VERTIV.

Liebert® DPM

User Manual

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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1 Introduction

The Vertiv™ Liebert® DPM offers the highest capability for control, communication and monitoring of power distribution units and remote power panels (PDUs and RPPs).

The Touchscreen Control Panel's integrated interface simplifies monitoring and managing the PDU or RPP where it is installed. The control collects information about the PDU or RPP's setup and operation and presents it in a standardized format. This simple, dynamic display speeds operator response to changing power input and demand.

Many settings, including component names, number of inputs and other configuration items, will be made by Vertiv™ personnel when setting up the PDU or RPP and Liebert DPM. These will depend on the PDU or RPP model, its features and site requirements. Many settings and component names can be modified by personnel with Administrator login access.

The Liebert DPM's interface will display data either graphically or as text, whichever the user chooses (see Liebert® DPM Main Display, Graphical View, Observer Level on the next page and Liebert® DPM Main Display, Text View, Operator Level on page 3). The display alternates between graphics and text at the touch of an icon.  The one-line diagram remains displayed and interactive, even when text view is chosen.

The Toolbar at the top of the touchscreen summarizes system conditions with colors and an icon matched to the status. The color and the icon change immediately if the system's status changes. The right panel displays meters showing data about the output side of the transformer. The upper portion of the panel has the overall status. Below that is detailed output data for each phase. See **Figure 1.1** on the next page

1.1 Touchscreen Control Panel and User Interface

The Liebert DPM uses graphical icons or text to show the comprehensive information that the operator needs to keep the system operating smoothly and efficiently:

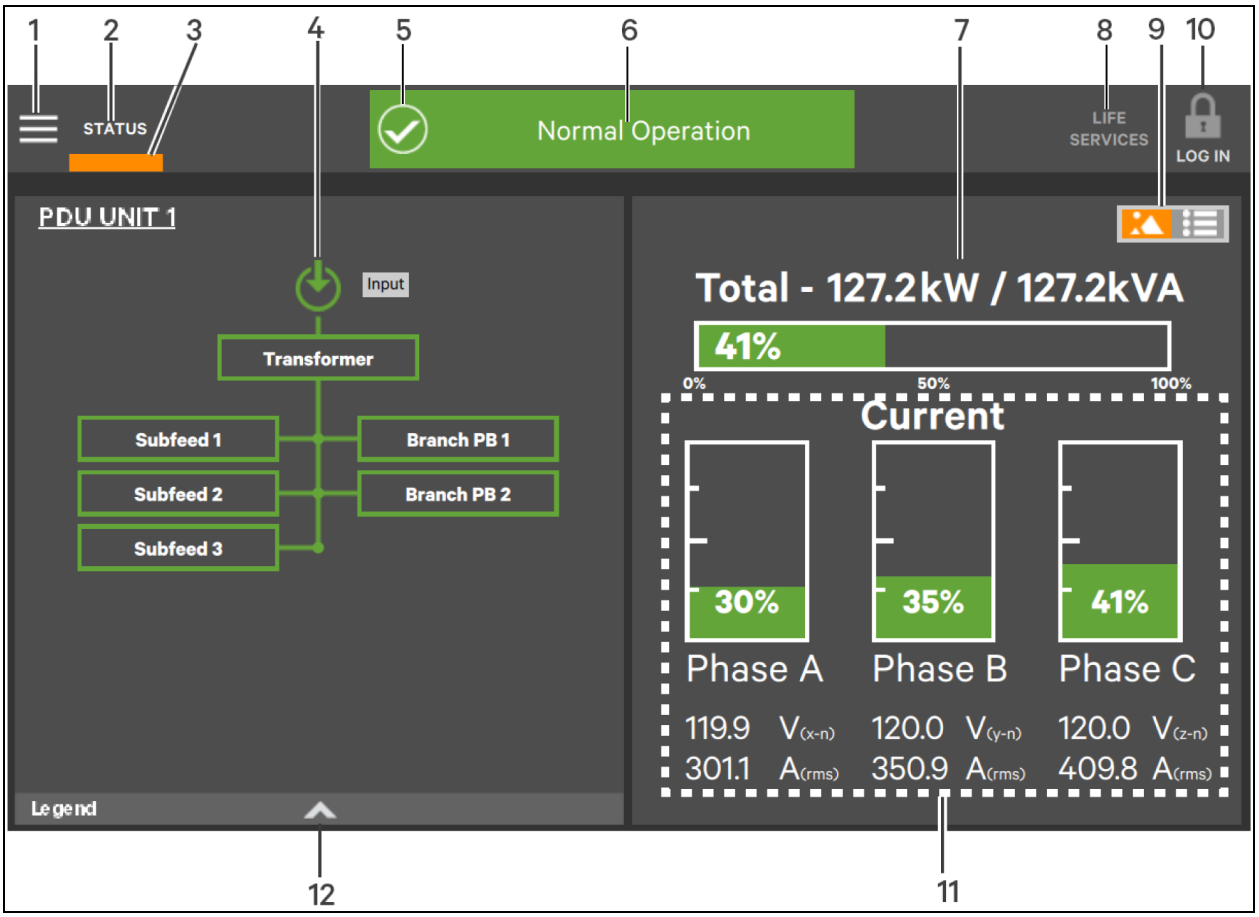
- Is input power connected?
- Is the load balanced?
- Are there any alarms?
- Which breakers are open and which are closed?

Checking the status of a particular component is as simple as touching it on the one-line display. Detailed data appears, allowing the operator to respond quickly to operational changes.

Visual and audible alarms alert personnel to faults and alarms requiring immediate attention. The legend drawer at the bottom left of the main display in the Default View defines the color codes for unit status (see Legend, Graphical and Text Views on page 3).

PINs (Personal Identification Numbers) for each access level - Operator, Administrator and Service - secure the Liebert DPM against unauthorized changes. Observers (personnel without a PIN) can view PDU or RPP status through the Liebert DPM, but cannot change any configuration settings.

Figure 1.1 Liebert® DPM Main Display, Graphical View, Observer Level



ITEM	DESCRIPTION
1	Context Menu icon
2	Active Navigation tab indicator - At Observer access level, no edit tools are displayed
3	Indicates which navigation tab is active
4	One-line system drawing; color-coded to indicate the status of each component
5	System status icon; changes to indicate overall status: Normal, Warning or Alarm
6	Toolbar, color-coded for system status; touching the status header will take you to the Events screen where any active events may be viewed and managed; green indicates normal operation; amber denotes a warning and red denotes a critical fault; Toolbar will scroll through active warnings and faults
7	Upper Meter showing output power usage for transformer
8	LIFE Services icon
9	Graphical/Text display switch
10	Login/Logout icon
11	Lower Meter showing output power usage for each phase; color-coded to indicate status
12	Legend Drawer icon

Figure 1.2 System Status Toolbar: Warning and Alarm Examples

Figure 1.3 Liebert® DPM Main Display, Text View, Operator Level

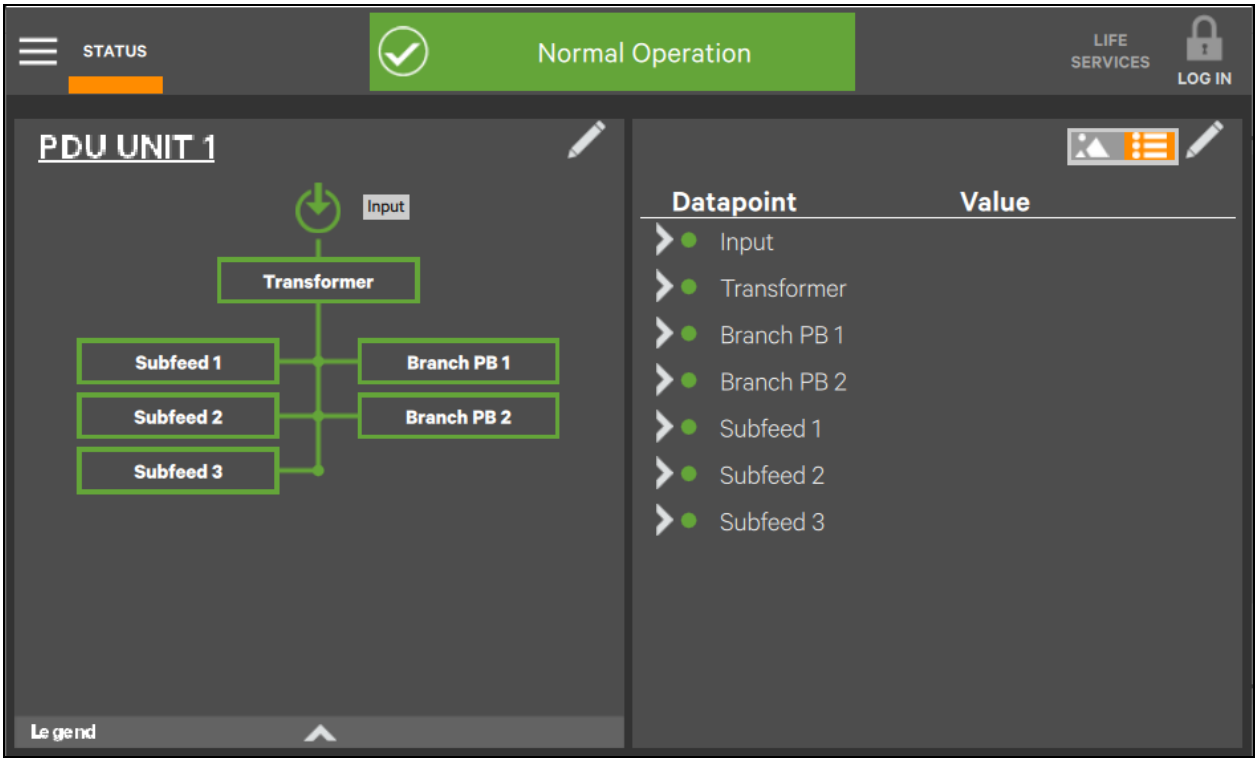
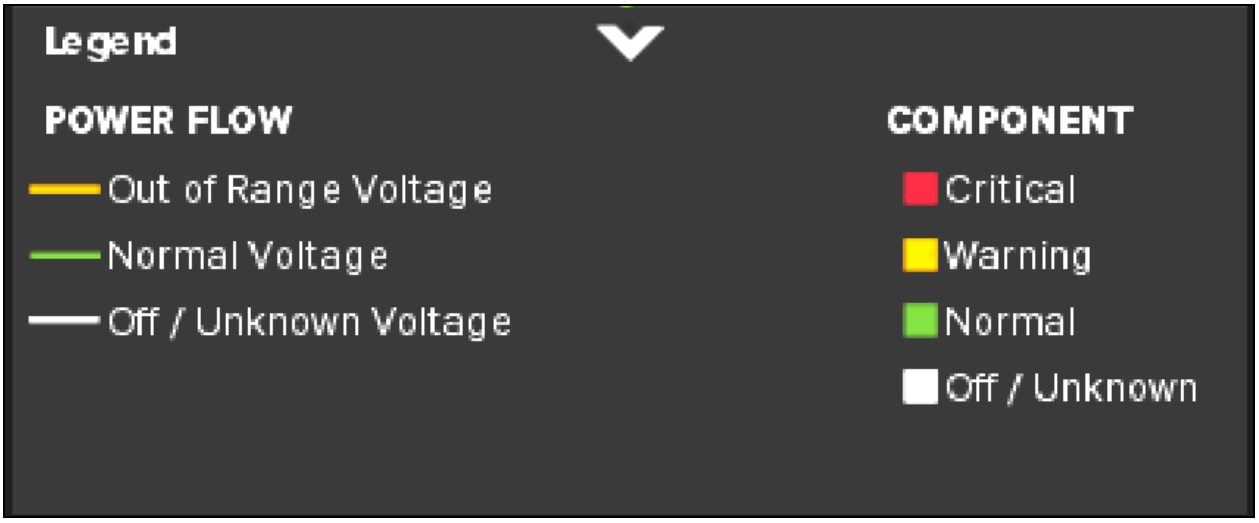


Figure 1.4 Legend, Graphical and Text Views



1.2 Component Naming and Labeling

Default component names are set either at the factory or by Vertiv Services personnel who set up the system, but Administrators can rename them. Renaming permits site personnel to denote a component so that it's location and function are more readily apparent (e.g., *Rack # Backup Servers*). There is no limit on the number of characters in the unit name; panelboard names are limited to 32 characters and names for breakers and subfeeds can have no more than 24 characters.

2 Touchscreen Display and User Interface

The Liebert® DPM is active whenever the PDU or RPP it is mounted on has input power. The screen may be dark and appear inactive, depending on its settings and user activity. If the panel is inactive, touch the LCD to activate it.

The touchscreen permits:

- **Logging in to the system**: Log In to the Touchscreen Control Panel on page 23
- **Customizing the user interface**: Customizing the Display on page 10
- **Checking the status** of the PDU or RPP, including all measured parameters, events and alarms: View System Status on page 43
- **Determining when users logged in and out**: Context Menu Controls on page 27
- **Silencing alarms**: Reset, Silence and Filter Faults and Events on page 63
- **Resetting faults**: Reset, Silence and Filter Faults and Events on page 63

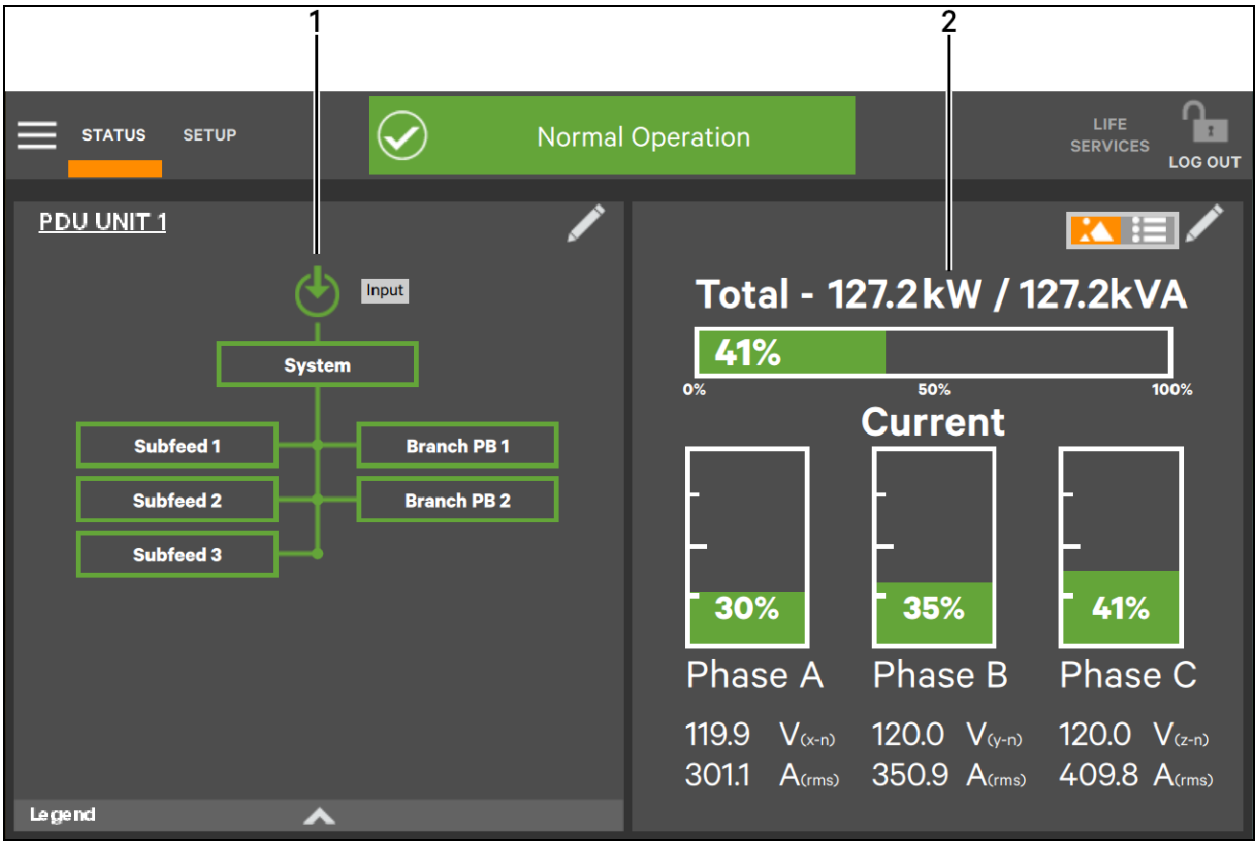
The Liebert DPM display's Default View has two panels:

- One-line diagram and
- Unit status (see Touchscreen Default View on the next page).

The Default View cannot be deleted. Editing the Default View is possible, but the changed view will be renamed automatically and the original Default View will remain.

The Touchscreen Control Panel's appearance can be changed to multiple panes that show other data. Customizing the appearance is detailed in Customizing the Display on page 10 .

Figure 2.1 Touchscreen Default View



ITEM	DESCRIPTION
1	One-Line Diagram
2	Unit Status

2.1 Restrict Physical Access with Barriers or Set Login Codes

NOTE: The default time for a login to remain active without screen interaction is 5 minutes. This is set when the unit is configured. It can be altered at the Service level login.

The Liebert® DPM has four access levels—Observer, Operator, Administrator and Service—each with different levels of authority. The Observer level, which does not permit configuration changes, does not require a PIN.

The default access level for the Liebert DPM is Observer. When a PIN is not required for the Administrator or Operator, the control panel opens at the Administrator level.

2.1.1 Default PINs

- Observer: None at default level
- Operator: 1234 (default)
- Administrator: 2345 (default)

Figure 2.2 Opening Screen - PIN Required

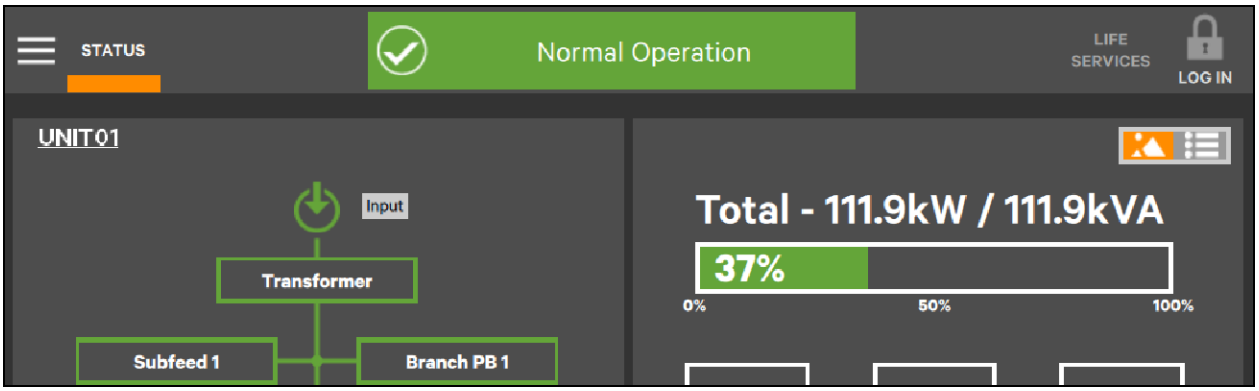
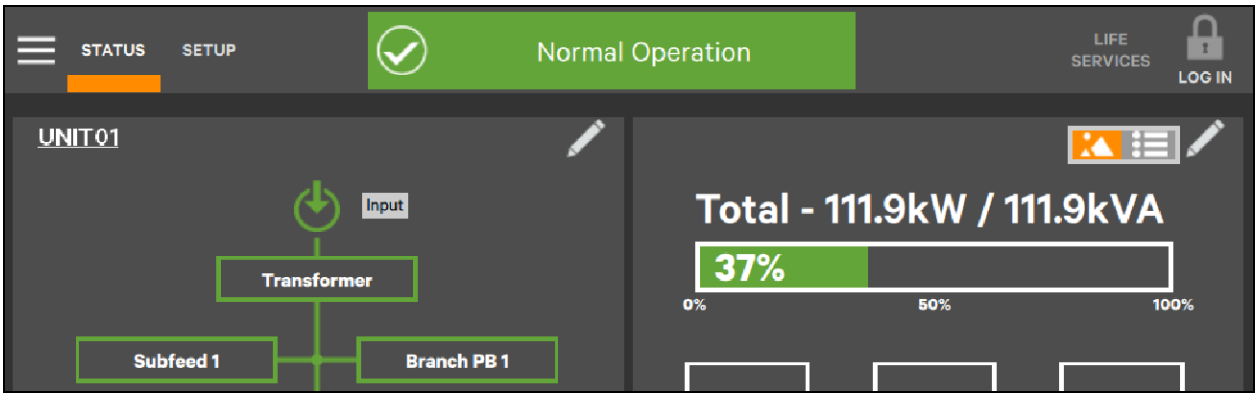


Figure 2.3 Opening Screen - No PIN Required; Opens to Administrator Level

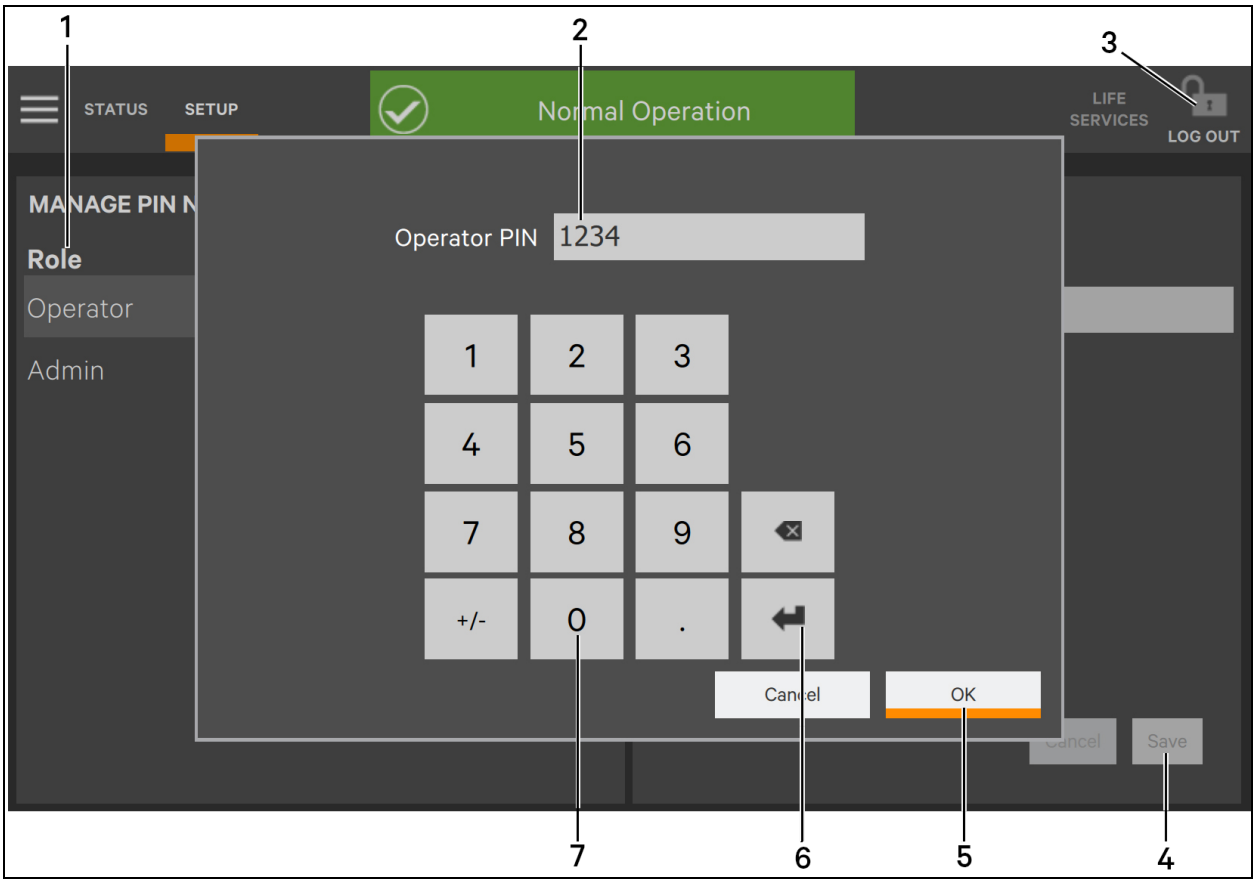


To set or change a PIN:

1. Log in to the Liebert® DPM at the Administrator level (neither Observers nor Operators can change PINs).
2. Touch SETUP. The MANAGE PIN NUMBERS menu opens; either the Operator or Administrator PIN may be changed.
3. Touch the PIN to be changed and a keypad opens.
4. Enter the new PIN or delete the numerals to delete PIN requirements.
5. Touch the *OK* button.
6. Touch the *Save* button to keep your changes or touch the *Cancel* button to exit without saving.

NOTE: To delete PIN requirements, such as for a PDU or RPP in a secure area with restricted access, remove the PIN for the Operator level first, then delete the Administrator PIN. The Operator PIN must be empty before the Administrator PIN can be deleted. If an attempt is made to delete the Administrator's PIN first, the Touchscreen Control Panel will display a notice that the Operator's PIN is not empty. Conversely, the Administrator's PIN must be completed first if conditions change and PINs become required.

Figure 2.4 Manage PINs



ITEM	DESCRIPTION
1	Login level to be changed
2	PIN of level selected
3	Logout Icon
4	*Save* button;, must be pressed to make complete changes
5	*OK* button, must be pressed to proceed with changes
6	*Enter* Key
7	Keypad

At login for all access levels, the Touchscreen Control Panel opens to the STATUS screen in graphic display. The STATUS view at each login level will show the one-line diagram and system status readings unless the default view has been changed. The appearance will differ only in the Context Menus displayed. The Observer and Operator menus are the same, but the Observer has view-only access.

Context Menus are available by touching STATUS or an access level (SETUP for Administrator or SERVICE for Service) and then touching the Context Menu icon at the top left of the Touchscreen Control Panel. A label at the top of the Context Menu signifies which level is being accessed. Touching a Context Menu item reveals data about a component or opens a submenu with additional options (see Context Menu Controls on page 27).

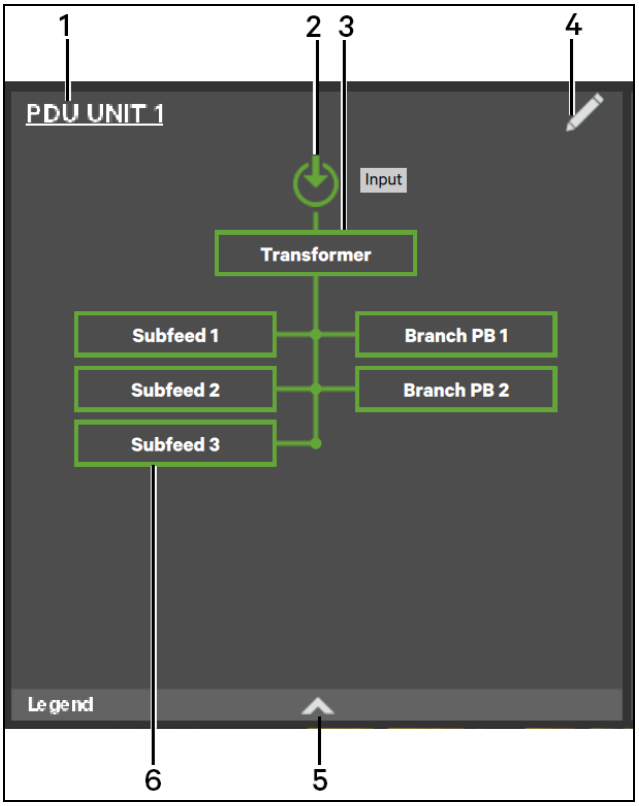
2.2 SYSTEM PANEL: One-Line Display Components

The one-line diagram, the default view for the control, shows each configured major component of the PDU or RPP system. The one-line diagram displayed is the same for all access levels. Touching a component brings up details about that component's status. If the component has additional components, the one-line diagram shows those subcomponents with overall details displayed in the right side of the touchscreen. Touch a lower-level component to view details about it.

Components in the one-line diagram signify their operational status by their color, green, white, amber or red. Faults, Warnings and Events on page 71 describe the various states of the indicators.

The left panel default view can be changed from the one-line diagram to any of three other views: Status, Events and Event Log (see Customizing the Display on the next page).

Figure 2.5 Typical One-Line Display - Normal Operation



ITEM	DESCRIPTION
1	Unit Name
2	Input power
3	Transformer status
4	Edit Screen symbol
5	Legend drawer opener
6	System components

2.3 Customizing the Display

The Touchscreen Control Panel's default appearance will be adequate for most installations, but the view can be altered to show additional or different data. After creating or altering a view, select a view by touching the button beside it and touch *Save*. The layout selected will be applied to all users. Layouts may be created or altered with Operator, Administrator or Service Access if PINs are required. Observers, who do not have a PIN, do not have authority to customize the display.

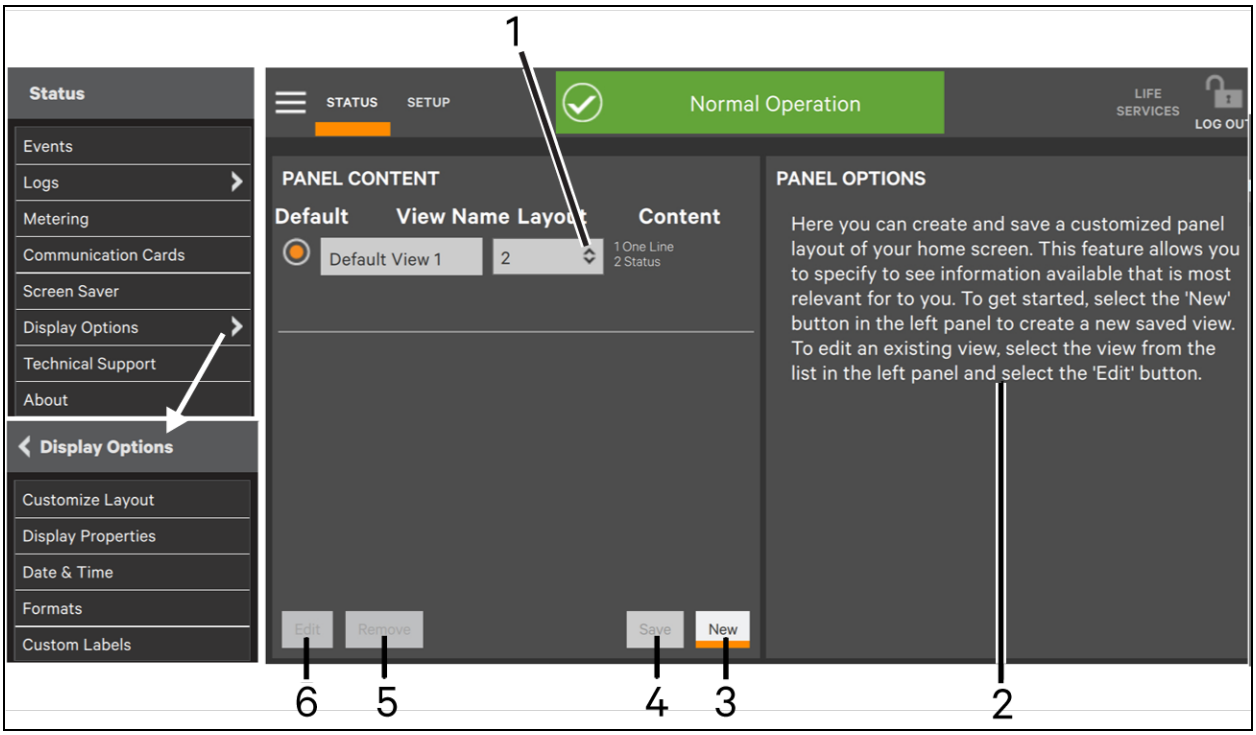
To customize the display's appearance:

1. Log in to the Liebert® DPM, with Operator, Administrator or Service Access if PINs are required.
2. From the STATUS view, touch the Context Menu icon in the top left corner.
3. Select Display Options > Customize Layout. (The right panel details how to edit, remove, or create a view; see Editing, Creating or Removing Panel View below .)

2.3.1 Edit a View

4. Touch a view to highlight it.
5. Touch *Edit* to change that view.
6. Alter the layout—Add or remove a panel or associate different options with a panel.
7. Touch the *Save* button to keep your changes or touch *Cancel* to exit without saving.

Figure 2.6 Editing, Creating or Removing Panel View

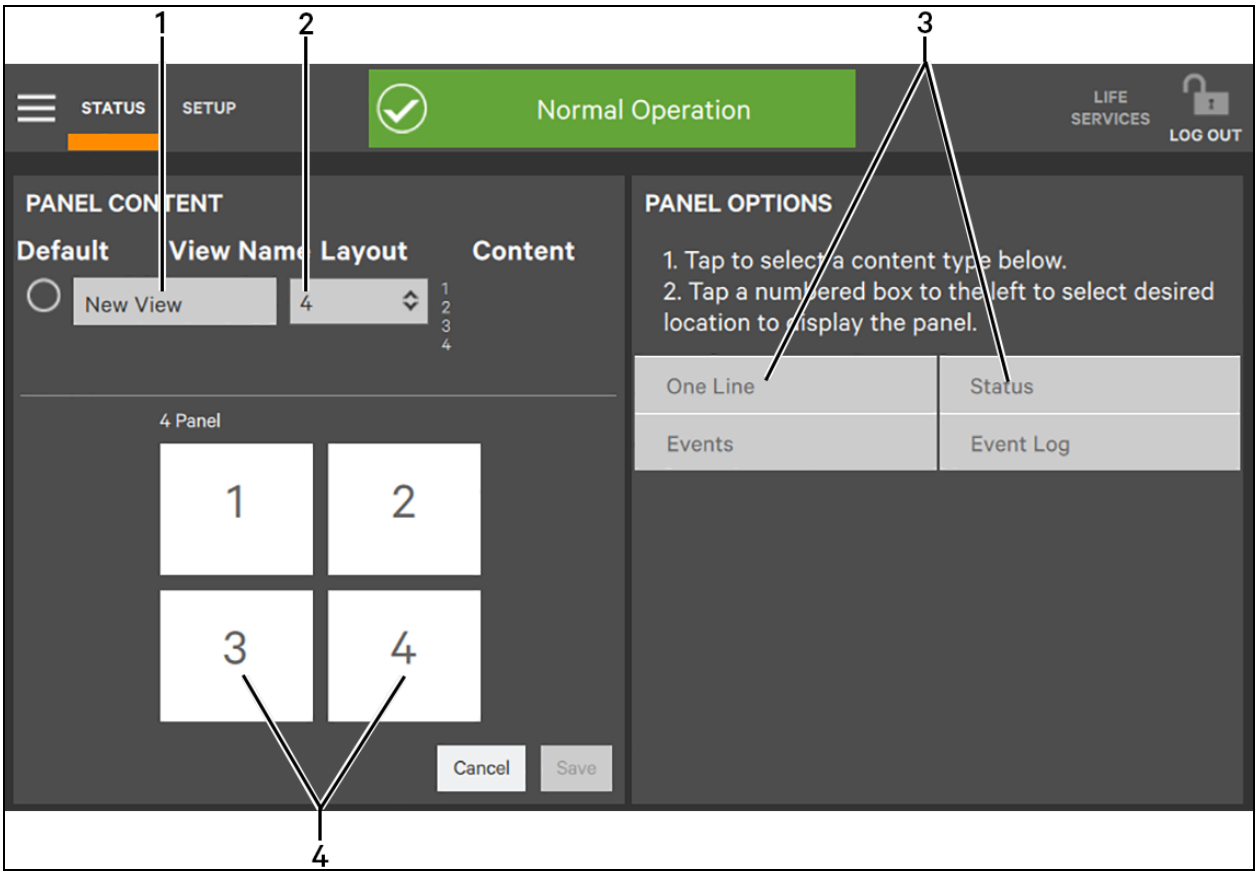


ITEM	DESCRIPTION
1	Increase or decrease the number of panels in the view
2	Screen instructions to change layout
3	*New* panel layout button
4	*Save* edited or new panel layout button
5	*Remove* panel layout button
6	*Edit* panel layout button

2.3.2 Create a View

1. Touch the *New* button to create a view.
2. Either accept the generated name (New View) or touch the view's name to rename it using the on-screen keyboard (maximum length is 15 characters including spaces). If more than one New View is created, the Liebert® DPM will number them in order of creation.
3. Touch the *Enter* key on the on-screen keyboard after entering the new name.
4. Select the number of panels in the new or edited view from the drop-down list under the Layout heading. The maximum is four, one for each possible view: One Line, Status, Events, Event Log.
5. Choose the data to be displayed in each panel by touching a choice in the PANEL OPTIONS pane and then touching the appropriate panel. Repeat for each panel.
6. Touch the *Save* button to keep the changes or touch the *Cancel* button to exit the screen without saving.

Figure 2.7 Create a Panel Layout

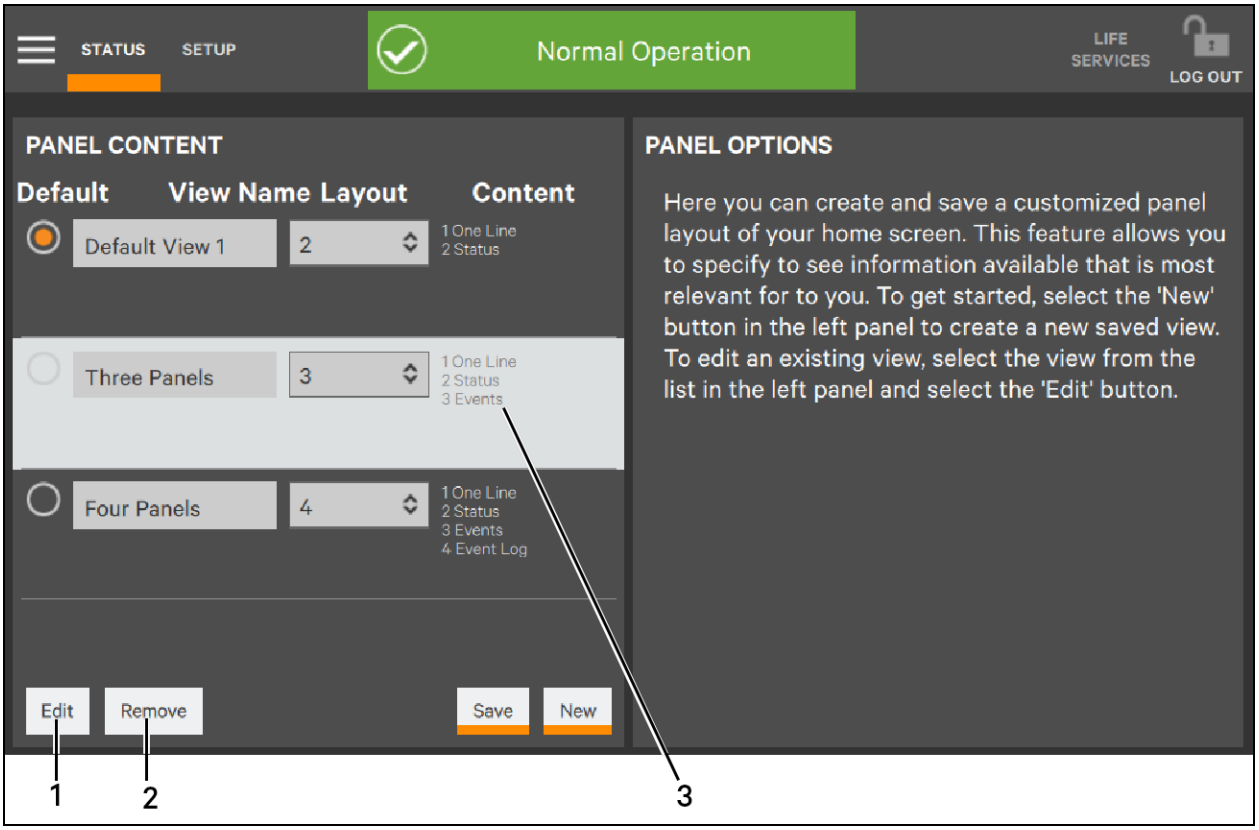


ITEM	DESCRIPTION
1	Name for new layout
2	Number of panels in new layout
3	Content links for panels in new layout
4	Location of panels in new layout

2.3.3 Remove a View

1. Select the view to be removed by touching in the view's row in the PANEL CONTENT screen.
2. Touch the *Remove* button at the bottom left of the PANEL CONTENT screen. The layout disappears.
3. Touch the *Save* button to complete the removal.

Figure 2.8 Remove a View



ITEM	DESCRIPTION
1	*Edit* button
2	*Remove* button
3	View highlighted - may be edited or removed

2.4 Using the Edit Icon to Customize Layout

The Touchscreen Control Panel layout can also be changed with the Edit icons  on the screen. The Edit icon can be used to add or remove panels, resize panels, rearrange panels and change monitored parameters.

To use the Edit icon:

1. Log in as Operator or Administrator, if PINs are required.

2. Touch the Edit icon on the panel to be edited and hold it until a *Change content* button appears on the panel (about 1 second).

2.4.1 Change Panel

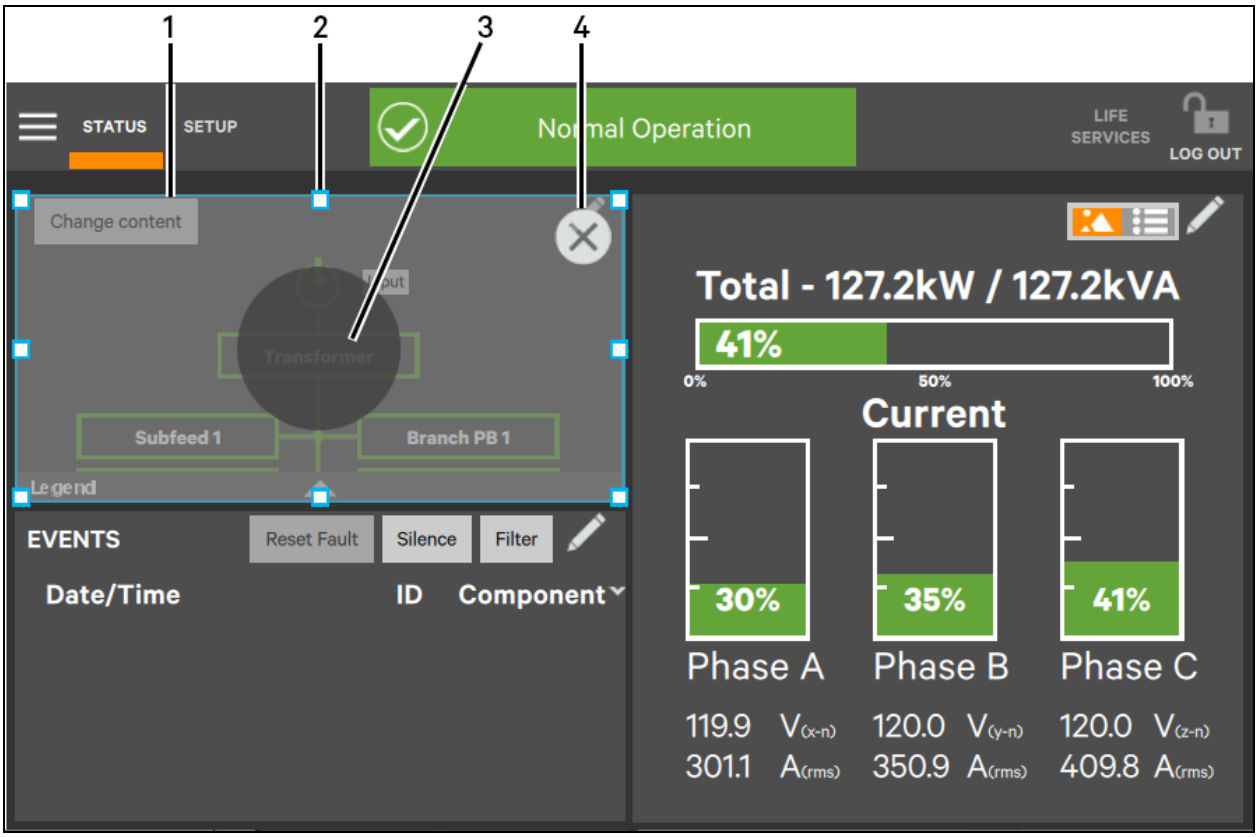
3. Touch the *Change content* button. A window opens offering a choice of panel types not being displayed. (*Example*: If the display is showing the one-line diagram and the Status panel, the choices offered will be Events and Event Log.)
4. Choose the data to be displayed in the panel.
5. Touch an inactive portion of the screen to close the change options. The change will be applied automatically.

2.4.2 Resize or Delete a Panel

6. While the *Change content* button is displayed, touch the *Edit*  icon. The panel will be selected with handles and an *X* will appear (see Figure 2.9 on the facing page).
7. **Resize a Panel:** Pull or push a handle to resize the panel - this is possible only if the panel shares half the Touchscreen Display with another panel (see Figure 2.9 on the facing page).
8. **Move a Panel:** Touching and holding the center circle (grabber circle) in a panel permits dragging the panel to another area of the screen
9. **Delete a Panel**: Touch the *X* on the panel to delete it from the layout. If only two panels are shown during this operation, the remaining panel will fill the Touchscreen Display.

CAUTION: Deleting a panel with this method also removes that panel from the layout for all users. Choosing this changed view from the Customize Layout menu shows a view without the panel that was deleted in Steps 6 through 9 above. The panel can be restored to any layout through the steps in Customizing the Display on page 10 .

Figure 2.9 Resize or Delete a Panel



ITEM	DESCRIPTION
1	Panel to be resized or deleted
2	Handle for resizing the window (one of 8 handles)
3	Grabber Circle (moves panel to another area)
4	Delete panel icon

2.4.3 Choose a Theme

The Touchscreen Control Panel's default mode is a dark gray background with white headings and light gray text, dialog boxes with dark gray text and orange indicators. This is the view shown in this document. This will be acceptable for most applications, but it can be changed to a blue background or a light gray background, accompanied by changes to the dialog boxes and text. Users at any access level, Observer, Operator, Administrator and Service, can choose a theme. The selected theme will apply to the display at all access levels.

To choose a theme:

1. Touch the Context Menu and select Display Options, then Display Properties.
2. Touch the Theme dialog box and select a theme (see **Figure 2.10** on the next page).
3. Touch the *Save* button. (The *Save* button becomes active only after a new theme has been chosen.

Figure 2.10 Choose a Theme

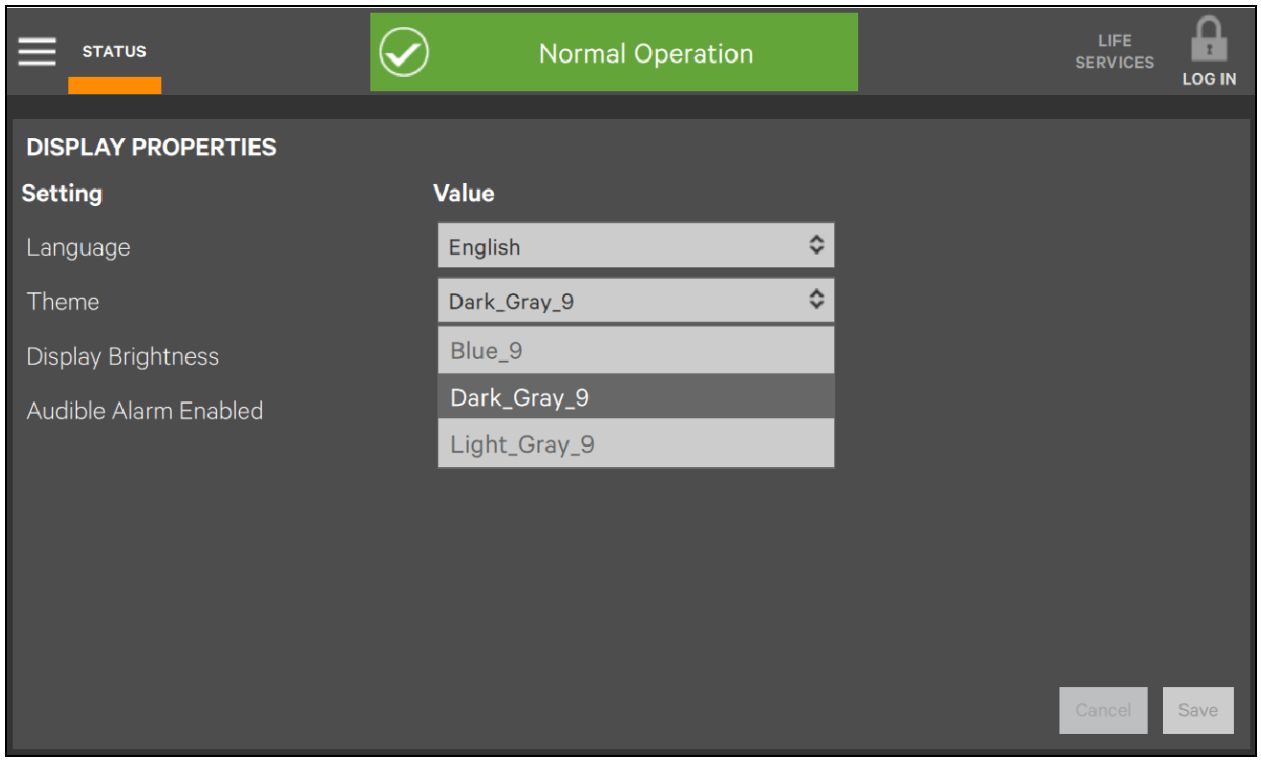
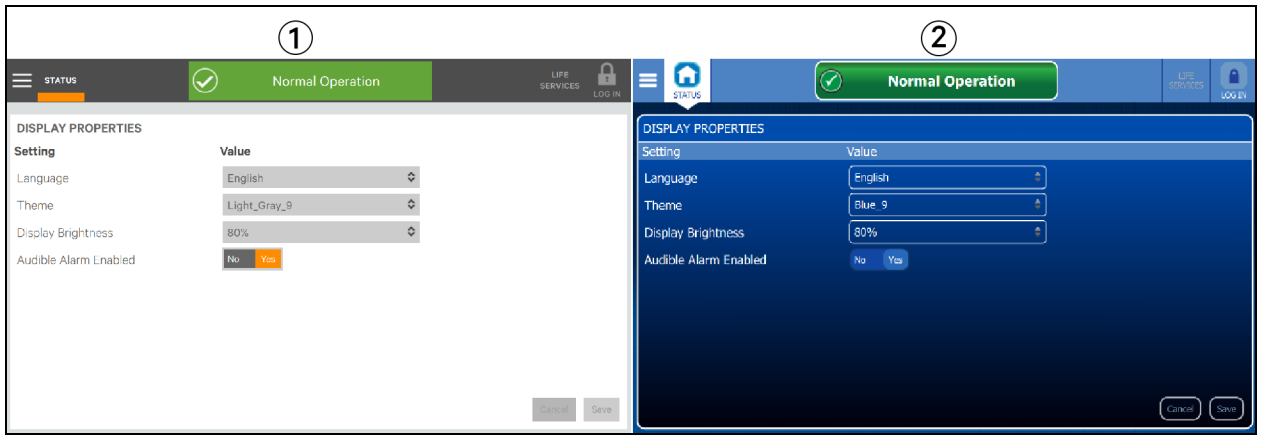


Figure 2.11 Themes: Light_Gray_9 and Blue_9



Item	DESCRIPTION
1	Light_Gray_9 theme
2	Blue_9 theme

3 Setting Display Properties

The Context Menu for either OPERATE or SETUP permits determining how data is displayed and alarms are handled. The DISPLAY PROPERTIES menu is available to any user, including Observers. However, the items that may be altered differs with each access level, if PINs are required.

- **Language**: The default setting is English.
- **Theme**: The default setting is Dark_Gray_9; other choices are Blue_9 and Light_Gray_9. Themes change not only the background, but also the color of some menus.
- **Backlight Off Timer**: The default setting is Off After 5 Minutes; other choices are Off After 10 minutes, 20 minutes, 30 minutes, 45 minutes and 60 minutes.
- **Alarm Window Timeout**: If the backlight is Off and a fault occurs, the screen saver will be displayed until this timer expires. The default setting is Never. It may be changed in one-day increments from one day to 14 days.
- **Auto-Logout Timer**: The default setting is Logout After 5 Minutes of no screen interaction. Choices are 1 minute, 2 minutes, 3 minutes, 4 minutes, 5 minutes, 10 minutes and 15 minutes.
- **Display Brightness**: The default setting is 80 percent, but the brightness may be changed in increments of 20 percent from 20 percent to 100 percent.
- **Status Indicator Brightness**: The default setting is 80 percent; brightness may be changed in increments of 20 percent from 20 percent to 100 percent.
- **Audible Alarm Enabled**: The default setting is Yes, but the alarm can be disabled.
- **Calibrate Touch Screen**: No default value; instructions must be followed to calibrate the touchscreen. A notification warns that performing a calibration on a properly functioning touchscreen could cause the touchscreen to fail. The notification offers a choice of going ahead with the calibration or canceling it.

Table 3.1 Available Display Properties by Access Level if PINs are Required

DISPLAY PROPERTY	ACCESS LEVEL			
	OBSERVER	OPERATOR	ADMINISTRATOR	SERVICE
Language	✔	✔	✔	✔
Theme	✔	✔	✔	✔
Backlight Off Timer	X	✔	✔	✔
Alarm Window Timeout	X	✔	✔	✔
Auto-Logout Timer	X	X	✔	✔
Display Brightness	✔	✔	✔	✔
Status Indicator Brightness	X	✔	✔	✔
Audible Alarm Enabled	✔	✔	✔	✔
Calibrate Touch Screen	X	X	✔	✔

3.1 Setting Date, Time and Time Zone

The date, time and time zone are set when the Liebert® DPMI is configured.

Changing the date, time or time zone requires Administrator or Service access if PINs are required. These settings can be viewed, but cannot be changed, by Observers and Operators if PINs are required.

The control permits using these time protocols:

- Manual: Manually set the time for the Liebert DPM
- Network: Network Time Protocol (NTP), a TCP/IP protocol, synchronizes computer clock times in a network.
- Unity: The time of the PDU or RPP will match the time set on the Liebert® IntelliSlot card (IS-UNITY or IS-RDU101). Refer to the card's documentation.

The format of the date or time may be changed through the Context Menu on either the STATUS or SETUP page (STATUS>Context Menu>Display Options>Formats or SETUP>Context Menu>Display Options>Formats) (refer to Changing Date, Time and Measurement Formats on the facing page).

The control will display local time and UTC Time in the STATUS>Context Menu>Display Options>Date & Time view. The control will display the selected time on the Events page and in the Audit and Event logs.

NOTE: UTC Time is a world standard that the Touchscreen Control Panel displays. It cannot be changed.

3.2 Change the Time Zone

The time zone is set when the Touchscreen Control Panel is configured (the default is America/New York). The drop-down menu permits selecting any time zone on the globe.

To change the time zone:

1. Log in with Administrator access if PINs are required.
2. Navigate to STATUS>Display Options>Date & Time or to SETUP>Display Options>Date & Time.
3. Touch the Time Zone box or either arrow on the drop-down menu.
4. Scroll to the appropriate time zone and touch it.
5. Make any other changes on the DATE & TIME page.
6. Touch the *Save* button to make the changes or touch *Cancel* to exit without saving the changes.

3.3 Change the Date

The date is set when the Liebert® DPM is configured. The default format is month/day/year with single numerals for months from January through September and for days 1 through 9. The remaining months of the year and days of the month require two numerals. Changing how the date is shown requires using the Formats page at Context Menu>Display Options on either the STATUS or SETUP menu. Refer to Changing Date, Time and Measurement Formats below .

To change the date:

1. Log in with Administrator access, if PINs are required.
2. Navigate to STATUS>Display Options>Date & Time or to SETUP>Display Options>Date & Time.
3. Touch either the Date box or the grid beside it. Either will display a calendar for the month.
4. Scroll to the correct month and touch the correct day.
5. Make any other changes on the DATE & TIME page.
6. Touch the *Save* button to make the changes or touch *Cancel* to exit without saving the changes.

NOTE: Touching the Graphic/Text icon permits changing the date by scrolling though months, days and years.

3.4 Changing Date, Time and Measurement Formats

The Touchscreen Control Panel has these default settings:

- Date: M/d/yyyy
- Time: h/mm (either AM/PM or am/pm)
- Measurement System: Metric

These formats may be changed by any user, including an Observer, by going to Status>Display Options>Formats; choose the format or measurement system and touch the *Save* button.

3.4.1 Change the Date Format

To change the way the date is displayed, touch inside the box containing the date format and choose the format from the choices shown in Date/Time Format and Measurement System Choices.

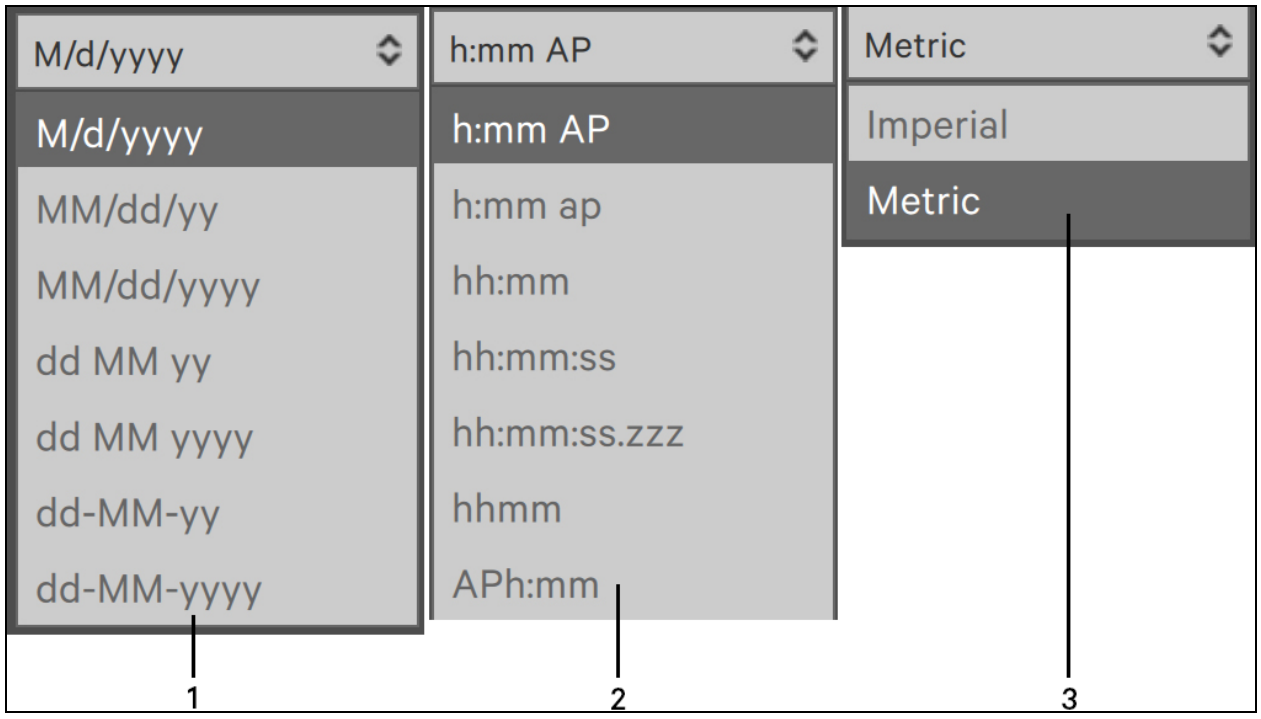
3.4.2 Change the Time Format

To change the way the time is displayed, touch inside the box containing the time format and choose the format from the choices shown in Date/Time Format and Measurement System Choices.

3.4.3 Change the Measurement System

To change the way measured values, such as heat, are displayed, touch inside the box containing the Measurement System and choose either Imperial or Metric as shown in Figure 3.1 below .

Figure 3.1 Date/Time Format and Measurement System Choices



ITEM	
1	Date Format Choices; scrolling reveals more choices— Change how the date is displayed.
2	Time Format Choices— Change how the time is displayed.
3	Measurement Format— Change how measured values, such as heat, are displayed.

3.5 Create or Modify Custom Labels

The CUSTOM LABELS page permits renaming settings, serial ports and network interfaces. New names may be entered for these to suit local preferences and to ease troubleshooting and refine data. (The default name of COM1 may be adequate, but renaming the port with the name of a connected device or a rack number may ease determining the cause of an alarm.)

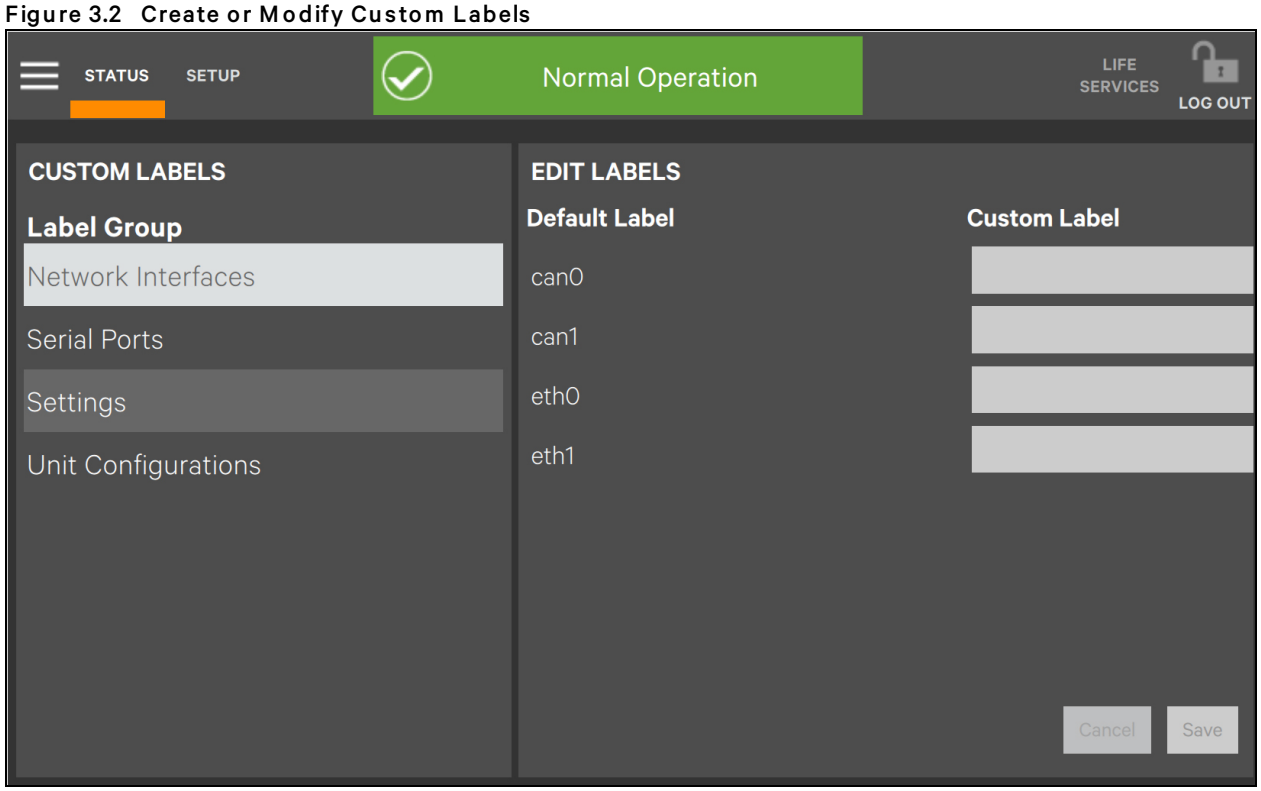
Custom labels may be created or modified by any user, including Observers. The labels are universal and will be displayed for all users.

To create or modify a custom label:

1. Go to STATUS>Display Options>Custom Labels.
2. Choose the label group to be changed.
3. Touch inside the Custom Label box beside the setting to be labeled.
4. Use the on-screen keyboard to enter the label name.

5. Touch the *Enter* key.
6. Touch *Save* to make the change or touch *Cancel* to exit without saving.

Figure 3.2 Create or Modify Custom Labels



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4 Log In to the Touchscreen Control Panel

The Liebert® DPM is On whenever the PDU or RPP has control power. It may be dark and appear inactive, depending on its settings. If the panel is inactive, touch the LCD to activate it.

The Touchscreen Control Panel's controls are available to anyone who has physical access to the PDU or RPP the panel is mounted on. However, control panel access may be restricted by ensuring PINs are set for Operator and Administrator access. The Operator, Administrator and Service levels require a PIN by default; these PINs may be changed from the factory-set numbers.

NOTE: Vertiv™ recommends recording any PINs set and storing the numbers where they are accessible if they are forgotten. A user with authority to change a PIN will be able to see PINs of those with equal or lesser access.

NOTE: After a user finishes logging in, the system will return navigation to the location displayed when you pressed the login button.

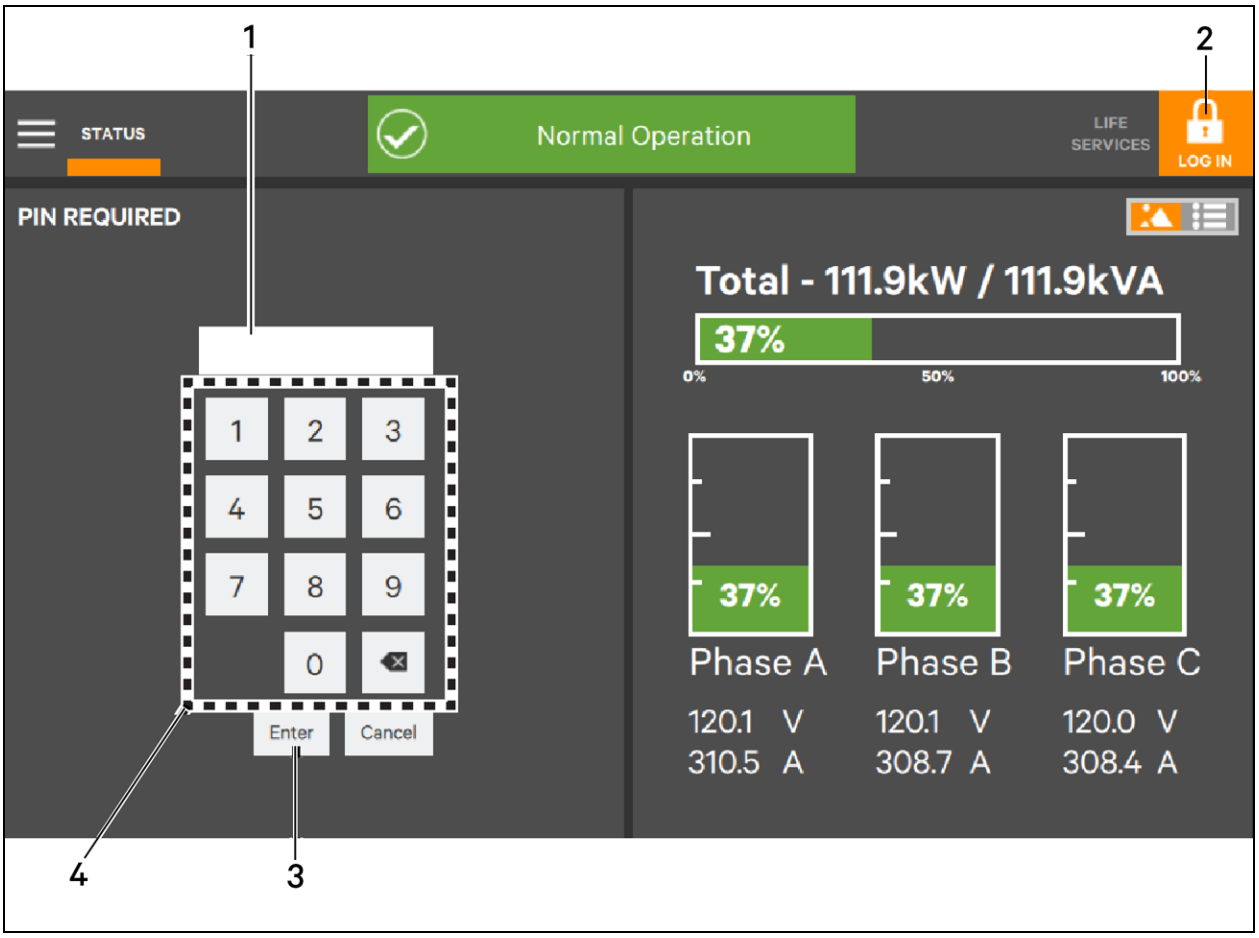
To log in to the Touchscreen Control Panell:

1. Touch the LOG OUT icon 

at the top right of the screen. The lock will close and be renamed LOG IN. 

2. Touch the LOG IN icon . The background will change color and open a screen with a keypad.
3. Enter a PIN at the screen below.
4. Touch *Enter*.

Figure 4.1 Log In to the Touchscreen Control Panel

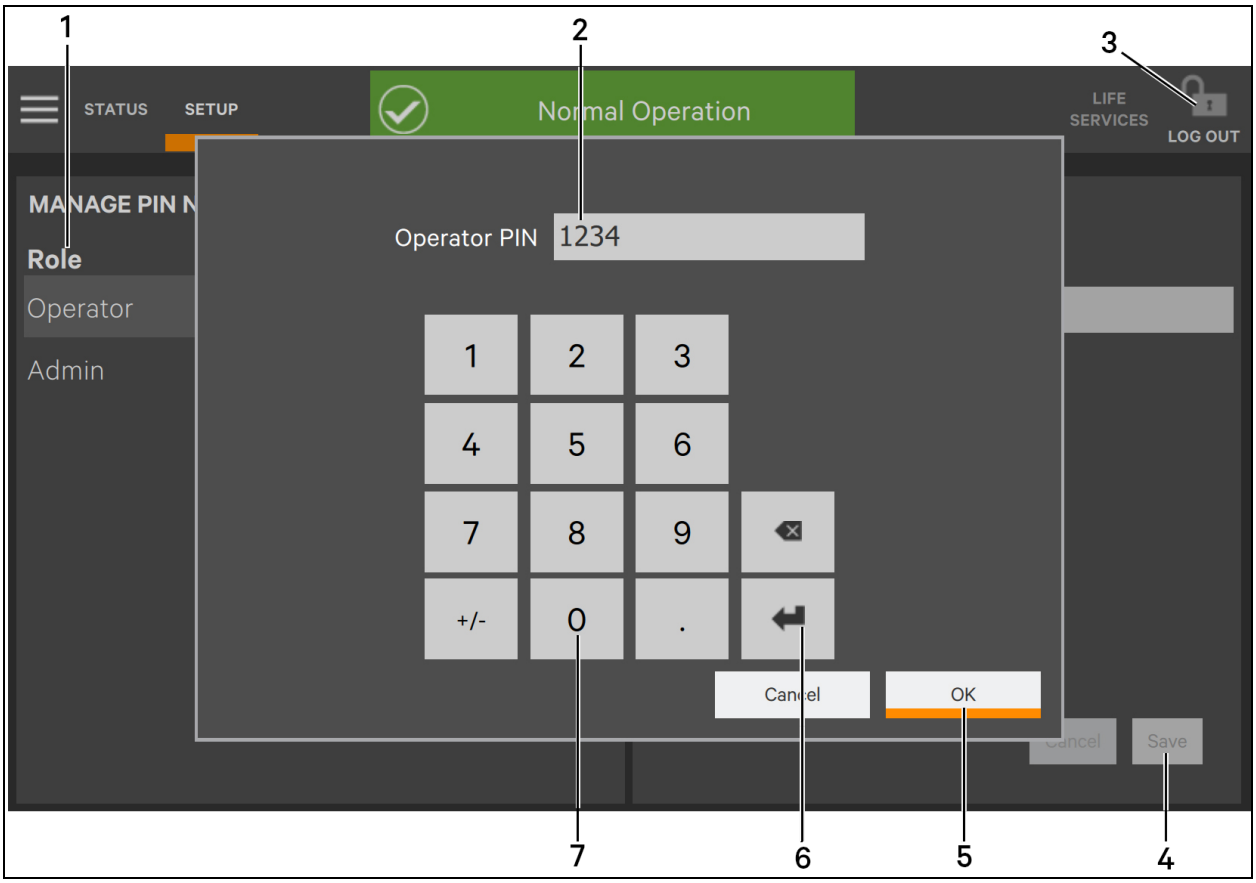


ITEM	DESCRIPTION
1	PIN shown when entered
2	LOG IN icon
3	*Enter* button
4	Keypad

To set a PIN:

1. Log in as Administrator or higher.
2. Touch SETUP at the top of the screen.
3. Touch the Role whose PIN will be set or changed.
4. Touch the PIN value on the right side of the Touchscreen Control Panel.
5. Enter a PIN using the on-screen keypad, shown below (the PIN may be up to nine digits).
6. Press the *Enter* key or *OK* button.
7. Press the *Save* button.

Figure 4.2 Set a PIN



ITEM	DESCRIPTION
1	Role whose PIN will be changed (Operator or Administrator)
2	Current PIN, shown after touching PIN Value
3	Log Out icon
4	*Save* button
5	*OK* button
6	*Enter* button
7	Keypad

NOTE: Vertiv™ recommends keeping a current list of PINs in a location known to administrative personnel and updating the list immediately when a PIN is changed.

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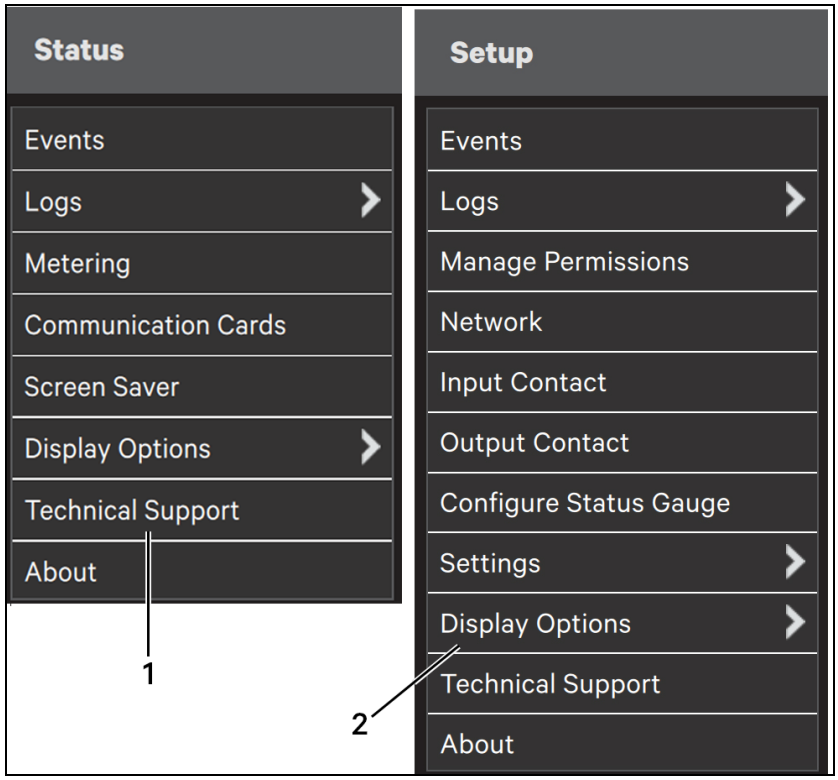
5 Context Menu Controls

Context Menus at the top left side of the Touchscreen Control Panel contain links that aid in configuring and managing the PDU or RPP. The choices vary by access level, as do the actions permissible.

The Context menu seen by an Observer appears identical to the Context Menu seen by an Operator. However, when an Operator or Administrator is logged in, the Context Menu permits actions, such as customizing the layout, that are not permitted at the Observer access level.

Figure 5.1 Context Menus: Observer/Operator; Administrator



ITEM	DESCRIPTION
1	Context Menu for Observer and Operator
2	Context Menu for Administrator

5.1 Context Menu Commands for Operators

The Context Menu at the Operator login level shows:

- **Events**: Date and time of each configured event's occurrence, type of event, Event ID, component affected and description. Events can be sorted by time of occurrence, Event ID, component, subcomponent (system, breaker, panelboard) and description by clicking the table header for that particular item. The Touchscreen Control Panel also permits filtering events by severity (Status, Alarm or Fault); or by component or subcomponent. Filtering limits the events displayed to those of a certain severity or that affect a particular component or subcomponent. If a component or subcomponent name is too long, the Liebert® DPM displays an ellipsis. Clicking on that row will create a double row displaying the full component or subcomponent name. See Reset, Silence and Filter Faults and Events on page 63 for more information.
- **Logs**: Event Log and Audit Log. See Reset, Silence and Filter Faults and Events on page 63 for more information.
  - **Audit Log** shows date and time that users logged into and out of the system. The Audit Log can be exported as an extensible markup language (*XML*) or comma-separated value (*CSV*) file for recordkeeping, analysis and similar uses. Observers can export the log for recordkeeping, analysis and similar uses.
  - **Event Log** shows date and time of event occurrence, type of event, Event ID, status. (whether the event was On or Off), component affected and description; same options for all access levels. Observers can export the log as a *CSV* file for record-keeping, analysis and similar uses. If a component or subcomponent name is too long, the Liebert DPM displays an ellipsis. Clicking on that row will create a double row displaying the full component or subcomponent name.
- **Metering**: View-only system components voltage, current, power usage and peak current and demand. Touching a component brings up a detailed metering screen about that component. Observers can export the log as a *CSV* file for recordkeeping, analysis and similar uses. See View System Status on page 43 for more information.
- **Communication Cards**: Display of communication cards' details and status. Logging in with Administrator or Service access permits editing the Unity/RDU-101 cards' network mode (DHCP/Static), IPV4 address, subnet mask and default gateway.
- **Screen Saver**: Display Sleep Mode notification (immediate entry into screen saver); screen goes dark and user is logged off; touching the screen reactivates the interface.
- **Display Options:** (see Setting Display Properties on page 17
  - **Customize the Layout** (Changes affect view for all access levels): Customize the default screen layout.
  - **Display Properties**: Language, Theme, Display Brightness, Backlight Off Timer, Alarm Window Timeout and Audible Alarm Enabled.
  - **Date and Time**: Read-only view of Time Zone Country and Region, Time Protocol, Date, Local Time and UTC Time.
  - **Formats**: Date Format, Time Format and Measurement System
  - **Custom Labels**: Custom naming of Network Interfaces, Serial Ports, Settings and Unit Configurations.
- **Technical Support**: Manufacturer's support: Web site, e-mail address and telephone numbers.
- **About**: Information about the PDU or RPP and its software and firmware; model, rating, component, model number and serial number.

NOTE: The same Context Menu seen by Operators is also seen by Administrators by touching the STATUS heading and then touching the Context Menu. Administrators who access this Context Menu can change settings and parameters in this menu.

5.2 Context Menu Commands for Administrators

The Administrator's Context Menu is available by logging in as Administrator, touching SETUP and then touching the Context Menu icon. An Administrator is able to change most configurable items in the Context Menu. The Context Menu will show:

- Events: Date and time of each configured event's occurrence, type of event, Event ID, component affected and description. Events can be sorted by time of occurrence, Event ID, component, subcomponent (system, breaker, panelboard) and description. The Liebert® DPM also permits filtering events by severity (Status, Alarm or Fault); or by component or subcomponent. Filtering limits the events displayed to those of a certain severity or that affect a particular component or subcomponent. If a component or subcomponent name is too long, the Liebert DPM displays an ellipsis. Clicking on that row will create a double row displaying the full component or subcomponent name. For more information, refer to Reset, Silence and Filter Faults and Events on page 63 .
- Logs: Audit Log and Event Log. See Reset, Silence and Filter Faults and Events on page 63 for more information
  - Audit Log Date and time that users logged into and out of the system. The Audit Log can be exported as an *XML* or *CSV* file for recordkeeping, analysis and similar uses.
  - Event Log shows date and time of event occurrence, type of event, Event ID, status (whether the event was On or Off), component affected and description; same options for all access levels. Observers can export the log as a *CSV* file for recordkeeping, analysis and similar uses. If a component or subcomponent name is too long, the Liebert DPM displays an ellipsis. Clicking on that row will create a double row displaying the full component or subcomponent name.
- Manage Permissions: Change or require PIN for users of Administrators or Operators. For information, refer to Touchscreen Display and User Interface on page 5 .
- Network: Modify communication settings. See View or Change Network Settings on page 31 for more information.
- Input Contact: Assign preset or custom names and time delay to external input contacts.
- Output Contact: Assign events and time delay to output contacts.
- Configure Status Gauge: Modify information shown on the Status Gauge, including the warning threshold and critical threshold for the Upper Meter. See Configure Status Gauge on page 37 for more information.
- Settings
  - Unit: Rename the PDU or RPP, view Restart Procedure, view whether Overtemperature Shutdown is enabled, enable or disable Event Latching, Local EPO, Remote EPO, Frequency Deviation, Overvoltage Fault and Undervoltage Fault; set the Frequency Deviation threshold, Frequency, Input Voltage Rating, System Voltage Rating and Undervoltage Fault threshold.
  - Export: Export the Liebert® DPM's configuration file to an external drive, such as a memory stick, connected to the PDU or RPP. See Settings - Import and Export on page 39 for more information.

- **Import**: Import full, partial or custom settings from an external drive, such as a memory stick, connected to the PDU or RPP. See Import Settings on page 40 for more information.

- **Display Options:** (see Setting Display Properties on page 17
  - **Customize the Layout** (Changes affect view for all access levels): Customize the default screen layout.
  - **Display Properties**: Language, Theme, Backlight Off Timer, Alarm Window Timeout, Display Brightness, Status Indicator Brightness, Audible Alarm Enabled and Calibrate Touch Screen.
  - **Date and Time**: Set Time Zone Country and Region, Time Protocol, Date, Local Time and UTC Time.
  - **Formats**: Date Format, Time Format and Measurement System, either Imperial or Metric.
  - **Custom Labels**: Custom naming of Network Interfaces, Serial Ports, Settings and Unit Configurations.
- **Technical Support**: Manufacturer's support: Web site, e-mail address and telephone numbers.
- **About**: Information about the Liebert® DPM and its software and firmware; Liebert DPM model, rating, configured capacity, model number and serial number.

5.2.1 View or Change Network Settings

Because the Liebert DPM monitors and manages the PDU or RPP over a network, the Liebert DPM restricts communication setting changes to those with Administrator and Service access, if PINs are required. These settings were originally made at the factory or set up by Vertiv Services during the system's initial configuration.

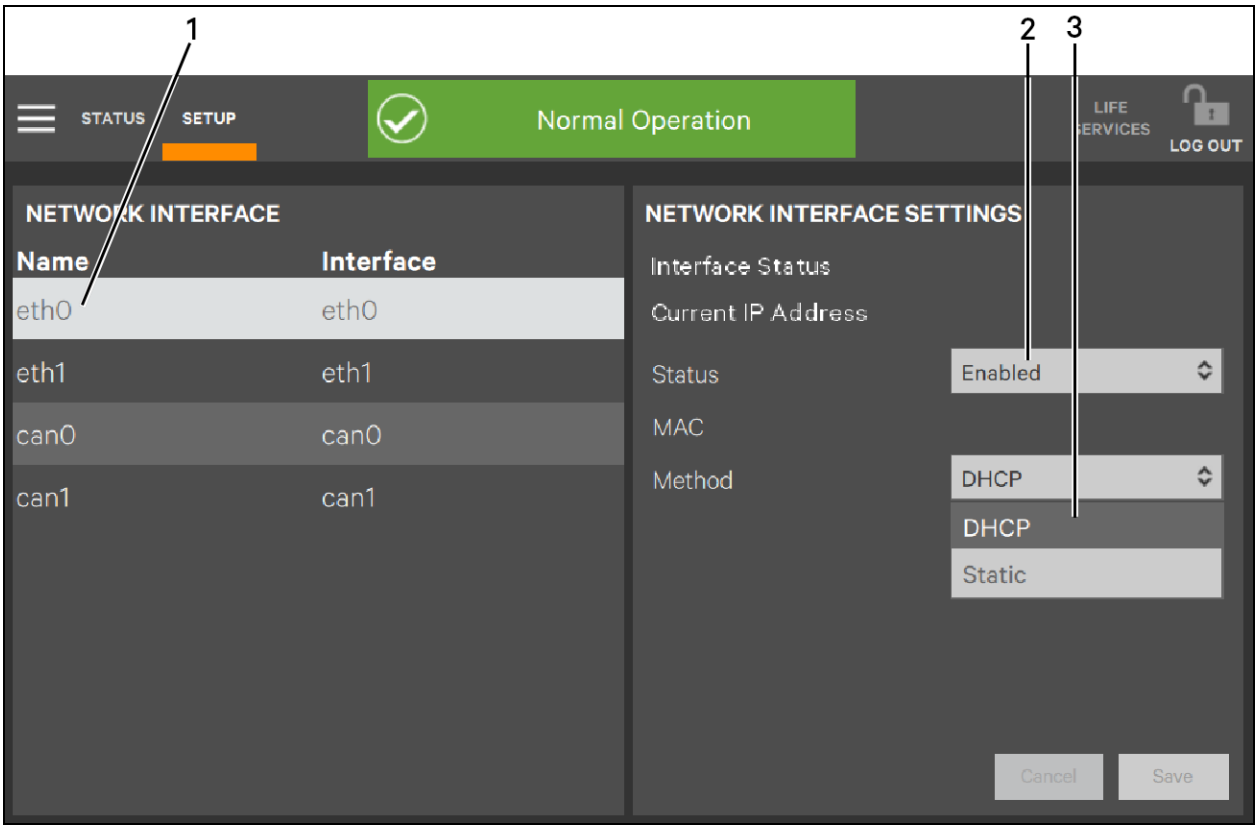
To view or change Network settings:

1. Log in with Administrator or Service access.
2. Touch SETUP, touch the Context Menu icon and Network.
3. Select a network interface to change by touching the name on the left side of the Touchscreen Control Panel.

   Ethernet connections can be enabled or disabled and the IP address source can be set to DHCP or Static.

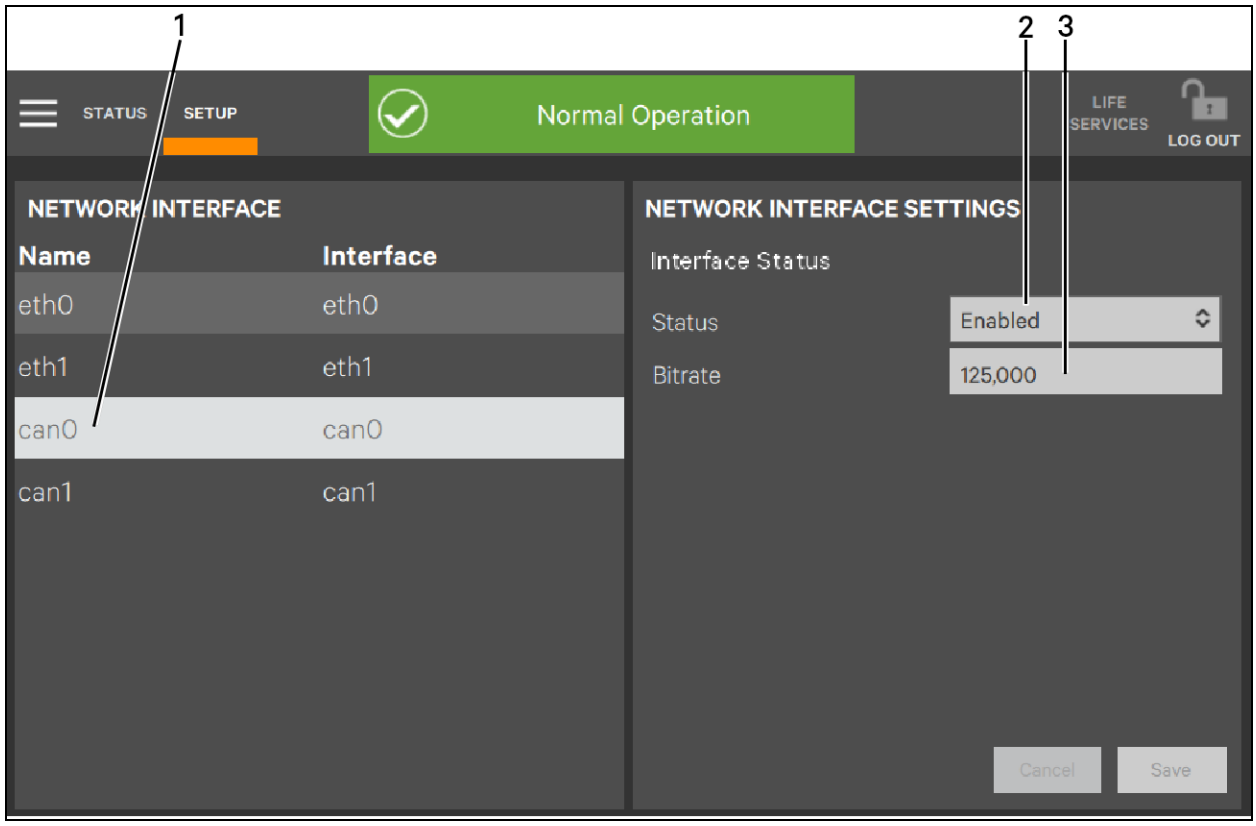
   CANbus connections can be enabled or disabled and the bit rate can be changed by touching the dialog box associated with Bitrate. Touching the dialog box opens a keypad where the bit rate can be entered.

Figure 5.2 Change Network Settings: Ethernet



ITEM	DESCRIPTION
1	Ethernet network selected
2	Enabled/Disabled choice
3	IP address source: DHCP or Static

Figure 5.3 Change Network Settings: CANbus



ITEM	DESCRIPTION
1	CANbus network selected
2	Enabled/Disabled choice
3	Bit rate settings box; touching box opens keypad

5.2.2 Change Input Contacts

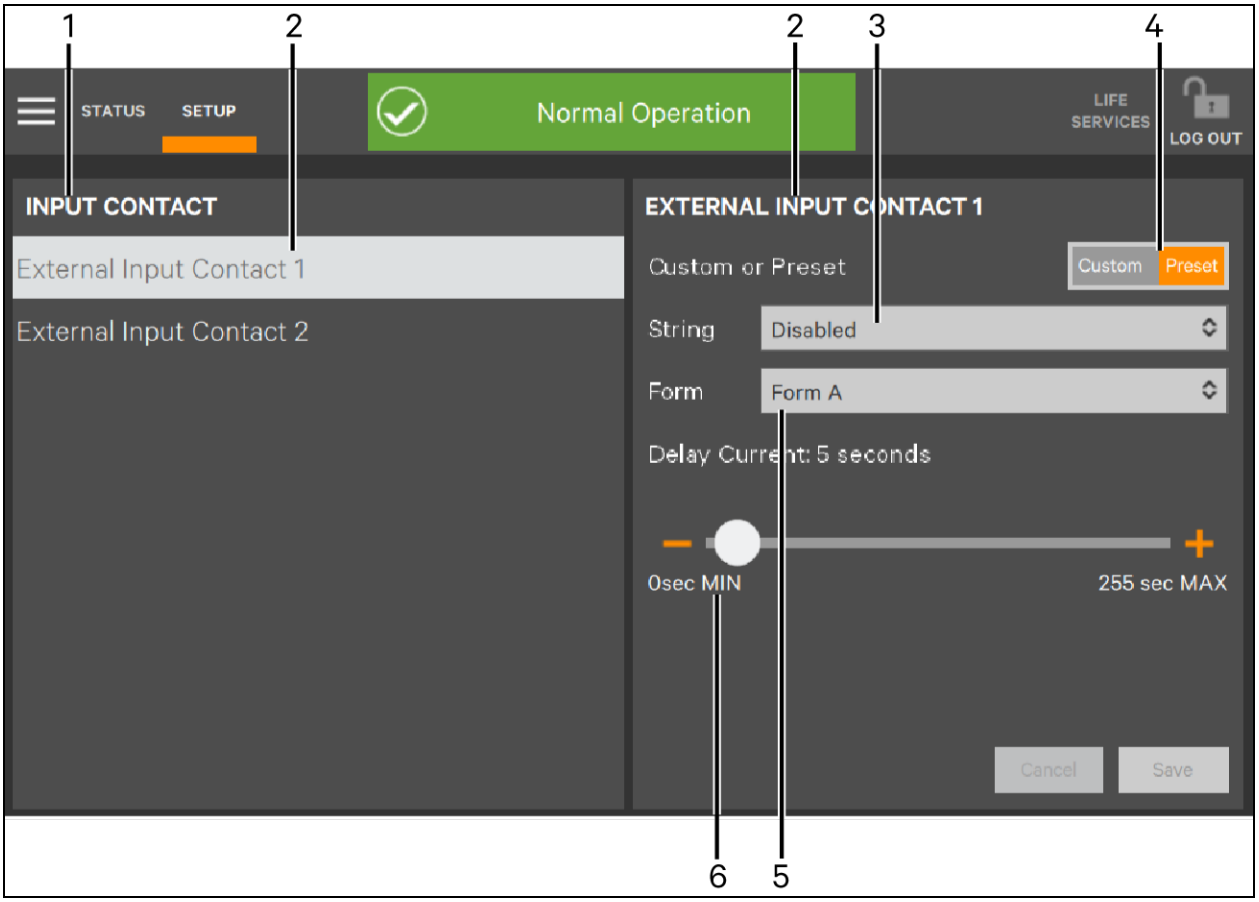
Input contacts, also set up at the factory or by Vertiv Services during initial configuration, may be changed only by personnel with Administrator or Service access level if PINs are required. The Liebert DPM permits selecting Form A or Form B for the two external input contacts supported. The External Input Contact's delay current may also be adjusted.

To change the Input Contact settings:

1. Log in with Administrator or Service access.
2. Touch SETUP > Context Menu > Input Contact.
3. Select an external input contact to change by touching the name on the left side of the Touchscreen Control Panel.
4. Change the setting from Preset to Custom by touching anywhere in the Custom/Preset box at the top right of the Touchscreen Control Panel. The String dialog box will become active for the user to enter their desired label and the on-screen keyboard will open.
5. Touch the String dialog box to rename the contact; a keypad opens. Enter the name and touch the Enter key or *OK* button.

6. Change the type of contact to either Form A or Form B.
7. To change the Delay Current time, drag the slider left or right or tap the plus (+) or minus (-) icons to increase or decrease the delay. The default is 5 seconds. The permissible range is 0 seconds to 255 seconds.
8. Touch the *Save* button to make your changes or touch the *Cancel* button to discard the changes.

Figure 5.4 Change Input Contacts



ITEM	DESCRIPTION
1	Context Menu location
2	Default contact name
3	Contact String; default; changing from Preset to Custom enables specifying and renaming the string
4	Custom or Preset type of contact
5	Default contact type; can be changed to Form B
6	Delay Current slider

5.2.3 Change Output Contacts

Output contacts, also set up at the factory or by Vertiv Services during initial configuration, may be changed only by personnel with Administrator or Service access level if PINs are required. Output contacts can have events assigned to them, either alerts or alarms.

To change the Output Contact settings:

1. Log in with Administrator or Service access.
2. Touch SETUP > Context Menu > Output Contact.
3. Select an output contact to change by touching the name on the left side of the Touchscreen Control Panel.
4. Touch the Assigned Event dialog box to select an event and assign it to the contact.
5. If the Assigned Event is "EPO", set the associated Shunt Trip Duration by moving the slider left or right.
6. Touch the *Save* button to keep your change or touch the *Cancel* button to discard the change.

Figure 5.5 Change Output Contact's Assigned Event

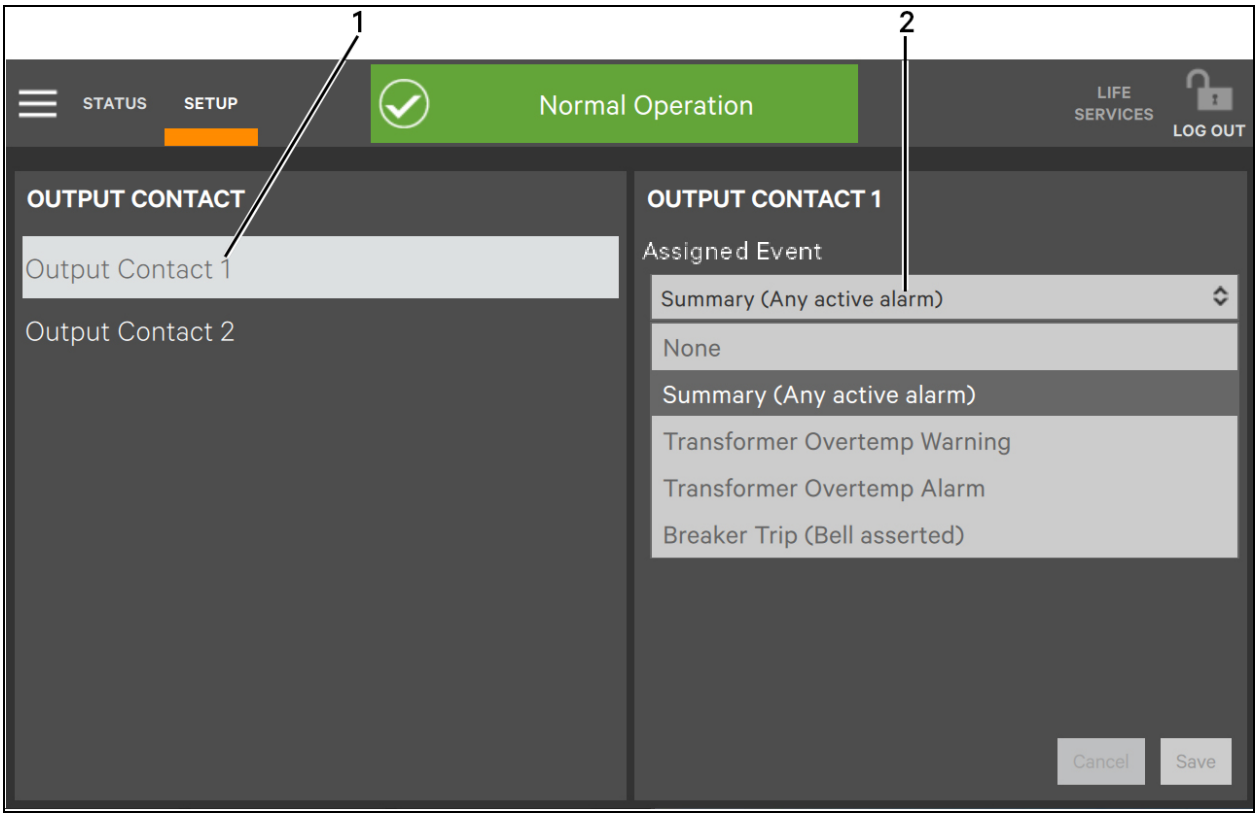
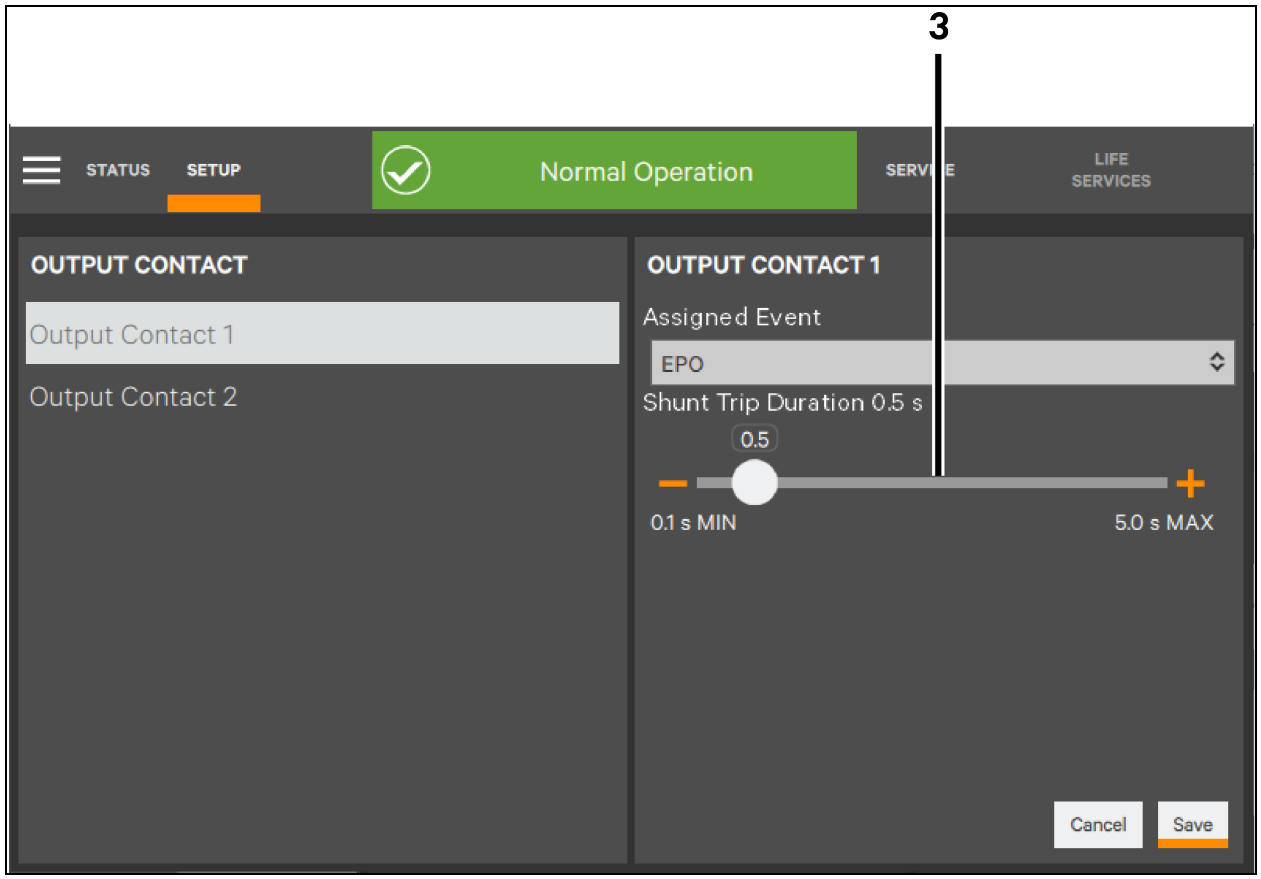


Figure 5.6 Set EPO Shunt Trip Duration



ITEM	DESCRIPTION
1	Output Contact selected
2	Assigned Event choices
3	Shunt Trip Duration

5.2.4 Configure Status Gauge

Users with Administrator or Service access may configure the Status Gauge, altering the Bar Control's Upper Meter and Phase Meter.

By default, the Upper Meter shows the load percentage in kW and kVA. The Phase Meter, by default, shows the voltage and amperes for each phase. Thresholds may be changed to determine when warnings and alarms occur.

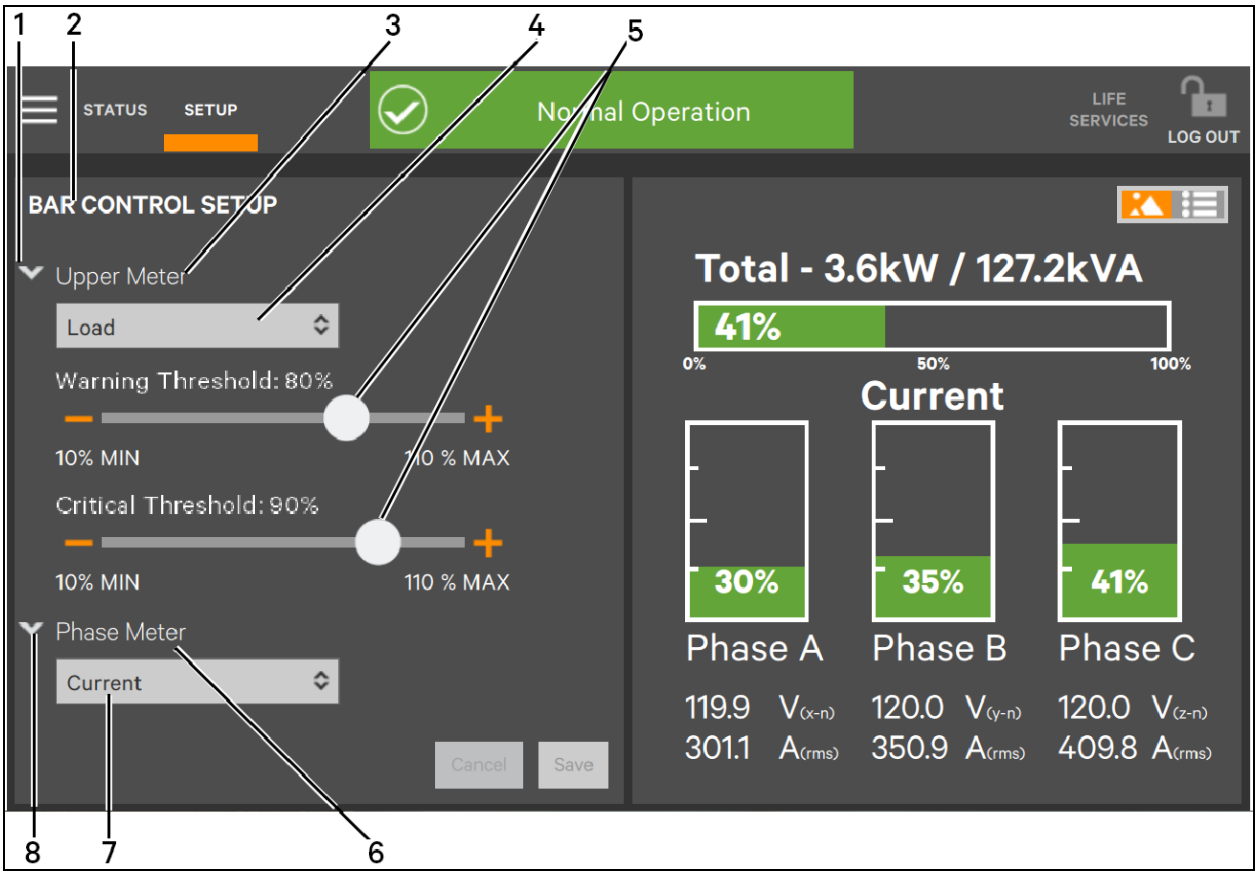
To configure the Status Gauge:

1. Log in with Administrator access if PINs are required.
2. Touch SETUP > Context Menu > Configure Status Gauge. This opens the BAR CONTROL SETUP panel.
3. Choose the threshold to change and pull the slider left or right, or touch the plus (+) or minus (-) sign at the ends of the slider to increase or decrease the threshold value. The threshold determines when the Liebert® DPM changes the Status Bar color and icon.
4. Touch the *Save* button to effect the change or touch the *Cancel* button to exit without saving.

IMPORTANT! Changing the Status Gauge Warning Threshold and Critical Threshold will affect only the unit graphs. Changes to the Status Gauge thresholds will not affect the graphs or alarm setpoints for the branch panelboards or breakers. Graphs for the branch panelboards and breakers are changed only through their overcurrent warning and fault thresholds.

NOTE: The Phase Meter has similar Warning and Critical Threshold sliders that may be viewed by scrolling.

Figure 5.7 Configure Status Gauge: Bar Control Setup



ITEM	DESCRIPTION
1	Arrow expands or closes Upper Meter options
2	BAR CONTROL SETUP indicates location in Touchscreen Control Panel
3	Upper Meter
4	Load Setting; cannot be changed
5	Threshold Sliders
6	Phase Meter
7	Current Setting; cannot be changed
8	Arrow expands or closes Phase Meter options

5.2.5 Settings - Unit

The Unit function on the Administrator's Context Menu permits changing several global settings, including:

- Unit Name - unlimited characters, but all may not be displayed
- Event Latching
- Local EPO Enabled/Disabled
- Remote EPO Enabled/Disabled
- Frequency change (50 or 60 Hz)
- Frequency Deviation Enabled/Disabled
- Input Voltage Rating
- System Voltage Rating
- Overvoltage Fault Enabled/Disabled and Threshold
- Undervoltage Fault Enabled/Disabled and Threshold

Many of the items have No/Yes boxes to choose from; touching either half of the box will switch the setting. Other items, such as Frequency, have a drop-down menu. Touching others, such as Unit Name, activates a keypad to make changes. Changes to any require touching the *Save* button to implement the change.

5.2.6 Settings - Import and Export

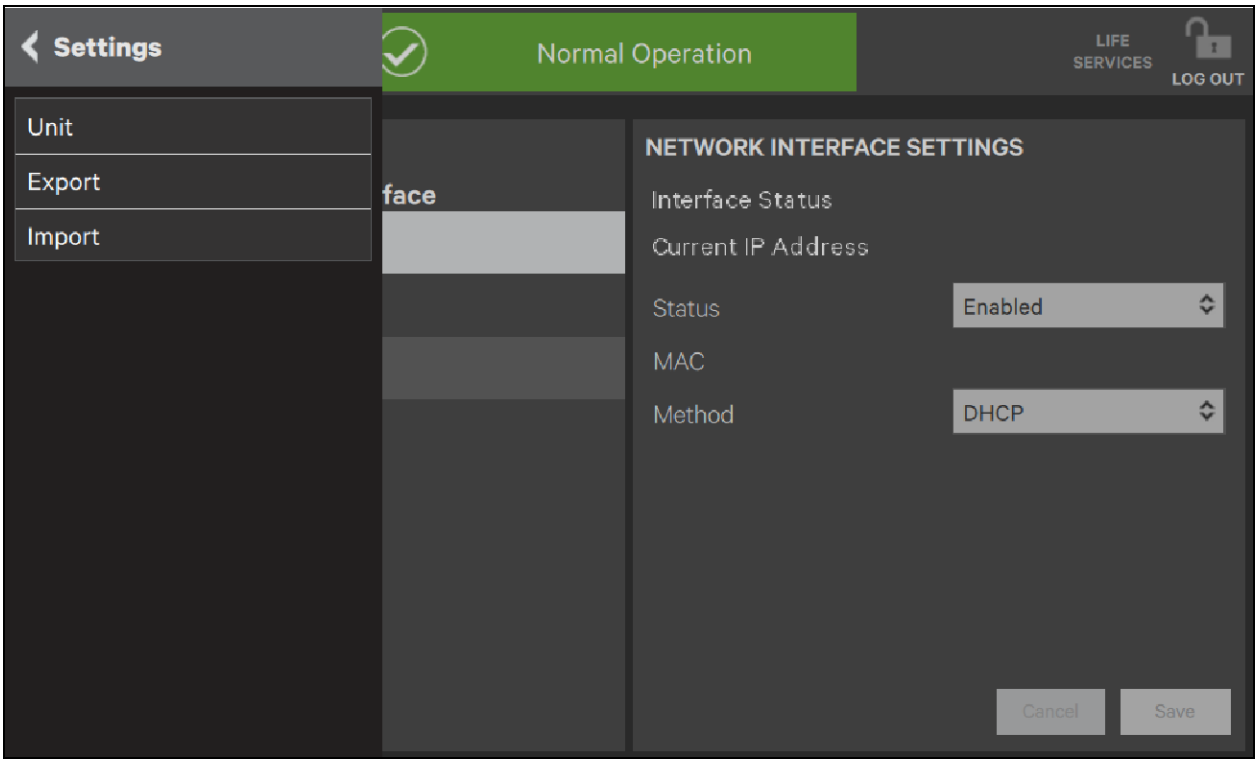
The Liebert® DPM permits Administrators to import or export settings from a system or from a configuration file written by an offline DPM Configuration Editor application or exported and saved from another PDU. The offline application permits creating common configuration files for multiple systems. This can save time when setting up duplicate systems or reverting to a previous setup. The import and export functions are not available to Observers or Operators.

Export Settings

To export settings for a system:

1. Log in as Administrator or Service.
2. Connect a memory stick or an external drive to the USB port on the PDU or RPP.
3. Touch Setup>Context Menu>Settings and select Export.
4. Name the *.INI* file to be exported.
5. Touch the *Save* button.

Figure 5.8 Export or Import Settings

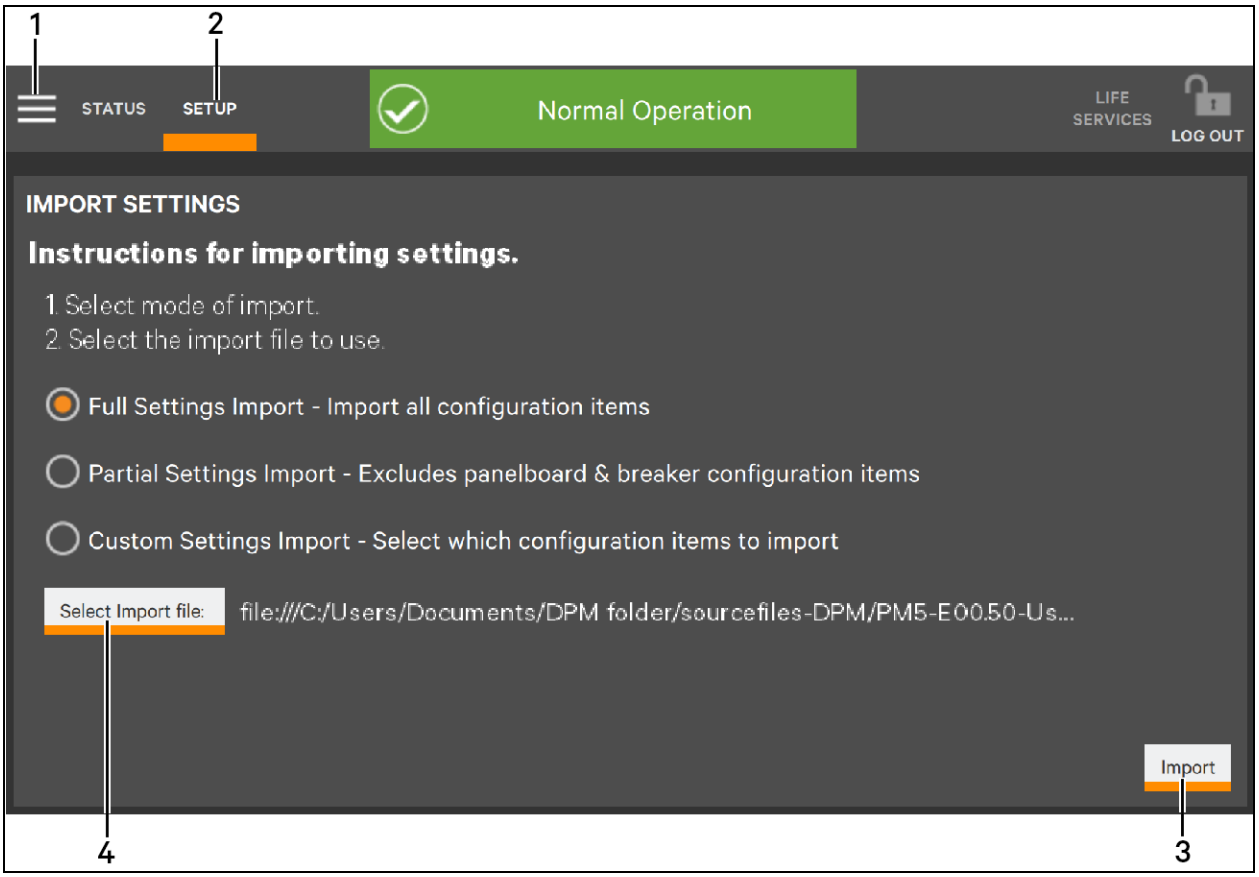


5.2.7 Import Settings

To import settings for a system:

1. Log in as Administrator or Service.
2. Connect a memory stick or an external drive containing the *.INI* file to be imported to the USB port on the PDU or RPP.
3. Touch Setup > Context Menu > Settings and select Import.
4. Select the *.INI* file to be imported.
5. Select the import method to use: Full Settings, Partial Settings or Custom Settings.
6. Touch the *Open* button.
7. Touch the *Import* button. This displays a message to confirm importing the file and, if successful, displays a notice to that effect.

Figure 5.9 Select Import file



ITEM	DESCRIPTION
1	Context Menu (Choose Settings>Import to import an *.INI* file.)
2	Setup
3	*Import* button (Touch this after selecting the file to import.)
4	Select Import file: (Choose the *.INI* file to import.)

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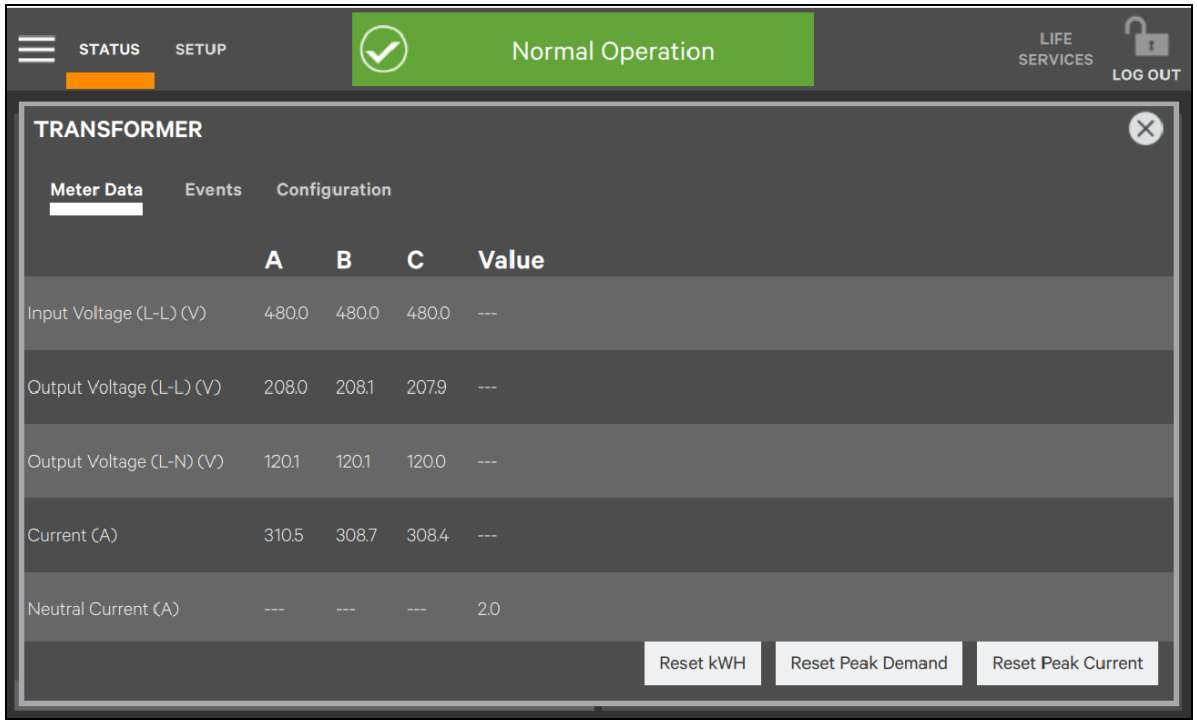
6 View System Status

6.1 View Overall System Status

To view the overall system's condition, touch the STATUS heading on the Liebert® DPM. The Touchscreen Control Panel displays the default view, factory-set to show the one-line diagram and system summary status (see Introduction on page 1). If the system is operating normally, with no faults and no warnings, the toolbar at the top center of the screen will be green and will display a check mark (see **Figure 6.1** below). The one-line diagram will also be green. Warnings and faults will color the toolbar amber or red; the affected parts of the system will also be amber or red in the one-line diagram.

For detailed information touch Transformer at the top of the one-line diagram. The Liebert DPM opens to the TRANSFORMER screen at *Meter Data*. This displays metered values for each phase (see **Figure 6.1** below).

Figure 6.1 SYSTEM Meter Data



The buttons at the bottom of the *Meter Data* screen are visible only at the Administrator or Service log in level. Parameters other than those shown in **Figure 6.1** above, which may be viewed by scrolling down, are:

Ground Current (A)	Power Factor (Abs)	iTHD (%)	v iTHD (%)
Current Load % (A)	Energy (kWh)	i 3rd Harmonic (%)	v 3rd Harmonic (%)
Frequency (Hz)	Peak Current (A)	i 5th Harmonic (%)	v 5th Harmonic (%)

Real Power (kW)	Peak Demand (kW)	i 7th Harmonic (%)	v 7th Harmonic (%)
Apparent Power (kVA)	Current Crest Factor	i 9th Harmonic (%)	v 9th Harmonic (%)
Load % (kVA)	K-Factor	—	—

The Liebert® DPM will also display *Meter Data* for each panelboard and for subfeeds.

6.2 View Component Status with One-Line Diagram Links

The default display in the Liebert® DPM permits fast and easy monitoring of system components through labeled links (see Introduction on page 1). These links span the full system, from input down to each individual breaker. Touching a component's link displays information about that component.

6.2.1 Panelboard Status

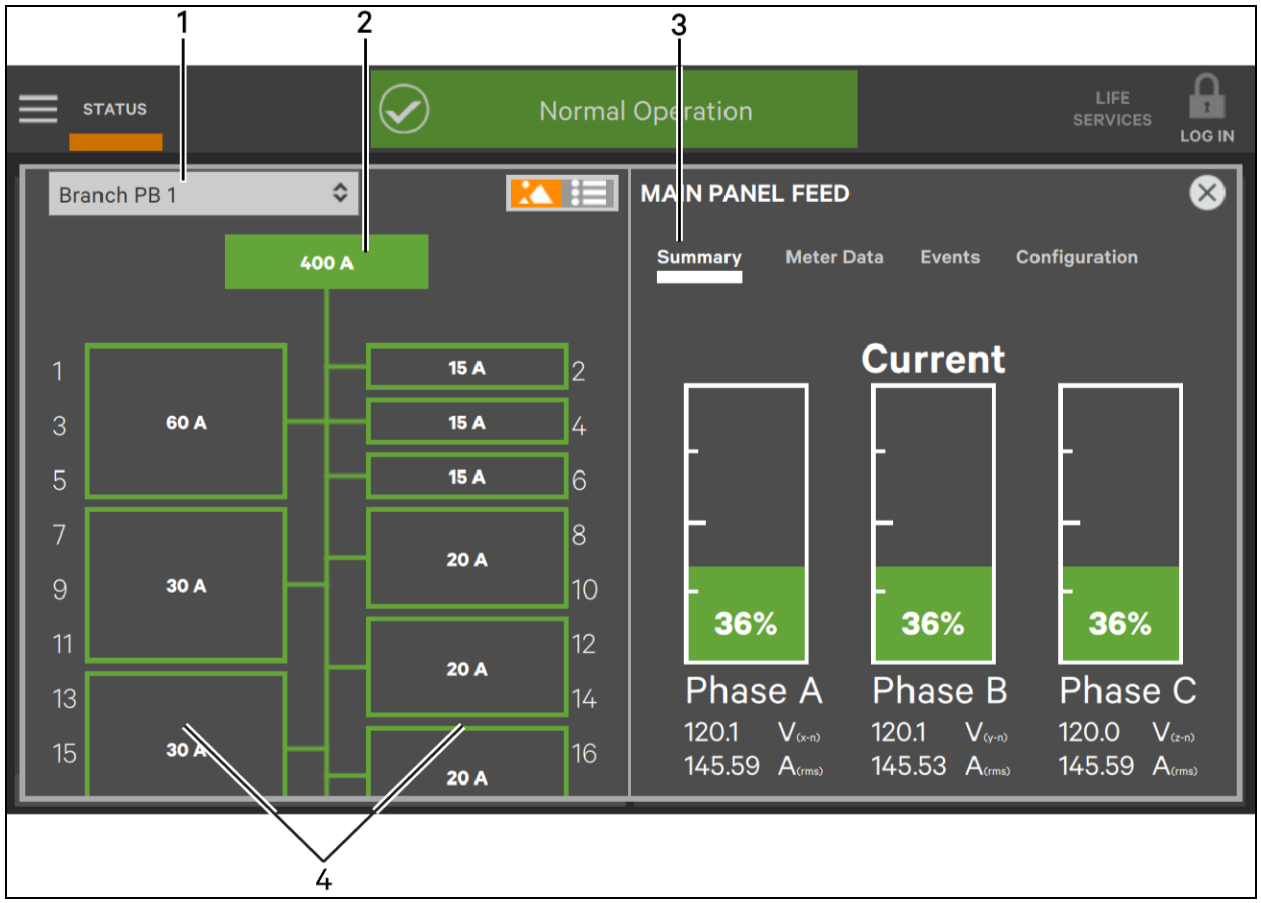
The *Summary* tab displays the phase loading graphically or numerically (text) for the entire panelboard. The thresholds for the warning/fault color are the overcurrent warning/fault thresholds for the panelboard.

To view a Panelboard's Summary Status:

1. Touch Status > Panelboard. This displays a one-line diagram of the panelboard's components, each color-coded to show its status and opens to the *Summary* tab.
2. For information about any component, touch its icon on the Touchscreen Control Panel.

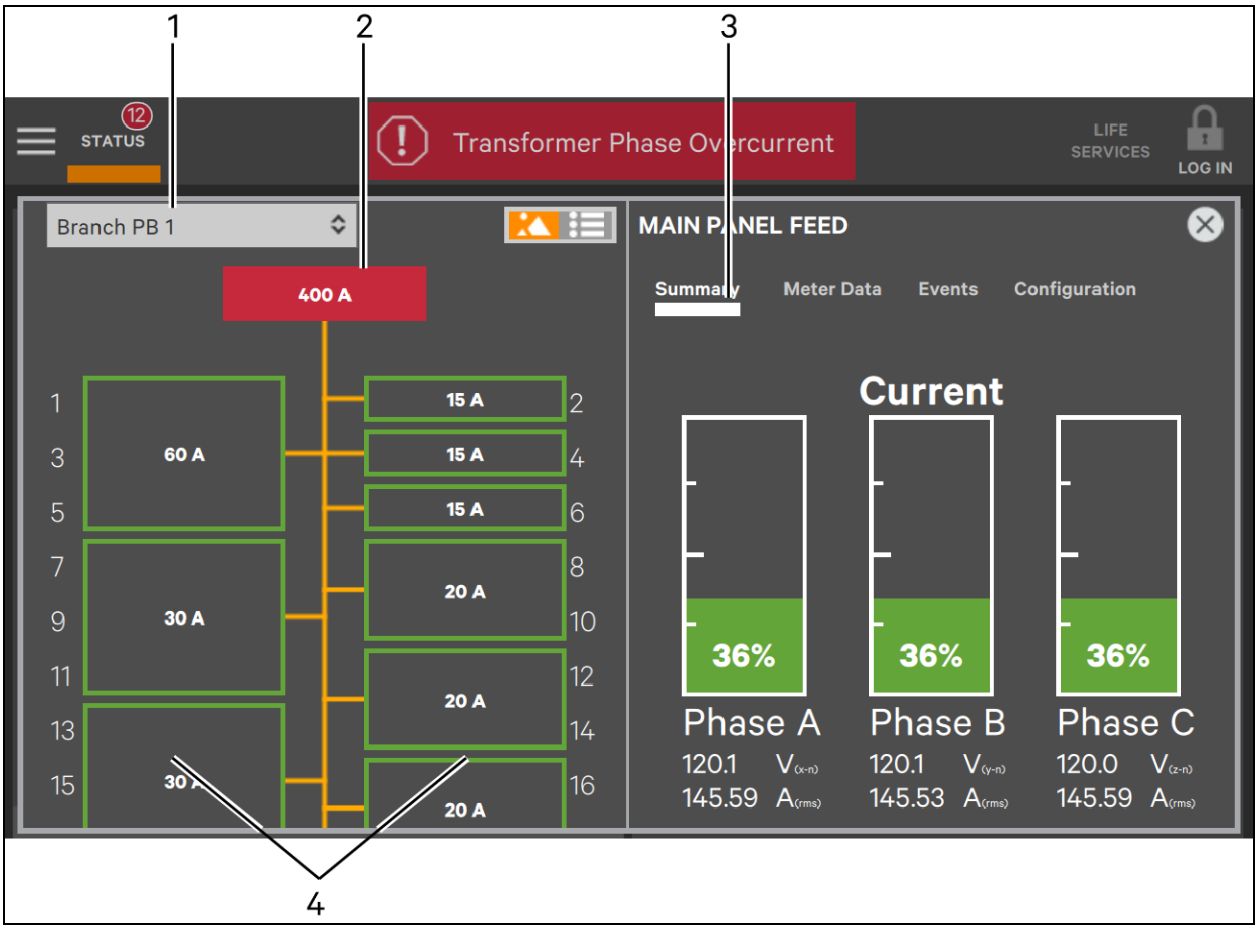
   The additional information is helpful when troubleshooting a fault or alarm, as shown in **Figure 6.3** on the next page .

Figure 6.2 Panelboard summary status: Normal operation



ITEM	DESCRIPTION
1	Panelboard being viewed
2	Panelboard main
3	*Summary* tab
4	Panelboard branch breakers

Figure 6.3 Panelboard summary status: Fault

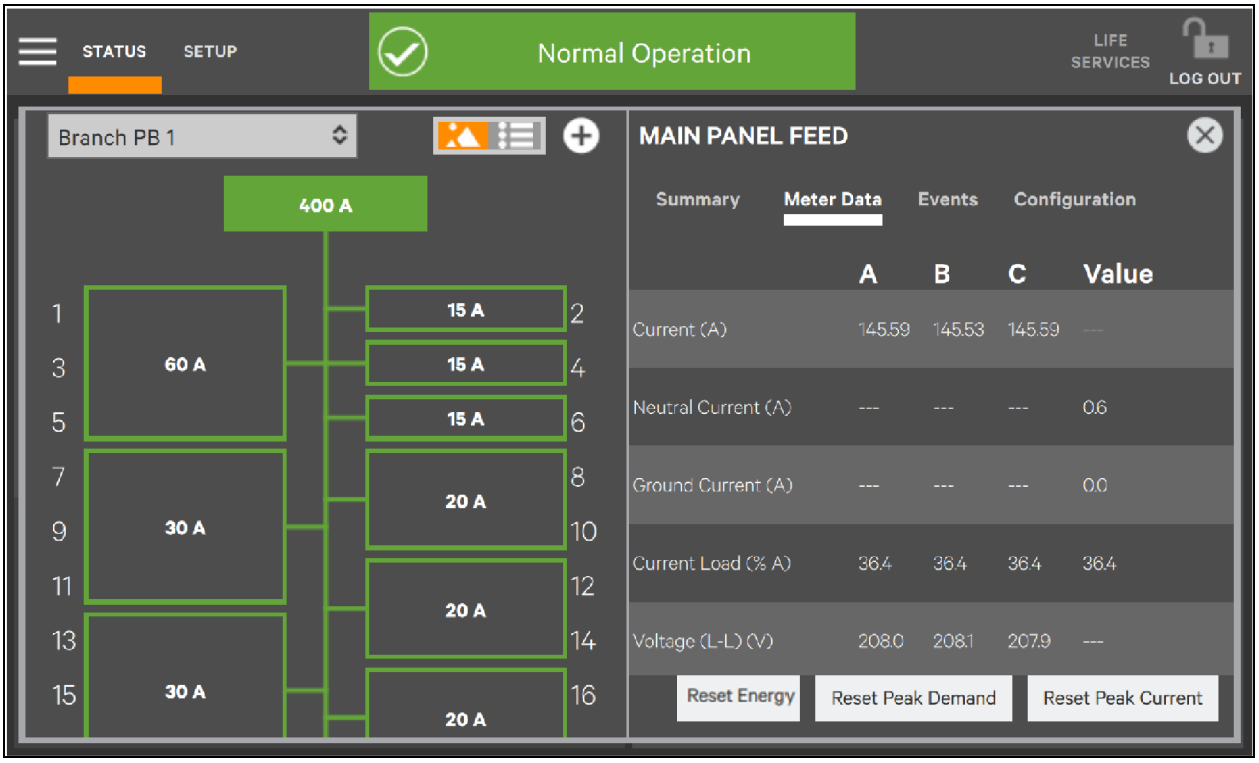


ITEM	DESCRIPTION
1	Panelboard being viewed
2	Panelboard main
3	*Summary* tab
4	Panelboard branch breakers

To view a panelboard's metering data,

1. Touch Status, then touch the panelboard in the one-line diagram. This displays a one-line diagram of the panelboard's components, each color-coded to show its status.
2. Touch *Meter Data*. This displays the view shown in **Figure 6.4** below .

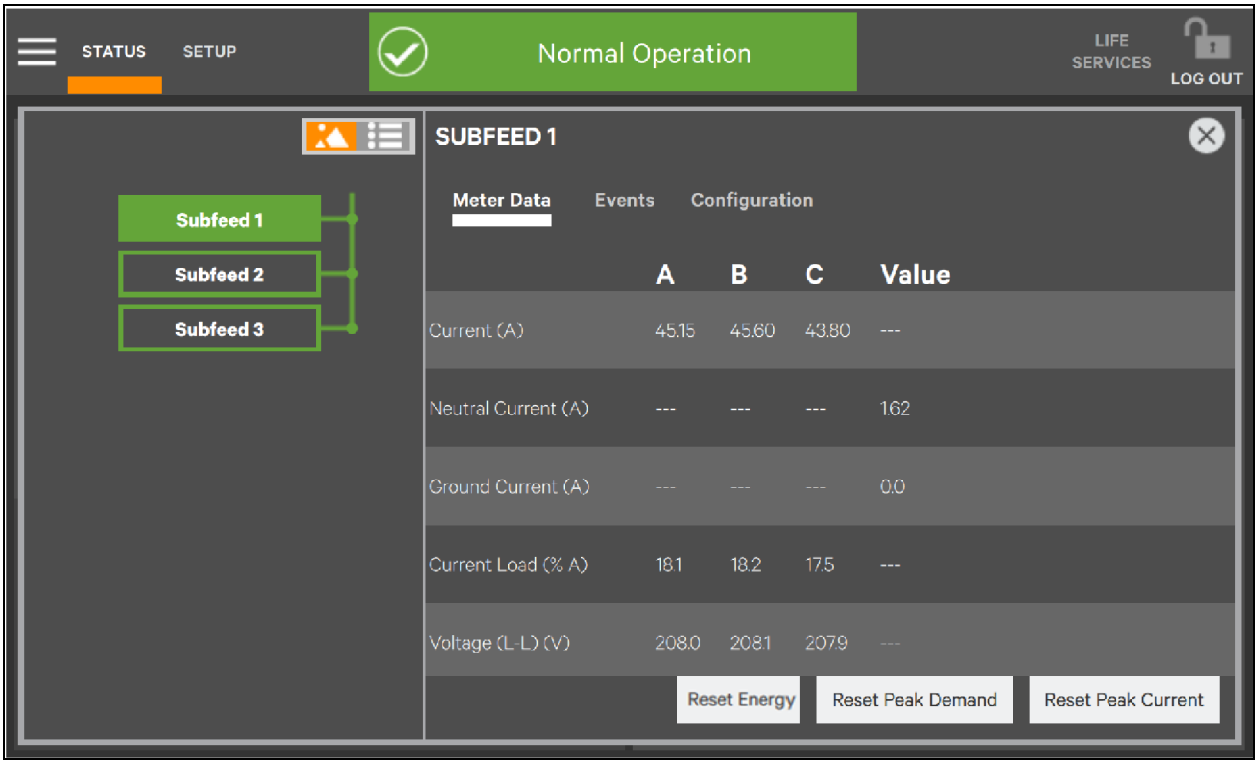
Figure 6.4 View Panelboard Meter Data



To view a subfeed's metering data:

1. Touch Status, then touch the subfeed in the one-line diagram. This displays a one-line diagram of the subfeed (depending on touchscreen space) and the *Meter Data* screen for the subfeed as shown in **Figure 6.5** below .

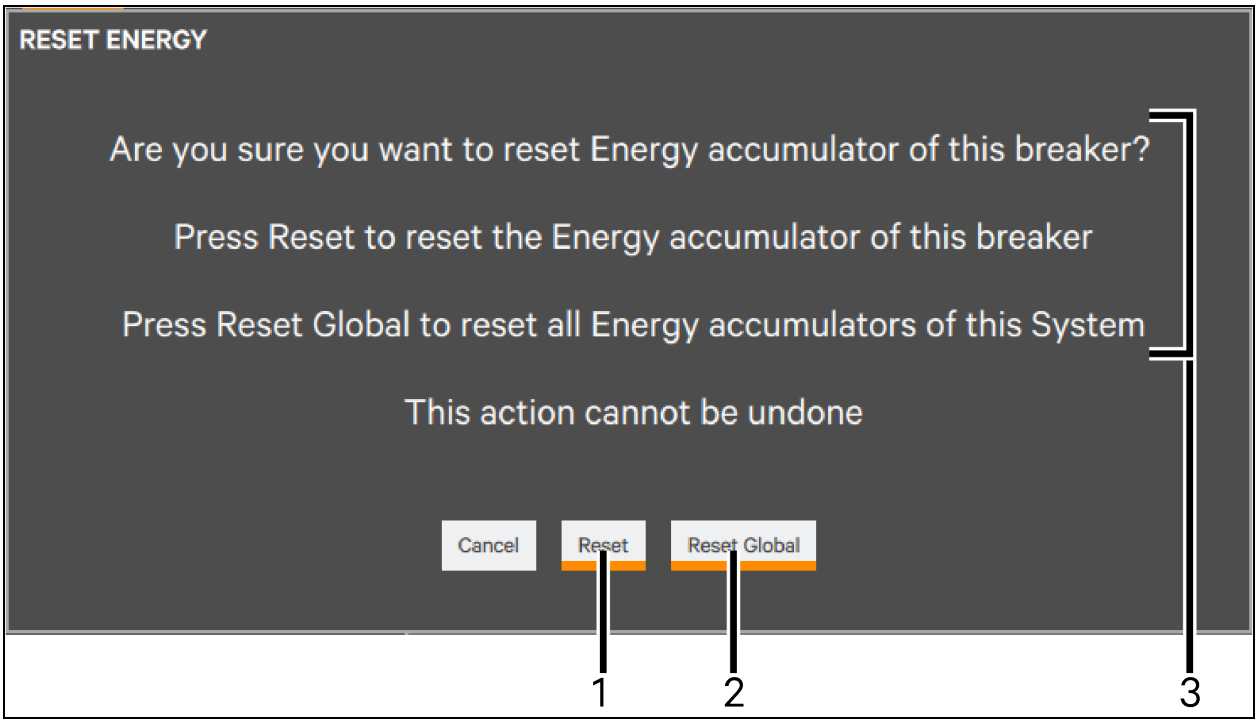
Figure 6.5 View Subfeed Meter Data



6.2.2 Reset Energy

Touching the *Reset Energy* button displays a prompt asking confirmation to reset the breaker's kWH, a choice of resetting all mains and breakers' kWH and a warning that the action cannot be undone. To reset the selected breaker's kWH, touch the *Reset* button; to reset the kWH for **all** mains and breakers, touch the *Reset Global* button. These settings may be used to track power consumption by particular equipment.

Figure 6.6 Reset Energy



ITEM	DESCRIPTION
1	*Reset* button; resets value for one breaker
2	*Reset Global* button; resets current and peak values for all mains and breakers
3	Value to be reset (same text appears with all reset screens, but value being reset may be kWH, Peak Demand or Peak Current

6.2.3 Reset Peak Demand

Touching the *Reset Peak Demand* button displays a prompt asking confirmation to reset the breaker's Peak Demand, a choice of resetting all mains and breakers' Peak Demand and a warning that the action cannot be undone. To reset the selected breaker's Peak Demand, touch the *Reset* button; to reset the Peak Demand for **all** mains and breakers, touch the *Reset Global* button. Resetting either a single breaker or all breakers causes the Touchscreen Control Panel to display a prompt asking confirmation similar to Reset Energy above . These settings may be used to track power consumption by particular equipment.

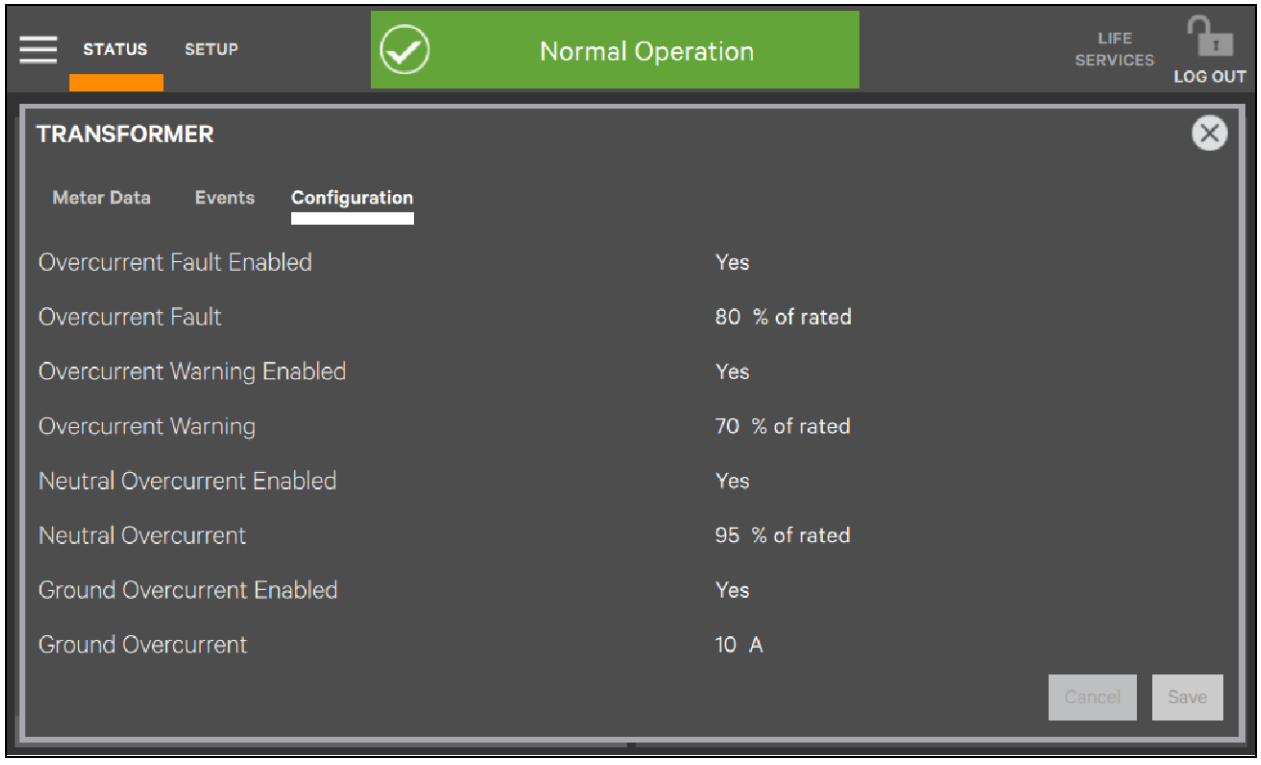
6.2.4 Reset Peak Current

Touching the *Reset Peak Current* button displays a prompt asking confirmation to reset the breaker's Peak Current, a choice of resetting all mains and breakers' Peak Current and a warning that the action cannot be undone. To reset the selected breaker's Peak Current, touch the *Reset* button; to reset the Peak Current for **all** mains and breakers, touch the *Reset Global* button. Resetting either a single breaker or all breakers causes the Touchscreen Control Panel to display a prompt asking confirmation similar to Reset Energy on the previous page . These settings may be used to track power consumption by particular equipment.

6.2.5 View Transformer Configuration

The system's overall configuration may be viewed by touching STATUS > Transformer > Configuration at any access level. These settings were made at the factory or by Vertiv Services and system engineers when the PDU or RPP was installed. The configuration may be changed only with Service access. Note that in the view in **Figure 6.7** below the *Cancel* and *Save* buttons are inactive (grayed-out) at the Administrator log in level.

Figure 6.7 System Configuration



In addition to the parameters shown in **Figure 6.7** above , scrolling will reveal values for Voltage Over THD Enabled, Voltage Over THD and Event Detect Delay.

7 Add, Remove and Configure Components

The Liebert® DPM permits configuring system changes, such as adding larger breakers or changing from single-pole to two-pole or three-pole breakers. The configuration requires logging in as Administrator or Service, if PINs are required.

7.1 Change Component Configuration with One-Line Diagram Links

Neither the Observer, Operator nor Administrator level log in permits changing the overall system configuration. Administrators, however, have authority to configure some system components, such as a panelboard or breakers.

Administrator and Service log-ins permit using the one-line diagram links to:

- Delete, install and configure breakers.
- Rename components.
- Enable or disable warning and fault notifications.
- Change thresholds for warnings and faults.

The one-line diagram links permit Observers and Operators to view the system, its components and warning and fault settings. These two user classes cannot, however, alter settings. Using the Context Menu permits additional changes for logging in with Administrator or Service access (see Context Menu Controls on page 27).

7.1.1 Panelboard Configuration: One-Line Diagram Links

To change a panelboard's configuration with one-line diagram links:

1. Log in with Administrator access if PINs are required.
2. Touch STATUS and select the panelboard to be altered.

NOTE: The correct panelboard can be chosen from the one-line diagram or, after Configuration has been touched, by using the drop-down menu at the top left of the Touchscreen Control Panel.

3. Touch Configuration. The screen, shown in Figure 7.1 on the next page permits changing the component's name and rating, enabling or disabling related faults and warnings, resetting the fault and warning thresholds, even clearing the panelboard of all breakers.

Figure 7.1 Panelboard Configuration

ITEM	DESCRIPTION
1	Selected component
2	Drop-down arrow to open different top-level component
3	Graphical/Text display box
4	*Configuration* tab chosen
5	*Save* button (inactive until change is made)
6	*Cancel* button (inactive until change is made)
7	*Clear Panel* button (removes all breakers from panel)

Additional settings, not shown in **Figure 7.1** above , which may be viewed by scrolling down, are: Neutral Overcurrent, Enabled/Disabled, Threshold;

- Ground Overcurrent: Enabled/Disabled, Threshold
- Tripped: Enabled/Disabled
- Accessory Fail: Enabled/Disabled

- Event Detect Delay: Seconds

4. To enable or disable a fault or warning, touch the associated box.

NOTE: If a fault or warning is enabled, touching even the *Yes* portion of the box will disable it. Disabling a fault or warning will clear the threshold from the screen.

5. To change the threshold for a warning or fault, either drag the slider or touch the plus (+) or minus (-) sign at either end of the slider.
   a. Tapping either the plus (+) or minus (-) sign once will increase or decrease the threshold value by one percentage point.
   b. Holding either the plus or minus sign will move the threshold indicator continuously until the sign is released.

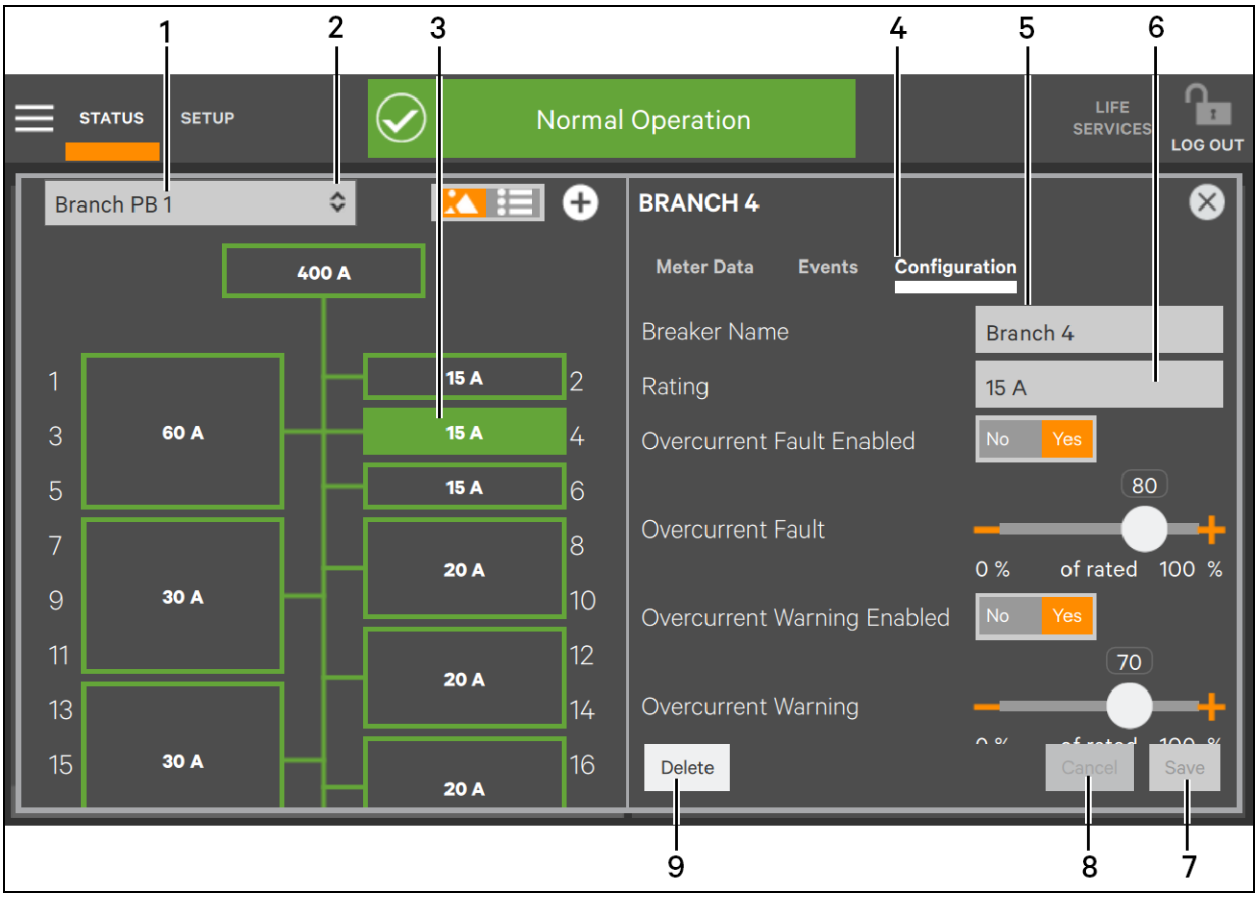
7.1.2 Breaker Configuration: One-Line Diagram Links

To change a breaker's configuration with one-line diagram links:

1. Log in with Administrator access if PINs are required.
2. Touch STATUS and select the panelboard to be altered.
3. Touch *Configuration*. The screen, shown in Panelboard Configuration on the previous page permits changing the component's name and rating, enabling or disabling related faults and warnings, resetting the fault and warning thresholds, even clearing the panelboard of all breakers.

NOTE: The correct breaker can be chosen from the one-line diagram or, after Configuration has been touched, by using the drop-down menu at the top left of the Touchscreen Control Panel.

Figure 7.2 Breaker Configuration



ITEM	DESCRIPTION
1	Panelboard where selected breaker is installed
2	Drop-down arrow to open different panelbaord
3	Selected breaker
4	*Configuration* tab chosen
5	Breaker's name (default is position on panelboard; can be customized)
6	Breaker rating
7	*Save* button (inactive until change is made)
8	*Cancel* button (inactive until change is made)
9	*Delete* button, removes selected breaker from panel

Additional settings, not shown in **Figure 7.2** above , which may be viewed by scrolling down, are: Undercurrent Fault enabled/disabled and Event Detect Delay (in seconds)

4. To enable or disable a fault or warning, touch the associated box.

NOTE: If a fault or warning is enabled, touching even the *Yes* portion of the box will disable it. Disabling a fault or warning will clear the threshold from the screen.

5. To change the threshold for a warning or fault, either drag the slider or touch the plus (+) or minus (-) sign at either end of the slider.
    a. Tapping either the plus (+) or minus (-) sign once will increase or decrease the threshold value by one percentage point.
    b. Holding either the plus sign or minus sign will move the threshold indicator continuously until the sign is released.

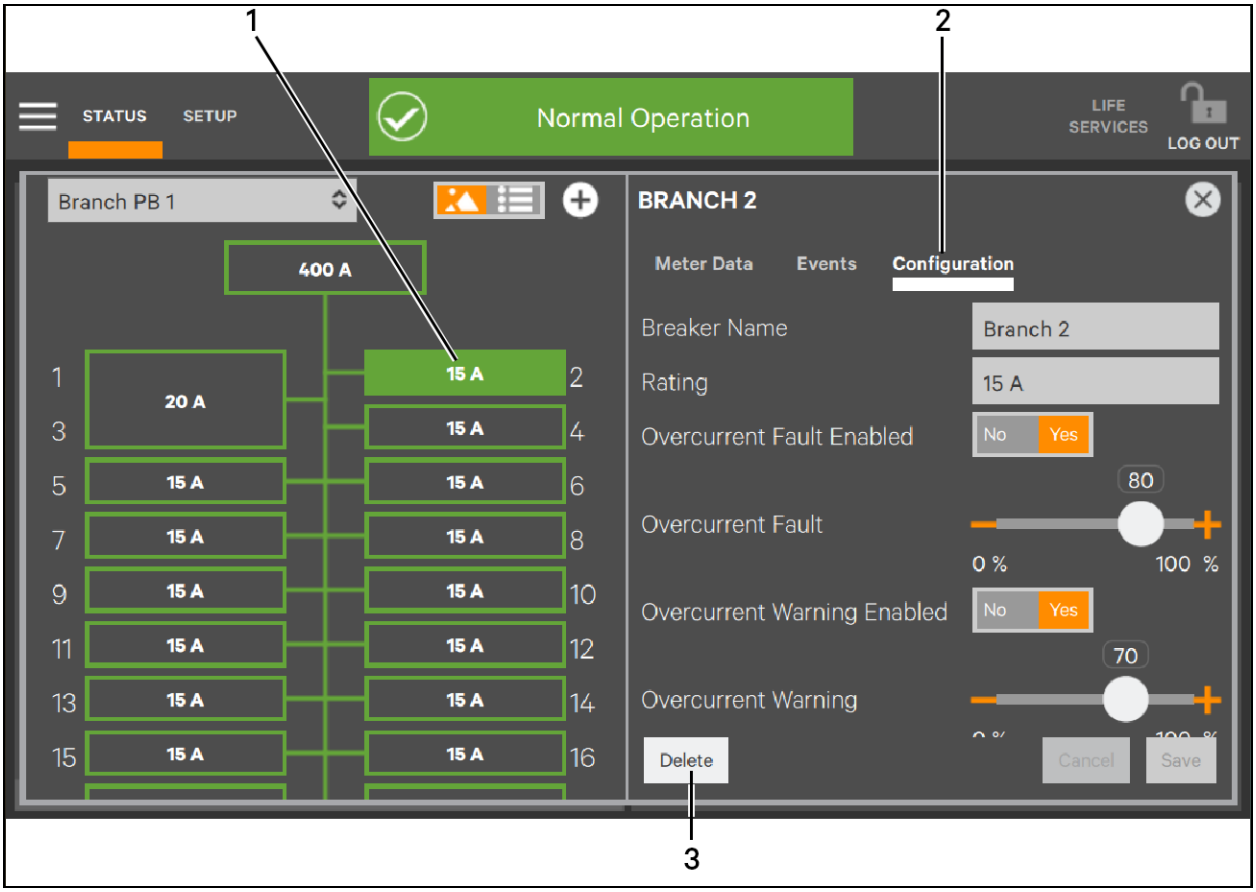
7.2 Remove One Breaker from a Panelboard

Touching *Configuration* with the main panel feed selected displays a screen that permits removing a breaker from a panelboard. This is necessary, for example, when a breaker with a different rating is installed. This function is not permissible at the Observer or Operator access level.

To remove a breaker:

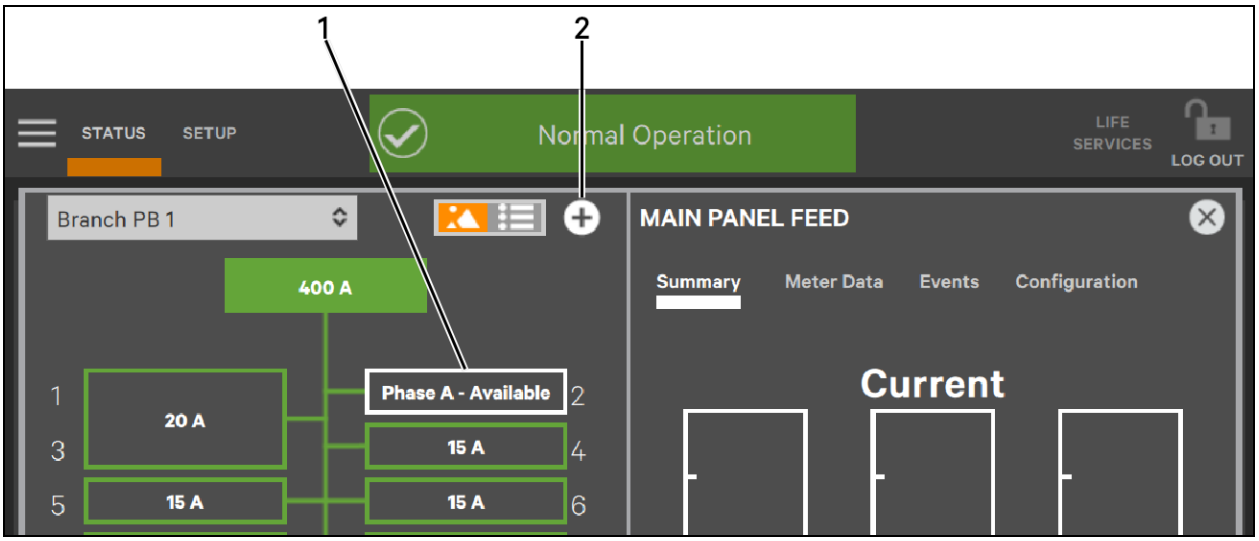
1. Log in with Administrator or Service access, if PINs are required.
2. Touch STATUS and select the panelboard where the breaker is to be removed and reinstalled.
3. Select the breaker to be deleted by touching it on the screen (see **Figure 7.3** below).
4. Touch *Configuration* on the right side of the touchscreen.
5. Touch *Delete*. This will display a cautionary popup about deleting the breaker.
6. Touch *Delete*. The one-line diagram will reopen with a white box where the breaker was deleted labeled *Phase X - Available* (see **Figure 7.4** on the next page).

Figure 7.3 Select Breaker to be Deleted



ITEM	DESCRIPTION
1	Selected breaker
2	*Configuration* tab chosen (signified by white bar underneath)
3	*Delete* button

Figure 7.4 Breaker Deleted



ITEM	DESCRIPTION
1	Deleted breaker position (white outline signifies that the breaker has been removed)
2	Add breaker button

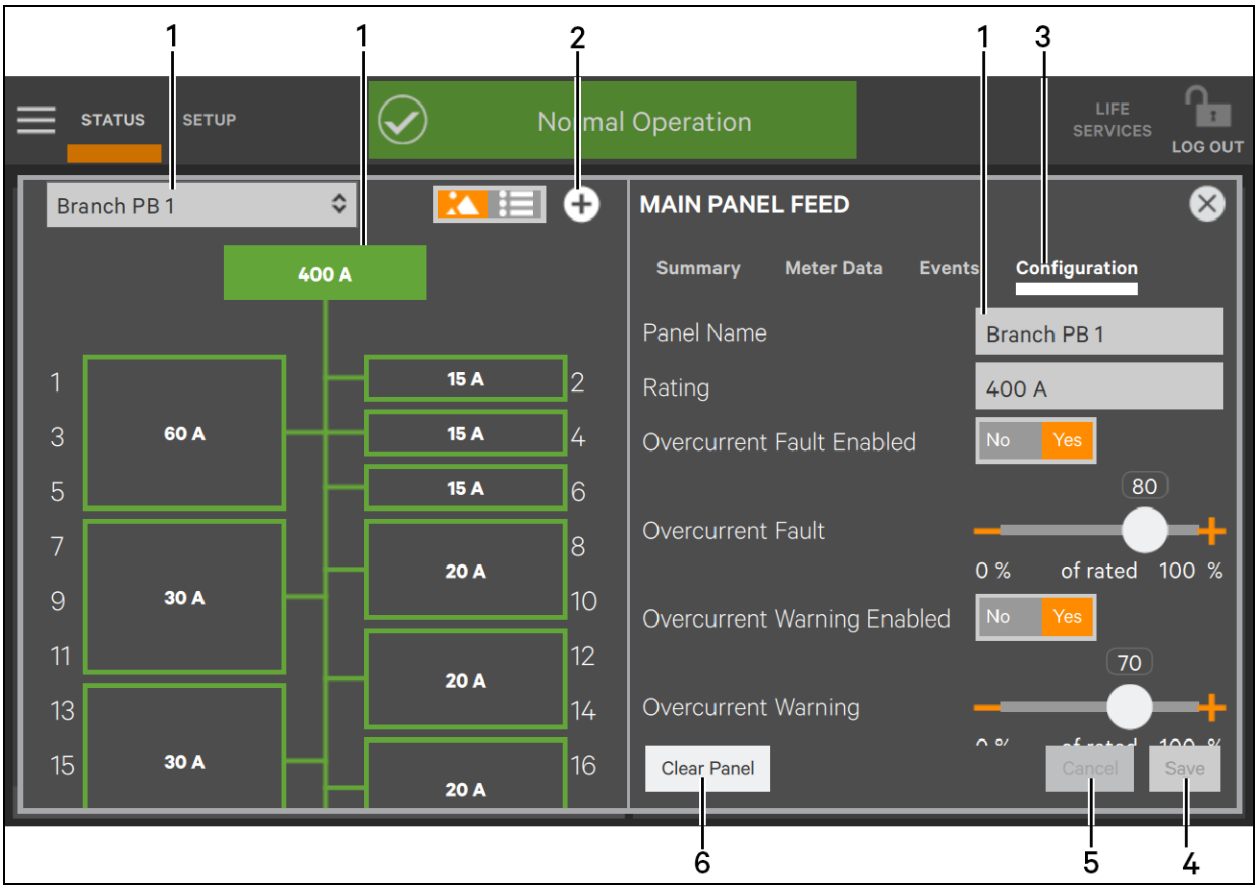
7.3 Remove All Breakers from a Panelboard

Touching *Configuration* with the main panel feed selected displays a screen that permits removing all breakers from a panelboard. This could be employed to ease setup if a panelboard is replaced with a panelboard that has a different arrangement of breakers. This function is not possible at the Observer or Operator access level.

To remove all breakers:

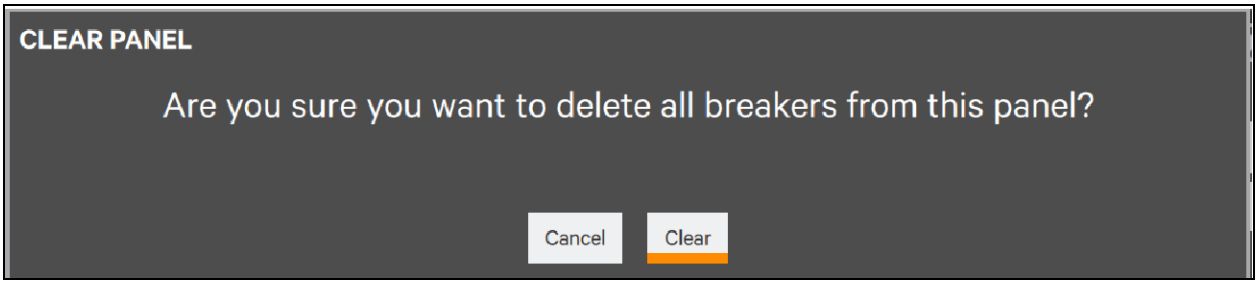
1. Log in with Administrator or Service access, if PINs are required.
2. Touch STATUS and select the panelboard to be cleared.
3. Touch the *Configuration* tab.
4. Touch the *Clear Panel* button. This displays a warning that all breakers on the panelboard will be deleted.
5. To proceed, touch the *Clear* button; touch the *Cancel* button to exit the screen without proceeding.

Figure 7.5 Remove All Breakers from Panelboard



ITEM	DESCRIPTION
1	Branch panelboard selections
2	Add breaker icon
3	*Configuration* tab
4	*Save* button (inactive until change is made)
5	*Cancel* button (inactive until change is made)
6	*Clear Panel* button (not visible to Observers or Operators)

Figure 7.6 Remove All Breakers from Panel Warning



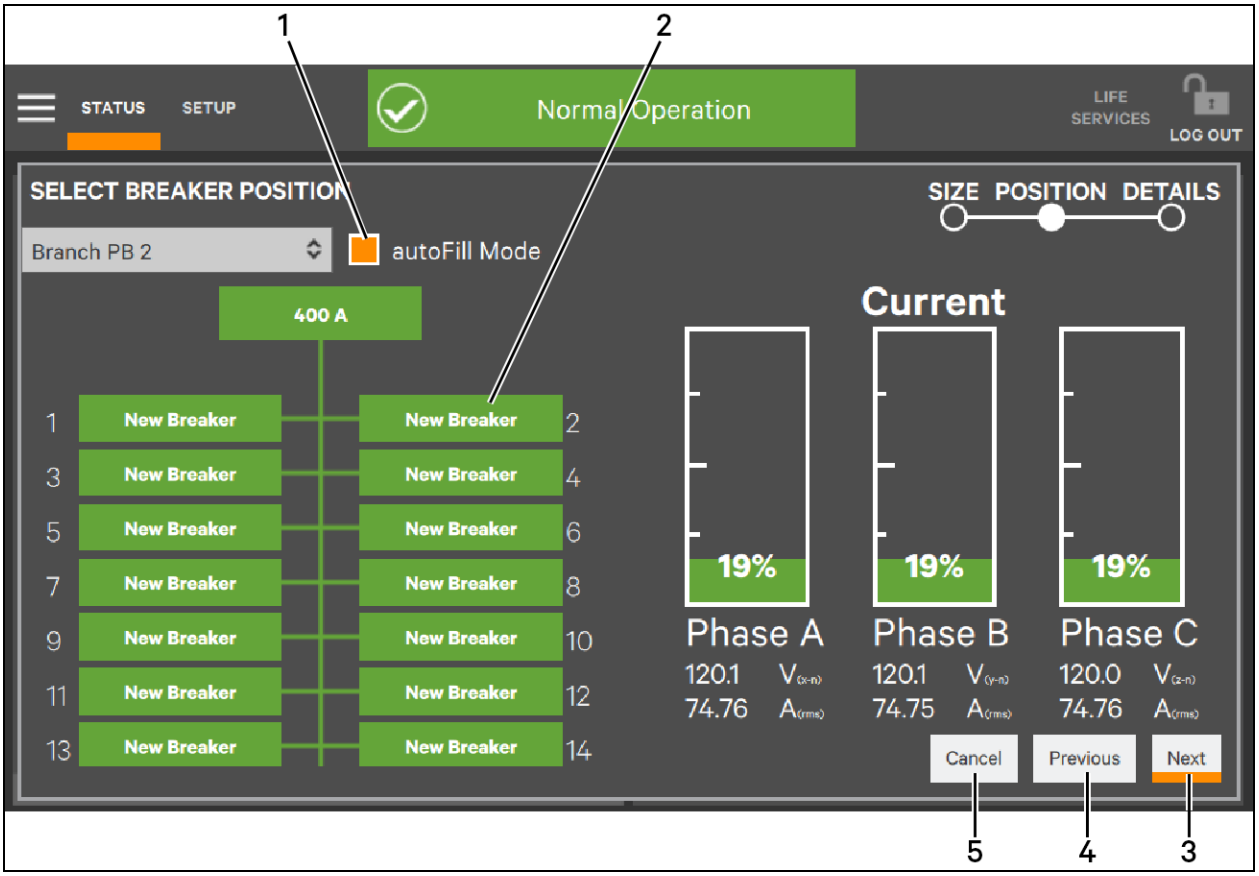
7.4 Install Multiple Breakers

If all new breakers have the same number of poles and rating, they can be replaced in one batch. To do so:

1. Touch the add a breaker icon at the top right of the system diagram panel. This opens the Choose Breaker Size screen.
2. Choose the number of poles (1, 2 or 3) and touch the *Next* button.
3. Touch the autoFill Mode box; all available breaker positions will be selected in green and labeled *New Breaker*.
4. Touch the *Next* button.
5. At the next screen, enter the breaker rating on the keypad and touch the *Done* box.

NOTE: This procedure may be used even if some of the new breakers have a different number of poles or a different rating. After completing the steps above to replace all breakers with identical settings, select the breakers that require different settings and edit the configuration.

Figure 7.7 Replace All Breakers - autoFill Mode



ITEM	DESCRIPTION
1	autoFill Mode box selected
2	All breakers ready to be replaced
3	*Next* button: advances to ADD BREAKER DETAILS screen where values are set for all breakers (rating in amps;

ITEM	DESCRIPTION
	overcurrent fault and warning enabled/disabled and thresholds; and undercurrent fault enabled/disabled)
4	*Previous* button: returns to CHOOSE BREAKER SIZE screen
5	*Cancel* button: exits autoFill Mode, returning to screen where all breakers are available for configuration

7.5 Change a Breaker

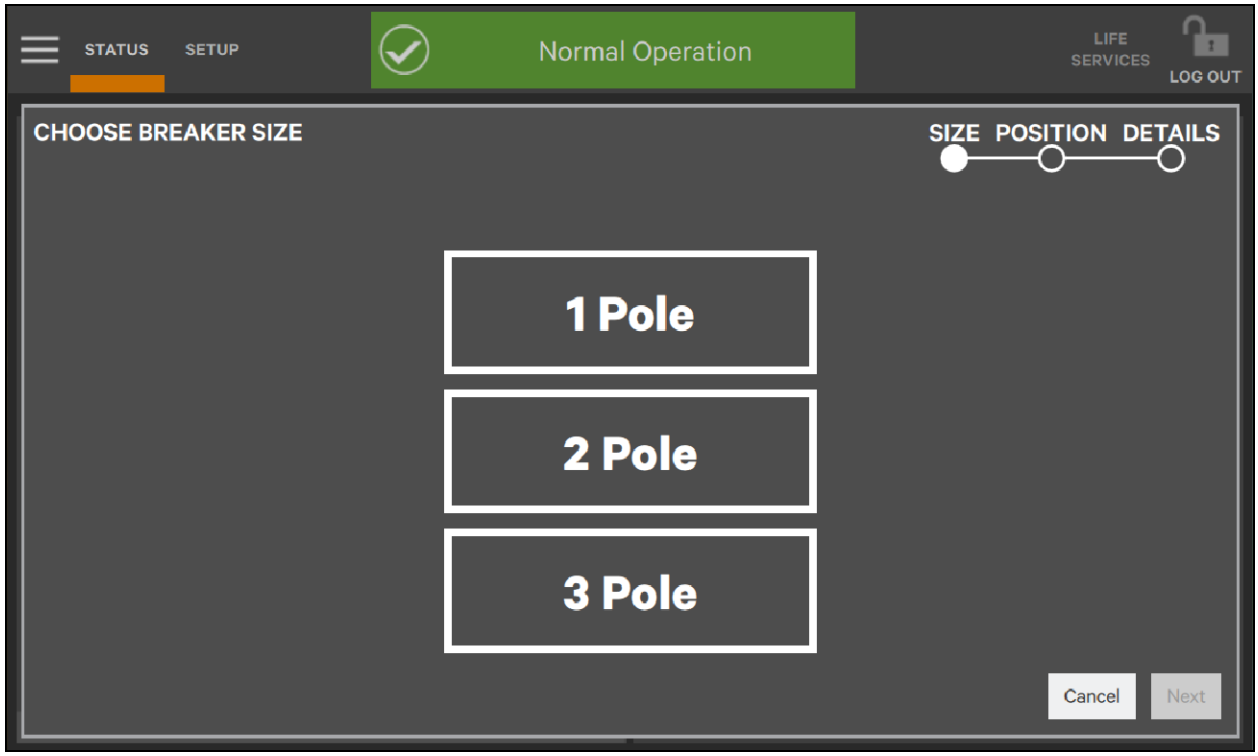
This function is used to specify breaker settings (number of poles and rating) when a breaker is being replaced or being installed in an open section of a panelboard.

1. Log in at the Administrator or Service level, if PINs are required.
2. Touch the panelboard with the breaker(s) to be altered. (If you are installing a new breaker, continue with all steps; if changing a breaker's number of poles or other settings, skip to Set Breaker Details on the next page.)

7.5.1 Add a Breaker

3. Touch the plus sign (+) in the top right corner of the one-line diagram (see **Figure 7.4** on page 56). The CHOOSE BREAKER SIZE screen opens.
4. Choose the type of breaker to add. (Adding a two-pole breaker requires two available positions; adding a three-pole breaker requires three available positions. If inadequate positions are available for the breaker being configured, delete additional breakers as required.)

Figure 7.8 Choose Breaker Size



5. Select the number of available positions required for the breaker being added (1-pole, 2-pole or 3-pole). The selected position(s) will fill with green and the label *New Breaker* (see Figure 7.7 on page 58 . Selecting the *autoFill* button automatically selects the required number of positions, if the required number of positions are open.
6. Touch the *Next* button. The ADD BREAKER DETAILS window opens.

7.5.2 Set Breaker Details

7. Set the breaker rating, enable or disable Overcurrent Fault, the fault threshold, and enable or disable Overcurrent Warning and the threshold.

NOTE: If the autoFill Mode box was selected, all breakers will be installed with the same details except for the breaker name.

8. Touch the *Done* button. The one-line diagram returns with the new breaker and its rating.

Figure 7.9 Configure the New Breaker

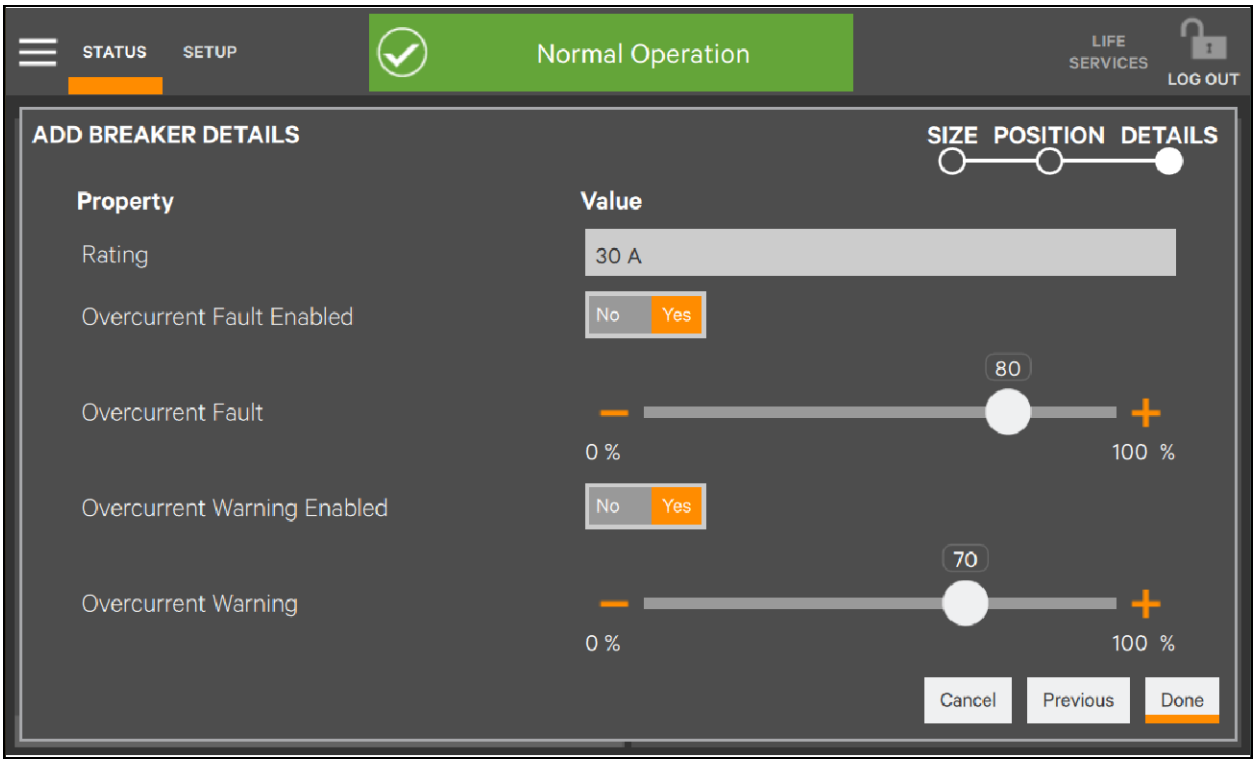
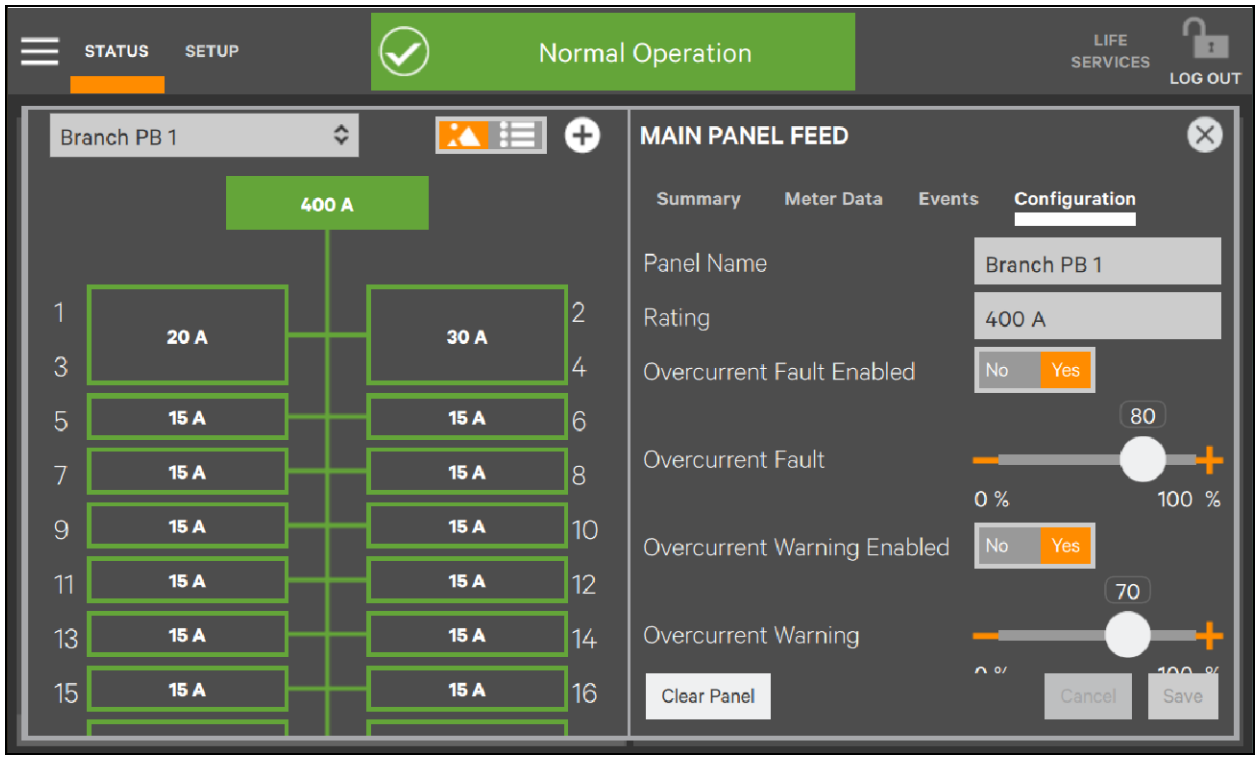


Figure 7.10 Breaker Changes Completed



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8 Reset, Silence and Filter Faults and Events

8.1 Active EVENTS List: Overview

The Liebert® DPM permits easy management of faults, warnings and events through the active Events list. The list is accessible by touching the Toolbar in the top middle portion of the Touchscreen Control Panel. The active EVENTS list enables personnel to pinpoint the location of a system fault or warning and remedy the problem quickly and prevent damage to connected equipment.

Personnel with Operator, Administrator or Service access can use the active EVENTS list to view, silence, filter and reset faults and warnings. Observers can view, silence and filter warnings and faults but cannot reset them; the *Reset Fault* button is not visible at the Observer access level.

Critical faults and warning events are registered immediately on the Liebert DPM. If the Touchscreen Control Panel is in screen saver mode when a warning or fault occurs, it will automatically open to the default view and display the event. The Toolbar changes to either amber (warning) or red (critical fault), depending on the severity of the event. An audible alarm may also sound if the PDU or RPP is equipped with one and the audible alarm is enabled.

8.2 Event Log: Overview

The Events Log, accessible by touching STATUS > Logs > Events, enables users to view a maximum of 1000 faults, warnings and status events that have occurred over time, assessing system performance under various conditions and modes of operation. The Event Log does not permit resetting or silencing events. The Event Log may be exported as a *.csv* file and copied to an external drive, such as a USB memory stick, for recordkeeping, troubleshooting and checking for operational trends.

Active EVENTS may be sorted by time of occurrence, Event ID, component, subcomponent and by description. The Event Log presents this information but does not permit sorting it.

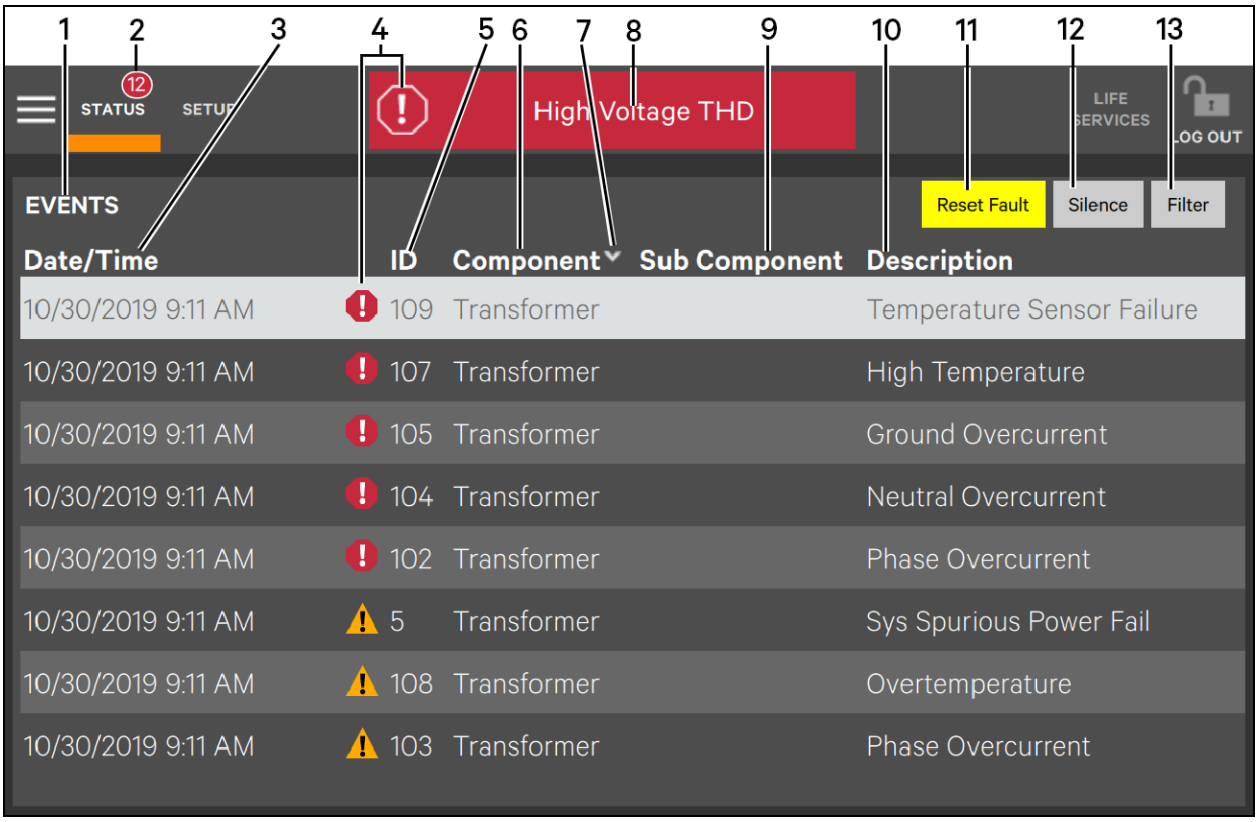
Both the active EVENTS and Event Log permit filtering events, though with different criteria. Active EVENTS may be filtered by Severity (Status, Alarm or Fault) or by Component (all affected components). The Event Log may be filtered by Status (OFF, ON) or by Component (all components from System through Subfeed).

8.3 Manage an Active Event

To manage a fault or Alarm:

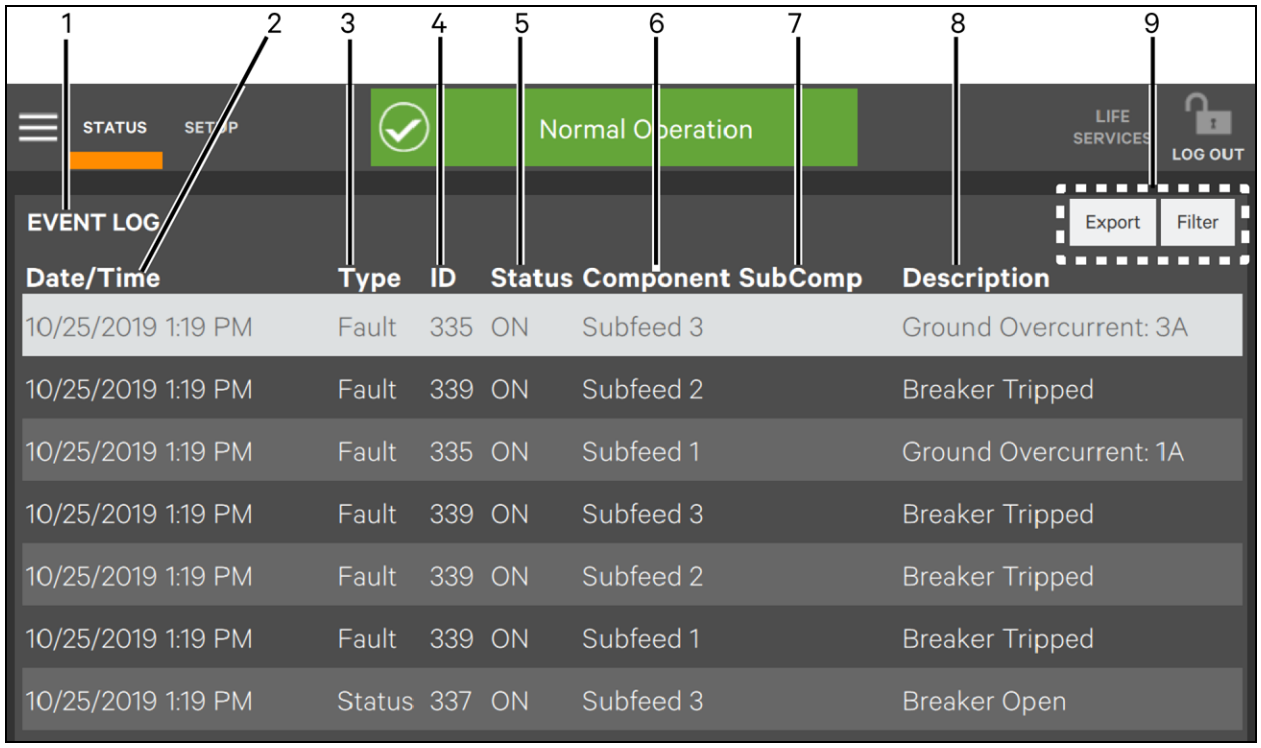
1. Log in with Operator, Administrator or Service access if PINs are required.
2. Touch the Toolbar. This opens the active EVENTS list.
3. Sort the events and faults, if necessary, by touching the heading to be used for sorting. An arrow at the right of the heading will sort in ascending or descending order.
4. Touch a fault or event to select it.
    a. The fault can be silenced if it is still active by touching the *Silence* button.
    b. If the fault's cause has been resolved, the fault can be reset by touching the *Reset Fault* button. The *Reset Fault* button will be grayed-out if the cause of the fault or alarm remains unresolved.

Figure 8.1 Viewing Active Events



ITEM	DESCRIPTION
1	Active EVENTS list, displayed by touching the Toolbar in the top middle portion of the Touchscreen Control Panel.
2	Tally of active events
3	Date/Time of event occurrence
4	Event severity icon. A red shield with an exclamation point denotes a critical fault; a yellow shield with an exclamation point denotes a warning; a green shield with a check mark is normal operation.
5	Event ID
6	Component that the event affected
7	Arrowhead denotes which heading was used to sort the active EVENTS list (Component in this instance).
8	One of the active events on the Toolbar; all active events will scroll across the Toolbar when more than one event is active; touching the bar displays the active EVENTS list
9	Sub Component (if applicable) where event occurred
10	Description of events
11	*Reset Fault* button
12	*Silence* event button
13	*Filter* events button

Figure 8.2 Viewing EVENT LOG

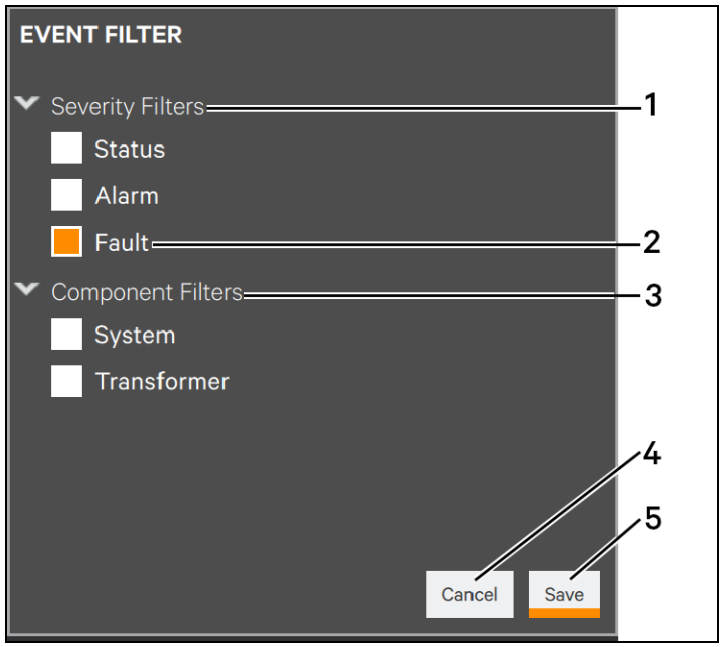


ITEM	DESCRIPTION
1	EVENT LOG - menu item location
2	Date/Time each event occurred
3	Type of logged event: Status, Warning, Fault
4	Event ID
5	Status: ON or OFF
6	Component where event occurred
7	Subcomponent where event occurred
8	Description of event
9	*Export* and *Filter* buttons

8.4 Filter Events: Active Events

1. Touch the Toolbar. This displays the active EVENTS list.
2. Touch the *Filter* button. This displays the Event Filter list.
3. Select the parameter used to filter the list, either Severity Filters (Status, Alarm and Fault) or Component Filters (populated with the current list of components being displayed). If the parameters are not shown, touch the arrow to the left of the filter type to expand the list. Selected parameters will be filled; unselected parameters will be white.
4. Touch the *Save* button to filter events or touch the *Cancel* button to exit without filtering the events. The *Save* button becomes active only after a filter is selected.

Figure 8.3 Filter Events: Active Events



ITEM	DESCRIPTION
1	Severity Filters; use these parameters to sort events by threat level; Fault is most severe, followed by Alarm and Status
2	Fault parameter chosen as sorting filter; denoted by filled box; white boxes will not be used to filter the active events
3	Component Filters; use these filters to sort the active EVENTS list by where the event occurred
4	*Cancel* button: touch this button to exit the screen without filtering the active events
5	*Save* button; touch this button to sort the active events

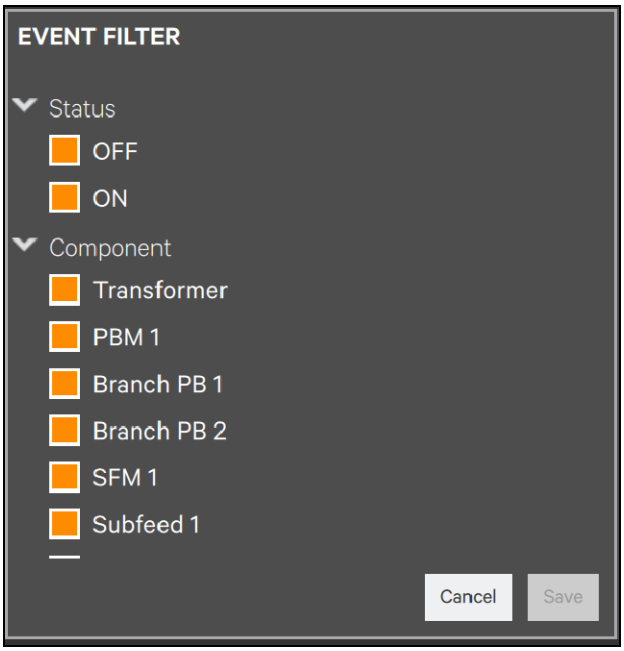
8.5 Filter Events: Event Log

The Liebert® DPM permits filtering events, enabling users to view only certain events.

To filter events and faults:

1. Touch Status > Context Menu > Logs > Event Log. This displays the Event Log.
2. Touch the *Filter* button.
3. Select the parameter used to filter the list, either Status (OFF or ON) or Component Filters (populated with the current list of components being displayed). If the parameters are not shown, touch the arrow to the left of the filter type to expand the list. Selected parameters will be filled; unselected parameters will be white. Note in **Figure 8.4** on the facing page that all filters are filled, meaning that all are selected.
4. Touch the *Save* button to filter events or touch the *Cancel* button to exit without filtering the events. The *Save* button becomes active only after a filter is selected.

Figure 8.4 Filter Events: Event Log



Scrolling will permit viewing components not shown in the example above.

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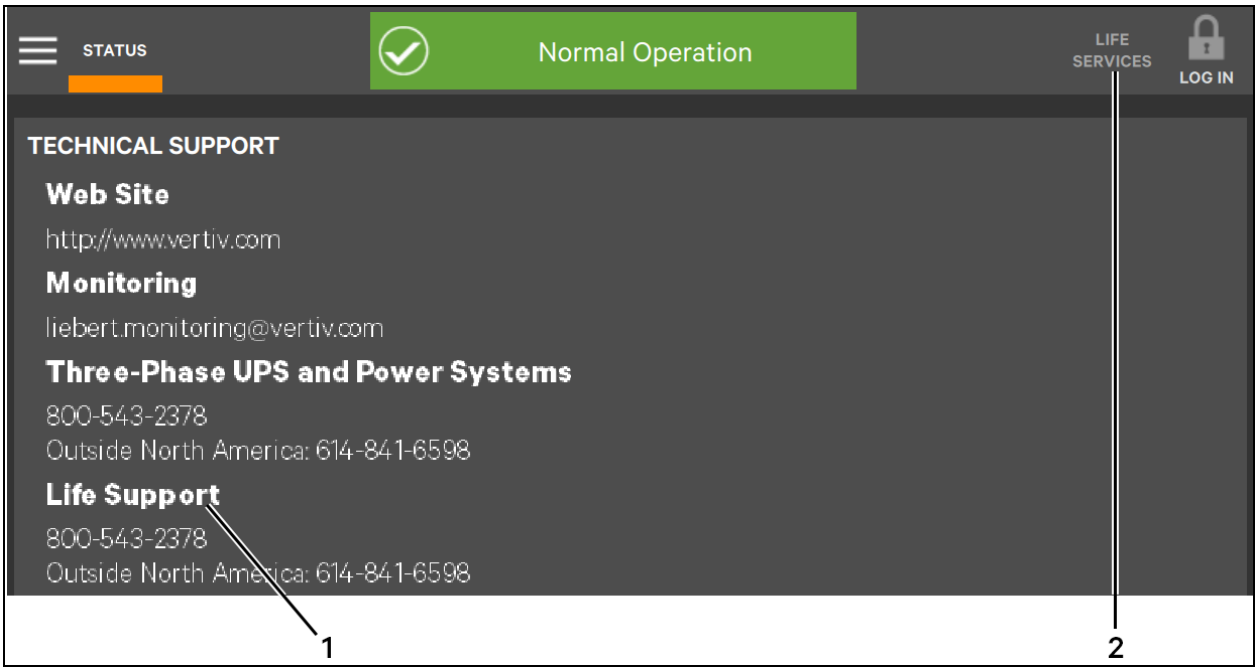
9 Vertiv™ Life™ Services

LIFE Services can be enabled from the default view of the Liebert® DPM. LIFE Services requires a contract with Vertiv and on-site activation by Vertiv Services The LIFE Support group may be contacted at the telephone number on the dialog that opens at STATUS > Technical Support or by touching the LIFE SERVICES icon at the top of the touchscreen (see **Figure 9.1** below).

Figure 9.1 LIFE Services information



ITEM	DESCRIPTION
1	LIFE Services information from Status>Context Menu>Technical Support
2	LIFE link in Toolbar, displays status of LIFE Services, contact information; see **Figure 9.2** on the next page

LIFE Services provides increased up-time and operational efficiency through continuous monitoring, expert analysis and proactive response. Detailed parametric data is continuously captured with advanced technology embedded in select critical systems. The data is transmitted to an authorized remote service center staffed with system engineers. Should an operating anomaly or alarm condition arise, the engineer analyzes the information and initiates an appropriate response to have the critical system quickly, safely and accurately restored to its proper operating condition.

To initialize LIFE Services:

1. Log in with Operator, Administrator or Service access.
2. Touch the LIFE SERVICES icon at the top right of the Touchscreen Control Panel or touch the Context Menu and select Technical Support
3. Telephone the number on the screen and follow the instructions given.

Figure 9.2 Vertiv™ LIFE™ Services Contact - From LIFE SERVICES Icon

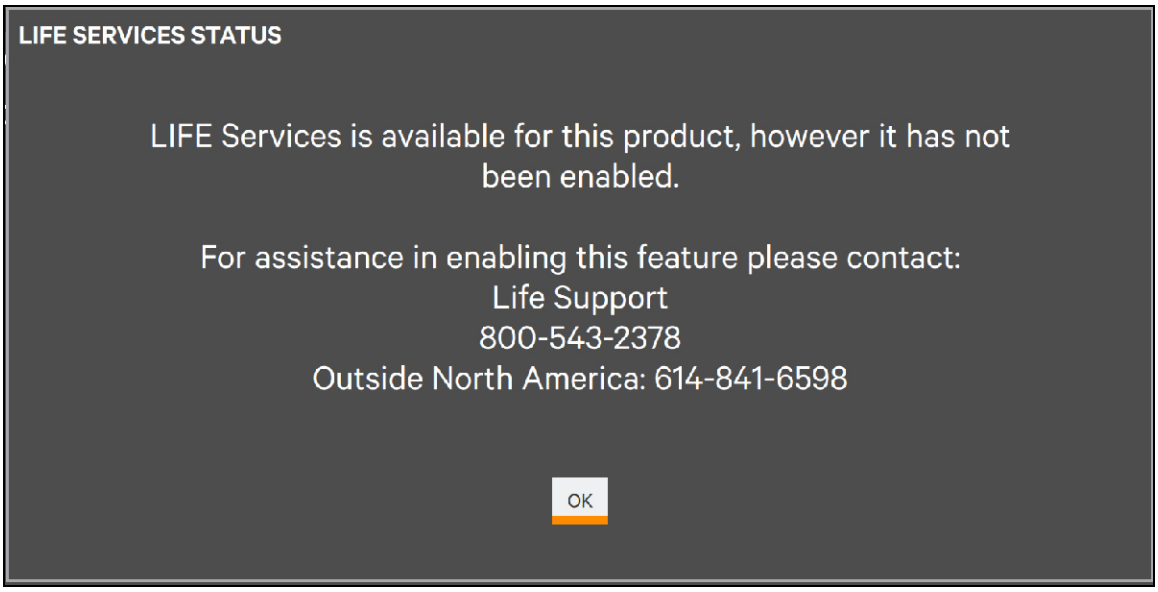
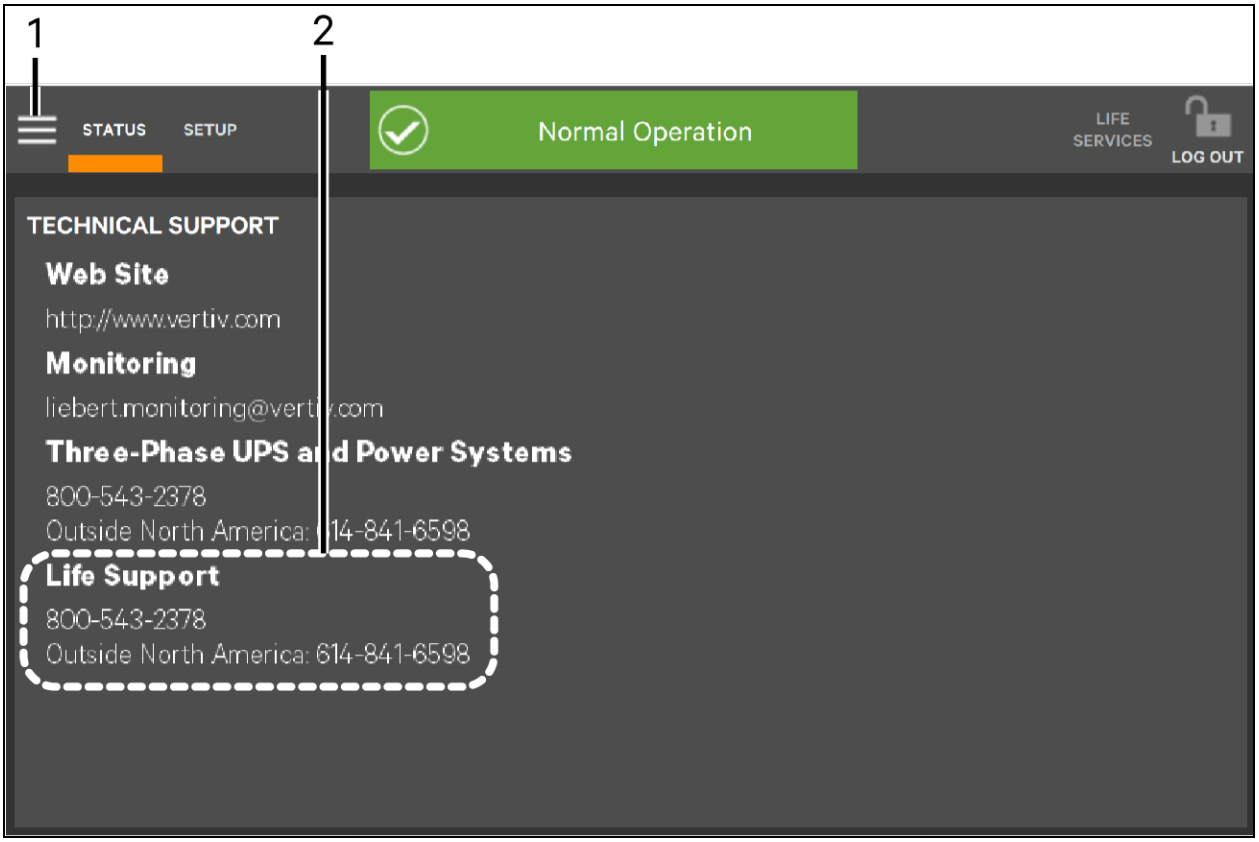


Figure 9.3 Vertiv LIFE Services Contact - From Context Menu



ITEM	DESCRIPTION
1	Context Menu
2	LIFE Support Contact Information

10 Faults, Warnings and Events

Table 10.1 XFM User Events

Component	Type	Event Name	ID	Definition
Transformer	Fault	Output Undervoltage	100	One of the VLL rms phases is below the setpoint for the set period.
Transformer	Fault	Output Overvoltage	101	One of the VLL rms phases has exceeded the setpoint for the set period.
Transformer	Fault	Phase Overcurrent	102	One of the I rms phases has exceeded the alarm setpoint for the set period.
Transformer	Alarm	Phase Overcurrent	103	One of the I rms phases has exceeded the warning setpoint for the set period.
Transformer	Fault	Neutral Overcurrent	104	The In rms has exceeded the alarm setpoint for the set period.
Transformer	Fault	Ground Overcurrent	105	The Ig rms has exceeded the alarm setpoint for the set period.
Transformer	Fault	Frequency Deviation	106	The measured frequency has fallen outside the range specified in the frequency setpoint
Transformer	Fault	High Temperature	107	The transformer temperature has exceeded its limit. If High Temp EPO trip switch is enabled (EIB LED off), the event will result in tripping the input breakers.
Transformer	Alarm	Overtemperature	108	The transformer temperature has exceeded the warning limit.
Transformer	Fault	Temperature Sensor Failure	109	The transformer OverTemp level is true before the warning level.
Input 1	Fault	Invalid Phase Rotation	110	The input phases are not in the normal A-B-C sequence.
Input 1	Fault	Phase Loss	111	The input phase voltages are unbalance by 20% and all voltages are greater than 50v.
Input 1	Fault	High Voltage THD	112	One of the voltage THD readings has exceeded the alarm setpoint .
		Reserved	113	
Transformer	Alarm	Summary Alarm	114	The occurrence of any XFM alarm (activeLatched).
Input 1	Status	Breaker Closed	117	The Main Input Breaker (1) Aux lines are reported closed.
Input 1	Fault	Breaker Tripped	118	The Main Input Breaker (1) Bell sensing has changed state (normal to tripped).
Input 1	Fault	Breaker Acc Error	119	The Main Input Breaker (1) sensing is an erroneous state. Parametric data logged with this event will indicate the nature of the first cause. Error Type: 1 = Form C position (Aux) sensing is not complimentary. 2 = Form C trip (Bell) sensing is not complementary. 3 = Trip (Bell) sensing is indicating a tripped breaker but the position (Aux) sensing is indicating a closed breaker.
Input 1	Fault	Breaker Open Fail	120	The breaker was commanded to open but sensing did not show open within a 2 second period.
Input 2	Status	Breaker Open	121	The Main Input Breaker 2 Aux lines are reported open.
Input 2	Status	Breaker Closed	122	The Main Input Breaker 2 Aux lines are reported closed.
Input 2	Fault	Breaker Tripped	123	The Main Input Breaker 2 Bell sensing has changed state (normal to tripped).

Table 10.1 XFM User Events (continued)

Component	Type	Event Name	ID	Definition
Input 2	Fault	Breaker Acc Error	124	The Main Input Breaker 2 sensing is an erroneous state. Parametric data logged with this event will indicate the nature of the first cause. Error Type: 1 = Form C position sensing (Aux) is not complimentary. 2 = Form C trip sensing (Bell) is not complementary. 3 = Trip (Bell) sensing is indicating a tripped breaker but the position sensing (Aux) is indicating a closed breaker.
Input 2	Fault	Breaker Open Fail	125	The breaker was commanded to open but sensing did not show open within a 2 second period
Input 1	Fault	Undervoltage	127	One of the VLL rms phases is below the setpoint for the set period.
Input 1	Fault	Overvoltage	128	One of the VLL rms phases has exceeded the setpoint for the set period.
Input 1	Fault	Frequency Deviation	129	The measured frequency has fallen outside the range specified in the frequency setpoint
Input 2	Fault	Undervoltage	130	One of the VLL rms phases is below the setpoint for the set period.
Input 2	Fault	Overvoltage	131	One of the VLL rms phases has exceeded the setpoint for the set period.
Input 2	Fault	Frequency Deviation	132	The measured frequency has fallen outside the range specified in the frequency setpoint.
Input 2	Fault	Invalid Phase Rotation	133	The input phases are not in the normal A-B-C sequence.
Input 2	Fault	Phase Loss	134	The input phase voltages are unbalance by 20% and all voltages are greater than 50v.
Input 2	Fault	High Voltage THD	135	One of the voltage THD readings has exceeded the alarm setpoint .

Table 10.2 PBM Events

Component	Subcomponent	Type	Event Name	ID	Definition
PBM Mains Label	Overvoltage	Fault	Overvolt	200	One of the VLL rms phases has exceeded the setpoint for the set period.
PBM Mains Label	Undervoltage	Fault	Undervolt	201	One of the VLL rms phases is below the setpoint for the set period.
PBM Mains Label	—	Fault	Phase Overcurrent	202	One of the I rms phases has exceeded the alarm setpoint for the set period.
PBM Mains Label	—	Alarm	Phase Overcurrent	203	One of the I rms phases has exceeded the warning setpoint for the set period.
PBM Mains Label	—	Fault	Neutral Overcurrent	204	The In rms has exceeded the alarm setpoint for the set period.
PBM Mains Label	—	Fault	Ground Overcurrent	205	The Ig rms has exceeded the alarm setpoint for the set period.
PBM Mains Label	—	Fault	Frequency Deviation	206	The measured frequency has fallen outside the range specified in the frequency setpoint
PBM Mains Label	—	Alarm	Panel Summary	207	The occurrence of any branch or panelboard main alarm (activeLatched).
PBM Mains Label	—	Status	Energy Measure Rollover	208	The kWH Total measurement has exceeded its max value. Parametric data 1 indicates panel.

Table 10.2 PBM Events (continued)

Component	Subcomponent	Type	Event Name	ID	Definition
PBM Mains Label	—	Status	Main Breaker Open	209	The Panel Main Breaker Aux lines are reported open.
PBM Mains Label	—	Status	Main Breaker Closed	210	The Panel Main Breaker Aux lines are reported closed.
PBM Mains Label	—	Fault	Main Breaker Tripped	211	The Panel Main Breaker Bell sensing has changed state (normal to tripped).
PBM Mains Label	—	Fault	Main Breaker Acc Error	212	The Panel Main Breaker sensing is an erroneous state. Parametric data logged with this event will indicate the nature of the first cause. Error Type: 1 = Form C position (Aux) sensing is not complementary. 2 = Form C trip (Bell) sensing is not complementary. 3 = Trip (Bell) sensing is indicating a tripped breaker but the position (Aux) sensing is indicating a closed breaker.
PBM Mains Label	Breaker # Label	Fault	Overcurrent	232	One of the breaker I rms phases has exceeded the alarm setpoint for the set period.
PBM Mains Label	Breaker # Label	Alarm	Overcurrent	233	One of the I rms phases has exceeded the warning setpoint for the set period.
PBM Mains Label	Breaker # Label	Fault	Undercurrent	234	All of the I rms phases are below the setpoint for the set period.
PBM Mains Label	Breaker # Label	Status	Energy Measure Rollover	235	The kWH Total measurement has exceeded its maximum value. Parametric data 1 indicates panel. Parametric data 2 indicates breaker (1-84).

Table 10.3 SFM User Events

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
SFM Panel Name	—	Fault	Overvoltage	300	L	One of the VLL rms phases has exceeded the setpoint for the set period.
SFM Panel Name	—	Fault	Undervoltage	301	L	One of the VLL rms phases is below the setpoint for the set period.
SFM Panel Name	—	Fault	Phase Overcurrent	302	L	One of the I rms phases has exceeded the alarm setpoint for the set period.
SFM Panel Name	—	Alarm	Phase Overcurrent	303	L	One of the I rms phases has exceeded the warning setpoint for the set period.
SFM Panel Name	—	Fault	Neutral Overcurrent	304	L	The In rms has exceeded the alarm setpoint for the set period.
SFM Panel Name	—	Fault	Ground Overcurrent	305	L	The Ig rms has exceeded the alarm setpoint for the set period.
SFM Panel Name	—	Fault	Frequency Deviation	306	L	The measured frequency has fallen outside the range specified in the frequency setpoint
SFM Panel Name	—	Alarm	Summary Alarm	307	N	The occurrence of any subfeed or subfeed main alarm (activeLatched).
SFM Panel Name	—	Status	Energy Measure Rollover	308	N	The kWH Total measurement has exceeded it max value.
SFM Panel Name	—	Status	Main Breaker Open	309	N	The Subfeed Main Breaker Aux lines are report open.

Table 10.3 SFM User Events (continued)

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
SFM Panel Name	—	Status	Main Breaker Closed	310	N	The Subfeed Main Breaker Aux lines are report closed.
SFM Panel Name	—	Fault	Main Breaker Tripped	311	N	The Subfeed Main Breaker Bell sensing has changed state (normal to tripped).
SFM Panel Name	—	Fault	Main Breaker Acc Error	312	N	The Subfeed Main Breaker sensing is an erroneous state. Parametric data logged with this event will indicate the nature of the first cause. Error Type: 1 = Form C position (Aux) sensing is not complementary. 2 = Form C trip (Bell) sensing is not complementary. 3 = Trip (Bell) sensing is indicating a tripped breaker but the position (Aux) sensing is indicating a closed breaker.
SFM Panel Name	Subfeed # Label	Fault	Phase Overcurrent	332	L	One of the I rms phases has exceeded the alarm setpoint for the set period.
SFM Panel Name	Subfeed # Label	Alarm	Phase Overcurrent	333	L	One of the I rms phases has exceeded the warning setpoint for the set period.
SFM Panel Name	Subfeed # Label	Fault	Neutral Overcurrent	334	L	The In rms has exceeded the alarm setpoint for the set period.
SFM Panel Name	Subfeed # Label	Fault	Ground Overcurrent	335	L	The Ig rms has exceeded the alarm setpoint for the set period.
SFM Panel Name	Subfeed # Label	Status	Energy Measure Rollover	336	N	The kWH Total measurement has exceeded its maximum value. Parametric data 2 indicates Subfeed number (1-12).
SFM Panel Name	Subfeed # Label	Status	Breaker Open	337	N	The Subfeed Breaker Aux lines are reported open.
SFM Panel Name	Subfeed # Label	Status	Breaker Closed	338	N	The Subfeed Breaker Aux lines are reported closed.
SFM Panel Name	Subfeed # Label	Fault	Breaker Tripped	339	N	The Subfeed Breaker Bell sensing has changed state (normal to tripped).
SFM Panel Name	Subfeed # Label	Fault	Breaker Accessory Error	340	N	The Subfeed Breaker sensing is an erroneous state. Parametric data logged with this event will indicate the nature of the first cause. Error Type: 1 = Form C position (Aux) sensing is not complementary. 2 = Form C trip (Bell) sensing is not complementary. 3 = Trip (Bell) sensing is indicating a tripped breaker, but the position (Aux) sensing is indicating a closed breaker.

Table 10.4 HMI User Events

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
Component Name	—	Fault	Comms Misconfig	13	N	Displayed at the HMI but not logged.
Component Name	—	Fault	No Initial Comms	14	N	Displayed at the HMI but not logged.
Component Name	—	Fault	Config Sync Error	19	N	Displayed at the HMI but not logged.
Board Name	[BAM #]	Fault	Comm Fail	12	N	Communication has been lost to this board (HMI or Peripheral board for DSPs) for 20 seconds. The HMI

Table 10.4 HMI User Events (continued)

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
						detects comm fails to the monitoring boards and sends an event to each respective board once comms are restored.
Component Name	—	Fault	FW Incompatible	21	N	There is a Display to Control version or schema incompatibility. The user can view the display and control firmware versions and perform updates to either the display or the control in order to make them compatible.

Table 10.5 Custom Events

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
Board Name	EIB	Alarm	Internal Input Contact 1	600	L	Internal alarm is active. Default text: "High Temp Alarm". Does not trip input breaker.
Board Name	EIB	Alarm	Internal Input Contact 2	601	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 3	602	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 4	603	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 5	604	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 6	605	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 7	606	L	Internal alarm is active.
Board Name	EIB	Alarm	Internal Input Contact 8	607	L	Internal alarm is active.
Board Name	EIB	Alarm	External Input Contact 1	608	L	Customer alarm is active.
Board Name	EIB	Alarm	External Input Contact 2	609	L	Customer alarm is active.

Table 10.6 Common Events

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
Board Name	—	Status	System Shutdown EPO	2	N	An EPO has been pressed record the event and trip the input breaker. EPO Source: 1 = Local EPO 2 = Remote EPO NO 3 = Remote EPO NC. The input breaker(s) will be tripped as a result of this event.
Board Name	—	Status	System Reset By User	11	N	The monitor board received a command to reset latched events
Board Name	[BAM #]	Fault	Communication Fail	12	N	Communication has been lost to this board (HMI or Peripheral board for DSPs) for 20 seconds. The HMI detects comm fails to the monitoring boards and sends an event to each respective board once comms are restored.
Board Name	—		Comms Misconfiguration	13	N	Use by HMI. No logging.

Table 10.6 Common Events (continued)

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
Board Name	—		No Initial Comms	14	N	
Board Name	—	Status	System Clock Set	15	N	The time or date has been set by the user (not time sync) or a time source change (i.e., NTP. Unity card). HMI detects sends event record to all Power Monitoring boards for logging.
Component Name	—	Status	Peak Current Reset	16	N	Recorded at every monitor board. A command was received at the monitor board to clear Peak Current value(s). Panel and breaker number are 1's based like config. A scope of Global reset will be represented as parametric data: Panel A/B: 1 = Panel A, 2 = Panel B Branch NO.: 0 = Mains, 1 to 84 = Branch No., 0xFF = Mains and Branch on this panel. Parametric Data Examples: XFM: 0, 0, 0 PBM: 1 or 2 (panel), 0xff (All branches), 0 PBM: 1 or 2 (panel), 0 to 84 (branch), 0 SFM, I-Line: 0, 0xff (All subfeeds), 0 SFM, I-Line: 0, 0 to 12 (branch), 0 SFM: 0, 1 to 12 (subfeed), 0.
Component Name	—	Status	Peak Demand Reset	17	N	Recorded at every monitor board. A command was received at the monitor board to clear Peak Current value(s). Panel and breaker number are 1's based like config. A scope of Global reset will be represented as parametric data: Panel A/B: 1 = Panel A, 2 = Panel B Branch NO.: 0 = Mains, 1 to 84 = Branch No., 0xFF = Mains and Branch on this panel. Parametric Data Examples: XFM: 0, 0, 0 PBM: 1 or 2 (panel), 0xff (All branchs), 0 PBM: 1 or 2 (panel), 0 to 84 (branch), 0 SFM, I-Line: 0, 0xff (All subfeeds), 0 SFM, I-Line: 0, 0 to 12 (branch), 0 SFM: 0, 1 to 12 (subfeed), 0.
Component Name	—	Status	kWH Reset	18	N	Recorded at every monitor board. A command was received at the monitor board to clear Peak Current value(s). Panel and breaker number are 1's based like config. A scope of Global reset will be represented as parametric data: Panel A/B: 1 = Panel A, 2 = Panel B Branch NO.: 0 = Mains, 1 to 84 = Branch No., 0xFF = Mains and Branch on this panel. Parametric Data Examples: XFM: 0, 0, 0 PBM: 1 or 2 (panel), 0xff (All branchs), 0 PBM: 1 or 2 (panel), 0 to 84 (branch), 0 SFM, I-Line: 0, 0xff (All subfeeds), 0 SFM, I-Line: 0, 0 to 12 (branch), 0 SFM: 0, 1 to 12 (subfeed), 0.
Board Name	—		Config Retrieval Error	19	N	

Table 10.6 Common Events (continued)

Component	Subcomponent	Type	Event Name	ID	Latching	Definition
Board Name	EIB	Status	Communication Fail	20	N	Communication has been lost to this board (HMI or Peripheral board for DSPs) for 20 seconds. The HMI detects comm fails to the monitoring boards and sends an event to each respective board once comms are restored. A separate event is needed to show the Comms Fail to the EIB at the system level especially when detected at PBM or SFM (as opposed to every subfeed for example, like the BAM).
Board Name	—	Fault	FW Incompatible	21	N	Use by HMI. No logging. HMI sees a mismatch in configuration schema or version number between HMI and monitor board.
Board Name	[BAM # or EIB if applicable]	Alarm	Communication Bus Error	22	N	The condition is when TX or RX stops for 10 seconds. The event is detected at a board when the condition above occurs 5 times within a 24 hour sliding window. The event will clear when the occurrences are 3 or less in the 24 hour window.

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