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# **PanelMate® PC Runtime Operation User's Guide**

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**www.cutler-hammer.eaton.com**

Use the Cutler-Hammer website to find product information. You can also find information on local distributors or Cutler-Hammer sales offices.

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If you have questions regarding the repair or upgrade of an OI/IPC, contact your local distributor. Additional support is also available from our well-equipped Repair and Upgrade Service department.

## European PanelMate Support Center

**VOICE: +41 1 806 64 44 (9:00AM-5:00PM CET)**

**EMAIL: [CHSupport@bfa.ch](mailto:CHSupport@bfa.ch)**

This center, located in Zurich, Switzerland, provides high-level quality support and product repair services for your PanelMate products. You will receive real-time technical and application support.

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# Introduction

## 1

*This chapter provides an introduction to the PanelMate PC Runtime software. PanelMate PC is a powerful Graphical User Interface that runs on a Windows NT Workstation.*

*The following topics are discussed:*

- *Introduction*
- *Minimum System Requirements*

## Introduction

The PanelMate PC Operator Station is a powerful Graphical User Interface (GUI) that runs on the Windows NT platform. Functionally, it is similar to the PanelMate Power Series except it is an “Open Platform” system that runs on a personal computer. There are two versions of PanelMate PC:

**Software-Only:** You can install this on any personal computer that meets these minimum **system requirements**.

**Software/Hardware Combination:** The software comes pre-installed on a Cutler-Hammer industrial personal computer.

## Minimum System Requirements

### Software/Hardware Version

The **Software/Hardware** version of PanelMate PC comes pre-installed on a Cutler-Hammer industrial personal computer.

### Software Only Version

To install the **Software-Only** version, your PC must meet these minimum system requirements:

- Pentium 133Mhz Processor
- 32 Mb RAM
- Windows NT 4.0 with service pack 3
- 100 MByte Free Hard Disk Space
- VGA (640 x 480) or Higher Resolution With 256 Colors
- Color CRT or Flatpanel Display
- Touchscreen, Mouse, or Compatible Pointing Device



# Installation

## 2

*This chapter describes the installation of the PanelMate PC Runtime software.*

*The following topics are discussed:*

- *Installation*
- *Software Installation*
- *Software Only Version*
- *Installing The Software Protection Key*
- *Installing Third-Party Hardware Or Software*
- *Setting Up For Auto Logon*
- *Making An Emergency Repair Disk*
- *Checking For Installed Components*

## Software Installation

The Software Kit contains a CD-ROM for fast, easy software installation. Select **Install Software**, and then select the software files you wish to install:

- Configuration Software files
- Configuration Database files
- Transfer Utility files
- Executive Firmware files
- PanelMate PC Runtime files

**Note:** If installing the PanelMate Runtime Software only, deselect the other selections and only check the box for the PanelMate PC Runtime selection.

**Note:** If you are upgrading your configuration software, you do not need to install the Configuration Database files. However, if you do not deselect this box, your existing database will be renamed and a new database will be installed. On-screen prompts detail available options.

**Note:** PanelMate PC default fonts are not automatically installed in the Windows Font directory. Follow the installation prompts to install the PanelMate fonts and reboot the PC prior to running PanelMate PC.

**Note:** See Minimum System Requirements for more information.

## Installing the Software Protection Key

Before running the PanelMate PC software, you must install a Software Protection Key on your computer's parallel port.

**Note:** If the key is not installed, the system will only run in **Demo mode**.

1. The key has a passthrough feature that lets you plug a printer cable into the key. If you have a printer connected to your parallel port, unplug the printer cable from the parallel port, plug in the key, then plug the printer cable into the key's other connector.
2. Plug the end of the key marked "Computer" into your parallel port.
3. Plug the printer cable into the other end of the key.

**Note:** The Software Protection Key will not be recognized until the PC is rebooted following software installation.

## Installing Third-Party Hardware or Software

Install third-party hardware using the standard Windows NT procedures.

## Setting Up For Auto Logon On A PC

Auto-logon lets your computer boot up and bypass the normal Windows NT password logon sequence, which allows operation without a keyboard.

To enable Auto-logon at bootup, you must manually edit the System Registry.

**Caution:** Incorrectly editing the system registry can cause bootup problems. Make an emergency repair disk by running RDISK.

1. Run the Registry Editor from the Start Menu by selecting Run – Regedt32 and select the **HKEY\_LOCAL\_MACHINE** hive.
2. Locate and select the WinLogon key under:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\Current Version
3. Change the value of **DefaultUserName** to the name of the user you wish to automatically log-in at startup (the default=Administrator).

**Note:** In Step 4, if **AutoAdminLogon** is already present and set to a value of 0, just change the value to 1.

4. Add these two values by selecting Edit – Add Value.

**AutoAdminLogon** - Data Type: REG\_SZ – Value: 1

**DefaultPassword** – Data Type: REG\_SZ – Value= *userpassword*  
(where *userpassword* is the actual password for the default user).

5. The logon password may not be a null string (A null is the default value for Cutler-Hammer D700 Series IPCs). If the password is blank, change the password at the Windows NT Security window. Press CTL/ALT/DEL then select the Change Password button.
6. Ensure the values you have entered are correct, close the registry, and re-start the computer.

To automatically launch a PanelMate PC application, configure for Auto Logon and place a **shortcut** in the Windows NT Startup folder.

## Making an Emergency Repair Disk

Run RDISK from the Start Menu by selecting Run - RDISK. Follow the on-screen prompts to create the Emergency Repair Disk.

## Checking For Installed Components

To check for the presence of installed components, use Windows NT explorer to go to the folder ...

c:\pmconfig\Ntonline

The Executive software is named “Pmc.exe”.

Drivers are named “xxx.exe”, for example Mod.exe (Modicon), Abdh.exe (Allen-Bradley Data Highway), etc.

# Launching A PanelMate PC Application

## 3

*This chapter describes how to start up the PanelMate PC Runtime software.*

*The following topics are discussed:*

- *Launch Options*
- *Open Command Switches*
- *Creating A Shortcut*
- *Automatically Launching An Application*
- *Power-Up Sequence*
- *Checking User Configuration Compatibility*
- *Demo Mode*
- *Run Mode*
- *Secure/Unsecure Mode*

## Launching Methods

There are a number of ways to launch a PanelMate PC application (\*.pps file):

- Using a short Run command
- From a command prompt window
- Double-clicking the .pps file within the Explorer or My Computer utilities
- Double-clicking a shortcut
- Placing a shortcut in the Startup folder:  
WINNT\PROFILES\ALL USERS\PROGRAMS\STARTUP

## Launch Options

The launch options include command line switches:

- Secure (default) or Unsecure (-u) Mode
- Communications Enabled (Default) or Disabled (-g)
- PanelMate PC Application (Default) or any PanelMate .pps Application (-a)

To launch an application from a Start-Run command or from a command prompt window with default settings, use this command syntax:

```
pmc.exe app_name.pps
```

Where app\_name.pps is the name of the application.

You must provide a complete path name if the path setting within the WINNT environment variables (Start – Settings - Control Panel – System) is not modified to include the application folder. In this case, the complete command line becomes (assuming the default folders are not changed):

```
c:\pmconfig\ntonline\pmc.exe c:\pmconfig\online\cfg\app_name.pps
```

To add command line switches, place them in the command line after the .pps filename, leaving a space between each switch. The following command line contains switches for unsecure mode, disabled communications, and for any PanelMate application.

```
pmc.exe app_name.pps -u -g -a
```

When the PanelMate PC Runtime software is installed, a file association is registered in Windows NT that associates any .pps file with pmc.exe. You can modify this association as follows:

1. Run the Windows NT Explorer.
2. Select the menu item View-Option.
3. Select the File Types tab and edit the PanelMate PC Application association.

## Open Command Switches

The open command default is:

```
pmc.exe
```

To add command line switches to default to Unsecure mode and any model, change the command line to:

```
pmc.exe %1 -u -a
```

Once the file association is set as desired, run the applications by double-clicking the .pps file from the Explorer, or My Computer.

## Creating A Shortcut

To create a shortcut to a .pps file, right-click the file and select Create Shortcut. You can move the new shortcut wherever you choose, including the Startup folder.

## Automatically Launching an Application

To automatically launch a PanelMate PC application, place the shortcut in the Windows NT Startup folder.

If **Auto Logon** is also configured, the PanelMate PC application will start up automatically.

## Power-Up Sequence

On power-up, the PanelMate PC unit performs a standard Windows NT startup. If you have ...

- Configured **Auto-Logon**, the system boots up without further action on your part. Otherwise, you must log on normally.
- Placed the PanelMate PC shortcut in the **Startup** folder, it will run as soon as logon is complete. Otherwise, you must run PanelMate PC like any other application.
- Installed a demo configuration, the demo will run.

## Checking User Configuration Compatibility

As the PanelMate PC program starts up, it automatically checks for the presence of a valid User Configuration. It then verifies the configuration is compatible with the Executive Software.

- If they match, the startup sequence continues.
- If they are incompatible, the following error message is displayed:

```
PanelMate PC: Incompatible Configuration
```

... and installation of new Executive Software or a new Configuration is required.

Click the **OK** key to cancel.

If you experience other problems during program startup, you should check for the presence of Executive Software and installed drivers.

## Demo Mode

Demo software is provided with the PanelMate PC software. The Demo software is time-limited to run 120 minutes.

When you first run the Demo software, a dialog box pops-up and prompts “PanelMate PC is in Demo mode. Demo mode will expire in 120 minutes.” Click the <OK> button to close the dialog box.

As the Demo software runs, it counts down the time remaining. Every 15 minutes, a dialog box pops-up and lists the amount of time remaining. Click the <OK> button.

After the 120 minute timeout elapses, a final dialog box appears, stating that “Demo mode has terminated”. At this point, all communications to the application have been shut down. Click the <OK> button, and the PanelMate PC program will close.

## Run Mode

The following message will be displayed while PanelMate PC loads the specific application:

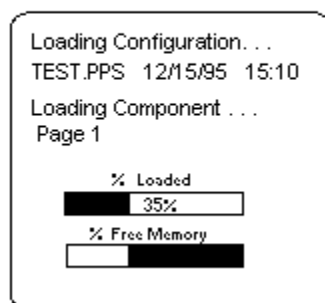
Loading Configuration

At this point in the initialization, the integrity of the Executive Firmware and integrity of the User Configuration have been verified. The proper driver is also known to be installed. The Operator Station will display the Loading Status Screen while performing the initialization procedure outlined below. The time to complete the initialization depends upon the complexity of the configuration. The complexity of the user configuration is determined by the density of the pages, number of alarm conditions, and the number of control bits which must be initialized in the process control device(s).

**Note:** If the configuration contains an address reference error, the configuration will fail to run or generate an Exception Error when trying to load. To find the error, run the verify utility in your PanelMate Power Pro Configuration Editor software.

The Loading Status Screen displays the name, date, and time of the configuration being loaded, the component that is currently being loaded, the percentage of the configuration that has been loaded, and the percentage of the usable free memory remaining (based on the largest contiguous block).

10:28:56



The following steps outline the run mode initialization procedure:

1. Load System Parameters
2. Check for the presence of the Software Protection Key
3. Load PLC Name and Port Table
4. Load Message Library
5. Load Page Passwords/Titles
6. Load System Online Labels
7. Load Symbol Library
8. Load Normal Character Font
9. Load Graphic Character Font
10. Load Double-High Character Font
11. Load Configuration Pages
12. Create the Run Mode database from Page Component files, verify all expressions, and process control device references
13. Allocate memory
14. Load Quad Character Font
15. Create Block Reads
16. Begin communications with the process control device
17. Control bit initialization; every control bit reference is initialized as follows:

Normally Closed Momentary	Set to 1
Normally Open Momentary	Set to 0
Maintained and Toggle	Unchanged

Also send remote bits (Passwords, etc) to process control device(s)

**Note:** If process control device communications are not valid, the communication retry process could be lengthy.

18. Update the Startup Page information and display

**Note:** If the Startup Page is password protected, the protection will be ignored during startup. Subsequent selections of that page will be password protected.

19. Remote send of Startup Page information to process control device
20. If the Software Protection Key is not installed, a pop-up dialog box indicates that the Runtime Software is in the Demo Mode.

**Note:** If a configuration is too large to fit in the Operator Station, the Operator Station will attempt to go online indefinitely, displaying the Loading Status screen. The Loading Status screen states each portion of the configuration as it is being loaded. It is suggested that the Configuration Verifier (accessed by the Verify selection in the File Menu) be executed on every configuration before downloading to an Operator Station for online operation.



## Secure/Unsecure Mode

During the development of a configuration, the Application Development Engineer can select either Secure Mode or Unsecure Mode operation. This is determined by the method used to launch the PanelMate PC application. The default is Secure Mode.

### Secure Mode

In secure mode, the PanelMate PC application runs full-screen (in 640x480 resolution\*) rather than in the standard window used for most Windows NT applications. The workstation is “secure” because there are no Windows NT controls (Minimize, Maximize, X-terminate, and Start Taskbar) to interrupt or terminate the application.

\* For displays with a resolution greater than 640x480, the unused area is filled with black.

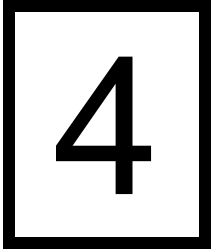
The **Close PanelMate Application** button on the **Setup Page** lets the user return to the Windows NT desktop from the Secure Mode.

### Unsecure Mode

In Unsecure Mode, the PanelMate PC application runs in a standard Windows NT window with normal Windows NT controls.

**Caution:** When running in Unsecure Mode at 640x480 resolution, communication errors are hidden by the Windows frame and are not be viewable onscreen. You must use 800x600 or higher resolution or Secure Mode to view communication errors.

# Run Mode Operation



*This chapter describes the PanelMate PC Run Mode.*

*The following topics are discussed:*

- *Run Mode*
- *Online Page Layout*
- *Refresh Graphics*
- *Conditional Visibility*
- *Default Control Buttons*
- *Remote Page Selection*
- *Directory*
- *Operator Input*
- *Alarms*
- *Password Protection*
- *Setup Page*
- *Maintenance Templates*

## Run Mode

The online system performs three basic tasks:

- Screen Updating
- Alarming
- Remote Operations

For more information on screen updating, refer to the **Refresh Graphics** topic or the **Conditional Visibility** topic.

During the Run Mode, up to four separate scans may be occurring. All can be scanned at a user-specified rate. The scans are Screen Scan, Alarm Scan, Message Scan, and Trend Scan.

Proper Run Mode operations will only occur if a programmable controller, NetSolver, or other intelligent device is properly communicating with the Operator Station. If errors occur, see the **Errors During Run Mode** topic. In Run Mode, a variety of operations will take place; some are related to the display functions of the Operator Station, and some are related to the operator-input functions.

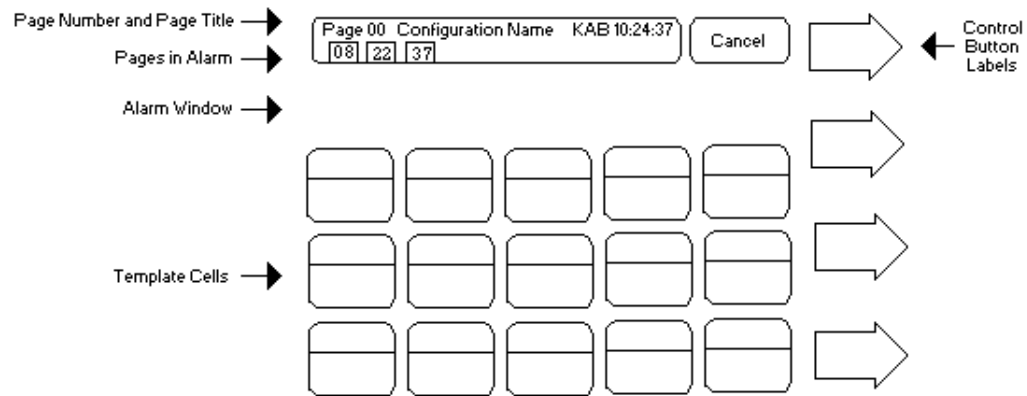
## Online Page Layout

Online page layout is flexible. The Configuration Editor lets you determine the online page layout in Run Mode. When the Flexible Page Layout field is selected in the **System Parameters - General Tab** dialog box, it enables you to select or deselect the Page Status Banner, Default Buttons, Alarm Table, or Cancel Key items in the **New Configuration Page** dialog box and in the **Page Properties** dialog box. When the Flexible Page Layout items are selected, the items will appear on the page in Run Mode. When the Flexible Page Layout items are deselected, the items will be removed from the page in Run Mode. Note that for each configuration page, you may determine to keep or remove the Flexible Page Layout items.

*Note: When the Flexible Page Layout feature is enabled, default buttons are deselected, and templates with button controls are selected, the control buttons will appear on the right side of the Operator Station unless the selected template is located in this area. If the selected template resides in the standard control button area, the control buttons will appear in an area not occupied by the selected template.*

*You can select the control button group and move it to a more desirable location by clicking and dragging the button group from the unlabeled one-touch button at the top of the group.*

The online page layout is described below.



### Page Number and Page Title

The top line displays the page number and the page title of the currently displayed page. It also displays the time of day in 24-hour format. (Note that the time will be displayed in the **CANCEL** key.) Additionally, the status of Password A, and Password B are displayed on the line by the letters A, and B respectively. The letter will be displayed if the password is valid for operator entry.

### Pages in Alarm

The second line will show only the pages in alarm. The Operator Station will use the First-In-First-Out (FIFO) method to show only the most recent 10 pages in alarm. If no pages are in alarm, then no page numbers will be displayed. If a page is in alarm, you can go directly to that page by selecting the page number.

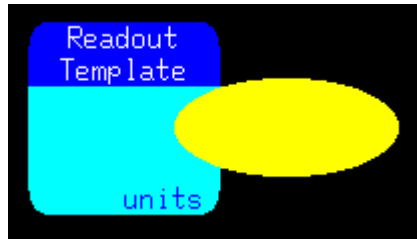
### Alarm Window

This area will show the alarms you have received. The Alarm Window will display four alarms. If there are more than four alarms, the Operator Station uses the First-In-First-Out (FIFO) method to show only the latest alarms received. If there are no alarms, the Alarm Window will be blank.

## Refresh Graphics

To refresh dynamic objects which overlap other static or dynamic objects that appear on a PanelMate screen, the Refresh Affected Graphics Online field must be selected for the dynamic object you are configuring. When the Refresh Affected Graphics Online field is selected, other objects that lie within the area of the item being updated will be redrawn to properly reflect the layering of each object's (draw order) on the page when the item is updated.

For example, the following template and object are displayed on the online Operator Station screen.



If the Readout Template is updated and the Refresh Affected Graphic Online field is not selected, the screen will appear as shown below.



If the Readout Template is updated and the Refresh Affected Graphic Online field is selected, the screen will appear as shown below.



## Conditional Visibility

All templates, variable-sized templates, symbols, and text objects can be visible at all times or only visible based on a condition. When creating a template, variable-sized template, symbol, or text object, you have the following options:

If the Enable Conditional Visibility field is not selected for the template, variable-sized template, symbol, or text object you are configuring, the item will be visible at all times and all updating of the item will be activated when in Run Mode.

If the Enable Conditional Visibility field is selected and the Visibility Expression evaluates to be true for the object you are configuring, the item will be displayed and all updating of the item will be activated when in Run Mode.

If the Enable Conditional Visibility field is selected and the Visibility Expression evaluates to be false for the object you are configuring, the item will not be displayed and all updating of the item will be deactivated when in Run Mode.

When objects are activated or deactivated as a result of the Visibility Expression changing, the item is drawn or erased accordingly. If you want the layering of objects to be maintained, you must select the Refresh Affected Graphics Online field for the item you are configuring. Refer to the **Refresh Graphics** topic for more information.

## Default Control Buttons

The default control button labels will appear when the system powers up in Run Mode, when the CANCEL button is pressed, when operator input is completed, or when the automatic cancel feature takes effect.

Enable  
Fault  
Relay

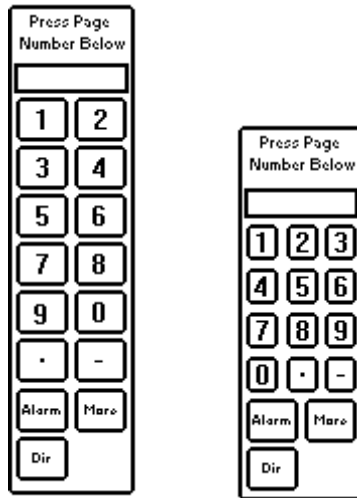
View or  
Acknowledge  
Alarms

Get  
Page

**Enable Fault Relay** – Resets **communication errors** between the Operator Station and the PLC or other communication device. Note that there is no physical fault relay.

**View or Acknowledge Alarms** - Refer to the **View or Acknowledge Alarms** topic for more information about viewing or acknowledging alarms.

**Get Page** - Brings up one of the following touchscreen keypads, to allow numeric entries.



Press the **Switch to Two-Column Keypad** template or the **Switch to Three-Column Keypad** template on the Setup Page to switch between keypads.

Refer to each button's respective topic for more information.

Press the **More Buttons** control button and the following control buttons appear.

Maintenance  
Template

Change  
Online  
Labels

Host  
Display  
Window

Setup  
Page

Note that the **Maintenance Template** control button only appears if a Maintenance Template is allowed on the page.

Note that the **Change Online Labels** control button only appears if any of the system online labels have been changed and the user can toggle between the standard and user-defined labels.

Refer to each button's respective topic for more information.

## Get Page

The first page to appear when entering Run Mode will be Page 0, unless you have defined a different start-up page when editing the Startup Page Number field in the **Systems Parameters - General Tab** dialog box.

From the default control button selections, select any other page by performing the following tasks:

1. Press the **Get Page** control button. The control button labels will change. Press the **Directory** control button to access a page title directory.
2. On the numeric keypad, press the number of the page you wish to select. (Note that if you are entering a single-digit page number, the number must be preceded by a zero, e.g., 01.) The new page will appear immediately. If you press the number for the page you are already on, the page is not re-drawn. Press the **CANCEL** key to remain on the current page and return the control buttons to their default labels.
3. Use other ways of changing pages such as Variable-Sized Control Buttons, Remote Page Changing, and the Pages In Alarm feature of the page banner.



## Remote Page Selection

The Operator Station can monitor a register in the process control device and change the page shown on the screen automatically.

The Page Change Register field (described in the **Systems Parameters - Remote Tab** dialog box topic) holds the register number in the process control device which is monitored by the Operator Station. When a valid page number is placed in this register via process control device logic, if a control variable-sized template or control template is not selected in the current page, that page will be called to the screen.

If control is selected for an item - once control is relinquished, the page referenced in the register will be called.

*Note: If the Allow Immediate Page Change field in the Systems Parameters - General Tab dialog box is enabled, the page will change immediately regardless if control is selected.*

## Directory

The Operator Station automatically creates a directory of the page titles as you configure your system. If you need to refer to this list of page titles while in Run Mode, press the **Get Page** control button from the default control button selections. The control button labels will immediately change. Press **Directory** control button to view the directory.

To go to a page, press any page number in the entry keypad. To exit the directory, press the **CANCEL** key.

*Note: Highlighting a page in the directory listing will only cancel the directory. It will not take you to the selected page.*

Up to 100 pages are available for configuration.

## Operator Input

Operator input may be one-touch (optional) or two-touch depending upon your configuration.

### One-Touch Selection of Variable-Sized Templates

One-touch selection is available only when: You have selected Direct Select on the **System Parameter - General Tab** dialog box.

With one-touch selection, a template is selected immediately when you touch it. If the template requires control button input, the corresponding control button labels appear when the template is selected. If no selection is wanted, press the **CANCEL** key.

### Two-Touch Selection of Variable-Sized Templates

Two-touch selection is required when Direct Select is not checked on the **Systems Parameters - General Tab** dialog box. Two-touch operation requires at least two keystrokes. Any template or variable-sized template that displays a small arrow in the lower left-hand corner of the template can be controlled by the operator.

## Selecting a Template

Before any change can be made to a template, that template must be selected. To select a template, press the template to move the white box cursor to the location of the template on the screen.

If the template requires control button input, the corresponding control button labels appear when the template is selected. Press the appropriate control button.

If the wrong template is selected before the control button is pressed, simply use the selection keypad to make the right choice. If no selection is wanted, press the **CANCEL** key.

## Control Button Operation

The Operator Station's control buttons provide several types of input as defined by the configuration:

**Normally Open Momentary** - When the button is pressed, the Operator Station sends a command to the process control device to set the referenced bit to a 1. When the button is released, a separate command is sent to set the bit to a 0, thus providing a momentary input to the process control device.

**Normally Closed Momentary** - When the button is pressed, the Operator Station sends a command to the process control device to set the referenced bit to a 0. When the button is released, a separate command is sent to set the bit to a 1, thus providing a momentary input to the process control device.

**Normally Open Maintained** - When the button is pressed, the Operator Station sends a command to the process control device to set the referenced bit to a 1. This state is maintained when the button is released.

**Normally Closed Maintained** - When the button is pressed, the Operator Station sends a command to the process control device to set the referenced bit to a 0. This state is maintained when the button is released.

**Toggle** - When the button is pressed, the Operator Station sends a command to the process control device to set the referenced bit to its opposite state. This state is maintained when the button is released.

**Page Change** - When the button is pressed, the page is called.

If the template requires numeric keypad input, the **Change Value** control button will appear when the template is selected. The control button labels will immediately change to read Clear and Enter New Value. Use the numeric keys to write the value onto the screen, then press the **Enter New Value** control button to transmit the value to the process control device. If the wrong number is written before the control button is pressed, simply press the **Clear** control button and try again. If no selection is wanted, press the **CANCEL** key.

When variable-sized templates or graphics are used, and Direct Select is **not** checked in the System Parameters Table, a given template cell area may contain more than one control point.

1. When the TouchPanel is initially touched, the first control point that lies within the template cell area is selected, and is identified by its flashing control indicator.
2. Pressing the same area again will step to the next variable-sized template in a top-to-bottom, left-to-right search pattern within the cell area.
3. The selection process will cycle and recycle through all the variable-sized templates with controls lying within the selected cell area.

With Direct Select not configured, the cell areas referred to here are the screen areas which correspond to the location of 15 single-wide Indicator or Readout templates placed in a 3x5 matrix in the drawing window below the alarm area and to the left of the default control buttons.

*Note: PanelMate PC applications that use variable-sized objects for control should be configured to use the Direct Select mode.*

## Alarms

The alarm conditions that you designate in the Operator Station's template editors are constantly monitored. When an alarm condition occurs, an alarm message is automatically configured by the Operator Station and drawn in the 4-line alarm window. The same message will also go to a printer if you have configured a printer in the **PLC Name and Port Table** dialog box.

The alarm message always includes:

- the device name or alarm device name
- the nature of the alarm (high alarm, low alarm, or the alarm condition label)
- the time of the event being reported
- the page the device is displayed on in the Operator Station

Additionally, the following attributes also apply to alarm messages, depending on the condition being reported:

New alarms	Alarms are displayed as white text on a red background.
Acknowledged	Alarms are displayed as yellow text on a black background. The abbreviation "Ackd" will appear in the message in front of the time.
Cleared, not acknowledged	Alarms are displayed as red text on a white background. The abbreviation "Clrd" will appear in the message in front of the time.
Cleared and Acknowledged	The message will disappear from the screen. The message that gets sent to the printer will include the abbreviation "Clrd" in front of the time.

The four most recent alarm messages appear in the alarm window of the current page.

### Alarm Summary Page

The Operator Station automatically creates the Alarm Summary Page as alarm conditions occur. In the Operator Station, the 100 most current alarm messages can be viewed on the Alarm Summary Page at any time. As new alarms occur, the oldest alarms will be removed. For example, if 100 alarms have occurred and then one more occurs, the oldest alarm will be removed and the new alarm will be added to the beginning of the Alarm Summary Page. The page indicator for the page that contains the removed alarm will still blink until the alarm condition has been cleared.

To get to the Alarm Summary Page, press the **Get Alarm Page** control button from the default control button selections. The Alarm Summary Page will appear immediately, displaying the most current 26 alarm messages. If there are no alarm messages to display, the page will be blank.

To view the alarms beyond the most current 26, use the **Scroll Up** and **Scroll Down** control buttons. These buttons move a small, white block cursor that marks the start of a specific alarm message. When the block cursor is scrolled down past the last message on the screen, the messages beyond 26 appear. This block cursor is also used to mark individual alarm messages for acknowledgment.

To return to any other page in the system, press the **Get Page** control button and enter the page number using the numeric keypad.

## View or Acknowledge Alarms

To acknowledge alarms in the alarm window located on each page, press the **View or Acknowledge Alarms** control button from the default control button selections. The control buttons will immediately change and a small, white block cursor will mark the most current alarm, located at the top of the alarm window.

To acknowledge alarms in the Alarm Summary Page, press the **View or Acknowledge Alarms** control button. The control buttons will immediately change and a small, white block cursor will mark the most current alarm, located at the top of the page.

These control button labels will appear:

Scroll Up

Scroll Down

Acknowledge  
Selected  
Alarm

Acknowledge  
All  
Alarms

The following paragraphs apply to all alarms, regardless of whether you are viewing the alarm window or the Alarm Summary Page.

To acknowledge a single alarm, move the block cursor using the **Scroll Up** or **Scroll Down** buttons to mark the alarm. Then press the **Acknowledge Selected Alarm** control button to acknowledge.

To acknowledge all new alarms, press the **Acknowledge All Alarms** control button. It does not matter where the block cursor is located. This action acknowledges all new alarms, whether they are actually in view or not.

The alarms can also be acknowledged remotely. Once the Remote Alarm Acknowledge Bit (defined in the **Systems Parameters - Remote Tab** dialog box) is set, all alarms must be acknowledged. When the Remote Alarm Acknowledge Bit is configured, the Operator Station is also capable of setting a bit in the process control device when the **Acknowledge All Alarms** control button is pressed. This capability, along with the ability to remotely acknowledge all alarms, can be useful in allowing one operator to acknowledge all alarms on a network of Operator Stations from a single system.

## Password Protection

Passwords can be used to restrict access to certain functionality when the Operator Station is in Run Mode. The Operator Station supports multiple levels of password protection, but does not use the Windows NT password functionality. Password protection works like this:

A great deal of flexibility is provided so it is important to define an implementation scheme before configuring your passwords. There are two levels of protection: Password A, and Password B. Passwords A and B are configured in the **System Parameters - Password Tab** dialog box and are up to 5 digits in length. (Passwords can be enabled or disabled to permit or prohibit change during online operation.)

Passwords are numbers that range between 0 and 65535

*Note*     **Leading zeroes are not supported when configuring Password A and Password B in the System Parameters - Password Tab dialog box.**

You can use passwords in the following areas in the Run Mode. They must be enabled for entry each time they are selected.

### Templates with Numeric Entry selected

- Readout Template
- Variable-Sized Readout Template
- Bar Template
- Variable-Sized Bar Template
- Table Template
- Close PanelMate Application
- Maintenance Template
- Set Date and Time

The following combinations of Password Protection are available:

- None
- Password A or B
- Password A Only
- Password B Only

*Note:*     **PanelMate PC does not currently support a keyswitch. The keyswitch and combinations of keyswitch/passwords listed in the Configuration software are there to support other versions.**

Password protection can also be invoked to protect access on a Page-by-Page basis. Once a Page Password is logged-in, access to a page remains active until it is logged-out. While logged-in, the operator can change pages and return to this page until logged-out. Password A and B can be logged-out manually or a user-defined time period can expire which will log-out all passwords. If the time-out occurs, the operator retains access to the current page.

Page Passwords are accessed in the Setup Page. This page is accessed from the default page by selecting the **Get Page, More Buttons** and **Setup Page** control buttons. The letters A and B will appear to the left of the time of day clock on the top line of each page to indicate when Password A, and/or Password B are enabled for entry. The status of the passwords, when used as Page Passwords, may be transmitted to a process control device by setting the appropriate address in the **System Parameters - Password Tab** dialog box. This feature can be useful when implementing the Page Protection concept when a Page Change is sent from a process control device.

Passwords A and B are downloaded within the User Configuration to the Operator Station. These values may be used at system start-up or they may be defined to overwrite current passwords that reside in the system.

Password Protection can be implemented in many ways. Examples of usage are defined below:

- Close PanelMate Application protected with Password A
- Set Date and Time protected with Password B
- Reset Part Counter Readout Template protected with Password A and Password B

## Lost Password Recovery

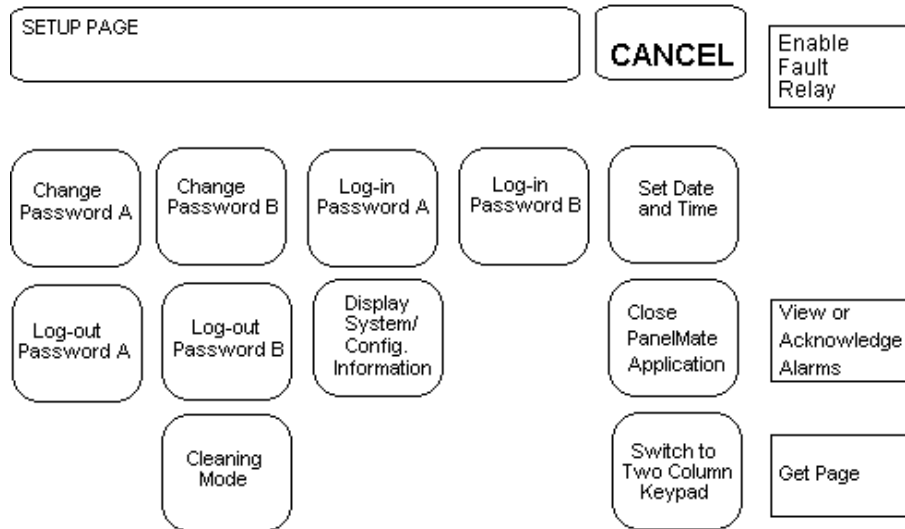
You cannot determine the passwords in a PanelMate PC system, but you can recover if a password is lost. There are two techniques.

If the User Configuration ...

1. **has** the Overwrite Password fields selected, simply reinstall the configuration. This resets the system to the original passwords defined in the configuration.
2. **does not have** the Overwrite Password fields selected, you must use the Configuration Software to modify the configuration. Select the Overwrite Password fields, enter the new passwords, then, reinstall the new configuration.

## Setup Page

Setup Page is accessed from the default control buttons. This page allows selection of the following features while the Operator Station remains in the Run Mode.



To access a feature, select a template then press the **Execute** control button.

### Change Password A or Change Password B

This selection permits you to change a software password. You will be prompted to Enter the Old Password, Enter the New Password, and then Re-enter the New Password. If the ability to change the passwords in the online mode is not desired, do not enable the Allow Password A Change field or the Allow Password B Change field in the **System Parameters - Password Tab** dialog box.

### Log-in Password A and Log-in Password B

These selections permit you to Log-in a valid page password. The password remains enabled until you Log-out or the Page Password Time-out period expires.

Refer to the Password A and Password B sections in the **Systems Parameters - Password Tab** dialog box topic for information on configuring passwords.

## Set Date and Time

This selection permits you to enter the Set Date or Set Time field. Use the numeric keypad to enter the appropriate value. Use the minus key to separate numeric values. Note that the time is entered in 24-hour (military) format. This selection can be password protected.

## Log-out Password A and Log-out Password B

These selections permit you to Log-out of a page password by pressing the **Execute** control button.

*Note: The Log-out Password A template or Log-out Password B template will only appear on the Setup Page if you have logged-in password A or password B.*

## Display System/Configuration Information

This selection will display the current User Configuration, Executive Firmware, and Installed Drivers.

## Close PanelMate Application

This selection will close the currently running PanelMate PC application. The normal Windows NT desktop appears.

## Cleaning Mode

This selection will allow you to clean your touchscreen.

## Switch to Two Column Keypad or Switch to Three Column Keypad

This selection switches between the two-column and three column numeric entry keypads.

- When the **two-column** keypad is displayed, the button indicates “Switch to Three Column Keypad”.
- When the **three-column** keypad is displayed, the button indicates “Switch to Two Column Keypad”.

For more information about the two column or three column keypads, refer to the **Default Control Buttons** topic.



## Maintenance Templates

*Note: To use the Maintenance Template online, you must configure the Allow on Page selection in the New Configuration Page dialog box or in the Page Properties dialog box within the Configuration Editor.*

To access the Maintenance Template online, you must press the **Get Page** control button from the default control buttons online, press the **More Buttons** control button and then press the **Maintenance Template** control button. The Maintenance Template selection cursor will appear in the upper left corner. You can place the Maintenance Template on any cell including cells already occupied by a fixed template or another Maintenance Template. You **cannot** place a Maintenance Template on top of a variable-sized template.

Note that the Maintenance Template will not appear on your page until you press the **Activate** control button. (The default process control device Name will appear in the Maintenance Template.) If you press the **Deactivate** control button, the Maintenance Template will be removed from your page.

Once the Maintenance Template is activated, press the **CANCEL** key and re-select the Maintenance Template. The **Deactivate** and **Modify Template** control buttons will appear.

*Note: When selecting a template cell to place a Maintenance Template, static values will be displayed in the template's value fields if the Operator Station is not communicating to the process control device.*

Refer to the **Maintenance Template Examples** for more information.

### Start Monitor

This control button label will toggle between **Start Monitor** and **Stop Monitor**. With this control button, it is possible to freeze a value for prolonged observation.

*Note: When you press the Start Monitor control button and the Enable Writes field in the New Configuration Page dialog box is configured on the page and the Maintenance Template is configured with a valid reference, the Change Value control button will also appear.*

*Note: If the double high font is redefined, the Maintenance Template will be blank for numeric and hex display formats unless the characters have been redefined. If the characters have been redefined, then the redefined characters will be displayed.*

### Deactivate

This control button will delete the Maintenance Template from the page.

### Change Value

This control button will be displayed only if the Enable Writes field in the **New Configuration** dialog box or the **Page Properties** dialog box was configured for the page. This control button will change the display and open a data entry field to permit the operator to enter a value. If Password Protection has been configured in the **New Configuration** dialog box or the **Page Properties** dialog box for the pages that contain Maintenance Templates, the operator will be prompted before data entry is permitted.

## Modify Template

This control button is used to change the configuration of the Maintenance Template. This control button will change the display and call three control buttons. The control buttons are **Change PLC Name**, **Change PLC Ref**, and **Data Format**. The operator may change one or all of the three entry variables (name, reference, format).

When the Maintenance Template is configured with a valid reference, the **Start Monitor** control button will appear. Once you are satisfied with the changes, you must press the **Start Monitor** control button. This will advise the Operator Station to check the name, reference, and format to determine if they are valid, and if valid, begin to read that information.

If the reference is invalid, an error will be displayed on the error line on the bottom of the page and the reference will be cleared.

## Change PLC Name

The online selection of the process control device Name occurs in the **Change PLC Name** control button. The default process control device Name will be displayed in the data entry field. Use the **Previous** or **Next** control buttons to scroll through the list of names entered in the **PLC Name and Port Table** dialog box.

Once you press the **Change PLC Name** control buttons, three buttons will appear labeled **Previous**, **Next**, and **Accept**.

## Change PLC Ref

The online selection of the process control device Register Reference occurs in the reference field of the template. The operator must know the correct alpha and numeric characters to enter to access the memory of the process control device to which it is communicating.

See your PanelMate Power Pro Communications driver documentation for more information. If the process control device brand uses numbers only, the numeric keypad may be used to enter the address. If the process control device brand requires characters other than numeric, then the **Previous**, **Next**, and **Clear** buttons will serve a special purpose. The **Previous** and **Next** button are used to determine the operation of the **Clear** button, which becomes a "Hot Key". The functionality of the Hot Key can be changed by using the buttons labeled **Previous** and **Next**.

The Hot Key can assume the following functionality:

Touchscreen Hot Keys	Description
>>	Move the entry cursor one character right.
<<	Move the entry cursor one character left.
DEL	Delete the character at the current cursor position.
SPACE	Place a blank space at the current cursor position.
CLEAR	Clear the entire entry field.
SEL	Enters the mode to select alpha character strings.

In Change PLC Reference mode, the Hot Key labeled "Clear" is displayed.

Selecting the **Previous** button will change the Hot Key to **Space**, while selecting the **Next** button will change the Hot Key to **Select**.

In Select mode, the first of a list of alpha characters for the currently selected process control device name will be displayed in the data entry field. Selecting the **Next** button will move deeper into the alpha character list while selecting **Previous** button would take you back to **Clear**. Once in the Select mode, the **Previous** and **Next** keys will scroll through the alpha character strings that are required to address the process control device brand associated with the process control device name currently selected.

Once the correct character string is displayed, you may press the **Select** Hot Key to lock in that character. Alternately, you may press a numeric key that will lock in the alpha key and enter a number. Pressing the numeric key will reduce the number of keystrokes and permit faster entry. Do not press the **Accept** button until the entire address is entered or an error may occur.

The operator uses a combination of Hot Key entry and numeric entry to enter the address for the process control device. The Hot Key may also be used to edit an existing address without requiring complete re-entry of the address. Refer to the **Maintenance Template Examples** for more information.

## Maintenance Template Examples

### Example 1: Entering a new address.

To enter the Allen-Bradley Reference N7:10

1. Select the Maintenance Template.
2. Press the **Modify Template** control button.
3. Press the **Change PLC Ref** control button.
4. Press the **Next** button. This will place the Hot Key in the Select mode.
5. Press the **Next** button until an " N " appears in the entry field.
6. Press <7>. Use the numeric keypad.
7. Press the **Next** button until the colon, " : " , appears in the entry field.
8. Press <1>, then press <0> to enter 10. Use the numeric keyboard.
9. Press the **Accept** button to enter the address.
10. Press the top **Start Monitor** control button to begin reading that address.

### Example 2: Editing an existing field.

To change the Allen-Bradley Reference N7:10 to N7:20

1. Select the Maintenance Template
2. Press the **Modify Template** control button.
3. Press the **Change PLC Ref** control button. The cursor will appear at the far right of the entry field.
4. Press the **Previous** button. This will place the Hot Key in the Space mode.
5. Press the **Previous** button. This will place the Hot Key in the Delete mode.
6. Press the **Previous** button. This will place the Hot Key in the Cursor Left mode.
7. Press the **Cursor Left** Hot Key. The Hot Key moves the cursor from the far right onto the 0.
8. Press the **Cursor Left** Hot Key. The Hot Key moves the cursor from the 0 onto the 1.
9. Press <2>. Use the numeric keypad. The "overstrike" replaces the 1. The value now reads N7:20.
10. Press the **Accept** button to enter the address.
11. Press the top **Start Monitor** control button to begin reading that address.

### Example 3: Using NetSolver.

NetSolver is like the above examples except that the underscore character ( \_ ) and the complete character set (a to z) are available for entering Tag names.

See **Maintenance Templates** for more information.

## Data Format

The register can display in one of these formats: NUM, BITS, or HEX.

If NUM is selected, the data will display in a numeric format. The Operator Station will automatically type cast information based upon the memory area of the process control device that is read. This means it will manage integer, BCD, and binary data types and display them as numbers. Numeric entries will be converted to the correct data type and sent to the process control device if the Enable Writes field is configured in the **New Configuration Page** dialog box or in the **Page Properties** dialog box.

If BITS is selected, the data is entered and will be displayed in a binary bit pattern for the register selected. If the process control device word contains 16 bits, then the display will show two 8 bit bytes. The sequence is high byte above low byte and high bit to the left, low bit to the right. The bit values will not be manipulated to any data format. The operator accepts responsibility for entering a legal bit combination. (For example, writing 1111 to a BCD digit is an illegal value.)

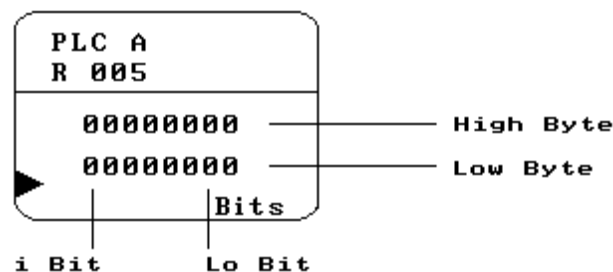
If HEX is selected, the data is entered and will be displayed in hexadecimal format (0-9 and A-F) of the bit pattern for the register selected.

Sixteen bit values are displayed in four-digit HEX representation.

**Example:** 0023 HEX is written to the process control device as 0000 0000 0010 0011. is not converted to 35 decimal or 0000 0000 0100 0101 in binary.

Only NUM types are converted to the numeric value based upon the memory areas of the process control device referenced.

The figure below shows an example of a 16-bit word in a Maintenance Template with the Bits format selected.



**Note:** *The Maintenance Template does not support 32-bit registers (i.e., #S32, #U32, #BIN6, #BIN8, #BCD8, #BCD6, and #FP).*

**Note:** *The Maintenance Template does not support unsolicited references*

# PanelMate PC Errors

## 5

*This chapter describes PanelMate PC errors.*

*The following topics are discussed:*

- *Errors During Run Mode*
- *Communication Errors*
- *Local Errors*
- *Remote Errors*
- *System Errors*
- *Error Codes*
- *Runtime Problems*

## Errors During Run Mode

During Run Mode operation, two basic conditions are checked:

- Proper communications with process control device or other communication interface such as NetSolver or a DDE server.
- Proper operation of the Executive Software

If there is a process control device or host computer problem, the error is classified as a Communication Error. The two types of Communication Errors are local errors and remote errors.

If there is an Executive Firmware problem, the error is classified as a **System Error**.

Refer to the **Error Codes** topic for a list of error codes and their descriptions.

## Communication Errors

The Operator Station can interface with a single process control device or with multiple process control devices. It provides predictable fault responses with the occurrence of communication errors that indicate a breakdown in communication between the Operator Station and a process control device. It is the Control System Designer's responsibility to define how the operator should respond to an error.

The Operator Station provides two indications when a communication error occurs: an error message is written to the bottom of the screen and the fault relay is de-energized. The fault relay is provided for both local annunciation to an operator and to send hardwired feedback to a process control device.

Once a communication error occurs, the operator should first note the page status. The data is a snapshot in time of the last valid communication. The next action is to try to clear the error by pressing the **Enable Fault Relay** control button. This attempts to restart communications. If the condition causing the error no longer exists, the screen is updated with dynamic information. If the error remains, the communication error message is written to the screen. If values could not be Communication Errors to the lack of communications, then templates will be displayed as blank.

*Warning: If blank templates appear on the screen, it means that communications have not been established. The operator should not attempt to perform control with blank templates because the actual state of the machine or process cannot be determined. If the operator continues to press control buttons, data may be sent faster than the communication link that is in error can handle them.*

*The Operator Station will buffer the control requests until communications have been established. This may result in control bits being sent to a process control device in rapid succession that may cause undesirable operation of the control system.*

*Caution: When running in Unsecure Mode at 640x480 resolution, communication errors are hidden by the Windows frame and are not be viewable onscreen. You must use 800x600 or higher resolution or Secure Mode to view communication errors.*

Communication errors can be cleared by pressing the **Enable Fault Relay** control button or changing pages, provided the reason for the error no longer exists. Integrity of the communication link to the process control device (or host) is monitored by ensuring that proper responses are received for each transmission that the Operator Station makes, according to the specific protocol in use.

Communication problems can include:

- Broken or incorrect cabling to the process control device
- Process control device or interface card failure
- Incorrect setting of process control device interface card switches
- Removal of a process control device from the active network
- Attempt to access a non-existent process control device address
- Attempt to write to a protected process control device address
- Too much traffic on a process control device network

The Operator Station will try to re-transmit a request several times before reporting that a communications error has occurred. Unlike Systems Errors, Communication Errors do not halt the system. The Operator Station continues to re-transmit requests indefinitely, even after an error has been reported.

The frequency of the re-transmission gradually decreases to five minutes if requests continue to fail over a prolonged period of time. This feature effectively prevents failing requests from conflicting with other communications.

Refer to the **Error Codes** topic for a list of error codes and their descriptions.

## Local Errors

Local errors are reported on the bottom of the screen as follows:

Loc: X on N via P O R

where:

- X is an internally generated communication error code that indicates the nature of the problem. Refer to the **Error Codes** topic for a list of error codes and their descriptions.
- N is the device name in the PLC Name and Port Table
- P is the port
- O is the operation being performed
- R is the reference



## Remote Errors

Remote errors are reported on the bottom of the screen as follows:

Rem: X on N via P O R
-----------------------

where:

- X is a generated communication error code from a remote device. Refer to your process control device user manual for more information on this error code.
- N is the device name in the PLC Name and Port Table
- P is the port
- O is the operation being performed
- R is the reference

*Note: If you are using Allen-Bradley PLCs for Data Highway or Data Highway Plus, a complete set of error codes can be found in the Allen-Bradley Publication 1770-6.5.16, November 1991. Take note of the hexadecimal error code and consult the Allen-Bradley publication. If the remote error code is F0XX (hex), then the XX represents the Allen-Bradley EXT STS (extended status) error code. The EXT STS codes are found in the EXT STS Codes for Command Code 0F (hex) table. Other remote error codes are found in the Remote STS Error Codes table.*

When a communication error is reported, the system continues to operate. Other comm device transmissions will be attempted and processed. Transmissions which have failed will be re-attempted until normal communication is re-established. Each time the error is detected, the message will be reprinted at the bottom of the screen.

The data at the time of a communication failure will remain on the current page. If a different page is selected, no data from the comm device with errors will be shown. For example, if the page contains a readout template, no numerical data from the device with the communication errors will be shown. The numerical area will be blank. All data from other devices that are operating correctly, will display as usual.

Once the communications problem is corrected and the **Enable Fault Relay** control button is pressed, the page will be re-drawn. Templates or Variable-Sized Templates which reference a process control device that is not communicating are not re-drawn until valid communications resume.

After the error is corrected, the error message remains until the operator presses the **Enable Fault Relay** control button, which appears on the default selections when a communications error occurs. This clears the message from the bottom of the screen. (The button label disappears once the button has been pressed.)

*Note: Invalid information may still be displayed. For example, if an expression for a Variable-Sized Bar Template value contains a reference to a process control device that is communicating and also contains a reference to a process control device that is not communicating, the Variable-Sized Bar Template will be updated on the screen, even though invalid data may be in the data base.*

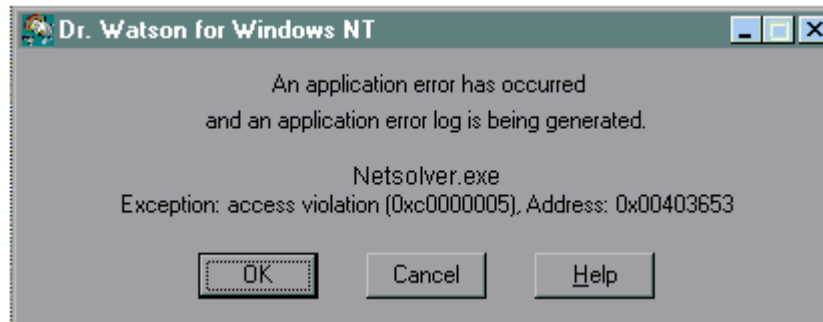
Refer to the **Error Codes** topic for a list of error codes and their descriptions.

## System Errors

During Run Mode operation, proper operation of the system software is checked.

Proper operation of system software is monitored to ensure that all internal processes are active and functioning normally. If a system software error is detected, an exception error is reported in a “Dr. Watson” diagnostic window and the PanelMate PC application halts.

As shown below, a typical error message lists the name of the application, type of error, and the address.



*Note: If these error messages appear, check your application for illegal or missing references.*

## Error Codes

For error code descriptions, refer to the table below.

Error Number	Description	Possible Cause
0	Undefined error.	
1	Software module not found or corrupted.	
2	Out of memory.	
201	Bad or missing communication card.	
244-246	Read/write error.	Cabling wrong. RS232/RS422 converter bad or missing. Excessive noise on communication line.
253	Acknowledge not received from the remote device or remote device did not reply to request in allotted amount of time.	No communication. PLC busy. Invalid network ID. Wrong communication parameter. PanelMate unit may be receiving too many unsolicited messages.
1000	Internal system error code.	Invalid configuration. Bad PLC Name and Port Table.
1001	Serial port buffer overrun.	PLC locked in transmit mode. PLC transmitting too much data.
1002	Error on input.	Wrong communication parameters. Intermittent hardware failure.
1003	Error on output.	Wrong communication parameters. Intermittent hardware failure.
1100	Device descriptor cannot be generated.	Out of memory. Module not found.
1101	Device cannot be opened.	Missing module. Serial controller or I/O board bad. Missing or bad hardware. Interface board not installed.
1102	Expected data was not received.	Communication established. The PanelMate unit started reading data but timed out. Error 1102 is usually followed by a 1202 or 1702 error.

Error Number	Description	Possible Cause
1103	Support process cannot start.	Out of memory. Module corrupted. Module not found.
1104	Device cannot be opened.	Missing module. Serial controller or I/O board bad. Missing or bad hardware. Interface board not installed.
1125	Framing error.	Wrong communication parameters.
1126	Parity error.	Wrong parity.
1127	Overflow error.	Wrong communication parameters, no communication.
1128	Hardware break.	Grounding, shield, or termination problem.
1150	Data Highway, Data Highway Plus, and AcceleratI/On error - the AcceleratI/On card has detected an error during its memory diagnostics.	
1151	Data Highway, Data Highway Plus, and AcceleratI/On error - the AcceleratI/On card would not restart.	
1151	DH-485 - destination buffer not big enough to receive message	
1152	DH-485 - message too big to transmit.	
1153	Data Highway, Data Highway Plus, and AcceleratI/On error - the AcceleratI/On card has no transmit buffers available.	AcceleratI/On card receiving unsolicited data (MSG's) too fast.
1153	DH-485 - received NAK from destination.	Normally received if destination has too many outstanding requests.
1154	Data Highway, Data Highway Plus, and AcceleratI/On error - the AcceleratI/On card would not respond to the interface software's command.	AcceleratI/On card hardware failure.
1154	DH-485 - time-out no response from destination after 3 retries.	Invalid ID or PLC type.

Error Number	Description	Possible Cause
1155	DH-485 - duplicate node detected.	Two devices on highway have same network ID (node #).
1156	DH-485 - data link is not active (link time-out) PanelMate unit is not passing token.	Missing or bad cable Noise on communication line.
1157	DH-485 - application time-out (destination active but not responding).	
1158	DH-485 - The PanelMate unit has not received token from previous node.	Network communications disrupted. The cable was disconnected from the PanelMate unit or the previous node has dropped off the network.  Error 1158 is usually followed by an 1156 error.
1200	Communication active but remote device responded with negative acknowledge (NAK).	Noise on communication line. Wrong parity.
1201	Communication active but remote device responded with negative acknowledge (NAK).	Noise on communication line. Wrong parity.
1202	Acknowledge not received from the remote device or remote device did not reply to request in allotted amount of time.	No communication. PLC is busy. Invalid network ID. Wrong communication parameter. The PanelMate unit may be receiving too many unsolicited messages. This error is driver dependent.
1203	PanelMate unit cannot set privilege level in GE PLC (SNP).	Communication error while trying to set privilege. Other device has set privilege.
1250	Could not establish link with Square D PLC.	
1250	Could not synchronize with Westinghouse PLC.	

Error Number	Description	Possible Cause
1250	Reliance AutoMate Gateway not configured.	No communication. PLC is busy. Invalid network ID. The PanelMate unit unsuccessfully trying to reconfigure Reliance gateway module. Dipswitches configured wrong. Power loss to gateway module. Intermittent error.
1250	Channel prematurely closed by GE CCM.	The PanelMate unit too busy to close channel.
1250	Communication to GE with SNP out of sync.	The PanelMate unit too busy to accept reply. Noise or cable problems
1251	Open Channel request was refused by GE CCM.	GE CCM card is too busy to open channel. Noise on communication line to GE. Wrong parity.
1251	Reliance AutoMate processor not found in destination slot.	
1251	PanelMate unit cannot set privilege level in GE PLC (SNP).	Communication error while trying to set privilege. Other device has set privilege.
1252	More than one Reliance AutoMate processor in the rack.	
1700	Communications out of sync.	Duplicate token, noise, or busy device causes PanelMate unit to time-out and PLC responds to previous request.
1701	A reply was received for which there was no request issued.	Scan delays too large.
1702	Acknowledge not received from the remote device or remote device did not reply to request in allotted amount of time.	No communication. PLC busy. Invalid network ID. Wrong communication parameter. The PanelMate unit may be receiving too many unsolicited messages. This error is driver dependent.
1703	Internal system error code.	

Error Number	Description	Possible Cause
1705	This interface does not support any unsolicited requests from a remote device.	
1706	Received an unsolicited command that is not supported.	
1707	The remote device memory type is not supported.	
1708	Cannot write to read only reference.	
1750	Siemens follow-on telegrams are not supported.	PLC sending too much data.
1750	Block transfer not detected on remote I/O.	
1750	Data Highway and Data Highway Plus - does not support PLC-3 address format.	
1750	Generic Protocol octal register reference invalid.	
1750	DH-485 - I/O word number out of range.	
1751	Too much data in Generic Protocol.	More than 60 words in data transfer.
1751	Data Highway and Data Highway Plus - symbolic word and addressing mode is not supported.	
1751	Remote I/O - rack is not active or configured.	
1752	Remote I/O - PLC is in test or program mode.	
1752	Data Highway and Data Highway Plus - symbolic file and addressing mode is not supported.	
1753	Remote I/O - remote rack is in a faulted condition.	

Error Number	Description	Possible Cause
1754	Remote I/O - communications not active.	On a PLC-3 if communications do not recover on the PanelMate unit check the revision of the EPROM on the Accelerati/On card.  The revision must be 05 or greater (P/N 85-00285-05 or 85-00307-05).
1755	Remote I/O - block transfer count is too small.	
1761	Allen-Bradley error code 01 - remote device could not take message.	Not enough memory in an older PLC 5/15 and/or 5/250.  Too much traffic on device.
1762	Allen-Bradley error code 02 - remote device does not acknowledge.	The PanelMate unit is communicating properly on the highway but the remote device cannot be found (Wrong network ID).  Remote device is bad or missing.
1763	Allen-Bradley error code 03 - unrecognized response from remote device.	Duplicate token holder detected.  General network error.
1764	Allen-Bradley error code 04 - local port is disconnected (Data Highway Plus only).	Not passing token.  The PanelMate unit is disconnected from highway or improperly connected.  Noise on communication line.
1766	Allen-Bradley error code 06 - duplicate node detected.	Two devices with the same network ID (node #).
1767	Allen-Bradley error code 07 - station is off-line.	
1768	Allen-Bradley error code 08 - hardware fault.	
1774	Allen-Bradley error code 0E - PanelMate unit received duplicate transaction number.	Communications out of sync.
2000-2002	Internal system error code.	Driver corrupted (Re-download driver).
2100	Internal system error code.	Configuration and driver may be incompatible.
2101	Invalid reference. Cannot parse.	Invalid PLC reference syntax.
2102	Invalid reference. Cannot parse.	Invalid PLC reference syntax.
2103	All PLC references in current block are invalid.	Check all references to same memory area.



Error Number	Description	Possible Cause
2105	Could not update database via block read.	Possible hardware problem. Internal data structure corrupted.
2106	Could not update database via unsolicited request.	PLC sending unsoliciteds to PanelMate unit memory area that does not exist.
2107	Remote interface supports only one block read.	
2120	Invalid bit write register.	GE CCM or TI Host Link bit write registers invalid.
2200	Unsolicited request failed. Connection not established with remote device yet.	PLC is sending unsolicited data before PanelMate unit is ready to receive it.
2201	Inconsistent local address.	Network ID does not match interface board ID.
2500	Invalid separator.	Check PLC references.
2501	Invalid reference. Cannot parse.	Invalid character in PLC reference.
2502	Invalid reference. Cannot parse.	Not enough characters in network address or PLC reference.
2503	Invalid reference. Cannot parse.	Too many characters in network address or PLC reference.
2525	Network address component out of range.	Configured Network ID or PLC ID out of range.
3000-3005	Internal system error code.	Driver corrupted. Download new executive firmware/drivers.
3006	Cannot write to unsolicited driver.	A reference associated with a name in the unsolicited device field is being used in a control button or numeric entry field.
3025	Network address (PLC ID field) is invalid or out of range.	
3050-3055	Internal system error code. Data buffer corrupted.	Baud rate too slow.
4100	Invalid network ID.	
4101	Invalid network ID.	
4102	Not enough network ID levels specified.	
4103	Too many network ID levels specified.	
4104	Invalid network ID.	

## Interface Card Errors

The error codes shown below are associated with interface cards.

Error Number	Description	Possible Cause	Possible Solution
107	SD card bad port and/or memory address.	Port address does not match the switch settings on interface card. Port address in conflict with other memory in computer.	Ensure the dip switch settings on interface card match the port address selected.  Select a different port address.
108	SD card memory error.	SD card memory in conflict with other memory in computer. SD card may be defective.	Select a different memory setting. Replace and test with a known good interface card.
109	SD card processor failure.	SD card may be defective.	Replace and test with a known good interface card.
10A	SD card error.	SD card may be defective.	Replace and test with a known good interface card.
10B	SD card software module not found.	Configuration software not properly installed or is corrupt.	Reinstall configuration software.

## Runtime Problems

*Note: For information on configuration editor or transfer problems, refer to the PanelMate Power Series Configuration Editor User's Guide or the Transfer Utility User's Guide.*

Problem	Possible Cause	Corrective Action
<p>Error message: "Create Port Failure: The system cannot find the specified file".</p> <p>This may be followed by another dialog which states "Write comm: The handle is invalid".</p>	<p>The configuration has assigned a serial communication driver to a serial port which is not available within Windows NT.</p>	<p>Check Ports and Devices from the Control Panel to ensure serial communications are properly configured.</p> <p>Use the Windows NT Diagnostics (Administrative Tools) to troubleshoot possible conflicts.</p> <p>If you are using a serial mouse, Touchscreen, or other serial device, make sure the port is not already assigned.</p>
<p>Error message: "Can't Create Procedure Pointer to SS_.....- the specified module could not be found".</p>	<p>The configuration is using the Allen-Bradley Data Highway or Data Highway Plus I/O driver and the S&amp;S 5136-SD card is not properly configured.</p>	<p>Check the installation procedure for the 5136-SD card. If it is properly installed, you should be able to view the driver resources from the Windows NT Diagnostics under Administrative Tools in the Start-Programs menu.</p> <p>Under the Resources tab, I/O Settings and Memory Settings, the SSTechDrv should appear at the addresses configured during installation (Default: I/O Port: 0250-0257; Memory: 00D0000-000D7FFF).</p>
<p>Error Message: SS-OpenCardFailed: Can't open DH/DH+ device (dhplan): 20000116".</p>	<p>The 5136-SD card is properly configured but not installed or malfunctioning.</p>	<p>Check the physical installation of the S&amp;S card to ensure it is properly seated in the backplane of the PC.</p> <p>If the card is properly seated and the driver is properly configured, you may have a hardware failure in either the PC backplane or the S&amp;S card.</p>

Problem	Possible Cause	Corrective Action
The PanelMate.pps file fails to run or generates an Exception Error when trying to load.	Address reference error in the application.	Run the verify utility from the Configuration Editor. If this does not find the problem, review all references on the page that is loading when the exception error occurs. Ensure all references are entered correctly.
The PanelMate.pps file fails with the error "ReadPLCPortTab: Win Ec\xec failed: error code = 2".	Associated communication driver is installed incorrectly.	Check the PMCONFIG\NTOHLINE directory for the driver's .exe file.
When trying to run the NetSolver driver – the PanelMate.pps file fails with the error "ReadPLCPortTab: Win Ec\xec failed: error code = 2".	The driver was installed while NetSolver was already running or that the DataExp.dll file was not properly installed in the SOLVER\BIN directory by the NetSolver program installation.	Check the SOLVER\BIN directory for the file DataExp.dll.  Shut down NetSolver and reinstall.
Modified PanelMate fonts do not display correctly.	New PanelMate fonts need to be installed on the PC.	Use the Fontmaker utility (CD-Rom\Utility\Tools) to install new fonts on the PC.

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