0) represents normal condition, one (1) is alarm, and an asterisk (*) represents a deactivated channel.

**Firmware Version**
The PowerVision DAT firmware version.

Pressing → from any screen escapes to the previous level menu without saving a current change.

**NOTE** *The PowerVision DAT exits the configuration menus and saves any changes automatically after three minutes of inactivity.*
Initial Startup Configuration

The first time the PowerVision DAT is started, you must set or verify certain operating parameters; other parameters are optional. Use the following procedures to set these initial configuration parameters. Begin each procedure at the PowerVision DAT main screen.

Setting the Time and Date

Setting the time and date is optional, but highly recommended.

To set the correct time and date:

1. Press ▼ repeatedly until the System Configuration screen is displayed.

2. Press ←. The Set Time & Date screen displays.

3. Press ←. The date and time format screen displays, showing the current settings.

4. Change the date and time numbers to the correct settings:
   a. Press ▲ or ▼ to increase or decrease the selected number (the selected number is underlined). **NOTE:** The cursor must be in the second digit position of the month and date to change the number.
   b. Press ← or → to select another number to change.

5. When the correct date and time are displayed, press ←. The Display Time screen displays.
6. Press ➡ (for 24-hour) or ➢ (for 12-hour) to select the format you want to use:

- 24-hour clock – 24-hour time displays military time. For example, 08:00 is 8:00 a.m. and 19:00 is 7:00 p.m.
- 12-hour clock – 12-hour time displays civilian time. For example, 08:00 can be either 8:00 a.m. or 8:00 p.m.

7. Press ➡️ to select the setting.

8. Press ➢ to return to the System Configuration screen.

9. Press ➢ to return to the PowerVision DAT main screen.

Setting User and System Passwords

Setting user and system passwords is optional, but highly recommended. Set the user and system passwords for added security:

- The user password accesses PowerVision DAT channel information.
- The system password accesses the internal controls of the PowerVision DAT.

Both passwords can be the same. Both passwords must contain six characters (0–9, A–Z). You must change both passwords at the same time. Change the passwords regularly, according to your site's security guidelines. The factory-default user and system passwords are B9AAAA.

NOTE Always remember your user and system passwords. There is no way to display or verify a password after leaving the password screens.
To set the passwords:

1. Press \( \downarrow \) repeatedly until the System Configuration screen is displayed.

2. Press \( \leftarrow \). The Set Time & Date screen displays.

3. Press \( \downarrow \) until the Set Box Controls screen displays.

   Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.

4. Press \( \leftarrow \). The System Password screen displays.

5. Enter the factory-default password (B9AAAA):
   
   a. Press \( \uparrow \) to change the first character to B.
   
   b. Press \( \rightarrow \) to move to the next character.
   
   c. Press \( \downarrow \) to change the second character to 9.

6. Press \( \leftarrow \). If you entered the password correctly, the Communication Settings screen displays.

   If you mistyped the password, press \( \rightarrow \) and enter the password again.
7. Press \( \mathbf{\downarrow} \). The Password Settings screen displays.

8. **NOTE** Performing this step requires you to enter new user and system passwords. If you do not enter new passwords, the user and system passwords reset to AAAAAA.

   Press \( \mathbf{\leftarrow} \). The Set User Pass screen displays.

9. Set the user password:
   - Press \( \mathbf{\uparrow} \) or \( \mathbf{\downarrow} \) to change the selected character (underlined).
   - Press \( \mathbf{\leftarrow} \) or \( \mathbf{\rightarrow} \) to select another character to change.

   **NOTE** REMEMBER YOUR USER PASSWORD. There is no way to display or verify a password once you leave the user password screen.

10. After you enter the new user password, press \( \mathbf{\leftarrow} \). The Set System Pass screen displays.

11. Set the system password:
   - Press \( \mathbf{\uparrow} \) or \( \mathbf{\downarrow} \) to change the selected character (underlined).
   - Press \( \mathbf{\leftarrow} \) or \( \mathbf{\rightarrow} \) to select another character to change.

   **NOTE** REMEMBER YOUR SYSTEM PASSWORD. There is no way to display or verify a password once you leave the system password screen.
12. After you enter the new system password, press ↓. The Password Settings screen displays.

13. To return to the PowerVision DAT main screen, press → three times.

Setting the Communication Identifiers

Specify the communication identifiers so that the PowerVision DAT can communicate with the network. Configure the IP address, gateway address, and net mask settings (obtain the settings from your network administrator).

**NOTE** Always use caution when changing communication settings. Incorrect settings can cause problems with Ethernet network communications.

1. Press ▼ repeatedly until the System Configuration screen is displayed.

2. Press ←. The Set Time & Date screen displays.

3. Press ▼ until the Set Box Controls screen displays.

Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.
4. Press ↓. The System Password screen displays.

5. Enter the system password (default is B9AAAA):
   - Press ↑ or ↓ to change the selected character (underlined).
   - Press ◀ or ▶ to select another character to change.

6. Press ↓. If you entered the password correctly, the Communication Settings screen displays.
   If you mistyped the password, press ▶ and enter the password again.

7. Press ↓. The IP Address screen displays.
   The IP address shown is the factory-default.

8. Change the IP address to the correct one for your unit:
   - Press ↑ or ↓ to change the selected number (underlined).
   - Press ◀ or ▶ to select another number to change.

   The gateway address shown is the factory-default.
10. Change the gateway address to the correct one for your unit:
   - Press ▲ or ▼ to change the selected number (underlined).
   - Press ◄ or ► to select another number to change.

    The net mask shown is the factory-default.

12. Change the net mask to the correct one for your unit:
    - Press ▲ or ▼ to change the selected number (underlined).
    - Press ◄ or ► to select another number to change.

13. Press ◄ to return to the Communication Settings screen.

14. To return to the PowerVision DAT main screen, press ◄► three times.

15. Restart the PowerVision DAT (see “Restarting the PowerVision DAT” on page 43).
Configuring the Channels

Configure the channel settings to describe the connected industrial equipment (use the completed separate PowerVision DAT Wiring Diagram). Only configure channels where there is equipment connected.

For each channel to configure:

- **Activate or deactivate** the channel (optional).
  
  By default, all channels are activated. You may want to deactivate channels you do not plan to use.

- **Specify a Device Name.**
  
  Name the equipment connected to the channel, such as “Generator 1” or “Flywheel 3.” The default device name is “Device 1.” See page 11 for a list of predefined words.

- **Specify two labels (Label 1 and Label 2).**
  
  The labels describe the meaning of the information delivered through the channel. Both labels together create a description such as “Input Voltage” or “Fuel Low.” The default for each label is “Blank.” See page 11 for a list of predefined words.

  **NOTE** The PowerVision software initially shows the description (Label 1 and Label 2) as both the true and false message. You can change the true and false messages individually using the PowerVision software.

- **Specify the channel state contact (open or closed) in the normal condition.**
  
  The default state is open.

The following sections describe these configuration tasks in detail.
Complete the following steps in order. You can skip some configuration steps by pressing ← to accept the displayed value. Press → at any time to return to a previous menu.

Enter Channel Setup

1. Press ↓ repeatedly until the Channel Setup screen is displayed.

2. Press ←. The User Password screen displays.

3. Enter the user password (default is B9AAAA):
   - Press ▲ or ▼ to change the selected character (underlined).
   - Press ◄ or ► to select another character to change.

4. Press ←. If you entered the password correctly, the Channel 01 screen displays, showing the current setting for Channel 01 (Activated or Deactivated; Activated is the default).
   - If you mistyped the password, press ← and enter the password again.

Activate/Deactivate a Channel

5. Press ▲ or ▼ to display the channel you want to configure.

6. Press ◄ or ► to deactivate (or activate) the displayed channel.
7. Press ← to save the setting and to continue configuring the channel.

Configure the Device Name

8. The Channel Properties screen displays, showing the channel number, device name, and label information.

   ![Channel Properties Example](image)
   
   In the example screen to the right, the default settings are shown. Channel 01’s device name is “Device 1.” The label default is “Blank Blank.”

9. To change the channel information, press ←. The Channel N Device Name screen displays, where $N =$ the channel number.

   ![Channel N Device Name Example](image)

10. To change the device name, press ←. The Device Name screen displays.

    ![Device Name Example](image)

    The default device name is “Device 1” for channels 01 through 08, or “Device 2” for channels 09 through 16.

**NOTE** The PowerVision software uses the device name as a top group name. Ensure that all channels associated with a device use the same spelling of the device name.
11. Press ▲ or ▼ to scroll through the list of predefined device names.

If you want to customize a device name, press ◄ to create a new word or press ► to modify the predefined word.

- Press ▲ or ▼ to change the selected character (underlined).
- Press ◄ or ► to select another character to change.

12. Press ◄ to save the change. The Label 1 screen appears.

Configure the Label

13. The Label 1 screen automatically appears after modifying the device name or press ▼ from the Channel N Device Name screen. (N = the channel number.)

14. To change the Label 1 description, press ◄. The Label 1 description screen displays, showing the current Label 1 for the channel. (There is also a Label 2 that completes the entire two-word label.)

In the example screen to the right, the label is not yet defined so it displays as the default “Blank.”
15. Press ▲ or ▼ to scroll through the list of predefined labels.

If you want to customize a device label, press ◄ to create a new word or press ► to modify the predefined word.

- Press ▲ or ▼ to change the selected character (underlined).
- Press ◄ or ► to select another character to change.

16. When the desired Label 1 is displayed, press ▼. The Label 2 screen displays.

17. To change the Label 2 description, press ◄. The Label 2 description screen displays, showing the current Label 2 for the channel.

In the example screen to the right, the label is not yet defined so it displays as the default “Blank.”

18. Press ▲ or ▼ to scroll through the list of predefined labels.

If you want to customize a device label, press ◄ to create a new word or press ► to modify the predefined word.

- Press ▲ or ▼ to change the selected character (underlined).
- Press ◄ or ► to select another character to change.
19. When the desired Label 2 is displayed, press \( \downarrow \) to save the change. The Normal Condition screen appears.

Configure the Normal Condition

20. The Normal Condition screen automatically appears after modifying Label 2 or press \( \uparrow \) from the Channel N Device Name screen.

21. To view or change the current Normal Condition setting, press \( \leftarrow \). The Normal Condition setting screen displays, showing the current setting.

22. Press \( \uparrow \) or \( \downarrow \) to select the proper setting (Open or Closed).

23. When the correct normal condition setting is displayed, press \( \leftarrow \). The Channel Properties screen displays.

24. Press \( \downarrow \) to repeat the configuration steps for the next channel or to end the configuration process. The Finish/Reboot prompt appears.

25. Press \( \uparrow \) to complete the configuration and reboot the PowerVision DAT or press \( \downarrow \) to configure the next channel.

NOTE If you have made changes and do not select the reboot option, the PowerVision DAT automatically reboots in three minutes.
Other Common Configuration Tasks (optional)

Use this section as a reference for future tasks.

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<tr>
<td>“Resetting the PowerVision DAT to Factory Defaults”</td>
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</table>

Viewing the MAC Address

The Media Access Control (MAC) address helps identify your unit to an Ethernet network. The number is similar to a serial number and cannot be changed.

1. Press \( \downarrow \) repeatedly until the System Configuration screen is displayed.

   System Configuration

2. Press \( \leftarrow \) J. The Set Time & Date screen displays.

   Set Time & Date

3. Press \( \downarrow \) until the MAC Address screen displays. (The number on your display will be different.)

   MAC Address
   002085000974

4. To return to the PowerVision DAT main screen, press \( \rightarrow \) twice.
Restarting the PowerVision DAT

Restarting the PowerVision DAT restores normal operation using all previously saved settings. Restarting the unit has the same effect as pulling the power plug and then reinserting the plug.

1. Press \( \text{▼} \) repeatedly until the System Configuration screen is displayed.

2. Press \( \text{◄} \). The Set Time & Date screen displays.

3. Press \( \text{▼} \) until the Set Box Controls screen displays.
   
   Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.

4. Press \( \text{◄} \). The System Password screen displays.

5. Enter the system password (default is B9AAAA):
   - Press \( \text{◄} \) or \( \text{▼} \) to change the selected character (underlined).
   - Press \( \text{◄} \) or \( \text{▼} \) to select another character to change.

6. Press \( \text{◄} \). If you entered the password correctly, the Communication Settings screen displays.

   If you mistyped the password, press \( \text{◄} \) and enter the password again.
7. Press ▼ until the Restart Box screen displays.


Press ► to select No or press ◄ to exit without rebooting.

Resetting the PowerVision DAT to Factory Defaults

Resetting the PowerVision DAT resets all settings except the communication settings to the original factory default settings.

**NOTE** Use caution when resetting the unit to factory defaults. ALL settings (except the communication settings) are restored to factory defaults, including all channel information, all passwords, and the time and date.

1. Press ▼ repeatedly until the System Configuration screen is displayed.

2. Press ◄. The Set Time & Date screen displays.

3. Press ▼ until the Set Box Controls screen displays.

   Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.

4. Press ◄. The System Password screen displays.
5. Enter the system password (default is B9AAAA):
   - Press ▲ or ▼ to change the selected character (underlined).
   - Press ◄ or ► to select another character to change.

6. Press ◄. If you entered the password correctly, the Communication Settings screen displays.
   If you mistyped the password, press ► and enter the password again.

7. Press ◄ until the Reset Box to Factory Defaults screen displays.

8. Press ◄. The warning screen displays.
   To exit this screen without resetting, press ►.

9. To reset the unit, press ◄. The PowerVision DAT resets and restores all factory settings, then the PowerVision DAT main screen displays.
Enabling/Disabling Automatic Reboot

Enabling automatic reboot sets the PowerVision DAT to automatically restart once a month. The default setting is enabled.

1. Press ▼ repeatedly until the System Configuration screen is displayed.

2. Press ▼. The Set Time & Date screen displays.

3. Press ▼ until the Set Box Controls screen displays.

   Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.

4. Press ▼. The System Password screen displays.

5. Enter the system password (default is B9AAAA):
   - Press ▲ or ▼ to change the selected character (underlined).
   - Press ▼ or ▲ to select another character to change.

6. Press ▼. If you entered the password correctly, the Communication Settings screen displays.

   If you mistyped the password, press ▼ and enter the password again.

7. Press ▼ until the Auto Reboot screen displays.
8. Press ← or → to select the appropriate mode.

9. Press ↓. The PowerVision DAT saves the setting, then the Set Box Controls screen displays.

10. To return to the PowerVision DAT main screen, press ↑↑ twice.

Changing the Temperature Units

You can set the temperature units to either degrees Fahrenheit or degrees Celsius. The default setting is Fahrenheit (F).

1. Press ▼ repeatedly until the System Configuration screen is displayed.

2. Press ↓. The Set Time & Date screen displays.

3. Press ▼ until the Set Box Controls screen displays.

   Box Control screens let you view or set internal controls for the PowerVision DAT. These tasks are password-protected.

4. Press ↓. The System Password screen displays.

5. Enter the system password (default is B9AAAA):
   - Press ▲ or ▼ to change the selected character (underlined).
   - Press ← or → to select another character to change.
6. Press \( \leftarrow \). If you entered the password correctly, the Communication Settings screen displays.

If you mistyped the password, press \( \rightarrow \) and enter the password again.

7. Press \( \uparrow \) until the Display Temp screen displays.

- \( F = \text{Fahrenheit} \)
- \( C = \text{Celsius} \)

8. Press \( \downarrow \) or \( \uparrow \) to select the appropriate mode.

9. Press \( \leftarrow \). The PowerVision DAT saves the setting, then the Set Box Controls screen displays.

10. To return to the PowerVision DAT main screen, press \( \rightarrow \) twice.
Chapter 4  Interfacing with PowerVision Software

The PowerVision DAT can monitor the alarm/status information from many different types of equipment, and then send this information to PowerVision software running on a remote computer.

The PowerVision software can:

- Locate a PowerVision DAT’s IP address on the network and see all equipment and channels configured on the PowerVision DAT.
- Enhance alarm definitions with color and text that make alarms more meaningful and obvious.
- Display detailed views of alarms, including historical graphs, and set alerts and messages for different alarm levels.

The PowerVision software can present all of this detailed equipment information in an easy-to-read format. This chapter provides general information on understanding how the PowerVision DAT and the PowerVision software work together to provide a powerful monitoring system that is easy to use.

Before you can use the PowerVision software with the PowerVision DAT, you must have already:

- Installed the PowerVision DAT.
- Configured the PowerVision DAT, including setting the communication identifiers and restarting the PowerVision DAT for the addresses to take effect.
- Installed or updated the PowerVision software to PowerVision Facility Edition Server v4.0 or later.
Connecting

To use the PowerVision software to connect to a PowerVision DAT:

1. Click **Configuration** on the menu bar.

2. Click the **Start Server Configuration** menu item.
   The message ***SERVER CONFIGURATION MODE*** displays in the title bar.

   The PowerVision software must be in server configuration mode to connect to a PowerVision DAT. The PowerVision software views the PowerVision DAT as a PowerVision software server.

3. Click **Configuration** again.

4. Click **Remote Management** and then **Add Remote**. The Add a Remote window displays.

5. Type a Remote Name that describes the location or use of the PowerVision DAT, such as “Power Room DAT.”

6. For the Remote Address, type the PowerVision DAT’s IP address. (This IP address must have previously been entered on the PowerVision DAT through its front panel.)

7. Click **OK** to save the changes.

8. Click **Configuration** again.

9. **Click End Server Configuration**. The remote name you entered for the PowerVision DAT appears on the tree view.

For additional information about connecting to a PowerVision DAT, refer to the PowerVision software’s online help.
Monitoring

To use the PowerVision software to monitor a PowerVision DAT:

1. Display the devices attached to a PowerVision DAT by double-clicking the name of the PowerVision DAT or clicking the + icon next to the name.

The devices display beneath the PowerVision DAT name, listed by their device names as entered at the DAT. The display may show a mix of the default names (Device 1, Device 2) and any new device names created at the PowerVision DAT.

2. To display the channel details of a device, click the device to select it. The individual channels for that device display in the right pane. The description for each channel includes:

   - Channel. A list of channel numbers, starting with Channel 01. (The channels displayed are not named to match their physical channel number on the PowerVision DAT.)
   - State. Normal or alarm.
   - Value. The current state of the channel.
   - Type. Digital or analog. Channels 01 through 16 are digital.

3. To disable or disarm a device: click the device to select it, click Configuration, and then click Properties. A dialog box opens that provides options for enabling and arming.

   - You might want to disable a device for maintenance. For example, if Generator 1 is taken offline for maintenance, you probably want to disable monitoring the associated channels to prevent detecting unnecessary alarms. PowerVision software does not monitor disabled devices.

   - You might want to disarm a device to temporarily ignore its status, such as when troubleshooting a malfunctioning device. PowerVision software monitors disarmed devices but does nothing with the information.

For additional information about monitoring a PowerVision DAT, refer to the PowerVision software's online help.
Updating

You can use the PowerVision software to:

- Change or enhance the messages (Label 1 and Label 2 names) for each channel.
- Add new channels to a PowerVision DAT already communicating with PowerVision software.

There are many more channel properties that can be modified to make the PowerVision display more useful. Refer to the PowerVision software’s online help for more information.

For an overview of device names and labels and how they work with the PowerVision DAT and the PowerVision software, see “Device Names and Labels” on page 11.

Changing Label Names

The Label 1 and Label 2 names originally entered on the PowerVision DAT appear in the PowerVision software as the true string for the channel. By default, the PowerVision software sets the channel’s false string to the same text as the true string. To create more descriptive messages, modify the true string and false string with the PowerVision software:

- The true string displays when the channel is in the normal state.
- The false string displays when the channel is in the alarm state.

NOTE Any changes to the true and false strings must be made through the PowerVision software. After these changes are made through the PowerVision software, the PowerVision DAT Label 1 and Label 2 values do not reflect the PowerVision strings.
To change the label name strings:

1. Click the appropriate device and channel to select them.

2. Click Configuration and then click Properties. A dialog box displays fields for editing the channel properties, including the True String and False String.

3. Edit the string fields as desired to make them more descriptive than the Label 1 and Label 2 combinations from the PowerVision DAT.

For example, the Label 1 and Label 2 names may form a message of Voltage On, which displays as the default for both the true string and false string. You could edit the true string to read Output Voltage Normal and the false string to read Low Output Voltage.

4. Click OK to save the changes.

5. To begin updating the remote, click the name of the PowerVision DAT in the tree view to select it.

6. Click Configuration, and then click Start Server Configuration. The message ***SERVER CONFIGURATION MODE*** displays in the title bar.

7. Click Configuration again.

8. Click Remote Management and then Get Remote Updates. The PowerVision DAT is disconnected and reconnected. The progress of the update displays in the State field in the right pane. When the update is complete, the top alarm management tree displays.

9. Return the server to normal mode by clicking Configuration and then End Server Configuration.
Adding New Channels

To add a new channel, you enter the new channel information at the front panel of the PowerVision DAT, update the PowerVision software, and then update the remote, as described below:

1. Configure the new channel at the front panel of the PowerVision DAT (see “Front Panel Configuration” on page 27).

   If the new channel is part of an existing device, ensure that the device name is entered with exactly the same spelling as the current device name. The new channel displays in the PowerVision software tree view as a new channel listed under the existing device.

   If the new channel is part of a new device, enter the new device name (such as “Generator 3”). The new device and new channel display in the PowerVision software tree view.

2. Restart the PowerVision DAT to save the changes (see “Restarting the PowerVision DAT” on page 43).

3. Update the PowerVision software for the new channel. For example, you may need to change label names or alarm settings. See “Changing Label Names” on page 52.

4. To begin updating the remote, click the name of the PowerVision DAT in the tree view to select it.

5. Click Configuration, and then click Start Server Configuration.

   The message ***SERVER CONFIGURATION MODE*** displays in the title bar.

6. Click Configuration again.

7. Click Remote Management and then Get Remote Updates.

   The PowerVision DAT is disconnected and reconnected. The progress of the update displays in the State field in the right pane. When the update is complete, the top alarm management tree displays.

8. Return the server to normal mode by clicking Configuration and then End Server Configuration.
Chapter 5  Specifications

Technical Specifications

Table 3. PowerVision DAT Technical Specifications

<table>
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<tr>
<th>Specification</th>
<th>Details</th>
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<tr>
<td>Operating Voltage</td>
<td>7–34 Vdc (3W nominal)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-15 to 80°C (5 to 176°F)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.62 lb (1.19 kg)</td>
</tr>
<tr>
<td>Dimensions (H × D × W)</td>
<td>1.75” (1U) × 4.63” × 19.00” (4.45 cm × 11.76 cm × 48.26 cm)</td>
</tr>
<tr>
<td>Inputs</td>
<td>16 isolated inputs</td>
</tr>
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</table>

Menu Maps

Table 4. PowerVision DAT Menu Map

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<th>Submenu</th>
<th>Display Information or Menu Function</th>
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<tr>
<td>PowerVision DAT</td>
<td></td>
<td>Displays the current date and time</td>
</tr>
<tr>
<td>Temperature/Humidity</td>
<td></td>
<td>Displays the current readings (if optional EMP is installed)</td>
</tr>
<tr>
<td>Channel Status</td>
<td></td>
<td>Displays the current channel contact status for all 16 channels: closed (0), open (1), or deactivated (*) Defaults: all channels open</td>
</tr>
<tr>
<td>System Configuration</td>
<td>Set Time &amp; Date</td>
<td>Settings for current time and date: mm/dd/yyyy hh:mm  Example: 01/01/2005 14:00</td>
</tr>
<tr>
<td></td>
<td>Display Time</td>
<td>Setting for type of clock Available settings: 24-hour clock, 12-hour clock Default: 24-hour clock</td>
</tr>
<tr>
<td></td>
<td>Set Box Controls</td>
<td>Settings for internal controls for the unit Requires system password for access (see Table 5)</td>
</tr>
<tr>
<td></td>
<td>MAC Address</td>
<td>Displays the Media Access Control (MAC) address for the unit (not configurable)</td>
</tr>
<tr>
<td>Channel Setup</td>
<td></td>
<td>Settings for all 16 channels Requires user password for access (see Table 6)</td>
</tr>
<tr>
<td>Alarm Status</td>
<td></td>
<td>Displays the current alarm status of all 16 channels: normal (0), alarm (1), or deactivated (*)</td>
</tr>
<tr>
<td>Firmware Version</td>
<td></td>
<td>Displays the firmware version</td>
</tr>
</tbody>
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### Table 5. Set Box Controls Menu (requires System Password)

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<th>Available Settings</th>
<th>Default Setting</th>
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</thead>
<tbody>
<tr>
<td>Communication Settings</td>
<td>IP Address (for your unit)</td>
<td>10.10.2.254</td>
</tr>
<tr>
<td></td>
<td>Gateway address (for your unit)</td>
<td>10.10.2.1</td>
</tr>
<tr>
<td></td>
<td>Net Mask (for your unit)</td>
<td>255.255.255.000</td>
</tr>
<tr>
<td>Password Settings</td>
<td>System Password (for your unit)</td>
<td>B9AAAA</td>
</tr>
<tr>
<td></td>
<td>User Password (for your unit)</td>
<td>B9AAAA</td>
</tr>
<tr>
<td>Restart Box</td>
<td>Yes / No</td>
<td>[No default]</td>
</tr>
<tr>
<td>Reset Box to Factory Defaults</td>
<td>PRESS ENTER TO RESET EVERYTHING / Escape</td>
<td>[No default]</td>
</tr>
<tr>
<td>Auto Reboot</td>
<td>Enabled / Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Display Temp</td>
<td>F / C</td>
<td>F (Fahrenheit)</td>
</tr>
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</table>

### Table 6. Channel Setup Menu (requires User Password)

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<th>Available Settings</th>
<th>Default Setting</th>
</tr>
</thead>
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<td>Channel &lt;N&gt;</td>
<td>Activated / Deactivated</td>
<td>Activated</td>
</tr>
<tr>
<td>Device Name</td>
<td>See page 11</td>
<td>Device 1</td>
</tr>
<tr>
<td>Label 1</td>
<td>See page 11</td>
<td>Blank</td>
</tr>
<tr>
<td>Label 2</td>
<td>See page 11</td>
<td>Blank</td>
</tr>
<tr>
<td>Normal Condition</td>
<td>Open / Closed</td>
<td>Open</td>
</tr>
</tbody>
</table>
Configuration Files

There are several INI files that control the configuration for the PowerVision DAT:

- `chanN.ini`, where $N$ equals the channel number (1–16)
- `temp.ini`
- `humid.ini`
- `lcd.ini`

You may want to back up these files to a disk for safekeeping each time you update the configuration for the PowerVision DAT (see the following section, “Backing Up Configuration Files”). If the configuration files become corrupted on the PowerVision DAT, restore the backup files to the unit (see “Restoring Configuration Files” on page 59).

<table>
<thead>
<tr>
<th>Channel</th>
<th>Filename</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channels 01 – 16</td>
<td><code>chan1.ini</code> – <code>chan16.ini</code></td>
<td>The <code>chanN.ini</code> files describe the channel characteristics for the PowerVision DAT, where $N$ equals the channel number. Includes the contacts available for equipment connections.</td>
</tr>
<tr>
<td>Channels 17 - 24</td>
<td><code>chan17.ini</code> – <code>chan24.ini</code></td>
<td>Do not use; for future use.</td>
</tr>
<tr>
<td>Channel 25</td>
<td><code>temp.ini</code></td>
<td>Temperature (for optional EMP)</td>
</tr>
<tr>
<td>Channel 26</td>
<td><code>humid.ini</code></td>
<td>Humidity (for optional EMP)</td>
</tr>
<tr>
<td>Channel 27</td>
<td><code>lcd.ini</code></td>
<td>Controls the LCD menu display for the PowerVision DAT.</td>
</tr>
</tbody>
</table>
Backing Up Configuration Files

To back up the configuration files:

1. From a computer connected to the PowerVision DAT through a network, launch a DOS application that supports File Transfer Protocol (FTP).

2. From the destination directory for the backup files, ping the IP address of the PowerVision DAT to ensure a communication link exists:
   \[ C:\text{directoryname}\text{> ping ipaddress <enter> } \]

3. Connect to the PowerVision DAT:
   \[ C:\text{directoryname}\text{> ftp ipaddress <enter> } \]

4. When the login message requests a user name and password, use admin for both.

5. To list the files on the PowerVision DAT:
   \[ ftp>ls <enter> \]

6. Enter the following command for each file to back up:
   \[ ftp>get filename.ini <enter> \]

7. Check your computer’s directory to make sure the file was copied to the directory.

8. Exit the FTP session:
   \[ ftp>quit <enter> \]
   or
   \[ ftp>bye <enter> \]
Restoring Configuration Files

To restore the backup files:

1. From a computer connected to the PowerVision DAT through a network, launch a DOS application that supports File Transfer Protocol (FTP).

2. From the directory containing the backup files, ping the IP address of the PowerVision DAT to ensure a communication link exists:
   C:\directoryname>ping ipaddress <enter>

3. Connect to the PowerVision DAT:
   C:\directoryname>ftp ipaddress <enter>

4. When the login message requests a user name and password, use admin for both.

5. Enter the following command for each file to restore:
   ftp>put filename.ini <enter>

6. Exit the FTP session:
   ftp>quit <enter>
   or
   ftp>bye <enter>
Chapter 6  Troubleshooting

If you experience trouble with the PowerVision DAT, consult the symptoms in this section. Try the recommendations in this section before calling Eaton for assistance.

Troubleshooting Guide

Table 7. Troubleshooting Guide

<table>
<thead>
<tr>
<th>Condition</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel is not working.</td>
<td>Channel may not be activated.</td>
<td>Navigate to the Channel Status display. If the channel in question shows an asterisk (*), the channel is not activated. Activate the channel.</td>
</tr>
<tr>
<td></td>
<td>Contacts (1 and 2) may be incorrect.</td>
<td>Navigate to the Channel Status display. Disconnect the signal wire from the channel. The Channel Status should show an open (1) for that channel. Apply a short between the channel terminals. The Channel Status should show a closed (0) for that channel. If the Channel Status does not change, refer to the wiring chart on top of the PowerVision DAT to ensure you are using the correct contacts (1 and 2).</td>
</tr>
<tr>
<td>Display is blank.</td>
<td>The power cord is not connected correctly.</td>
<td>Check the power cord connections.</td>
</tr>
<tr>
<td></td>
<td>The wall outlet is faulty.</td>
<td>Have a qualified electrician test and repair the outlet.</td>
</tr>
<tr>
<td>Display is on but the colon in the time display is not blinking.</td>
<td>Unit may need to be reset.</td>
<td>Reset the PowerVision DAT by removing power for a moment.</td>
</tr>
<tr>
<td>Ethernet is connected, but the (\rightarrow) is not on.</td>
<td>Network cables may be loose or faulty.</td>
<td>Verify that cables are of correct type, functioning, and connected properly.</td>
</tr>
<tr>
<td></td>
<td>Network may be down.</td>
<td>Check network status with your network administrator.</td>
</tr>
<tr>
<td>PowerVision DAT does not seem to be working correctly for any reason.</td>
<td>Unit may need to be reset.</td>
<td>Reset the PowerVision DAT by removing power for a moment.</td>
</tr>
<tr>
<td>Condition</td>
<td>Possible Cause</td>
<td>Action</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>Display returns to the main screen.</td>
<td>For security reasons, the display returns to the main screen if no keys are pressed within three minutes.</td>
<td>Do not pause for more than three minutes when navigating the PowerVision DAT menus.</td>
</tr>
<tr>
<td>Contact is always OPEN (1), never CLOSED (0).</td>
<td>There is too much resistance in the contact circuit.</td>
<td>Measure the resistance of the contact circuit from the channel contacts on the PowerVision DAT. Resistance must be less than 30 ohms with the contact closed. Have a qualified electrician test for and repair the cause of the high resistance.</td>
</tr>
<tr>
<td>Contact is failing.</td>
<td>Have a qualified electrician test for the failed contact before calling Eaton for assistance.</td>
<td></td>
</tr>
<tr>
<td>Unexpected results from updating the PowerVision DAT or PowerVision through PowerVision.</td>
<td>Unit may need to be reconnected.</td>
<td>Select the PowerVision DAT in the Tree View. Click Configuration &gt; Remote Management &gt; Disconnect Remote. To reconnect the unit, click Configuration &gt; Remote Management &gt; Connect Remote.</td>
</tr>
<tr>
<td></td>
<td>Unit may need to be restarted.</td>
<td>Select the DAT in the Tree View. Click Configuration &gt; Remote Management &gt; Restart Remote OS. If necessary, reconnect as described above.</td>
</tr>
</tbody>
</table>
Service and Support

If you have any questions or problems with the PowerVision DAT, call your Local Distributor or the Help Desk at one of the following telephone numbers.

In the United States: 1-800-356-5737 or 1-608-565-2100
Europe, Middle East, Africa: +44-17 53 608 700
Asia: +852-2830-3030
Australia: +61-3-9706-5022

Please have the following information ready when you call the Help Desk:

- Model number
- Serial number
- Version number (if available)
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) Number. This number must appear on the outside of the package and on the Bill Of Lading (if applicable). Use the original packaging or request packaging from the Help Desk or distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all warranted units.

NOTE For critical applications, immediate replacement may be available. Call the Help Desk for the dealer or distributor nearest you.