

DCTools Configuration Software Help

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Purpose

This guide describes the operation and application of DCTools Configuration Software.

Audience

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

- the operation and configuration of Eaton 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:

Eaton 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 [117](#).

Related Information

Title	Device	IPN
Data-Voice-Video Power Solutions Installation Guide (24V North America Models)	SM65	997-00012-76
Whisper Single-Bay Outdoor Cabinet (with APS6-300 Series) Installation Guide	SC100 or SC200	997-00012-73
Core Power Solutions Installation Guide (UL-Listed Models)	SC200	997-00012-71
Access Power Solutions Installation Guide (SM45 versions) - Spanish	SM45	997-00012-70
Access Power Solutions Installation Guide (SM40 versions) - Spanish	SM40	997-00012-69
Whisper Single-Bay Outdoor Cabinet Installation Guide	SC100 or SC200	997-00012-67
Data Power Solutions Quick Start Guide	SM45	997-00012-66
Enterprise Power Solutions Installation Guide (EPS) - Spanish	SC100 or SC200	997-00012-64
SC100 System Controller Handbook	SC100	997-00012-63
RM3-400/410/420 Series DC Power Systems	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

Title	Device	IPN
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
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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Overview


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About DCTools

DCTools is Microsoft® Windows®-based software for control and management of Eaton's dc power systems. DCTools allows the viewing, editing, and back-up of configuration file data. A communications connection from a PC running DCTools to a dc power system is controlled by the *Connection Manager* (see About Connection Manager on page 6). *Connection Manager* maintains a list of communication connections and activates the connections as required. The types of communications connection depend on the dc power system model and configuration. Refer to the dc power system Installation Guide for information (see Related Information on page ii).

DCTools runs under Microsoft Windows 2000, XP, Vista or Windows 7.

Starting DCTools

When you start DCTools the DCTools icon  appears in the System Tray at the right of the taskbar.

When you start DCTools for the first time a Welcome screen is also displayed.



► To close the welcome window

- 1 If you do not want the Welcome screen to appear on subsequent startups, select *Do not display this welcome screen again*.


To make the Welcome screen reappear change the "Welcome Screen" setting in the DCTools config file (DCTools.cfg) located in the DCTools program folder.

- 2 Click *Close*.

► To run DCTools

- USB communications (SC200 only):


Plug a USB cable from the PC to the USB port of the SC200 system controller. DCTools will start automatically.

 *The first time the SC200 USB connection is used, a warning about Windows Logo testing may be displayed. If this warning appears, select 'Continue Anyway'.*

- All other communication methods, either:

- Right-click the DCTools icon  and choose:

Connection Manager to go to the Connection Manager window.


 *See About Connection Manager on page 6.*

Help to view this Help guide.

About to view DCTools version and copyright information.


Shut down DCTools to close all DCTools windows and remove the System Tray icon.


- Or, double-click the DCTools icon  in the System Tray to go straight to the Connection Manager window.

 *See About Connection Manager on page 6.*


Shutting Down DCTools


When you shut down DCTools:

- all DCTools Data windows are closed:
 - all active connections are terminated
 - all logged data is purged.
- the DCTools icon  is removed from the System tray (at the right of the taskbar), and ...
- the DCTools program terminates.

 *If you want to terminate an active connection without totally shutting down DCTools, close all Data windows for that Device. Or, in Connection Manager, de-activate the connection (this leaves the Device's Data windows open in Offline mode).*

► To shut down DCTools completely


- Right-click the DCTools System Tray icon  and select Shut down DCTools.

 *If you shut down DCTools while a connection is active, and later restart DCTools, the Data window for the relevant Device will be automatically opened as soon as that Device responds (the Connection Manager window is not automatically opened).*


Overview

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About Connection Manager



 *Connection Manager is not used for USB communications. See Starting DCTools on page [2](#).*

Connection Manager enables you to:

- Set up and maintain one or more connections to Eaton dc power systems and CellSure Battery Controllers (CBC).
 -  *Refer to the dc power system Installation Guide for information (see Related Information on page [ii](#)).*
- Configure general communications options that apply to all connections (except USB).
- Activate a connection. When the relevant Device responds, the main DCTools Data window is opened, displaying the details for that Device.
- Terminate an active connection (you can also do this by closing the Data window for the relevant Device).

Opening Connection Manager

► To open the Connection Manager window

- Right-click the DCTools System Tray icon  and select *Connection Manager*.
-or-
- Double-click the DCTools System Tray icon .

Notes:

- You can only have one Connection Manager window open. If you try to open Connection Manager when it is already open, you will go to the existing Connection Manager window.
- If you close the Connection Manager window when a connection is active there is no effect - that connection remains active. If the connected Device is responding, the Data window shows its latest values. If a Device has not yet responded after its connection has been activated, polling of that Device continues.
- If you close DCTools while a connection is active, and later restart DCTools, you will automatically go to the Data window for the relevant Device when it responds - Connection Manager is not opened.

About the Connection Manager window




The *Connection Manager* window lists potential and active connections, and has the following elements.

- Menus
 - Global menu on page [7](#)
 - Connection menu on page [7](#)
 - Help menu on page [8](#)
 - Right-click menu on page [8](#)
- Toolbar on page [9](#)
- Connection List on page [9](#)

Global menu

Menu item	Function	Keyboard Equivalents
Properties	Opens the Global Communication Options dialog	F9 Right-click menu/Properties (except on connection name)
Close	Closes the Connection Manager window (does not terminate active connections)	ALT-F4

Connection menu

Menu item	Function	Equivalents
Open	Opens the Data window for the selected active connection (disabled for inactive connections)	Right-click menu/Open Double-click <i>active</i> connection name in list
Enabled	Activates or deactivates the selected connection	Space bar Check box in list Right-click menu/Enabled
New	Adds a new connection to the list and opens the Comms Properties dialog for that connection	INSERT key  button Right-click menu/New
Delete	Deletes the selected connection from the list	DELETE key  button Right-click menu/Delete
Rename	Enables editing of the selected connection name	F2 key Right-click menu/Rename Edit in Properties dialog
Properties	Opens the Comms Properties dialog for the selected connection	ENTER key  button Double-click <i>inactive</i> connection name in list Right-click menu/Properties

Help menu





Menu item	Function	Equivalentents
Help	Opens this help at the first topic	F1 key
Language	Displays a list from which you can select another language. See Display Accessibility Options on page 23 .	
About DCTools	Displays an About window, giving version and copyright details	

Right-click Menu

All right-click menu items have the same functions as in the Connection menu (except for Properties – see below). Available menu items vary, depending on where you right-click, as shown below.

Menu item	Available when you right-click...
New	Anywhere in the list <i>except</i> a connection name
Properties	Anywhere in the list – however: <ul style="list-style-type: none">• On Connection name, opens Comms Properties dialog <i>for that connection</i>• Elsewhere, opens Global Communication Options dialog
[Others]	A connection name <i>only</i>

Toolbar

Button	Function	Equivalents
	Adds a new connection to the list and opens the Comms Properties dialog for that connection  <i>If an existing connection is highlighted then the new connection will be a copy of the existing connection.</i>	INSERT key Connection menu/New Right-click menu/New
	Deletes the selected connection from the list	DELETE key Connection menu/Delete Right-click menu/Delete
	Opens the Comms Properties dialog for the selected connection	ENTER key Double-click <i>inactive</i> connection name in list Right-click menu/Properties




Connection List

Name

Shows the connection's given name – right-click and select Rename to change. The check box at the left indicates whether the connection is inactive or active, and can be used to change this status:

- Inactive – click to activate
- Active – click to de-activate

For an active connection, an icon between the check box and name indicates communications status:

-  Trying to establish communications
-  Communications established
-  Unable to establish communications

Comms Properties

This read-only text summarizes the communications properties for the connection. Use the Comms Properties dialog to view and edit all communications properties

Status

- Idle** Connection inactive.
- Connecting...** Trying to establish communications.
- Connected** Connection active and communications established (Device type and ID shown).
- Failed** Unable to establish communications within a preset time (a new attempt will be made) – details of the communications problem are also shown.

Setting Global Communications Options

Global Communications options apply to *all* connections.

► **To view and possibly change Global Communications options**

1 Press F9 or, in the Global menu, select *Properties*.

The Communications Options dialog is then displayed.

2 On the Protocol tab, edit the following values where required.

S3P options:

Number of Retries¹

Timeout³

Overriding Timeout⁵

SNMP options:

Number of Retries²

Timeout⁴

¹ 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.

² 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.

³ 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.

⁴ 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.

⁵ 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.

3 On the Modem tab, edit the following values where required.

Modem options:

Number of Dial Attempts⁶

Retry Wait⁸

S3P Connect Sequence Retries¹⁰

Idle Auto-Disconnect Timeout¹¹

Modem Security options:

Scripting Timeout⁷

Pause After Script Complete⁹

4 Click *OK* to apply your changes and close the dialog (or click *Cancel* to ignore any changes and close the dialog.

If you made any changes, they will apply to any active connections from now on.

Maintaining a Connection List

Use Connection Manager to maintain your list of all potential and active *DCTools* connections, with their individual communications properties.

This section covers the following topics:

- Setting Up a New Connection on page [12](#)
- Renaming a Connection on page [12](#)
- Setting Connection Properties on page [13](#)
- Deleting a Connection from the List on page [20](#)
- Activating a Connection on page [17](#)
- Terminating an Active Connection on page [19](#)

⁶ (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.

⁷ (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.

⁸ (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.

⁹ (Applies only to modem connections with callback security.) The maximum time Connection Manager will wait for the remote modem to begin sending data after scripting is complete. If no data is received in this time, Connection Manager will display a Failed status for that connection. This setting 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. ...

¹⁰ (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.

¹¹ (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.

Setting Up a New Connection

► **To add a new connection to the list**

1 Do one of the following.


Click the  toolbar button.

-or-

Select **New** from the Connection menu.

-or-


Press **Insert**.

 *If an existing connection is highlighted then the new connection will be a copy of the existing connection.*

2 A new connection with the default name ***no name*** or *** Copy of xxxxx** is then listed, and the Comms Properties dialog is displayed.

3 In the Comms Properties dialog, edit the properties as necessary for that connection, and click OK.

For more details, see Setting Connection Properties on page [13](#).

 *With a new Device, you should consider whether you want to set up a password to provide some protection against unauthorized changes to configuration parameter values for that Device. For more details, see Write Access Password Protection Option on page [32](#).*

Renaming a Connection

► **To rename a connection**

1 Do one of the following.

- Right-click the connection in the list, and select *Rename* from the popup menu.

-or-

- Select the connection in the list, and select *Rename* from the Connection menu.


-or-

- Select the connection in the list, and press F2.

2 The connection name then becomes an editable field.

3 Edit the name as required for that connection.


4 Press *Enter* (or click outside the field) when you have finished editing.

 *You can also change a connection name on the Comms Properties dialog. See Setting Connection Properties on page [13](#).*

Setting Connection Properties


Use the Comms Properties dialog to view and possibly change the name and communications properties of a *DCTools* connection.

► **To access the Comms Properties dialog for a connection**

- Select the connection name and click  (or press Enter or select Properties from the Connection menu).

-or-

- Right-click the connection name and select Properties from the popup menu.

 *The Comms Properties dialog is also displayed automatically when you are Setting Up a New Connection on page 12.*

Required communications properties for each type of connection are listed below.

► **To specify Comms Properties for different types of connection**

- 1 On the Comms Properties dialog, specify options depending on the type of connection (you must set *Comms Enabled* to *False* before you can change most options).
- 2 Use the following table to reference typical settings for that connection type.

Standalone Device connection	Using SM45/SM50/SM65* Passthrough (CBC only)
S3P over direct RS232/422/485 on page 13	S3P Passthrough direct on page 15
S3P over dialup modem on page 14	S3P Passthrough over dialup modem on page 15
S3P Multidrop on page 14	S3P Passthrough Multidrop on page 16
S3P over Ethernet (TCP/IP) on page 14	S3P Passthrough over Ethernet (TCP/IP) on page 16

- 3 If you want to activate this connection now, set *Comms Enabled* to *True*. Otherwise, set it to *False*.


- 4 Click *OK* to confirm your changes and close the Properties dialog.

-or-

Click *Apply* to confirm your changes and leave the Properties dialog open.

-or-

Click *Cancel* to reject any unconfirmed changes and close the Properties dialog.

 ** The SC200's Serial Server function makes the SC200's RS232 port available to any software via Ethernet. For example, use Serial Server to connect DCTools to a CellSure Battery Controller (CBC) connected to the SC200. For information refer to the SC200 System Controller Handbook (see Related Information on page ii).*

Standalone Device Connection

S3P over direct RS232/422/485

Protocol	S3P
Connect Using	COMn (where n = 1, 2, ...)
S3P Address	0 (broadcast)

S3P over dialup modem

Protocol	S3P
Connect Using	[Name of installed modem]
More button	[Use to set modem connection properties]
S3P Address	0 (broadcast)
Phone Number	[Phone number of the remote modem]

See also: S3P dialup modem - through SM45/SM50/SM65 on page [15](#).

S3P Multidrop

Protocol	S3P
Connect Using	COMn (where n = 1, 2, ...)
More button	Not available
S3P Address	1 through 65279 (individual address)

See also: S3P Multidrop - through SM45/SM50/SM65 on page [16](#).

S3P over Ethernet (TCP/IP)




Available with SM45/SM65/SC200, or other devices with an RS232/Ethernet interface.

Protocol	S3P
Connect Using	Local Network
S3P Address	0 (Broadcast) 1 - 65279 (individual address)
Server IP Address	User-specific - allocated by network administrator
Server Port	Default is 14000 for SM45/SM65/SC200 (may need to be changed - confirm with network administrator)
Telnet	Default is unselected. Leave unselected for SM45/SM65/SC200 or SGM10. Select this check box if the server will process the Telnet IAC (Interpret as Command) character as a Telnet command, and DCTools needs to escape those characters. Select this check box if using an external Ethernet server or router and there is a communications problem.


Passthrough Communications (CBC via SM45/SM50/SM65 only)

S3P Passthrough direct - SM45/SM50/SM65

 For CellSure Battery Controller with SM45/SM50/SM65 Passthrough only.


Protocol	S3PPassthrough
Connect Using	COM1 or COM2
S3P Address	Format is s:c: <ul style="list-style-type: none"> • For SM50: <ul style="list-style-type: none"> s = SM50's S3P address c = CBC's S3P address (in both cases, 0 = Broadcast, 1 through 65279 = individual address) • For SM45 or SM65: <ul style="list-style-type: none"> s = SM45/SM65's S3P address c = CBC's RCP slave address (150, 151, ...)

S3P Passthrough over dialup modem - SM45/SM50/SM65

 CellSure Battery Controller with SM45/SM50/SM65 Passthrough only.


Protocol	S3PPassthrough
Connect Using	[Name of installed modem]
More button	[Use to set modem connection properties]
S3P Address	Format is s:c: <ul style="list-style-type: none"> • For SM50: <ul style="list-style-type: none"> s = SM50's S3P address c = CBC's S3P address (in both cases, 0 = Broadcast, 1 through 65279 = individual address) • For SM45 or SM65: <ul style="list-style-type: none"> s = SM45/SM65's S3P address c = CBC's RCP slave address (150, 151, ...)
Phone Number	[Phone number of the remote modem]

S3P Passthrough Multidrop - SM45/SM50/SM65


 CellSure Battery Controller with SM45/SM50/SM65 Passthrough only.

Protocol	S3PPassthrough
Connect Using	COMn (where n = 1, 2, ...)
More button	Not available
S3P Address	Format is s:c: <ul style="list-style-type: none"> • For SM50: <ul style="list-style-type: none"> s = SM50's S3P address c = CBC's S3P address (in both cases, 0 = Broadcast, 1 through 65279 = individual address) • For SM45 or SM65: <ul style="list-style-type: none"> s = SM45/SM65's S3P address c = CBC's RCP slave address (150, 151, ...)


S3P Passthrough over Ethernet - SM45/SM50/SM65

 CellSure Battery Controller with SM45/SM50/SM65 Passthrough only*. SM50 will require an RS232/Ethernet interface.

Protocol	S3PPassthrough
Connect Using	Local Network
S3P Address	Format is s:c, where: <ul style="list-style-type: none"> s = S3P address of SM45/SM50/SM65 c = CBC's S3P address (in both cases, 0 = Broadcast, 1 through 65279 = individual address)
Server IP Address	User-specific - allocated by network administrator
Server Port	Default is 14000 for SM45/SM65 (may need to be changed - confirm with network administrator)
Telnet	Server-specific: <p>Default is unselected. Leave unselected for SM45/SM65/SC200 or SGM10.</p> <p>Select this check box if the server will process the Telnet IAC (Interpret as Command) character as a Telnet command, and DCTools needs to escape those characters.</p> <p>Select this check box if using an external Ethernet server or router and there is a communications problem.</p>

 * The SC200's Serial Server function makes the SC200's RS232 port available to any software via Ethernet. For example, use Serial Server to connect DCTools to a CellSure Battery Controller (CBC) connected to the SC200. For information refer to the SC200 System Controller Handbook (see Related Information on page [ii](#)).

Activating a Connection




 The connection must be inactive – check box is cleared .

► **To activate a connection**

- Click the connection's check box to select it ()
- or-
- Right-click the connection in the list and select *Enabled* from the popup menu.
- or-
- Select the connection in the list and select *Enabled* in the *Connection* menu.
- or-
- Select the connection in the list and press the spacebar.

The check box shows a checkmark and *Connection Manager* tries to communicate with the target Device, using the properties defined for that connection.

An icon appears by the connection name, and the Status column for the connection indicate the communications status:

Icon	Status column	Meaning
	Connecting...	Trying to establish communications.
	Failed - Connection Error	Unable to establish communications within a preset time (a new attempt will be made) – details of the communications problem are also shown (see Possible Problems on page 18).
	Connected	Communications established (Device type and serial number shown).

When a Device responds, *Connection Manager* will try to discover the type and interface version of that Device. If these are supported by this version of *DCTools*, then a Data window for that Device is opened. If not, a message dialog will be displayed informing you of this.

If no Device responds, *Connection Manager* will continue 'listening' on this connection.

Possible Problems

▶ **You get no response when a new or changed connection is activated (*Target Failed to Respond* or other error message)**

- Check the connection properties.
- Check your PC cables and connectors.
- Check that the target Device is powered and running, and is physically connected to the communications link.
- If you are using a network link, check the present network status (for example, try accessing other Devices on the network, or contact the network administrator).
- Check that the target Device's communications settings are correctly configured and *S3P Access is Enabled*.
- Try resetting the Device.
- If you are using Passthrough to connect to a *CellSure* Battery Controller (CBC), try activating a connection to that SM45/SM50/SM65 itself. If that works, check that the CBC has the correctly configured address and that it is connected to the SM45/SM50/SM65.

▶ **A Device that previously responded does not when its connection is reactivated**

- Check that the Device is powered and running, and is physically connected to the communications link.
- If you are using a network link, check the present network status (for example, try accessing other Devices on the network, or contact the network administrator).
- Check that the Device's communications settings have not been reconfigured (for example, the protocol or address have changed).
- Check that *S3P Access* is *Enabled* on the target Device.
- Try resetting the Device.



If no Devices are responding, check your PC cables and connectors. In some cases, may need to restart your PC.

▶ **Two or more Devices respond on the same active connection**

The Devices are able to use the same communications link, but have the same configured address, protocol type, and so on. Ensure that only one Device will respond by either disconnecting unwanted Devices, or by configuring each Device with a unique address.

▶ **An unsupported Device responds**

If a Device responds, but its type and interface version are not supported by this version of *DCTools*, then a message dialog will be displayed informing you of this.

Upgrade to the latest version of *DCTools* available from www.powerquality.eaton.com/downloads.

▶ **'Port Already Open' error with direct connection**

This can be caused by another application that is running and tying up the COM port, or by another application not closing the COM port properly. You can test this by trying to open the COM port, using a terminal program such as Hyperterminal. If Hyperterminal can open the COM port without trouble, then try again with *DCTools*.

Confirm that no modem is set up to use that COM port within *DCTools*.

▶ **CRC errors on a S3P/Ethernet connection**

The usual cause for CRC errors over an Ethernet link is whether or not the remote socket server is performing Telnet command processing on the data stream coming into the socket. See following for more details.


► Telnet Command Processing

Default is unselected. Leave unselected for SM45/SM65/SC200 or SGM10.


Select this check box if the server will process the Telnet IAC (Interpret as Command) character as a Telnet command. *DCTools* needs to escape those characters.

Select this check box if using an external Ethernet server or router and there is a communications problem.

Terminating an Active Connection

 The connection must be active (check box is selected) .

► To terminate an active connection and close its Data window

 Logged data collected for all Devices is purged from the system when you close all *DCTools* Data windows.

- Close the Data window for the connection.


► To terminate an active connection (without closing its Data window)

- In the Connection Manager window, do one of the following.
 - Click the connection's check box to clear it ().
 - or-
 - Right-click the connection in the list and unselect *Enabled* in the popup menu.
 - or-
 - Select the connection in the list and unselect *Enabled* in the Connection menu.
 - or-
 - Select the connection in the list and press the spacebar.
 - or-
 - In the Comms Properties dialog for that connection, set Comms Enabled to *False* and click *OK*.

See also: Shutting down *DCTools* on page [3](#).

Deleting a Connection from the List

► **To delete a connection from the list**

- 1 If the connection is active ()*, deactivate it by clicking the connection's check box to clear it ().*
- 2 Do one of the following:
 - Select the connection in the list, and click .
 - or-
 - Right-click the connection in the list, and select *Delete* from the popup menu.
 - or-
 - Select the connection in the list, and select *Delete* from the Connection menu.
 - or-
 - Select the connection in the list, and press *Delete*.
- 3 A confirmation dialog then displays.
 If the connection is still active, a message dialog informs you of this instead. terminate the active connection (see details on page 19) then delete the connection from the list (as above).
- 4 Click OK to confirm the deletion.
- 5 The connection is then removed from the list.

Closing Connection Manager

Closing the *Connection Manager* window does not shut down *Connection Manager* – it continues functioning, any open *DCTools* Data windows remain open, and a new *DCTools* Data window may be opened when communications is established with an active connection that had not previously responded (that is, no Data window had already been opened for that connection). However, shutting down *DCTools* (see details on page 3) exits all *DCTools* windows and executables, and purges all logged data.

See also: About the *DCTools* Log window on page 34.

Overview

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Opening and Closing DCTools windows

Opening a New Data window

The first *DCTools* Data window for a Device opens automatically when you activate a new connection.

You can then open additional Data windows for a connected Device – for example, so you can simultaneously view more than one type of data for that Device.

► **To activate a new Device (and open a Data window for it)**

- 1 Open Connection Manager, using one of the following methods.
 - Right-click the *DCTools* System Tray icon  and select Connection Manager.
 - or-
 - If the Connection Manager window is already open, go to it (for example, by clicking ALT-TAB).
- 2 In Connection Manager, activate the relevant connection, by clicking its check box to select it () or by selecting the connection in the list and pressing the spacebar.
- 3 When the Device responds, a Data window for that Device is opened.

► **To open another window for the same Device**


- In the File menu, select New Window.

Closing a Data window

If you have only one open *DCTools* window for a Device, closing that window deactivates the connection for that Device.


Closing all Data windows does not shut down *DCTools*. The *DCTools* icon  remains in the System Tray and *Connection Manager* continues functioning (whether or not its window is open).

A new Data window may be opened automatically when communication is established for active connections that had not previously responded (that is, where no Data window had yet been opened for that connection).



 *Closing all Data windows purges all collected DCTools log data.*



See also: About the *DCTools* Log window on page [34](#).

Opening and Closing the DCTools Log window

 *The DCTools Log window applies to all active connections. You can open only one DCTools Log window at time.*

► **To open the DCTools Log window**

- In the File menu of any Data window, select Open DCTools Log.
 - or-
 - In the status bar of any Data window, if the *DCTools* Log indicator  is showing, click it.
-  *This icon shows in the Status bar when at least one warning or error event currently applies for the connected Device (the Number next to the icon is the number of these).*




- ▶ **To close the DCTools Log window**
 - Click the  button (top right of the window).
 - Right-click the  button (top left of the window) and select *Close*.

Online v Offline Mode


You can run *DCTools* in the normal Online mode (when the connected Device is communicating with *DCTools*), or you can change to Offline mode (when communications are suspended).

Offline mode enables you to make several changes without actually sending any of them to the connected Device until you are ready. This is similar to holding changes, except that no data is being received from the Device.

▶ To change from Online to Offline mode

- 1 Open Connection Manager, using one of the following methods.
 - Right-click the *DCTools* System Tray icon  and select Connection Manager.
 - or-
 - Click the connection button  in the Status bar.
 - or-
 - If the Connection Manager window is already open, go to it (for example, by clicking ALT-TAB).
- 2 In Connection Manager, de-activate the relevant connection, by clicking its check box to clear it () or by selecting the connection in the list and pressing the spacebar.
- 3 When the Device responds:
 - The word *Offline* shows in the title bar and Status bar of all open Data windows for that Device.
 - The connection button in the Status bar changes to .


▶ To revert to Online mode

- 1 In Connection Manager, activate the relevant connection, by clicking its check box to select it () or by selecting the connection in the list and pressing the spacebar.
- 2 When the Device responds:
 - The word *Offline* is removed from the title bar of all open Data windows for that Device.
 - The word *Offline* is replaced by *Online* in the Status bar of all open Data windows for that Device.
 - The connection button in the Status bar changes to .

Display Accessibility Options

▶ To toggle full-screen display mode

Either.


- In the View menu, select: *Full Screen*.
- or-
- Press F11.
- or-
- Click  in the toolbar.

► **To change the display font size**


- In the view menu, select Fonts and then select a font size from the submenu.

► **To change the display language**

- In Connection Manager select: *Help > Language*.

 *If Connection manager is not open then see Opening Connection Manager on page [6](#).*

- Select the required language from the list. Click *Ok*.
- Shutdown then restart DCTools to change the display to the new language. See Shutting Down DCTools on page [3](#).

 *If the language is changed to "English (United States)" then all temperatures will be shown in degrees Fahrenheit (°F) instead of Celsius (°C).*

About the Data window




Title bar

The title bar of a Data window shows:



- The name of the connected Device
- The word *Offline* when connection to the Device is currently offline.

Data Window Menus




File Menu

Menu item	Function	Equivalents
New Window	Opens another Data window for the Device	CTRL + N
Open DCTools Log	Opens the DCTools Log window	
DCTools Restore	Loads data into a specific DCTools window from a .dct file.  <i>To create a .dct file: right-click anywhere in the window and select DCTools Backup ... (see details on page 30).</i>	
ICE Backup/Restore	Saves (.dcc format) or restores (.irc, .dcc or .dcs format) all data from a Configuration file.  <i>File formats:</i> <i>.dcc - configuration file format used in latest products (does not include site specific information).</i> <i>.dcs - "snapshot" configuration file format used in latest products (includes site specific settings including Site Identity, IP Address and S3P Address). Create a .dcs file via a web browser connected to the device (some devices only).</i> <i>.irc - configuration file format used in older products (does not include site specific information).</i>  <i>A Restore cannot be performed if Pending Changes exist.</i>	
Close	Closes the Data window (terminates connection if only window for the Device)	ALT + F4


Edit Menu

Menu item	Function	Equivalents
Copy	Copies data from the relevant view(s) to the clipboard.	Copy in right-click menu
Paste	Pastes previously copied data from the clipboard back into the relevant view(s).	Paste in right-click menu
Hold Changes	Toggles whether changes are held or sent immediately to the connected Device.	CTRL + H 
Apply Changes	Sends held changes to the connected Device.	CTRL + A 

Go Menu

Menu item	Function	Equivalents
Back	Goes back in the display sequence.	ALT + ← 
Forward	Goes forward in the display sequence.	ALT + → 
Home	Displays the Summary (home) window.	

View Menu







Menu item	Function	Equivalents
Full Screen	Toggles full-screen display mode	F11 
Toolbars	Displays a submenu of toolbar display options.	
Status Bar	Toggles display of the Status bar.	
Information Bar	Displays a submenu of Information Bar display options.	
Fonts	Displays a submenu of display fonts (Smallest to Largest).	

Help Menu

Menu item	Function	Equivalents
DCTools Help	Opens this help guide.	F1
Current Form Help	Opens DCTools Help at the topic related to the function currently displayed (if available).	
Web links	Links to various web pages related to Eaton and Eaton dc products.	
About DCTools	Displays an About window with version and copyright details.	

Toolbar (Data window)

 The Data window toolbar is displayed when Standard Buttons is selected (View > Toolbars).

Button	Function	Equivalents
	Go to the previous view. Click ▾ to select from a list of previous views.	ALT + ←
	Return to a view (only available after you have gone back to a previous view). Click ▾ to select from a list of views to return to.	ALT + →
	Go to the topmost (home) view.	HOME
	Toggle Hold changes (do not send changes to the connected device, or send immediately).	
	Apply changes (send any pending changes to the connected device).	
	Toggle full-screen display.	F11

► To show or hide text labels for toolbar buttons

- In the View menu, select Toolbars, then select Text Labels from the submenu.
- When text labels are selected, The toolbar looks like this:




Information Bar

The optional Information bar is displayed at the left of the Data window. It may display either of the following.

Available Forms Tree view

- Shows the structure of Data browser views for the connected Device.
- Highlights the currently displayed Data browser view.
- Enables you to quickly select a Data browser view.

Pending Changes list

- Shows changes you have made in DCTools that have not yet been sent to (or confirmed by) the connected Device.
- Will accumulate changes made when you are in *Hold Changes* mode (until you manually apply them by clicking  or selecting *Apply Changes* in the Edit menu).
- Is automatically cleared when the changes are acknowledged by the connected Device (either when you are not in **Hold Changes** mode or after you manually apply them).


► **To display the Available Forms Tree view**

- In the View menu, select Information Bar, then select Form Tree in the submenu.
-or-
- Press F9.

► **To display the Pending Changes list**

- In the View menu, select Information Bar, then select Pending Changes in the submenu.







► **To hide the Information bar display**

- Click the  button in the header of the Information bar.
-or-
- In the View menu, select Information Bar, then select None in the submenu.









Data Browser view

The Data browser view is the main data display area.

Button Functions

Button	Function
	Click to view more table columns.
	Click to hide table columns.
	Click to view more table rows.
	Click to hide table rows.
	Click to show a list of options.
	Click to show or hide a panel or table.

Data Editing

	For a list box, either edit the field directly, or click ▼ and select a new value from the list.
 Black text	Indicates a data value that can be changed.
 Gray text	Indicates a data value that has been changed, but not validated by DCTools.  <i>Press the Enter (Return) key on the keyboard for DCTools validation of new value.</i>
 Green text	Indicates a data value that has been changed and validated by DCTools, but the connected Device has not been updated (pending change).  <i>Click the Apply Changes button to update the connected Device.</i>
 Red text	A change that has failed validation by DCTools. Enter a correct value. Hold the mouse pointer over the field (or look in the <i>Pending Changes</i> view) to see details of the validation error.
 Gray background	Indicates a data value that cannot be changed.

► To change a data value

- Double-click or click and drag to select the text.
- Type a new value.
- Press the Enter (Return) key on the keyboard.

Each change is immediately validated by DCTools:


- If the change fails validation an error message is displayed with details of the validation error.
- If the change passes validation and you are in Online mode:
 - If *Hold Changes* is selected, no changes are sent until you select *Apply Changes*.
 - Otherwise, each change is sent immediately to the connected Device.
 - After a change is sent to and accepted by the connected Device and the change is recorded in the DCTools Log.
 - If a change is not accepted by the connected Device, an error dialog is displayed.
 - If the communications link fails, the change remains pending until a subsequent download succeeds.
- If the change passes validation by DCTools and you are in Offline mode, the change remains pending until you revert to Online mode.

Data Specific Help

Hold the mouse pointer over any data item to show specific help text.

Right-click Menus





Right-click in a data window to select part or all (depending on where you right-click) of the data. The right-click menu then shows three options for the selected data.

Menu item	Function	Equivalents
Copy	Copy the selected data to the clipboard.	
Export ...	Export the selected data to a plain or comma-delimited (.csv) text file.	<i>Edit > Copy</i>
DCTools Backup ...	Save all or selected data to a DCTools Backup file (.dct).  <i>To restore the selected data go to File > DCTools Restore ... (see details on page 25).</i>	





Status bar

The Data window's optional Status bar has three panels.

Connection button / indication

-  Online Connected to the connected Device and uploading information
 -  Online Connected to the connected Device and downloading information
 -  Offline Not communicating at present
-  *Click this button to open the Connection Manager window.*

DCTools Log indicator/button

-  One or more Critical/Major/Urgent alarms or error events currently apply for the connected Device (the number is indicated).
 -  No Urgent events apply, but one or more Minor/Non-urgent alarms or error events apply for the connected Device (the number is indicated).
 -  No Urgent or Non-urgent events apply, but one or more Warnings or informational events apply for the connected Device (the number is indicated).
-  *Click this button to open the DCTools Log window.*

Message Panel

This is used to display brief information about the currently selected display item.

- ▶ **To toggle display of the Status bar**
- In the View menu, select Status bar.

Navigation

Use the following standard methods to navigate to another DCTools view (or window).

Using the Information Bar's tree view

Select an item in the tree view to display the Data browser view for that item.

- ☐ *If the Tree view is not displayed, select Information Bar in the View menu, then select Form Tree.*

Using the Go menu

▶ To go to the previous view

- In the Go menu, select Back.

▶ To return to a view

- In the Go menu, select Forward.

- ☐ *Only available after you have gone back to a previous view.*

Using Hotlinks

The header of each Data view contains hotlinks to related displays. Click a hotlink to go to that view.


Using Toolbar buttons

- ☐ *If the toolbar is not displayed, select Toolbars in the View menu, then select Standard Buttons in the submenu.*

▶ To go to the previous view

- Click  or click the adjacent ▼ button to select from a list of previous views.

▶ To return to a view

- Click  or click the adjacent ▼ button to select from a list of views you can return to.

- ☐ *Only available after you have gone Back to a previous view.*

Using keyboard shortcuts

ALT + ← Go to the previous view.

ALT + → Return to a view.

- ☐ *Only available after you have gone back to a previous view.*

↓ Go down to the next item in the tree view.

↑ Go up to the next item in the tree view.

→ Open a closed tree branch, or go to the first child item of an open branch.

← Close an open tree branch, or go to the parent item of a branch.


HOME Go to the top of the tree view.

END Go to the last item in the tree view.

Using Multiple windows

► To go to another DCTools window

- Use the standard Windows operations – for example, press ALT + TAB, or select the window in the Windows taskbar.

 *You will have multiple Data windows open when there is more than one connected Device. You may also open additional Data windows for each connected Device.*

Write Access Password Protection Option


In DCTools, you can set a *Write Access Password* for each connected Device.


When a *Write Access Password* is set a Log On dialog will be displayed for them to enter the password for that Device. If they do not correctly enter the password, any changes will be ignored.

 *This does not apply to SM50s, which have their own Access Level protection.*

► To set a password for a Device

- 1 Go to the Communications.
- 2 Type a password in the Write Access Password field. Press the Enter (Return) key on the keyboard.
- 3 Click *Apply Changes* to update the connected Device.

 *The password will apply for the next DCTools session.*

 *A password only has to be entered once per session.*

► To change or clear a password


- 1 Go to the Communications.
- 2 Type a new password in the Write Access Password field (or delete and leave blank for no password). Press the Enter (Return) key on the keyboard.
- 3 Click *Apply Changes* to update the connected Device.

Backing Up and Restoring Configuration Files

All Configuration details (except site specific details) from the connected device can be saved into a DCC file (SC100/SC200 controllers) or an IRC file (all other devices). This file can be restored to either the same connected device, or to another of the same type and version, via DCTools.

This enables you to:

- Keep a record of a device's configuration file.
- Restore a device's configuration file back to one backed up earlier.
- Upgrade a device's configuration file to a newer one (for example, one obtained from your Eaton dc power system supplier).
- Transfer identical configuration files (except for site specific data) to a number of devices.

 *When backing up a configuration file, you always create a new specially formatted file with the .dcc or .irc suffix.*

 *For information on other files types see Data Window Menus on page [25](#).*

► **To back up and restore the configuration file for the connected device**

Go to File > ICE Backup/Restore. For more information see Data Window Menus on page [25](#).

Copying and Pasting Data

You can copy particular Data Browser view data to the clipboard, and then paste this data into the same DCTools view – for either the same connected Device, or another (usually of the same type).

This enables you to:

- Restore changed data values for a Device back to previously copied values.
- Copy specific saved data values to other Devices.
- Transfer data to other applications (for example, Notepad).



The clipboard can hold only one set of copied data.



To back up all Configuration details from the connected Device into an IRC file, and later restore these from backup, see [Backing Up and Restoring Configuration Files](#) on page [32](#).

When copying data, the data copied to the clipboard depends on the type of displayed view and, in some cases, where you right-click:

In this view...	If you right-click...	This data is copied...
A 'parent' view listing its subsidiary, 'child' views	Anywhere in the view or its header	All present data from all the child views
A view with displayed data in one display area	Anywhere in the view or its header	All data in that view
A view with displayed data in multiple areas	In the view's header or outside all its display area boundaries	All data in that view
A view with displayed data in multiple areas	Inside a display area boundary	Data in that area only

► **To copy all data displayed by or under a DCTools view**

- 1 Go to the relevant view (see table above).
- 2 Right-click in the view header and select Copy from the popup menu.

► **To paste only the data in one display area of a DCTools view**

- 1 Go to the relevant view.
- 2 Right-click in the relevant display area and select Paste from the popup menu.



► **To paste values previously copied to the clipboard**

- 1 Go to the relevant view.
- 2 Right-click and select Paste from the popup menu.


When you paste data from the clipboard:

- If Paste is not valid for that view, it will not be available in the menu.
- Changes are treated as if you made them by editing. For more details, see .
- Your present view does not change (even if the restored data applies to another view).
- Your present view does not change (even if the restored data applies to another view).
- If any settings are incompatible (for example, when you copy across different types of Device), an error dialog is displayed, and those values are not copied.

About the DCTools Log window

 To open the DCTools Log window click on the Information icon . See *Opening and Closing the DCTools Log window* on page [22](#).

The DCTools Log window is for diagnostic purposes. It lists 'global' events recorded by DCTools. These include status and error messages related to each active connection (but not events recorded by the connected Devices themselves).

 The DCTools Log window applies to all active connections. You can open only one DCTools Log window at time.

DCTools Logs:




- Have a maximum number of entries. After this limit is reached, the oldest entries are then deleted.
- Do not include log entries for events recorded by connected Devices (these are shown in the relevant Data window Log views for the specific Devices).
- Can be viewed for Devices no longer connected (up until all DCTools Data windows are closed).

The tree view lists all DCTools Logs.

- The topmost (Root) DCTools Log lists information about global events that are not specific to any connected Device (for example, Application Started).
- Under the Root, DCTools Logs are listed for each connected Device and, in some cases, for related subsystems (for example, an NES has an NSM35 log and one per battery tray). Each of these logs lists communications status messages, system item changes, and other events specific the Device or subsystem.
- Select an DCTools Log in the tree view to display the relevant log entries in the Event table at the right.

This table lists entries in the selected DCTools Log.


- Each entry has an associated priority, indicated by one of the following icons.


	Information only	Logged for informational purposes only; does not indicate any abnormalities
	Warning	<p>Non-critical for the originating process</p> <p>For example, an <i>S3P Invalid data id comms error</i> warning is non-critical because communications can continue with next item.</p> <p>If unexpected warnings continue to occur during normal operation, contact your Eaton dc power system supplier.</p>
	Error	<p>Usually critical for the originating process and results in process termination</p> <p>For example, an <i>Invalid database state</i> error is critical because the target database state is undetermined after that point and communications cannot continue, so the connection will be de-activated.</p> <p>Such errors should not occur during normal operation – if they do, contact your Eaton dc power system supplier.</p>


- Each entry is time-stamped (to the nearest second) and has an identifier (ID).
- Each entry has a Count value that is incremented each time a new event with the same ID occurs.
- You can change the listing sequence by using the toolbar buttons (see *Toolbar* below).


Toolbar

 Empties the log

 Lists log entries by time of occurrence

 Lists log entries by priority, then time of occurrence


 Lists log entries by ID


 *Multiple entries with the same ID are not shown when you sort on ID (but are in the other listing sequences).*

See also: Opening and Closing the DCTools Log window on page [22](#).


Shutting Down DCTools


When you shut down DCTools:

- all DCTools Data windows are closed:
 - all active connections are terminated
 - all logged data is purged.
- the DCTools icon  is removed from the System tray (at the right of the taskbar), and ...
- the DCTools program terminates.

 *If you want to terminate an active connection without totally shutting down DCTools, close all Data windows for that Device. Or, in Connection Manager, de-activate the connection (this leaves the Device's Data windows open in Offline mode).*

► To shut down DCTools completely

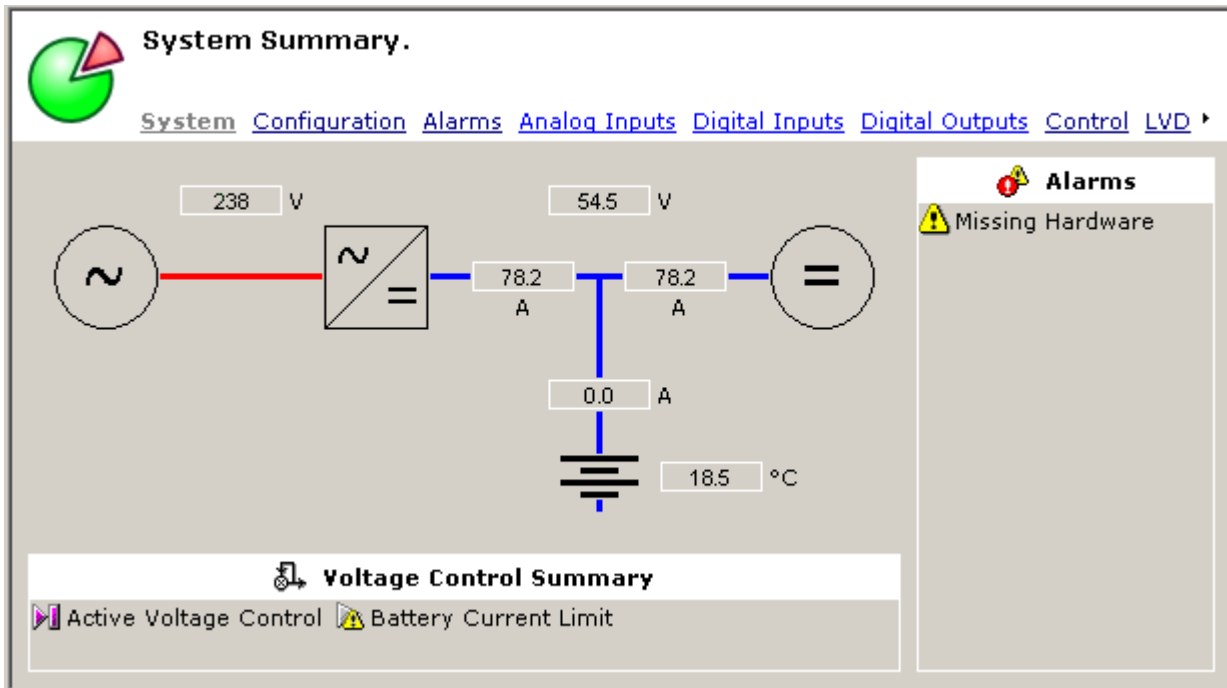
- Right-click the DCTools System Tray icon  and select *Shut down DCTools*.

 *If you shut down DCTools while a connection is active, and later restart DCTools, the Data window for the relevant Device will be automatically opened as soon as that Device responds (the Connection Manager window is not automatically opened).*

Overview

Topic	Page
System Summary	40
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Digital Inputs	50
Digital Outputs	51
Control Processes	52
Rectifiers	59
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System Summary



The System Summary view includes:

- A single-line diagram of the dc power system controlled by the connected Device. This diagram shows:
 - AC input voltage
 - dc output voltage
 - Rectifier current
 - Battery current
 - Load current
 - Battery temperature

☐ ? indicates no information has been received from the connected Device.
 N/A indicates values that do not currently apply.
 O/R indicates values that are outside their full normal operating range.
- A list of active voltage control processes.
 - ☐ Click on "Voltage Control Summary" to go to the Voltage Control Summary view (see details on page 52).
- A list of active alarms
 - ☐ Click on "Alarms" to go to the Alarms View (see details on page 47).
- A list of hyperlinks to other views.


Configuration

Identity

Identity	
Interface Version:	45
Compatible Interface Version:	45
Software Version:	2.57
LDR Software Version:	2.55
Hardware Version:	011
Run Up Date:	06/02/2007
Serial Number:	145332926
Manufacturer Name:	Eaton Corporation
System Manufacturer:	
System Type:	
System Serial Number:	
System Location:	
Site Name:	
Site Address:	
Site Notes:	
Contact:	
Configuration Name:	SC200 MIB18 APS3-300 48V MCF

The System Identity view shows the following groups of values from the connected Device.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.


Item Group	Description
Identity	<p>Details specific to the connected Device.</p> <p> <i>The system and site specific information is not included in DCC or IRC format configuration files. See Data Window Menus on page 25.</i></p>


Communications

Physical Ports	
Front Panel	
UI Access:	Unprotected ▼
UI Access PIN:	****
Language:	en
Physical Mounting:	Vertical ▼
Top Value:	Bus Voltage ▼
Top Value Index:	1
Bottom Value:	Rectifier Current ▼
Bottom Value Index:	2
Allow Front Panel LVD Control:	<input checked="" type="checkbox"/>
+ Serial	
+ Ethernet	
Remote Access Protocols	
+ S3P	
+ HTTP (Web)	
+ SNMP	
+ Serial Server	
+ Modbus	
+ CSP	

The Communications view shows the following groups of values from the connected Device (not all options are available with all devices).

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on + to expand a panel.


Item Group*	Description
Front Panel	Operation of the LCD screen and keypad of the connected Device. For more information refer to the device handbook.
Serial	Settings for serial communications with the connected Device. Includes port settings, modem option settings including PowerManager Callback and SMS Notifications.
Ethernet	Settings for Ethernet communications with the connected Device.
S3P	Set S3P access, address and password
HTTP (Web)	Settings to enable web access and setup registered users.
SNMP	Settings to allow communication with third-party Network Management System (NMS) software using SNMP.
Serial Server	Settings to make an SC200's RS232 port available as an Ethernet port.
Modbus	Settings to allow communication with third-party Building Management System (BMS) software using Modbus-TCP.
CSP	These are parameters for specific protocols. Contact Eaton for further details. <div style="margin-left: 20px;">  <i>If these protocols are not used then leave the parameters at their default values.</i> </div>

 * Some items are not available with all Devices.

RXP (SC100/SC200 only)

RXP Devices									
Num	State	Name	Serial Number	Type	Hardware Version	Software Version	Identify Device		
⌵									
I/O Board to Serial Number Mapping									
Num	Serial Number	RXP Slave Table Index	Number Of Voltages	Number Of Currents	Number Of Temperatures	Number Of Digital Inputs	Number Of Relays	Number Of LVDs	Status
⌵									

The RXP Devices view shows the rectifiers and I/O boards connected (registered) to the SC100/SC200 via the RXP communications bus, and the I/O board mappings for the SC200.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on  to expand a table.

Item Group	Description
RXP Devices	Details of the rectifiers, I/O board or other RXP Devices.
I/O Board to Serial Number Mapping (SC200 only)	Maps an I/O board number (Num) to the serial number of each connected I/O board.

 SC200 LVD mappings are made in the LVD view. See *Low Voltage Disconnect* on page [57](#).

Identify Device (SC200 only)

In DCTools, RXP devices (rectifiers and input/output boards) are referenced by their serial numbers.

► **To identify an RXP device corresponding to a particular serial number**

- In the RXP Devices table, select *Identify Device*.
- Either:
 - The Power-on LED on the selected I/O board or SiteSure-3G module will flash for 60 seconds, or
 - All LEDs on the selected rectifier will flash for 60 seconds.

Standby Mode

Two SC100 or SC200 system controllers can be connected together via RXP. One will be active and control the dc power system, and the other will be in Standby Mode (on, but inactive).

If the active SC100 or SC200 fails or is disconnected, then the SC100 or SC200 in Standby Mode will become active (after a short delay).

Time

Time Synchronization

New Zealand Daylight Time (GMT +13:00)

PC Date Time: 18/02/2009 13:03:57

SC200 Date Time: 18/02/2009 13:04:40

 Synchronise

+ SNTP

The Time view shows the following groups of values from the connected Device (not all options are available with all devices).

- To edit an item see *Data Editing* on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on + to expand a panel.

Item Group	Description
Time Synchronization	Shows the current time and date, and allows synchronization of the date and time on the connected Device with the PC (some devices only).
SNTP	Settings to allow time synchronization with SNTP time servers.

External I/O (SM40/SM45/SM50/SM60/SM65 only)

IO Module Comms Configuration

Module Number	Change module number to:	Detection State	Number Of Analog Inputs	Number Of Digital Inputs	Number Of Digital Outputs	Status
1	0	Not Detected	0	0	0	-
2	0	Not Detected	0	0	0	-
3	0	Not Detected	0	0	0	-
4	0	Not Detected	0	0	0	-
5	0	Not Detected	0	0	0	-
6	0	Not Detected	0	0	0	-
7	0	Not Detected	0	0	0	-
8	0	Not Detected	0	0	0	-
9	0	Not Detected	0	0	0	-
10	0	Not Detected	0	0	0	-
11	0	Not Detected	0	0	0	-
12	0	Not Detected	0	0	0	-
13	0	Not Detected	0	0	0	-
14	0	Not Detected	0	0	0	-
15	0	Not Detected	0	0	0	-
16	0	Not Detected	0	0	0	-

«

^

AC Metering Comms Configuration

IP Address:


Port:


Modbus Module Address:

CellSure Battery Controller (CBC)

Fitted: *the CBC form is only visible if this is set to "True"

The External I/O view shows the connected I/O devices.


- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on + to expand a panel and  to expand a table.

 Some items are not available with all Devices.


Item Group	Description
IO Module Comms Configuration	<p>SM40/SM45/SM60/SM65 only: The table lists any connected SiteSure I/O devices. If more than one SS-GP or more than one IOM-CS master module is connected then edit the number in the <i>Change module number to:</i> column to set sequential master module addresses.</p> <p><input type="checkbox"/> <i>Master modules are pre-loaded with default addresses (SS-GP = 1, IOM-CS = 2).</i></p> <p>Refer to the SiteSure Installation and Configuration Guide for more details (see Related Information on page ii).</p>
AC Metering Comms Configuration	<p>SM45/SM65 only: Configure the communications for the external ac metering option.</p>
CellSure Battery Controller (CBC)	<p>SM45/SM50/SM65 only: Check the box if one or more CellSure Battery Controllers (CBC) are connected.</p> <p><input type="checkbox"/> <i>The CBC Functions cannot be edited unless this box is checked. See details on page 64.</i></p> <p>Refer to the CellSure Installation Guide for more details (see Related Information on page ii).</p>

Alarms

Summary Alarms

- Critical Summary Alarm is Inactive
- Major Summary Alarm is Inactive
-  Minor Summary Alarm is Active

Alarm States

Name	State	Severity	»
Low Float	-	Minor	
Low Load	-	Major	
High Float	-	Minor	
High Load	-	Major	
Rectifier Fail	-	Minor	
Multiple Rectifier Fail	-	Major	
Rectifier Comms Lost	-	Minor	
Multiple Rectifier Comms Lost	-	Major	
Partial AC Fail	-	Minor	
AC Fail	-	Major	
System Overload	-	Minor	
Load Fuse Fail	-	Major	
Battery Fuse Fail	-	Major	
Battery Test Fail	-	Minor	
MOV Fail	-	Minor	
ACD Fan Fail	-	Minor	
LVD1 Disconnected	-	Major	
LVD1 Fail	-	Major	
LVD1 Manual	-	Minor	
LVD2 Disconnected	-	Major	
LVD2 Fail	-	Major	
LVD2 Manual	-	Minor	
Battery Temperature Low	-	Minor	
Battery Temperature High	-	Minor	
Sensor Fail	-	Minor	
Equalize	-	Warning	
Fast Charge	-	Warning	
Battery Test	-	Warning	
In Discharge	-	Warning	
Battery Current Limit	-	Minor	
Rectifier Over Temperature	-	Minor	
New Hardware	-	Warning	
Unknown Hardware	-	Warning	
Missing Hardware		Minor	
Slave Mode	-	Warning	

⌵


Reset Battery Test Failed Alarm

Reset Rectifier Comms Lost


+ Alarm Configuration

The Alarms view shows the following groups of values from the connected Device (not all options are available with all devices).

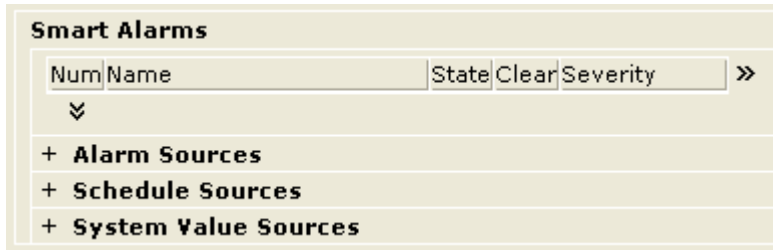
- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on + to expand a panel and ⌵ and » to expand a table.

 Some items are not available with all Devices.

Item Group	Description
Summary Alarms	Indicates if one or more alarms of each severity is active.
Alarm States	Indicates the state and allows configuration of each alarm.
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.
Alarm Configuration	Set the following alarm values: <ul style="list-style-type: none"> • Enable Audible Alarm Indication • Alarm Recognition Period • AC Fail • Low Float • High Load • Low Load • Battery Temperature • System Overload

 For information on how to configure Alarms refer to the controller handbook or dc power system installation and operation guide. See Related Information on page [ii](#).

Smart Alarms (SC200 only)



The Smart Alarms view shows the following groups of values from the connected SC200.

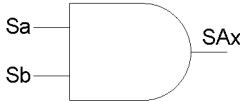
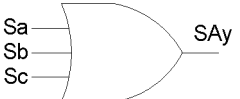
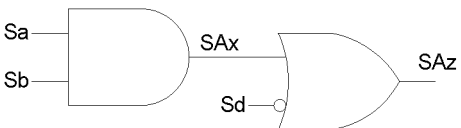
- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on + to expand a panel and ∨ and » to expand a table.

Item Group	Description
Smart Alarms	Configure Smart Alarms.
Alarm Sources	Set any of these as inputs to Smart Alarms: System Alarms, Analog Input alarms, Digital Input alarms, or other Smart Alarms.
Schedule Sources	Set time schedules as inputs to Smart Alarms.
System Value Sources	Set any of these as inputs to Smart Alarms: Bus Voltage, Rectifier Current, Load Current, Battery Current, Battery Temperature, Load Power, System Power, Ah Discharged, Number Of Rectifiers Failed, or Number Of Rectifiers Comms Lost.

☐ For information on how to configure Smart Alarms refer to the SC200 System Controller handbook. See Related Information on page [ii](#).

Smart Alarms are a software simulation of logic gates to allow the logical combination of other alarms, time schedules and/or system values. Up to 32 Smart Alarms can be configured.

A single Smart Alarm is the equivalent of a multi-input AND, OR or XOR logic gate. More complex logic arrangements are created by using one Smart Alarm as an input into another. For example:

Two input AND gate: $SAx = Sa \text{ AND } Sb$	
Three input OR gate: $SAy = Sa \text{ OR } Sb \text{ OR } Sc$	
Multi-gate logic: $SAz = SAx \text{ OR } \text{NOT } Sd$	

☐ One input is Smart Alarm SAx (output from another gate). The other input is negated. This is available with Alarm Sources only.

Key:

SAx, SAy, SAz are Smart Alarms (entered in the Smart Alarms table).

Sa, Sb, Sc, Sd are the Sources (entered in the Alarm Sources, Schedule Sources or System Value Sources tables).

Smart Alarms also have optional activation and deactivation delays. When activated they can cause alarm indications (unless Severity is set to Control) and can activate one or two digital outputs (in the same way as other alarms).

☐ For more information and application examples contact your Eaton DC product supplier and request Eaton Application Note AN0106, SC200 Version 3 Advanced Alarm Features.

Analog Inputs

System Values


Bus Voltage:	54.5	V
Load Current:	78.2	A
Battery Current:	0.0	A
Battery Temperature:	18.5	°C
Rectifier Current:	78.2	A
Sum Of Reported Rectifier Currents:	78.2	A
Load Power:	4.26	kW
System Power:	62	%
AC Voltage:	238	V

Analog Inputs

Num	High State	Low State	Value	Name	Function	Units	High Severity	Low Severity	»
⌵									

The Analogs view shows the values of the analog inputs to the connected Device (not all options are available with all devices).

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on ⌵ and » to expand a table.



 Some items are not available with all Devices.

Item Group	Description
System Values	The dc power system measurements from the connected Device.
Analog Inputs	Indicates the value and allows configuration of any analog inputs.

 For information on how to configure Analog Inputs refer to the controller handbook or dc power system installation and operation guide. See Related Information on page [ii](#).

Digital Inputs

System States



- Fan state is Unavailable
- Cabinet Fan state is Unavailable
- Mains state is Unavailable
- ✓ MOV is OK
-  Load Fuse Fail
-  Battery Fuse Fail


Digital Inputs

Num	Alarm	State	Name	Function	Severity	»
7	-	Closed	Load Fuse Fail	Load Fuse Fail	Disabled	
8	-	Open	Battery Fuse Fail	Battery Fuse Fail	Disabled	
10	-	Open	MOV Fail	MOV Fail	Disabled	

⌵

The Digitals view shows the values of the digital inputs to the connected Device (not all options are available with all devices).

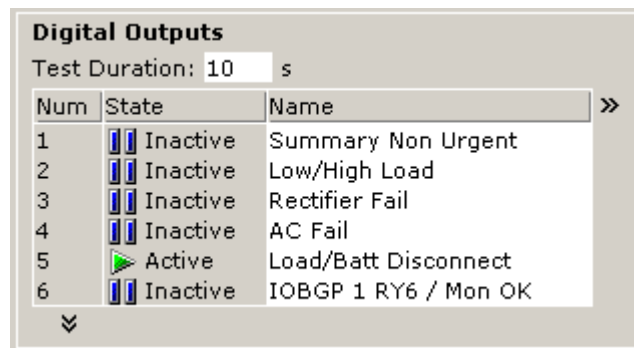
- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on  and  to expand a table.

 Some items are not available with all Devices.



Item Group	Description
System States	The dc power system states from the connected Device.
Digital Inputs	Indicates the value and allows configuration of any digital inputs.


 For information on how to configure Digital Inputs refer to the controller handbook or dc power system installation and operation guide. See Related Information on page [ii](#).

Digital Outputs



The Digital Outputs view shows the state of the digital outputs (relays) controlled by the connected Device (not all options are available with all devices).

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- Click on  and  to expand a table.

 Some items are not available with all Devices.

Item Group	Description
Digital Outputs	Indicates the state and allows configuration of digital outputs.

 For information on how to configure Digital Outputs refer to the controller handbook or dc power system installation and operation guide. See Related Information on page [ii](#).

Control Processes

See:

Voltage Control on page [52](#)

Active Voltage Control on page [53](#)

Temperature Compensation on page [53](#)

Equalize on page [54](#)

Fast Charge on page [54](#)

Battery Current Limit on page [55](#)

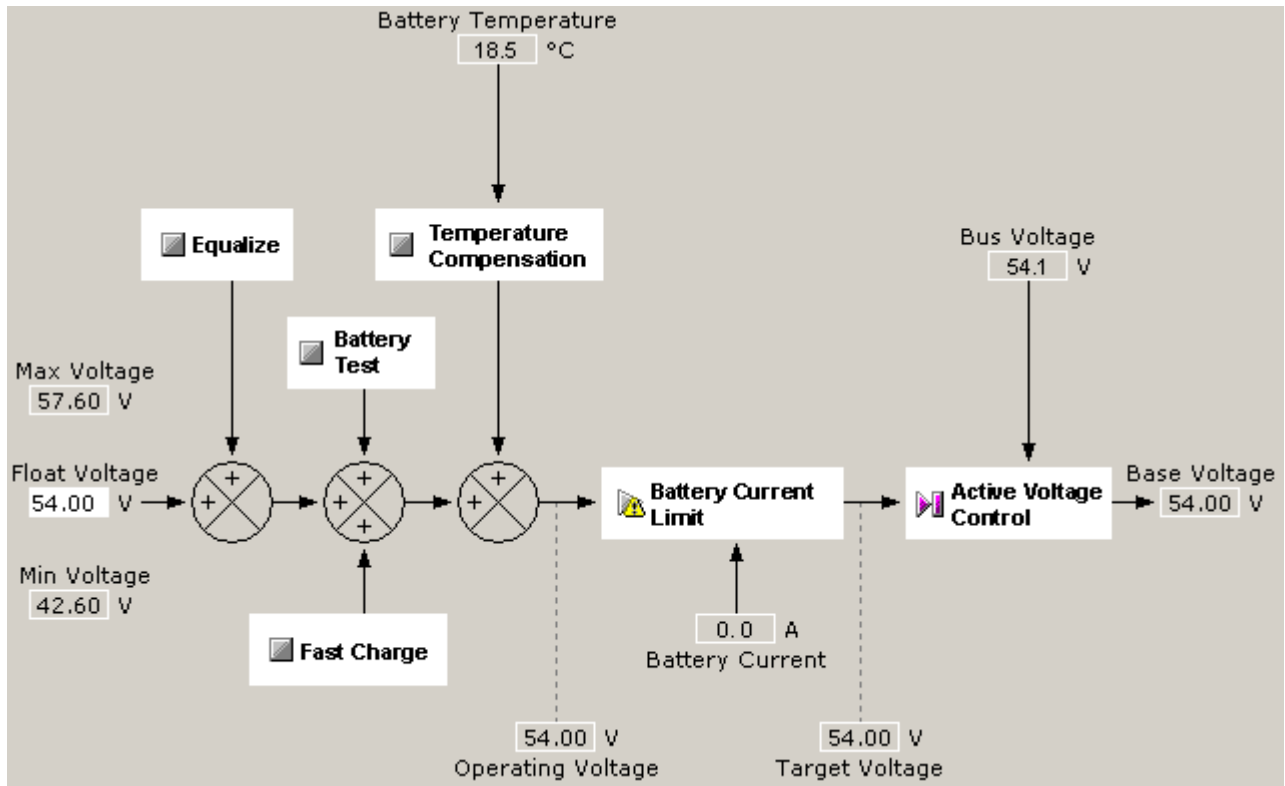
Battery Test on page [55](#)

Battery Characterization on page [56](#)


LVD (Low Voltage Disconnect) on page [57](#)

Generator Control on page [58](#)

Voltage Control



The Voltage Control summary view shows a diagram of the rectifier voltage control processes controlled by the connected Device.

-  ? indicates no information has been received from the connected Device.
- N/A indicates values that do not currently apply.
- O/R indicates values that are outside their full normal operating range.

- To view information on each value hold the mouse pointer over the value to show the specific help text.

- The Float Voltage can be edited in this view.

 See [Data Editing on page 29](#).

- Click on the name of a control process to go to the relevant view. See:

Active Voltage Control on page [53](#)

Temperature Compensation on page [53](#)

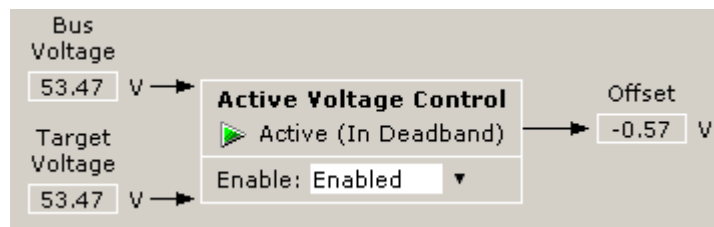
Equalize on page [54](#)

Fast Charge on page [54](#)

Battery Current Limit on page [55](#)

Battery Test on page [55](#)

Active Voltage Control

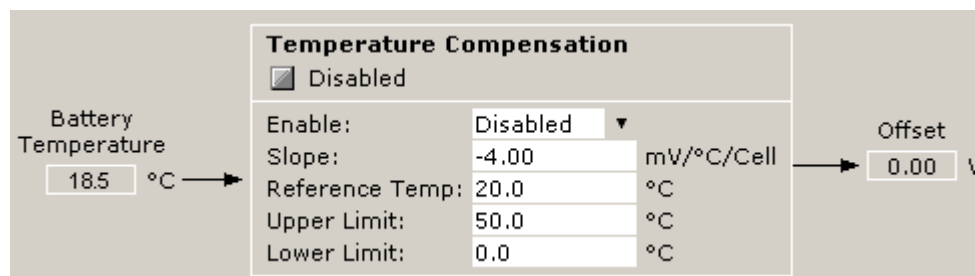


The Active Voltage Control (AVC) view shows the state of AVC and allows it to be enabled and disabled.


- To edit an item see [Data Editing on page 29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: [Active Voltage Control on page 87](#).

Temperature Compensation



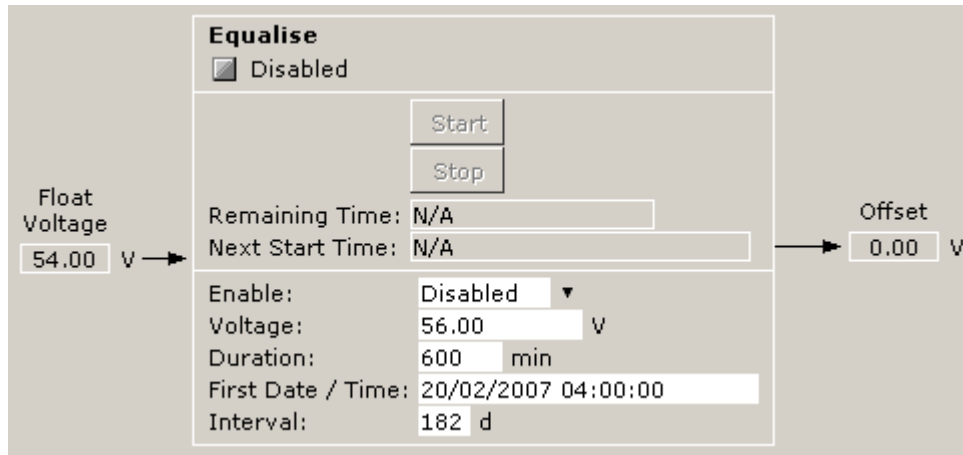
The Temperature Compensation view shows the state of the process, allows it to be enabled and disabled, and allows the parameters to be set.

 For some devices, Upper Limit and Lower Limit are fixed.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Temperature Compensation on page [94](#).

Equalize

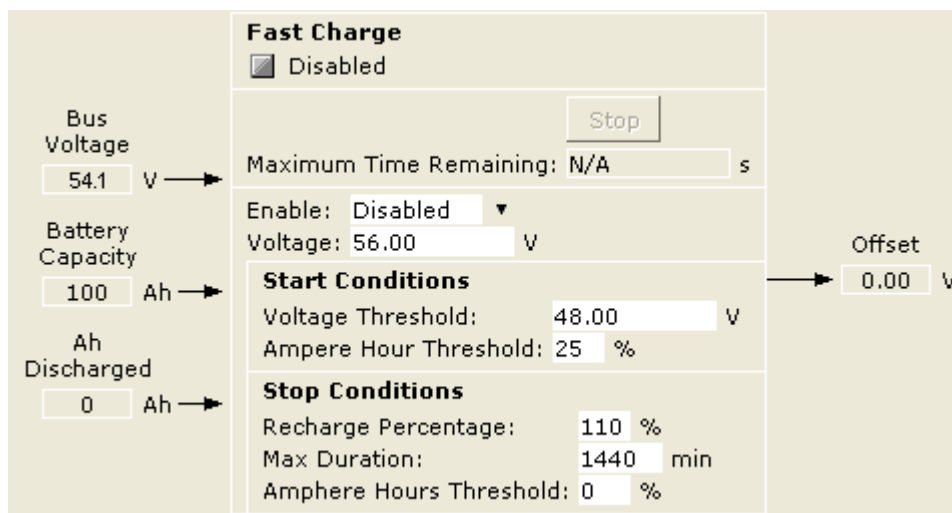


The Equalize view shows the state of the process, allows it to be enabled and disabled, started and stopped, and allows the parameters to be set.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Equalize on page [90](#).

Fast Charge

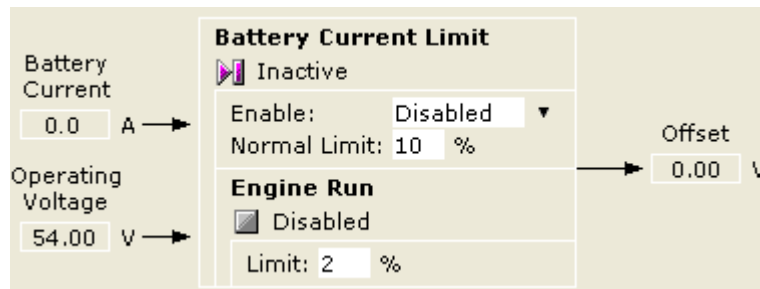


The Fast Charge view shows the state of the process, allows it to be enabled and disabled, started and stopped, and allows the parameters to be set. Not all parameters are available with all devices.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Fast Charge on page [90](#).

Battery Current Limit

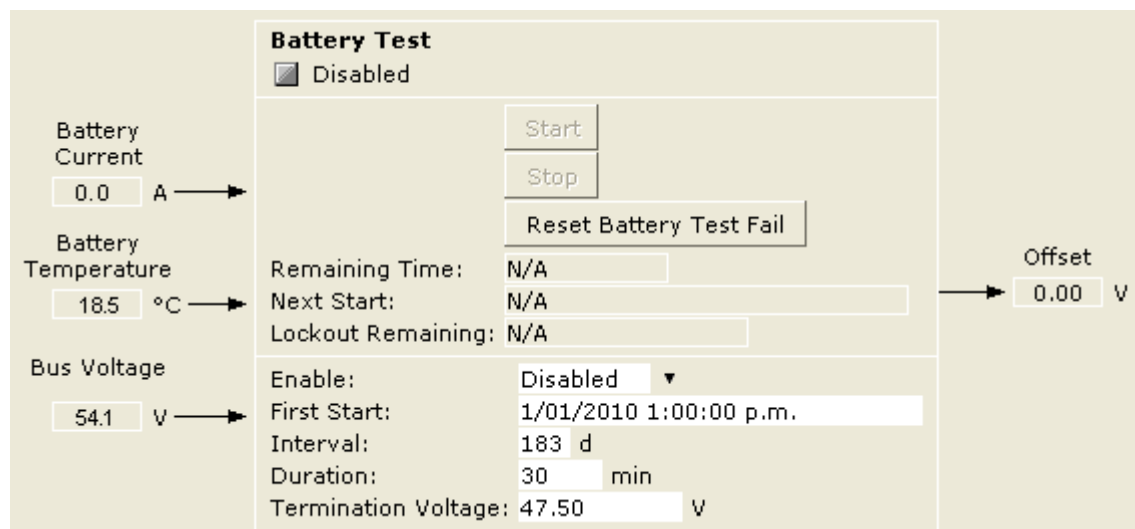


The Battery Current Limit view shows the state of the process, allows it to be enabled and disabled, and allows the parameters to be set.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Battery Current Limit on page [88](#).

Battery Test



The Battery Test view shows the state of the process, allows it to be enabled and disabled, started and stopped, and allows the parameters to be set.


- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- To clear a *Battery Test Fail* alarm, click on the *Reset Battery Test Fail* button.

See also: Battery Test on page [89](#).

Battery Characterization

The Battery Characterization view (SC100 only) shows the state of the process, allows it to be started and stopped, and allows the parameters to be set.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- To clear a *Battery Characterization Fail* alarm, click on the *Reset Battery Characterization Fail* button.

 For the SC200, Battery Characterization is part of the Battery Time Remaining view. See Batteries on page [59](#).

See also: Battery Time Remaining on page [89](#).

LVD (Low Voltage Disconnect)

Typical LVD screen for SC200 system controllers.

Low Voltage Disconnect

Bus Voltage: N/A V

Inhibit Period: 10 s

Allow Front Panel LVD Control:

Logical LVDS

Num	State	Inhibited	Voltage Based Disconnect	Disconnect Voltage, V	Reconnect Voltage, V	Recognition Period, s	AC Timer Based Disconnect	AC Timer Delay, min	Smart Alarm Based Disconnect	Smart Alarm Index	Chained to Previous
1	Connected	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
2	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Enabled
3	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
4	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
5	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
6	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
7	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
8	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
9	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
10	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
11	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
12	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
13	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
14	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
15	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled
16	No Contactors	-	Enabled	43.20	48.00	10	Disabled	240	Disabled	1	Disabled

⤴


+ Physical Contactors

Num	State	Enable	LVD Mapping Number	IOB Number	IOB LVD Number	Type
1	Connected	Enabled	1	1	1	Normally Open
2	Disabled	Disabled	2	1	2	Normally Open
3	Disabled	Disabled	16	1	1	Normally Open
4	Disabled	Disabled	16	1	1	Normally Open
5	Disabled	Disabled	16	1	1	Normally Open
6	Disabled	Disabled	16	1	1	Normally Open
7	Disabled	Disabled	16	1	1	Normally Open
8	Disabled	Disabled	16	1	1	Normally Open
9	Disabled	Disabled	16	1	1	Normally Open
10	Disabled	Disabled	16	1	1	Normally Open
11	Disabled	Disabled	16	1	1	Normally Open
12	Disabled	Disabled	16	1	1	Normally Open
13	Disabled	Disabled	16	1	1	Normally Open
14	Disabled	Disabled	16	1	1	Normally Open
15	Disabled	Disabled	16	1	1	Normally Open
16	Disabled	Disabled	16	1	1	Normally Open

Typical LVD screen for other system controllers.

Bus Voltage 53.58 V →	Low Volts Disconnect	
	Inhibit Period:	10 s
	Allow Front Panel LVD Control:	<input checked="" type="checkbox"/>
	LVD 1	
	<input type="checkbox"/> Disabled	
	Enable:	Disabled ▼
	Enable AC Timer:	Disabled ▼
	AC Timer Disconnect Delay:	240 min
	Disconnect Voltage:	43.20 V
	Reconnect Voltage:	48.00 V
Recognition Period:	10 s	
Analog Input Disconnect Trigger:	Disabled ▼	
Analog Input Number:	1	
LVD 2		
<input type="checkbox"/> Disabled		
Enable:	Disabled ▼	
Enable AC Timer:	Disabled ▼	
AC Timer Disconnect Delay:	240 min	
Enable Slave Mode:	Disabled ▼	
Disconnect Voltage:	43.20 V	
Reconnect Voltage:	48.00 V	
Recognition Period:	10 s	
Analog Input Disconnect Trigger:	Disabled ▼	
Analog Input Number:	1	

The Low Voltage Disconnect view shows the state of LVD channels, allows them to be enabled and disabled, and allows the parameters to be set (not all options are available with all devices).

 An SC200 system controller can have up to 16 LVD contactors mapped to up to 16 LVD channels. Other system controllers have only two LVD channels.

- To edit an item see Data Editing on page 29.
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Low Voltage Disconnect on page 93.

Generator Control

Generator Control	
Ah Discharged:	0 Ah
AC Supply State:	Ok
Bus Voltage:	54.5 V
Battery Current:	0.0 A
Configuration	
Generator Enable Trigger:	Fast Charge Only ▼
Battery Capacity:	100 Ah
Recharge Percentage:	110 %
Amphere Hours Threshold:	0 %

The Generator Control view shows the state of the process and allows the parameters to be set.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Generator Control on page [90](#), Fast Charge on page [54](#) or Equalize on page [54](#).

Rectifiers

Rectifiers

Serial Number	Load Based Run Time	Status
»		

⌵

Restart ALL Rectifiers

Reset Rectifier Comms Lost

Configuration

Rectifier Shutdown: ▾

OVSD Set Point: V

Startup Delay: s

Output Ramp Up Slope: %/s

Low AC Threshold: V

Rectifier Current Limit: A

+ Load Based Rectifier Shutdown

The Rectifiers view shows the operating conditions of all registered rectifiers and allows the rectifier parameters to be set.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.

See also: Load-based Rectifier Shutdown on page [92](#) (not available with all devices).

Load Based Run Time is only displayed if Load Based Rectifier Shutdown is Enabled.

Batteries

Batteries

Battery Charge State:

Bus Voltage: V

Battery Current: A

Battery Temperature: °C

Cells Per String:

Battery Capacity: Ah

Battery State Threshold: A

Battery Type:

Time Remaining:

Ah Discharged: Ah

Battery State Of Health: %

Battery Current Sensor Fail Recognition Period: s

Reset Battery State


+ Battery Time Remaining


+ Midpoint Battery Monitoring

The Batteries view shows the battery conditions (not all are available with all devices) and allows configurable parameters such as *Cells Per String* and *Capacity* to be set.

The *Battery Current Sensor Fail Recognition Period* (SC200 only) is an optional battery current sensor fail delay. Set if momentary battery current sensor fail conditions stop battery related control processes.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- To set the *Ah Discharged* back to zero and stop any active battery control processes, click on the *Reset Battery State* button.


 *Battery Time Remaining* is only available with the SC200 or SC100 system controllers. See *Battery Time Remaining* on page [89](#).

 *Midpoint Battery Monitoring* is only available with the SC200 system controller. See *Battery Mid-point Monitoring* on page [88](#).

Controller Log

Event Log

Num	Date Time	Type	Description
144	13/04/2007 07:48:48	Alarm Activation	Missing Hardware
143	13/04/2007 07:48:44	Start Up	
142	12/04/2007 16:02:56	Configuration Change	
141	12/04/2007 08:32:09	Clock Change From	11/04/2007 20:41
140	12/04/2007 08:41:09	Clock Change To	11/04/2007 20:32
139	12/04/2007 08:34:53	Alarm Activation	Missing Hardware
138	12/04/2007 08:34:49	Start Up	
137	11/04/2007 13:26:42	Configuration Change	
136	11/04/2007 09:11:27	Alarm Activation	Missing Hardware
135	11/04/2007 09:11:23	Start Up	
134	10/04/2007 09:11:51	Alarm Activation	Missing Hardware
133	10/04/2007 09:11:47	Start Up	

 Save to File...

The Event Log view shows the contents of the Event Log from the connected Device.

- Click *Save to File...* to save the log in either plain text, comma separated text or Microsoft Access format.
- To view information on each value hold the mouse pointer over the value to show the specific help text.

Data Log

Num	Date Time	AC Voltage, V	Bus Voltage, V	Load Current, A	Rectifier Current, A	Battery Current, A	Battery Temp, °C
2869	13/04/2007 08:21:28	238	54.1	78.2	78.2	0.0	18.5
2868	13/04/2007 08:18:28	238	54.1	78.2	78.2	0.0	18.5
2867	13/04/2007 08:15:27	238	54.1	78.2	78.2	0.0	18.5
2866	13/04/2007 08:12:27	238	54.1	78.2	78.2	0.0	18.5
2865	13/04/2007 08:09:27	238	54.1	78.2	78.2	0.0	18.5
2864	13/04/2007 08:06:26	238	54.1	78.2	78.2	0.0	18.5
2863	13/04/2007 08:03:26	238	54.1	78.2	78.2	0.0	18.5
2862	13/04/2007 08:00:26	238	54.1	78.2	78.2	0.0	18.5
2861	13/04/2007 07:57:25	238	54.1	78.2	78.2	0.0	18.5
2860	13/04/2007 07:54:25	238	54.1	78.2	78.2	0.0	18.5
2859	13/04/2007 07:51:25	238	54.1	78.2	78.2	0.0	18.5
2858	13/04/2007 07:48:25	238	54.1	78.2	78.2	0.0	18.5

Save to File...

The Data Log view shows the contents of the Data Log from the connected Device (not available with all devices).

- Click *Save to File...* to save the log in either plain text, comma separated text or Microsoft Access format.
- To view information on each value hold the mouse pointer over the value to show the specific help text.

Configuration

Log Management

Clear Logs

Event Log Config

Maximum Number of Log Entries: 10000

Data Log Config

Normal Interval: 1800 s

Off-Normal Interval: 180 s

Off-Normal Offset Voltage: 4.00 V

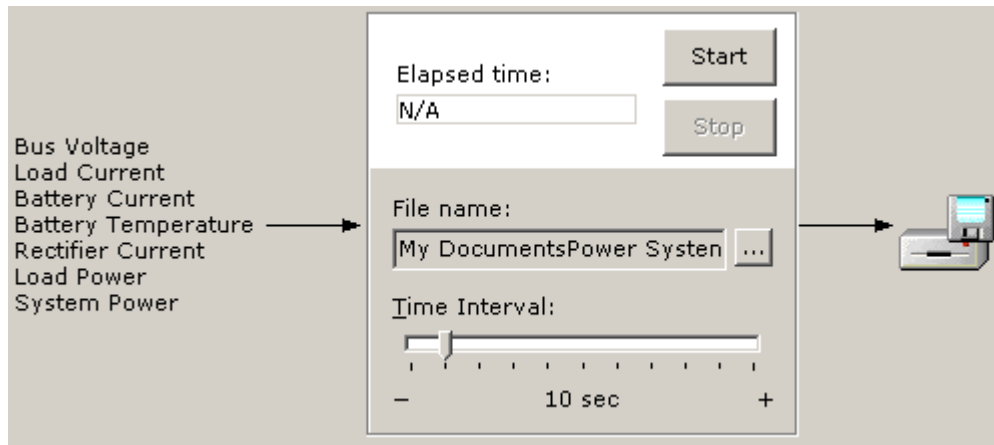
Maximum Number of Log Entries: 10000

The Log Configuration view shows allows the Event Log and Data Log parameters to be set.


Data Log is not available with all devices.

- To edit an item see Data Editing on page [29](#).
- To view information on each value hold the mouse pointer over the value to show the specific help text.
- To delete all entries from all logs, click on *Clear Logs*.

PC Log



The PC Log view allows data from the connected Device to be saved in a plain text or comma separated text file.

- Click on  to select the file type and destination.
- Slide or click the slide bar to set the interval between readings (5s - 60 minutes).

Overview

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Summary View

The CBC Summary view displays the following summary information for a CellSure Battery Controller.

- The CellSure Battery Controller (CBC) check box (in the External I/O view) must be checked. See External I/O on page [45](#).*

Items are listed in display order, under each display area. Unless indicated these values cannot be changed.

- If CBC modules are connected to and configured for an SM45/SM50/SM65, DCTools can also display the limited battery data sent by the CBC to the SM45/SM50/SM65, in the SM45/SM50/SM65 Battery Management System view.*

Values area

These values apply over all battery strings.

Date Time	The present date and time, as indicated by the CBC real-time clock. (Editable)
Number of Strings	Number of configured battery strings (Editable).
Blocs per String	Number of battery blocs per string (Editable).
Bloc Voltage	Rated voltage of each battery bloc (Editable).
Ambient Temperature	Indicates the ambient temperature at the batteries, in degrees Celsius or Fahrenheit, as applicable. O/R (out of range) indicates that the temperature sensor is faulty or is not connected.
Battery Reserve Time	Estimated remaining time in minutes before the batteries fully discharge (N/A if not all battery strings are discharging).
Battery Reserve Charge	Remaining charge level in Ampere hours, averaged over trays (N/A if not all battery strings are discharging).
Battery Precise Capacity	Total available battery capacity in Ampere hours (measured from a full discharge).
Battery Estimated Capacity	Estimated total available battery capacity in Ampere hours (derived from a partial discharge) (Editable).
Battery State of Health	Present battery State of Health (SOH) value averaged over all configured strings. SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables).

String Voltage graph displays

These graphs display voltages for each battery bloc in the selected string. Click a String button to display the bloc voltages for that string.



► To zoom in on an area within the graph

- 1 In the graph, click and drag to the right to define the area to enlarge.
- 2 Release the mouse button to view.



 Click the button to see instructions for zooming the graph display in and out.

Alarms list



Summary alarm indicators (either, both, or none):

-  indicates that one or more urgent alarms apply.
-  indicates that one or more non-urgent alarms apply.

String alarm indicators:

-  indicates that one or more urgent alarms apply for that string.
-  indicates that no urgent alarms apply, but one or more non-urgent alarms apply.

All blocs are shown, indicating blocs with and without alarms.


-  under the bloc number indicates a bloc with one or more alarms.
-  under the bloc number indicates no alarms for that bloc.

Realtime Views

CBC Realtime Values view

Summary values

These values apply over all battery strings.

 The Editable column indicates values you can change.

Battery Reserve Time	Estimated remaining time in minutes before the batteries fully discharge (N/A if not all battery strings are discharging) (Non-editable).
Battery Reserve Charge	Remaining charge level in Ampere hours, averaged over trays (N/A if not all battery strings are discharging) (Non-editable).
Battery Precise Capacity	Total battery capacity in Ampere hours (measured from a full discharge) (Editable).
Battery Estimated Capacity	Estimated total available battery capacity in Ampere hours (derived from a partial discharge) (Editable).
Battery State of Health	Present battery State of Health (SOH) value averaged over all configured strings (Editable). SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables).


Field table

These read-only True/False values apply during and following a full or partial battery discharge (including a Discharge Test) – that is, when all strings in the battery system are discharging.

- Discharge Running** A True state indicates that the CBC has reported that batteries are discharging at present.
- Full Discharge Complete** A True state indicates that a full discharge has completed.
- Full Discharge Test Pass** A True state indicates that a full discharge test has successfully completed (met the configured Discharge Conditions).
- Partial Discharge Complete** A True state indicates that a partial discharge has occurred (typically 30 percent).
- Partial Discharge Test Pass** A True state indicates that a partial discharge test has successfully completed (met the configured Discharge Conditions).
 Discharge details for each string are also displayed (see below).

String tables

The first of these two tables lists the following values for each string.

 The Editable column indicates values you can change.

String Calculated Voltage	Total of bloc voltages for the string (non-editable).
Bloc Average Voltage	Average bloc voltage for the string (non-editable).
Current	String current (non-editable).
Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable (non-editable). O/R (out of range) indicates that the temperature sensor is faulty or is not connected.
AmpHours Discharged	Total Ampere hours the string has discharged so far (zero if string is not actually discharging). (Non-editable)
Average Reserve Charge	Remaining charge level in Ampere hours, averaged over blocs in the string (N/A if batteries are not actually discharging). (Non-editable)
Worst Reserve Charge	Remaining charge level in Ampere hours, based on the worst (most discharged) bloc in the string (N/A if batteries are not actually discharging). (Non-editable)
Average Reserve Time	Estimated remaining time in minutes before the string blocs fully discharge, averaged over all blocs in the string (N/A if batteries are not actually discharging). (Non-editable)
Worst Reserve Time	Estimated remaining time in minutes before the first string bloc fully discharges (N/A if batteries are not actually discharging). (Non-editable)
Precise Capacity	Total available string capacity in Ampere hours (measured from a full discharge). (Editable)
Estimated Capacity	Estimated total available string capacity in Ampere hours (derived from a partial discharge). (Editable)
State of Health	Present string State of Health (SOH) value (derived from a partial discharge). SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables). (Editable)

The second table lists the following discharge information for each string. These read-only True/False values apply during and following a full or partial string discharge (including a Discharge Test).

Running	A True state indicates that the CBC has reported that battery string is discharging at present.
Partial Complete	A True state indicates that the string has completed a partial discharge test.
Partial Valid	A True state indicates that the string has successfully completed a partial discharge test (met configured Partial Discharge conditions).
Full Complete	A True state indicates that the string has completed a full discharge test.
Full Valid	A True state indicates that the string has successfully completed a full discharge test (met configured full Discharge conditions).
Discharge Interrupted	A True state indicates that a discharge test of the string has been interrupted before completion.
Average Current Fail	A True state indicates that the average string battery current during discharge has exceeded the specified tolerance.
String Temp Fail	Battery temperature has exceeded the specified tolerance.
Recharge Too Short	Recharge time prior to the discharge has not reached the specified minimum.

String Voltage graph display

This graph displays voltages for each battery bloc in the selected string.

If more than one string applies, click another String button to display the bloc voltages for that string.

Click  to enlarge the graph view.

Bloc Voltage table

Under the graph display, a table showing all bloc voltages for all strings is displayed. Each row lists the bloc voltages for that string, in millivolts.

CBC State of Health view

The CBC State of Health view displays the following battery data, which is read or derived from the CellSure Battery Controller. Items are listed in display order, under each display area.

Battery values

These values apply over all battery strings.

Battery Precise Capacity	Total battery capacity in Ampere hours (measured from a full discharge). (Editable)
Battery Estimated Capacity	Estimated total available battery capacity in Ampere hours (derived from a partial discharge). (Editable)
Battery State of Health	Present battery State of Health (SOH) value averaged over all configured strings. (Editable)
	<input type="checkbox"/> <i>SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables).</i>

String table

This table lists the following values for each string.

String Calculated Voltage	Total of bloc voltages for the string. (Non-editable)
Bloc Average Voltage	Average bloc voltage over the string. (Non-editable)
Current	String current. (Non-editable)
Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable. (Non-editable) O/R (out of range) indicates that the temperature sensor is faulty or is not connected.
AmpHours Discharged	Total Ampere hours the string has discharged so far (zero if string is not actually discharging). (Non-editable)
Average Reserve Charge	Remaining charge level in Ampere hours, averaged over blocs in the string (N/A if batteries are not actually discharging). (Non-editable)
Worst Reserve Charge	Remaining charge level in Ampere hours, based on the worst (most discharged) bloc in the string (N/A if batteries are not actually discharging). (Non-editable)
Average Reserve Time	Estimated remaining time in minutes before the string fully discharges, averaged over all blocs in the string (N/A if batteries are not actually discharging). (Non-editable)
Worst Reserve Time	Estimated remaining time in minutes before the first bloc fully discharges (N/A if batteries are not actually discharging). (Non-editable)

Precise Capacity	Total available string capacity in Ampere hours (measured from a full discharge). (Editable)
Estimated Capacity	Estimated total available string capacity in Ampere hours (derived from a partial discharge). (Editable)
State of Health	Present string State of Health (SOH) value (derived from a partial discharge). (Editable) <input type="checkbox"/> <i>SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables).</i>

Bloc table

This table lists the following values for each bloc. Each row represents one bloc, with its string and bloc numbers shown. You can change these values.

Bloc Precise Capacity	Total available bloc capacity in Ampere hours (measured from a full discharge).
Bloc Estimated Capacity	Estimated total available bloc capacity in Ampere hours (derived from a partial discharge).
Bloc State of Health	Present battery State of Health (SOH) value for the bloc (derived from a partial discharge). <input type="checkbox"/> <i>SOH values are calculated during partial discharge, and are the ratio of the actual charge (at a specific battery voltage) to the expected charge (based on the string characterization tables).</i>

Configuration Views

CBC Configuration View

Use this display to view and possibly change the CellSure Battery Controller configuration. The CBC Configuration view displays the following parameter values. Items are listed in display order, under each display area. You can change any of these parameter values.



Hardware Setup values

These parameters apply to CBC hardware configuration.

Value	Description
Operator Notes	Optional text note for operators (up to 40 characters).
Installer Notes	Optional text note for installers(up to 40 characters).
Bloc Type	Optional text description of the bloc type(up to 20 characters).
System Polarity	The Earth polarity for the power system(Positive Earth or Negative Earth).
Current Metering	Enables or Disables Current Metering at the CBC.
Current Shunt Scaling	Current scaling factor for current shunt measurements input to the CBC.

Relay table

This table indicates the present state and configured active state for the two CBC output relays. Each relay becomes active when an alarm of that type applies (Urgent or Non-Urgent).

Value	Description
Relay	Identifier for the relay (Urgent or Non Urgent).
Relay State	(Read-only) Indicates the present state of the relay at the CBC.  Urgent Relay activated  Non-urgent Relay activated - Relay not activated
Active State	Sets whether the relay is Energized or De-energized when it is activated.

Battery Setup values

These values apply over all battery strings.

Value	Description
Number of Strings	Number of configured battery strings.
Blocs per String	Number of battery blocs per string.
Bloc Voltage	Configured nominal voltage of each battery bloc.

Discharge Conditions values

These parameter values define battery discharge conditions at the CBC.

Value	Description
Bloc End Voltage	Bloc Voltage determining completion of a full discharge.
Rated Bloc Capacity	Manufacturer's rated capacity for a bloc.
Discharge Rate	Expected average current of any string during a discharge.
Discharge Rate Tolerance	Percentage allowed variation in string current during a discharge - if the average string current throughout the discharge exceeds this, a String Current Fail alarm activates.
Discharge Temp	Expected string temperature during a discharge.

Discharge Temp Tolerance	Allowed variation in string temperature during a discharge – if string temperature exceeds Discharge Temp by more than this, a String Temperature Fail alarm activates.
Partial Discharge Depth	Percentage drop in charge required before a Partial Discharge is considered to have occurred.
Minimum Recharge Time	Time (in hours) the batteries must recharge before a valid discharge test can be performed. A Recharge Too Short alarm activates if this limit is not reached.
Reserve Time Low Urgent threshold	Reserve Time (in minutes) below which the Urgent Low Reserve Time alarm activates.
Reserve Time Low NonUrgent threshold	Reserve Time (in minutes) below which the Non-urgent Low Reserve Time alarm activates.

CBC Communications view

The CBC Communications view shows the following CBC parameter values related to both modem communications (to a PC) and slave communications (to the CBC's voltage measurement modules at the batteries). Items are listed in display order, under each display area.

General values



You can change any of these values. Refer to the CellSure Installation Guide for configuration information (see Related Information on page [ii](#)).



Value	Description
Baud Rate Port RS485	Baud rate for the CBC's RS-485 port.
Baud Rate Port RS232	Baud rate for the CBC's RS232 port.
Protocol Port RS485	Communications protocol for the CBC's RS-485 port (RCP or S3P).
CBC S3P Address	S3P address for the CBC (must be valid if protocol is S3P).
CBC RCP Slave Address	RCP address for the CBC (must be valid if protocol is RCP).
	<i>A ? indicates that no information has been received from the CBC.</i>


Port table

This table lists the number of communicating CBC slave modules by CBC port.

Modem display area

 You can change any of these values.


Value	Description
Modem	Indicates whether the CBC's modem is enabled or disabled.  Changing this value causes the CBC to reset.
Auto Answer Rings	Number of rings the modem must detect before it answers. <ul style="list-style-type: none"> • A value of zero disables auto-answer (disables dial-in). • Changing this value causes the CBC to reset.
Primary Dial Out Number	First dial-out phone number.
Secondary Dial Out Number	Second dial-out phone number.
Connect Timeout	Maximum time (in seconds) the CBC will wait for a modem connection to be established with the host.
Maximum Retries	Maximum number of times the CBC will attempt to re-dial a failed connection using the same phone number.
Retry Interval	The time the CBC will wait before making a re-dial attempt.
Comms Timeout	The time (in seconds) that must elapse with no data being received, before the CBC forces the modem to hang up, once a modem connection has been established.
Modem Setup	A setup string configuring the modem to operate correctly with the CBC.  Changing this value causes the CBC to reset.
Maintenance Interval	The time (in minutes) that the CBC will wait between attempts at determining whether or not a modem is attached. <ul style="list-style-type: none"> • If the modem does not respond, the CBC will try to initialize it. • A value of zero disables periodic testing that a modem is present. • Changing this value causes the CBC to reset.

 A ? indicates that no information has been received from the CBC.


CBC Identity view

The CBC Identity view shows the following identification parameter values at the CBC, and a button. Items are listed in display order, under each display area.

Identity display area

 The Editable column indicates values you can change.

Value	Editable	Description
Interface Version	No	Version number of CBC's software interface.
Software Version	No	Version number of CBC software.
Hardware Version	Yes	Version number of CBC hardware.
System Type	Yes	CBC type, as configured in the CBC.
System Location	Yes	CBC Location name, as configured in the supervisory module.
System Serial Number	Yes	Power system's serial number, as configured in the CBC.
CBC Serial Number	No	CBC's serial number.
Configuration Name	Yes	Name identifying latest configuration loaded into the CBC.
Change Password button	-	Click to open the Change Password dialog. See Write Access Password Protection Option on page 32 .

 A ? indicates that no information has been received from the CBC.

Time Synchronization display area

Item	Description
PC Date Time*	The date and time as set in the PC.
CBC Date Time*	The date and time as set in the CBC's real-time clock.
Synchronize button	Click to set the CBC's real-time clock to the same date and time as the PC clock.

* You cannot edit these values in this view. Use the CBC Summary view (see details on page [64](#)) to edit the CBC date and time, and use Windows Control Panel to reset the PC date and time.

Characterization

This view shows all battery Discharge Characterization data stored in the CBC and allows management of the data.

This data is used to characterize the battery strings, which enables Remaining Charge and Remaining Time to be estimated during battery discharge.

Input: Full Charge Discharge Log

Graph and data

The graph and data show all values recorded during the latest full discharge.

You cannot change these values.

This display area has two main sub-areas.

The Graph display area shows the Full Discharge graph for a selected string, as recorded by the CBC. This graph is a duplicate of that shown in the CBC Full Discharge Graph view (see that topic for more details).

The Data area has six sub-areas of tabulated Full Discharge data.

- The four String Datalog areas (1 through 4) duplicate the corresponding tables shown in the CBC Full Discharge Table view.
- The Bloc End Ah area lists the Bloc End Ampere Hours values for each bloc, at the instant the bloc reached the Bloc End Voltage, as recorded during the last full discharge.

A value of 65535 indicates an unknown value.

- The Trigger Rec Num area lists the triggering log record number for each string, as recorded during the last full discharge. This log record number corresponds to the time when the average Bloc Voltage over the string reached the Bloc End Voltage.

Characterization Algorithm

This area contains a set of buttons you can use to re-characterize the battery strings. Each button resets the Discharge Characterization settings for a specific string to the corresponding Full Charge Discharge Log settings for that string.

Click a String button to re-characterize that battery string.

Each button resets the Discharge Characterization settings for a specific string (those shown in the display area below the buttons) to the corresponding Full Charge Discharge Log settings for that string (those shown in the display area above the buttons).

Output: Discharge Characterization

Graph and data


The graph and data show all Characterization settings that are used currently for estimating Remaining Time and Charge values during battery discharge.

This display area has two main sub-areas.

The Graph display area shows the Discharge Characterization graph for a selected string, as stored in the CBC. This graph is a duplicate of that shown in the CBC Discharge Characterization Graph view (see that topic for more details).

The Data area has two sub-areas of tabulated Discharge Characterization settings.


- The String Average area duplicates the Average table shown in the CBC Discharge Characterization Table view.
- The Bloc area duplicates the Average table shown in the CBC Discharge Characterization Table view.

 You can reset these values by using the Characterization Algorithm buttons.

Management

These functions allow the characterization data to be easily copied between strings within a CellSure Battery Controller (CBC) and copied to another CBC by downloading/uploading the characterization data.

This allows quicker setup and configuration of CellSure for repeat installations or for when only off-line battery discharge characterizations are allowed.

 *The initial accuracy of the installed CellSure system may be reduced. This is because the referenced data has been copied from other characterized batteries and may not accurately represent the installed batteries. This will be corrected after the next partial discharge test.*

Save to File ... Allows the data from one or all strings to be saved to file.





Load from File ... Allows the data for one or all strings to be loaded from a file.

Copy to >> Allows data from one string to be copied to other strings.

Alarms


CBC Summary Alarm Table

The CBC Summary Alarm table view shows the following items.

- Summary alarm indicators (either, both, or none), where:
 -  indicates that one or more urgent alarms apply.
 -  indicates that one or more non-urgent alarms apply.
- A table of all summary alarms showing each alarm's present state, where:
 -  (in the Urgent Active column) indicates an active Urgent alarm.
 -  (in the NonUrgent Active column) indicates an active Non-urgent alarm.
- The *Clear Cap. And SoH Alarms* button, which you can click to clear all latching Battery Capacity and State of Health alarms.





CBC String Alarm Table

The CBC String Alarm Table view displays battery string alarm indications and related data. Items are listed in display order, under each display area.

-  You cannot change any values in this view. Use the CBC Alarm Configuration view to change alarm parameter settings.


Summary area

This area shows a table of the following items for each battery string.

- String Current in Amps
- A String Alarms icon, where no icon indicates that no alarms apply, and:
 -  indicates that one or more urgent alarms are active for that string.
 -  indicates that no urgent alarms apply, but one or more non-urgent alarms are active for that string.
- One column for each bloc in the string, indicating blocs with and without alarms, where:
 -  under the bloc number indicates that no urgent alarms apply, but one or more non-urgent alarms are active for that bloc.
 -  under the bloc number indicates that no alarms are active for that bloc.


String Urgent Alarms area

This table shows alarm indications for each Urgent battery string alarm (columns), by string (rows), where:

-  indicates that particular Urgent alarm is active for that string.
- - indicates that particular alarm is either not active for that string, or is not configured as Urgent.


String NonUrgent Alarms area

This table shows alarm indications for each Urgent battery string alarm (columns), by string (rows), where:

-  indicates that particular Non-urgent alarm is active for that string.
- indicates that particular alarm is either not active for that string, or is not configured as Non-urgent.





CBC Bloc Alarm Table

The CBC Bloc Alarm Table view displays battery bloc alarm indications and related data. Items are listed in display order, under each display area.

 You cannot change any values in this view. Use the CBC Alarm Configuration view to change alarm parameter settings.


Summary area

This area shows a table of the following items for each battery string.

- String Current in Amps
- A String Alarms icon, where no icon indicates that no alarms apply for that string, or:
 -  indicates that one or more urgent alarms are active for that string.
 -  indicates that no urgent alarms apply, but one or more non-urgent alarms apply.
- One column for each bloc in the string, indicating blocs with and without alarms:
 -  under the bloc number indicates that no urgent alarms apply, but one or more Non-urgent alarms are active for that bloc.
 -  under the bloc number indicates that no alarms are active for that bloc.

Bloc Alarms area

This area shows a table of alarm indications for each battery bloc (one row per bloc, in string/bloc order), where:

-  indicates a particular Non-urgent alarm that is active for that bloc.
- indicates a particular alarm that is not active for that bloc.

CBC Alarm Configuration

The CBC Alarm Configuration view lists all configurable parameters related to CBC alarms. These parameters are listed below in display order, under each display area.

You can change any of these values.

Alarm table

This table shows the following configurable settings for each alarm.

Column	Description	
Urgent State	Enabled	The alarm can be Urgent (Urgent parameters must be set for this alarm).
	Disabled	The alarm cannot be Urgent.
	Log only	The alarm will be added to the CBC Log as Notify

		Only, but not otherwise indicated.
Urgent Alarm Report	Yes	The CBC will attempt to use the modem to dial out and connect to manager software when an Urgent alarm occurs.
	No	The CBC will not attempt to dial out when an Urgent alarm occurs. <input type="checkbox"/> Always set to No if there is no modem attached to the CBC.
NonUrgent State	Enabled	The alarm can be Non-urgent (Non-urgent parameters must be set for this alarm).
	Disabled	The alarm cannot be Non-urgent.
	Log only	The alarm will be added to the CBC Log as Notify Only, but not otherwise indicated.
NonUrgent Alarm Report	Yes	The CBC will attempt to use the modem to dial out and connect to manager software when a Non-Urgent alarm occurs.
	No	The CBC will not attempt to dial out when a Non-Urgent alarm occurs. <input type="checkbox"/> Always set to No if there is no modem attached to the CBC.

Specific alarm areas

These display areas show threshold (and in some cases, time) parameter settings related to specific alarms or group of alarms, where applicable.

Click + to open a particular display area.

The following table summarizes these alarm parameters.

Parameter	Description
Urgent Threshold	Value the relevant system value must exceed or fall below before the specific Urgent alarm is activated. Optional.
Urgent Alarm Time	Time the relevant system value must remain beyond the Urgent Threshold before the specific Urgent alarm is activated. Optional.
NonUrgent Threshold	Value the relevant system value must exceed or fall below before the specific Non-urgent alarm is activated.
NonUrgent Alarm Time	Time the relevant system value must remain beyond the NonUrgent Threshold before the specific Non-urgent alarm is activated. Optional.

Note:

- Alarms based simply on whether or not an event has occurred do not have threshold and time parameters, and thus have no display area (for example, Slave Communications Fault).
- Alarms based on key system values going above or below a threshold will each have both an Urgent and Non-urgent threshold parameter (and in some cases a time parameter also). Less important alarms of this type will each have only a Non-urgent threshold parameter (and in some cases a time parameter).
- A time parameter applies only where the system value must remain beyond the threshold for a specified time before the relevant alarm is activated.
- A Non-Urgent Alarm Time value should be greater than the Urgent Alarm Time value for the same alarm.
- All State of Health alarm threshold parameters are grouped in one display area for convenience (none of these have time parameters).

CBC Logs

CBC Event Logs table

The CBC Event Logs table lists events logged by the CBC, in numeric (Record Number) sequence.

When communications are first established, DCTools will upload all the CBC's logged events. After that, only new events are uploaded.



The CBC stores only the last 255 events. Thus if communications between DCTools and the CBC is broken for a period when more than 255 events are logged by the CBC, the oldest of these excess events will be lost to DCTools.

Each row of the CBC Event Logs table represents one log entry. Each entry has the following values.

Column	Description
Record Number	Unique number for the event
Time Stamp	CBC's clock time when the event occurred
Event Description	Text description of the event

CBC Datalog Graphs

Each of these graph views shows a graph of battery string voltages over time or Charge Remaining (Discharge Characterization graph), based on data received from the CBC. Voltages are graphed for each bloc and for the average and total over all blocs in the string.

You can view the following graphs.

- Discharge Characterization
- Full Charge Discharge Log
- Partial Discharge Log A or B
- Last Week Float Log
- Last Year Float Log

Each graph view has the following display elements.

String trackbar Drag the slide control to the string whose voltages you want to display (grayed-out string numbers indicate uninstalled strings).



Click to see instructions for zooming the graph display in and out.



Click to go to the table view for the same data.

Highlight trackbar Drag the slide control to the voltage you want to highlight in the graph.

Voltage (Y) axis Indicates the voltage (automatically adjusted to suit a bloc or string range, depending on your selected Highlight voltage).

Time (X) axis Indicates the time (automatically adjusted to fit the applicable time range).

Graph plot area Shows the selected graph lines:

- Red dotted horizontal lines indicate Low and High Voltage alarm thresholds.
- You can scroll, zoom in on an area, and out again (see below).

► **To zoom in on an area within the graph.**

- 1 In the graph, click and drag down to select the area to be enlarged.
- 2 Release the mouse button. A magnified graph of that part of the graph is then displayed.

► **To zoom out to the full graph display**

- 1 In the graph, click and drag up and to the left to form a rectangle (of any size).
- 2 Release the mouse button. The full graph area is then displayed.

► **To scroll the displayed graph area**

In the graph, using the right mouse button, drag in any direction.

CBC Datalog Tables

Each of these table views lists battery string values over time, based on data received from the CBC.


CBC Discharge Characterization Table

This view shows tabulated Discharge Characterization data.

This data is used to characterize each battery string, which enables Remaining Charge and Reserve Time values to be accurately estimated during battery discharge.


The *Average* table shows, for each string, the Voltage and Charge Remaining at each discharge point, averaged over all blocs in the string. Values are listed in String number/discharge point order.

The *Bloc* table shows the individual bloc values at each discharge point. Values are listed in String number/bloc number/discharge point order.

 You can reset these values in the Characterization Algorithm view.

CBC Full Charge Discharge Log Table

This view shows tabulated data related to the previous Full Charge Discharge.

 You cannot change these values.

One table is displayed for each string. Each table is preceded by a *Log Exists* value, which indicates whether the CBC has collected data for that string or not.


Each row of a table represents one logged set of data, and lists the following values.

Value	Description
String	String number.
Record Number	Unique number identifying a particular recording point and its data.
Time Stamp	Date and time the data was recorded (as indicated by the CBC's clock).
Current	String current, at the time indicated.
AmpHours Discharged	Total Ampere hours the string had discharged at that point.
String Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable.
Ambient Temperature	Ambient temperature in degrees Celsius or Fahrenheit, as applicable.
Bloc Voltage values	Voltage of each bloc at the time indicated (a column per bloc).

CBC Partial Discharge Log A and B tables

These views show Partial Discharge Log A and Log B data, as recorded by the CBC.

Two Partial Discharge Logs are recorded so that you can view details for both a partial discharge currently in progress and the previous one. The most recent Partial Discharge always alternates between Log A and Log B.

 You cannot change these values.

One table is displayed for each string. Each table is preceded by a *Log Exists* value, which indicates whether the CBC has collected data for that string or not.

Each row of a table represents one logged set of data, and lists the following values.

Value	Description
String	String number.
Record Number	Unique number identifying a particular recording point and its data.
Time Stamp	Date and time the data was recorded (as indicated by the CBC's clock).
Current	String current, at the time indicated.
AmpHours Discharged	Total Ampere hours the string had discharged at that point.
String Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable.
Ambient Temperature	Ambient temperature in degrees Celsius or Fahrenheit, as applicable.
Bloc Voltage values	Voltage of each bloc at the time indicated (a column per bloc).

CBC Last Week Float Log Table

This view shows Float data, as recorded at hourly intervals by the CBC, over the last week.

You cannot change these values.


One table is displayed for each string. Each table is preceded by a *Log Exists* value, which indicates whether the CBC has collected data for that string or not.

Each row of a table represents one logged set of data, and lists the following values.

Value	Description
String	String number.
Record Number	Unique number identifying a particular recording point and its data.
Time Stamp	Date and time the data was recorded (as indicated by the CBC's clock).
Current	String current, at the time indicated.
String Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable.
Ambient Temperature	Ambient temperature in degrees Celsius or Fahrenheit, as applicable.
Bloc Voltage values	Voltage of each bloc at the time indicated (a column per bloc).

CBC Last Year Float Log Table

This view shows Float data for a selected string, as recorded at weekly intervals by the CBC, over the last year.

 You cannot change these values.

One table is displayed for each string. Each table is preceded by a *Log Exists* value, which indicates whether the CBC has collected data for that string or not.

Each row of a table represents one logged set of data, and lists the following values.

Value	Description
String	String number.
Record Number	Unique number identifying a particular recording point and its data.
Time Stamp	Date and time the data was recorded (as indicated by the CBC's clock).
Current	String current, at the time indicated.
String Temperature	String temperature in degrees Celsius or Fahrenheit, as applicable.
Ambient Temperature	Ambient temperature in degrees Celsius or Fahrenheit, as applicable.
Bloc Voltage values	Voltage of each bloc at the time indicated (a column per bloc).

PC Logs (CBC)

PC Datalog (CBC)

Use the PC Log view to optionally set regular automatic logging of the CBC's main system values and all alarm states to a specified text file (in comma-separated format suitable for loading into Microsoft Excel).

The PC Log view lists (at left) the main system values that will be saved, and has the following display items.

Elapsed time	Countdown time remaining to the next logging point.
Start button	Click to start saving logged system values and alarms to the specified file, at the specified interval.
Stop button	Click to stop saving logged values.
File name	The file logged values and alarms are saved in (see Notes below)Click to browse for an existing file, or edit the filename directly.
Time Interval	Interval between logging points (when values and alarms are saved)Drag the slide control to the value required (between 5 seconds and 60 minutes).



Notes:

- If you save to an existing file, DCTools will add all log entries to the end of that file, after any previous entries.
- The first record in a file is a header giving the names of the saved system data items and alarms (these show as the column headings when the file is loaded into Excel).

CBC Bloc Voltage Trend Graph

This view shows a graph of logged Bloc Voltage data for a selected bloc or string, as recorded by the CBC over the last year.

Each graph view has the following display elements.

String trackbar	Drag the slide control to the string whose voltages you want to display (grayed-out string numbers indicate uninstalled strings).
	Click to see instructions for zooming the graph display in and out.
	Click to clear the logged values. Only new data will then be plotted.
Highlight trackbar	Drag the slide control to the voltage you want to highlight in the graph.
Voltage (Y) axis	Indicates the voltage (automatically adjusted to suit a bloc or string range, depending on your selected Highlight voltage).
Time (X) axis	Indicates the time (automatically adjusted to fit the applicable time range).
Graph plot area	Shows the selected graph lines: <ul style="list-style-type: none"> • Red dotted horizontal lines indicate Low and High Voltage alarm thresholds. • You can scroll, zoom in on an area, and out again (see below).

▶ **To zoom in on an area within the graph.**

- 1 In the graph, click and drag down to select the area to be enlarged.
- 2 Release the mouse button. A magnified graph of that part of the graph is then displayed.

▶ **To zoom out to the full graph display**

- 1 In the graph, click and drag up and to the left to form a rectangle (of any size).
- 2 Release the mouse button. The full graph area is then displayed.

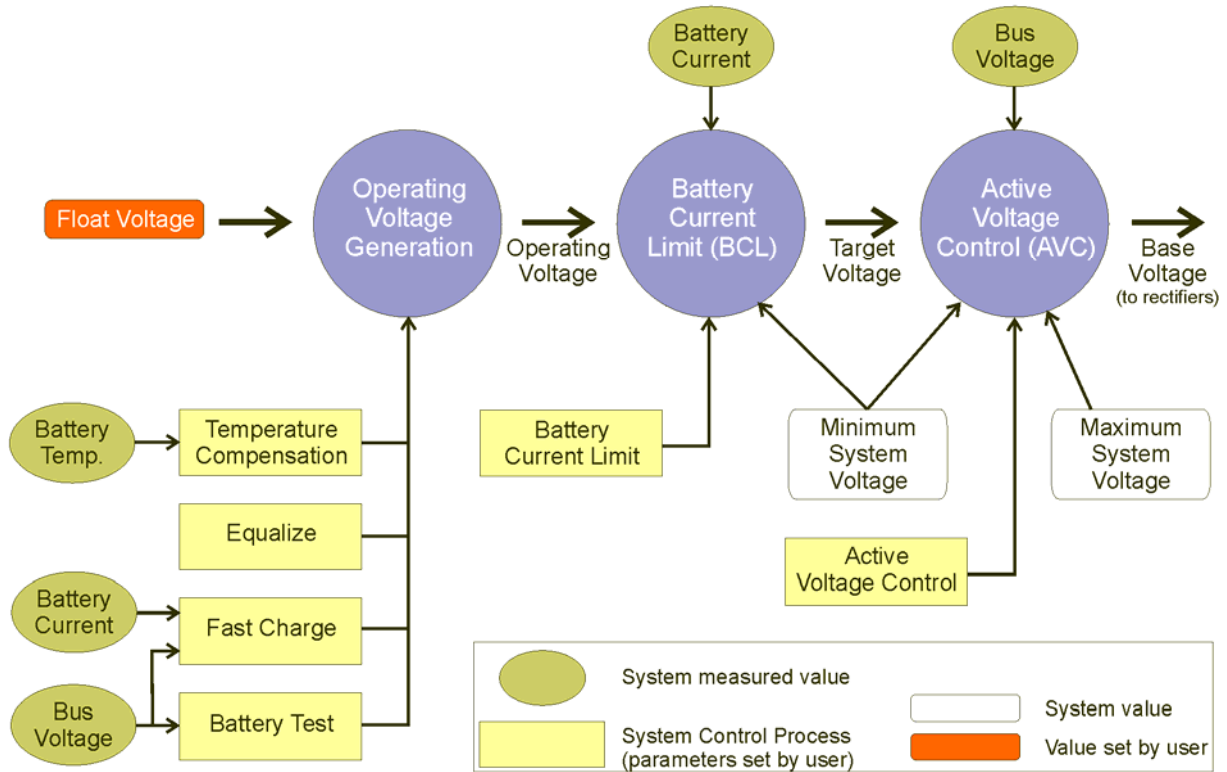
▶ **To scroll the displayed graph area**

In the graph, using the right mouse button, drag in any direction.

Voltage Control

The output voltage of the rectifiers is controlled by a number of control processes. The following diagram shows the various 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 by monitoring the bus voltage and adjusting the rectifier output voltage to compensate for any voltage drop.

Enable AVC to prevent undercharging the batteries during high load demand.

Active Voltage Control does **NOT** function during a Battery Test or if the battery current is negative.

To configure AVC see Active Voltage Control on page [53](#).

Battery Current Limit (BCL)


Battery Current Limit automatically limits the battery recharge current to:

- Prevent excessive battery charge current in under-loaded systems
- Minimize gas release in VRLA batteries
- Reduce the load on a standby generator.

Two current limit values can be set (both are a percentage of the C10 rating of the battery):

Battery Current Limit (Normal Limit): BCL value for use when utility ac is available.

Engine Run Limit (optional): BCL value for use when ac is supplied by a standby generator. This reduces the load on the generator and allows a smaller generator to be used.

 Engine Run Limit is activated by a signal from an ac standby generator.

To configure BCL see Battery Current Limit on page [55](#).

Battery Mid-point Monitoring (MPM)

Battery Mid-point Monitoring provides a cost-effective method for the early detection of internal battery faults. The voltages of the two halves of a battery string are measured and the system controller generates an alarm signal if a voltage imbalance is detected.

A voltage imbalance is an indication that one or more cells has an internal fault. Further investigation can then isolate the faulty cell(s) and action can be taken to correct the problem and prevent a total battery failure.

To connect the Battery Mid-point Monitoring option see details in the dc power system installation guide. If a *String Fail* alarm is generated see Troubleshooting.

To ensure reliable operation Mid-point Monitoring operates only when the battery is in float charge and after a configurable lockout period since the last battery discharge, Fast Charge, Equalize or Battery Test.

Battery Test

Battery Test is a preventative maintenance tool that monitors the discharge capabilities to ensure that the condition of the battery has not deteriorated over time.

The system controller temporarily reduces the output voltage of the rectifiers to just below the bus voltage for a set duration. The battery then supplies power to the load. A battery test passes if the battery voltage remains above a predetermined level for the duration of the test.

Battery Tests can be scheduled to occur at regular intervals, and/or can be started/stopped manually, and/or can be started by an external relay contact or switch.

- Battery Test does **NOT** function during a Fast Charge or Equalize, or during the lock-out period after an ac supply failure.*
- If a Digital Input has the function "Start Battery Test" then a Battery Test will start when the Digital Input becomes active.*

To configure see Battery Test on page [55](#).

Battery Time Remaining

The system controller obtains characterization data from either periodic battery discharges (SC100) or every full battery discharge (SC200) (to the specified end voltage).

During a battery discharge, the system controller uses this characterization data to calculate an estimated time until the battery will reach a specified end voltage.

- If a battery disconnect LVD is fitted then the end voltage will usually be the voltage at which the LVD disconnects the battery.*
- Battery Time Remaining is designed for a constant power load. The accuracy of the time remaining calculation will be reduced if the dc power system is connected to a predominantly resistive (constant current) load.*

Current Share

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

Equalize

Equalize charges batteries at a higher voltage after they have been fully charged to ensure that all individual cell voltages are the same, that electrolyte is distributed evenly, and that sulfate crystal buildup on the plates is reduced.

Equalize can be scheduled to occur at regular intervals and/or can be started/stopped manually.

- Refer to the battery manufacturer's instructions before using Equalize.
- If a Digital Input has the function "Start Equalize" then a manual equalize cycle will start when the Digital Input becomes active.

If Equalize cannot start at the scheduled time (for example when there is no ac supply) then its state will be Pending and it will start as soon as conditions allow. Use Stop Equalize to cancel a Pending Equalize.

To configure see Equalize on page [54](#).

Fast Charge

After an ac supply failure, Fast Charge automatically increases the float voltage of the power system to recharge the batteries as quickly as possible.

Enable Fast Charge if the site experiences frequent ac supply failures.

- Fast Charge does **NOT** function during a Battery Test, Equalize or if the battery current sensor fails.
- If Fast Charge is used then Battery Current Limit (BCL) should also be used. See Battery Current Limit on page [88](#) for details.

To configure see Fast Charge on page [54](#).

Generator Control Option (SC200 only)

Generator Control is used to delay the start of standby ac generators until the batteries are partially discharged (rather than immediately after the ac supply fails). This can save fuel by preventing generators running during short ac supply failures. It can also be used to control a generator in a hybrid power system (cyclic charge/discharge).

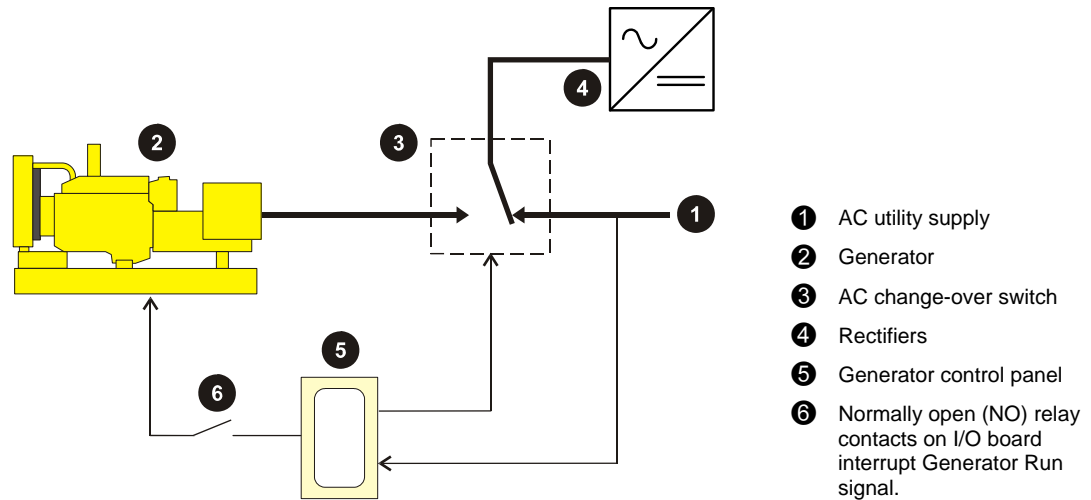
Generator Control uses a digital output (relay) which is connected in series with the generator run signal of the generator controller. The relay is controlled by the *Generator Enable* alarm. The relay contacts interrupt the generator run signal until the *Generator Enable* alarm is active.

The *Generator Enable* alarm is activated when the ac supply fails and either the *Fast Charge* or *Equalize* control process starts (depending on the setting of the *Generator Start Trigger*).

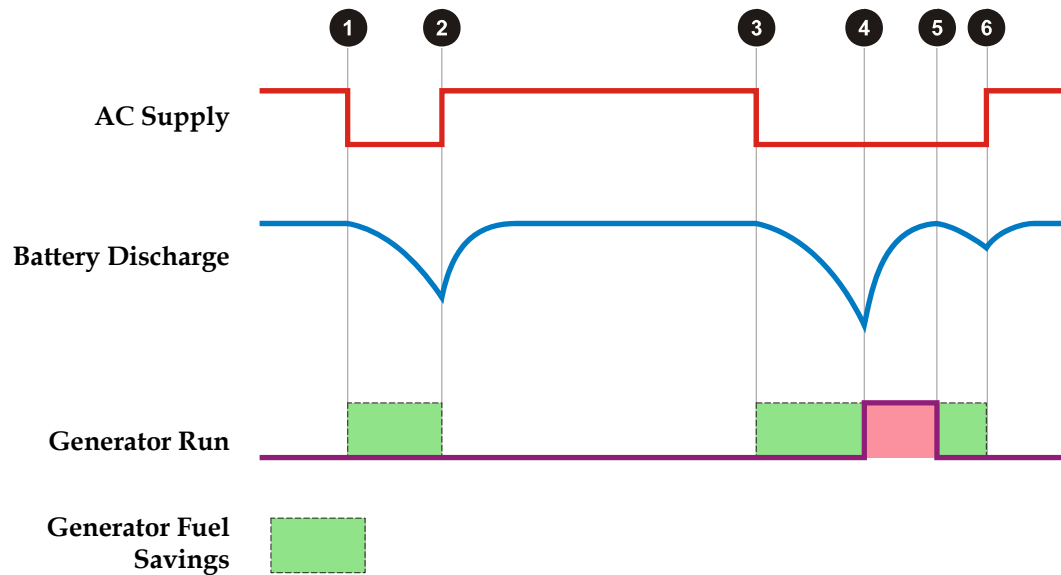
The *Generator Enable* alarm stays active (and the generator running) until the ampere-hours recharged is enough for the battery to be fully charged, or until the maximum fast charge duration is reached.

A *Generator Fail* alarm is activated if the system controller does not detect that the ac supply is present (rectifiers have turned on) after the *Generator Fail Alarm Recognition Period* following *Generator Enable* becoming active.

Single line diagram



Typical operation




- 1 AC supply failure. Battery starts to discharge.
- 2 AC supply restored. Battery begins to recharge. Battery discharge did not reach the Ah Threshold. Generator Enable was not active (relay contacts did not close) so the generator did not run.
- 3 AC supply failure. Battery starts to discharge.
- 4 Battery discharge reaches the Ah Threshold. Generator Enable becomes active and the relay contacts close. The Generator Run circuit is completed allowing the generator to start. Battery begins to recharge.
- 5 Battery recharge is complete. Generator Enable becomes inactive and the relay contacts open. The Generator Run circuit is interrupted causing the generator to stop. Battery begins to discharge.
- 6 AC supply restored. Battery begins to recharge. Battery discharge did not reach the Ah Threshold. Generator Enable was not active (relay contacts did not close) so the generator did not run.

Load Based Rectifier Shutdown

Load Based Rectifier Shutdown (LBRS) 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.

- ☐ *Rectifiers shut down by LBRS will have the  (red) alarm LED on.*
- ☐ *Rectifiers shut down by LBRS can be temporarily restarted from the system controller keypad or DCTools using the Rectifier Restart function. See details in the System Controller Operation Handbook.*

Low Voltage Disconnect (LVD)

Low Voltage Disconnects (LVDs) 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.

Eaton system controllers have the following LVD functionality.

	SC200	Other system controllers	Comment
Maximum number of LVD channels	16*	2	*SC200 systems require additional IOBGP boards.
Maximum number of LVD contactors	16*	2	
Voltage disconnect	✓	✓	
Slave Mode	Map multiple contactors to same channel.	✓	LVD2 will mirror the operation of LVD1.
AC Timer based disconnect	✓	Some	The LVD will disconnect either after the <i>AC Timer Disconnect Delay</i> , or if the bus voltage drops to the <i>Disconnect Voltage</i> .
Chained to Previous	✓	-	The LVD will disconnect if one of its disconnect conditions is true and the previous LVD is disconnected.
Smart Alarm Disconnect	✓	-	The LVD will disconnect if a specified <i>Smart Alarm</i> is active.
Auxiliary Temperature disconnect	Use Smart Alarm Disconnect.	SM40 and SC100 only	The LVD will disconnect if an auxiliary temperature sensor is out of range.

To configure LVDs see Low Voltage Disconnect on page [57](#).

Temperature Compensation

As the ambient temperature of a battery drops (or rises) the voltage required to maintain full charge increases (or decreases). Temperature Compensation automatically varies the float voltage to cancel the effects of changing temperature.

Enable Temperature Compensation for optimum battery life and battery capacity over a wider temperature range.

Temperature Compensation does **NOT** function during a Battery Test.

To configure see Temperature Compensation on page [53](#).

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.

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 Characterization (CellSure)

Battery Characterization is the process used by a CellSure Battery Controller (CBC) to obtain the discharge data it uses to calculate the battery performance.

DCTools has a Characterization Data Management feature that enables CellSure battery characterization data to be copied for other strings of the same type and size. This can reduce the time needed to characterize batteries.

Battery Characterization (SC100/SC200)

The system controller obtains characterization data from either periodic battery discharges (SC100) or every full battery discharge (SC200) (to the specified end voltage).

During a battery discharge, the system controller uses this characterization data to calculate an estimated time until the battery will reach a specified end voltage.

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.

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.

Battery Time Remaining

During a battery discharge, the system controller uses stored battery characterization data to calculate an estimated time until the battery will reach a specified end voltage.

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 on page [10](#).

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 (Identity)

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.

Data Log

The Data Log records several system parameters (AC Voltage, Bus Voltage, Load Current, Rectifier Current, Battery Current, Battery Temperature) at specified intervals. The rate of recording increases (interval is reduced) when the bus voltage differs from the float voltage by more than a specified value.

Data log entries are also written whenever a system event occurs (as for the Event Log).

The number of records depends on the Device. When the memory is full the oldest record will be over-written.

DCTools

DCTools is Microsoft® Windows® based software for control and management of Eaton dc power systems. *DCTools* allows the viewing, editing, and back-up of configuration file data.

Device

The Eaton 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). 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.

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.

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.

Event Log

The Event Log records every system event. The number of records depends on the Device. When the memory is full the oldest record will be over-written.

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.

Generator Control

Generator Control is used to delay the start of standby ac generators until the batteries are partially discharged (rather than immediately after the ac supply fails). This can save fuel by preventing generators running during short ac supply failures. It can also be used to control a generator in a hybrid power system (cyclic charge/discharge).

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.

Hardware Version

The Product Hardware Version.

Hardware Version (RXP Devices)

Hardware Version of the RXP device.

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.

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.

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.

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.

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.

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.

Modbus

Modbus is a communications protocol for industrial networks and building management systems (BMS).

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.

Name (RXP Devices)

Name of the RXP device.

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 \pm 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.

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).

See also: Serial Server on page [111](#)

Password (HTTP)

The password for this user.

Phone Number (SMS Notifications)

The phone number for SMS notifications.

Physical Mounting

The orientation of the LCD.

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 Eaton dc power systems.

Primary Address (SNTP)

IP address of Primary SNTP server.

Pull In Value (LVD)

The voltage which the IOB applies to initially connect the LVD.

RCP

Control protocol used by the supervisory modules to communicate 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.

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.

RXP

Advanced control protocol used by the SC100 and SC200 system controllers to communicate 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.

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 Devices)

The serial number of this device.

Serial S3P Passthrough Port (Ethernet)

Server port number for Ethernet S3P connections.

Serial Server

The SC200's Serial Server function makes the SC200's RS232 port available to any software via Ethernet. For example, use Serial Server to connect DCTools to a CellSure Battery Controller (CBC) connected to the SC200.

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.

Smart Alarm

Smart Alarms are a software simulation of logic gates to allow the logical combination of other alarms, time schedules and/or system values for customized alarm and control systems.

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 Devices)

Software Version of the RXP device.

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 Devices)

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 Eaton) and are preceded by 1.3.6.1.4.1 to form an object ID for the system type.

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 *Eaton* for multiple trap numbers, or *X.733* for a single trap number as per ITU X.733.

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 Devices)

What type of component (IOB, rectifier, and so on) this device is.

UDP Port (SNTP)

SNTP client destination port.

UI

User Interface. The keypad and LCD 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.

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)

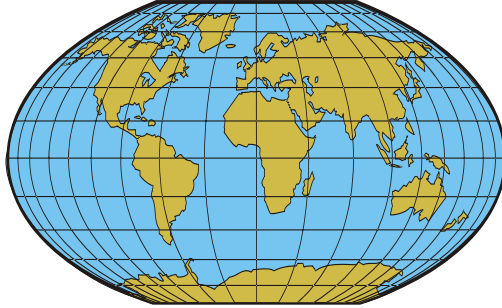
When set true the user has access to database items that require Write user access level.

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.

For product information and a complete listing of worldwide sales offices, visit Eaton's website at: www.eaton.com/telecompower or email: DCinfo@eaton.com

For technical support contact either your local Eaton dc product representative, the closest office from the following list, telephone (+64) 3 343-7448, or email CustomerServiceNZ@eaton.com



Australia:	1300 877 359
Canada:	1-800-461-9166
Central America:	+52 55 9000 5252
China:	+86-571-8848-0166
Europe / Middle East / Africa:	+44-1243-810-500
Hong Kong / Korea / Japan:	+852-2745-6682
India:	+91-11-4223-2325
New Zealand	0800 DC Power (0800 327-693)
Singapore / South East Asia:	+65 6825 1668
South America:	+54-11-4124-4000
South Pacific:	+64-3-343-7448
Taiwan:	+886-2-6600-6688 or free call 0800-038-168
United States of America (Toll Free):	1-800-843-9433 - option 2 - option 6

A

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