EATON | Powerware

PowerManagerII Remote Management Software

Help

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About This Guide

Purpose

This guide describes the operation and application of PowerManagerII Remote Management Software.

Audience

This guide is intended for use by dc power system engineers and installers familiar with:

- the operation and configuration of Powerware dc power systems
- general operating principles of dc power systems for telecommunications
- the Microsoft® Windows® operating system environment.

Reporting Problems with this Guide

Please use this email address to report any problems you find in this guide:

Powerware dc Product Marketing Communications

EMAIL: DCMarketingNZ@eaton.com

For Further Information and Technical Assistance

For further information and technical assistance see Worldwide Support on page 203.

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Related Information

Title	Device	IPN
Enterprise Power Solutions Installation Guide (EPS) - Spanish	SC100 or SC200	997-00012-64
SC100 System Controller Handbook	SC100	997-00012-63
RM3-400 Series	SC100 or SC200	997-00012-62
SC200 System Controller Handbook - Spanish	SC200	997-00012-61
Access Power Solutions Installation and Operation Guide (APS6-300/500 and APS12-300 Series) - Spanish	SC100 or SC200	997-00012-60
Access Power Solutions Installation Guide (APS3-300 Series) - Spanish	SC100 or SC200	997-00012-58
SM65 Supervisory Module Handbook (Version 6)	SM65 v6	997-00012-55
Data-Voice-Video 3G Power Solutions Installation Guide	SC100 or SC200	997-00012-54
SC200 System Controller Handbook	SC200	997-00012-50
Access Power Solutions Installation and Operation Guide (APS6-300/500 and APS12-300 Series)	SC100 or SC200	997-00012-49
Access Power Solutions Installation Guide (APS3-300 Series)	SC100 or SC200	997-00012-48
NPS24-014/015 DC Power Systems	SM65	997-00012-47
Data-Voice-Video Power Solutions Installation Guide (APR-3G Rectifiers)	SM60 or SM65	997-00012-46
Data-Voice-Video Power Solutions Installation Guide (UL-Listed Models)	SM65	997-00012-44
Access Power Solutions Installation Guide (SM40/APR48-03)	SM40	997-00012-43
Data-Voice-Video Power Solutions Installation Guide	SM60 or SM65	997-00012-42
Data Power Solutions Installation Guide	SM45	997-00012-41
Access Power Solutions Installation Guide (SM45 versions)	SM45	997-00012-38
Access Power Solutions Installation Guide (SM40 versions)	SM40	997-00012-37
SM65 Supervisory Module Handbook	SM65	997-00012-35
Network Power Solutions Installation Guide	SM60 or SM65	997-00012-33
Intergy Access Power System Installation Guide	SM40	997-00012-29
SM60 Supervisory Module Handbook	SM60	997-00012-27
Intergy Network Energy Source Installation Guide	NSM35	997-00012-26
CellSure Installation Guide	CBC	997-00012-20

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Title	Device	IPN
SiteSure Installation and Configuration Guide	-	997-00012-19
Intergy SM50 Users Guide	SM50	997-00012-09
Intergy Mini Power System Installation Guide	SM20 or SM30	995-00001-43

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General Description

Overview

About PowerManagerII

PowerManagerII is an interactive software tool for remote management of Eaton's range of dc power systems and CellSure Battery Management systems.

It has the following main features:

- Communicates with all Eaton dc control devices (3G system controllers, Intergy supervisory modules, Swichtec Series 3 E40 monitors, and CellSure Battery Controllers). See Compatible Devices on page 3.
- Windows®-based graphical user interface

  An intuitive, Windows-based graphical user interface enables you to quickly zoom in to view concise summary information, specific control processes, key operational data, or alarm details. See Browser Views on page 35.
- Flexibility and Customization

  You can set up area map views of urban areas and wider regions, to help you visually navigate to any site. You can connect as many dc power systems as you like, in any mapping structure, using customized communications options that suit your network operations. See Communications Setup on page 151.
- SiteSure Module (SiteManager) Support (some devices only)

  You can set up SiteManager nodes to remotely view and manage SiteSure module (and other) inputs and outputs over multiple RPSs. Each SiteManager node must be set up to contain a unique set of power systems (that is, each power system can be placed under only one SiteManager node). See SiteManager Features on page 3.
- CellSure Battery Controller (CBC) Support

  You can set up and communicate with CBCs in a similar way to RPSs. See Communications Setup on page 151.

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- Real-time monitoring of system values and states

  PowerManagerII regularly polls each power system and reports all key information. Alarms and configuration or Control Process changes can be given priority. See How Polling Works on page 177.

- Online access to power system control processes

  You can remotely set up and manage all power system control processes (Active Voltage Control, Temperature Compensation, Equalize, Fast Charge, Low Voltage Disconnect, Battery Test, and so on). See RPS Control Functions on page 99.

- Automatic alarm indication

  You can set up different types of alarm indication, including playing a sound, sending an e-mail or pager message, printing, and/or sending an SNMP Trap message. See Alarm Management on page 109.

- Alarm, Event, and Data logging

  Alarms, changes in key data, control process operations, and other power system events are logged to help you analyze faults and produce maintenance histories and schedules. Any failed alarm notifications are separately logged. See Log Management on page 131.

- User Administration

  Optionally set up different User IDs, with different access rights to important PowerManagerII functions. You can then also choose general options for logging on and off, startup and shutdown. See Setting Up User IDs and Passwords (User Administration) on page 9.

- Language options

  In some areas, your local Eaton dc product distributor may be able to offer a local language version of PowerManagerII. You can easily switch between different languages. See Setting the Language on page 9.

- Self-monitoring Guardian program

  A separate Guardian program regularly checks that PowerManagerII is running, and if not, will restart it automatically. You can optionally run PowerManagerII without Guardian. See About Guardian on page 4.

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Compatible Devices

PowerManagerII can be used to communicate with the following dc control devices:

Devices	Systems
SC100/SC200	Powerware 3G Series dc power systems
SM40/SM45	Powerware Access Power Systems (APS Series)
SM60/SM65	Powerware dc power systems (APS, NPS, LPS, DV2 Series)
SM50	Intergy dc power systems (IPS, ILS Series)
SM20/SM30	Intergy Mini Power Systems (IMPS)
NSM35	Intergy Network Energy Source (NES)
E40	Swichtec Series 3 (with data communications capability)
CBC	CellSure battery management systems

SiteManager Features

SiteManager groups and nodes have no purpose outside of PowerManagerII.

SiteManager applies to RPSs controlled by the following Devices.

- SM30 (Version 2 or higher)
- SM40
- SM50 (Version 5 or higher)
- SM60 (Version 2 or higher)
- SM45/SM65
- SC100/SC200

SiteManager allows specially configured inputs and outputs to be organized and displayed separately. This makes it easier to monitor equipment external to the dc power system – for example, a generator, an air conditioning unit, or a security door.

SiteManager Nodes

In the PowerManagerII display hierarchy, SiteManager displays are shown under one or more SiteManager nodes.

Each SiteManager node must be set up to contain a unique set of power systems (that is, each RPS can be placed under only one SiteManager node). The SiteManager Groups shown under a node and the channels within those groups are those for the RPSs under that node.

An RPS must have established contact with PowerManagerII at least once before its SiteManager channels can be displayed.

For example, if you are using PowerManagerII to monitor power systems for several client companies or divisions, you could set up one SiteManager node for each client.

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Use Edit Layout mode to set up your SiteManager nodes, in a similar way to setting up maps.

Before doing this, you must know the required number of SiteManager nodes and their names. If more than one SiteManager node is to be configured, you must also know the required display hierarchy, and the applicable SiteManager node for each power system.

See also SiteManager Node Summary View on page 48.

SiteManager Groups

Use DCTools to initially configure channels with SiteManager Group numbers. For more details refer to the system controller or supervisory module handbook or consult your local Eaton dc product distributor.

A SiteManager Group number (1 to 255) can be configured for any SiteSure or SiteSure-3G Input/Output channels, and for other data and "internal" channels of SM30s (version 2) and SM50s (version 5).

This Group number is used to determine where the channel data appears within the display hierarchy for the SiteManager node containing the relevant RPS. Channels with the same Group number are displayed together for all RPSs under the same SiteManager node (they are not displayed under each RPS). See SiteManager Group Displays on page 48.

An RPS must have established contact with PowerManagerII at least once before its SiteManager channels can be displayed.

You can use PowerManagerII to change the configured Group number of any channel, and to change other channel settings. For more details, see Configuring SiteManager Groups on page 30.

Some typical examples of groups are:

- Smoke alarms, temperature sensors, extinguisher release relay
- Load Current Sensors
- Battery Current Sensors
- AC monitoring
- Environmental – Air Conditioning, temperature and humidity sensors, water detection
- Building Security – door alarms, motion detectors
- Generator

About Guardian

By default, the separate Guardian program starts when PowerManagerII starts.

Guardian regularly checks that PowerManagerII is running, and if not, will restart it automatically after a specified time (you can change this timeout value - see below).

PowerManagerII can be run without Guardian by including /NoGuardian in the Command line.

When Guardian is running, its icon  appears in the System tray area of your Windows taskbar.

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► **To access the Guardian window**

- Double-click the Guardian icon  in the System tray.

The Guardian window has the following items.

Animated icon:	Changes each time Guardian receives a 'pulse' message from PowerManagerII.
State value:	Indicates present state of PowerManagerII (Running, Not Responding, Shutdown, and so on).
Timeout slide control:	Continuous period of time after which, if no response is received from PowerManagerII, Guardian will restart it. To change this value, drag the slide.
Restart counter:	Number of times Guardian has automatically restarted PowerManagerII (read-only).
Guardian log:	Lists changes in state and restarts of PowerManagerII, with dates and times (read-only).
Close button	Click to minimize the Guardian window (does not stop Guardian).

About DCTools

DCTools is Eaton's control and management software for viewing, editing, and back-up of all configuration file data from individual dc power systems.

DCTools has the same range of communications options as PowerManagerII.

The latest version of *DCTools* is available free from www.powerware.com/downloads.

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When you First Start PowerManagerII

When you start PowerManagerII for the first time following installation:

- All users are default users. They have access to all functions, and logging on does not apply.

  If you want to restrict access of different users to some PowerManagerII functions, you must first set up different User IDs with the appropriate access rights.

  See Setting Up User IDs and Passwords (User Administration) on page 9.

- A small example network (and possibly a high-level map graphic) is initially provided, to help you with setting up your own network. One or more items of each type (RPSs and CBCs) are shown, with default settings, but with all communications disabled.

  In some regions, maps and relevant RPSs and CBC s for your region may already be set up to assist you.

  To add new items (maps, SiteManager nodes, CBCs, and RPSs), and to change item names, positions, and other properties, see Edit Layout mode.

  A regional network hierarchy is not mandatory – you can group RPSs and CBCs any way you choose. Here however, the term map refers to any tree item higher than the RPS or CBC level (including SiteManager nodes).

- You will need to set up your general communication protocols, ports, and other options.

  See Communications Setup on page 151.

- You may want to set up parameters for logging connected Devices (including uploading logs kept by those Devices), and for purging logs.

  See Log Management on page 131.

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- If an error dialog appears that refers to Firebird and/or the Logging database, you should check that the Firebird services are correctly set up, using Windows Control Panel/Services.

  See About the Logging Database on page 134.

See also:

What's Displayed at Startup on page 15

Main Display Elements on page 17

Arranging Your Display Layout on page 26

Registering PowerManagerII

Upgrades

If you are upgrading to a new support release (for example, from v5.3 to v5.4) and had registered the previous version, your existing registration details will usually still be valid.

This applies only when you install a new support release 'on top of' an earlier release (for example, from v5.3 to v5.4) . It does not apply when you upgrade to a new major release (for example, to v6.0 from v5.3), nor if you uninstall the previous version first.

License Restrictions

Your license specifies the maximum number of devices (RPSs and CBCs as shown in the full RPS List) to which PowerManagerII can connect. Obtain a new license to increase this number.

► To change the existing PowerManagerII registration details

1. Ensure you have received your new Registration details from your local Eaton dc product distributor.
2. Start PowerManagerII.
3. In the *Help* menu, select *Registration*.

   The Registration screen is then displayed.
4. Enter your new Registration details exactly as given, and click *OK*.

   These details are case-sensitive.

   - If your Registration details are incorrect, an error dialog will appear. Click *OK* to return to the *Registration* screen. Check your details, and try again (if necessary, contact your local Eaton dc product distributor).

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Setting the Language

You can run PowerManagerII in a different language by selecting from a list of available languages. Screen titles, menus, and so on will then display in your selected language.

The available languages may vary, depending on the language version of Windows you are running. Translation files can be added later for more languages, if available.

► **To change the language**

1 Select *Language* from the *Options* menu.

The *Language* dialog is then displayed.

2 Select the language you want from the list and click *OK*.

You can change the language at any time.

Setting Up User IDs and Passwords (User Administration)

User Administration is optional. It enables you to restrict user access to important PowerManagerII functions, by setting up and maintaining User IDs, passwords, and user access rights. It also provides the following options:

- Log on dialog displayed at startup
- Application shutdown requires password
- Log-off current user after a period of inactivity

If a device requires a password, you must also enter that password (once) on the Properties form (Password tab) before you can send Control Function commands or change any configuration parameters. See details on page 92.

When you start PowerManagerII for the first time, you have access (as the 'default' user) to all functions, and no user log-on and log-off is required. This 'no-security' situation remains until you change it by setting up one or more User IDs, then restricting default user access rights.

PowerManagerII ensures that at least one User ID always has User Administration access rights.

See also:

Logging On and Off on page 13

Changing Your Password on page 14

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Accessing User Administration

Your current *User ID* must have *User Administration* access rights.

► **To access User Administration**

1. Ensure you are not in *Edit Layout mode*. In the *Browser* menu, select *Edit Layout* if necessary (it should be unchecked).
2. In the *Options* menu, select *User Administration*. See also Setting Access Rights for User IDs on page 12.

Important:

If no users can access User Administration (because no one knows a User ID and password with User Administration rights, or because the security file is missing or corrupt), then PowerManagerII must be re-installed before any security settings can be changed.

PowerManagerII ensures that at least one User ID always has User Administration access rights.

About the Default User

The default user applies when you start PowerManagerII (unless the *Log On dialog displayed at Startup* option is set and you enter a valid *User ID)*. It also applies when you log off from your current User ID.

You can set access rights for the default user as for any other user, but the default user cannot be deleted, has no password, and cannot log off.

When PowerManagerII is first installed, the default user has full access rights. When you set up different levels of security for different User IDs, you should then change the default user's access rights to the minimum allowed.

See also:

Log On/Off and Password Options on page 11

Security at Startup on page 12

Setting Access Rights for User IDs on page 12

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Log On/Off and Password Options

When one or more User IDs have been set up, you can then select or clear the following User Administration options:

Option	Select to...
Log on dialog displayed at startup:	Request users to enter their User ID and password when they start PowerManagerII. *If Cancel is selected the default user applies.*
Application shutdown requires password:	Require users who have Application Shutdown rights to enter their password before they can shut down PowerManagerII. You cannot select this option while the default user has Application Shutdown rights (because the default user has no password).
Log off current user after a period of inactivity:	Automatically log off the current user if they perform no keyboard or mouse actions within PowerManagerII for the specified number of minutes. A dialog is displayed to notify the user when this occurs.

You can also force the next user logging on under a specific User ID to change the relevant password.

► To force a password change for a User ID

Your current User ID must have User Administration access rights.

1. Ensure you are not in Edit Layout mode. In the Browser menu, select Edit Layout if necessary (it should be unchecked).
2. In the *Options* menu, select *User Administration*.
3. On the *Users* tab, select the *User ID* from the list, and select the *Reset Password* option.
4. Click *OK*.

The next user to log on under that User ID can then use the default password (the User ID itself). The *Change Password* dialog will be automatically displayed, and they must change to a new password before their log-on will be successful.

See also:

Logging On and Off on page 13

Changing Your Password on page 14

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Security at Startup

When PowerManagerII is first installed, the default user has full access rights. When you set up different levels of security for different User IDs, you should then change the default user's access rights to the minimum allowed.

When you set up one or more User IDs in *User Administration*, you can optionally select the *Display Log On dialog at Startup* option, which will request log on when any user starts PowerManagerII. However, logging on is always optional - you can cancel the *Log On* dialog and run PowerManagerII as the default user.

See also:

About the Default User on page 10

Log On/Off and Password Options on page 11

Logging On and Off on page 13

Setting Access Rights for User IDs

When PowerManagerII is first installed, the default user has full access rights.

If you have *User Administration* rights, you can assign the following access rights to each User ID. For more details, click the relevant access right.

Access Right	Allows User to...
Alarm Acknowledgement:	Acknowledge alarms within PowerManagerII.
Application Shutdown:	Close PowerManagerII.
RPS Control Processes*:	Start and stop control processes on RPSs.
Rectifier Shutdown:	Shut down and restart rectifiers.
RPS Configuration Changes*:	Edit and download configuration items.
Log Management:	Edit Log Management settings and manually upload logs (some devices only).
Communications:	Change communication settings (users without this still have read-only access).
Alarm Notifications:	Change alarm notification settings (users without this still have read-only access).
Data Log Purging:	Purge records from the Data and Event log.
Map Layout:	Edit map layouts.
User Administration:	Open the *User Administration* form. *At least one User ID must have this access right.*

* If a device requires a password, you must also enter that password (once) on the Properties form (Password tab) before you can send Control Function commands or change any configuration parameters. See details on page 92.

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Important:

If no users can access User Administration (because no one knows a User ID and password with User Administration rights, or because the security file is missing or corrupt), then PowerManagerII must be un-installed then re-installed before any security settings can be changed.

Save the files NodeList.bin and RpsList.bin before un-installing, and copy the saved files back into the PowerManagerII folder after re-installing. This will save the tree layout.

If the security file is missing, or appears corrupted in any way, PowerManagerII will still start and run normally, but you only have *Application Shutdown* access rights. The relevant menu items do not appear or are disabled, including *Log On*, *Log Off*, and *Change Password*.

PowerManagerII ensures that at least one User ID always has User Administration access rights.

Logging On and Off

When you first start PowerManagerII, no User IDs are present, the default user has full access rights, and logging on does not apply.

Logging on applies as soon as different User IDs have been set up in User Administration. To gain the access rights of a particular User ID, you log on, entering that User ID and its correct password. Your logged-on User ID (or <Default User>) is then shown in the status bar. All events added to the Event Log also include the logged-on User ID at the time they occurred (or <Default User> if applicable).

The Log On dialog may display when you start PowerManagerII (*User Administration* option), but you can choose whether to log on or not. If you don't log on after starting PowerManagerII, you have default user access rights.

Logging off means you lose the access rights of your current User ID and revert to default user access rights (thus the default user cannot log off). You may be automatically logged off after a period of inactivity (User Administration option) -a message dialog is displayed when this occurs.

► To Log On

1. Select *Log On* from the *File* menu. The *Log On* dialog is then displayed.
2. Enter a valid User ID and password, and click *OK*.

   If you are entering a new User ID for the first time, the password is the same as the User ID.

3. If the *Change Password* dialog is then displayed, enter your old and new passwords and click *OK*. (This means that your log-on is the first for that User ID, or the first following a setting of *Reset Password* in *User Administration* for that User ID.)

You are then logged on and have the access rights of your specified User ID, which is displayed in the status bar.

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► To Log Off

1 Select *Log Off* from the File menu.

A confirmation dialog is then displayed.

2 Click *OK* to confirm.

You are then logged off, and have default user access rights. The status bar indicates <Default User>.

The default user cannot log off.

See also:

Log On/Off and Password Options on page 11

About the Default User on page 10

Changing Your Password on page 14

Changing Your Password

When you are logged on, you can change the password for your current User ID at any time.

► To change the password for your current User ID

The default user has no password.

1 In the *Options* menu, select *Change Password*.

The *Change Password* dialog is then displayed.

2 In the *Old Password* field, enter the existing password.

3 In the *New Password* field, enter the new password.

- You can enter up to 40 characters.
- The password must start with an alphabetic character (A-Z).
- The password cannot be the same as the User ID.
- A space is invalid.

4 In the *Confirm Password* field, enter the new password again.

5 Click *OK*. An error or confirmation dialog is then displayed.

- If you receive an error dialog, click *OK* and try again from Step 2.
- Otherwise, a confirmation dialog is displayed. Click *OK*.

► If you can't remember your password...

- If you have User Administration access rights, set the *Reset Password* option for the relevant User ID. For more details, see Log On/Off and Password Options on page 11.
- Ask someone with User Administration access rights to reset your password.

  This sets your password to the User ID itself, which you can be used once only. When that occurs, the *Change Password* dialog is displayed and the password must be changed before logging on is allowed.

  If no users can access User Administration (because no one knows a User ID and password with User Administration rights, or because the security file is missing or corrupt), then PowerManagerII must be re-installed before any security settings can be changed.

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The *Change Password* dialog is automatically displayed and you must also change the password for your current User ID when:

- You are the first user to log on under that User ID (in this case, the password is initially set to the User ID by PowerManagerII).
- You are the first user to log on following a setting of the *Reset Password* option for that User ID in User Administration.

Display Elements and Basics

This introductory section covers the following general topics related to using PowerManagerII displays and their main elements.

- What's Displayed at Startup on page 15
- Main Display Elements on page 17
- Arranging Your Display Layout on page 26
- Editing Configuration Parameters on page 29

See also:

Using Browser Views on page 35

What's Displayed at Startup

- While PowerManagerII is starting up, a 'splash screen' is temporarily displayed.
- Then the main window appears showing the default display layout.
- If Guardian is running (the default), its icon  appears in the System tray area of your Windows taskbar.

  If no Browser views are showing when you start PowerManagerII, select New Window from the Window menu.

Default Display Layout

PowerManagerII's default main display layout shows one maximized *Browser* view, with the *Tree* view, *System* view, toolbar, and status bar visible.

When PowerManagerII is started for the first time, the default main display layout will be shown, with one blank map labeled Top Level, example RPSs (one of each type), and possibly an example CBC. For more details, see When you First Start PowerManagerII on page 7.

In some regions, maps and relevant RPSs and CBCs for your region may already be set up to assist you.

To add new maps, SiteManager nodes, RPSs, and CBCS; or to change item names, positions, and other properties, see Edit Layout mode on page 76.

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First Startup after Installation

- To add your own maps, RPSs, CBCs, and SiteManager nodes; or to change the default item names and add new ones, see Edit Layout mode on page 76.

  SiteManager Groups displayed under a SiteManager node are those configured for SiteManager channels at the RPSs under that node. The Groups for an RPS will not appear if communications have never been established with that RPS.

- To open other Browser views, hide parts of the display, and so on, see Arranging Your Display Layout on page 26.
- To set up User IDs with different access rights, see Setting Up User IDs and Passwords (User Administration) on page 9.

Subsequent Startups

In a central monitoring installation, PowerManagerII will generally be running continuously.

When you subsequently start PowerManagerII, the initial display depends on the settings of various display options and the display layout when PowerManagerII was last shut down (by any user).

For example, a *Log On* dialog may be displayed first (see Logging On and Off on page 13). The main display will show one of the following, depending on the *Save Layout on Exit* option setting, as follows:

- If *Save Layout on Exit* was not set when PowerManagerII was last shut down (by any user), the default layout is displayed on the next startup.
- Otherwise, the layout when PowerManagerII was last shut down is restored. If someone else has been using PowerManagerII, you will see their last layouts.

If your display is "empty" when you start PowerManagerII, select New Window from the Window menu (this simply means that the previous user has closed all Browser views immediately before they shut down and Save Layout on Exit was set).

See also:

Saving and Restoring your Display Layout on page 28

Security at Startup on page 12

When you First Start PowerManagerII on page 7

About Guardian on page 4

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Main Display Elements

This section covers the following elements of PowerManagerII displays.

See also:

Editing Configuration Parameters on page 29

What's Displayed at Startup on page 15

Arranging Your Display Layout on page 26

Browser Views on page 35

Edit Layout mode on page 76

Menus

Menus Accessed from the Menu bar:

- File menu
- View menu
- Alarm menu
- Browser menu
- Options menu
- Window menu
- Help menu

Right-click Menus

When you right-click in the Tree view or System view, popup menus provide navigation, editing, and special functions.

Many functions can be accessed only by right-click menus.

Right-click menu items vary depending on where you are pointing the mouse, and the mode you are in (normal or Editing). See Common Right-click menu items on page 22.

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File menu

Contains the following items:

New Window:	Opens another *Browser* view (copying the current view)
Log On:	Logs you on under the User ID you specify
Log Off:	Logs off your current User ID (default user rights then apply)
Exit:	Closes PowerManagerII

View menu

Contains the following items:

Toolbar:	Shows/hides the Toolbar
Status Bar:	Shows/hides the Status bar at the bottom of the main window

Alarm menu

Contains the following items:

Acknowledge:	Acknowledges the selected alarm or alarms
Acknowledge with note:	Acknowledges the selected alarm or alarms, and opens the Note dialog for you to enter optional text about these particular alarms.
Clear 'Latched' Alarms:	Clears any latched alarms for the selected device.
View Notification Log:	Opens the Notification Log dialog, which lists the most recent alarm notification failure messages (if any).

Browser menu

Contains the following items:

Go To:	Shows a submenu of navigation commands
Tree View:	Shows/hides the Tree View
System View:	Shows/hides the System View
Banner:	Shows/hides the banner heading for the active System view
Status Bar:	Shows/hides the Status Bar at the bottom of the active Browser window (does not apply when Browser view maximized)
Edit Layout:	Enters/exits Edit Layout mode (does not apply when more than one window is open)

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Options menu

Contains the following items:

Language:	Opens a dialog you can use to run PowerManagerII in a different language, by selecting from a list of available languages.
Communications:	Opens a dialog you can use to view and change Polling, Protocol, modem, and dialup connection options.
Alarm Notifications:	Opens a dialog you can use to view and change e-mail and pager options for alarm notifications.
Data Logging:	Shows a submenu of Data Logging commands
User Administration:	Opens a dialog you can use to set up User IDs, access rights, and other security options.
Change Password:	Opens a dialog you can use to change the password for your current User ID.

Window menu

This menu contains the following items:

New Window:	Opens another Browser view (copying the current view)
Tile Horizontally:	Horizontally tiles open Browser views (one above the other)
Tile Vertically:	Vertically tiles the display of open Browser views (side by side)
Cascade:	Cascades (overlaps) the display of open Browser views
Layout:	Shows submenu of Browser layout commands
1, 2, etc:	Goes to the Browser view indicated (all current views are listed)

See also:

Arranging Your Display Layout on page 26

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Help menu

Contains the following items:

Contents & Index:	Opens PowerManagerII Help and displays Help topics. See How to Use Help.
What's This?:	Enables you to get context-sensitive help (if available). A Help cursor appears– point and click on a screen item or area to get related information.
About PowerManagerII:	Displays PowerManagerII Version and Copyright details.
Registration:	Opens the Registration dialog, which enables you to change your registration (licensing) details for PowerManagerII. See Registering PowerManagerII on page 8.

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Toolbar

 Returns active Browser display to home (topmost) level

 Selects previous item in hierarchy and displays corresponding System view

 Selects next item in hierarchy and displays corresponding System view

 Selects parent (next-highest level) item and displays corresponding System view

 Cancels use of New Map, RPS Location, or Text Label button*

 Inserts a new map in the hierarchy (Edit Layout Mode only)

 Inserts a new text label at current map position*

 Inserts a new SiteManager node in hierarchy*

 Inserts a new SC200 RPS location in hierarchy*

 Inserts a new SC100 RPS location in hierarchy*

 Inserts a new SM65 RPS location in hierarchy*

 Inserts a new SM60 RPS location in hierarchy*

 Inserts a new SM50 RPS location in hierarchy*

 Inserts a new SM45 RPS location in hierarchy*

 Inserts a new SM40 RPS location in hierarchy*

 Inserts a new NSM35 NES location in hierarchy*

 Inserts a new SM30 RPS location in hierarchy*

 Inserts a new SM20 RPS location in hierarchy*

 Inserts a new E40 RPS location in hierarchy*

 Inserts a new CellSure Battery Monitor (CBC) location in hierarchy*

 Selects Help mouse pointer . You can then click on a screen item or menu item to get popup help about that item.

* *Available in Edit Layout Mode only.*

► To show or hide the Toolbar on the main window

- Select *Toolbar* from the *View* menu.
- A check mark ✔ by this menu item indicates that the *Toolbar* is currently displayed.

► To show or hide the Toolbar on a floating Browser view

- Select *Toolbar* from the *Browser* menu.
- A check mark ✔ by this menu item indicates that the *Toolbar* is currently displayed.

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Browser View

The Browser view has two main areas; Tree View and System View. For more details see Browser Views on page 35.

You can select various display arrangements for your Browser views, or go into Edit Layout Mode to set up and make changes to your Browser view structure and content. For more details, see Arranging Your Display Layout on page 26.

Common Right-click menu items

When you right-click in the Tree view or System view, popup menus provide navigation, editing, and special functions.

Many functions can be accessed only by right-click menus.

Right-click menu items vary depending on where you are pointing the mouse, and the mode you are in (normal or Edit Layout Mode). The following items commonly occur.

Item	Click to...
Go To:	Go to another Browser view.
Go To Next/Previous:	Go to the next or previous item in the tree.
Go To Home:	Go to the root item in the tree.
Enable Comms:	Enable communications with the selected RPS or CBC.
Disable Comms:	Disable communications with the selected RPS or CBC.
Refresh Alarms:	Force an alarm poll of the selected RPS or CBC as soon as possible.
Refresh Data:	Force a data poll of the selected RPS or CBC as soon as possible.
Alarm Behaviour:	Display a submenu for selecting alarm viewing and management functions.
Properties:	Display the relevant Properties form for the item you right-click on (or for the parent item if you right-click in a vacant area).
Rack Layout:	Display the Rack Layout Properties form (some devices only), to change the rack diagram to represent the actual RPS layout if required.

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For more details of right-click menu items for specific displays or display areas, see the relevant topic in each case.

See also:

What's Displayed at Startup on page 15

Tree View on page 36

System View on page 42

Edit Layout mode on page 76

Configuring Alarm Behaviour on page 119

Enabling and Disabling Communications on page 91

Forcing an Immediate Poll of an RPS or CBC on page 94

Navigating in the Tree View on page 39

Changing the Rack Diagram on page 52

Title Bars and Banners

The main window title bar is always displayed. Floating Browser windows also have title bars.

The *System* view has an optional banner heading which you can alternately show or hide by selecting *Banner* in the *Browser* menu.

One or more of these indicate what your *System* view is currently displaying, as follows.

If you are currently in Edit Layout mode, this is indicated either by the designation [Editing] or a green System view banner instead of the normal color (grey by default).

Other indications depend on your current System view, as follows.

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What is indicated?

Current System view	Indication gives...
System tab/*Map*	*Map* name
System tab/*RPS* or *CBC* Schematic diagram	*Map* or *SiteManager* node name and *RPS* or *CBC* name
System tab/other *RPS* or *CBC* item	*RPS* or *CBC* name and item name
System tab/*SiteManager* node	*Node* name
System tab/*SiteManager* group	*Group* name
RPS List tab	*RPS List* and (Filtered) if applicable
Alarms tab	*Alarm List* and (Filtered) if applicable
Event Log tab	*Event Log* and *All Events* or type of events selected *
Data Log tab/any *RPS* or *CBC* item	*Data Log* and *RPS* or *CBC* name *
Pending Changes tab	*Pending Changes List* and mode

* *Log tab title bars also show any date range and/or (Filtered) if applicable.*

Where is it indicated?

This depends on your current display options.

Indications are on...	When...
Main window title bar	*Browser* view is maximized and *Banner* is hidden
Browser view title bar	Browser view is floating (not maximized)
System view *Banner* heading	*Banner* is displayed

See also:

Showing/Hiding Parts of the Browser View on page 27

Using Multiple Browser Views on page 27

Browser menu on page 18

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Status Bars

Main Window

The optional Status bar at the bottom of the main window shows:

- Your PC's current time (the date is also shown as a tooltip when you rest the mouse pointer over the time)
- The total numbers of unacknowledged and acknowledged alarms
- When a *Data Log* or *Event Log* purge is in progress
- Your current User ID (or <Default User>)

When the *Browser* is docked, it also shows (when an *RPS* or *CBC* is selected) the present state of communications with the *RPS* or *CBC*, and the time since it was last polled.

► To alternately show or hide the main window status bar

- Select *Status Bar* from the *View* menu.
- A check mark ✓ by this menu item indicates that the Status bar is currently displayed.

Separate Browser views

The optional Status bar at the bottom of each separate Browser view shows (when an RPS or CBC is selected) the present state of communications with the RPS or CBC, and the time since it was last polled.

► To alternately show or hide a Browser view's status bar

- Select *Status Bar* from the *Browser* menu when that view is active.
- A check mark ✓ by this menu item indicates that the Status bar is currently displayed.

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Data Fields

The following types of data field display can appear in schematic diagrams, control process diagrams and *SiteManager* group displays on the *System* tab.

A system value measured at the device

An intermediate setting calculated by the device, or a configuration parameter setting you cannot change from PowerManagerII

Black text. A non-numeric configuration parameter setting you may change (by selecting from the list)

Black text. A numeric configuration parameter setting you may change (if you have RPS Configuration access rights)

Green text. A pending configuration parameter setting you have changed but not yet downloaded to the device (to see the previous value, rest the mouse pointer over the field)

Red text. A value currently violating a validation rule, as checked by the device. See the *Pending Changes* tab for the error message.

When you change two or more related configuration parameters, some rules may be temporarily broken until all the changes are made at the RPS.

Gray text. A configuration parameter setting you cannot change at present (for example, because you are in *Browser Edit* mode, or you do not have access rights for RPS Configuration Changes).

Blue text. A value you have edited, but whose value has since changed at the device. On the *Pending Changes* tab, right-click and select *Retry* to revalidate.

For more details about changing configuration parameters and pending values, see Editing Configuration Parameters on page 29.

Data field values of **?** indicate that no information has yet been received from the device - usually because the communications link has been broken.

Values of **N/A** indicate that the value does not currently apply - usually because the particular feature is not enabled or is unavailable.

See also: Pending Changes Tab on page 67

Arranging Your Display Layout

This section covers:

- Showing/Hiding Parts of the Browser View on page 27
- Using Multiple Browser Views on page 27
- Saving and Restoring your Display Layout on page 28

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Showing/Hiding Parts of the Browser View

► **To show or hide the Tree view**

- Select *Tree View* from the *Browser* menu.
- A check mark ✔ by this menu item indicates that the Tree view is currently displayed.

You cannot hide both the Tree view and the System view.

► **To show or hide the System view**

- Select *System View* from the *Browser* menu.
- A check mark ✔ by this menu item indicates that the *System* view is currently displayed.

You cannot hide both the System view and the Tree view.

► **To alternately show and hide the banner heading (on the active System view)**

- Select *Banner* from the *Browser* menu.
- A check mark ✔ by this menu item indicates that the *Banner* is currently displayed.

See also:

Tree View on page 36

System View on page 42

Using Multiple Browser Views

You can open more than one *Browser* view at a time, with each view showing different maps, *SiteManager* nodes and groups (if any), *RPS* views, and tabs, as you decide.

The usual window manipulation functions apply – that is, you can resize, minimize, maximize, close, tile, and cascade floating Browser views.

You can also save and restore your display layout. See details on page 28.

You cannot access Edit Layout mode unless only one Browser view is open.

► **To open a new Browser view**

- Select *New Window* from the *Window* menu. A new Browser view is opened that is a copy of your currently active Browser view and this becomes the active view.
- Use the new window to show another view, tab, or part of the tree, as you require.

Close any Browser view in the normal way, by clicking ✕ in the top right corner of the relevant window.

► **To go to a different Browser view**

- If you can see the view you want, click in it.

  -or-

- Select another window (labeled 1, 2, and so on) from the *Window* menu.
- A check mark ✔ indicates the currently active *Browser* view.

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► **To tile the display of multiple Browser views**

Select *Tile* from the *Window* menu.

► **To cascade (overlap) the display of multiple Browser views**

Select *Cascade* from the *Window* menu.

See also:

Display Elements and Basics on page 15

Saving and Restoring your Display Layout on page 28

Showing/Hiding Parts of the Browser View on page 27

Browser Views on page 35

Saving and Restoring Your Display Layout

When you maximize the *Browser* view, PowerManagerII remembers your current layout of child *Browser* views, and will automatically restore this layout when child windows are next restored.

You can optionally have the display layout automatically saved when you shut down PowerManagerII. This layout will be automatically restored when PowerManagerII is next started (by any user).

You can also save your current display layout at any time, and restore that layout at any later time. Only one layout can be saved in this way.

► **To toggle the Save Layout on Exit option**

- Select *Layout* from the *Window* menu, then select *Save Layout on Exit* from the submenu.
- A check mark ✓ by this menu item indicates that the display layout will be automatically saved when PowerManagerII is shut down, and restored when PowerManagerII is next started (by any user).

If this option is not set, the last-saved display is restored when PowerManagerII next starts. If no layout has yet been saved, the default display applies (as when PowerManagerII was first started).

► **To save your current display layout at any time**

Select *Layout* from the *Window* menu, then select *Save Layout* from the submenu.

► **To restore the last saved display layout**

Select *Layout* from the *Window* menu, then select *Restore Layout* from the submenu.

See also:

Using Multiple Browser Views on page 27

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Editing Configuration Parameters

You cannot change any configuration values if:

- You are in Edit Layout mode. See Entering and Leaving Editing Mode on page 77.
- No Data polls have yet been made to the relevant device. See How Polling Works on page 177.
- You do not have RPS Configuration Changes access rights. See Setting Access Rights for User IDs on page 12.

► To change a parameter setting in an RPS or CBC

1 Click in the field whose value you want to change. That field is given the focus and shows a cursor.

See examples of Data Fields on page 26.

2 For a simple field, edit the field as required to enter your new value.

For a list box, either click the ▾ button to display the drop-down list of valid values, then click to select your new value from the list; or edit the field directly.

3 Press ENTER to change focus. This tells PowerManagerII you have finished editing.

- If your new value fails validation by PowerManagerII, it is displayed in red and an error message appears in the *Pending Changes* tab. Try again from Step 2.
- If your new value passes validation by PowerManagerII, it is displayed in green (and the change is listed on the *Pending Changes* tab).
- If the previous value changes at the RPS or CBC in the meantime, it is displayed in blue. On the *Pending Changes* tab, right-click and select *Retry* to revalidate.

4 On the *Pending Changes* tab, right-click and select *Download All*.

- If your new value passes validation by the relevant device, the display reverts to black, and the change is recorded in the Event Log.
- If your new value fails validation by the relevant device, it is displayed in red (and the change remains on the *Pending Changes* tab).
- If the download fails because the device has a password, set the password and download again.

  Set the password (once) on the Properties form (Password tab).

- If the communications link fails, your change remains pending until you clear it or until a subsequent download succeeds.

While a pending value is displayed, you can see the previous value by resting the mouse pointer over the field. For more details, see Pending Changes Tab on page 67.

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Configuring SiteManager Groups

SiteManager applies to RPSs controlled by some Device versions only. See SiteManager Features on page 3.

A *SiteManager Group* number (1 to 255) can be configured for the following data channels:

- SiteSure (external) analog and digital inputs and outputs
- Other ('internal') analog and digital inputs and outputs
- RPS Alarms
- Analog and digital input States
- Frequency inputs

How the Group Number is Used

The *Group* number is used to determine where the channel data appears within the display hierarchy for the *SiteManager* node, where:

- You have set up the display hierarchy with one or more SiteManager nodes and each of the relevant RPSs under the required SiteManager node. For more details, see Edit Layout mode on page 76.
- All non-zero groups valid for all *RPSs** under a *SiteManager* node are shown in the *Tree* view, in sequence, under that node.

  Channels with a zero group number are not shown in SiteManager displays.
- All channels with the same group number are shown under that group, for all *RPSs* under that *SiteManager* node.

  An RPS must have established contact with PowerManagerII at least once before its SiteManager channels can be displayed.

You can configure similar types of channel to have the same *Group* number over multiple power system installations.

Available Group Numbers

You can use any of the following *Groups*:

- General (Group 1)
- User-specified (Groups 2 to 127) – you can change these Group names
- Reserved (Groups 128 to 255; named Reserved1 through Reserved128) – you cannot change these Group names (these channels are reserved for future standard use)

Although you can have up to 255 groups, use as few as practical.

Use *DCTools* to initially configure channels with *SiteManager Group* numbers at the *RPS*.

You can do this at an SM50 via its front panel, but that method is not recommended.

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Group Display Properties

In *Edit Layout* mode, you can change the following *Group* display properties.

- Name (User-specified Groups only)

  A group name applies globally – that is, over all SiteManager nodes and RPSs.

- Text appearance (font and color)
- Position (X and Y coordinates)
- Group display order (under the SiteManager node) in the Tree view
- Channel display order (under the Group) in the System view

In *Normal* display mode, you can remotely initiate a valid change to any channel's configurable parameter settings if required. These channel parameters always include a text label and the *SiteManager Group* number. Other settings depend on the type of channel.

You cannot change a Group number to zero.

Before you reconfigure a *SiteManager* channel:

- You must have access rights for *RPS Configuration Changes*
- You must know the channel's existing *Name* (text label), *Group*, *RPS*, and the *SiteManager* node for the *RPS*.

► To change the text label of a SiteManager channel

You cannot change the label of an SM30 Analog State channel.

1. Ensure you are in *Edit Layout mode* - see Entering and Leaving Edit Layout Mode on page 77.
2. Select the relevant *SiteManager Group* and go to the *System* tab display.
3. On the *Configuration* tab, select and change the value in the Label field for the required channel.

When the relevant *RPS* has acknowledged this change, the new configured text label will apply for that channel at that *RPS*.

► To change the Group display order within a SiteManager node

1. In *Edit Layout mode*, select the relevant *SiteManager Group* in the *Tree* view, and drag it to the required position under the same node.
2. Repeat for other *Groups* until you have the desired display order.

► To change the channel display order within a SiteManager group

1. In *Edit Layout mode*, select the relevant *SiteManager Group*.
2. On the *Configuration* tab, select the first channel you want to move, and drag it to the required position.
3. Repeat for other channels until you have the desired display order.

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► To move a channel to another SiteManager group

1 In *Edit Layout mode*, select the relevant *SiteManager Group* and go to the *System* tab display.

2 On the *Configuration* tab, select and change the value in the channel's *Group* field to a different non-zero group number.

You cannot change the group number to zero.

When the relevant RPS has acknowledged this change, the channel will be removed from the selected group, and will then appear in the new group.

► To change other configured settings for a channel

1 Select the relevant *SiteManager Group* and go to the *System* tab display.

2 On the *Configuration* tab, select and change the value in the relevant fields for the required channel.

When the relevant RPS has acknowledged your changes, the new configured settings will apply for that channel at that RPS.

To check the latest statuses of SiteSure I/O Modules at an SM50-controlled RPS, go to the I/O Module Status view under that RPS.

See also:

SiteManager Features on page 3

SiteManager Group Displays on page 48

SiteManager Node Summary View on page 48

Edit Layout mode on page 76

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Shutting Down PowerManagerII

Your current User ID must have Application Shutdown access rights. For more details, see Setting Access Rights for User IDs on page 12.

► To shut down PowerManagerII

- In the *File* menu, select *Exit*.
  - A confirmation dialog box appears. Click *Yes* to confirm shut down, or *No* to cancel.
  - If your current User ID does not have *Application Shutdown* rights, a dialog displays, informing you of this. Click *OK* to close this dialog. Your attempted shutdown is ignored, and PowerManagerII continues running.
  - If you do have *Application Shutdown* rights, an *Enter Password* dialog will appear if the *Application shutdown requires password* option is set. Enter your password and click *OK*. For more details, see Log On/Off and Password Options on page 11.
- A Closing Down splash screen then appears, and:
  - If a log purge is not in progress, the Closing Down splash screen remains only briefly, until PowerManagerII completely shuts down.
  - If a log purge is in progress, the Closing Down splash screen remains until the purge has finished and PowerManagerII completely shuts down.. A Datalog database busy message on the splash screen indicates that the purge is still in progress.

    For more details, see Log Purging and Statistics on page 143.
- The PowerManagerII icon is removed form the System Tray area of your Windows taskbar.

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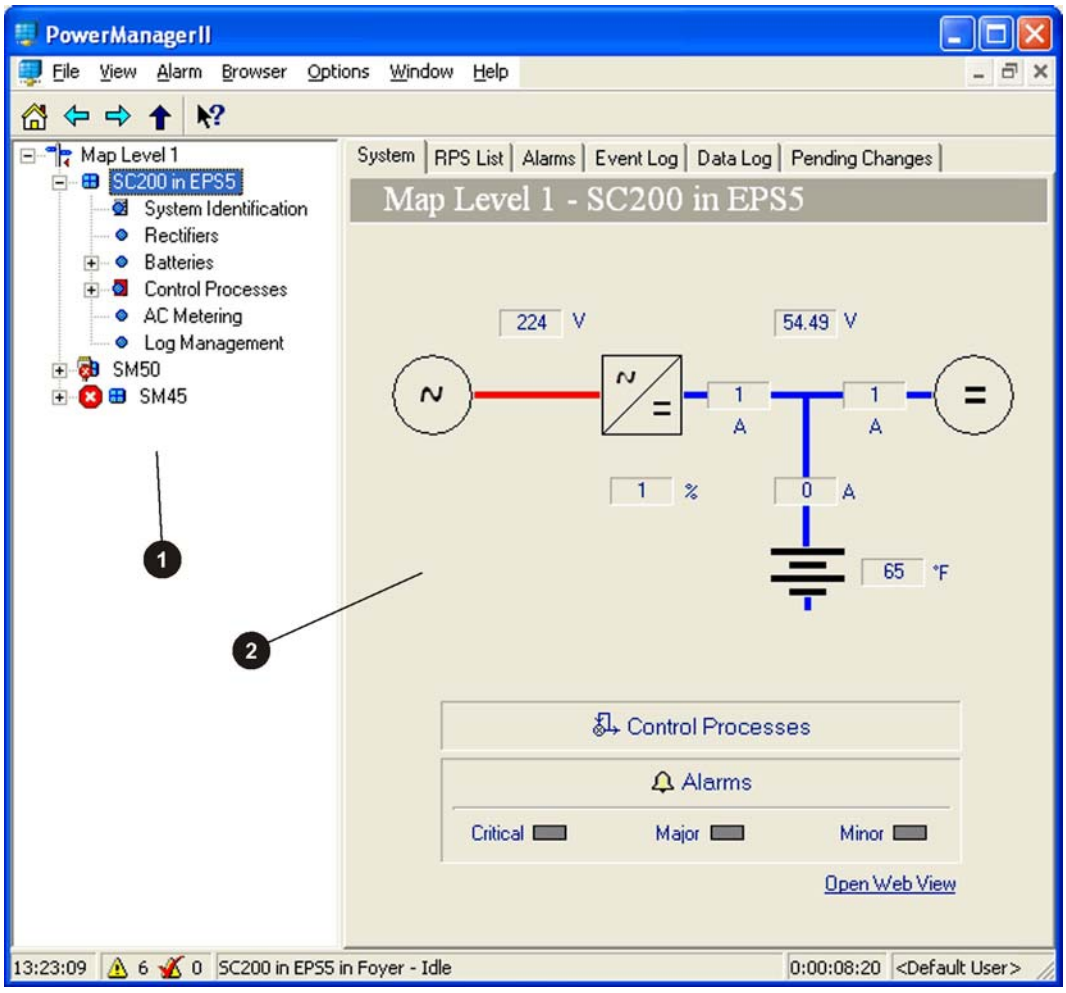
Introduction



❶ Tree View. See details on page 36.

❷ System View. See details on page 42.

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Tree View

The *Tree View* shows a hierarchical structure of maps, SiteManager nodes and groups, RPSs, CBCs, and subsidiary RPS or CBC functional items. See example on page 35.

SiteManager groups are displayed only when PowerManagerII has communicated with RPSs that have configured SiteManager channels.

The *Tree View* enables you to quickly select any item in the hierarchy, displaying its various settings and values in the corresponding *System View*.

Showing/Hiding the Tree View

► **To show or hide the Tree view**

- Select *Tree View* from the *Browser* menu.
- A check mark ✔ by this menu item indicates that the Tree view is currently displayed.

You cannot hide both the Tree view and the System view.

Items in the Tree View

The Tree view shows a hierarchical structure of maps, SiteManager nodes and groups, RPSs, RPS Summaries and RPS Control items, CBCs, and CBC String and Bloc views, as summarized below.

SiteManager groups are displayed only when PowerManagerII has communicated with RPSs that have configured SiteManager channels.

Icon	Item	Description

	Map item*	• When selected, displays the corresponding map in the corresponding System View (System tab).
		• Can have one or more subsidiary (child) items, which may be RPSs, CBCs, further maps, and/or SiteManager nodes.
		• Can be either expanded or collapsed, to show or hide its subsidiary (child) items, respectively.
		• If its branch is closed, will show an alarm icon if there are alarms within its region:
		  •  One or more Critical/Major/Urgent alarms (icon flashes if any unacknowledged, steady otherwise).
		  •  No Critical/Major/Urgent alarms, one or more Minor/Non-urgent alarms (icon flashes if any unacknowledged).
		* A small red triangle on the icon indicates specifically configured alarm behaviour. See Hierarchical Alarm Behaviours on page 120.

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	SiteManager node*	• Can be located directly under the top-level map or any other map (but not under another SiteManager node). • Can have one or more subsidiary (child) items, which may be RPSs, CBCs, or SiteManager groups only. • When selected, displays the corresponding background graphic (if any), superimposed with subsidiary item names and icons, and any added text labels; in the corresponding System View (System tab). • Can be expanded or collapsed to show or hide its subsidiary items, respectively. • If its branch is closed, will show an alarm icon if there are alarms at any subsidiary RPSs or CBCs ( if any Critical/Major/Urgent alarms,  if Minor/Non-urgent only; flashing if any unacknowledged, steady otherwise). * A small red triangle on the icon indicates specifically configured alarm behaviour. See Hierarchical Alarm Behaviours on page 120.

	SiteManager group	• Is displayed only:
		  • Only under a SiteManager node
		  • After PowerManagerII has established communications with one or more RPSs that have SiteManager channels configured with the relevant Group Number
		• When selected, displays real-time values and configuration parameters for all channels with the relevant Group Number; in the corresponding System View (System tab)
		• Has no subsidiary (child) items

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	RPS or CBC device	• Other indicator icons are:  Communications with the device is disabled at present.  A specifically configured alarm behaviour applies for the device - see Hierarchical Alarm Behaviours on page 120.  Individual Polling options apply for the device, superseding the global polling options - see Polling tab options for a Device on page 169.  All of the above apply. • Can be located under a map (at any level) or under a SiteManager node You can view SiteManager group channel data for RPSs under a SiteManager node only (under a map, you can view only a summary of SM50 SiteSure module statuses). *While you may locate the same RPS or CBC in two places (for example, under both a map and a SiteManager node), this is not recommended. If you do, you must ensure that communications is enabled to only one of such duplicated devices at a time. Other complications arise - for example, with logging.* • When selected, displays the *System Schematic* in the System View (*System* tab) • Has the following subsidiary (child) items: • System Identification. See details on page 55. • Rectifiers. See details on page 43. • Batteries. See details on page 43. • Control Processes. See details on page 56. • AC Metering (some devices only). See details on page 43. • Alarm Configuration (some devices only). • Log Management (some devices only). See details on page 58. • System Summary (SM50 only). See details on page 55. • String 1 and further String n items as required (CBC only). See details on page 62. • Can be either expanded or collapsed, to show or hide its subsidiary items, respectively. • Will show an alarm icon if there are alarms at that RPS or CBC ( if any Critical/Major/Urgent alarms,  if Minor/Non-urgent only; flashing if any unacknowledged, steady otherwise).

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Navigating in the Tree View

This section shows how you can use the Tree view to quickly select an item for display in the corresponding System view.

A Tree view item may be a map, SiteManager node or group, RPS, CBC, or an RPS or CBC subsidiary item (see below).

You can navigate in the Tree view by using the mouse, the keyboard, or both.

Navigation by Mouse

► To select an item

Click on that item's text in the Tree view (don't click the + or - box).

The relevant map, SiteManager Node Summary view, SiteManager Group view, RPS System Schematic diagram, CBC System Schematic Diagram, System Summary, Control Functions Summary diagram, specific RPS Control Function, System Identification view, CBC String Schematic Diagram, or CBC Bloc Details view is then displayed in the corresponding System view.

► To move your selection to the next item down or up

- Press  to move down.

  Any branches are automatically expanded as you move down the tree.

- Press  to move up.

  Branches are not automatically collapsed as you move up the tree.

► To expand a collapsed branch of the tree structure to the next level

Either:

- Click on the + box on that line in the Tree view.

–or–

- Double-click that line's text.

–or–

- Select that line and click 

► To collapse an expanded branch of the tree structure

Either:

- Click on the - box on that line in the Tree view.

–or–

- Double-click that line's text (not in the box).

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► **To return to the home (topmost) item**

Either:

- Click 

–or–

- Select the first (topmost) item.

If the System View is currently displayed, it returns to the first-level map.

► **To move your selected item up to its parent (next-highest) level**

Click 

Navigation by Keyboard

► **To move your selection to the next displayed item up or down**

Press the ↑ or ↓ cursor key as required.

► **To expand a collapsed branch of the tree structure to the next level**

Select the line and press the → cursor key.

► **To collapse an expanded branch of the tree structure**

Select the line and press the → cursor key.

► **To select the next item in the tree hierarchy**

If there are no lower-level items, this key has no effect.

Press the → cursor key (on a collapsed branch item, press it twice).

► **To move your selected item up to its parent (next-highest) level**

Press the ← cursor key (on an expanded branch item, press it twice).

► **To return to the home (topmost) item**

Press the HOME key.

If the System View is currently displayed, it returns to the first-level map.

► **To move your selection to the last displayed item**

Press the END key.

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About Tree Item Properties

Tree items with properties are maps, RPSs, CBCs, SiteManager nodes, and SiteManager groups.

Text labels (which show on the System view only) also have name and text appearance properties.

Item properties include:

- Name (on Tree view and System view)
- Text color, text font, optional icon, and X-Y position (on System view)
- Background graphic (maps and SiteManager nodes, on System view)
- Device communications options (RPSs and CBCs only)

Except for communications options, editing of item properties requires *Edit Layout* mode.

► To view and edit properties of a map or SiteManager node

Use *Edit Layout* mode. See Changing Item Properties on page 83.

► To view and edit RPS or CBC properties

1. Right-click on that item in the *Tree* view.
2. Select *Properties* from the popup menu.

   The RPS or CBC Properties form is then displayed.
3. Change one or more properties if required:

   On the *Polling* tab and on 'device' tab you can change communications options for that device at any time. See Specifying Communications Options for a Device on page 168.

   To change display properties on the *Hot Spot* tab (name, text color, position, and so on), you must be in Edit Layout Mode. See Changing Item Properties on page 83.
4. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

► To move a map, SiteManager node, RPS, or CBC in the Tree view structure

Use Edit Layout Mode. See Moving an Item to another System View on page 88.

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System View

See an example of the System View on page 35.

Click the tabs at the top of the *System View* to view the available displays:

Tab	Description
System	Shows the main display for your currently selected item. See details on page 43.
RPS List	Gives details of RPSs and CBCs currently selected. See details on page 63.
Alarms	Gives details of alarms for RPSs and CBCs currently selected. See details on page 64.
Event Log	Lists all or selected RPS, CBC, and PowerManagerII 'events'. See details on page 65.
Data Log	Lists the main RPS or CBC system values received in messages from your currently selected device. See details on page 66.
Pending Changes	Lists all RPS, CBC, or SiteManager group configuration changes made in PowerManagerII but not yet downloaded to the relevant device. See details on page 67.

Scroll buttons  *appear when not all tabs can be displayed at once.*

► To show or hide the System view

- Select *System View* from the *Browser* menu.
- A check mark ✓ by this menu item indicates that the *System* view is currently displayed.

You cannot hide both the System view and the Tree view.

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Using the System tab

The *System* tab shows the main details for your currently selected item (in the Tree), in a graphical, block, table, or list format, as follows:

Item selected in Tree	Description
Map	Background graphic (if any) with superimposed names and icons (if any) of subsidiary items (maps, SiteManager nodes, CBCs, RPSs, and/or text labels). See details on page 45.
SiteManager node	Background graphic (if any) with superimposed names and icons (if any) of subsidiary items (RPSs and valid SiteManager groups for those RPSs). See details on page 48.
SiteManager group (some devices only)	List of real-time or configuration values of all channels for the group, from the RPSs under the relevant SiteManager node. See details on page 48.
RPS	Graphical display showing RPS or CBC elements, alarm indications, and main system values. See details on page 51.
CBC	List of main battery system values and either a graphical display showing string currents and bloc statuses, or a table of string values. See details on page 62.
System Summary (SM50 only)	Graphical dial or bar displays indicating the main system values for the selected SM50-controlled RPS. See details on page 55.
System Identification	List of System Identification parameters for the selected RPS or CBC. See details on page 55.
Rectifiers	Rectifier information from the selected RPS is shown on the System tab. All items are read-only. *When no information has yet been received, ? values are shown. The information varies depending on the device.*
Batteries	Battery information from the selected RPS is shown on the System tab. All items are read-only. *When no information has yet been received, ? values are shown. The information varies depending on the device.*
Control Processes (some devices only)	Graphical display showing all Control Processes and related system values for the selected RPS. See details on page 56.
AC Metering	AC Metering information from the selected RPS is shown on the System tab. All items are read-only. *When no information has yet been received, ? values are shown. The information varies depending on the device.*
Log Management (some devices only)	Settings for configuring and uploading logs from the selected RPS or CBC. See details on page 58.
IO Module Status view (some devices only)	Block display summarizing the latest statuses of all known SiteSure IO Modules connected to the selected RPS. See details on page 57.

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Alarm Configuration (some devices only)	Table of Alarm configuration parameters for the selected RPS
Digital Input (some devices only)	Table of Digital Input channel configuration parameters for the selected RPS
Relay (some devices only)	Table of Relay (Digital Output) channel configuration parameters for the selected RPS

► To navigate using item hotspots

Applies to map or SiteManager Node views only.

- On a map view, click a map icon or name to select it and display its own map view.
- On a map view, click a SiteManager node icon or name to select it and display its SiteManager Node Summary view.
- On a SiteManager Node Summary view, click a SiteManager group name to select it and display its Channel values and Configuration settings.
- On a map or SiteManager Node Summary view, click an RPS icon or name to select it and display its Schematic diagram.

► To navigate using the right-click menu (on System tab)

- Right-click anywhere in the System tab display (when not in Edit Layout Mode). Select one of the following navigation items from the popup menu.

Select...	To...
Go To	Show a submenu of related (parent and child) items you can click to display.
Go To Previous	Select the previous item in the tree hierarchy and display the corresponding System view.
Go To Next	Select the next item in the tree hierarchy and display the corresponding System view.
Go To Home	Display the Home (highest-level) map in the System view and select the Home item in the Tree view.
Rack Layout	Display the Rack Layout dialog (SM50-controlled RPSs only).
Alarm Behaviour	Show a submenu of Alarm Behaviour functions.

Similar right-click menu items apply in Edit Layout Mode – For more details, see About the Edit Layout Mode Display on page 78.

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Using Map Views

To load or change a map use Edit Layout mode on page 76.

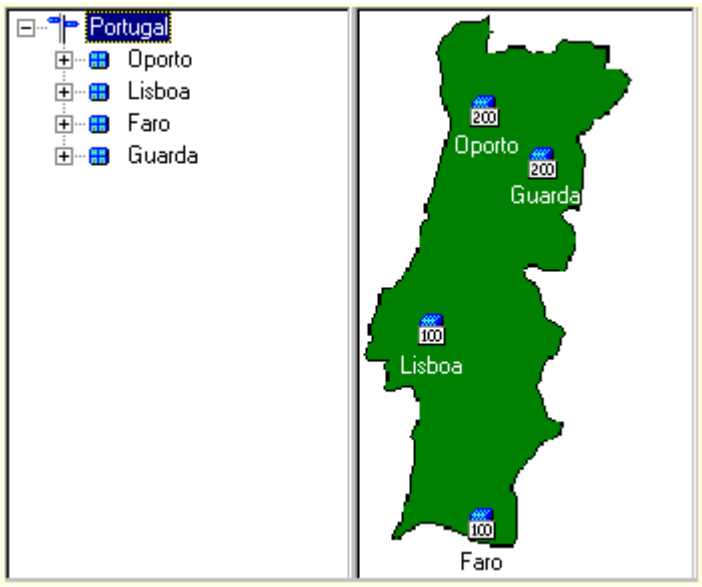
Map views are shown on the *System* tab. A map indicates the names and relative positions of one or more locations. Each map can include an optional background graphic as a visual aid.

In some regions, map graphics may be supplied to assist you. However, a regional network hierarchy is not mandatory – you can group RPSs (and SiteManager nodes) any way you choose. Here however, the term Map refers to any tree item higher than the RPS level.

In PowerManagerII, a map has a unique name and is graphically represented in the System view. The locations on a map may be individual RPSs, CBCs, SiteManager nodes, and/or subsidiary (more localized) maps.

Map views give you a way to quickly identify and access information for multiple RPSs (and CBCs and SiteManager nodes, if any) over geographical areas of any size.

- Where you have relatively few RPSs evenly distributed over a city or region, you may need only one map showing all RPSs, as shown in Example 1.



Example 1: Four RPS (SC100- and SC200-controlled) locations on one national map.

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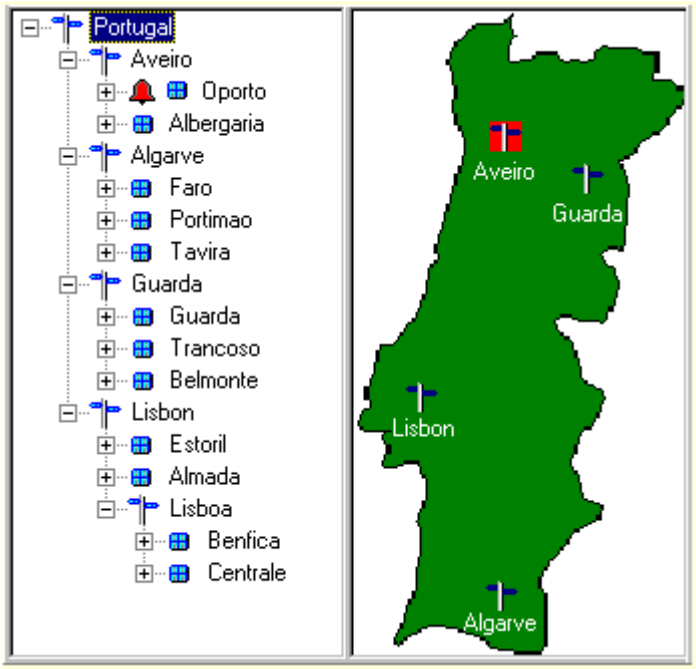
- Where you have RPSs concentrated in several regions, you may have one map showing all the regions; and a map for each region showing its RPS and map locations, as shown in Example 2.



Example 2: Four regions with several RPSs (one subregion). The Oporto RPS (in the Aviero district) has an urgent alarm.

- You can have any number of maps, and as many levels of map as you want.
- In the Tree view, a map is indicated by the icon .
- In the System view, when a map is displayed (on the System tab):
  - It shows any subsidiary items (maps, SiteManager nodes, RPSs, and/or CBCs).
  - Its optional background graphic is shown.
  - By default, each type of device is indicated by its own icon as follows (you can change, resize, or remove these icons in Edit Layout Mode on page 76).

SC200 SC100 SM65 SM60 SM50 SM45 SM40 NSM35 SM30 SM20 E40 CBC

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- By default, subsidiary maps are indicated by  and SiteManager nodes by  (you can change, resize, or remove these icons in Edit Layout Mode on page 76).
- When you click an item's name or icon, the System View displays the highest-level view for that item (map, SiteManager node Summary, RPS Schematic diagram, or CBC System Schematic diagram), and the relevant subsidiary item then becomes your selected item in the Tree view.
- Any RPS, CBC, or SiteManager alarms in the region are indicated by a colored border around the relevant item icons. These colors are red (urgent active) or yellow (non-urgent); and they flash where any alarm remains unacknowledged.
- You can use Edit Layout Mode on page 76 to add, move, and delete items; add, change, and delete background graphics and icons; and to change other item properties.
- The map name is shown in the title bar, preceded by its higher-level map names in the hierarchy.
- When you are not in Edit Layout Mode, you can use the System view's right-click menu to go to related displays.

► To display a map in the System view

This procedure also applies for a SiteManager node.

With the System tab showing, use any one of the following methods.

- Select the map in the Tree view.
- If the map you want is currently displayed as a location on the System view, click on that location.

  –or–
- Right-click to display the popup menu, select *Go To*, then select the location from the submenu.
- If the map you want is one level higher than the item currently displayed in the System view, right-click to display the popup menu, select *Go To*, and click the parent map (the first item) in the submenu.

  –or–
- Click  in the toolbar.
- If you want the highest-level or Home map, right-click to display the popup menu, and select *Go To Home*.

  –or–
- Click  in the toolbar.

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SiteManager Node Summary View

SiteManager Nodes are not required unless you will be using PowerManagerII for remote viewing and management of specially configured SiteManager channels (for example, SiteSure inputs and outputs).

A SiteManager Node Summary view is shown on the System tab, and:

- Displays, for the selected SiteManager node, the corresponding background graphic (if any), superimposed with subsidiary RPS and CBC icons, configured SiteManager Group names, and any text labels you may have added

  SiteManager Groups displayed under a SiteManager node are those configured for SiteManager channels at RPSs under that node. The Groups for an RPS will not appear if communications have never been established with that RPS.

- Enables you to quickly go to a subsidiary RPS, CBC, or SiteManager Group display, by clicking on that RPS icon, CBC icon, or group name
- Cannot include any subsidiary map locations
- Cannot include any subsidiary SiteManager nodes
- Can be edited in Edit Layout mode, to change Group names, Group display order, text labels, and so on.

See also: Edit Layout mode on page 76

SiteManager Group Displays

SiteManager Groups displayed under a SiteManager node are those for SiteManager channels configured at the RPSs under that node (that is, for I/O and other channels configured with a non-zero Group Number).

The Groups for an RPS will not appear if communications have never been established with that RPS.

A SiteManager Group display is shown on the System tab, and:

- You can select either a Realtime tab or Configuration tab display.
- You can edit the display in Edit Layout mode - for example, to change Channel names, Channel display order, text labels, and so on.
- On the Realtime tab:
  - The latest available values of all channels configured with the relevant Group Number are shown for the RPSs under the selected SiteManager node.
  - You can remotely initiate a valid change to any output channel value, as required.
  - Values are shown as ? if the relevant RPS is not yet communicating.
  - Values are shown as Indeterminate if the relevant channel value cannot be obtained by the RPS (for example, because a SiteSure module is not communicating with it).

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- On the Configuration tab:
  - The configured settings of channels for the relevant Group Number are shown for the RPSs under the selected SiteManager node.
  - If you have access rights for RPS Configuration Changes, you can remotely initiate a valid change to any channel's text label, Group number, and other configured settings, as required.
    If you change the value in the Group field, then when the relevant RPS has acknowledged this change, the channel will be removed from the selected Group, and will then appear in the new Group (you cannot change the Group number to zero).
  - Values are shown as **?** if the relevant RPS is not yet communicating.
  - Values are shown as **Indeterminate** if the relevant channel value cannot be obtained by the RPS (for example, because a SiteSure module is not communicating with it).

In the Event Log tab display, you can also view the values of channels currently being logged for a group. For more details, see Logging SiteManager Group Channels on page 139.

See also: Edit Layout mode on page 76

Realtime tab - SiteManager Group display

Shows the latest available values of all channels configured for the selected SiteManager group, for all RPSs under the selected SiteManager node.

These channels can include:

- SiteSure (external) analog and digital inputs and outputs (some devices only)
- Other ('internal') analog and digital inputs and outputs
- RPS Alarms
- Analog and digital input States
- Frequency inputs (some devices only)

If you have access rights for RPS Changes, you can remotely initiate a valid change to output channel values only, as required.

A **?** value indicates that the relevant RPS is not yet communicating.

An **In determinate** value indicates that the relevant channel value cannot be obtained by the RPS (for example, because a SiteSure module is not communicating with that RPS).

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Configuration tab - SiteManager Group display

Shows the latest available configuration settings of all channels allocated to the selected SiteManager group, for the RPSs under the selected SiteManager node.

These channels can include:

- SiteSure (external) analog and digital inputs and outputs (some devices only)
- Other ('internal') analog and digital inputs and outputs
- RPS Alarms
- Analog and digital input States
- Frequency inputs (some devices only)

If you have access rights for RPS Configuration Changes, you can remotely initiate a valid change to any channel's configurable parameter settings, as required. These parameters always include a text label and the SiteManager group number; other settings depend on the type of channel.

A **?** value indicates that the relevant RPS is not yet communicating.

► **To change the text label of a channel**

- Change the value in the relevant *Label* field.

  You cannot change the label of an SM30 Analog State channel.

- When the relevant RPS has acknowledged this change, the new configured text label will apply for that channel at that RPS.

► **To move a channel to another SiteManager group**

- Change the value in the relevant *Group* field to a different non-zero group number.

  Note You cannot change the group number to zero.

- When the relevant RPS has acknowledged this change, the channel will be removed from the selected group, and will then appear in the new group.

► **To change other configured settings for a channel**

- Change the values in the relevant fields for that channel.
- When the relevant RPS has acknowledged your changes, the new configured settings will apply for that channel at that RPS.

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RPS System Schematic

An RPS System Schematic (see example on page 35) is shown on the *System* tab and:

- Is the highest-level display for an RPS, and is shown when you select the RPS name.
- Shows the RPS's present statuses and important system values.
- Shows any active alarms.
- Click on the *Control Processes* button to view the Control Processes diagram.
- Enables you to access more information for the RPS – for example:
  - Click on the rectifier symbol to go to either the rectifier table or to open the rectifier detail window (depends on device)
  - Click on *Open Web View* to go to the device's web server pages (only available for devices with a web server)
  - Rest the mouse pointer over a specific graphic in the rack diagram to display a popup panel containing brief details about that rectifier or (some devices only).

  For some devices the diagram represents the actual rack layout. This can be edited if required – see Changing the Rack Diagram on page 52.

General Display Options and Functions

Right-click Menu

Use the System view's right-click menu to go to related displays (not available in Edit Layout mode).

'Active' areas

The hand pointer shows where you can click to change the display or perform related functions.

Other Display Functions

► To view details for a rectifier (when a single-line diagram is shown)

Click the rectifier graphic to go the rectifier table.

This is the same as selecting Rectifiers in the Tree and clicking on the System tab.

► To view details for a rectifier (when a Rack Diagram is shown)

1. Click the rectifier graphic.

   The *Rectifier Detail* window is then displayed. This window shows the latest operating values and any alarms for your selected rectifier and enables you to optionally:

   - Acknowledge alarms for the rectifier
   - Shut down or restart the rectifier

2. Click the *Close* button to close the *Rectifier Detail* window.

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► **To view and possibly change RPS or CBC properties**

- For communications-related properties, right-click anywhere in the item's System Schematic view, and select Properties from the popup menu. For more details, see Specifying Communications Options for a Device on page 168.
- For RPS or CBC display properties such as name, text color, position, and icon, you must use Edit Layout Mode. See Changing Item Properties on page 83.

► **To obtain brief details about a specific area on the System Schematic diagram (when a Rack Diagram is shown)**

- Rest the mouse pointer (don't click) over a specific graphic or value.
- A small panel will then display brief details about that area and any action you can take.

Changing the Rack Diagram (some devices only)

For some devices you can set up the rack diagram to represent the actual RPS layout. This includes showing multiple racks or cabinets.

See:

Changing an SM50 RPS Rack Diagram on page 52

Selecting/Editing an SM30 RPS Rack Diagram on page 53

Changing an SM50 RPS Rack Diagram

Not available on SM50s earlier than Version 3.

If required, you can set up the rack diagram to represent the actual RPS layout. This includes showing multiple racks.

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► **To change an RPS's rack diagram**

1 Select Rack Layout from the right-click menu.

The Rack Layout Properties form is then displayed.

2 Change the following field values as required and allowed (click a field name below for more details).

- Rectifier Size
- Magazine Width
- Number of Racks
- Number of Magazines in each Rack

3 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

Any changes will then be shown in the rack diagram/s for that RPS, but remain pending changes until they are confirmed (or rejected) by the Supervisory Module when it is next polled.

If the Supervisory Module rejects your changes, an error dialog will inform you of this. Click OK to close this error dialog. Your changes are ignored, and the rack diagram reverts to its previous layout.

Selecting/Editing an SM30 RPS Rack Diagram

Introduction

When PowerManagerII first connects to an SM30, it will upload any rack layout information stored in that SM30, and display a rack diagram based on that.

If the SM30 does not have a rack layout stored, PowerManagerII will display the Default layout. This shows up to four rows of graphics, each row having up to five rectifiers and an SM30, with the SM30 at the right, as indicated below.

mr1	mr2	mr3	mr4	mr5	m
s1r1	s1r2	s1r3	s1r4	s1r5	s1
s2r1	s2r2	s2r3	s2r4	s2r5	s2
s3r1	s3r2	s3r3	s3r4	s3r5	s3

(m = master, s =slave, r = rectifier)

If the Default layout is not correct, one of the Preset layouts will usually apply. If not, you can edit the displayed layout as required. See below.

Selecting a Preset Rack Layout (or the Default Layout)

► **To select a preset rack layout diagram (or the Default)**

On the System page, right-click anywhere on the Mini System Schematic, select Rack Layout and then select a numbered Preset Layout (or Default Layout) from the submenu.

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Editing the Rack Layout

In the rare situation where the SM30 has no layout stored and neither the Default layout nor any of the Preset layouts apply, you can edit the displayed layout as required.

You should not need to do this in most cases, because:

- PowerManagerII will automatically display the correct layout if one is stored in the SM30.
- If the SM30 does not its layout stored, PowerManagerII displays the Default (most common) layout.
- If the Default layout is not correct, one of PowerManagerII's Preset layouts will usually apply.

Provided PowerManagerII is communicating with an SM30-controlled Mini System, you can:

- Reposition rectifier and SM30 graphics in the rack layout diagram.
- Prevent the use of a specific slot in the diagram – for example, where a slot does not exist (the rack has fewer actual slots).

► To reposition a rectifier or SM30 graphic

1 On the System page, right-click anywhere on the Mini System Schematic, select Rack Layout and then select Edit Layout from the submenu.

The Edit Layout submenu item is checked when you are in Edit mode.

A full-size diagram is then displayed, showing all possible slots, including those unused (X) and disallowed (blank).

2 Drag a rectifier or SM30 graphic to a different position.

The two graphics then swap positions.

3 Exit from Edit Layout mode by repeating Step 1.

► To prevent the use of a specific slot

1 In Edit Layout mode, ensure that the slot you want to prevent use of is empty (see the procedure above).

2 Right-click on the relevant slot and select Slot Exist.

The slot is then shown as non-existent (blank).

► To re-allow the use of a "non-existent" slot

In Edit Layout mode, right-click on the relevant blank slot and select Slot Exist.

The slot is then marked X, indicating it is empty.

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► **To exit from Edit Layout mode**

On the System page, right-click anywhere on the Mini System Schematic, select Rack Layout and, in the submenu, select Edit Layout (which .

The Edit Layout submenu item is checked when you are in Edit mode.

Your edited layout will be displayed and downloaded to the SM30.

System Summary (SM50 only)

The System Summary is shown on the System tab for SM50-controlled RPSs only, and:

- Graphically summarizes the system values for the RPS
- Enables you to access related displays–for example:
  - Click on the Control Functions heading to view the Control Function Summary diagram.
  - Click on a specific Control Function name to view its own Control Function diagram.
  - Use the System view's right-click menu to go to other related displays.
- Indicates RPS alarms as Urgent (red) and/or Non-Urgent (yellow) colored indicators.
- Has **N/A** or **Unknown** values when no information has been received from the RPS
- Has no equivalent for other devices.

System Summary items

Percent/Total Power	Control Functions button (heading)
Load/Rectifier Current	Temperature Compensation status
Battery/Rectifier Temperature	Manual Equalize status
Bus Voltage	Periodic Equalize status
Mean DC/AC Rectifier Current	Fast Charge status
Battery Current	LVD status
Alarm Indicators	Battery Test status
System Schematic button	Battery Current Limit status

System Identification view

System Identification information from the selected device display is shown on the System tab. All items are read-only.

When no information has yet been received, ? values are shown. The information varies depending on the device.

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Control Processes View

Does not apply to CBCs and NSM35-controlled power systems.

The *Control Processes* diagram is shown on the System tab and:

- Gives a graphical representation of RPS Control Processes, showing their order of precedence, relationships, and present statuses.
- Enables you to access specific Control Process diagrams by clicking the relevant *Control Process* name (except SM60 and SM50 Active Voltage Control).
- Differs for each type of device
- Shows **?** or **Unknown** where no information has been received from the RPS

► To access the Control Processes diagram for an RPS

- In the Tree view, click the *Control Processes* item under the RPS.

  –or–

- If the System view's *System* tab is currently showing the RPS Schematic click the *Control Processes* button.

See also:

Control Process Diagrams on page 56

Control Process Diagrams

These apply to all devices except NSM35s and CBCs.

Each diagram is shown on the *System* tab, and graphically displays configurable settings (including Enabled/Disabled), present status, and system data values related to your selected Control Process and type of device.

► To access a specific Control Process diagram

- In the Tree view, click the required Control Process name under the RPS.

  –or–

- On the *System Schematic* diagram click a specific *Control Process* button.

For information about specific Control Processes refer to RPS Control Processes on page 99.

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IO Module Status View (Some devices only)

This System tab display shows the latest statuses of SiteSure IO Modules connected to the selected device.

Value	Meaning
OK	IO module is communicating
Comms lost	IO module is not communicating
Not available	IO module is not configured
?	No information has yet been received from the device.

You cannot change these statuses from PowerManagerII.

Click the System Schematic button to go to the System Schematic diagram for the RPS.

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Log Management view

The Log Management view is displayed on the *System* tab when you select *Log Management* in the Tree view.

You cannot change any of these settings unless you have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

This view displays the following items.

Item	Description
Local Data Log	Select this option to save the analog values uploaded during the data poll into the PowerManagerII data log. *Clear this option to disable this data logging.*
Remote Data Log	Select this option to enable automatic uploading of the device's Data Log (if available) and save it into the PowerManagerII data log. *Clear this option to disable this type of upload.*
Remote Event Logs	Select this option to enable automatic uploading of the device's Event Log (if available) and save it into the PowerManagerII data log. *Clear this option to disable this type of upload.*
Outstanding Records	Indicates the number of entries yet to be uploaded (when *Remote Event Log* or *Remote Data Log* is Enabled) (Read-only)

See also:

Log Management view (SM50 only) on page 58

Log Management view (CBC only) on page 60

Log Management view (SM50 only)

The SM50 Log Management view is displayed on the System tab when you select Log Management under an SM50 in the Tree view.

You cannot change any of these settings unless you have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

This view has the following tabs, each with the display items listed.

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Automatic Log tab

This tab displays the following items for:

- Automatic data logging by PowerManagerII, based on system data values received from the SM50
- Automatic uploading of the SM50's own internal log entries, using specific regular background polls (unlike manual uploading, this minimizes the effect on normal alarm and data polls over all devices)

Item	Description
Local Data Log	Select this option to enable normal data logging by PowerManagerII of analog values from this SM50.  *Clear this option to disable this automatic data logging.*
Remote Data Log	Select this option to enable automatic uploading of the SM50's own internal data log entries. Clear this option to disable this type of data logging. When this option is selected: • The *Outstanding Records* value indicates how many SM50 data log entries remain to be uploaded. • Click *Skip Records* to ignore any outstanding entries. On subsequent log polls, SM50 data log entries recorded before this point will not be uploaded.
Remote Event Log	Select this option to enable automatic uploading of the SM50's own internal event log.  *Clear this option to disable this type of event logging.* When this option is selected: • The *Outstanding Records* value indicates how many SM50 event log entries remain to be uploaded. • Click *Skip Records* to ignore any outstanding entries. On subsequent log polls, SM50 event log entries recorded before this point will not be uploaded.

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Manual Data Log and Manual Event Log tabs

These tabs display the following items for manually uploading the SM50's own internal data or event log entries respectively, using an immediate foreground poll.

Important: Unlike automatic uploading, manual uploading can significantly hold up normal alarm and data polls, over all devices. The greater the range of index numbers you upload, the greater this effect.

Item	Description
Upload log records from index number	Select the earliest SM50 data/event log number from which you want to manually upload. *The Log information panel shows the range of log numbers available.*
To index number	Select the latest SM50 data/event log number from which you want to manually upload.
Start button	Click to start uploading.
Cancel button	Click to cancel an upload in progress.
Log information	Read-only values showing the earliest and latest SM50 data/event log numbers available in the SM50, and a progress bar indicating how far you are through the upload

Log Management view (CBC only)

The CBC Log Management view is displayed on the *System* tab when you select *Log Management* under a CBC in the *Tree* view.

You cannot change any of these settings unless you have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

This view has the following tabs, each with the display items listed.

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Discharge Logs tab

This tab displays the following items for automatically uploading Discharge log entries from the CBC, when a new Discharge log is available following a full or partial discharge controlled by the CBC.

Item	Description
Upload full discharge information	Select this option to enable automatic uploading of new *Full Discharge* log entries for this CBC. *Clear this option to disable this type of upload.*
Upload partial discharge information	Select this option to enable automatic uploading of new *Partial Discharge* log entries for this CBC. *Clear this option to disable this type of upload.*

In each case, the read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

Float Logs tab

This tab displays the following items for automatically uploading Float log entries from the CBC, when a new Weekly or Yearly Float log is created at the CBC.

Item	Description
Upload weekly float log information	Select this option to enable automatic uploading of new weekly float log entries for this CBC. *Clear this option to disable this type of upload.*
Upload yearly float log information	Select this option to enable automatic uploading of new *Partial Discharge* log entries for this CBC. *Clear this option to disable this type of upload.*

In each case, the read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

Events tab

This tab displays the option for automatically uploading Event log entries from the CBC.

The read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

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Local Logging tab

This tab displays the Local data logging enabled option for the CBC.

Select this option to enable normal data logging by PowerManagerII of data received with log entries uploaded from this CBC.

Clear this option to disable this 'additional' data logging.

CBC System Schematic

A CBC System Schematic is shown on the System tab and:

- Is the highest-level display for a CBC, and is shown when you select the CBC name
- Shows the present battery system values at the top of the diagram
- On the *Schematic* tab:
  - Gives a graphical representation of each battery string, including the status of each battery bloc
  - Enables you to view more information for a bloc - rest the mouse pointer over a specific bloc graphic in the *Schematic* tab to display a popup panel containing brief details about that battery bloc
- On the *Table* tab, lists the battery values for each string.

See also:

CBC String Schematic Diagram on page 62

CBC Bloc Details view on page 63

CBC String Schematic Diagram

A CBC String Schematic diagram is shown on the System tab and:

- Is shown when you select a specific battery string under a CBC
- Shows the present string system values at the top of the diagram, followed by a graphical representation of the battery string indicating the status of each battery bloc
- On the *Chart* tab, shows a bar chart indicating individual bloc voltages
- On the *Table* tab, lists the battery values for each bloc and indicates any blocs with alarms
- On the *String Alarms* tab, lists the individual alarms for the string
- On the *Life Time Dates* tab, lists the measurement dates for Precise Capacity, Estimated Capacity, and State of Health for the string.

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CBC Bloc Details view

A CBC Bloc details view is shown on the System tab and:

- Is shown when you select a specific battery bloc under a CBC string
- Shows the present bloc system values at the top of the view
- Includes buttons you can use to go to the Details view for the previous or next bloc, or to the string as a whole
- On the Alarms tab, lists any alarms for the bloc
- On the Life Time Dates tab, lists the measurement dates for Precise Capacity, Estimated Capacity, and State of Health for the bloc.

Using the List tabs

This section summarizes the *System View* tabs that list specific information, in table format. Each of these 'list' tabs has only one type of display (a table), but you can select various display options in each case.

All tabs except the System *tab are list tabs.*

RPS List tab

The RPS List tab gives details of the currently selected devices, including device type, communications status and options, the time since alarms and data were last received (Age of Alarms and Age of Data columns), and the number of unacknowledged and acknowledged alarms.

- If you have selected a higher-level map item covering several RPSs and/or CBCs, all those devices are listed.
- If you have selected one RPS or CBC, only that device is listed.

In the RPS List tab display, you can:

- Enable or disable communications for an RPS or CBC, by right-clicking on that device in the list, and selecting Enable Comms or Disable Comms from the popup menu, as relevant.
- Optionally add, edit, or delete notes for selected devices - see Editing Notes in Lists on page 68.
- List devices in ascending or descending order of any column, by clicking on the column heading.

  By default, multiple devices will be listed in Tree view order. The column your list is ordered by, and its order, is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).
- Display all devices, or 'filtered' devices only - see Filtering List Data on page 69.
- Export details of displayed devices, or all devices - see Exporting List Data on page 75.

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Alarms tab

The *Alarms* tab lists all existing alarms for your currently selected RPS, CBC, or map location. If you have selected a higher-level map item covering several RPSs and/or CBCs, the alarms for all those devices are listed.

When each new alarm is received from a currently selected device, details of that alarm are added to the list.

In this context, 'existing' alarms include all active alarms and any inactive urgent alarms you have not yet acknowledged (for the selected device/s).

By default:

- A Critical/Major/Urgent alarm remains in the list until it is no longer active at the device and you acknowledge it.
- A Minor/Non-urgent alarm remains in the list only while it is active. Acknowledgement of non-urgent alarms is optional.

Icons by each *Alarms* tab entry indicate the alarm's present state, as follows.

Icon	Indicates...
	Acknowledged alarm
	Active Critical/Major/Urgent alarm
	Active Minor/Non-Urgent alarm
	Inactive Critical/Major/Urgent alarm
	Inactive Minor/Non-Urgent alarm

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In the *Alarms* tab display, you can:

- List alarms in ascending or descending order of any column, by clicking on the column heading.
- By default, entries are listed in ascending *Time* order, latest at the bottom. The column your list is ordered by, and its order is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).
- Acknowledge selected alarms, optionally adding a note. See Acknowledging Alarms on page 116.
- Clear certain 'latched' alarms. See Clearing 'Latched' Alarms on page 117.
- Display selected types of alarm, or all alarms - see Filtering List Data on page 69.
- Export details of displayed alarms, or all alarms - see Exporting List Data on page 75.
- Edit or delete notes for selected alarms - see Editing Notes in Lists on page 68.

Notes

- 'User Alarm' Digital inputs are included (some devices only)
- All alarm events (start, acknowledgement, end) for all RPSs are also recorded in the Event Log.
- Alarms for a specific rectifier at an SM50-controlled RPS are also listed in the Rectifier Detail window which is displayed when you double-click that rectifier graphic in the System Schematic diagram for that RPS.

Event Log tab

The Event Log tab lists all or selected RPS, CBC, and PowerManagerII 'events', including:

- PowerManagerII startups, shutdowns, user logons and logoffs
- RPS and CBC configuration changes
- RPS Control Function status changes (starting and stopping, etc)
- Alarm state changes

The Event Log shows event entries for your currently selected item:

- If an RPS is selected, details are shown for that RPS only.
- If a CBC is selected, details are shown for that CBC only.
- If a map is selected, details are shown for RPSs and CBCs in that map area.
- If a SiteManager node is selected, details are shown for RPSs and CBCs under that node.
- If the Home (top-level) item is selected, details are shown for all RPSs, CBCs, and SiteManager nodes, and for PowerManagerII system-level events.

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In the Event Log tab display, you can:

- List events in ascending or descending order of any column, by clicking on the column heading.

  By default, entries are listed in ascending Time order, latest at the top. The column your list is ordered by, and its order is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).
- Display all events or 'filtered' events only - see Filtering List Data on page 69.
- Display all events or a specific subset of events (within any filtered events) - see Displaying Log Subsets on page 72.
- Further restrict the display to a specified number of days or a date range - see Displaying Log Subsets on page 72.
- Export details of displayed events, or all events - see Exporting List Data on page 75.
- Optionally add, edit, or delete notes for selected event entries - see Editing Notes in Lists on page 68.

Event Log entries available for display also depend on any log purging (removal of old entries) that has occurred - see Log Purging and Statistics on page 143.

Data Log tab

The list is blank if no device is selected, or if your currently selected device has not yet communicated.

PowerManagerII creates Data Log entries each time it gets analog values from RPSs and CBC (except for an SM50 whose Local Data Logging option is not selected).

When RPS or CBC Data Log entries are uploaded (automatically or manually), those are also included in PowerManagerII's Data Log from the those devices.

The Data Log tab displays entries related to your currently selected RPS, CBC, or CBC String only. If a map, SiteManager node, or group is selected, no entries are displayed.

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In the Data Log tab display, you can:

- List entries in ascending or descending order of any column, by clicking on the column heading.

  By default, entries are listed in ascending Time order, latest at the bottom. The column your list is ordered by, and its order is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).

- Display all entries for your currently selected item, or 'filtered' entries only - see Filtering List Data on page 69.
- For a CBC or CBC String, display one specific subset of log entries at a time (in addition to any data filtering) - see Displaying Log Subsets on page 72.
- Further restrict the display to a specified number of days or a date range - see Displaying Log Subsets on page 72.
- Export details of displayed entries, or all entries - see Exporting List Data on page 75.
- Optionally add, edit, or delete notes for selected entries - see Editing Notes in Lists on page 68.

Data Log entries available for display also depend on:

- Any log purging (removal of old entries) that has occurred
- For an some devices, any automatic or manual uploading of their own internal logs

For more details, see Data and Event Log Management on page 131.

Pending Changes tab

This tab lists all changes to SiteManager group, RPS, or CBC configuration parameter values and Control Function settings made in PowerManagerII but not yet sent to the relevant RPSs or CBCs. Any applicable validation warnings are shown.

A pending change remains until you explicitly download it.

When a pending change is sent to a device, details of the change are then removed from the Pending Changes tab, but are recorded as an Event Log entry.

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In the Pending Changes tab display, you can:

- List entries in ascending or descending order of any column – by clicking on the column heading.

  The column your list is ordered by, and its order, are indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first). By default, entries are listed in ascending Date and Time order.

- Cancel selected pending change entries – by right-clicking and selecting *Clear* from the popup menu.
- Force a download of pending changes that have been rejected because the value has changed in the meantime – by right-clicking and selecting *Retry* from the popup menu.
- Download all pending changes to the relevant RPSs – by right-clicking and selecting *Download All* from the popup menu.
- When you start or stop a Control Function process, log off (or log on under another User ID), or exit PowerManagerII, you will first be prompted to download or delete any pending changes for the affected RPSs and CBCs.

You can also force an earlier one-off Alarm or Data poll of any RPS or CBC - see Forcing an Earlier Poll of an RPS or CBC on page 94.

Editing Notes in Lists

A note is user-defined text that is attached to any entry in the Alarms, Event Log, Data Log, or RPS List tab.

Any notes entered by any user are visible in the Notes column of the list on the relevant tab. You can sort, filter, and export the list on this column (as for any other column). While a note can have up to 10,000 characters, the Notes column shows only the first 50 characters or the first line of the note, whichever is smaller.

Notes can be included in exported list entries, except for the Alarms list. However, notes for alarm state changes are included in the Event Log.

You can add a new note, view its full text, edit it, or delete it (by selecting one or more entries in the relevant list, right-clicking, and selecting the appropriate option from the popup menu). You can also add a note to an alarm entry when you acknowledge the alarm (see Acknowledging Alarms on page 116), and to an RPS List item by using the Notes tab of the RPS Properties form for that RPS.

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► **To add, view, or edit a single note**

1 Do one of the following:

- In the relevant list, select the entry you want, right-click, and select Edit Note from the popup menu. The Edit Note dialog is then displayed.
- If you are acknowledging an alarm and want to add a note at the same time, select the alarm in the Alarms tab list, right-click, and select Acknowledge with note. The Edit Note dialog is then displayed.
- If the RPS Properties form is currently displayed and you want to add, view, or edit the note for that RPS, click the Notes tab.

2 On the Edit Note dialog (or Notes tab of the RPS Properties form), edit the note's text field as required.

3 Click OK to confirm the note text (or click Cancel to ignore any changes).

► **To view multiple separate notes, edit, and combine them into one common note**

1 Do one of the following:

- In the relevant list, select the entries you want, right-click, and select *Edit Note* from the popup menu.
- If you are acknowledging several alarms and want to add a note at the same time, select the alarms in the Alarms tab list, right-click, and select *Acknowledge with note*.

  The Edit Note dialog is then displayed. The original separate notes are separated by a dashed line.

2 Edit the note's text field as required.

  Once you click OK, your resulting combined note text will apply to all your selected entries, overwriting the original separate notes.

3 Click *OK* to confirm the same combined note text for all your selected entries (or click *Cancel* to ignore any changes).

► **To delete one or more notes**

1 In the relevant list, select the entries you want to delete, right-click, and select *Delete Note* from the popup menu.

  A confirmation dialog is then displayed.

2 Click *OK* to confirm the deletion (or click *Cancel* to cancel it).

Filtering List Data

In each list tab except Pending Changes, you can specify data filtering criteria that restrict which entries are displayed in that tab's list.

You can also:

- Apply a data filter when exporting list entries - see Exporting List Data on page 75.
- Select a subset of Event Log or Data Log entries to display (applied in addition to any display filtering) - see Displaying Log Subsets on page 72.

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For data filtering, you specify one or more conditions that must be satisfied to include an entry in the display. Each condition applies a required value or range of values to one data column.

Where more than one condition is specified, you can choose whether, for an entry to be displayed, all conditions must be satisfied (logical AND), or any condition (logical OR).

If a filtering condition is invalid for the data, it is ignored. For example, suppose you create a filter condition on the CBC Data Log tab of Estimated Capacity < 10. If you move to the SM60 Data Log tab, this criteria is ignored as there is no Estimated Capacity column.

Examples

Tab	Data Filtering Conditions	Data included
Alarms	Type = Rectifier AND Priority = Urgent AND Acknowledged = False	Urgent, unacknowledged Rectifier alarms
Data Log	Bus Voltage > 62 OR Capacity Remaining < 200	Entries with Bus Voltage over 62 V or Capacity Remaining below 200 Ah
Event Log	Event Type = Control Function	Control Function events
RPS List	Type NOT= E40 AND Comms Enabled = True	Non-E40 RPSs with Comms enabled

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Specifying and Using Filters

► **To create a data filter from scratch**

1. Select the relevant list tab in the System view (Alarms, Data Log, Event Log, or RPS List).
2. Right-click in the list, and select *Filter* from the popup menu.

   The Data Filter dialog is then displayed.
3. In the *Field* list box, select an item you want to filter by. These items correspond to the columns in the relevant tab display.
4. In the *Condition/Operator* list box, select a logical or arithmetic operator.
5. In the *Value* field, enter a specific value of the correct type for the data item, or edit the existing value.
6. Click *Add*. The condition then shows in the main list (labeled *Find* items that match these criteria:).
7. To add more conditions, repeat steps 3 through 6.
8. Where more than one condition is specified, select *And* or *Or*.
   - Where all conditions must be satisfied for an entry to be displayed, select *And*.
   - Where only any one condition (or more) must be satisfied for an entry to be displayed, select *Or*.
9. Click *OK* to activate your filter and close the *Data Filter* dialog (or click *Apply* to activate without closing the dialog).
   - If any conditions are invalid, an error dialog is displayed informing you of this. Click *OK* to close this error dialog. To correct the error, see the edit procedure below.
   - If your conditions are all valid, the filter is immediately applied and only filtered entries are displayed

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► **To edit an existing data filter**

1. Right-click in the relevant list tab, and select *Filter* from the popup menu.

   The *Data Filter* dialog is then displayed, listing the existing conditions.

2. Do one of the following.
   - To remove a condition, select it in the list and click *Remove*.
   - To clear all existing conditions, click *Remove All*.
   - To edit an existing condition, select it in the list, edit *Field, Condition/Operator*, and *Value*, as required, and click *Replace*.
   - To add a new condition, specify *Field, Condition/Operator*, and *Value,* as required, and click *Add*.
3. To add or remove more conditions, repeat step 2.
4. Where more than one condition is specified, ensure the *And* or *Or* setting is correct. Change it if necessary.
5. Click *OK* to activate your filter and close the *Data Filter* dialog (or click *Apply* to activate without closing the dialog).
   - If any conditions are invalid, an error dialog is displayed informing you of this. Click *OK* to close this error dialog. To correct the error, see the edit procedure below.
   - If your conditions are all valid, the filter is immediately applied and only filtered entries are displayed

► **To cancel display filtering**

Right-click in the relevant list tab, and select *Clear Filter* from the popup menu.

Data filtering is then cancelled. Your filter criteria are deleted.

Displaying Log Subsets

Data logs apply only when an RPS or CBC is currently selected.

In addition to any display filtering that may currently apply for a displayed log, you can also specify the following further display criteria.

In...	You can display log entries for...
Any Event or Data Log	A specified date range or the last n days only
Any Event Log	All events, or a specific subset of events
A CBC Data Log	One specific type of data at a time*

*You cannot display all CBC Data Log entries at once, as each subset shows different types of data.

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► To display the last n days only

1. Ensure the required *Log* tab is displayed for your selected item.
2. Right-click in the tab display, and select *Previous Days* from the popup menu.

   A *Properties* form with a *Dataset Restriction* tab is then displayed.
3. Select *Restrict* to previous days, and in the *Days* field, enter your number of days value (n).
4. Click *OK*.

The log display will then list only entries for the last n days, and the text Previous Days will be shown in the header.

► To display a specified date range only

1. Ensure the required *Log* tab is displayed for your selected item.
2. Right-click in the tab display, and select *Previous Days* from the popup menu.

   A *Properties* form with a *Dataset Restriction* tab is then displayed.
3. Select *Restrict between dates*, and in the *From* and *To* list boxes, select or enter the first and last dates, and the times within those dates.
4. Click *OK*.

The log display will then list only entries within those dates and times, and the date range will be shown in the header.

► To display entries for all dates

1. Ensure the required *Log* tab is displayed for your selected item.
2. Right-click in the tab display, and select *Previous Days* from the popup menu.

   A *Properties* form with a *Dataset Restriction* tab is then displayed.
3. Select *No Restriction*.

The log display will then list all entries (within any other display filtering criteria).

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► **To display all or selected Event Log entries**

1 Ensure the *Event Log* tab is displayed for your selected item.

2 Right-click in the tab display, and select one of the following from the popup menu.

Select...	To view...
All Events	All events, including alarms
System Events	Events other than the following
Alarms (All)	All alarm events only
System Alarms	System alarm events only
Rectifier Alarms	Rectifier alarms only
String and Bloc Alarms	CBC battery string and bloc alarms only
Config Changes	Changes to Configuration parameters
Control Functions	Control Function actions and status changes
Logged Channels	The Logged Channels dialog, which enables you to change the SiteManager group channels that are currently logged - see Logging SiteManager Group Channels on page 139

► **To display a specific CBC Data Log**

1 Ensure the *Data Log* tab is displayed for your selected CBC, CBC String, or CBC Bloc.

2 Right-click in the tab display, and select one of the following from the popup menu.

Select...	To view...
Analog Values	• CBC analog values reported to PowerManagerII • Any full and partial Discharge logs uploaded from the CBC • Any weekly and yearly Float logs uploaded from the CBC
Battery Life Time	Life Time values for the batteries, calculated over all strings(lists dates and times with Precise Capacity, Estimated Capacity, and State of Health values)
String Life Time	Life Time values for battery strings, calculated over all blocs in the string(lists string number, date and time, with Precise Capacity, Estimated Capacity, and State of Health values)
Bloc Life Time	Life Time values for battery blocs(lists string/bloc number, date and time, Precise Capacity, Estimated Capacity, and State of Health values)

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Exporting List Data

From each list tab except *Pending Changes*, you can 'export' (copy) entries to a text file. You can export either all available entries or filtered entries (see Filtering List Data on page 69).

In the *Event Log*, any event grouping selection is ignored when exporting.

► To export all available entries

1. Select the relevant list tab in the *System* view (*Alarms, Data Log, Event Log*, or *RPS List*).
2. Right-click in the list, and select *Export All Data* from the popup menu.

   A standard File dialog is then displayed.
3. Specify your file name, directory, and drive, and click *OK*.

► To export filtered entries only

1. In the relevant list tab display, right-click and select *Export Filtered Data* from the popup menu.

   A standard File dialog is then displayed.
2. Specify your file name, directory, and drive, and click *OK*.

Standard text file suffixes are supported – for example, .csv, and so on.

File Format

The text file outputs two heading lines followed by one line per list entry, in your present display order. Lines are separated by a standard paragraph marker (CR-LF). Fields are separated according to the file suffix you select – for example, .csv files are separated by commas (as required by Microsoft Excel).

The first heading line shows the type of list and the date (in your local system format) - for example:

Filtered Events 23/10/2004

The second heading line gives the field (column) names, as shown on your display - for example, for the *Event Log*:

Date Time Event Type User ID Rps Details Notes

Subsequent lines give entry details, in your current display order. An example of an *Event Log* entry for a *System Alarm* follows:

18/11/2004 09:45:20 System Alarm JDoe Sydney Active, 0, Urgent, AC Power Fail

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Edit Layout Mode

You cannot use Edit Layout mode unless you have Map Layout access rights. For more details, see Setting Access Rights for User IDs on page 12.

In some regions, background map graphics may be supplied to assist you. However, a regional network hierarchy is not mandatory – you can group RPSs any way you choose.

In *Edit Layout mode*, you can add, copy, move, delete, and change properties of the following items, except where noted in the table below.

Item Type	Notes and restrictions
All items	You can: • Move any item to a different position on its parent item's System view. • Change the text appearance of any item's name on its parent item's System view (font, text size, color). • Add, change, resize, or clear the icon in the System view for any item (except a text label). • Delete any item except the top-level (Home) map and any SiteManager group. CAUTION If you delete a map or SiteManager node, you will also be deleting all its subsidiary items. You cannot: • Move or rename any item (except a text label) so that duplicated item names occur within the same parent item. • Change the Tree view icon for any item.
Map	You can, for any map: • Add, change, or clear the *System* tab's background graphic. • Add, change, resize, or clear the icon in the *System* view. You cannot: • Copy, move, or delete the top-level (Home) map. • Add or move a map to any parent item except another map.
SiteManager node	You can, for any node: • Add or move it to another map parent item only. • Add, change, or clear the System tab's background graphic. • Change the display order of *Groups* in the *Tree* view.

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SiteManager group	You can: • Change the display order of *Channels* in a group's *System* view. You cannot: • Add a SiteManager group to any item (groups are automatically created by PowerManagerII when RPSs having SiteManager group channels first respond). • Rename a reserved SiteManager group. • Move a SiteManager group to a different parent item (groups are moved automatically when an RPS with SiteManager channels is moved). • Delete a SiteManager group (except by changing all its channel's group numbers to a different value).
RPS (any type)	You can, for any RPS: • Add or move it to a map or SiteManager node parent item only. • Change some communications-related properties in normal or Edit Layout Mode.
CBC	You can, for any CBC: • Add or move it to a map or SiteManager node parent item only. • Change some communications-related properties in normal or Edit Layout Mode.
Text Label	You can: • Duplicate the text anywhere in the hierarchy. You cannot, for any text label: • Move it to a different parent item. • Use an icon with it.

Entering and Leaving Edit Layout Mode

► **To enter Edit Layout Mode**

1. If you have multiple Browser windows open, close all except one of these windows.
2. Select *Edit Layout* from the *Browser* menu.
   - The Browser view banner (if showing) changes from grey to green.
   - If the Browser view is a sub-window, its title bar shows [editing].

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► **To exit Edit Layout Mode**

1 Select *Edit Layout* from the *Browser* menu.

You are then prompted to save your changes.

2 Choose one of the following:

- Click *Yes* to save your changes and exit Edit Layout Mode.
- Click *No* to reject your changes and exit Edit Layout Mode.
- Click *Cancel* to remain in Edit Layout Mode.

When you exit from Edit Layout Mode:

- If the Browser view is maximized, the banner (if showing) changes from green back to grey.
- If the Browser view is a sub-window, its title bar no longer shows [editing].

About the Edit Layout Mode Display

Things to note about the Edit Layout Mode display:

- If the Browser view is maximized, the banner (if displayed) changes from grey to green.
- If the Browser view is floating, the designation [editing] shows in that window's title bar.
- Most normal Browser display options apply, except that you cannot navigate in the System view by clicking on a map location or RPS location (*System* tab).
- The *System* tab right-click popup menu has the following additional items.

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Click...	To do this...
Open	Display the relevant map, SiteManager node, RPS or CBC Schematic diagram for an item (when you right-click on that item).
New	Display a submenu for selecting an item type you want to add.
Paste	Add a copy of the item currently in the Edit Layout Mode clipboard.
Copy	Copy the item you right-click on to the Edit Layout Mode clipboard.
Delete	Delete the item you right-click on.
Rename	Change the name of the item you right-click on.
Properties	Display the relevant Properties form for the item you right-click on (or for the parent item if you right-click in a vacant area).

Notes:

- For details of other items also shown in normal mode, see Common Right-click menu items on page 22.
- When you right-click *Properties* in *Edit Layout* mode, the *Properties* form includes extra tabs and items.

- The tree view right-click popup menu also has *Delete* and *Rename* added. These function as in the *System* tab (see the table above).
- New toolbar buttons are added, as follows.

Click...	To do this...
	Insert a new map location where you next click on the System view.
	Insert a new SiteManager node where you next click on the System view.
	Insert a new SC100, SC200, etc. device where you next click on the System view. See full list of device icons on page 21.
	Insert a new text label where you next click on the System view.
	Cancel the use of any of the above New item buttons (if selected).

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Adding New Items

Use this procedure to add a new item into the display hierarchy.

You can also create a new item by copying an existing item. Choose an item with properties similar to those you want for the new item.

Each type of item and the valid 'parent' or higher-level items to which it may be added are shown in the following table.

Item	May be added to (Parent item)...
Map	Higher-level map
SiteManager node	Any Map
RPS	Any Map or SiteManager node
CBC	Any Map or SiteManager node
Text Label	Any Map or SiteManager node

You cannot add a SiteManager group, as these are created by PowerManagerII when first communicating with RPSs that have configured SiteManager channels.

Before adding a new map, SiteManager node, RPS, or CBC, you should know:

- The required name in each case
- The required display hierarchy when more than one of these items are to be added
- The applicable SiteManager node (if any) for each RPS with SiteManager Group channels that you want to configure and view in PowerManagerII.

► To add a new item into the hierarchy

1. Ensure the System Browser is in Edit Layout Mode. See Entering and Leaving Editing Mode on page 77.
2. Ensure you have the correct 'parent' map or SiteManager node displayed on the *System* tab - that is, the one you want to add the new item to.
3. Do one of the following.
   - Click the button for the new item once (see table below). The button then appears pressed. In the System view, click where you want to place the map location (or, to cancel this function without creating a new item, click the same button again or click). The relevant button then returns to the raised position.

   –or–

   - Right-click where you want to place the map location, select *New* from the popup menu, then select the relevant Hotspot item from the submenu (see below).

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For all items except text labels, a default item name (see table below) and icon appear on the map and in the Tree view. For a text label, the default Text appears on the map only.

Item Type	Button	New submenu	Default name or text*
Map		Map Hotspot	Map Hotspotn
SiteManager node		SiteManager Hotspot	SiteManager Hotspotn
RPS (SC100, SC200, etc)		SC100, SC200, etc Hotspot	SC100, SC200, etc Hotspotn
Text Label		Text Label	Text

* In these default names, n represents a unique number for that type of item, on that map.

You will have difficulty seeing an item name or text label if its text color merges into the background. For all but a text label, you can check that the item is in the Tree view. Also, a pointing hand cursor shows when you position the mouse over the item in the System view. To change a location's text color and other properties, see Changing Item Properties on page 83.

Then:

1. Right-click on your item to display a popup menu (you can do this in either the *Tree* or *System* view).
2. Select *Rename* and edit the text within the box, changing the default text to a more meaningful value. Use a unique name for each item at the same level. To finish editing the text, press ENTER or click outside the text box.

What to do next

For any type of item (when in Edit Layout Mode):

- You can change its display and other properties.
- You can reposition it anywhere on the System view, by dragging it (you can also move some items to a different parent map or SiteManager node).

If you have added a new map, you can use the above procedure to add, to that map, any type of item (including more subsidiary maps).

If you have added a new SiteManager node, you can use the above procedure to add only RPSs, CBCs, and text labels to that node.

If you have added a new RPS or CBC, you can now set its Communications options and enable communications (in Normal or Edit Layout Mode).

When you add an RPS to a SiteManager node, any new SiteManager groups configured at that RPS are automatically added by PowerManagerII when communications to that RPS are first established.

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Copying an Existing Item

If you are setting up your display hierarchy and want to add several new items that have many similar properties, use the Copy and Paste function (instead of adding each new item and then having to repeat the same changes to properties each time).

You can copy any type of item and paste it any number of times, either elsewhere on the same parent item's System view, or to another parent item's System view, provided that your action is valid.

You cannot copy a SiteManager group, as these are created by PowerManagerII.

► To copy an existing item to the Edit Layout Mode clipboard

1. Ensure the System Browser is in Edit Layout Mode. See Entering and Leaving Editing Mode on page 77.
2. Display the item you want to copy in the System view (System tab) – for example, by selecting its parent item in the Tree view.

   Choose an item to copy that has many similar properties to the new item.
3. Right-click the item you want to copy, and select *Copy* from the popup menu.

► To paste an item from the Edit Layout Mode clipboard

1. If you want to copy to a different parent item to that currently selected, select that parent item in the Tree view.
2. In the System view, right-click where you want to locate the copied item, and select *Paste* from the popup menu.

   Paste is unavailable if the action would be invalid.

   For all items except text labels, the new cloned item's default name is Copy of xxxxx or Copy n of xxxxx (where xxxxx is the original item's name and n is a copy number of 2 or more). For a text label, the original text is copied exactly.
3. Right-click on your Copy of item to display a popup menu (you can do this in either the Tree or System view).
4. Select *Rename* and edit the text within the box, changing the default text to a more meaningful value. To finish editing the text, press ENTER or click outside the text box.
5. Change the item's other properties as necessary. See Changing Item Properties on page 83.

To continue copying the same item, repeat the procedure as required.

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Changing Item Properties

In *Edit Layout* mode, you can change the properties listed below for each type of item.

Type of item	Property	View/s property applies to
Highest-level (Home) map	Name	Tree and parent System view
	Background graphic	Map's own System view
Any other map	Name	Tree and parent System view
	Background graphic	Map's own System view
	Position	Parent map's System view
	Text appearance of name	Parent map's System view
	Icon for the map	Parent map's System view
	Icon size	Parent map's System view
Any RPS or CBC	Name	Tree and parent System view
	Position	Parent System view
	Text appearance of name	Parent System view
	Icon for the map	Parent System view
	Icon size	Parent System view
Text Label	Text value	Parent System view
	Position	Parent System view
	Text appearance of label	Parent System view
Any SiteManager node	Name	Tree and parent System view
	Background graphic	Map's own System view
	Position	Parent map's System view
	Text appearance of name	Parent map's System view
	Icon for the node	Parent map's System view
	Icon size	Parent map's System view
User-specified SiteManager group	Name	Relevant node's System view
	Position	Relevant node's System view
	Text appearance of name	Relevant node's System view
	Icon for the group	Relevant node's System view
	Icon size	Relevant node's System view
Reserved SiteManager group	Position	Relevant node's System view
	Text appearance of name	Relevant node's System view
	Icon for the group	Relevant node's System view
	Icon size	Relevant node's System view

Changing an Item's Name or Text Value

This procedure applies to map, SiteManager node, RPS, CBC, text label, and user-specified SiteManager group items.

Note:

- Group names apply globally – that is, over all SiteManager nodes and RPSs.
- You cannot change a reserved SiteManager group name.

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► **To change an item name (Method 1)**

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In the *System* tab, display the parent map or SiteManager node containing the item you want to change, and right-click that item (or, right-click on the item in the Tree view, if applicable).
3. In the *System* tab, right-click on the item (or, if applicable, right-click on the item in the Tree view).
4. Select *Rename* from the popup menu.
5. Edit the text within the box. For all items except text labels, you must specify a unique name.
6. Press ENTER or click outside the text box.

► **To change an item name (Method 2)**

Use this method when the Properties form is displayed for the item you want.

In the Properties form for the item, edit the text in the *Name* field.

You must specify a unique name for each map, RPS, and CBC.

The new name will apply from when you click *Apply* or *OK* on the *Properties* form.

Changing an Item's Text Appearance

'Text appearance' refers to item text in the System view only.

This procedure applies to all types of item (map, SiteManager node, RPS, CBC, text label, or SiteManager group).

► **To change an item's text appearance (font, color, and so on)**

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In the *System* tab, display the parent map or SiteManager node containing the item you want to change, and right-click that item (or, if applicable, right-click on the item in the Tree view).
3. In the popup menu, select *Properties*.
4. On the *Hot Spot* or *Map Label* tab, use the *Background color* list box to select a new background color for the text.
5. Click *Select Font* to display a standard Font dialog, where you can select different fonts, styles, sizes, and so on.
6. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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Changing a Background Graphic

This procedure applies to maps and SiteManager nodes only.

Often, your background graphic will be an underlying map diagram of the area concerned (in some cases, map graphics may be available – contact your local Eaton DC product distributor).

► To change an item's background graphic

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. Do one of the following.
   - In the *Tree* view, right-click the item.

   –or–

   - In the *System* tab, display the item and right-click in a vacant area.

   –or–

   - In the *System* tab, display the map containing the item (its parent map) and right-click on that item name.

   In all cases, a popup menu then appears.
3. Select *Properties*.
4. Do one of the following.
   - If you want to remove the background graphic and leave it blank, click *Clear*. Go to Step 8.

   –or–

   - If you want to replace the background graphic with a new one, click *Load*. An *Open* dialog is then displayed. Continue at Step 6.
5. Specify the file containing the background graphic you want. You must specify a .bmp, .emf, or .wmf file. When you specify a valid graphics file, a preview of its contents are shown.

   In some regions, background graphics for your region may be supplied by Eaton.
6. Click *Open*. You are returned to the *Properties* form, and your new background graphic is shown.
7. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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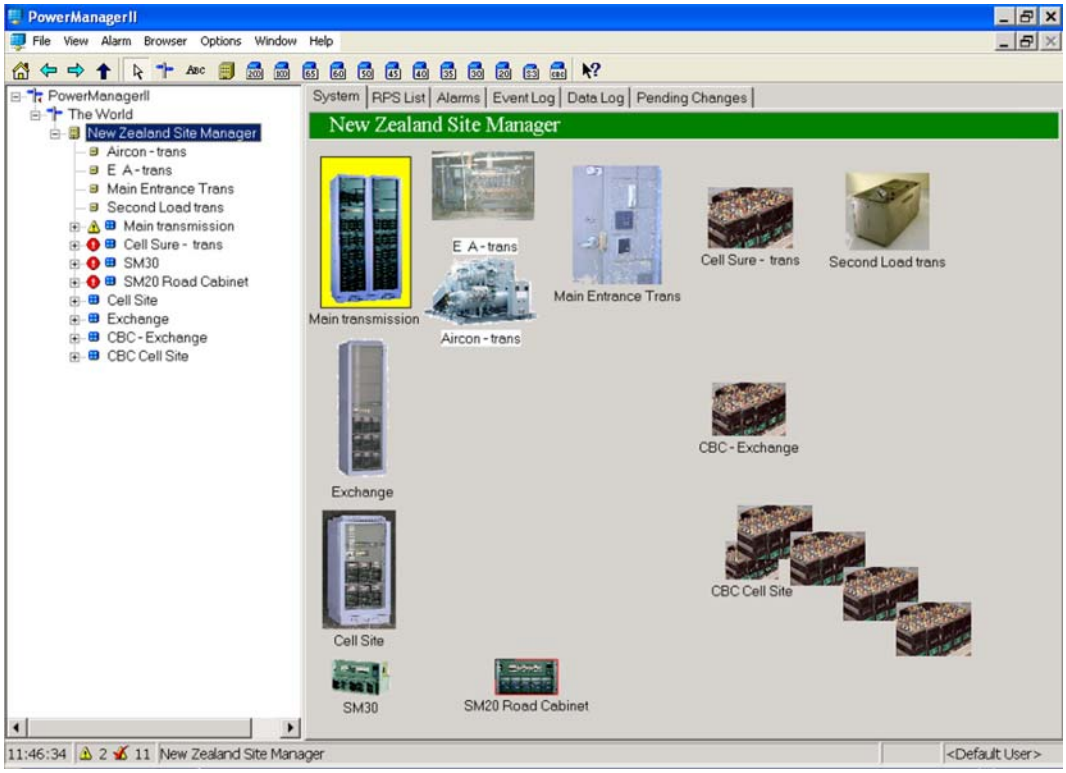
Adding, Changing, or Deleting an Item Icon

This procedure applies to the optional icons indicating map, SiteManager node, RPS, CBC, and SiteManager group items in the System view only. Tree view icons cannot be changed.

Text labels have no associated icon.

For example, use this procedure to display a photograph of a dc power system as its icon.



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► **To add, change ,or delete an item icon, or change the icon size**

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In the *System* tab, display the parent map or SiteManager node containing the item you want, and right-click that item (or, if applicable, right-click on the item in the Tree view).
3. In the popup menu, select *Properties*.
4. The *Properties* form is then displayed, showing the existing icon, if any, at its original size.
5. On the *Hot Spot* tab:
   - To add or change an icon, click *Load*, then specify the .bmp, .emf, .ico, or .wmf file containing the icon you want. Click *Open* to return to the *Properties* form, where your new icon will be shown.
   - To delete an existing icon, click *Clear*.
   - To use the default icon (if any), click *Default*.

     A SiteManager group does not have a default icon.
   - To change the icon's size, enter a suitable value in the *Scaling Factor* field, where 1.0 is the original size, 2.0 is twice the size, and so on.
6. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

Moving Items

You can move any item to another position within its parent item's *System* view.

You can also move the following items to a different parent item's *System* view (providing the move is valid).

- Any map except the top-level (Home) map may be moved to another parent map. All its subsidiary items will move with it.
- Any SiteManager node may be moved to another parent map. All its subsidiary items will move with it.
- Any RPS or CBC may be moved to another parent map or SiteManager node.

You cannot move a text label or SiteManager group to another parent item.

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Moving an Item within the Same System View

This procedure applies to any type of item's position on its parent item's *System* view.

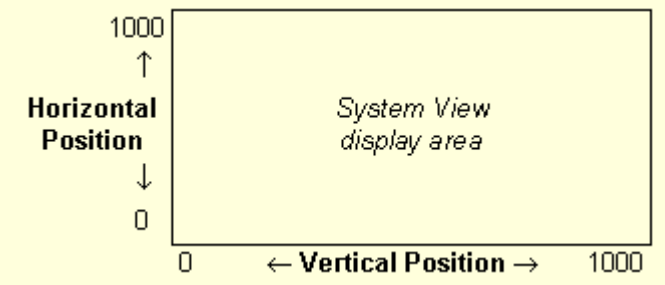
► To move an item (Method 1)

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In the *System* tab, display the parent item for the item you want to move.
3. Drag the item to its new position.

► To move an item (Method 2)

In the *Properties* form for the item, change the values in the *Horizontal Position* and *Vertical Position* fields, as required. The *Position* values range from zero to 1000, with (0, 0) at bottom left, (1000, 1000) at top right, as shown below.

The new position will apply from when you click *OK* or *Apply* on the *Properties* form.



Moving an Item to another System View

You can move the following items to a different parent item's *System* view (providing the move is valid).

- Any map except the top-level (Home) map may be moved to another parent map. All its subsidiary items will move with it.
- Any SiteManager node may be moved to another parent map. All its subsidiary items will move with it.
- Any RPS or CBC item may be moved to another parent map or SiteManager node.

You cannot move a text label or SiteManager group to another parent item.

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► **To move an item to a new parent item's System view**

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In the *Tree* view, select the item you want to move.
3. Drag your selected item to its new parent item in the *Tree* view. This may be:
   - Above another item - the moved item will go above that item in the tree, at the same level.
   - Below another item - the moved item will go below that item in the tree, at the same level.
   - On top of another item - the moved item will become a child of that item.

   When you pause over a closed branch item for more than a second, that branch will open. PowerManagerII will only allow you to move an item to a valid parent item.
4. Drop the item. It will then appear in its new position in the *Tree* view.

   Its position on the new parent item's *System* view will be the same as it was for the old parent item.
   - To change the item's position, see Moving an Item within the Same System View on page 88.
   - To change other properties for the item, see Changing Item Properties on page 83.

Deleting an Item

This procedure applies to all item types except the top-level (Home) map and SiteManager groups.

The Home map is always required, and SiteManager groups are automatically maintained by PowerManagerII after establishing communications with the relevant RPSs.

If you delete a map or SiteManager node, you will also be deleting all its subsidiary items.

► **To delete an item**

1. Ensure the System Browser is in *Edit Layout* mode. See Entering and Leaving Editing Mode on page 77.
2. In either the *Tree* view or *System* tab, display the item you want to delete, and right-click it. A popup menu then appears.
3. Select *Delete*. You are then prompted to confirm the deletion.
4. If you are sure you want to delete the item and all its subsidiary items (if applicable), click *Yes* to confirm.

That item (and all its subsidiary items, if applicable) are then deleted.

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Introduction

PowerManagerII can be used with any combinations of RPS types and CBCs. Individual devices may be connected to your PC or network using different communications setups. For more details, see Communications Setup on page 151.

To use these functions, you must have access rights for *RPS Control Processes* and/or *RPS Configuration Changes* - see Setting Access Rights for User IDs on page 12.

If a device requires a password, you must also enter that password (once) on the Properties form (Password tab) before you can send Control Function commands or change any configuration parameters. See details on page 92.

Enabling and Disabling Communications

When you start PowerManagerII, it will attempt to establish communications with RPSs and CBCs, depending on:

- Your communications configuration and connections
- Whether all communications are enabled or disabled generally – see Configuring PowerManagerII Communications on page 153
- Whether communications to individual RPSs and CBCs are enabled or disabled

This section covers how to enable or disable PowerManagerII communications for all or individual RPSs and CBCs. You must have Communications access rights to use these functions. For more details, see Setting Access Rights for User IDs on page 12.

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► **To enable or disable communications with all enabled RPSs and CBCs**

1 From the *Options* menu, select *Communications*.

The *Communication Options* dialog is then displayed.

2 In the *Communications* list box, select *Active* (to enable) or *Suspended* (to disable), as relevant.

3 Click OK.

The Tree view icons for all RPSs and CBCs then change, where:

 Indicates that communications is enabled.

 Indicates that communications is disabled or suspended at present.

► **To enable or disable communications with one RPS or CBC**

Right-click on an RPS or CBC item in a Tee view or System view, and select *Enable Comms* or *Disable Comms*, as relevant.

The Tree view icon for only that RPS or CBC then changes, as shown above.

These menu options are available depending on the current communications status and when you right-click the following.

- An RPS or CBC location in the Tree view, or any of its subsidiary items
- An RPS or CBC location in a map
- Anywhere in an RPS or CBC diagram on the System tab
- An RPS or CBC entry on the RPS List tab

An alternative method is to set the *Comms Enabled* option on the RPS or CBC Properties form to *True* or *False*, as relevant. To access this form, select *Properties* from the right-click menu for any RPS or CBC item or RPS System view. For more details, see Specifying Communications Options for a Device on page 168.

Device Password

If a device has a password set, then no changes can be made to the device's control processes or configuration settings until the password is entered.

► **To enter the password**

- Right-click on the device in the Tree view.
- Select the Password tab.
- Enter the password. This not validated.

The password (Write Access Password) can only be set, changed or cleared via DCTools (see details on page 5) or the Web View (see details on page 51, some devices only).

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Editing Configuration Parameters

You cannot change any configuration values if:

- You are in Edit Layout mode. See Entering and Leaving Editing Mode on page 77.
- No Data polls have yet been made to the relevant device. See How Polling Works on page 177.
- You do not have RPS Configuration Changes access rights. See Setting Access Rights for User IDs on page 12.

► To change a parameter setting in an RPS or CBC

1 Click in the field whose value you want to change. That field is given the focus and shows a cursor.

See examples of Data Fields on page 26.

2 For a simple field, edit the field as required to enter your new value.

For a list box, either click the ▾ button to display the drop-down list of valid values, then click to select your new value from the list; or edit the field directly.

3 Press ENTER to change focus. This tells PowerManagerII you have finished editing.

- If your new value fails validation by PowerManagerII, it is displayed in red and an error message appears in the *Pending Changes* tab. Try again from Step 2.
- If your new value passes validation by PowerManagerII, it is displayed in green (and the change is listed on the *Pending Changes* tab).
- If the previous value changes at the RPS or CBC in the meantime, it is displayed in blue. On the *Pending Changes* tab, right-click and select *Retry* to revalidate.

4 On the *Pending Changes* tab, right-click and select *Download All*.

- If your new value passes validation by the relevant device, the display reverts to black, and the change is recorded in the Event Log.
- If your new value fails validation by the relevant device, it is displayed in red (and the change remains on the *Pending Changes* tab).
- If the download fails because the device has a password, set the password and download again.

  Set the password (once) on the Properties form (Password tab).

- If the communications link fails, your change remains pending until you clear it or until a subsequent download succeeds.

While a pending value is displayed, you can see the previous value by resting the mouse pointer over the field. For more details, see Pending Changes Tab on page 67.

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Forcing an Earlier Poll of an RPS or CBC

When communicating with more than one RPS or CBC, PowerManagerII polls each device in turn, sending it any commands and configuration changes, and (by default) requesting it to send back any alarms, and, if alarm states have changed, relevant analog data, statuses, and so on.

If the Regular Data Polling option is selected, PowerManagerII will also make regular (but less frequent) background polls for all data.

For further information see How Polling Works on page 177.

The ages of the most recent alarms and data received from each RPS are displayed in the RPS List tab.

If you require more recent information data for a specific RPS or CBC, you can initiate an earlier, one-off alarm or data poll for that device. You must have Communications access rights to do this - for more details, see Setting Access Rights for User IDs on page 12.

A Poll can also be initiated by an SNMP trap from a device. See SNMP Trap Directed Polling (some devices only) on page 94.

► To force an Alarm poll of an RPS or CBC

Right-click on an RPS or CBC item or in an RPS System view, and select *Refresh Alarms*.

The next poll will be an Alarm poll to the selected device.

► To force a Data poll of an RPS or CBC as soon as possible

Right-click on an RPS or CBC item or in an RPS System view, and select *Refresh Data*.

SNMP Trap Directed Polling (some devices only)

This feature allows operators using Ethernet TCP/IP connectivity and static IP addressing to set a device to "push" alarm notifications as a substitute for the PowerManagerII 'pull" or polling model.

The sequence of events are as follows:

1. On an alarm condition, the device sends a trap to PowerManagerII
2. PowerManagerII recognizes this trap as a request from the device to be polled immediately and polls the device
3. PowerManagerII uploads all data and events from the device and displays this is real time.

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► **To set up Trap Directed Polling**

1. Obtain the static IP address used by the PC running PowerManagerII. Get this from the Network option in Control Panel if you have access to the PC.
2. Connect *DCTools* (see details on page 5) to the device and configure an SNMP trap for *All alarms*.
3. Use the IP Address obtained in step 1. Configure the trap mode to *Acknowledged Summary Trap*.
4. Configure the *Level* of alarm(s) to trigger the trap (All Alarms and Warnings, Minor and Above, Major and Above, Critical only).

RPS Alarm Configuration / Settings

For all devices, alarm configuration is available through *DCTools*. See details on page 5.

Alarm Configurations include alarm threshold values, urgency level (Critical, Major/Urgent, Minor/Non-Urgent or Warning), and other parameters that differ for each type of device.

For some devices only, alarm configuration is available through PowerManagerII:

- Use the *Alarm Settings* function to view and configure alarms at an RPS controlled by an SM40/SM60. See details on page 95.
- Use the *Alarm Configuration* function to view and configure alarms at an RPS controlled by:
  - SM20/SM30 - see details on page 96.
  - SM50 - see details on page 97.
  - E40 - see details on page 98.

For management of RPS or CBC alarms once they have been received by PowerManagerII, see Alarm Management on page 109.

SM40/SM60 Alarm Settings

Click on the *Alarm Settings* tree item to view and optionally edit the following alarm threshold settings at an SM40 or SM60-controlled RPS.

Low Float Alarm (V)	Float voltage level below which a Low Float alarm triggers
Low Load Alarm (V)	Load voltage level below which a Low Load alarm triggers
High Float Alarm (V)	Float voltage level above which a High Float alarm triggers
High Load Alarm (V)	Load voltage level above which a High Load alarm triggers

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SM20/SM30 Alarm Configuration

Click on the SM20/SM30 *Alarm Configuration* tree item to view and optionally edit alarm configuration parameters at an RPS.

The Alarms tab also lists active alarms.

About the Display

The Alarm Configuration table lists the following:

Column	Description
Alarm Name	Preset name of each system alarm. You cannot change these values from PowerManagerII.
Threshold	Threshold level for High or Low system alarms, as relevant. You can change these values.
Led State	Preset urgency level of each system alarm – Urgent, Non-urgent, or None (neither). You cannot change these values from PowerManagerII.
Relay Mapping	Output relay mapped to each system alarm – any one relay, or none. You can change these values. Note: • To map Digital Inputs to alarms and output relays, use the Digital Inputs function. • To view and change relay active states, use the Relays function.

Indicators by each alarm name indicate whether the alarm is active at present or not.

Alarm is active

Alarm is inactive, or the Mini System is not communicating.

Editing Alarm Configuration parameters

► **To change an alarm Threshold**

Edit the required Threshold field value for the alarm you want to change.

► **To change an alarm's output relay mapping**

In the Relay Mapping field for the alarm you want to change, select a specific relay (or none).

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SM50 Alarm Configuration

Overview

Click on the SM50 *Alarm Configuration* tree item to view and optionally edit alarm configuration parameters at an RPS.

The Alarms tab also lists active alarms.

Alarm Reporting tab

The Alarm Reporting tab lists the following.

Column	Description
Name	Preset name of each system alarm. You cannot change these values from PowerManagerII.
Urgency	Preset urgency level of each system alarm – Urgent, Non-urgent, or None (neither). You cannot change these values from PowerManagerII.
Report	Indication of whether or not the SM50 will send an SNMP Trap or dial-up modem message when the alarm becomes active. You can change these values.

Analog State Thresholds tab

The Analog State Thresholds tab lists the following.

Column	Description
Alpha Label	Preset name of each system alarm. You cannot change these values from PowerManagerII.
Threshold	Threshold level for High or Low system alarms, as relevant. You can change these values.

Enabling and Disabling Alarm Reporting

► **To enable or disable alarm reporting from the SM50**

On the Alarm Reporting tab, select the relevant Report option for the alarm.

Editing Alarm Configuration parameters

► **To change an alarm Threshold**

On the Analog State Thresholds tab, edit the Threshold field value as required for the alarm you want to change.

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E40 Alarm Configuration

Click on the E40 *Alarm Configuration* tree item to view and optionally edit alarm configuration parameters at an RPS.

The Alarms tab also lists active alarms.

About the Display

The Alarm Configuration table lists the following parameters.

Column	Description	
Alarm Name	Preset name of each system alarm. You cannot change these values from PowerManagerII.	
Threshold	Threshold level for High or Low system alarms, as relevant. You can change these values.	
Fitted	Indication whether an alarm is currently fitted for use at the E40 – Yes or No.	
Urgency	Preset urgency level of each system alarm – Urgent, Non-urgent, or None (neither). You cannot change these values from PowerManagerII.	
Latched	Latching method:	
	Latched	An alarm is cleared at the E40 when the alarm condition no longer applies and the alarm has been explicitly acknowledged.
	Unlatched	An alarm is automatically cleared at the E40 when the alarm condition no longer applies, whether the alarm has been explicitly acknowledged or not.

Indicators by each alarm name indicate whether the alarm is active at present or not.

Alarm is active

Alarm is inactive, or the System is not communicating.

The Reset Alarms button enables you to return all of the E40's alarm configuration parameters to their defaults.

Enabling and Disabling Alarms

► To enable or disable an alarm at the E40

In the Fitted field for the alarm you want to change, select Yes or No as required.

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Editing Alarm Configuration parameters

► **To change an alarm Threshold**

Edit the required Threshold field value for the alarm you want to change.

► **To latch or unlatch an alarm at the E40**

In the Latched field for the alarm you want to change, select Latched or Unlatched as required.

► **To return all Alarm Configuration parameters to their defaults**

Click the Reset Alarms button.

RPS Control Processes

This section contains brief background information about RPS control processes, dc power system protection and monitoring functions.

Not all control processes are available with all RPSs. For more detailed information refer to the Operation Handbook supplied with the device.

Voltage Control Processes

This section has brief information about the following control processes:

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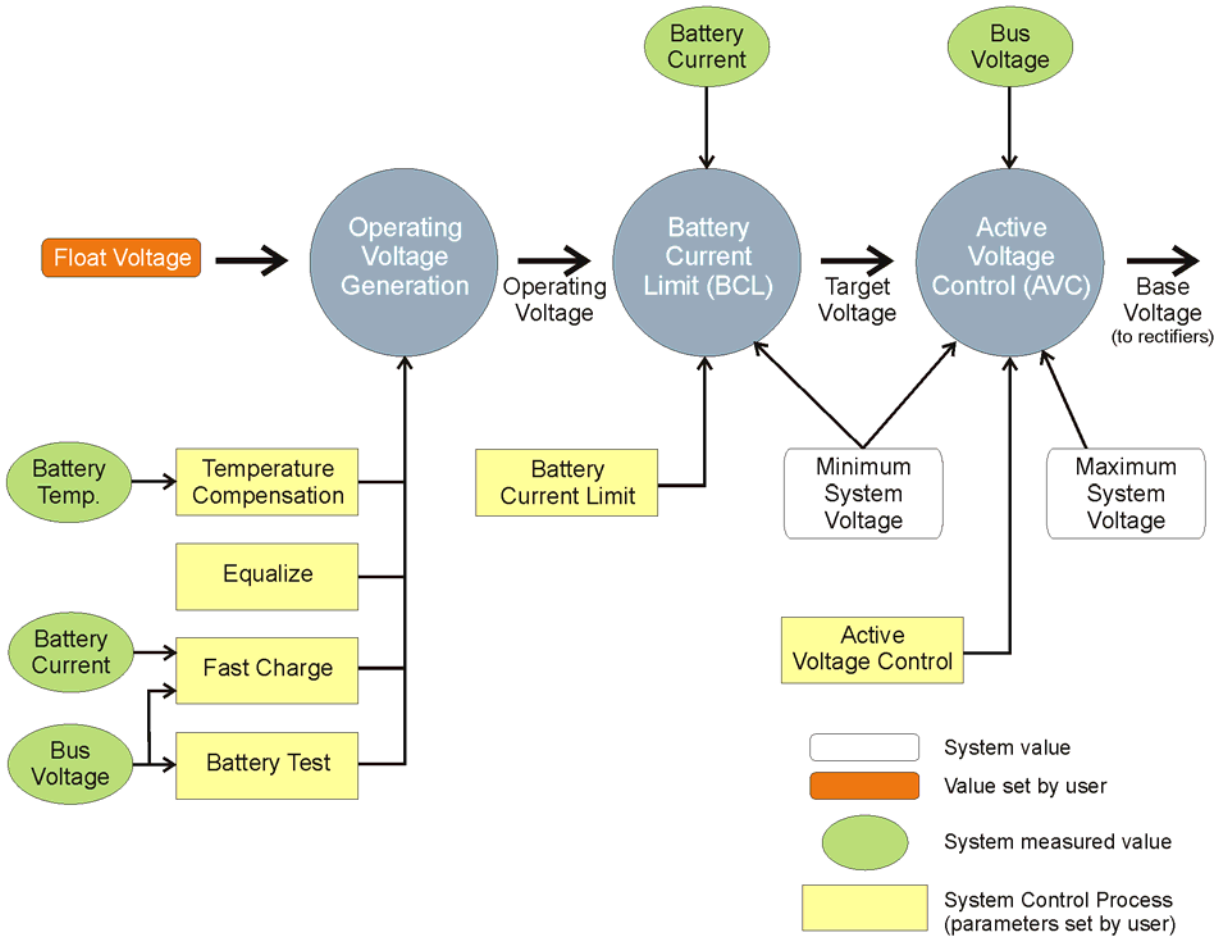
The output voltage of the rectifiers is controlled by a number of system functions. The following diagram shows the various system control processes, measured values and operating values that determine the rectifier output voltage.

If ac fails then any active Control Process stops. No Control Process can start until the ac supply is restored.



Active Voltage Control

Active Voltage Control (AVC) maintains a constant float voltage under varying load current.

The system controller monitors the bus voltage and adjusts the rectifier output voltage to compensate for any voltage drop. This function will prevent undercharging of the batteries during high load demand when excess voltage drop may reduce the battery voltage.

If the batteries are located some distance from the rectifiers then the bus voltage sensor can be located at the batteries (remotely from the power system). AVC will then compensate for voltage drop in the battery cables/bus.

Active Voltage Control does not function during a Battery Test or if the battery current is negative (battery discharging).

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Battery Current Limit

Battery Current Limit (BCL) automatically limits the battery charge current within a configured range (a percentage of the C10 rating of the battery) by varying the system voltage.

This control process is used to:

- Prevent overcharging of the batteries in under-loaded systems
- Minimize gas release in VRLA batteries

A related control process is BCL Engine Run Limit. This limits the battery charge current to a preset value, when the power system is powered by a standby engine/alternator during an extended ac supply failure. A smaller engine/alternator set can therefore be used without excessively pulling down the alternator voltage.

If BCL Engine Run Limit is enabled, then the battery current limit function will use the Engine Run Limit as the charge parameter rather than Battery Current Limit.

Battery Test

Battery Test is an automatic preventative maintenance tool that monitors a battery's discharge capabilities to ensure that the condition of the battery has not deteriorated over time. An initial battery test must be performed during installation to characterize the battery strings.

During a Battery Test the system controller temporarily reduces the output voltage of the rectifiers just below the bus voltage for a set duration. The battery then supplies power to the load.

If the battery voltage remains above a predetermined level for the duration of the test then the battery has passed the test. Otherwise a Battery Test Fail alarm is activated.

Battery Tests can be started manually or set to start at scheduled intervals.

Equalize

Equalize automatically charges batteries at a higher voltage. For VRLA cells this overcomes a self-discharge characteristic. For flooded cells it ensures that all cell voltages are the same, that electrolyte is distributed evenly and that sulfate crystal buildup on the plates is reduced.

Equalize can be started manually or set to start at scheduled intervals.

Battery manufacturers recommend that batteries be equalized periodically. Refer to the battery manufacturer's instructions before using Equalize.

Fast Charge

When Fast Charge is enabled the system controller automatically increases the float voltage of the power system after an ac supply failure to recharge the batteries as quickly as possible.

This function is particularly useful if the site experiences frequent ac supply failures.

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Temperature Compensation

As the ambient temperature of a battery drops (or rises) the voltage required to maintain full charge increases (or decreases).

When temperature compensation is enabled the system controller automatically adjusts the float voltage according to the ambient temperature of the battery, to maintain full battery charge. The adjustment is typically -4mV/°C/cell.

Temperature compensation is essential for optimum battery life and battery capacity at sites where the battery temperature will vary.

Temperature compensation does NOT function during a Battery Test or for ambient battery temperatures below 0ºC or above 50ºC.

System Control Processes

This section has brief information about the following control processes:

Current Share

Current Share ensures that the total output power of the power system is evenly shared between all rectifiers.

The system controller measures each rectifier's contribution to the total load current. It then controls individual rectifier output current by making minor voltage output adjustments to each rectifier.

Load-based Rectifier Shutdown

When Load-based Rectifier Shutdown (LBRS) is enabled the system controller automatically shuts down rectifiers when the total load current is significantly less than the total rectifier capacity.

This raises the average load on the remaining rectifiers which will then operate at a higher efficiency. This results in a decrease in total power consumption.

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Low Voltage Disconnect (LVD)

Low Voltage Disconnects (LVD) can be connected either as load or battery disconnect and have two purposes:

- to protect a VRLA battery from deep discharge and premature failure, and/or
- to reduce the load on a battery under discharge so that high priority equipment operates for a longer time after an ac supply failure.

Powerware system controllers have two independent LVD control channels (LVD1 and LVD2). Both the LVD disconnect and reconnect voltages, and time delay are configurable.

In normal LVD applications (Slave Mode disabled) LVD1 always disconnects before LVD2. If Slave Mode is enabled, LVD2 will mirror the operation of LVD1.

An additional feature available with some Powerware system controllers is AC Timer Mode: When AC Timer is enabled, the LVD will disconnect either after the AC Timer Disconnect Delay, or the bus voltage drops to the Disconnect Voltage, whichever happens first. Both LVD1 and LVD2 can be set to AC Timer mode if required.

Relay Test

The Relay Test Function simulates an alarm at the system controller by changing the state of a relay between active and inactive. It is used to test reception of alarms at a remote location.

System Protection

This section has brief information about the following aspects of dc power system protection:

- AC Supply Failure on page **103**
- Rectifier Failure on page **104**
- Over Temperature on page **105**
- Over Voltage on page **105**

AC Supply Failure

The principal purpose of a dc power system is to safeguard supply to the load equipment during an ac supply failure.

Normal system operation

During normal operation, when the ac supply is connected, the rectifiers supply the load current via the load distribution (MCBs or fuses) and float charge the batteries. Float charging provides sufficient charge current to the batteries to counter their self-discharge characteristic.

Operation during ac supply failure

During an ac supply failure the rectifiers turn off and the batteries supply power to the load without interruption. No switching is involved in the transition from ac supply to battery standby as the batteries are permanently connected to the load.

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Operation after ac restoration

When the ac supply is restored the rectifiers automatically restart and take over supply of power to the load without switching or interruption. The rectifiers will also start to re-charge the batteries.

During battery charging, the rectifiers will initially deliver full current (unless battery charge current limit is employed). The rectifiers will supply the load current and the batteries will take any remaining current available from the rectifiers.

When the batteries are fully recharged the system returns to normal operation mode.

LVD operation

If the duration of an ac supply failure is longer than the designed run-time of the batteries the Low Voltage Disconnect (LVD) will operate automatically. This disconnects the battery from the load and prevents further discharge. This is designed to prevent over-discharge of the batteries which may prevent recharge by the rectifiers and can cause permanent damage to the batteries.

When ac supply is restored the LVD will automatically re-connect the batteries.

Rectifier Failure

If a rectifier module fails the current share function (see details on page 102) ensures that the remaining rectifiers increase their output current to compensate.

The system controller detects the failure and raises a Rectifier Fail alarm.

Fail-safe Operating Mode

If a rectifier's microprocessor software fails, the watchdog timer in the microprocessor times out and resets the microprocessor. This changes the rectifier to the fail-safe operating mode.

Output Voltage

When the rectifier is operating in the fail-safe operating mode, the hardware default voltage sets the output voltage.

Output Current Limit

When the rectifier is operating in the fail-safe operating mode, the default maximum current limit applies. There is no thermal turndown. However, the primary side over temperature shutdown provides the safety limit.

Output Load Sharing

There is no active output load sharing during fail-safe operation. Load sharing as defined by the hardware still operates.

Over-voltage Shut-down

The default voltage and delay determined by the hardware applies.

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Over Temperature

If a rectifier detects an over temperature condition its output current is reduced automatically and an alarm is initiated by the system controller. The batteries supply additional current.

Over Voltage

If a rectifiers senses that its output voltage is above the preset over-voltage shutdown limit then the rectifier is shut down.

A Slope Discrimination Method is used to reduce the over-voltage shutdown limit with increasing load.

If a rectifier shuts down the current share function (see details on page **102**) ensures that the remaining rectifiers increase their output current to compensate.

The system controller detects the shutdown and raises a Rectifier Fail alarm.

Monitoring Functions

This section has brief information about the following dc power system monitoring functions:

- Alarms on page **106**
- Inputs and Outputs (I/O) on page **107**
- Data Logging on page **107**

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Alarms

The system controller will generate an alarm when particular pre-configured conditions are met.

Alarm indications

Alarms can be indicated in a number of ways to suit the network alarm and response system.

Indication	Availability
Alarm LED on the system controller	All systems.
Alarm LED on the rectifier	All systems. For rectifier alarms only.
Alarm status message on the system controller LCD display	All systems with LCD display fitted.
Operation of an output relay	All systems. Relay must be mapped to alarm.
SNMP trap	Some system controllers only. Requires Ethernet connection.
SMS text message	Some system controllers only. Requires GSM modem.
Alarm status message displayed by DCTools or PowerManagerII software	All systems. Requires external network connection.

Alarm types

Type	Triggered by
System alarms and Rectifier alarms	System and rectifier fault conditions.
Analog based alarms	Voltage thresholds (analog inputs) are exceeded.
Digital based alarms	Operating status of components such as fuses, MOVs etc (digital inputs).
User configured alarms	As configured.
CellSure alarms (some system controllers only)	Messages from a CellSure battery controller (CBC) if connected.

Alarm urgency

Alarms can be assigned a severity such as Minor/Non-urgent, Major/Urgent or Critical. This is useful for allocating a priority to alarm responses (next working day, as soon as possible, immediately etc.).

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Alarm mapping

Alarms can be mapped to (one or more) output relays to activate an external fault indication monitoring system.

Alarms may also be used as a trigger for capturing and logging system values. See Data Logging on page 107.

Additional alarm text

With some system controllers additional text can be entered to appear when an alarm is active.

This text can provide further information about the alarm, or action to take when the alarm is active. The additional text can be viewed from DCTools, the system controller LCD display, and in an SNMP trap (if enabled).

Inputs and Outputs (I/O)

All Powerware dc power systems have a number of I/O channels. Some channels are reserved for system use and some are available for user-defined alarms, control or monitoring.

In most systems SiteSure I/O modules can be installed to provide additional I/O. There are limits on the total number of I/O channels per system.

Types of I/O

Type	Description
Digital input	For connection to voltage free relay contacts or switches.
Analog input	For connection to a variable voltage signal.
Temperature input	For connection to a temperature sensor.
Frequency input	For connection to a variable frequency signal.
Digital output	Relay contacts for connection to external devices.

For further information refer to the system controller or SiteSure manual. See Related Information on page ii.

Data Logging

Powerware dc power systems provide data logging functions to allow system performance to be evaluated and to capture information on a system's operating condition when a specified event occurs.

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There are two types of data logging as described below.

Type	Description
Event logging	When a specific event occurs (such as an alarm activation), logging captures and stores a variety of system values and stores these in the system controller.
Data logging	Continuous capture of system values

There is a limit on the number of events and the number of data log records that can be recorded. When memory is full new records overwrite the oldest records.

Log records are appended to tab-delimited text files which can be analyzed using spreadsheets or other suitable analysis tools.

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Introduction

The latest alarm statuses and alarm-related values from an RPS or CBC are obtained by PowerManagerII when it successfully polls that device. See How Polling Works on page 177.

PowerManagerII stores details of each active alarm. Alarm states are indicated in various ways in the Tree view, System tab, and Alarms tab. All alarm events (start, acknowledgement, end) for all RPSs and CBCs are also recorded in the Event Log on page 132.

CAUTION:

Each RPS can be configured independently and can have different alarm names and configurations. You should have access to copies of each RPS's latest configuration settings to refer to in each case.

It is strongly recommended that all RPSs in your network use consistent configurations and labeling conventions where possible.

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How Alarms are Indicated

The Alarms tab lists, for the selected item (map, RPS, CBC, SiteManager node or group), details of each currently active alarm and any inactive Critical/Major/Urgent alarms you have not yet acknowledged.

Also:

- Alarms cause alarm icons to appear in the *Tree* view. The icons flash while relevant alarms remain unacknowledged. See Alarms in the Tree view on page **113**.
- Alarms cause purple (Critical), red (Major/Urgent) and/or yellow (Minor/Non-urgent) indications in the *System* tab. These colors flash while relevant alarms remain unacknowledged. See Alarm Indications in System Tab Displays on page **113**.
- For SM50 only, active alarms/states for a specific rectifier are also listed in the *Rectifier Detail* window (displayed when you double-click that rectifier graphic in the *System Schematic* diagram).
- Details of all alarm events (start, acknowledgement, end) for all alarms are recorded in the *Event Log*. See Alarm Details in the Event Log on page **115**.
- Each new received alarm causes the notification behaviour configured for that RPS (or CBC) and alarm type, which can include playing a sound, sending an e-mail or pager message, printing, sending an SNMP Trap message and/or executing a command file. See Configuring Alarm Behaviour on page **119**.

  Also, details of all alarm notifications (and Notification Failure messages) are added to the Alarm Notification log. See About the Alarm Notification Log on page **115**.
- Unacknowledged alarms cause the PowerManagerII icon in your Windows taskbar to flash if the PowerManagerII window does not have the focus – that is, when:
  - You minimize the window.
  - You go to another program's window.
  - You open the Windows Start menu.
  - You right-click anywhere in the Windows taskbar or System Tray.

When you re-open the window (give it the focus), the icon will no longer flash.

Alarms tab list entries

When each new alarm is received from a currently selected device, details of that alarm are added to the *Alarm* tab list (if you have selected a map, SiteManager node or group, this includes all RPS, CBC, or SiteSure alarm covered by that item).

An Critical or Major/Urgent alarm remains in the Alarm List until it is no longer active at the RPS and you acknowledge it.

A Minor/Non-urgent alarm remains in the Alarm List only while it is active. Acknowledgement of non-urgent alarms is optional.

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The following icons may be displayed to the left of each alarm entry in the Alarm list.

Icon	Indicates...
	Acknowledged alarm
	Active Minor/Non-Urgent alarm – automatically removed from the list when they become inactive, whether acknowledged or not
	Inactive Minor/Non-Urgent alarm
	Active Major/Urgent alarm
	Inactive Major/Urgent alarm – removed from the list when acknowledged
	Active Critical alarm
	Inactive Critical alarm – removed from the list when acknowledged

The age of alarms from a device (the time since the alarms were received by PowerManagerII) is indicated in the RPS List.

In the *Alarms* tab display, you can:

- List alarms in ascending or descending order of any column, by clicking on the column heading.

  By default, alarms are listed in ascending Time order, latest at the top. The column your list is ordered by, and its order is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).
- Display selected types of alarm, or all alarms - see Filtering List Data on page 69.
- Export details of displayed alarms, or all alarms - see Exporting List Data on page 75.

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Alarms/States in the Rectifier Detail window (SM40, SM50, or SM60 only)

When the Rectifier Detail window is displayed for a specific RPS and rectifier, details of any active alarms/states reported by that rectifier show in the Alarms (or States) list in that window.

If the rectifier alarm conditions are labeled States:

- Only specific System alarms configured using rectifier Internal states will also appear in the main Alarm List (when active).
- They do not require acknowledgement (unlike alarms).

If the rectifier alarm conditions are labeled Alarms:

- All active rectifier alarms (like any other active alarms) also appear in the main Alarm List.
- You can acknowledge a rectifier alarm in either the Rectifier Detail window or on the *Alarms* tab.
- The displayed alarm entries are similar to those in the main Alarm List, except that the RPS location name and parent map location are not listed.

Icon	Indicates...
	Acknowledged alarm
	Active Non-Urgent alarm – automatically removed from the list when they become inactive, whether acknowledged or not
	Active Urgent alarm
	Inactive Urgent alarm – removed from the list when acknowledged

Alarms are listed in order of occurrence.

► To acknowledge one or more alarms

1. Click an alarm entry to select that alarm.
2. To select further alarms, hold down the CTRL key while you click additional alarm entries. Holding down the SHIFT key when you click another alarm entry selects all entries between that alarm and the previous one you selected.
3. Right-click in the Alarm list, and select *Acknowledge* from the popup menu.

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Alarms in the Tree View

An alarm icon will be shown to the left of the relevant item in the Tree view when active alarms apply for that item.

Icon	Indicates...
	One or more Critical alarms. The icon flashes if any alarms are unacknowledged, otherwise it remains steady.
	One or more Major/Urgent alarms. The icon flashes if any alarms are unacknowledged, otherwise it remains steady.
	No major/Urgent alarms, but one or more Minor/Non-urgent alarms. The icon flashes if any alarms are unacknowledged, otherwise it remains steady.

Alarm Indications in System Tab Displays

Map icons (and SM50 or SM40/SM60 Rectifier graphics)

The relevant part of a Map or a System Schematic diagram (on the System tab) will be color-highlighted as follows when alarms apply:

Purple	One or more Critical active alarms
Red	One or more Major/Urgent active alarms
Yellow	One or more Minor/Non-urgent active alarms

The color flashes to indicate unacknowledged alarms, otherwise it remains steady. The highest severity alarm takes precedence.

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RPS Summary indicators

The System Schematic diagram (all types) and the RPS Summary view (SM50 only) include the following RPS Summary alarm indicators.

- Critical indicator (some devices only):
  - Flashes purple when one or more Critical alarms are unacknowledged
  - Steady purple when one or more Critical alarms are still active, but none are unacknowledged
  - Grey when no Critical alarms are active nor unacknowledged
- Major/Urgent indicator:
  - Flashes red when one or more Urgent alarms are unacknowledged
  - Steady red when one or more Urgent alarms are still active, but none are unacknowledged
  - Grey when no Urgent alarms are active nor unacknowledged
- Minor/Non-Urgent indicator:
  - Flashes yellow when one or more Non-Urgent alarms are active and unacknowledged
  - Steady yellow when one or more Urgent alarms are still active, but all are acknowledged
  - Grey when no Non-Urgent alarms are active (whether acknowledged or not)

SM20, SM30, SM40, and NSM35 Rectifier graphics

On the System Schematic diagram, the relevant rectifier or Supervisory Module graphic will be superimposed with alarm indicators that currently apply to that device, as follows.

Icon	Indicates...
	Active Urgent alarm
	Active Non-Urgent alarm
	Power off

CBC indicators and lists

On the CBC System Schematic diagram, the following icons represent one or more alarms for the indicated bloc in a string (Schematic tab), or in the string as a whole (Table tab).

 Active Urgent alarm

 Active Non-Urgent alarm

On the CBC String Schematic diagram, the same icons represent one or more alarms for the indicated bloc in the string, and the String Alarms tab lists all alarms for that string.

On the CBC Bloc Details view, the Alarms tab lists all alarms for that bloc.

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Alarm Details in the Event Log

All alarm state changes are recorded in the Event Log. These alarm events include acknowledgement by either a PowerManagerII user or locally via a Supervisory Module front panel.

► To view some or all of these alarm events

1. In the *Tree* view, select the map, SiteManager node, group, RPS, or CBC whose alarm events you want to view.
2. In the *Event Log* tab display, right-click and select one of the following filtering options from the popup menu.

Select...	To view...
All Events	All events, including alarms
Alarms (All)	All alarm events only
System Alarms	System alarm events only
Rectifier Alarms	Rectifier alarms only

About the Alarm Notification Log

Each new received alarm causes the notification behaviour configured for that RPS and alarm type, which can include playing a sound, sending an e-mail or pager message, printing, and/or sending an SNMP Trap message. See Configuring Alarm Behaviour on page **119**.

Also, details of all alarm notifications (and any Notification Failure messages) are added to the Alarm Notification log.

► To view the Alarm Notification log

In the Alarms menu, select View Notification Log.

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When an Alarm Notification Fails

If an alarm notification fails, a Notification Failure message dialog is displayed. This dialog shows the actual error message text, and all of the configured settings for the relevant alarm behaviour.

If further alarm notification failures occur while the message dialog is still open, these will not cause further displays of the message dialog.

All Notification Failure messages are added to the Alarm Notification log.

► To view the Alarm Notification log

In the *Alarms* menu, select *View Notification Log*.

IMPORTANT

A Notification Failure message is shown in the Notification log for every such error that occurs.

Therefore, in some cases, a large number of these messages could accumulate – for example, where:

- Several printer notifications are generated when the printer is offline.
- Several e-mail notifications are generated when your e-mail is not correctly set up.

See also: About the Alarm Notification Log on page 115

Acknowledging Alarms

Acknowledging an RPS or CBC alarm in PowerManagerII does not clear the alarm at the RPS or CBC itself if the alarm is latched. See Clearing 'Latched' Alarms on page 117.

► To acknowledge an alarm

1. Select the relevant RPS or CBC and in the System view, display the *Alarms* tab.
2. Do one of the following:
   - Right-click on the alarm in the list, and select *Acknowledge* (or *Acknowledge with note* - see below) from the popup menu.

   –or–

   - Select the alarm in the list, then select *Acknowledge* from the *Alarm* menu.

Selecting *Acknowledge with note* enables you to add a note to the alarm entry when you acknowledge the alarm. You can also add a note to one or more alarm entries at other times. For more details, see Editing Notes in Lists on page 68.

Alarm notes are actually stored in the Event Log.

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► **To acknowledge multiple alarms (in the Alarms tab list)**

1 Click an alarm entry in the alarm list to select the first alarm.

You can also acknowledge specific rectifier alarms for SM50-controlled RPSs in the Rectifier Detail window. Acknowledgements you make in the Rectifier Detail window apply to the Alarms tab and vice versa.

2 Hold down the CTRL key while you click additional alarm entries.

Holding down the SHIFT key when you click another alarm entry selects all entries between that alarm and the previous one you selected.

3 Right-click in the list, and select *Acknowledge* (or *Acknowledge with note)* from the popup menu.

When an Alarm Clears

PowerManagerII will remove an Critical/Major/Urgent alarm from the Alarms tab list when:

- It is no longer active at the originating system

  –and–

- You acknowledge it.

This does not apply to latched alarms. See Clearing 'Latched' Alarms on page 117.

A Minor/Non-urgent alarm remains in the Alarms tab list only while it is active. Acknowledgement is optional.

You can also view all recent alarm events (start, acknowledgement, end) on the Event Log tab.

You can clear a *Battery Test Fail* alarm from PowerManagerII. On the *Last Test* tab of the *Battery Test Control Function* diagram, click the *Clear Alarm* button.

This is the only alarm you can clear from PowerManagerII. It is an Urgent alarm, so you must also acknowledge it before it is removed from the Alarm List.

Clearing 'Latched' Alarms

A Latched alarm is one that remains active even when the triggering condition(s) no longer apply, and until you manually clear it.

Examples of Latched alarms are:

- Rectifier Comms Lost alarms
- Battery Test Failed alarms
- CBC Discharge, Capacity and State of Health alarms

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► **To clear latched alarms in the tree view**

- In the tree, select a specific device or, to clear these alarms for all devices in a map area, select the branch for that map.
- Right-click in the *Alarms* tab (System view) and select *Clear 'Latched' Alarms*.
- A confirmation dialog then appears.
- Click *OK* to confirm.

► **To clear a Battery Test Failed alarm**

1. Display the *Battery Test* view for the device in the *System* tab.
2. Click the *Last Test* tab.
3. Click the *Clear Alarm* button.

For more details, see Battery Test in the supervisory module/system controller manual.

CBC Discharge, Capacity and State of Health alarms

Following a CBC Discharge, Capacity and State of Health alarms can occur. These alarms will not automatically clear until the next Discharge finishes and the condition no longer applies.

However, in the meantime, you can clear them manually if you choose (provided you have access rights for RPS Control Processes).

► **To clear CBC Discharge 'latched' alarms**

1. In the tree, select a specific CBC; or, to clear these alarms for all CBCs in a map area, select the branch for that map.
2. Right-click in the *Alarms* tab (System view) and select *Clear CBC 'Latched' Alarms*.

Strictly speaking, these alarms are not 'fully' latched, as they can (eventually) clear without manual intervention.

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Configuring Alarm Behaviour

Alarm behaviour refers to the optional actions that alarms can cause at your computer. For the configuration of alarms at an RPS itself, see RPS Alarm Configuration on page 95.

You can set up and change optional actions that PowerManagerII will take when alarms are first received, and/or when they remain unacknowledged for a specified time. These optional actions include:

- Playing a sound
- Printing alarm details
- Sending an email message
- Sending a pager message
- Sending an SNMP Trap message
- Execute a Command File

You can also save alarm information in a file by exporting Alarm events from the Event Log – see Exporting List Data on page 75.

You can configure specific alarm behaviour for RPSs and CBCs at any map level, for all RPSs and CBCs under a SiteManager node, and/or for individual RPSs, CBCs, or SiteManager groups.

This hierarchical scheme gives flexibility and minimizes repetition where the same behaviours apply in many cases (if not all) within a branch of the display hierarchy. If you configure no specific behaviours, all items will have the default behaviour (no actions).

In each case, you can separately configure the behaviours for Critical, Major/Urgent and Minor/Non-Urgent alarms.

Unless you have Alarm Notification access rights, you can only view alarm behaviours (you cannot create or edit them) - see Setting Access Rights for User IDs on page 12.

If you specify any E-mail or Pager alarm behaviour, then before these will work, you must first configure the interfaces your computer will use for these.

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Hierarchical Alarm Behaviours

Overview

You can configure specific alarm behaviour for an item at any level, as follows.

Level	Alarm behaviour applies for...
RPS	The selected RPS only
CBC	The selected CBC only
Map	RPSs, CBCs, and SiteManager nodes at the selected map level and lower (except where those items have individually configured behaviours)
SiteManager Node	RPSs, CBCs, and SiteManager groups under the selected node (except where those items have individually configured behaviours)
SiteManager Group	Any alarm channels (for RPSs under the selected SiteManager node) configured with the relevant Group Number
Home (highest)	All items without specifically configured behaviours at any lower level

Thus the lowest-level configured behaviour applies for each RPS, CBC, or SiteManager group. An item with no specifically configured behaviour 'inherits' the behaviour from the level above, and so on. This hierarchical scheme gives flexibility and minimizes repetition where the same behaviours apply to many (if not all) RPSs, CBCs, and/or SiteManager groups in a specific branch of the display hierarchy.

If no configured alarm behaviour is assigned to an item (individually or 'inherited'), the default behaviour applies (that is, no action on alarms).

Guidelines and Examples

Try to minimize the number of different alarm behaviours. Carefully consider whether any differences are really necessary, because using many different behaviours (or behaviours with only minor differences) can be more confusing than helpful, especially to new operators – for example, having more than a few clearly different sounds.

For behaviours generating text output, use consistent formats and wording and specify variables so you can apply the same behaviour more generally. For example, the variable [AlarmRpsName] outputs the RPS or CBC name.

Plan the best order in which to configure your different alarm behaviours, to minimize the work required and to simplify the behaviour hierarchy.

In a network where you want behaviours to be different for major groupings of RPSs that are not in the same regions, you may want to consider setting up your hierarchy on a non-regional basis. For example, suppose you wanted one behaviour for all Intergy Supervisory Modules; one for all E40s, and one for all CBCs. Your hierarchy could group items of these types together (under second-level tree items). However, you could not then view these different types of system on the same 'map'.

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► **To assign the same alarm behaviour universally**

At the topmost (Home map) level, configure the alarm behaviour you require.

(The default behaviour is no actions.)

► **To assign behaviour 'A' in areas 'X' and 'Y', behaviour 'B' elsewhere**

1. At the topmost level, configure alarm behaviour B.
2. At the Area X map level, configure alarm behaviour A.
3. At the Area Y map level, configure alarm behaviour A.

► **To assign behaviour 'A' to all but one RPS in area 'X', behaviour 'B' in all other cases**

1. At the topmost level, configure alarm behaviour B.
2. At the Area X map level, configure alarm behaviour A.
3. At the one exceptional RPS in Area X only, configure alarm behaviour B.

How Specified Alarm Behaviours are Indicated

Items in the Tree view that have configured alarm behaviours are indicated by a small red triangle against their graphical symbol, as follows.

Symbol	Item/Level	Alarm behaviour
	Map	Not configured
	Map	Configured
	RPS or CBC	Not configured
	RPS or CBC	Configured
	SiteManager node	Not configured
	SiteManager node	Configured
	SiteManager group	Not configured
	SiteManager group	Configured

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Copying Alarm Behaviours

You must copy an alarm behaviour from a higher-level item before you can edit it.

► **To copy a configured alarm behaviour from a higher-level item**

- In the *Tree* view, right-click the item to which you want to copy the behaviour (or right-click in any view for that item in the *System* tab)
- Select *Copy Alarm Behaviour* from x from the popup menu (where x indicates the higher-level item whose alarm behaviour you are copying).

The lower-level item now has its own alarm behaviour. This is indicated in the *Tree* view by a small red triangle beside its icon.

Its alarm behaviour can now be edited if required, which you cannot do to 'inheriting' items (those without their own configured behaviour).

Editing Alarm Behaviours

If you have Alarm Notification access rights (see Setting Up User IDs and Passwords (User Administration) on page 9 you can:

- Copy an existing configured behaviour from a higher level to any selected item currently without a configured behaviour. This is equivalent to configuring the same behaviour for your selected item.

  You must copy an alarm behaviour from a higher-level item before you can edit it. See Copying Alarm Behaviours on page 122.
- Edit an existing configured alarm behaviour for an item (must be a copied behaviour as above, you cannot edit an 'inherited' behaviour).
- Delete an existing configured behaviour for an item.
- Delete all existing configured behaviours under your selected item in the tree (subsidiary or child items at a lower level). This prevents the behaviour configured for that item being overridden at a lower level.

Without Alarm Notification access rights, you can only view alarm behaviours.

► **To edit the configured alarm behaviour for an item**

1. Right-click the item in the *Tree* view (or right-click in any view for the item in the System tab), and select Edit *Alarm Behaviour* from the popup menu. (Applies only to items with a specified behaviour.)

   The *Alarm Behaviour Properties* form is then displayed.
2. Click the *Details* button for a type of behaviour you want to specify.

   The relevant *Alarm Behaviour Details* dialog is then displayed.

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3 For SNMP Trap behaviour, clear (uncheck) Enable trap sending if you do not want to send any SNMP Trap messages for alarms from the selected RPS/s and go to Step 6. Or select (check) Enable trap sending, specify the following options, and then go to Step 6.

- In the SNMP Manager list, select the SNMP Manager you want to send the SNMP Trap messages to.

  The SNMP Managers listed are those you have defined on the Alarm Notification dialog (SNMP Managers tab) – for more details, see Configuring Email, Pager, and SNMP Trap Interfaces on page **126**.

- Use the User defined strings fields to define your message text. Click Edit to go to the Alarm Message Editor dialog, where you can change the fixed and variable text sent, and/or load and save text files.
- In the third User defined numbers field, enter an optional number to send (0 to 255)
- Select Use default repeat delay to re-send SNMP Traps for the same alarm according to the default delay (as defined on the Alarm Notification dialog's SNMP Trap tab) – see Configuring Email, Pager, and SNMP Trap Interfaces on page **126**).

–or–

- Clear Use default repeat delay and enter a different Repeat delay value, in minutes.

4 For sound, printer, email or pager behaviour, select the required alarm severity tab(s). Then:

- Select *Enable 'severity immediate' action* to specify an action PowerManagerII will perform immediately the relevant alarms are active. Then specify the required values, as summarized in the table below. Or clear (uncheck) *Enable* to specify no immediate action of this type for the relevant alarms.

–and–

- Select *Enable 'severity delayed' action* to specify an action PowerManagerII will perform when the relevant alarms remain active and unacknowledged for a specified time. Then specify the required values, as summarized in the table below. Or clear this check box to specify no delayed action of this type for the relevant alarms.

–and–

- Specify the options for your selected alarm behaviour type, as shown in the following table.

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Behaviour type	Settings required

Play a sound	• Wave file for the sound to play
	  • Click … to browse for a file.
	  • Click *Test Sound* to play the sound once as a test.
	• Repeat rate in minutes
	  • 0-120, where zero means no repeat.
	  • The sound is repeated after this time, until the alarm is acknowledged.

Print a report	• Printer name (click ▼ to select a printer)
	—and/or—
	• Text File name for report content
	  • Click … to browse for a file.
	  • Click *Edit* to go to the *Alarm Message Editor* dialog, where you can specify the message content.

Send an email (see Note below)	• Send to email address
	• Text File name for message content
	  • Click … to browse for a file.
	  • Click *Edit* to go to the *Alarm Message Editor* dialog, where you can specify the message content.

Send a pager message (see Note below)	• Message number or text to parse and send. • Click *Edit* to go to the *Alarm Message Editor* dialog, where you can specify the message content. • Number of Pager to send to

Before email or pager alarm behaviour will work, you must configure their interfaces and general options. To do this in PowerManagerII at this point, click the More button in each case. For more details, see Configuring Email, Pager, and SNMP Trap Interfaces on page ***126****.*

5. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

   You are then returned to the *Alarm Behaviour Properties* form.

6. To set up or edit another type of alarm behaviour, repeat Steps 2 through 5.
7. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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Deleting Alarm Behaviours

Applies only to alarms with individually configured behaviour, not 'inherited' behaviour.

► To delete a configured alarm behaviour for an item

1. In the *Tree* view, right-click the item whose alarm behaviour you want to delete (or right-click in any view for that item in the *System* tab) and select *Delete Alarm Behaviour* from the popup menu. You can select only an item with a configured alarm behaviour.

   A confirmation dialog is then displayed.

2. Ensure that the stated action is correct and click *OK*.

   The alarm behaviour for your selected item is then deleted. The item inherits the relevant higher-level behaviour, or if none, the default behaviour applies (no actions).

► To delete all subsidiary configured behaviours for an item

1. In the *Tree* view, right-click the map or SiteManager node whose subsidiary item's individually configured alarm behaviours you want to delete (or right-click in the map view in the *System* tab) and select *Delete Alarm Behaviours Below* from the popup menu. You can select only an item that has one or more subsidiary items with individually configured alarm behaviours.

   A confirmation dialog is then displayed.

2. Ensure that the stated action is correct and click *OK*.

   Any individually configured alarm behaviours for all subsidiary items are then deleted. These items now inherit your selected item's behaviour.

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Configuring Email, SMS/Pager, and SNMP Trap Interfaces

To configure email, SMS/pager, or SNMP Trap interfaces, you must have Alarm Notification access rights.

If you specify any email, SMS/pager, or SNMP Trap alarm behaviour, then before these will work, you must first configure the interfaces your computer will use for these. This involves the one-off setting of specific options in each case.

► To configure an email interface for alarm notifications

1 In the *Options* menu, select *Alarm Notifications*.

The *Alarm Notification Options* dialog is then displayed.

2 On the *Email* tab, select one of the two *Use... to send email* methods, and enter the required parameters for that method, as shown in the following table. (Or select *Disable email notifications* instead, to prevent any email alarm notifications.)

Email method	Parameters	Notes
Use MAPI...	• Profile Name • Password (when required)	An email application that supports MAPI must be installed.
Use SMTP...	• Host IP Address • User ID (when required) • Reply to	A TCP/IP network protocol is required.

3. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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► To configure an SMS/pager interface for alarm notifications

PowerManagerII communicates with SMS/pager services using Derdak Message-Master®. The Message-Master icon will appear in the system tray.

1 In the *Options* menu, select *Alarm Notifications*.

The *Alarm Notification Options* dialog is then displayed.

2 On the *Pager* tab, do one of the following.

- Select an existing *Service name*. To edit the properties for that service, click the *Properties* button, edit the displayed *Properties* dialog as required, and click *OK*. For more details, see the Windows Control Panel help for Services.

—or—

- Click the *Add Service* button to use a new Service if necessary. Edit the displayed *Properties* dialog as required, and click *OK*. For more details, see the Windows Control Panel help for Services.

3 Click the *Pager Configuration* button. Edit the displayed dialog as required and click *OK* to return.

4 Enter a *Quiet Time* value, in minutes, and select the *Quiet Time per* option (either Pager Number or RPS).

The *Quiet Time* sets a minimum interval between successive Alarm notifications (either to the same Pager or about the same RPS), except where the new alarm has a higher priority — that is, the Quiet Time is ignored if a Critical alarm follows a Major/Urgent alarm, or a Major/Urgent alarm follows a Minor/Non-Urgent alarm.

5 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

► To configure an SNMP Manager interface for alarm notifications

1 In the *Options* menu, select *Alarm Notifications*.

The *Alarm Notification Options* dialog is then displayed.

2 On the *SNMP Managers* tab, select an existing SNMP Manager name, or click *New* and enter an appropriate Name.

3 Set or change the IP address for that SNMP Manager:

- Enter in standard format. For example 101.102.103.104

4 Select the *System alarms* option to specify which system alarms will be sent to that SNMP Manager.

5 Select the *Rectifier alarms* option to specify which rectifier alarms will be sent to that SNMP Manager.

6 Select the *Frequency option* to specify whether alarms sent to that SNMP Manager will be re-sent or not (Send once (on activate), Repeat while active, Repeat until acknowledged, or On activate and deactivate).

7 Leave *Send Heartbeat* unchecked unless required. See SNMP Heartbeat on page 171.

8 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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► **To configure general SNMP Trap options for alarm notifications**

1 In the *Options* menu, select *Alarm Notifications*.

The *Alarm Notification Options* dialog is then displayed.

2 On the *SNMP Trap* tab, enter the *Default repeat delay* in minutes. This is the default time PowerManagerII will wait before re-sending an SNMP Trap notification for a particular alarm. The default is 30 minutes.

3 Only if you are sure it is necessary, enter the *Remote port* to be used for SNMP Trap notifications.

It is recommended that you leave this at the default of 162.

4 Set *Community string* if trap security is required, otherwise leave as *Public*.

5 Only set *Heartbeat string* and *Heartbeat repeat delay* if the *SNMP Heartbeat* feature is used. See SNMP Heartbeat on page 171.

6 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

Text Parsing for Alarm Notifications

To edit (or view) email, pager, or SNMP Trap messages, you must have Alarm Notification access rights.

Printer, Email, Pager, and SNMP Trap alarm notifications produce a text message or report. The actual text output is determined by either a text file (Printer, Email, and SNMP Trap) or the Message field value (Pager).

Click the relevant Edit button to access the Alarm Message Editor dialog, where you can set up and change the fixed and variable text sent in each case, and/or load and save message text files.

PowerManagerII assumes that there will be variable values embedded in this specified 'source' text file or Message value. These variable values are indicated by variable names enclosed in square brackets – for example, [AlarmLocation].

When an alarm occurs, PowerManagerII will search through (parse) the source text and replace any variables with the appropriate information for that alarm.

Other 'control' variables or codes that you can also embed are as follows.

Code	Function
[LineFeed]	In Printer notifications only, embeds a Line Feed printer code in the text.
[EndText]	Removes everything after and including the [EndText].

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Example

Suppose you set up the following source text for an alarm behaviour.

Date & Time	*[AlarmDate] [AlarmTime]*
RPS	*[AlarmRpsName]*
Priority	*[AlarmUrgency]*
Description	*[AlarmDescription]*
Location	*[AlarmLocation]*
Type	*[AlarmType]*

When an alarm occurs that actions this behaviour, the variables are replaced with the applicable values at the time, as shown in the following example output.

Date & Time	*05-10-1999 15:42*
RPS	*Paddington*
Priority	*Non-Urgent*
Description	*Temp Sensor Fail*
Location	*London*
Type	*System*

Text file size

PowerManagerII will require your confirmation if you specify a text file greater than 50kB.

Execute a Command File on Alarm

This feature allows the user to execute an external program (such as a batch file) when a particular alarm condition occurs.

► **To configure Execute a Command File on Alarm**

1. Start PowerManagerII.
2. Right click on the item that will cause the command file to execute.
3. For example, to make this occur for all sites: in the tree view, right click on the topmost item.
4. Select *Alarm Behaviour* > *Edit Behaviour* to open the *Properties* dialog box.

   See Configuring Alarm Behaviour on page 119.
5. At Execute a Command click Details.
6. Select Enable Command Execution.
7. Enter these parameters:

   Command The name of the external file to be executed

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Parameters	Any additional parameters to be included in the call to the command file. Click *Edit* and select the parameters to include.
Directory	The location of the command file *Ensure there is a suitable command file in the directory.*
Alarm severity	Which alarm severity should cause the command file to be executed
Frequency	How often to execute the command file.
Activation Delay	The alarm condition must be active for this time before the command file is executed.

Click *OK*.

After an alarm occurs, use the alarm notification logs (*Alarm* > *View Notification Log*) to check that the command file was executed as expected. See About the Alarm Notification Log on page 115.

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Introduction

To use these functions, you must have *Log Management* access rights (see Setting Access Rights for User IDs on page 12).

There is also an Alarm Notification Log, which lists the most recent alarm notification failure messages (if any). For more details, see When an Alarm Notification Fails on page 116.

Local Logs refer to the analog values uploaded during the data poll into the PowerManagerII logs.

Remote Log refers to a device's internal Data/Event Logs.

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About the Data and Event Logs

For details of viewing the logs see Log Management view on page 58.

The Event Log is displayed on the *Event Log* tab of the *System* view. This tab lists all or selected RPS, CBC, SiteManager group, and PowerManagerII 'events', including:

- PowerManagerII startups, shutdowns, user logons and logoffs
- RPS and CBC configuration changes
- RPS Control Function status changes (starting and stopping, etc)
- Alarm state changes
- Real-time RPS and CBC control settings
- RPS clock updates
- Changes to the set of SiteManager group channels that are to be logged

If the *Local Data Logging* option is selected, PowerManagerII's Data Log records the following values notified to PowerManagerII by RPSs and CBCs:

- Main system analog values
- Logged SiteManager group channel values (if any)
- Any entries uploaded (automatically or manually) from the internal 'remote' data logs kept by those devices (some devices only).

For Series 3 RPSs, PowerManagerII does not use the E40 data-logging feature. All data logging is performed using polled data.

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Each log display shows log entries for your currently selected item, as follows.

Selected Item	Log entries are shown for...
RPS	The selected RPS only
CBC	The selected CBC only
CBC String	• Event Log - the relevant CBC • Data Log - the selected CBC string only
CBC Bloc	• Event Log - the relevant CBC string • Data Log - the selected CBC bloc only
SiteManager group (Event Log only)	All logged channels in that group (for the relevant RPSs under the SiteManager node).
SiteManager node (Event Log only)	All logged channels in all groups for the RPSs under that SiteManager node and all RPSs and CBCs under that node.
Map (Event Log only)	All RPSs, CBCs, and SiteManager nodes in that map area

In the *Log* tab displays, you can:

- List entries in ascending or descending order of any column, by clicking on the column heading.

  By default, entries are listed in ascending Time order, latest at the bottom. The column your list is ordered by, and its order is indicated by an arrow in that column heading. An up arrow indicates ascending order (lowest first); a down arrow descending (highest first).

- Optionally 'filter' which entries are displayed – see Filtering List Data on page 69.
- Specify further display criteria (in addition to any filtering) - see Displaying Log Subsets on page 72.
- Export details of displayed entries, or all entries – see Exporting List Data on page 75.
- Optionally add, edit, or delete notes for selected entries – see Editing Notes in Lists on page 68.

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Log entries available for display also depend on:

- Any log purging (removal of old entries) that has occurred - see Log Purging and Statistics on page **143**
- Which SiteManager group channels (if any) are currently being logged – see Logging SiteManager Group Channels on page **139**.
- For some devices, any automatic or manual uploading of the device's own log entries that has occurred, and the related *Local Data Log* option setting - see Managing Device Logs on page **134**.
- For a CBC, any automatic uploading of the CBC's own log entries that has occurred, and the related Local datalogging enabled option setting - see Managing CBC Logging on page **140**

About the Logging Database

PowerManagerII uses *Firebird* to manage the Logging database. When you install PowerManagerII, *Firebird* is also installed. *Firebird* is an open source relational database and is compatible with Microsoft Windows ® Server 2003.

Firebird "Embedded Server" version is installed with PowerManagerII. If required, the more advanced "Full Server" version can be installed. Contact Eaton for advice.

If an error dialog appears that refers to Firebird and/or the Logging database, you should first try to reset PowerManagerII's connection to the database. In the *Options* menu, select *Data Logging*, and then *Reset* from the submenu (if it is available).

If your Logging database becomes too large, you can manually remove (purge) old log entries when required, or set up automatic log purging. For more details, see Log Purging and Statistics on page **143**.

Managing Device Logs

Overview

In addition to the logs generated by PowerManagerII, some devices (supervisory modules and system controllers) maintain their own internal Event Log and Data Log.

The device's Event Log records alarm state changes and the starting and stopping of control processes. The device's Data Log records the values of system parameters at various intervals. These logs cannot be accessed from the front panel of the device.

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Using PowerManagerII, you can:

- Specify options for automatically uploading an device's Data and/or Event Log as a background task.

  Unlike manual uploading, this minimizes the effect on normal alarm and data polls (over all devices).

- Manually upload specified device Data or Event Log entries as a background task.

  Important: Unlike automatic uploading, manual uploading can significantly hold up normal alarm and data polls, over all devices. The greater the range of index numbers you upload, the greater this effect.

- View and save uploaded device log entries (as for any other PowerManagerII log entries).
- Distinguish uploaded device log entries from those generated by PowerManagerII, by noting the Data Source column value for each entry, as follows.

Data Source	Description
Local	Entries created by PowerManagerII when a device replies to a normal Data or Alarm poll. Such entries represent the device's current states and values when the poll was made, but the device itself does not directly create the Data Log entry.
Remote	Log entries retrieved from a device's database when it responds to a specific Upload poll. Such entries are directly created by the device and are copied by PowerManagerII into its log database when they are uploaded.

Specifying Automatic Uploading of device log entries

► **To specify options for automatically uploading device log entries**

You must have Log Management access rights, see Setting Access Rights for User IDs on page 12.

1 In the Tree view, under the required device, select Log Management.

The device Log Management view is then displayed in the System view (System tab).

2 On the Automatic Log tab, select or clear the following options, as required.

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Item	Description
Local Data Log	Select this option to instruct PowerManagerII to create Data Log entries each time it gets analog values from the device. *Clear this option to disable this data logging.*
Remote Data Log	Select this option to enable automatic uploading of the device's own internal data log entries. *Clear this option to disable this type of data logging.* When this option is selected: • The *Outstanding Records* value indicates how many device data log entries remain to be uploaded. • Click *Skip Records* to ignore any outstanding entries. On subsequent log polls, device data log entries recorded before this point will not be uploaded.
Remote Event Log	Select this option to enable automatic uploading of the device's own internal event log. *Clear this option to disable this type of event logging.* When this option is selected: • The *Outstanding Records* value indicates how many device event log entries remain to be uploaded. • Click *Skip Records* to ignore any outstanding entries. On subsequent log polls, device event log entries recorded before this point will not be uploaded.

Manually uploading device Log entries

Important: Unlike automatic uploading, manual uploading can significantly hold up normal alarm and data polls, over all devices. The greater the range of index numbers you upload, the greater this effect. For example, a full device Data Log (about 4,000 entries) can take up to 30 minutes to upload via a direct S3P connection.

► To manually upload specified device Data or Event Log entries

You must have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

- In the *Tree* view, under the required device, select *Log Management*.

  The device *Log Management* view is then displayed in the *System* view (*System* tab).
- On the *Manual Data Log* or *Manual Event Log* tab as required, select or enter the following values.

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Item	Description
Upload log records from index number	Select the earliest device data/event log number from which you want to manually upload. *The Log information panel shows the range of log numbers available.*
To index number	Select the latest device data/event log number from which you want to manually upload.

The Log information panel shows the earliest and latest device data/event log numbers available in the device, and a progress bar indicating how far you are through the upload (if one is in progress).

- Click *Start* to start uploading your specified entries.
- If necessary, to stop the upload (for example, because the upload is taking too long and you want to see alarms and data from other devices), click *Cancel*.

More about Device Logs and Uploading them

Checking the CPU Serial Number before Uploading

Before uploading any log entries from an device, PowerManagerII will check for entries previously uploaded from that device. PowerManagerII uses the device's CPU Serial Number to uniquely identify each device.

This value is shown in the *CPU Serial No* field on the RPS *Properties* form for an device. PowerManagerII accepts any string of characters as a valid CPU Serial Number, and checks the value is unique for each device-controlled RPS with *Comms Enabled* set to *True*.

You do not have to enter the CPU Serial Number before connecting to an device. PowerManagerII will fill in the actual value after it has connected to the device and checked that it is unique. See Registration of an device below.

If call-back modems are being used for security purposes, you may have to enter the CPU Serial Number before communications can be established. For more details, see Setting Modem Security Features on page **164**.

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Registration of a device by PowerManagerII

When PowerManagerII completes the registration of a device, it stores the CPU Serial Number then performs the following steps:

1. The CPU Serial Number received from the device is checked against the *CPU Serial Number* field value on the RPS *Properties* form for that RPS.
   - If the values are the same, registration continues at Step 2.
   - If the values are different, registration stops and a *Remote Comms Lost* alarm is generated for the RPS.
   - If the *CPU Serial Number* field is blank and the device's serial number is unique, the device's value is copied into the *CPU Serial Number* field, and registration continues at Step 2.
   - If the *CPU Serial Number* field is blank, but the device's serial number is not unique, registration stops and a *Remote Comms Lost* alarm is generated for the RPS.
2. The CPU Serial Number is compared to with the value previously saved for that RPS.
   - If there is no value previously saved, PowerManagerII treats this as a First-Time registration.
   - If the value previously saved is the same as the device's serial number, PowerManagerII treats this as a Re-Registration.
   - If the value previously saved is different to the device's serial number, PowerManagerII treats this as a Replacement device.

   The different types of Registration are described below.

Registration Type	What is uploaded
First-Time registration	No Event or Data Log entries for any previous days
Re-registration	If one or both Automatic Logging options (Remote Data Log and/or Remote Event Log) are selected, PowerManagerII will upload all relevant log entries since that device was last polled. *For more details, see Managing Device Logs on page 134.*
Replacement device	PowerManagerII will upload only device log entries generated after this registration is completed. This avoids confusion between the old and new device. Also, historical log entries in the replacement device may have been generated prior to installation in this RPS. *Record numbers of log entries for the old device will be replaced by spaces.*

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Re-using the same RPS item for different devices

You should not use one RPS item in PowerManagerII to connect to different devices (by changing the communications properties). This is because each different device is treated as a replacement device, and PowerManagerII will not upload any historical log entries, nor will it distinguish between the different devices for log entries it does record from.

Therefore, if you want PowerManagerII to upload historical records from different devices, you must set up an RPS item for each one, with its own communications properties. Use the *Comms Enabled* settings to select the device you currently want to connect to. You can re-use ports and so on, provided only one RPS at a time has *Comms Enabled* set *True* for one port.

Device Data Log Overflow

A device Data Log can store only a finite number of data log entries. Refer to the system controller or supervisory module handbook for details.

When trying to upload previous days' Data Log entries, or all entries since the last poll, PowerManagerII allows for the possibility that older entries it wants to upload may have been discarded because of Data Log overflow.

(The Event Log can store a large number of entries, and so overflow will rarely occur.)

Logging SiteManager Group Channels

Use the *Logged Channels* dialog to select which SiteManager channels will or will not be logged for a group.

This is local logging of values received by PowerManagerII during data polls only.

► To set up and change the logged channels for a SiteManager group

1. In the Tree view, select the SiteManager group.
2. In the System view's *Data Log* tab, right-click and select *Logged Channels* from the popup menu.
3. Do one or more of the following, as required.
   - To log a new channel, select it in the *Available Channels* list, and click  .
     This channel then moves to the *Logged Channels* list. When you click *OK* or *Apply*, the channel will then be logged by PowerManagerII.
   - To stop logging a channel (and delete its logged data from the database), select it in the Logged Channels list, and click  .
     This channel then moves back to the *Available Channels* list. When you click *OK* or *Apply*, the channel will no longer be logged by PowerManagerII.
   - To temporarily suspend logging of a channel, click its check box in the *Logged Channels* list (so that the box is empty).
     This channel remains in the *Logged Channels* list. When you click *OK* or *Apply*, the channel will no longer be logged by PowerManagerII.
   - To resume logging a suspended channel, click its check box in the *Logged Channels* list (so that the box is checked).
     This channel remains in the *Logged Channels* list. When you click *OK* or *Apply*, the channel will then be logged by PowerManagerII.

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4 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

Use the Event Log to view your currently logged SiteManager channels.

► **To view the Event Log for your currently logged SiteManager channels**

1 In the Tree view, select the SiteManager group, SiteManager node, or map whose logged channel values you want to view.

2 In the *System* view, select the *Event Log* tab.

3 If the Event Log does not already show *Logged Channels* in its title bar, right-click in the Log display, and select *Logged Channels* from the popup menu.

Managing CBC Logging

A CBC also maintains its own Discharge Logs, Float Logs, and an Event Log.

Using PowerManagerII, you can:

- Enable or disable automatic uploading of Full and/or Partial Discharge log entries from the CBC when a new Discharge log is available (following a full or partial discharge controlled by the CBC)

  PowerManagerII keeps only the latest Full Discharge Log, and the two latest Partial Discharge Logs.

  See Automatic Uploading of CBC Discharge Logs below.

- Enable or disable automatic uploading of Weekly and/or Yearly Float log entries from the CBC when a new Float log is created at the CBC.

  See Automatic Uploading of CBC Float Logs below.

- Enable or disable automatic uploading of CBC Event log entries from the CBC.

  See Automatic Uploading of CBC Event Log Entries below.

- Enable or disable normal data logging by PowerManagerII of data received with log entries updated from this CBC.

  See PowerManagerII Data Logging when CBC Logs are Uploaded below.

- Enable uploading of Float logs and/or Event logs from days prior to the date you first connect to a CBC.

  By default, PowerManagerII will upload only logs from the day it first connects to a specific CBC.

  See Uploading Logs from Days before You First Connect below.

- View and save uploaded CBC log entries (as for any other PowerManagerII log entries).

  See About the Data and Event Logs on page 132.

- Distinguish uploaded CBC log entries from those generated by PowerManagerII, by noting the Data Source column value for each entry.

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Automatic Uploading of CBC Discharge Logs

► **To enable or disable automatic uploading of CBC Discharge logs**

You must have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

1 In the *Tree* view, under the required CBC, select *Log Management*.

The *CBC Log Management* view is then displayed in the *System* view (*System* tab).

2 On the *Discharge Logs* tab, select or clear the following options, as required.

Item	Description
Upload full discharge information	Select this option to enable automatic uploading of new Full Discharge log entries for this CBC, when available. *Clear this option to disable this type of upload.*
Upload partial discharge information	Select this option to enable automatic uploading of new Partial Discharge log entries for this CBC, when available. *Clear this option to disable this type of upload.*

In each case, the read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

Automatic Uploading of CBC Float Logs

► **To enable or disable automatic uploading of CBC Float logs**

You must have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

1 In the *Tree* view, under the required CBC, select *Log Management*.

The *CBC Log Management* view is then displayed in the *System* view (*System* tab).

2 On the *Float Logs* tab, select or clear the following options, as required.

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Item	Description
Upload weekly float log information	Select this option to enable automatic uploading of new weekly float log entries for this CBC, when available. *Clear this option to disable this type of upload.*
Upload yearly float log information	Select this option to enable automatic uploading of new Partial Discharge log entries for this CBC, when available. *Clear this option to disable this type of upload.*

In each case, the read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

See also: Uploading Logs from Days before You First Connect below.

Automatic Uploading of CBC Event Log Entries

► **To enable or disable automatic uploading of CBC Event log entries**

You must have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

1 In the *Tree* view, under the required CBC, select *Log Management*.

The *CBC Log Management* view is then displayed in the *System* view (*System* tab).

2 On the *Events* tab, select or clear the *Upload event log information* option, as required.

The read-only values (Total event log entries and Number of records outstanding) indicate the number of entries available in the CBC and the number yet to be uploaded.

See also: Uploading Logs from Days before You First Connect below.

PowerManagerII Data Logging when CBC Logs are Uploaded

► **To enable or disable normal data logging of data received with CBC logs**

You must have Log Management access rights. For more details, see Setting Access Rights for User IDs on page 12.

1 In the *Tree* view, under the required CBC, select *Log Management*.

The *CBC Log Management* view is then displayed in the *System* view (*System* tab).

2 On the *Local Logging* tab, select or clear the *Local data logging enabled* option for the CBC, as required.

- Select this option to enable normal data logging by PowerManagerII of data received with log entries uploaded from this CBC.
- Clear this option to disable this 'additional' data logging.

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Uploading Logs from Days before You First Connect

By default, PowerManagerII will upload only Float log and Event log entries from the time it first connects to a CBC.

However, you can enable PowerManagerII to upload earlier log entries, by changing specific settings in the PM2.cfg file (PowerManagerII uses this file to record user settings for restoring when you restart). These settings apply to all CBCs.

► **To enable uploading of logs from days before first connection**

1. Start Notepad (or another text editor program).
2. Open the PM2.cfg file (located in the folder where you installed PowerManagerII).
3. In the [DataLog] section, change the numeric value for one or both of the following settings to the number of days prior to first connection.

   For example, to enable uploading of any CBC's Float log and Event log entries from 14 days before PowerManagerII connects to it, set:

   Days of Weekly Float Log to read for new CBC=14
   Days of Eventlog to read for new CBC=14
4. Save the file and close the editor.

Log Purging and Statistics

Over time, your logs increase in size. You should limit the maximum size of the logs to a reasonable amount for your computer, and also ensure that older data is removed when it is no longer required. To do this, you will need to manually or automatically purge the logs to remove the oldest entries, according to options you specify.

Before purging a log, you can save a copy of it in a file – see Exporting List Data on page 75.

Use the Data Logging dialog for:

- Viewing Log Statistics for:
  - All logs (Statistics tab; shows number of entries, oldest entry date, last purge details).
  - Discharge Logs only (Discharge Log Statistics tab; shows number of Full and Partial Discharge Logs, with the total number of entries and oldest entry in each case)
- Automatically Purging Logs (setting up options and a schedule for automatic purging of one or both logs)
- Manually Purging Logs

You must have Log Management access rights to perform any of these tasks- see Setting Access Rights for User IDs on page 12.

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► **To access the Data Logging dialog**

In the *Options* menu, select *Data Logging*, then *Purging*.

IMPORTANT - Effects of Log Purging

A log purge increases your computer's workload, and can take some time to complete. Because of this, the purge is run as a lower-priority 'background' task so that PowerManagerII does not actually lose communications with any RPSs because of the slower polling rate.

During a log purge, PowerManagerII display changes may be slower. In particular, the affected Log tab display/s will be extremely slow, as the log data is being intensively used by the purge process.

If a large amount of data is deleted during the purge, then the next time PowerManagerII is run the initial accessing of the Datalog information could be noticeably slower than normal. This is due to table re-indexing automatically performed by *Firebird*.

Once a log purge has started, you cannot stop it; not even by shutting down PowerManagerII. If you try to shut down PowerManagerII while a purge is in progress, the Closing Down information dialog remains until the purge has finished. This dialog indicates that a purge is in progress with a Datalog database busy message.

CAUTION: Do not switch off your PC while a log purge is in progress.

Viewing Log Statistics

Statistics tab

This tab on the *Data Logging* dialog displays current statistical and summary information about all Data, Event, Discharge, and SiteManager Logs, including, in each case:

- Total number of entries
- Age of the oldest entry (number of days)
- Last purge date
- Duration of last purge
- User ID who initiated the last manual purge
- The text Working… where PowerManagerII has not finished calculating that value

The larger the log size, the longer it can take to show the statistics.

► **To force a recalculation of the statistics for all logs**

On the *Statistics* tab, click *Refresh*.

The Refresh button is disabled while any information is still being calculated. If the Data Logging dialog is displayed when a purge or RPS deletion finishes, the statistics will automatically be refreshed.

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Discharge Log Statistics tab

This tab on the *Data Logging* dialog displays current statistical and summary information about PowerManagerII Full and Partial Discharge Logs uploaded from CBCs, including, in each case:

- Total number of logs
- Total number of log entries
- Age of the oldest log (number of days)

PowerManagerII keeps only the latest Full Discharge Log, and the two latest Partial Discharge Logs.

The larger the log size, the longer it can take to show the statistics.

► To force a recalculation of the Discharge Log statistics

Click *Refresh*.

If the Data Logging dialog is displayed when a purge or CBC deletion finishes, the statistics will automatically be refreshed.

Automatically Purging Logs

The *Automatic Purge* tab of the *Data Logging* dialog enables you to set options for automatic purging of Data Log, Event Log, and/or CBC Discharge Log entries, for all items in PowerManagerII, at specified intervals and times.

You cannot purge the most recent Full Discharge Log, nor the two most recent Partial Discharge Logs.

You can also use the Run now button to purge immediately, using the displayed automatic purge settings.

Before purging a log, you can save a copy of it in a file. See Exporting List Data on page 75.

► To access the automatic purging options

1. In the *Options* menu, select *Data Logging*, then *Purging*.
2. Open the *Automatic Purge* tab.

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Setting Automatic Purge options

You must have Log Management access rights to perform any of these tasks- see Setting Access Rights for User IDs on page 12.

Select one or more of the following log purging options that will apply when automatic purging takes place (or when you click Run now), and enter the relevant age values.

- *Purge datalog entries older than*

  In the *Days and Hours* fields for this option, specify the minimum age of Data Log entries you want to purge automatically. This applies over all items in PowerManagerII.

- *Purge event log entries older than*

  In the *Days and Hours* fields for this option, specify the minimum age of Event Log entries you want to purge automatically. This applies over all items in PowerManagerII.

- *Purge discharge logs older than*

  In the *Days and Hours* fields for this option, specify the minimum age of CBC Discharge Log entries you want purge automatically. This applies over all CBCs in PowerManagerII.

  You cannot purge the most recent Full Discharge Log, nor the two most recent Partial Discharge Logs.

Scheduling Automatic Purging

► To schedule automatic purging of the Data Log and/or Event Log

1. On the *Automatic Purge* tab of the *Data Logging* dialog, select one or more log purge options, as detailed above.
2. Edit the following scheduling parameters, as required.

Frequency	Number of days between automatic purges
Time	Time of day when you want to run the automatic purge of the Data Log, Event Log, and/or Discharge Log (in the preferred format at your PC). Select the hours or minutes or seconds individually and use the spin buttons to increase or decrease each value in turn.
Simultaneous Execution Delay	Minimum time an automatic purge can follow a previous purge. If an automatic purge is due before this time elapses, it will be delayed until this time expires.

Click *OK* or *Apply* to confirm your parameter settings.

Automatic purges will subsequently be initiated by PowerManagerII according to your selected options and schedule, unless an inhibiting condition applies. See "When an automatic purge will not run" below.

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Purging immediately

To do a one-off purge using different settings without affecting your automatic purge settings, use the Manual Purge tab.

Use the *Run now* button to purge immediately, using the displayed automatic purge settings, without waiting for the next scheduled automatic purge.

A confirmation dialog will be displayed. Click *OK* to confirm the purge. You will then be returned to the *Data Logging* dialog (the purge will be running in the background).

When an automatic purge will not run

An automatic purge will not run (the *Run now* button is disabled) if any of the following apply:

- Another purge is running.
- An RPS or CBC is being deleted from PowerManagerII.
- The *Simultaneous Execution Delay time* has not elapsed since the last purge finished.

When an Automatic Purge is Due to Start

A dialog is displayed just before an automatic purge is due to start. A visible 30-second countdown then begins, and when this countdown reaches zero, PowerManagerII will perform the automatic purge, as specified.

Before the countdown expires, you can choose one of the following actions.

Click...	To...
Cancel	Prevent this occurrence of the automatic data purge. The warning dialog closes. Your automatic purge settings and schedule are unchanged.
Delay X minutes	Delay the automatic data purge by X minutes, where X is the Simultaneous Execution Delay value. The warning dialog closes without starting a purge, but will reappear again in X minutes, warning you again of the impending automatic data purge.
Purge now	Start the scheduled purge immediately. The warning dialog closes and the purge starts.

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When a purge is running

The status bar indicates when an automatic or manual purge is currently running.

Other indications are:

- The *Run now* button on the *Automatic Purge* tab is disabled.
- The *Purge now* button on the *Manual Purge* tab is disabled.

Once a log purge has started, you cannot stop it, even by shutting down PowerManagerII. If you shut down PowerManagerII while a purge is in progress, the *Closing Down* splash screen remains until the purge has finished, indicating that a purge is in progress by showing a Datalog database busy message.

CAUTION: Do not switch off your PC while a log purge is in progress.

Manually Purging Logs

The *Manual Purge* tab of the *Data Logging* dialog enables you to immediately purge selected Data Log, Event Log, and/or CBC Discharge Log entries for all items in PowerManagerII, without affecting your current automatic purge settings.

Before purging a log, you can save a copy of it in a file. See Exporting List Data on page 75.

You cannot run a Manual Purge (the Purge now button is disabled) if any of the following apply:

- Another purge is currently running (manual or automatic)
- An RPS or CBC is being deleted from PowerManagerII.
- You do not have *Log Management* access rights - for more details, see Setting Access Rights for User IDs on page 12.

You cannot purge the most recent Full Discharge Log, nor the two most recent Partial Discharge Logs.

► To access the manual purging options

1. In the *Options* menu, select *Data Logging*, then *Purging*.
2. Open the *Manual Purge* tab.

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► To run a Manual Purge

1 On the *Manual Purge* tab of the *Data Logging* dialog, select one or more of the following log purging options that will apply when you click *Purge now*, and enter the relevant age values.

- *Purge datalog entries older than*

  In the *Days and Hours* fields for this option, specify the minimum age of Data Log entries you want to purge. This applies over all items in PowerManagerII.

- *Purge eventlog entries older than*

  In the *Days and Hours* fields for this option, specify the minimum age of Event Log entries you want to purge. This applies over all items in PowerManagerII.

- *Purge discharge logs older than*

  In the *Days and Hours* fields for this option, specify the minimum age of CBC Discharge Log entries you want purge. This applies over all CBCs in PowerManagerII.

You cannot purge the most recent Full Discharge Log, nor the two most recent Partial Discharge Logs.

1 Click *Purge now*.

A confirmation dialog is then displayed.

2 Click *OK* to confirm the manual purge.

You are then returned to the *Data Logging* dialog. The purge will be running in the background, and the status bar will indicate that a purge is currently running.

Other indications that a manual purge is currently running are:

- The *Purge now* button on the *Manual Purge* tab is disabled.
- The *Run now* button on the *Automatic Purge* tab is disabled.

The *Last manual purge* field on the *Statistics* tab also shows when you started the purge, *Duration* shows the elapsed time, and *Initiated by* shows your User ID.

When a purge is running

Once a log purge has started, you cannot stop it; not even by shutting down PowerManagerII. If you try to shut down PowerManagerII while a purge is in progress, the *Closing Down information* dialog remains until the purge has finished. This dialog indicates that a purge is in progress with a Datalog database busy message.

CAUTION: Do not switch off your PC while a log purge is in progress.

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Introduction

Before PowerManagerII can communicate with any device, you must do the following:

- Set up the physical connections required for communications between your PC and the relevant devices (System Controllers, Supervisory Modules or CBCs).
- Select a communications protocol for each connection (S3P, SNMP, or E40).
- Specify the connection type, address, and other communications options for each device, depending on the protocol.
- Enable PowerManagerII polling of the RPS or CBC.

When PowerManagerII first starts communicating with any devices using the SNMP protocol, the PowerTCP application is automatically started on your PC.

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PowerManagerII Communications Protocols

PowerManagerII supports three remote communication protocols.

- S3P (Serial 3-layer Protocol):
  - Used for most supervisory module and system controller communications
  - Mandatory for CBC communications (direct or Passthrough)
  - Optional for some devices (see Note below)
  - May optionally be used with TCP/IP (the Internet suite of protocols)
  - With TCP/IP, may involve Telnet Command Processing
  - Eaton proprietary (contact Eaton for more detailed S3P information)

  S3P is recommended, unless you require SNMP (if available) for other purposes. S3P runs faster, has less overhead, and is simpler to set up.

  Multiple copies of PowerManagerII (running on separate PCs) cannot communicate with the same device simultaneously using S3P.
- SNMP (Simple Network Management Protocol)
  - Optional with some devices (see Note above and refer to the system controller or supervisory module Handbook)
  - Uses TCP/IP (Internet protocols)
- E40
  - Simple serial protocol used with Swichtec Series 3 (E40-25 and E40-27 monitors)
  - Eaton proprietary.

PowerManagerII can simultaneously support the different protocols. Also, where a large number of RPSs are to be polled, multiple communications ports will enable parallel polling, giving faster response.

Different devices can share a COM port, but you cannot specify SNMP and a different protocol on the same port. Different protocols can share a modem.

Communications Interfaces

The different devices (system controllers, supervisory modules and CBC) have a range of remote communications interfaces including:

- Ethernet
- RS232
- RS485

For details refer to the particular system controller or supervisory module Handbook, or the CellSure Installation Guide.

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Configuring PowerManagerII Communications

Introduction

When you install PowerManagerII, default communications options apply, and all communications are disabled.

Before you can enable communications and attempt to poll any devices (RPSs or CBCs) for the first time, you will need to configure the following.

- Global communications options required for your network configuration as a whole – covered in this section
- Individual communications options required for each device – see Specifying Communications Options for a Device on page 168.

Where they differ, individual device Polling options override global Polling options.

Procedure Summary

► To specify global communications options

1 In the *Options* menu, select *Communications*.

The *Communications Options* dialog is then displayed.

2 Ensure that the *Communications* option at the top of the dialog is set to *Suspended*, and click *Apply*.

3 On each tab, check and set the relevant parameters, as follows:

Tab name	Summary of parameters
Polling	Data polling, Control polling, RPS clock updating These may be overridden by individual device Polling options.
Alarms	Fast alarm polling, Dial-up connections for alarm callbacks
Protocol	S3P, E40, and SNMP timeout and retry settings
Modem	Modem timeout, retry, and security settings

4 When you are satisfied with your changes, set the *Communications* option at the top of the dialog to *Active*.

5 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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Configuring for S3P Communications

PowerManagerII supports the following types of S3P connection.

- Ethernet
  - All systems can be accessed simultaneously.

    If more than 50 devices are connected then polling will be done 50 devices at a time.
  - The recommended Data Poll Interval is 60 seconds or more; or alarm poll every 60 seconds with normal data poll at longer intervals. Use slower polling rates with larger networks.
  - See Configuring an S3P (or E40) Ethernet Network on page 154.
- Point-to-point serial connection
  - Each RPS or CBC must have its own dedicated port.
  - The full serial bandwidth is available for each RPS, so the polling rate can be as fast as you like.

    If more than 50 devices are connected then polling will be done 50 devices at a time.
- Modem connection
  - Modem alarm callback is supported by some devices.
  - See Configuring for Modems on page 156.

Multiple copies of PowerManagerII (running on separate PCs) cannot communicate with the same device simultaneously using S3P.

Configuring an S3P (or E40) Ethernet Network

Network Considerations

With appropriate networking equipment, a WAN can also be used with a variety of protocols and physical media (ATM, frame relay, etc). However, setting up and configuring such a network is beyond the scope of this document.

Ethernet is a convenient method of connecting systems together over a LAN (using TCP/IP):

- PowerManagerII can poll any number of S3P and E40 connections over Ethernet simultaneously.

  If more than 50 devices are connected then polling will be done 50 devices at a time.
- To use Ethernet with PowerManagerII, each device on the network must have a unique IP address.

  For devices without their own Ethernet port, a suitable TCP socket server must be available to connect to the device – for example, a Lantronix® CoBox, or Moxa® NPort DE-411.

  A socket server can be connected to a multidrop RS485 network (see Polling Rates and Other Parameters, below).
- Alarm polling can be used.

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Telnet Command Processing

- For SC200, SM65 and SM45 clear the *Telnet* check box in the *Properties* form.
- For other devices:
  - Clear the *Telnet* check box in the *Properties* form for the device to turn off Telnet processing by PowerManagerII. This is the default.
  - Some servers process the Telnet IAC (Interpret as Command) character as a Telnet command. In that case, PowerManagerII needs to escape those characters for those servers.
    For these servers, select (check) the *Telnet* check box in the *Properties* form for the device to turn on Telnet processing by PowerManagerII. Alternatively, configure the server (if possible) to perform Telnet command processing.

Polling Rates and Other Parameters (multidrop RS485 network)

The principal limitation on polling rates is network bandwidth and performance.

A socket server can be connected to a multidrop RS485 network. In this case, the polling rates may need to be optimized – see Configuring an S3P Network with Modems on page 155 (in practice, these networks are likely to be small and thus polling rates easy to optimize).

If PowerManagerII attempts to connect to an RPS or CBC that is currently being managed by a different connection, then PowerManagerII displays the following error message:

The Ethernet socket connection was refused by the server.

Because TCP is connection-based and reliable, timeouts and retries may be similar to a direct connection, except that you may need to allow more time for the protocol timeout.

Configuring an S3P Network with Modems

Network Considerations

The more devices that use a single COM port, the longer it will take PowerManagerII to poll all devices. Therefore, it is an advantage to distribute the RPSs as evenly as possible around as many COM ports as practical.

Multiple COM ports increase response time and enable a larger number of devices to be connected.

Eaton recommends up to 100 devices per COM port to achieve a 30-second alarm response time at 19.2k baud.

Different types of devices can share a COM port, but you cannot specify SNMP and another protocol on the same port.

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Configuring for Modems

Modem communications are not possible for SM20s.

For modem communications, you must use the S3P protocol.

The recommended network configuration is to use two modems: one for routine polling of the RPSs, and the other dedicated to receiving callback alarm reports.

For large systems, several polling and callback modems may be used, with RPSs split evenly between them.

When dedicated modems cannot be used, then one modem may share both the polling and answering callback roles, but with slower alarm response times on average (because the modem is more often engaged on a routine poll when an RPS attempts a callback).

PowerManagerII cannot process a modem callback from a device until that device has registered with it. This is because PowerManagerII must have the hardware serial number of the device to correctly identify which RPS the alarm belongs to. If the device cannot be identified, then PowerManagerII will hang up.
Manually entering the device's CPU Serial Number on the RPS Properties form ('device' tab) overcomes this limitation. Communications must still be enabled to accept alarm reports.

Communications Options for Modems

Use the *Communication Options* dialog to configure PowerManagerII for modem communications.

Changes you make on the Modem tab will be lost each time PowerManagerII shuts down. To find out how to prevent this, see Using Windows Control Panel to Configure Modems on page *162*.

Polling tab Settings (Modem Communications)

Where they differ, individual device Polling options will override global Polling options in each case. For more details, see Specifying Communications Options for a Device on page *168*.

About Poll Intervals

Under normal operating conditions, you can safely set the *Data Poll Interval* to a high value - for example, 1440 minutes (24 hours) may be quite acceptable, especially if the cost per call is a consideration.

This is because when a device's alarms are active, the main system values are obtained every alarm poll; and when a new alarm is detected by PowerManagerII, a full *Data poll* to that device is made immediately.

Regular Data Polling

This option should be selected for modem communications.

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Data Poll Interval

Using separate, dedicated modems for data and alarm polling:

- A simple guideline is to allow ten minutes per device (RPS or CBC).
- Use slower times if the cost per call is a consideration.

With a shared modem (for both data and alarm polling):

- Aim to minimize the probability that the modem will be engaged when a device makes an alarm report.
- It is recommended that, where possible, you set the data polling rate to at least 20 or 30 minutes per device. This will mean that the modem is engaged 5% of the time or less on average. See also About Poll Intervals above.

PowerManagerII does not attempt to evenly spread modem polls over time. Although the modem may be engaged 5% of the time or less on average, there can still be peaks when PowerManagerII is running through its polling cycle. This can make alarm reporting unreliable – this is why dedicated modems are recommended.

Retry Interval

For modems, this interval can be important in preventing deadlocks. If a device calls up while PowerManagerII is engaged, it can take some minutes to determine that this is the case. Similarly, the PowerManagerII modem may take some time to determine that the device is engaged.

If the *Retry Interval* or the device's modem retry interval is too short, then the modems may never resolve this deadlock. Also, these two retry intervals should be different.

It is recommended that you set the *Retry Interval* to twice the device's modem retry interval. The device's modem retry interval should be set to at least 120 seconds.

Control State Timeout (some devices)

This timeout applies when you start or stop a Control Process from PowerManagerII. (SM20s and E40s handle Control Process timeouts independently.)

If the device does not acknowledge your action within this time, then PowerManagerII cancels the request.

However, this value should take modem connection time into account. A maximum value of 10 to 20 seconds is recommended.

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Battery Test Poll Interval

This polling interval is used when a Battery Test is started (either from PowerManagerII, or when PowerManagerII detects one has started by some other means). It enables you to set a higher polling rate for RPSs that have a Battery Test active, for faster updating of the PowerManagerII Battery Test displays and data. This can give you earlier warning of any failure of the test.

However, the lower you set this value, the less time there is for normal and alarm polling. Choose a setting depending on the relative importance of these events in your network. For example, if you do not want to monitor Battery Tests any more than usual, set this to the same value as the Normal Poll Interval.

Other guidelines:

- On a single-modem system, values less than the *Data Poll Interval* may compromise the ability of an alarm callback to get through.
- Values less than the *Idle Autodisconnect Timeout* (*Modem* tab) dedicate the modem to monitoring only one RPS when it has a Battery Test active, unless other RPSs require polling.
- Devices independently monitor Battery Tests and log test data. If the test fails, the device will restore normal operation and the rectifiers will supply the load.

Update RPS Clock

Select this option if you want PowerManagerII to automatically reset the clock at the device (some devices only), to your PC's clock, if they differ by more than the specified RPS Clock Accuracy +/- value. This helps prevent confusing times on Data Log entries when clocks disagree by more than a few minutes.

Each RPS's clock accuracy is then checked every normal poll, and any clock updates initiated by PowerManagerII are logged for reference.

This assumes that your PC clock is accurate.

RPS Clock Accuracy +/-

Set the maximum number of minutes an RPS clock may differ from your PC's clock before PowerManagerII will automatically reset the RPS clock to your PC's time. A value of 2 minutes is recommended.

Alarms tab Settings (Modem Communications)

Dial-up Connections

(Applies to modem communications only.)

Select (check) those modems that are to be used for alarm reporting (callback).

The use of dedicated callback modems is recommended.

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Protocol tab Settings (Modem Communications)

S3P & E40 Settings

Number of Retries	Because modem communications are not always 100% reliable, a value of 2 or more is recommended.
Timeout	Because of the buffering that occurs in modem networks, this needs to be set longer than for direct connections. A minimum value of 2000ms is recommended.
Overriding Timeout	Because modem communications are slower than other types of communications, the overriding timeout should be set longer than for direct connections. A value of 120s is recommended.

SNMP Settings

Number of Retries	Accept the default Number of Retries value of 1 unless your network is not near-100% reliable.
Timeout	A value of 60s is recommended.

Modem tab Settings (Modem Communications)

Number of Dial Attempts

This value determines the maximum number of unsuccessful re-dial attempts PowerManagerII will make to a device via a modem, before an *RPS Comms Lost* alarm is generated.

If desired, you can change the *Number of Dial Attempts* value to include initial retries, but this is not recommended, since no other communications will take place during the *Retry Wait*, even an alarm callback will be ignored.

Retry Wait

This is the time PowerManagerII will wait before making a re-dial attempt to a device via modem.

The Number of Dial Attempts value determines how many times PowerManagerII will re-dial the same device.

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S3P Connect Retries

After a carrier has been detected, the modem may still require some time before the connect response comes through.

In S3P, before communications can proceed, a 'connect sequence' must be exchanged. The standard S3P protocol (via a port) does not allow any retries of the connect sequence; but for a modem this is necessary, because:

- Modem communications may not always be 100% reliable and thus a small temporary 'glitch' could cause a waste of all the time spent in making a modem connection,

  –and–

- Some modems report *Carrier Detect* before being ready to actually transfer data.

Setting the *Number of S3P Connect Retries* to at least 5 for modem communications overcomes this relatively rare problem. There is little harm in setting it too high, but setting it too low can reduce your communications reliability.

Idle Auto-Disconnect Timeout

This value has little effect unless one modem is being shared between callback and polling (or calls are charged per minute). In the case of the shared modem, this value should be set as short as possible to maximize the availability of the modem for callback – but when Control Processes are to be controlled remotely, it should be longer than the *Control State Polling Interval* (*Polling* tab).

Scripting Timeout

Applies only to modem connections using a logon script.

This is the maximum time PowerManagerII will wait for an expected prompt when running a Modem Logon script, before giving up and reporting a *Script Failed* communications error.

It applies only to networks using modem connections with callback security.

For more details, see:

- Modem Logon Scripting on page **164**
- Setting Modem Security Features on page **164**

Callback Hang-up Timeout

This is the maximum time PowerManagerII will wait for the remote modem to hang up after the Modem Logon script has completed, before reporting a communications error.

It applies only to networks using modem connections with callback security.

Some modems may take some time to recognize that a remote modem has hung up – your timeout value should allow for this.

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Callback Timeout

This is the maximum time PowerManagerII will wait for the remote modem to call this local modem back, before reporting a communications error. It applies only to networks using modem connections with callback security.

During this timeout, PowerManagerII will not initiate any more calls from its local modem (the one you are configuring).

If the remote modem dials back after the error is reported, then polling or registration will still proceed, but because PowerManagerII may already be contacting another RPS, its modem may not be available to receive the (late) callback.

Pause After Script Complete

This is the maximum time PowerManagerII will wait for the remote modem to begin sending data after scripting is complete. If no data is received in this time, PowerManagerII will report a communications error.

This setting applies only to networks using modem connections with callback security, and depends on the modems you use. A value between 5000ms and 8000ms is usually appropriate. Smaller values may speed communications, but setting this time too short may make modem communications unreliable.

This gives the remote modem time to inform the device about the incoming call, which it does only after it has handles the security logon messages created by the remote logon script (some devices only). So there can be a substantial pause before the remote modem is actually ready to transfer data.

This timeout is also used for callback polling. After the remote modem has established a connection with the PowerManagerII modem, it then informs the device, as though it has just received an incoming call. Again, this is because the callback functionality is handled by the remote modem, not the device.

This setting depends on the modems you use. A value between 5000ms and 8000ms is usually appropriate. Shorter values are desired, since they speed communications, but setting this value too short may make modem communications unreliable.

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Using Windows Control Panel to Configure Modems

PowerManagerII allows changes to the modem settings (in the *Communications Options* dialog, *Modem* tab), but these settings may be lost if PowerManagerII is shutdown. Use the following method to set your modem settings permanently.

► **To configure a modem using Windows® Control Panel**

1. In *Control Panel*, select *Modems*.
2. Select the type of modem you are using. A *Modem Properties* form is then displayed.

   (These forms vary depending on the modem.)
3. Adjust your modem settings using the following table as a guide, and click *OK* to close the *Modem Properties* form.

   The actual option names will vary depending on the type of modem.

Tab	Parameter/setting	Guidelines
General	Speaker volume	Adjust as required. (This does not control your computer's speaker.) *See also Advanced Settings below.*
	Maximum Speed (See Note below)	The speed at which your computer talks to the modem. This does not effect modem-to-modem communication speed. Set faster than the maximum speed the modem can support.
	Only Connect at this Speed	Do not select.
Connection	Data bits	8
	Parity	None
	Stop bits	1
	Wait for dial tone...	Ticked (Selected)
	Cancel the call if not connected within...	60 seconds
	Disconnect a call if idle for more than...	5 minutes
	Advanced Connection Settings	• Click *Advanced* to access. • *Error control* may be enabled but is not required to connect. • Select *Use flow control and Hardware (RTS/CTS)*. • To silence the modem speaker (if you cannot from the General tab), enter M0 under *Extra Settings*.

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Note for users of 56kbps Modems

Modems that can achieve line speeds faster than 33.6kbps are designed to connect to the Internet. They cannot achieve the same speeds when communicating with a slower modem, or when the quality of the phone line is not perfect. Since PowerManagerII is designed for modem-to-modem communications, connection speeds faster than 33.6kbps cannot be expected.

Setting Up Modem Security

PowerManagerII includes some modem security features you can use:

- With specific modems that support security
- With the S3P protocol only
- When communicating to devices that support S3P

Depending on the security method selected, these special modems may be required at the device only, or at both the device and the computer running PowerManagerII.

PowerManagerII supports the following modem security methods.

Method	Description
Password Security	Requires a password (or a user name and password) to access the device modem. A standard modem can be used as the PowerManagerII modem. To enable in PowerManagerII, you must use a Modem Logon Script. This can be created and edited only by PowerManagerII users with *Communications Setup* access rights.
Callback Security	Provides an additional level of security on top of password security. Once the correct password has been entered, the device modem hangs up and, after a pause, calls back by dialing a stored number. A standard modem can be used as the PowerManagerII modem. Using callback security greatly increases the time to establish a connection. Available only with the S3P protocol.
Encryption	At its highest level, encryption can prevent all but two authorized modems of the same type from communicating with each other. A similar modem must be used by both the device and PowerManagerII. Contact Eaton for recommended modem models. *The use of encryption modems may be illegal in some countries.* Wholly managed by the modems – no special settings in PowerManagerII.

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Setting Modem Security Features

► **To specify modem security features in PowerManagerII**

1. In the *System* view, right-click anywhere in any view for that device, and select *Properties* from the popup menu.

   The *Properties* form is then displayed.

2. On the 'device' tab, set *Comms Enabled* to *False* and click *Apply* (this is required before you change any settings on this form).

3. In *Protocol*, select *S3P* (or, for a CBC only, *S3PPassthrough*).

4. In *Connect Using*, select the modem.

   If there is no entry in the list for the modem you want, use Windows Control Panel/Modems to install the new modem according to its manufacturer's instructions. For more details, see Using Windows Control Panel to Configure Modems on page **162**.

   Different protocols can share a modem.

5. Enter the phone number for the modem (if a CBC using Passthrough connection, the phone number applies to the modem for the system controller or supervisory module the CBC is attached to).

6. With most devices, enter its CPU Serial Number if you want to check this value before allowing communications to proceed with this device. Otherwise, do not enter or change the CPU Serial No. PowerManagerII will fill in the actual value after it has connected to the device and checked that it is unique. For more details, see Registration of a device by PowerManagerII on page **137**.

   With an SM20, SM30, SM35, or CBC (direct or passthrough), enter its Serial Number.

7. Select *Modem Logon Required* if you want to use a Modem Logon Script to connect to the device. To create and edit the script, click the *Logon Script* button to go to the *Modem Script* dialog. For more details, see Modem Logon Scripting on page **164**.

8. Select *Poll by Callback* if you want the device to hang up and then call your PowerManagerII modem back each time it receives a poll.

   *This considerably affects device connection time, and settings for related communications options should allow for this. For more details, see Modem tab Settings (Modem Communications) on page **159**.*

9. If you want to start communicating to the device immediately, set *Comms Enabled* to *True*.

10. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

Modem Logon Scripting

Overview

Modem Logon scripting enables PowerManagerII to log on to a remote modem by exchanging special preliminary messages, usually for password authentication.

The remote (RPS) modem will not communicate unless it receives the correct password or username/password combination (depending on the model of modem).

Use the Modem Script dialog to create or edit a Modem Logon script.

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► **To access the Modem Script dialog**

You must have Communications Setup access rights.

1. On the RPS Properties form, select Modem Logon Required.
2. Click the Logon Script button.

What is a Modem Logon script?

The Modem Logon script for an RPS defines a sequence of expected prompts received from the RPS's modem, and/or the correct responses to send back.

Each script line includes a Wait For component and/or a Then Send component to define the prompt and response message texts.

Example script

An example Modem Logon script for a NetComm IG6000 Industrial Modem with security follows.

Wait for "Enter Name :" then send "admin"

Wait for "Enter Password:" then send "zyx4da"

Wait for "Access Granted"

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How the script works

When the PowerManagerII modem first dials the remote modem, it uses the script to establish and confirm the connection, as follows.

1. The first script line's Wait for value defines the first message expected back from the remote modem. When this is received, the corresponding then send message (if one is defined) is sent in reply, and the script processing moves to the next line, and waits.

   If no then send value is specified, no reply is sent.

2. Provided the correct message replies are received each time, the script processing continues line by line, until all lines have been processed, when data communications between the two modems can then proceed.

3. If, for any script line, no correct reply is received from the remote modem before the Scripting Timeout expires, a Script Failed communications error is reported.

The Scripting Timeout value is specified on the Communications Options dialog (Modem tab).

Using the example script above:

1. When (and only when) Enter Name: is received from the remote modem, admin is sent back, and the script moves to the second line, and waits.

2. When (and only when) Enter Password: is received from the remote modem, zxy4da is sent back, and the script moves to the third line, and waits.

3. When (and only when) Access Granted is received from the remote modem, data communications between the two modems proceeds.

Creating and Editing a Modem Logon Script

► **To add a new line to the end of a script**

1. On the *Modem Script* dialog, enter the Wait For message text, exactly as it is expected from the remote modem. Do not include the delimiting double quotes - PowerManagerII will do this for you.

2. Enter any associated *Then Send message* text to be sent to the remote modem in response to the expected message. Do not include the delimiting double quotes.

3. Click *Add to End*.

► **To insert a new line within a script**

1. On the *Modem Script* dialog, select the line you want your new line to be placed above.

2. Enter the *Wait For* value.

3. Enter any associated *Then Send* value.

4. Click *Insert Above*.

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► **To edit an existing script line**

1. On the *Modem Script* dialog, select the line you want to edit.
2. Edit the *Wait For* value.
3. Edit any associated *Then Send* value.
4. Click *Replace*.

► **To delete an existing script line**

1. On the *Modem Script* dialog, select the line you want to delete.
2. Click *Delete*.

► **To confirm your script changes and close the dialog**

Click *OK*, or *Cancel* to reject your changes.

Example Configuration (Shared Modem)

Tab	Parameter/setting	Values in the example
Polling	Data Poll Interval	9000s
	Retry Interval	300s
	SM50 Control State Poll Interval	5s
	Battery Test Poll Interval	900s
	Update RPS Clock	x (Selected)
	RPS Clock Accuracy +/-	2 minutes
Alarms	Fast Alarm Polling	(Not selected)
	Fast Alarm Poll Interval	Not applicable
	Dial-up Connections	Selected modem type
Protocol	S3P: Number of Retries	2
	Timeout	2000ms
	Overriding Timeout	120s
Modem	Number of Dial Attempts	1
	Retry Wait	90s
	Connect Retries	5
	Idle Auto- Disconnect Timeout	10s
	Scripting Timeout	5s
	Callback Hangup Timeout	20s
	Callback Timeout	5 minutes
	Pause After Script Complete	5000ms

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Specifying Communications Options for a Device

Introduction

When you install PowerManagerII, default communications options apply, and all communications are disabled.

Before you can enable communications and attempt to poll any RPSs or CBCs for the first time, you will need to change the global communications options required for your network configuration and protocol/s, and also the individual communications options required for each device.

Procedure Summary

► **To specify communications options for an individual device**

1 Do one of the following.

- In the *Tree* view, right-click the device (or any subsidiary item).

–or–

- In the *System* view, right-click anywhere in any view for the device.

–or–

- If the *System* view is showing the map containing the device, right-click on that device name.

In all cases, a popup menu then appears.

2 Select *Properties*.

The *Properties* form is then displayed.

3 On the *Polling* tab, do one of the following.

- Select *Use Global Polling Settings* (this is the default).

–or–

- If you want to use specific Polling options for this device, clear *Use Global Polling Settings*, and enter your required Data Polling option settings.

  The present values of the Global Polling options are also shown, at the bottom of the Polling tab.

4 On the 'device type' tab:

- Ensure that *Comms Enabled* is *False*.
- Set the relevant communications options, depending on the type of device. You must always specify the port or connection type and a unique address for the device. Other settings vary.
- For a device with a password (some devices only), enter that password on the *Password* tab (if you want to be able to send changes and commands to the device).
- If you want to start communicating to the device immediately, set *Comms Enabled* to *True*.

5 Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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Polling tab options for a Device

Use different Polling settings for a device only when there is a specific reason to do so - for example, when new equipment is being commissioned or tested at the site, during maintenance, or when you want to temporarily monitor particular system values at a site more frequently than the global poll interval.

Note:

- These options apply only when *Use Global Settings* is not selected.
- Where they differ, individual device Polling options will override the global Polling option defaults in each case.
- When specific Polling options apply for a device, its icon in the Tree view is superimposed with a clock symbol - for example,  .
- The present values of the global Polling options are also shown at the bottom of the *Polling* tab.

About Poll Intervals

Under normal operating conditions, you can safely set the *Data Poll Interval* to a high value - for example, 1440 minutes (24 hours) may be quite acceptable, especially if the cost per call is a consideration.

This is because when a device's alarms are active, the main system values are obtained every alarm poll; and when a new alarm is detected by PowerManagerII, a full *Data poll* to that device is made immediately.

Non Dial-up Connections setting

Alarm Poll Interval	(Does not apply to dialup modem communications.) The time between successive alarm polls - effectively, the maximum 'age' you allow alarms to reach at the RPS before displaying them in PowerManagerII. If *Regular Data Polling* is selected, set the *Alarm Poll Interval* less than the *Data Poll Interval*.

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Data Polling options

Regular Data Polling	Clear this option to give maximum priority to alarm polling over data polling. Data polling will still occur, depending on alarm conditions - see About Poll Intervals above. Select this option to force regular polls for all data. If you select it, ensure you set the *Data Poll Interval* high enough so that you do not cause unacceptable delays to alarm response time (for example, significantly higher than the *Alarm Poll Interval*).
Data Poll Interval	(Available only when *Regular Data Polling* is selected.) Ethernet (S3P): • Set the *Data Polling Interval* higher than the *Alarm Poll Interval* (which should be 30 seconds or more). In an S3P Multidrop Network: • You need to achieve a balance between the data polling interval and your desired alarm response time. For example, faster data polling can result in delays in alarm polling. • You can prevent this by specifying a higher *Data Poll Interval*, or by disabling *Regular Data Polling* so that data is polled only when alarms are activated. Using separate, dedicated modems for data and alarm polling: • You can set the data polling interval as fast as you like without compromising alarm response time, since alarms are handled by a different modem. • A simple guideline is to allow ten minutes per RPS. • Use slower times if the cost per call is a consideration. Using one shared modem for both data and alarm polling: • Aim to minimize the probability that the modem will be engaged when an RPS makes an alarm report. • It is recommended that you set the *Data Polling Interval* to 30 minutes or more per RPS. This will mean that the modem is engaged five percent of the time or less on average.

Device Specific Communications Options

For details on configuring the individual communications options for a device refer to the system controller or supervisory module Handbook, or the CellSure Installation Guide.

For global PowerManagerII communications options, see Configuring PowerManagerII Communications on page 153.

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Starting and Stopping Device Polling

This procedure applies to a single RPS or CBC. It is assumed that a connection to the device, and the relevant communications options have been set up.

► To start and stop polling a device

Right-click on an RPS or CBC item, or in an RPS or CBC System view, and select Enable Comms or Disable Comms, as relevant.

These menu options are available depending on the current communications status and when you right-click on or in any of the following.

- An RPS or CBC location in the Tree view, or any of its subsidiary items
- An RPS or CBC location in a map
- Any RPS or CBC diagram on the System tab
- An RPS or CBC entry on the RPS List tab

An alternative method is to set the Comms Enabled option on the RPS or CBC Properties form to True or False, as relevant. To access this form, select Properties from the right-click menu for any RPS or CBC item, or from an RPS or CBC System view.

SNMP Heartbeat

Operators at a network management layer are able to use this feature to ensure the PowerManagerII application is alive and online.

► To set the SNMP heartbeat

1. In the *Options* menu, select *Alarm Notifications*.

   The *Alarm Notification Options* dialog is then displayed.
2. On the *SNMP Managers* tab, select an existing SNMP Manager name, or click *New* and enter an appropriate Name.
3. Set or change the IP address for that SNMP Manager:
   - Enter in standard format. For example 101.102.103.104
4. Select the *System alarms* option to specify which system alarms will also be sent to that SNMP Manager, or select *None* so that no system alarms are sent.
5. Select the *Rectifier alarms* option to specify which rectifier alarms will also be sent to that SNMP Manager, or select *None* so that no rectifier alarms are sent.
6. Check *Send Heartbeat*.
7. Select the *SNMP Trap* tab.
8. Enter the required *Heartbeat string* and the *Heartbeat repeat delay*. Retain the other default options.
9. Click *OK* or *Apply* to confirm, or *Cancel* to reject your changes.

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Example Network Configurations

This section gives examples of network configurations that you could use with PowerManagerII.

General Notes

The examples in this section are indicative only. Further options are possible. Contact your local Eaton DC product distributor to discuss communication link detailed requirements.

PowerManagerII can simultaneously support several of these communications options, by using separate ports on your PC for each option.

Any direct data link may be replaced by a leased line telephone connection with suitable configured modems at each end.

Dial-in modem support works with:

- System Controllers and Supervisory Modules configured for alarm reporting using a modem
- System Controllers and Supervisory Modules using callback modems for security purposes

  Where callback modems are used, PowerManagerII uses the CPU Serial Number from the device to identify which device initiated a call.

CBC Passthrough connection support works only with some devices.

S3P and Ethernet

Availability	All devices with an Ethernet or RS232 port
PC interface	Ethernet
Communications links	LAN/WAN
Protocols	S3P (You can also use SNMP with Ethernet, but only with SM50)
Advantages	• Works with any Ethernet network • Fast alarm/data polling

Disadvantages	• For some devices, requires an additional Ethernet serial interface adapter:
	  • This may be a separate box (for example, a remote access server) or it may be provided as a port on a router.
	  • Contact your local Eaton DC product distributor for a list of approved modules.

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PSTN / Modem

Availability	All devices with an RS232 port
PC interface	• RS232 with modems • At least one modem is required for dial-out and one for dial-in.
Communications links	PSTN
Protocols	S3P or E40
Advantages	• Simple interconnection • Can be used at any site with PSTN connection
Disadvantages	• Slow polling (more modems can be added for faster operation) • Relatively unreliable connection (due to use of PSTN)

GSM / Modem

Availability	All devices with an RS232 port
PC interface	• RS232 with modems • At least one modem is required for dial-out and one for dial-in.
Communications links	GSM at both ends, or GSM at site and PSTN at PC.
Protocols	S3P or E40
Advantages	• Simple interconnection • Can be used at any site with GSM network connection
Disadvantages	• Slow polling (more modems can be added for faster operation) • Slower data rate than with a PSTN modem connection. • Relatively unreliable connection (due to use of GSM network)

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Point-to-Point RS232

Availability	All devices with an RS232 port.
PC interface	One RS232 port per RPS or CBC. These can be installed in your PC, or an external multi-port box can be attached to the PC.
Communications links	Multiple direct data links. These data links can be: • Direct hard-wired RS232 connection –or– • Point-to-point data connection across a telecommunications provider's network
Protocols	• SNMP (some devices only) • S3P • E40
Advantages	High-speed – since the device effectively communicates in a number of parallel channels to PowerManagerII, the polling rate is very high.
Disadvantages	Only suitable for a small number of connections.

S3P Multi-drop DDN / DSTN

Availability	All devices with an RS232 port
PC interface	A single RS232 port
Communications links	• DSTN (Digital Data Network) • DDN (Data Switched Telephone Network) –or– • Other type of network that connects all ports together so that a transmission at one port is received by all other devices on the network
Protocols	S3P only
Advantages	Simple connections.
Disadvantages	Polling can be slow with a large number of RPSs connected. This can be overcome by splitting the network into several independent segments and connecting each to separate RS232 ports on the PC.

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Multi-drop RS422 / RS485

Availability	All devices with an RS232 or RS485 port
PC interface	• RS422 • RS485 • RS232 with an external adapter
Communications links	Local RS422 or RS485 network
Protocols	S3P or E40
Advantages	• Simple interconnection • Can be extended for remote operation • Very fast alarm polling (0.3 seconds per RPS)
Disadvantages	• The network can be disabled by a fault in any part of it. • Polling can be slow with a large number of connections. This can be overcome by splitting the network into several independent segments and connecting each to separate RS232 ports on your PC.

S3P Remote / Mixed Multi-drop

A virtual DDN type network can be configured using RS485 or RS422 connections and point to point links combined with multi-drop networks.

RS232 to RS422 / RS485 adapters are used where required to interface from local site RS422 / RS485 networks to remote link RS232 inputs.

This network operates as a single multi-drop network.

Availability	All devices with an RS232 or RS485 port
PC interface	RS232 or RS485/RS422
Communications links	• Remote half-duplex link using RS232 RTS / CTS handshaking (if required) • Line speeds up to 19,200 baud
Protocols	S3P only
Advantages	Very flexible – can use service channels of microwave equipment, and so on
Disadvantages	Polling can be slow with a large number of RPSs connected. This can be overcome by splitting the network into several independent segments and connecting each to separate RS232 ports on your PC.

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SNMP and Ethernet

Availability	SM50 only
PC interface	Ethernet
Communications links	Ethernet LAN or WAN with Ethernet connections at each end
Protocols	SNMP
Advantages	Works with any Ethernet network
Disadvantages	May requires an additional Ethernet serial interface adapter • This may be a separate box (for example, a remote access server) or it may be provided as a port on a router. • Contact your local Eaton DC product distributor for a list of approved modules.

SNMP Point-to-Point

Availability	Some devices only
PC interface	RS232 or RS485/RS422
Communications links	Point-to-point serial connection
Protocols	SNMP
Advantages	Since each RPS has its own dedicated port, the full serial bandwidth is thus available for each RPS, so the polling rate can be as fast as you like.
Disadvantages	• Modem alarm reporting does not function with SNMP. • Not recommended with Windows NT Workstation – use only with Windows NT Server. • Each RPS requires its own dedicated port.

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How Polling Works

What is Polling?

Polling is the sending, by PowerManagerII, of a message to a connected device (System Controller, Supervisory Module or CBC), requesting a reply from that device that will include specific information about the power system or batteries controlled by the device.

Poll Request Queues

PowerManagerII polls devices in the sequence defined by its foreground poll request queue.

PowerManagerII polls a device only when an unprocessed poll request to that device is first in the foreground queue. When the reply is received from the polled device, that poll request is removed from the foreground queue.

A second, background queue holds lower-priority poll requests. The first poll request in the background queue (if any) is 'promoted' to the end of the foreground queue only if no other promoted requests are already in the foreground queue.

A poll request specifies the device to be polled and the information wanted. Three types of information can be requested.

- Configuration
- Alarm
- Data

Configuration Poll Request

- Asks the polled device to include all device configuration details in its reply
- When issued, is added to the end of the background queue
- Is initially issued when PowerManagerII first establishes communications with the device (PowerManagerII finds no matching system identification details)
- Is later issued only when PowerManagerII detects a configuration change for that device.

Alarm Poll Request

- Asks the polled device to reply with alarm statuses and alarm-related information (if any alarms are active, this includes the main analog system values and configuration details for those alarms)
- Is automatically issued and added to the end of the foreground queue when the alarm data becomes older than the Alarm Poll Interval value
- Can be manually added to the front of the foreground queue (by selecting the system, then selecting Refresh Alarms from the right-click menu)

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Data Poll Request

- Asks the polled device to reply with all data values (including alarm data).
- When the Regular Data Polling option is selected, is automatically added to the end of the background queue for a device whose Data Poll Interval has expired.
- For an SM50 only, is automatically issued and added to the end of the background queue for an SM50 whose reply to an alarm poll indicates any active alarms (provided that SM50 does not already have a data poll request in either queue)
- For other Supervisory Modules and CBCs, is automatically issued and added to the front of the foreground queue for a device whose reply to an alarm poll indicates any changed alarm states
- Can be manually added to the front of the foreground poll request queue, by:
  - Selecting the system, then selecting Refresh Data from the right-click menu
  - Starting or stopping a Control Function (SM50, SM20/30, E40 only)
- Can also be manually added to the front of the foreground poll request queue when pending changes are present, by selecting Retry or Download All from the right-click menu on the Pending Changes tab, where:
  - Retry adds a request for the selected system only.
  - Download All adds requests for all systems with pending changes, in order of age of data in PowerManagerII (oldest first).

The time that particular data was received from a device is displayed in the corresponding Data Log entries. If you require more recent data for a specific RPS, you can initiate a one-off poll (data refresh) for that RPS – see Forcing an Earlier Poll of an RPS or CBC on page 94.

SNMP Trap Directed polling (some devices only)

This feature allows operators using Ethernet TCP/IP connectivity and static IP addressing to set a device to "push" alarm notifications instead of the PowerManagerII "pull" polling model.

For further information see SNMP Trap Directed Polling on page 94.

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AC Fail Recognition Period

An AC Fail condition must be continuously active for this period before an AC Fail alarm is generated.

AC Timer Disconnect Delay (LVD1)

If *Enable AC Timer* is set then LVD1 will disconnect after the Disconnect Delay from the start of an ac supply failure, unless Disconnect Voltage is reached first.

AC Timer Disconnect Delay (LVD2)

If *Enable AC Timer* is set then the LVD2 will disconnect after the *LVD2 AC Timer Disconnect Delay* from the start of an ac supply failure, unless LVD2 Disconnect Voltage is reached first.

AC Voltage

The ac voltage measured by the rectifier.

Active (HTTP)

Indicates this user is enabled or disabled.

Active State (Digital Inputs)

If the input is in this state for the alarm recognition time then an alarm will be activated.

Active State (Digital Outputs)

Active state of the digital output (Energized or De-energized).

Active Voltage Control

When AVC is enabled the rectifier output voltage is adjusted to maintain the bus voltage at the configured float voltage (plus or minus any adjustments by active control processes) within a predefined dead band. Enable AVC unless there is specific reason to disable.

Ah Discharged

The current level of battery discharge. Used to start a Fast Charge cycle if this value is above the Fast Charge Ampere Hour Threshold.

Alarm (Digital Inputs)

The state of this alarm.

Alarm Recognition Period

An alarm condition must be continuously active for this period before an alarm is generated.

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Alarm Report

This indicates that the dial-out process will start when an alarm occurs.

Allow Front Panel LVD Control

If true LVD manual control from the front panel is allowed.

Ampere Hour Threshold (Fast Charge)

If Fast Charge Ah Discharged is above this value, then Fast Charge occurs when the ac supply is restored. The threshold is given as a percentage of installed C10 battery capacity. Fast charge can also be triggered based on the Fast Charge Voltage Threshold.

AVC

Active Voltage Control.

Backup (HTTP)

When set true the user is allowed to download configuration or snapshot.

Backup Address (SNTP)

IP address of Backup SNTP server.

Base Voltage

The voltage sent to the rectifiers. This is the Target Voltage plus the AVC Offset.

Battery Capacity

The rated 10-hour (C10) capacity of the battery. 0 = no battery is installed.

Battery Current

The total current flowing to/from the batteries derived from the sum of any current inputs mapped as battery shunts. If no input is mapped and a load current is available, the battery current is calculated as Rectifier Current - Load Current, otherwise it is unavailable. If positive, the battery is being charged.

Battery Current Limit

Protects the batteries from excessive charge current. BCL varies the system voltage in order to maintain battery charge current below the Battery Current Limit value.

Battery State

Indicates the battery state (charge, discharge or float).

Battery Temperature

The temperature measured by the battery temperature sensor.

Battery Temperature High Threshold

Battery Temperature High alarm is activated if the battery temperature is above this value.

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Battery Temperature Low Threshold

Battery Temperature Low alarm is activated if the battery temperature is below this value.

Battery Test

Periodically tests the condition of the battery by reducing the rectifier voltage and allowing the batteries to discharge into the normal load.

Bus Voltage

The system bus voltage from the bus voltage sensor. If the bus voltage sensor has failed, the system bus voltage is determined from the rectifier output voltages.

Cells Per String

The number of 2V battery cells per string. Zero means no battery is installed.

Communications Options dialog - Overview

Use this dialog to configure *general* communications options for the *DCTools* connections.

You must do this before enabling communications and attempting to poll any supervisory modules or *CellSure* Battery Controllers for the first time.

Before you change any communications configuration parameters using this dialog, check no connections are active.

For more details, see Setting Global Communications Options.

Compatible Interface Version

The earliest interface version this controller is compatible with. Compatible means all existing communications commands are unchanged, although additional commands may have been added. This means that any management tool (including DCTools or PowerManagerII) that is compatible with this version can safely talk to this controller, ignoring the extra items it does not recognize.

Configuration Name

Name of the configuration in the controller database.

Contact

Contact details for the person responsible for this dc power system.

Current (Rectifier)

The current produced by this rectifier. This is measured by the rectifier and reported via the rectifier comms bus.

Current Limit (Battery)

BCL maintains the battery current below this value, which is a percentage of the installed C10 Battery Capacity.

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DCTools

DCTools is Microsoft® Windows® based software for control and management of Powerware dc power systems. DCTools allows the viewing, editing, and back-up of configuration file data.

Device

The Powerware dc power system controller with which *DCTools* communicates. This may be a supervisory module, a system controller or a *CellSure* Battery Controller.

Dial Out Number

The telephone numbers to be called (via a modem) if alarm reporting is enabled. Consult the modem documentation for appropriate dial modifiers to use with the ATD command. Leave blank to prevent dial-out.

Enter any valid dialing number, up to 23 digits long, including dummy spaces and hyphens (-). A comma can also be inserted where you want a pause in the dialing – for example, to wait for an additional dial tone, as in dialing out through a PABX.

Digital Output mapping A (Alarm States)

Optional digital output activated while this alarm is active.

Digital Output Mapping A (Digital Inputs)

Optional digital output activated while this digital input is active.

Digital Output mapping B (Alarm States)

Optional second digital output activated while this alarm is active.

Digital Output Mapping B (Digital Inputs)

Optional digital output activated while this digital input is active.

Disconnect Voltage (LVD1)

If the bus voltage drops to this value, then any shutdown rectifiers are restarted (even if LVD is disabled). Then, if the bus voltage is still lower than this value after the LVD1 Recognition Period, the LVD1 will disconnect.

Disconnect Voltage (LVD2)

If the bus voltage drops to this value after the LVD2 Recognition Period, the LVD2 will disconnect. This parameter is ignored if Enable LVD2 Slave Mode is Enabled.

Display Orientation

The orientation of the LCD display.

Duration (Battery Test)

The maximum time a Battery Test process will be active. The Battery Test will pass if the bus voltage remains above the Battery Test Termination Voltage for the duration of the test.

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Duration (Equalize)

The duration of a scheduled Equalize.

Edit User List (HTTP)

When set true the user has access to database items that require Admin user access level.

Elapsed Time (Fast Charge)

The time the current Fast Charge cycle has been active. This timer is started when a Fast Charge cycle starts and is running while Fast Charge remains active. It is suspended and resumed when Fast Charge is suspended and resumed respectively. The Fast Charge cycle will stop if this timer reaches the configured maximum value.

Enable AC Timer (LVD1)

LVD1 will disconnect after the *AC Timer Disconnect Delay*, even if the *Disconnect Voltage* is not reached.

Enable AC Timer (LVD2)

LVDs will disconnect after the *AC Timer Disconnect Delay*, even if the *Disconnect Voltage* is not reached.

Enable Audible Alarm Indication

Enable/disable audible alarm indication.

Enable High Float Tracking

The alarm thresholds will be increased when the operating voltage is raised by a voltage control process.

Enable Low Float Tracking

The alarm thresholds will be reduced when the operating voltage is lowered by a voltage control process.

Enable Modem

Determines whether or not the RS232 port is configured to work with a modem.

Enable Slave Mode (LVD2)

LVD2 will disconnect and reconnect at the same voltages as LVD1. The LVD2 configuration parameters are ignored.

Engine Run Limit

The Battery Current Limit setting when Engine Run is active. BCL maintains the battery current below this value when the Engine Run digital input is active (Engine Run is enabled). This limit is expressed as a percentage of the installed C10 Battery Capacity.

Equalize

Raises the battery charge voltage to re-distribute the battery electrolyte.

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Execute Commands (HTTP)

When set true the user has access to database items that require Execute user access level.

Fast Charge

After an ac supply failure, Fast Charge automatically increases the float voltage of the dc power system to recharge the batteries as quickly as possible. Enable Fast Charge if the site experiences frequent ac supply failures.

First Date / Time (Battery Test)

The date and time that the first Battery Test will occur. Subsequent tests will occur at every Battery Test Interval after that.

First Date / Time (Equalize)

The date and time that the first scheduled Equalize will occur. Subsequent Equalize cycles will occur at every Equalize Interval after that.

Float Voltage

The voltage required to maintain optimum battery charge (at the nominal ambient temperature). Use the value recommended by the battery manufacturer. The bus voltage will be adjusted above or below this value by Temperature Compensation, Active Voltage Control, Equalize.

Function (Analog Inputs)

Selects the function of this input. The function selects how the value of this analog input is to be used by any control processes, if at all.

Function (Digital Inputs)

Selects the function of this input. The function selects how the value of this digital input is to be used by any control processes, if at all.

Gain (Analog Inputs)

The scaling factor applied to the raw value read from the I/O board.

Gateway Address (Ethernet)

Allows access to IP addresses outside your sub-network. Consult your network administrator.

Group (Analog Inputs)

The group tag used by PowerManagerII to group related inputs and outputs for display purposes.

Group (Digital Inputs)

The group Number to be used by SiteManager.

Group (Digital Outputs)

The Group Number to be used by SiteManager.

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Hardware Version

The Product Hardware Version.

Hardware Version (RXP Bus Slaves)

Hardware Version of the RXP slave

Heatsink Temperature (Rectifier)

The measured rectifier heatsink temperature.

High Digital Output Mapping A (Analog Inputs)

Optional digital output activated while this alarm is active.

High Digital Output Mapping B (Analog Inputs)

Optional digital output activated while this alarm is active.

High Float Threshold

High Float alarm is activated if the bus voltage is above this value.

High Load Threshold

High Load alarm is activated if the bus voltage is above this value.

High Note (Analog Inputs)

User notes about this alarm. These notes appear in SNMP traps and can be viewed using DCTools or PowerManagerII.

High Severity (Analog Inputs)

The severity level associated with the alarm. Digital output-only alarms are not displayed, although any configured digital outputs are still activated.

High State (Analog Inputs)

The state of the selected analog input high alarm.

High Threshold (Analog Inputs)

An analog input high alarm is activated if the scaled input is greater than or equal to this value.

Hold In Value (LVD)

The voltage which the IOB applies to hold the LVD in the connected state.

Host Name (Ethernet)

The Internet Protocol (IP) Host Name. Depending on your network configuration, the host name may be able to be used as an Internet Protocol (IP) address rather than the numeric IP Address. Consult your network administrator.

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HTTP Access

If Enabled, HTTP Web interface access is allowed.

HTTPS Access

If Enabled, HTTPS (SSL) Web interface access is allowed.

Hysteresis (Analog Inputs)

The amount of hysteresis applied to the input before an active alarm is deactivated.

Idle Auto-Disconnect Timeout

(Applies only to modem connections.)

This value has little effect unless one modem is being shared (or calls are charged per minute). In the case of the shared modem, this value should be set as short as possible to maximize the availability of the modem for callback.

Inhibit Period (LVD)

The minimum time an LVD stays connected or disconnected before it can change state.

Interface Version

S3P interface version. As the embedded software is upgraded, the communications interface may change. This number reflects any such change. This value, along with Compatible Interface Version is used by DCTools to determine how to communicate.

Interval (Battery Test)

The time between scheduled Battery Tests. The interval period begins at the start of a Battery Test. Zero disables scheduled Battery Tests. Zero also disables the 48 hour lockout following an ac supply failure, allowing an immediate manual test.

Interval (Equalize)

The time between scheduled Equalize cycles. The interval period begins at the start of an Equalize. Zero disables scheduled Equalizes.

IOB AI Number (Analog Inputs)

The input channel on the I/O board of this analog input.

IOB DI Number (Digital Inputs)

The input channel on the I/O board of this digital input.

IOB DO Number (Digital Outputs)

The number of the digital output channel on the I/O board.

IOB LVD Number (LVD)

The LVD connector on the I/O board that this LVD is connected to.

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IOB Number (Analog Inputs)

The I/O board number on which this analog input is located.

IOB Number (Digital Inputs)

The I/O board number on which this digital input is located.

IOB Number (Digital Outputs)

The I/O board number on which this digital output is located.

IOB Number (LVD)

The number of the I/O board that this LVD is connected to.

IP Address (Ethernet)

The Internet Protocol (IP) address. This value and the Subnet Mask must be set correctly to communicate using Ethernet. Consult your network administrator.

IP Address (SNMP Receiver)

SNMP notifications of events are sent to this IP address.

Language

The language selected for the front panel LCD screen. If the selected language is not available, the default language (English) will be used.

LDR Software Version

Bootloader software version. The bootloader is responsible for loading and running the system support software and the main application.

Level (SMS Notifications)

If an alarm becomes active or inactive, with severity level equal to or higher than this setting, the designated SMS Phone Number will be sent an SMS notification.

Level (SNMP Receiver)

When to send a trap to the receiver.

Load Based Rectifier Shutdown

Automatically shuts down rectifiers based on load. Rectifier shutdown flag must also be enabled.

Load based Run Time (Rectifier)

The time the rectifier has been operating since it was registered.

Load Current

The total current drawn by all loads derived from the sum of all current inputs mapped as load shunts. If no input is mapped and a battery current is available, the load current is calculated as Rectifier Current - Battery Current, otherwise it is unavailable.

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Load Power

The power being supplied to the load.

Lockout Remaining (Battery Test)

How much longer the Battery Test is locked-out. Battery Tests cannot be started within 48 hours of an ac supply failure. If an immediate test is required, set Battery test Interval to zero (this disables the 48 hour lockout).

Logon ID (HTTP)

The logon name of a user.

Logon Script button

(Applies only when a modem is selected in *Connect Using* and *Modem Logon Required* is selected.)

Click this button to go to the Modem Script dialog, where you can define and edit a Modem Logon script to be used when the selected modem is connecting to the remote modem at the selected supervisory module or *CellSure* Battery Controller.

Logon Window

Enter the Write Access Password.

Low AC Threshold (Rectifier)

If the ac input voltage is below this value the rectifier will limit input current.

Low Digital Output Mapping A (Analog Inputs)

Optional digital output activated while this alarm is active.

Low Digital Output Mapping B (Analog Inputs)

Optional digital output activated while this alarm is active.

Low Float Threshold

Low Float alarm is activated when the bus voltage is below this value.

Low Notes (Analog Inputs)

User notes about this alarm. These notes appear in SNMP traps and can be viewed using DCTools or PowerManagerII.

Low Severity (Analog Inputs)

The severity level associated with the alarm. Digital output-only alarms are not displayed, although any configured digital outputs are still activated.

Low State (Analog Inputs)

The state of the selected analog input low alarm.

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Low Threshold (Analog Inputs)

An analog input low alarm is activated if the scaled input is lower than or equal to this value.

Low Volts Disconnect 1 Enable

Enables operation of LVD1. If two LVDs are used, LVD1 may be used to connect non-essential load that may be disconnected during an ac supply failure to extend battery hold-up time and protect the essential load.

Low Volts Disconnect 2 Enable

Enables operation of LVD2 (if used). If two LVDs are used LVD2 can be used to disconnect the essential load, or the batteries, that should be only disconnected after LVD1 has disconnected.

Lower Limit (Temperature Compensation)

No additional voltage adjustment is made below this temperature.

Manufacturer Name

The name of the manufacturer.

Max Duration (Fast Charge)

The maximum duration of a Fast Charge (use the value recommended by the battery manufacturer).

Maximum Current Limit (Rectifier)

The maximum current limit value of the rectifier. Adjust Rectifier Current Limit to set a lower operating current limit.

Maximum Number of Log Entries (Data Log Configuration)

The size of the data log.

Maximum Number of Log Entries (Event Log Configuration)

The size of the event log.

Maximum Power Limit (Rectifier)

The maximum output power limit value of the rectifier. Adjust Rectifier Current Limit to set a lower operating power limit.

Maximum System Voltage

The maximum voltage the live bus may be set to. Do not set above 58.0V. The actual bus voltage may be adjusted up to this value by Fast Charge, Equalize or AVC.

Minimum System Voltage

The minimum voltage the live bus may be set to. The actual bus voltage may be adjusted down to this value by control processes such as AVC and Battery Current Limit.

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Mode (SNMP Receiver)

Set to Normal traps to send normal traps to a Network Management System on alarm activation and deactivation. Set to Acknowledged Summary Traps to send summary traps to PowerManagerII. These traps are repeated until PowerManagerII receives the trap, connects to the controller, and downloads alarms and data.

Modem Auto Answer Rings

Number of rings before an incoming call is answered. Setting this parameter to zero disables incoming calls (the modem can still be used for alarm reporting).

Modem Logon

(Applies only when a modem is selected in *Connect Using*.)

Select this option if the selected modem has security features, and you want it to use a Modem Logon script when establishing connection with the remote modem at the site.

(Click *Logon Script* to view and edit the script for the connected Device.)

Modem Maximum Retries

If an alarm report dial-out does not connect with a remote modem, then this number of subsequent alarm report attempts will be made on the current dial-out number before trying the next dial-out number from the Dial Out Number Table. Dialing will stop if none of the numbers in the Dial Out Number Table connect.

Modem Power Reset

If this is enabled, then an attempt will be made to reset a non-operating modem by turning its power supply off and on using digital output 2.

Modem Retry Interval

If an alarm report dial-out does not connect with a remote modem, then another attempt will be made after this time interval.

Modem Set up String

The string sent to the modem on reset. The modem AT command should not be included as it is automatically sent. The Auto-Answer Rings parameter is also sent, so it does not need to be included here. For complete details of appropriate commands, consult your modem documentation.

Name (Analog Inputs)

The name of this analog input channel as it will appear on management software such as DCTools or PowerManagerII. This name is not displayed on the controller.

Name (Digital Inputs)

The name of the digital input.

Name (Digital Outputs)

The name of the digital output.

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Name (RXP Bus Slaves)

Name of the RXP slave

Name (SMS Notifications)

A name to identify this phone.

Name (SNMP Receiver)

Name used to identify the receiver.

Next Start Time (Battery Test)

The start time of the next scheduled Battery Test.

Next Start Time (Equalize)

The start time of the next scheduled Equalize cycle.

Normal Interval (Data Log Configuration)

The time between each data log record when the Bus Voltage differs from the Float Voltage by less than the Data Log Off Normal Offset Voltage. Data log entries are also written whenever an event is logged.

Notes (Alarm States)

User notes about this alarm. These notes appear in SNMP traps and can be viewed using DCTools or PowerManagerII.

Notes (Digital Inputs)

User notes about this alarm. These notes appear in SNMP traps and can be viewed using DCTools or PowerManagerII.

Number of Dial Attempts

(Applies only to networks using modem connections.)

The maximum number of unsuccessful re-dial attempts Connection Manager will make to a Device via a modem, before displaying a *Failed* status for that connection.

Connection Manager will not re-dial until the Retry Wait time has expired.

Off-Normal Interval (Data Log Configuration)

The time between each log record when the Bus Voltage differs from the Float Voltage by more than the Data Log Off Normal Offset Voltage.

Off-Normal Offset Voltage (Data Log Configuration)

The Off Normal Log Interval will apply when bus voltage is outside the range: float voltage ± Off Normal Log Offset. Off normal condition transitions is recognized within 10 seconds.

Offset (Analog Inputs)

The offset applied to the raw value read from the I/O board.

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Operating Voltage

This voltage is usually the Float Voltage (but can be the Fast Charge Voltage or Equalize Voltage if either is active) adjusted by Temperature Compensation. Or, it is the Battery Test Voltage if Battery Test is active with Fast Charge and Equalize inactive.

Output Ramp Up Slope (Rectifier)

The ramp-up slope of the rectifier, as a percentage of the rectifier rated current. Used by APR-3G, NPR, R2948, and R5848 series.

OVSD Set Point (Rectifier)

Rectifier Over Voltage Shut Down set point. Not used by all rectifier types.

For 3G rectifiers the recommended value is 1.6V above Maximum System Voltage.

Passthrough Communications

A CellSure Battery Controller (CBC) can be connected to an SM45, SM50 or SM65 supervisory module and all communications to the CBC are through the supervisory module's external communications connection (RS232, modem or Ethernet) .

Password (HTTP)

The password for this user.

Phone Number (SMS Notifications)

The phone number for SMS notifications.

Physical Mounting

The orientation of the LCD display.

Poll By Callback

(Applies only when a modem is selected in *Connect Using*.)

Select this option if you want the selected modem to use a poll-by-callback method when establishing connection with the remote modem at the dc power system.

Poll Interval (SNTP)

Polling interval in seconds.

Port (SNMP Receiver)

SNMP notifications of events are sent to this UDP port.

PowerManagerII

PowerManagerII is a software tool for remote management of multiple Powerware dc power systems.

Primary Address (SNTP)

IP address of Primary SNTP server.

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Pull In Value (LVD)

The voltage which the IOB applies to initially connect the LVD.

RCP

Control protocol used by the supervisory modules to communicated with rectifiers, SiteSure modules and other dc power system devices.

Read (HTTP)

When set true the user has access to database items that require Read Only user access level.

Recharge Percentage (Fast Charge)

The ratio of ampere-hours recharged to the ampere-hours discharged. Fast Charge stops when the recharge Ah recharged x Fast Charge Recharge Percentage equals the Ah discharged, or after Maximum Duration.

Recognition Period (LVD1)

The time the bus voltage must be below the LVD1 Disconnect Voltage before disconnection, or above the LVD1 Reconnect Voltage before reconnection.

Recognition Period (LVD2)

The time the bus voltage must be below the LVD2 Disconnect Voltage before disconnection, or above the LVD2 Reconnect Voltage before reconnection.

Reconnect Voltage (LVD1)

LVD1 reconnects when the bus voltage has been above this value for the LVD1 Recognition Period and LVD2 is disabled, or has already reconnected, or is in slave mode.

Reconnect Voltage (LVD2)

LVD2 reconnects when the bus voltage has been above this value for the LVD2 Recognition Period. This parameter is ignored if Enable LVD2 Slave Mode is Enabled.

Rect Cycle High Threshold (Load Based Rectifier Shutdown)

If the load power is above this percentage of total system power then any shutdown rectifiers will be restarted.

Rect Cycle Interval (Load Based Rectifier Shutdown)

The time interval in minutes that rectifiers are cycled when the LBRS process is active.

Rect Cycle Low Threshold (Load Based Rectifier Shutdown)

Rectifiers will only be shut down by the LBRS process if the load power is below this percentage of total system power.

Rectifier Current

The total current output by all rectifiers derived from the sum of all current inputs mapped as rectifier shunts. If there are no rectifier shunts but there are battery and load shunts, the rectifier current is calculated as Battery Current + Load Current. Otherwise rectifier current is determined as the sum of all reported rectifier output currents.

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Rectifier Current Limit

The output current limit of the rectifier. If set to zero then the output current is maximum. Used by APR-3G, APR, APU, NPR, R2948 and R5848 series.

Rectifier Shutdown

Allows remote rectifier shutdown/restart.

Reference Temp (Temperature Compensation)

The temperature where no voltage adjustment is applied. Use the value specified by the battery manufacturer.

Remaining Time (Battery Test)

The time to the end of the currently active Battery Test.

Remaining Time (Equalize)

The time until the current Equalize cycle will stop.

Remote Control State (Digital Outputs)

Allows remote control of the digital output.

Reset Battery Test Failed Alarm

This command attempts to reset Battery Test Failed alarm.

Reset Rectifier Comms Lost Alarm

This command attempts to reset Rectifier Comms Lost alarm and Multiple Rect Comms Lost alarm.

Restart All Rectifiers

This command sets all Shutdown Rectifier elements to false.

Restore (HTTP)

When set true the user is allowed to upload configuration or snapshot.

Retry Wait

(Applies only to modem connections.)

The time Connection Manager will wait before making a re-dial attempt to a Device via a modem.

The Number of Dial Attempts value determines how many times Connection Manager will re-dial the same Supervisory Module or CellSure Battery Controller.

Run Up Date

The date the connected device was run up in the factory. The format of the date is dd/mm/yy. This item is not reset by the Reset System Configuration command.

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RXP

Advanced control protocol used by the SC100 and SC200 system controllers to communicated with rectifiers, I/O boards and other dc power system devices.

S3P

Proprietary serial communications protocol used to communicate with a connected Device.

S3P Address

The S3P slave address.

S3P Connect Sequence Retries

(Applies only to modem connections with the S3P protocol.)

After a carrier has been detected, the modem may still require some time before the connect response comes through. The Number of Connect Retries should be set to at least 5. There is little harm in setting it too high, but setting it too low can reduce your communications reliability.

S3P Number of Retries

The number of consecutive, unsuccessful connection attempts to any Device, after which Connection Manager will display a *Failed* status for that connection (if the Overriding Timeout has not expired first).

Accept the default value of 1 if the connections are very reliable. Otherwise, select a higher Number of Retries.

S3P Overriding Timeout

The maximum time Connection Manager will spend trying to connect to a Device before displaying a *Failed* status for that connection (if the Number of Retries have not occurred first).

S3P Multidrop Networks:

Accept the default value of 60s.

Modem connections:

Because modem communications are slower than other types of communications, the overriding timeout should be more than for direct connections. A value of 120s is recommended.

S3P Timeout

The time Connection Manager will wait for a response from a Device before displaying a *Failed* status for that connection.

S3P Multidrop Networks:

You may need to adjust this Timeout value if large network delays are common. Otherwise, use the default of 1000ms.

Modem connections:

Because of the buffering that occurs, this needs to be more than for direct connections. A minimum value of 2000ms is recommended.

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Scripting Timeout

(Applies only to modem connections with callback security.)

The maximum time Connection Manager will wait for an expected prompt when running a Modem Logon script, before giving up and reporting a *Script Failed* communications error.

Serial Number

The Product Serial Number. This item is not reset by the Reset System Configuration command.

Serial Number (I/O Board Mapping)

This provides a mapping from I/O board numbers as used by the analog input configuration to I/O board serial numbers.

Serial Number (Rectifier)

Rectifier serial number.

Serial Number (RXP Bus Slaves)

The serial number of this slave.

Serial S3P Passthrough Port (Ethernet)

Server port number for Ethernet S3P connections.

Severity (Alarm States)

Specifies the severity of the alarm.

Severity (Digital Inputs)

Alarm severity indicator

Site Address

The street address of the site.

Site Name

The site designation or code.

Site Notes

Notes made by the installation or maintenance personnel.

SiteManager

SiteManager is a feature of PowerManagerII that enable specially configured inputs and outputs to be organized and displayed separately.

Slope (Temperature Compensation)

Bus voltage adjustment rate. Use the value specified by the battery manufacturer.

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SNMP

Simple Network Management Protocol. A protocol used to broadcast database status information to a network management system such as HP OpenView®.

SNMP Access

Determines how SNMP access is allowed.

SNMP Number of Retries

The number of consecutive unsuccessful connection attempts to a Device, after which Connection Manager will displaying a *Failed* status for that connection.

Ethernet:

Adjust this Timeout value if large network delays are common. Otherwise, use the default of 20s.

Modem connections:

Because of the buffering that occurs, this needs to be more than for direct connections. A minimum value of 60s is recommended.

SNMP Read Community

Community that can get items.

SNMP Timeout

The maximum time Connection Manager will spend trying to connect to a Device before displaying a *Failed* status for that connection.

Ethernet:

Adjust this Timeout value if large network delays are common. Otherwise, use the default of 20s.

Modem connections:

Because of the buffering that occurs, this needs to be more than for direct connections. A minimum value of 60s is recommended.

SNMP Write Community

Community that can set items.

SNTP

Simple Network Time Protocol. An Internet protocol that allows time synchronization with SNTP time servers.

Software Version

Application software version. This is the software version of the main controller application.

Software Version (RXP Bus Slaves)

Software Version of the RXP slave

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Startup Delay (Rectifier)

The delay from ac turn-on before the rectifier output turns on.

State (Alarm States)

The state of this alarm.

State (Digital Outputs)

The state of this digital output. Active digital outputs may be energized or de-energized depending on their configuration.

State (RXP Bus Slaves)

Registration state of the slave with RXP Slave Serial Number serial number.

Status (Analog Inputs)

Enable/disable this analog input channel.

Status (Digital Inputs)

Enable/disable this digital input channel.

Status (Digital Outputs)

Enable or disable this digital output. If disabled, the digital output is not driven.

Status (Rectifier)

The status reported by this rectifier.

Subnet Mask (Ethernet)

Identifies which fragment of the IP address is the sub-network identity. This value and the IP Address must be set correctly to communicate using Ethernet. Consult your network administrator.

Sum of Reported Rectifier Currents

The sum of all Rectifier Reported Current values. In systems with only one shunt, this value is used as the Rectifier Current.

System Location

Usually the location of the dc power system within the site.

System Manufacturer

The manufacturer of the dc power system.

System Object ID

Used to form the return value for the SNMP MIB-2 sysObjectId. These numbers start with a specific enterprise ID (i.e. 1918 for Powerware) and are preceded by 1.3.6.1.4.1 to form an object ID for the system type.

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System Overload Recognition Period

The System Overload alarm activates if the load is above the System Overload Threshold continuously for this time. It is normally set to several hours so that the alarm does not operate during a normal battery recharge.

System Overload Threshold

The System Overload alarm activates if the load is above this threshold continuously for the System Overload Recognition Period. Measured as a percentage of total rectifier capacity.

System Overload Type

If the System Overload Type is total capacity then the alarm will trigger when the load is above the System Overload Threshold for the System Overload Recognition Period. If the System Overload Type is redundancy then the alarm will trigger when the load is above the total current capacity of the system minus the current capacity of the largest rectifier for the System Overload Recognition Period.

System Power

The output power of the system as a percentage of the total nominal power of the registered rectifiers.

System Serial Number

The dc power system serial number assigned by the manufacturer.

System Type

The dc power system model number assigned by the manufacturer.

Target Voltage

The voltage maintained by AVC. AVC will set the Base Voltage to attempt to maintain the Bus Voltage to this value.

Temperature Compensation

When enabled, the battery charge voltage is automatically adjusted based on temperature. This is recommended by battery manufacturers to optimize battery life.

Termination Voltage (Battery Test)

If the bus voltages drops below this value during a Battery Test, then the test fails.

Test State (Digital Outputs)

Allows control of the digital output for test purposes. This helps to confirm wiring installation.

Trap Community (SNMP Receiver)

Community to use for traps sent to the receiver.

Trap Format

Select Powerware for multiple trap numbers, or X.733 for a single trap number as per ITU X.733.

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Trap Repeat

If enabled, alarm activation traps will be repeated according to Trap Repeat Rate.

Trap Repeat Rate

How often to send a trap to trap receivers if Enable Trap Repeat is Enabled or the trap receiver's Trap Receiver Mode is Acknowledged Summary Trap.

Trap Version

Indicates whether SNMP v1, SNMP v2 or SNMP v3 trap will be sent.

Type (RXP Bus Slaves)

What type of component (IOB, rectifier etc) this slave is.

UDP Port (SNTP)

SNTP client destination port.

UI

User Interface. The keypad and LCD display on the front of the Device.

UI Access

Controls keypad access to change configuration items, and start or stop processes. This provides protection against unauthorized or accidental modifications of configuration settings.

UI Access PIN

If UI Access is set to PIN Protected then this value must be entered before any changes to configuration items or control actions can be made.

Units (Analog Inputs)

Units of this analog input (after scaling).

Upgrade Firmware (HTTP)

When set true the user is allowed to upgrade firmware (including de-installing optional modules).

Upper Limit (Temperature Compensation)

No additional voltage adjustment is made above this temperature.

User Name (HTTP)

The full name of the user. This is for reference only and is not used in the login process.

Value (Analog Inputs)

Analog input value.

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Value (Digital Inputs)

Voltage (Equalize)

The bus voltage maintained during an Equalize cycle. The bus voltage is further adjusted by Temperature Compensation.

Voltage (Fast Charge)

The bus voltage maintained during Fast Charge (use the value recommended by the battery manufacturer). Adjustments for Temperature Compensation and Battery Current Limit also apply.

Voltage (Rectifier)

The output voltage measured by this rectifier. This is measured by the rectifier and reported via the RXP bus.

Voltage Threshold (Fast Charge)

If the bus voltage drops below this value then Fast Charge occurs when the ac supply is restored. Fast charge can also be triggered based on the Fast Charge Ampere Hour Threshold.

Write (HTTP)

When set true the user has access to database items that require Write user access level.

Write Access Password

If set, requires a password to be used before write access is granted. This password may be used to control remote configuration change or control actions. Note that the password is sent unencrypted.

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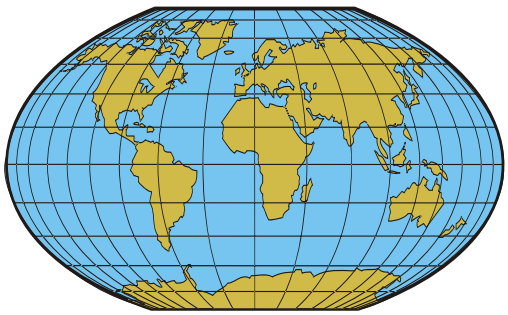
Worldwide Support

For product information and a complete listing of worldwide sales offices, visit Eaton's Powerware website at: **www.powerware.com** or email: **DCinfo@eaton.com**

For technical support contact either your local Powerware dc product representative, the closest office from the following list, telephone **(+64) 3 343-7448,** or email **CustomerServiceNZ@eaton.com**



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