Symmetra™ PX

250/500 kW 400/480 V

Single and Parallel Operation

7/2023



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Schneider Electric

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Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

⚠DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

Failure to follow these instructions will result in death or serious injury.

⚠WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

Failure to follow these instructions can result in equipment damage.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Per IEC 62040-1: "Uninterruptible power systems (UPS) -- Part 1: Safety Requirements," this equipment, including battery access, must be inspected, installed and maintained by a skilled person.

The skilled person is a person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which the equipment can create (reference IEC 62040, section 3.102).

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

This is a product category C2 UPS product. In a residential environment, this product may cause radio inference, in which case the user may be required to take additional measures.

Failure to follow these instructions can result in equipment damage.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

⚠DANGER

HAZARD OF ELECTRICAL SHOCK, EXPLOSION OR ARC FLASH

All safety instructions in this document must be read, understood and followed.

Failure to follow these instructions will result in death or serious injury.

⚠DANGER

HAZARD OF ELECTRICAL SHOCK, EXPLOSION OR ARC FLASH

After the UPS system has been electrically wired, do not start up the system. Startup must only be performed by Schneider Electric.

Failure to follow these instructions will result in death or serious injury.

Schneider Electric has carefully reviewed wording in product hazard messages to alert users to potential hazards, how to avoid those hazards, and the consequences of not following hazard messages. Workplace safety standards such as NFPA 70E and CSA Z462 are clear that the proper method to work on or near electrical equipment is in a de-energized state.

However, it is recognized that the standards identify exceptions where powering down the equipment is infeasible due to equipment design or actually introduces additional hazards. While elimination of all risks is not possible, in those situations where it can be demonstrated that energized work is necessary, certain tasks, including the installation or removal of modules into the Symmetra PX UPS, may be performed on an energized Symmetra PX UPS only after the user has demonstrated that the application meets the required exceptions in local regulations, NFPA 70E, CSA Z462 or other standards as appropriate and employs the work practices and personal protective equipment prescribed in the standard.

NOTICE

RISK OF INTERFERENCE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Failure to follow these instructions can result in equipment damage.

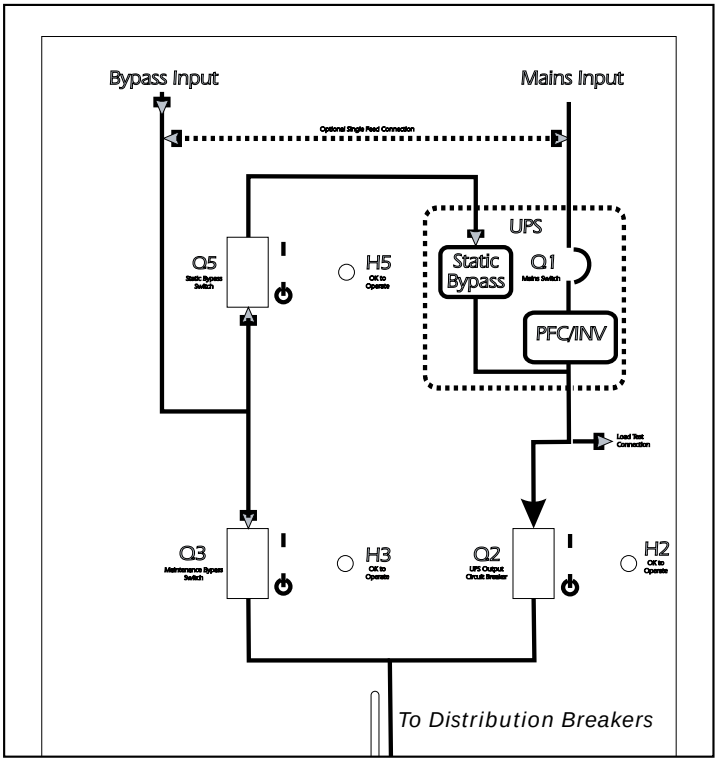
System Overview

Overview of Breakers in the Maintenance Bypass (Option)

NOTE: The maintenance bypass is only applicable for single systems.

NOTE: A breaker must only be operated when the associated breaker lamp is ON.

The maintenance bypass contains the breakers Q2, Q3, and Q5.

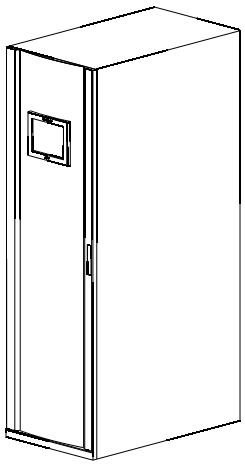


Display Overview

NOTE: The screens shown in this manuals are examples only.

The UPS display is located in the I/O cabinet and is used to configure and monitor the system, and provides visible and audible alarms.

Front View of the I/O cabinet



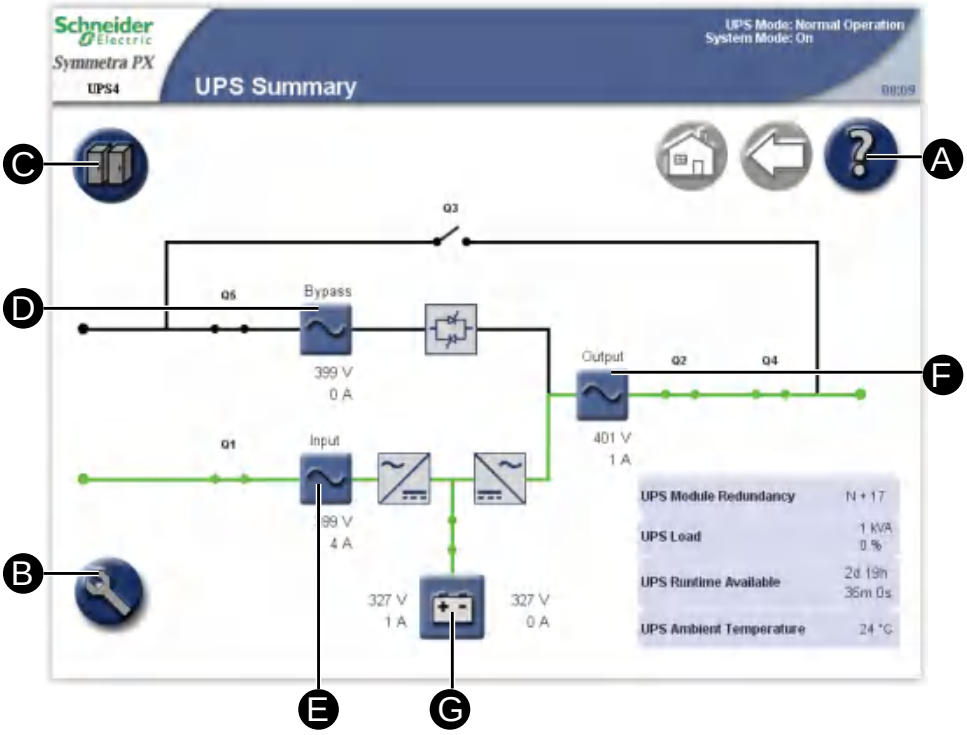
Navigation

- **UPS System**
  - **System Information**
    - **System Status**
    - **Logs**
    - **Firmware Overview**
    - **Predictive Maintenance**
    - **Software Licences**
  - **Configuration**
    - **User Configuration**
    - **Service Configuration**
    - **Factory Configuration**
  - **Operation**
    - **Start-Up**
    - **Shutdown**
    - **Static Bypass –> Normal Op.**
    - **Normal Op. –> Static Bypass**
    - **Isolate this UPS**
    - **Enable ECO Mode**
  - **Language Settings**
    - **Regional Settings**

UPS Summary Screen

Single System

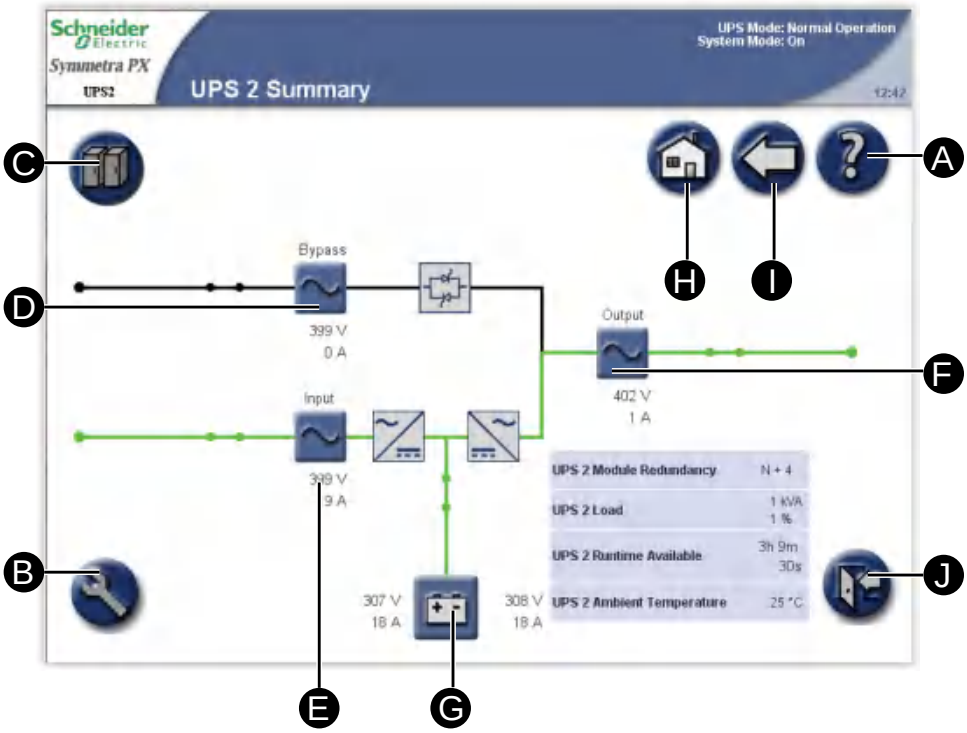
In single systems, the **UPS Summary** screen is the home screen. It provides you with an overview of the UPS system and circuit breakers. It shows the system status and the power flow through the system and gives access to the system's summary screens and the **UPS System** screen.



A. Access help on the current screen.
B. Go to the **UPS System** screen.
C. Go to the **System Status** screen for the UPS.
D. Go to the **Bypass Summary** screens.
E. Go to the **Input Summary** screens.
F. Go to the **Output Summary** screens.
G. Go to the **Battery Summary** screens.

Parallel System

In parallel systems, the **UPS Summary** screen provides you with an overview of the actual UPS and circuit breakers. It shows the system status and the power flow through the UPS and gives access to the system's summary screens and the **UPS System** screen.

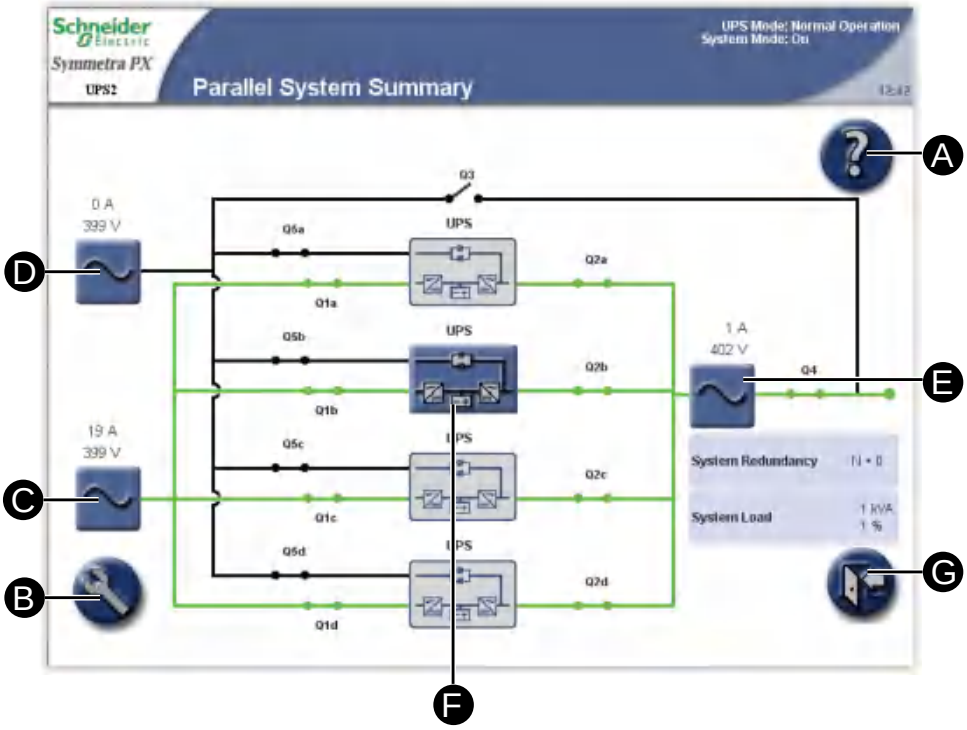


A. Access help on the current screen.
B. Go to the **UPS System** screen.
C. Go to the **System Status** screen for the operated UPS.
D. Go to the **Bypass Summary** screens.
E. Go to the **Input Summary** screens.
F. Go to the **Output Summary** screens.
G. Go to the **Battery Summary** screens.
H. Go to the **Parallel System Summary** screen.
I. Go to the previous screen.
J. Log out of password protected screens.

Parallel System Summary

The **Parallel System Summary** screen is the home screen in parallel systems. It provides you with an overview of the parallel system and circuit breakers. It shows the system status and the power flow through the system and gives access to the system's summary screens.

NOTE: The operated UPS is highlighted on the screen and the other UPS units are faded.



A. Access help on the current screen.
B. Go to the **UPS System** screen.
C. Go to the **Parallel Input Summary** screens.
D. Go to the **Parallel Bypass Summary** screens.
E. Go to the **Parallel Output Summary** screens.
F. Go to the **UPS Summary** screens.
G. Log out of password protected screens.

Configuration

Set the Language and Regional Settings

1. From the home screen on the display select **UPS system > Language** button to access the **Language Settings** screen.



2. Select the preferred language.
3. Select your preferred date format and temperature unit and complete with **Finish**.



Set the User Password Settings

NOTE: If you forget your password, contact Schneider Electric for information.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Password Settings** to access the **Password Settings** screen.



2. Change the user password:
   a. Tap **Enter current password** and type the current password by using the keyboard on the screen. Complete with **Enter**.
   b. Tap **Enter new password** and type the new password by using the keyboard on the screen. Complete with **Enter**.
   c. Tap **Confirm new password** and re-type the new password. Confirm with **Enter**.
3. Tap **Apply** to complete the password change procedure.

Perform a Battery Runtime Calibration

Calibrating the batteries keeps measurements like runtime and battery charge accurate.

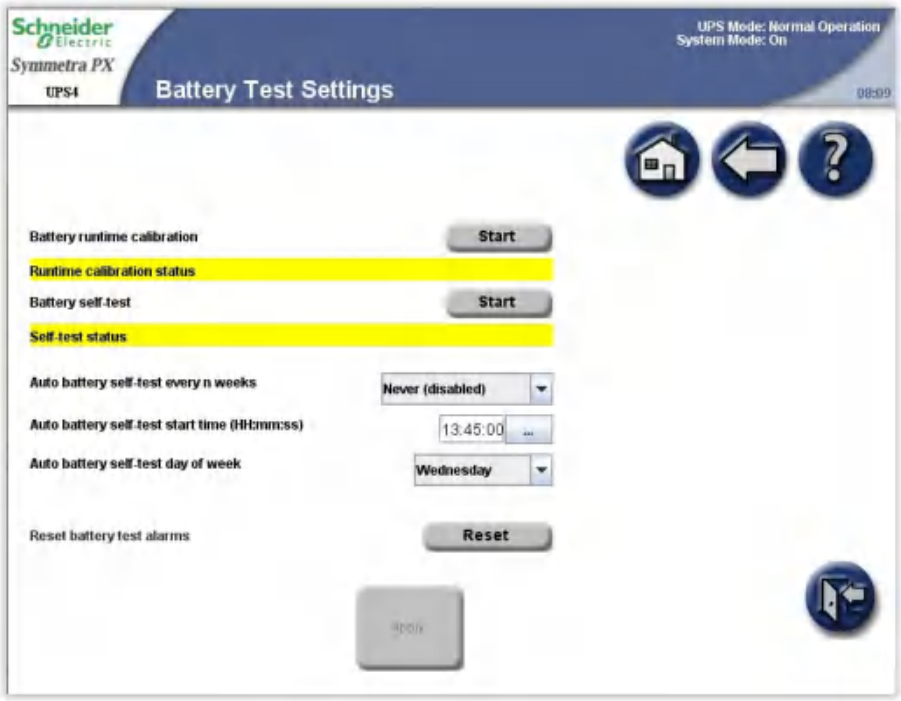
Schneider Electric recommends performing battery runtime calibration at startup, when batteries are replaced, or when changes are made to the battery cabinets.

NOTICE
HAZARD OF EQUIPMENT DAMAGE • During a runtime calibration the batteries will be at a very low level and therefore not capable of supporting your system load in case of a power failure. • Batteries will be discharged to 10% capacity and this will result in a low battery runtime after the calibration. Allow a minimum of 8 hours for battery to reach 90% of the capacity after the calibration. • Repeated battery testing or calibration can affect the lifetime of the battery. **Failure to follow these instructions can result in equipment damage.**

To perform a test, the following conditions must be present:

- The batteries must be 100% charged.
- The load percentage must be at least 10% and must not change more than 20% during the test. Example: if the load is 40%, it must not vary more than +/- 8%.
- The bypass supply must be available.
- The **UPS Mode** must be **Normal Operation**.
- The **System Mode** must be **On**.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Battery Test Settings** to access the **Battery Test Settings** screen.



2. Tap **Start** to begin the battery runtime calibration. You can tap **Cancel** to stop the calibration. The status of the runtime calibration is shown under **Runtime calibration status**.

Set the Battery Self-Test Settings

To start a self-test:

- The battery must be more than 50% charged.
- The load percentage must be at least 10%.
- The runtime available must be more than 2 minutes.
- The bypass supply must be available.
- The UPS mode must be in normal operation or ECO mode.
- The System mode must be On or ECO mode.

The battery self-test simulates battery operation. If the utility/mains power fails during the test, the test stops and the UPS supplies battery power.

The test detects any weak or inoperable battery cells.

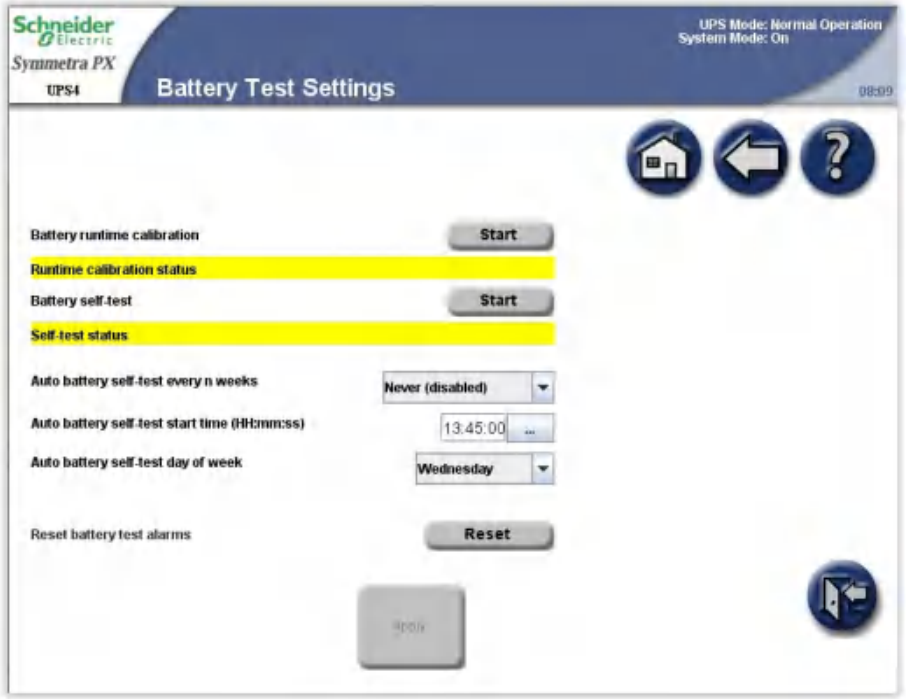
The following criteria should be met to ensure that the test detects any weak battery cells:

- The total discharge current to the load from both the positive and negative sides of the batteries needs to be at least half of the rated battery Ah. For example, if you have 18 Ah of batteries, more than 9 A must be drawn by the load from each battery side.
- Both the positive and negative battery voltage must be lower than 280 V for longer than 16 seconds.

The test lasts for approximately 10% of the available runtime.

NOTE: The test will discharge all batteries by 10%.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Battery Test Settings** to access the **Battery Test Settings** screen.



2. Set the battery test settings

    a. **Battery self-test**: Tap **Start** to begin the battery self-test immediately. You can tap **Cancel** to stop the self-test and continue in normal operation. The status of the self-test is shown under **Self-test status**.

    b. **Auto battery self-test every n weeks**: Select the time in weeks between automatic battery self-tests. Schneider Electric recommends a battery self test every 12 weeks.

    c. **Auto battery self-test start time (HH:mm:ss)**: Select the time of the day for the battery self-test.

    d. **Auto battery self-test day of week**: Select the day of the week for the battery self-test.

    e. **Reset battery test alarms**: Tap the **Reset** button to reset the battery alarms.

3. Tap **Apply** to confirm the settings.

Set the Display Settings

NOTE: If the **Back light time out** is set to **Always on**, it will reduce the lifetime of the display.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Display Settings** to access the **Display Settings** screen.



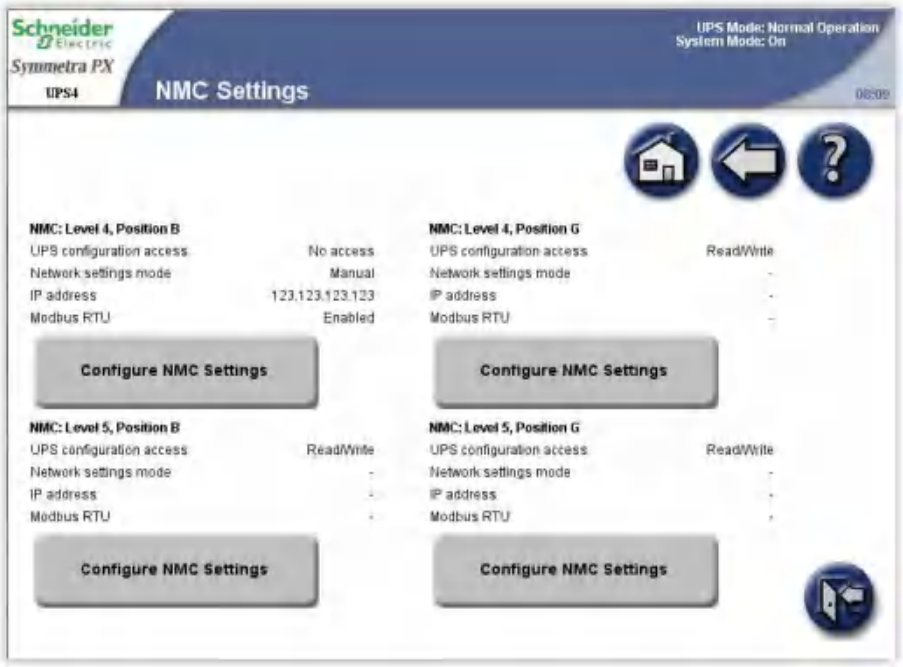
2. Set the display settings:
   a. **Brightness**: Place the finger on the indicator and slide it left or right to the desired setting.
   b. **Temperature unit**: Select °C for Celsius or °F for Fahrenheit.
   c. **Back light time out**: Select the time limit for turning off the screen back light.
   d. **Date format**: Select the preferred setting.
   e. **Waveform voltage label**: Select phase-to-phase or phase-to-neutral.
   f. **Recalibrate touch screen**: Tap the **Start** button to initiate the calibration of the screen. Tap the points that are shown on the screen to calibrate the touch area of the display.
   g. **Enable audible buttons**: Enable or disable audible buttons.
   h. **Enable audible alarms**: Enable or disable audible alarms.
   i. **Enable Q breaker prefix**: By default, breakers are labelled Q1Qx, Q2Qx, etc. as displayed on the **UPS Summary** screen. Using this field, you can clear the prefix of the label (for example, Q1, Q2).
   j. **Enable SB breaker prefix**: By default, subfeed breakers are labelled SB1, SB2, etc. as displayed on the **Output Subfeed Summary** screen. Using this field, you can clear the prefix of the label (for example, SB1, SB2). See Set the Subfeed Breaker Names, page 28 for information on how to name the subfeed breakers.

Set the Network Management Card (NMC) Settings

NOTE: You can only configure the cards that have been installed. The **Configure NMC Settings** button is greyed out for uninstalled cards. The NMC will reboot to activate the changes.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > NMC Settings** to access the **NMC Settings** screen.

   NOTE: In some systems, there are only two NMC slots.



2. The **NMC Settings** screen displays the configuration for each NMC in the system. Tap **Configure NMC Settings** to access the **Configure NMC Settings** screen and to change the settings.

3. Change the NMC settings. The **IP address**, **Subnet mask**, and **Gateway** can only be edited if the NMC is set to manual. See NMC documentation for more information.



   a. **UPS configuration access**: Set the UPS access level for the specific NMC. It can be set to **No access**, **Read**, or **Read/Write**.

   b. **Network settings mode**: Select to use **DHCP**, **BOOTP**, or **Manual IP**.

   c. **IP address**: Enter a valid IP address for the card. Only visible if manual mode has been selected.

   d. **Subnet mask**: Enter a valid subnet mask. Only visible if manual mode has been selected.

   e. **Gateway**: Enter a valid gateway. Only visible if manual mode has been selected.

4. Tap **Apply** to confirm the settings.

5. Tap the arrow down button and change the settings.



- **Enable IPv6**: Check mark the **Enable IPv6** box to enable or disable IPv6 communications for the NMC. The table shows the type of configuration, the IPv6 address, and the prefix length.
- **Auto Configuration**: Select the **Auto Configuration** box to enable the system to obtain addressing prefixes from the router (if available). It will use those prefixes to automatically configure IPv6 addresses.
- **Manual**: Check mark the **Manual** check box and then enter the system IPv6 address and gateway if you are not using automated addressing.
- **DHCPv6 Mode**:
  - **Never**: With this option selected, DHCPv6 is NOT used for any configuration settings.
  - **Router Controlled**: When this option is selected, DHCPv6 is controlled by the M (Managed Address Configuration Flag) and O (Other Stateful Configuration Flag) flags received in IPv6 Router Advertisements.
  - **Non-Address Information Only**: With this option selected, DHCPv6 is used to configure "other" settings (such as location of DNS servers), but NOT to provide addresses. This is known as DHCPv6 stateless.
  - **Address and Other Information**: With this option selected, DHCPv6 is used to obtain addresses AND other configuration settings. This is known as DHCPv6 stateful.

6. Tap **Apply** to confirm the settings.

7. Tap the arrow down button and change the settings.



   a. Check mark the **Enable Modbus RTU** to enable the use of Modbus RTU.

   b. Specify the **Modbus RTU address** of the NMC device. Only a BMS manager should modify this address.

   c. Specify the **Baud rate** of the modbus communication port.

   d. Specify the **Parity** of the modbus communication port.

8. Tap **Apply** to confirm the settings.

Set the Alarm Settings

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Alarm Settings** to access the **Alarm Settings** screen.

Single System



Parallel System



2. Set the threshold values that will trigger the alarms:

   NOTE: For parallel systems, shared settings are marked with * on the display.

   a. **UPS module redundancy**: Set the system threshold for generating alarms in the redundant power modules. **N+0** indicates that the redundancy alarm is disabled. **N+1** indicates that there must be one redundant power module.

   b. **Parallel system redundancy**: Set the number of redundant UPS units in a parallel system. If you have a parallel system with UPS redundancy, you can use this field to configure an alarm to appear when the load in your parallel system starts using some of the UPS redundant power. **N+0** indicates that there is no redundant power and **N+1** indicates that there is one UPS of redundant power.

   c. **Load alarm threshold (%)**: Set the threshold for load percentage of the total UPS capacity for generating an alarm.

   d. **Low battery alarm threshold (seconds)**: Set the remaining battery runtime threshold for generating an alarm.

   e. **Warning alarm delay(s)**: Set the delay in seconds before a warning alarm is reported on the display.

   f. **Information alarm delay(s)**: Set the delay in seconds before a informational alarm is reported on the display.

   NOTE: If you use PowerChute Network Shutdown software, **Low battery alarm threshold (seconds)** must not be set to 0. Set the threshold to a value that will allow computers to shut down when the batteries are low.

   NOTE: If these threshold values are exceeded, an alarm with the severity warning is generated.

3. Tap **Apply** to confirm the settings and tap arrow down to go to the next **Alarm Settings** screen.

4. This screen is only visible if subfeed breakers are present. Set the load percentage for each subfeed breaker that should generate a critical alarm.



5. Tap **Apply** to confirm the settings and tap arrow down to go to the next **Alarm Settings** screen.

6. This screen is only visible if subfeed breakers are present. Set the load percentage for each subfeed breaker that should generate a warning alarm.



7. Tap **Apply** to confirm the settings.

Set the System Settings

NOTE: The date and time will be synchronized between all UPS units in a parallel system.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > System Settings** to access the **System Settings** screen. The **System Settings** screen can also be accessed by tapping the time displayed in the top right corner of the screen.



2. Set the system settings.

   NOTE: For parallel systems, shared settings are marked with * on the display.

   - **System date (MM-dd-yyyy)**: Set the date. The setting is synchronized between all UPSs and the NMC.
   - **System time (HH:mm:ss)**: Set the time. The setting is synchronized between all UPSs and the NMC.
   - **Local UPS name**: Type in a name for the UPS unit. A maximum of eight characters is allowed.
   - **Parallel system name**: Type in a name for the group of UPS units in the same parallel system. A maximum of eight characters is allowed.

3. Tap **Apply** to confirm the settings.

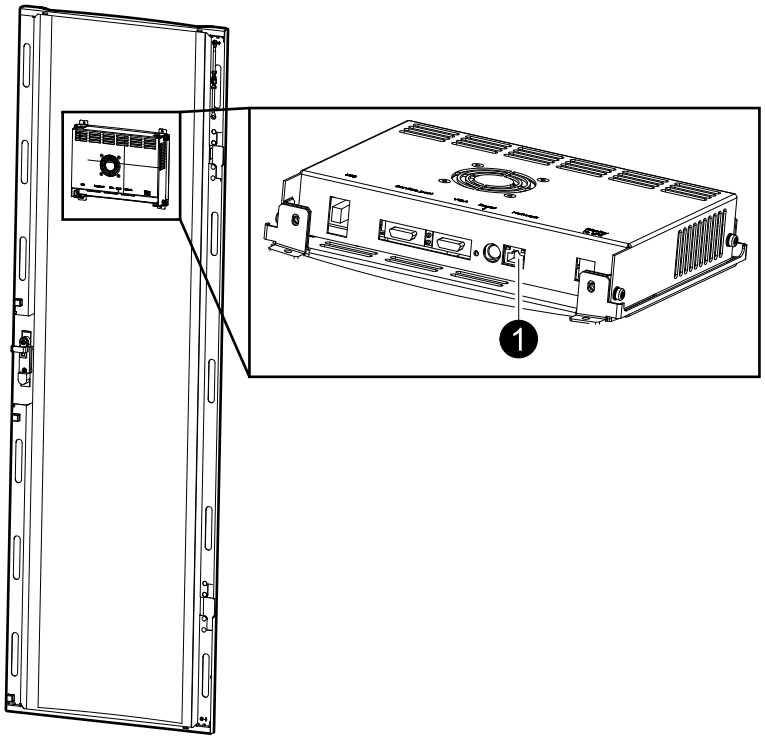
Enable Virtual Display Application

NOTE: The Virtual Display Application (VDA) is disabled by default.

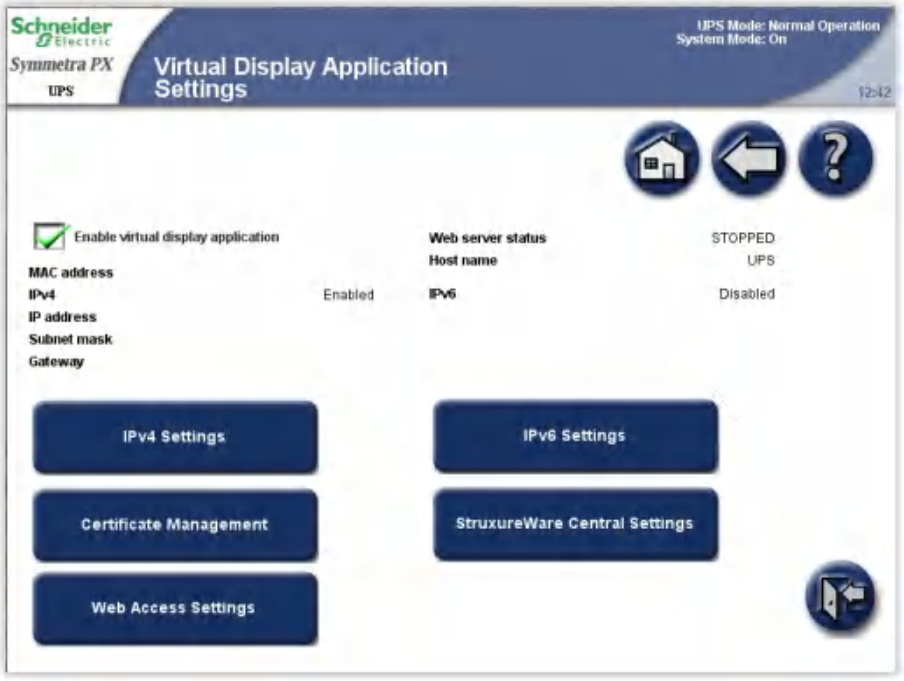
The VDA enables remote access to the display via a web browser. From the web browser it is possible to view the UPS status and settings. It also allows secure remote configuration of a small number of non-critical settings on the **User Configuration** screen. UPS event logs can also be saved from the VDA to the local computer to aid with troubleshooting.

1. Open the front door of the I/O cabinet and connect the display to the network.

Rear View of the I/O Cabinet Front Door



2. From the home screen on the display select **UPS System > Configuration > User Configuration > Virtual Display Application Settings** to access the **Virtual Display Application Settings** screen.



3. Check mark **Enable virtual display application** to activate the VDA.

   An IPv4 address will automatically be obtained via DHCP for the VDA once it is enabled and there is network connection between the physical display unit and the Local Area Network.

   NOTE: The hostname for accessing the VDA from a web browser (which is a combination of the UPS name and the configured domain on the **Web Access Settings** screen) can be seen under **Host name**.

   The following can be configured from the submenus:

   - **IPv4 Settings**: Network settings for the VDA
   - **IPv6 Settings**: Network settings for the VDA
   - **Certificate Management**: A self-signed certificate is generated for HTTPS communication when the VDA is enabled. This can be replaced by a valid user certificate
   - **StruxureWare Central Settings**: Schneider Electric StruxureWare Central (StruxureWare Data Center Expert) settings for the network device management
   - **Web Access Settings**: Access protocols (both HTTP and HTTPS are supported) and inactivity time-out periods for the VDA

   NOTE: For more information on these screens, visit the context sensitive help on the display.

Set the Door Filter Settings

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Door Filter Settings** to access the **Door Filter Settings** screen.



2. Set the door filter lifetime depending on the installation environment:
   - **15 Days (Heavy Filtration)** for industrial environments
   - **30 Days (Normal Filtration)** for IT environments
   - **60 Days (Light Filtration)** for controlled environments

NOTICE
HAZARD OF EQUIPMENT DAMAGE • Schneider Electric recommends to check the filters at regular intervals. • If construction has been done in the UPS room, consider temporarily reducing the filter lifetime. **Failure to follow these instructions can result in equipment damage.**

Set the Subfeed Breaker Names

NOTE: The subfeed breaker names can only be configured on systems including a maintenance bypass and subfeeds.

1. From the home screen on the display select **UPS System > Configuration > User Configuration > Subfeed Breaker Names** to access the **Alarm Settings** screen(s).



2. Tap the text box and type a name for the specific subfeed breaker using the keyboard on the screen. A maximum of six characters are allowed. Complete with **Enter**.
3. Tap **Apply** when all subfeed breaker names have been set.

Operation Modes

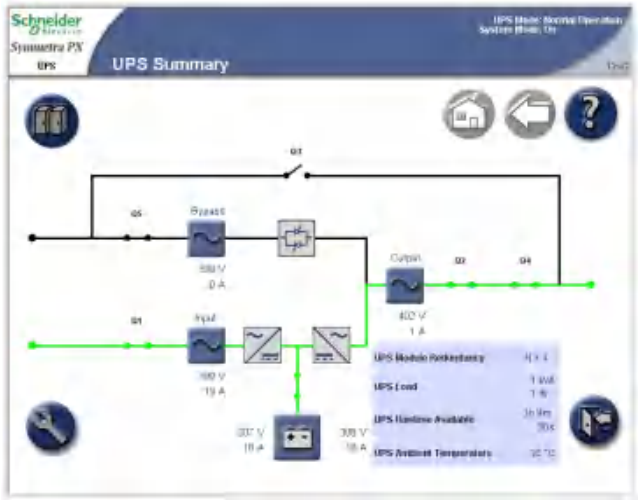
UPS Modes

The UPS operation mode is indicated in the top right corner of the screen under the heading **UPS Mode**. The **UPS mode** indicates the current status of the operated UPS.

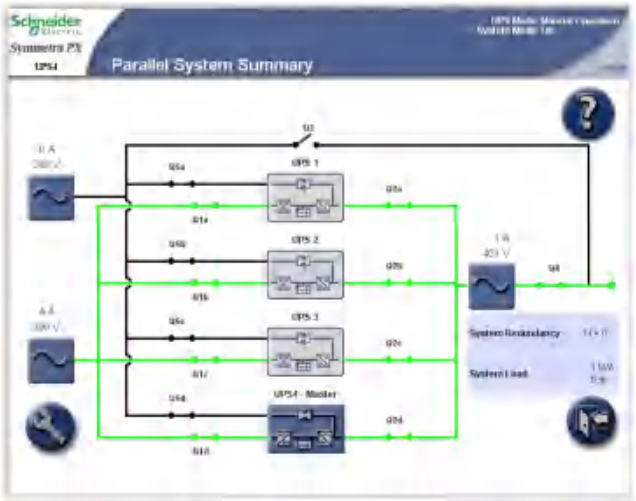
Normal Operation

During normal operation, the UPS supports the critical load with conditioned power. While the UPS is operating in normal operation, a single-line diagram will appear on the screen. A green line indicates the power flow from the utility/mains, through the UPS system, and to the load. The green line to the batteries indicates that the batteries are connected.

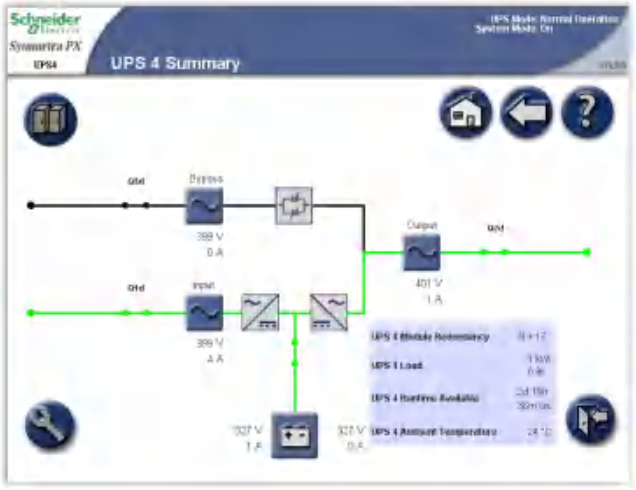
Single System



Parallel System



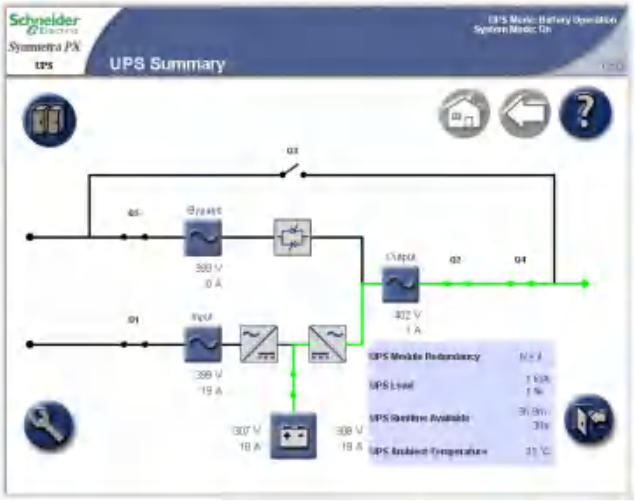
or



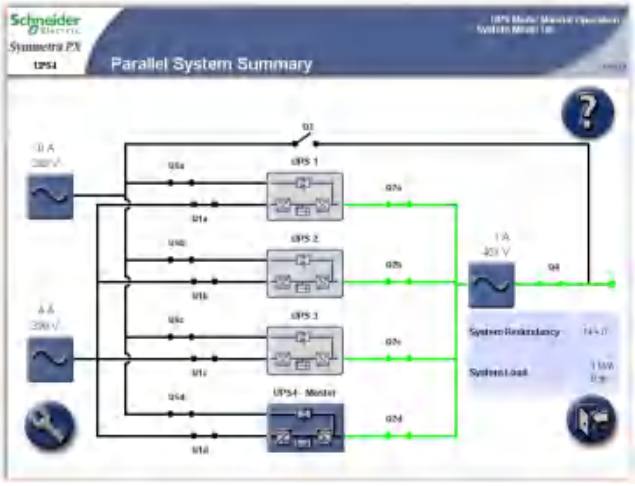
Battery Operation

If the utility/mains supply fails, the UPS transfers to battery operation. During battery operation, battery power ensures uninterrupted support to the critical load. While the UPS system is in battery operation, a single-line diagram will appear on the screen. The green line indicates the power flow from the batteries, through the inverters, and then to the load.

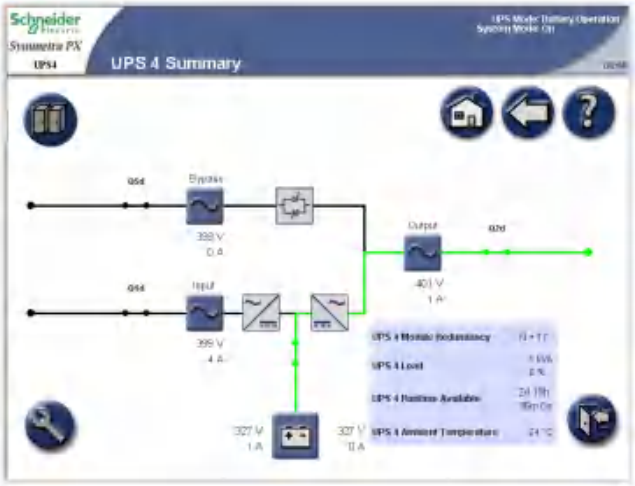
Single System



Parallel System



or



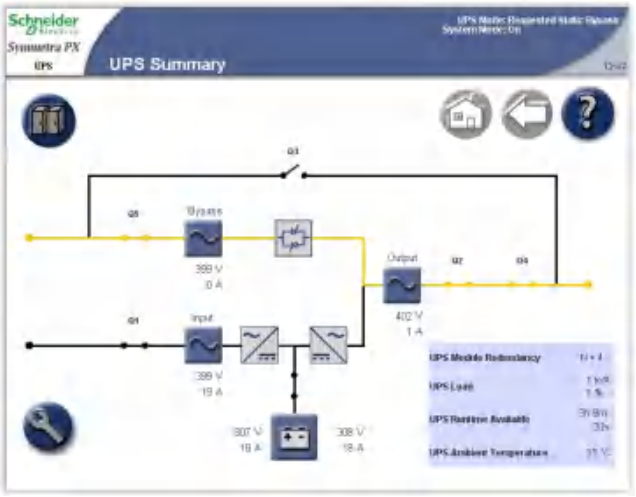
Requested Static Bypass Operation/Forced Static Bypass Operation

The UPS is in requested static bypass following a command from the display, and the UPS is in forced bypass when the UPS has detected a fault on the system and requests static bypass operation. During static bypass operation, the critical load is supplied directly by utility/mains power. While the UPS is operating in this mode, a single-line diagram will appear on the screen. The orange line indicates the power flow from the utility/mains through the bypass static switch, and then to the critical load.

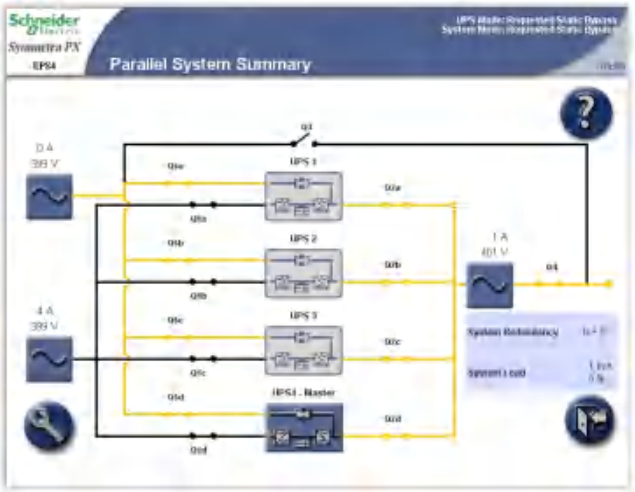
NOTE: The batteries are not available as an alternate power source while the system is in forced static bypass operation.

NOTE: The batteries are available in requested bypass, and it is possible to manually transfer to normal operation. If there is an interruption to the utility/mains power supply during requested static bypass operation, the system will transfer to battery operation. This can cause an interruption to the power supplying the load and can result in a load drop.

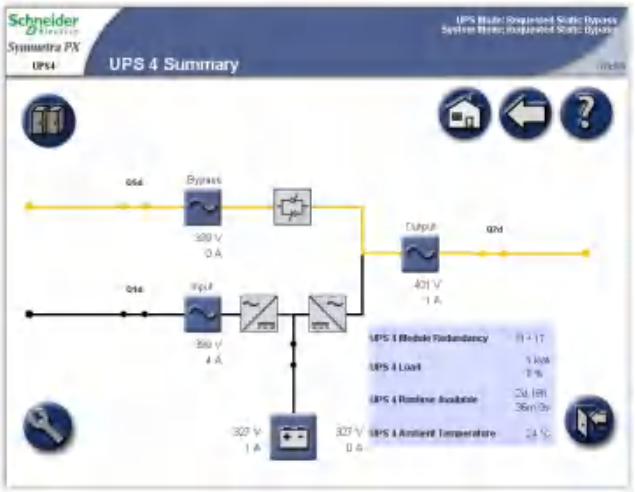
Single System



Parallel System



or

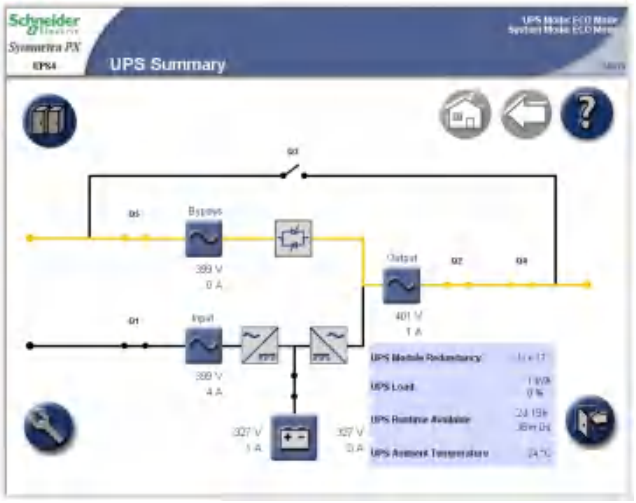


ECO Mode (Option)

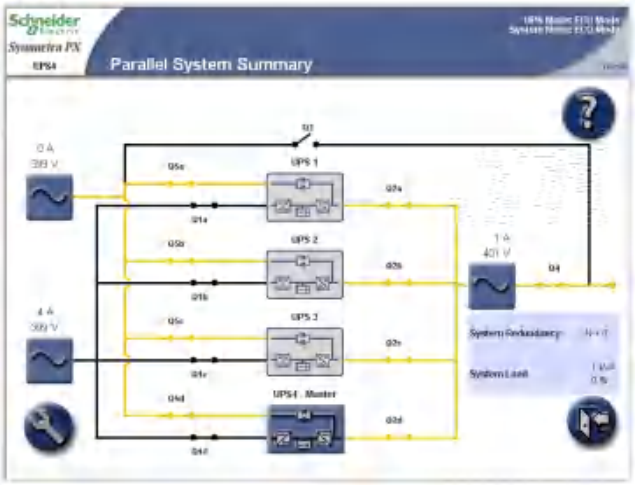
When ECO mode is enabled (see Enable ECO Mode (Option), page 41) the system will transfer to static bypass operation after 30 seconds with bypass supply within specified limits.

NOTE: If there is an interruption to the bypass supply when the system is in ECO mode, the system will transfer to battery operation. This can cause an interruption to the power supplying the load and can result in a load drop.

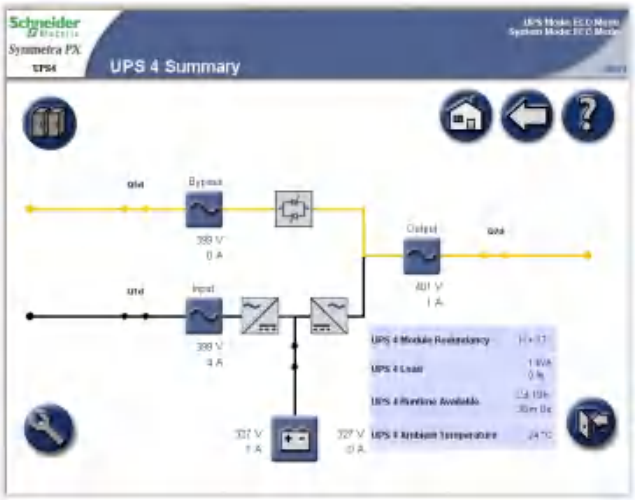
Single System



Parallel System



or

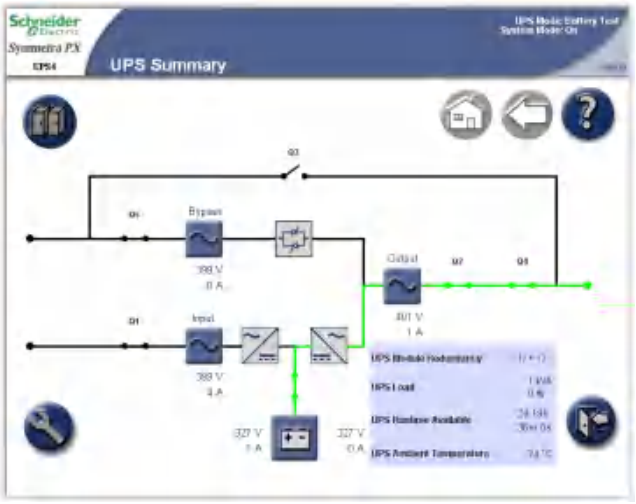


Battery Test

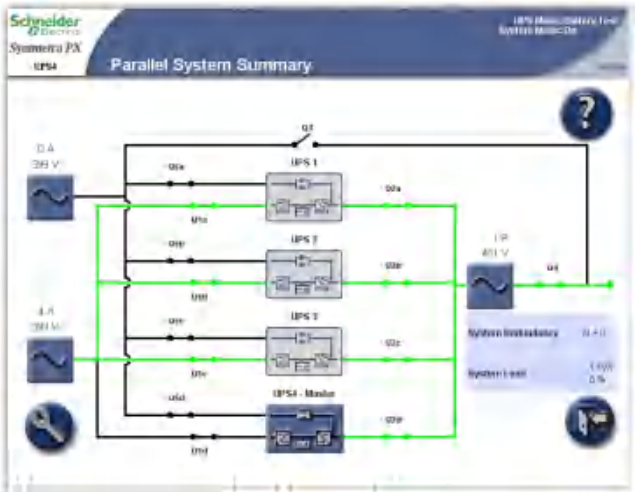
The UPS is in battery test mode when the UPS is performing a battery self-test or a battery runtime calibration.

NOTE: The battery test will stop if the utility/mains supply fails during the test.

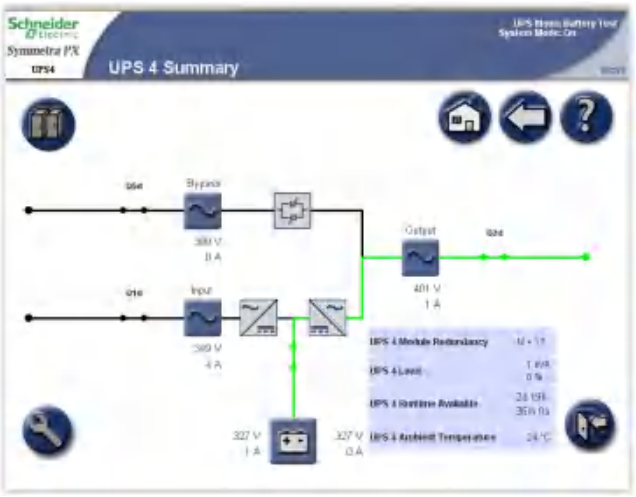
Single System



Parallel System



or



System Modes

The system mode is indicated in the top right corner of the screen under the heading **System Mode**. The system mode indicates the output status of the complete system, and not the individual UPS unit.

On

When the system mode is **On**, the UPS system supports the critical load with conditioned power. The load is supported by the UPS in both normal and battery operation.

Off

When the system mode is **Off**, the UPS system does not support the load with power.

Requested Static Bypass Operation/Forced Static Bypass Operation

The UPS is in requested static bypass following a command from the display, and the UPS is in forced bypass when a fault on the system has caused static bypass operation. During static bypass operation, the critical load is supplied directly by utility/mains power. While the UPS is operating in this mode, a single-line diagram will appear on the screen. The orange line indicates the power flow from the utility/mains through the bypass static switch, and then to the critical load.

ECO Mode

When ECO mode is enabled (see Enable ECO Mode (Option), page 41) the system will transfer to static bypass operation after 30 seconds with bypass supply within specified limits.

NOTE: If there is an interruption to the bypass supply when the system is in ECO mode, the system will transfer to battery operation. This can cause an interruption to the power supplying the load and can result in a load drop.

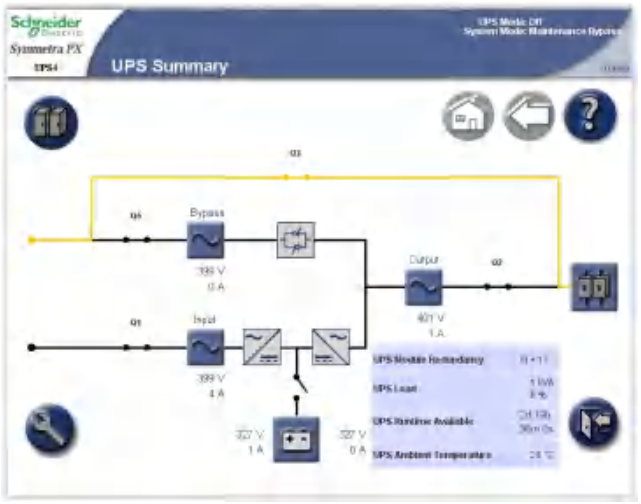
Maintenance Bypass Operation

During maintenance bypass operation, the critical load is supplied directly by utility/mains power. While the UPS system is in maintenance bypass operation, a single-line diagram will appear on the screen. The orange line indicates the power flow from the utility/mains to the critical load via Q3.

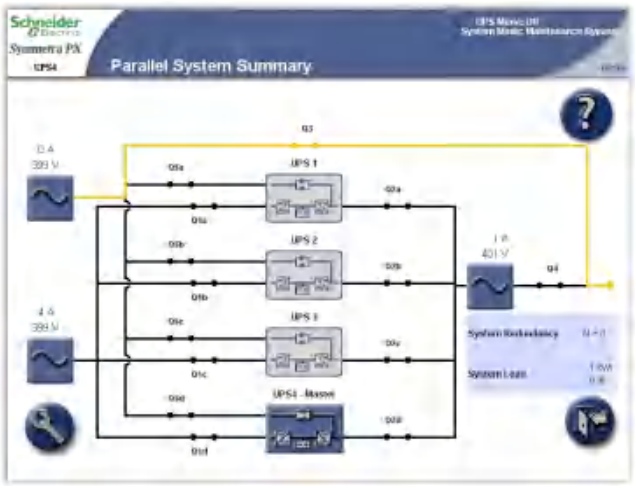
NOTE: Do not open the Q3 when the system is in maintenance bypass operation, as it can result in a load drop.

NOTE: The batteries are not available as an alternate power source while the UPS system is in maintenance bypass operation.

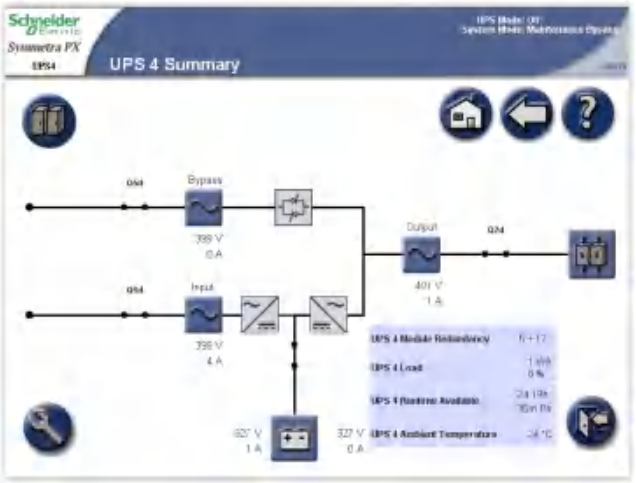
Single System



Parallel System



or



Autostart Countdown

The system can be set up for an automatic start when utility/mains supply is restored following a low battery voltage shutdown. The autostart countdown window is shown over all screens until the countdown period expires or the autostart is manually stopped by tapping the **STOP** button.

This feature is disabled by default and is not supported in parallel systems. Contact Schneider Electric if this feature should be enabled on your system.

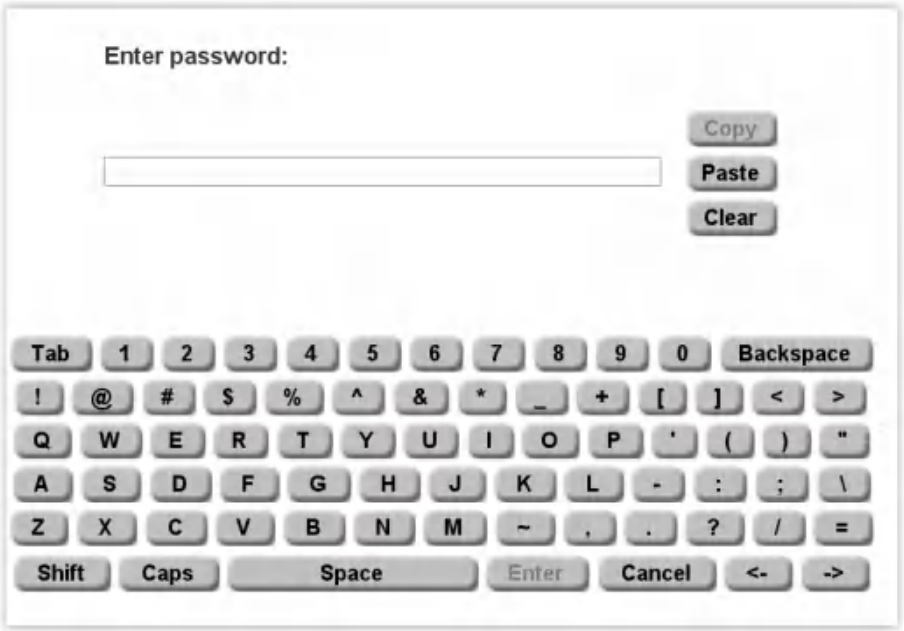
Operation Procedures

Access Screens Protected by User Password

1. When prompted for the user-password, tap the password field to access the keyboard.



2. Type in the user password and tap **Enter**.



NOTE: The default user name and password are apc at first login. In v6.8.0 and higher, you will be prompted to enter a new password after you log in.

Start Up the System

NOTE: Start-up condition: The load is supplied via the Q3 switch from the utility/mains, and the other breakers are open.

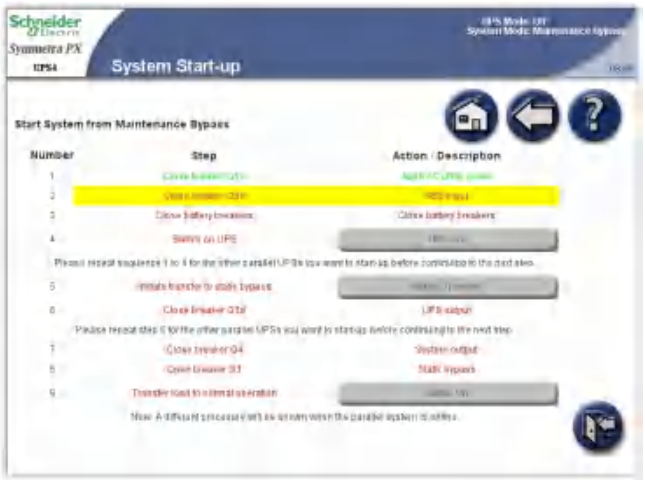
NOTE: A breaker must only be operated when the associated breaker LED is lit.

1. Close the UPS input breaker (Q1). This will power up the UPS display.
2. From the home screen on the display select **UPS System > Operation > System Start-up**.
3. Follow the steps which appear on the screen. Steps will appear in the order in which they need to be completed. A step will initially appear in red and then when it is completed, the step will change to green. The next step to be completed will be highlighted in red text and yellow background.

Single System



Parallel System



4. Check that the **UPS Mode** is **Normal Operation** in the upper right corner.

Shut Down System from Normal to Maintenance Bypass Operation

NOTE: A breaker must only be operated when the associated breaker lamp is ON.

1. From the home screen on the display select **UPS System > Operation > System Shutdown**.
2. Follow the steps which appear on the screen. Steps will appear in the order in which they need to be completed. A step will initially appear in red and then when it is completed, the step will change to green. The next step to be completed will be highlighted in red text and yellow background.

   NOTE: Grey buttons are touch-screen functions.

Single System



Parallel System



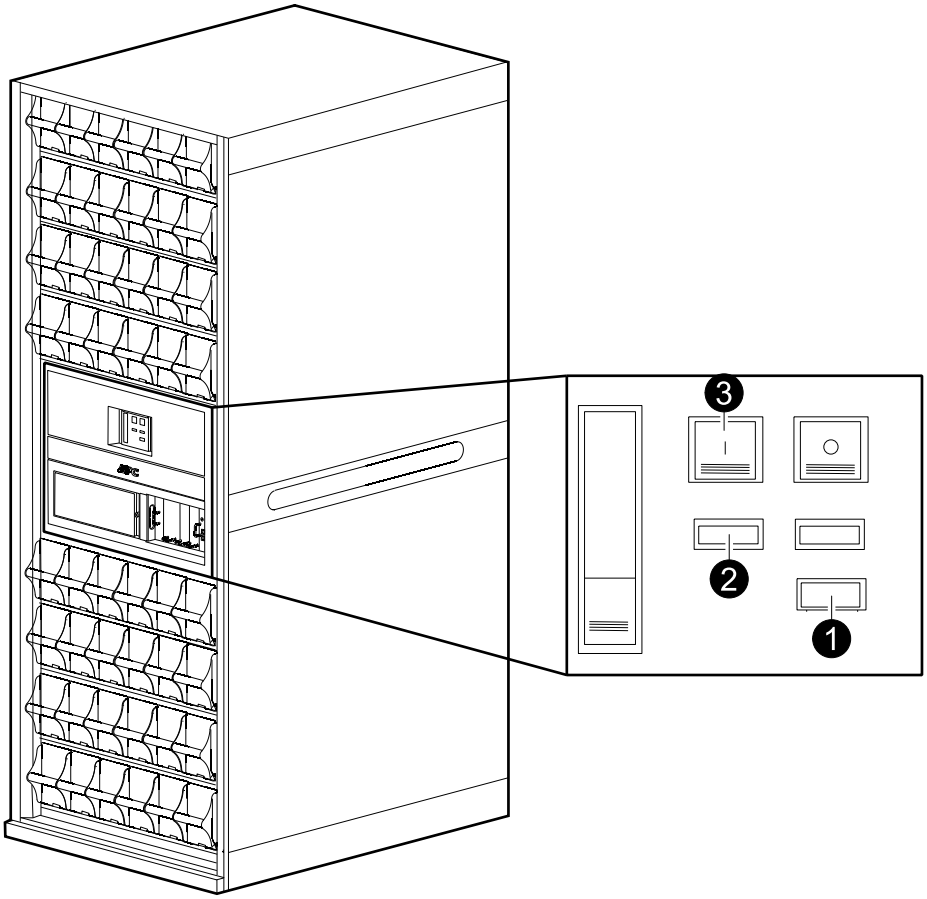
NOTE: The display will turn off when the UPS input breaker (Q1) is opened.

NOTE: Do not open the Q3 breaker when the system is in maintenance bypass operation, as it can result in a load drop.

Operate the Battery Breaker Manually

NOTE: The battery breaker is motorized with a shunt trip facility, and typically it is operated from the display interface. If manual operation of the breaker is required, follow the procedure below.

Front View of the Battery Cabinet



1. Turn the selector to Manual position.
2. Check the spring status:
   a. If CHARGED SPRING, go to step 3.
   b. If DISCHARGED, charge the spring by pressing the bottom part of the handle to release it and pumping the handle a few times until the spring status says CHARGED SPRING.
3. Push the green ON button to turn the breaker on. A red ON indication will show the breaker status.

Transfer from Normal to Requested Static Bypass Operation

NOTE: Following this procedure will transfer the entire system to requested static bypass.

1. From the home screen on the display select **UPS system > Operation > Normal Op. → Static Bypass**.
2. Tap **Initiate Transfer** to go to static bypass operation. The **Initiate Transfer** button is greyed out when the transfer is not available, when the bypass source is out of tolerance and there is more than 10° phase difference between the UPS output and the bypass source.



3. Check that the status has changed to **Requested Static Bypass** in the upper right corner.

Transfer from Requested Static Bypass to Normal Operation

NOTE: Following this procedure will transfer the entire system from requested static bypass to normal operation.

1. From the home screen on the display select **UPS System > Operation > Static Bypass -> Normal Op.**.
2. Tap **Initiate Transfer** to go to normal operation. The **Initiate Transfer** button is greyed out when transfer is not available.
3. Check that the status has changed to **Normal Operation** in the upper right corner.

Enable ECO Mode (Option)

NOTE: ECO mode is deactivated by default on installation. Contact Schneider Electric if this feature should be activated on your system.

1. From the home screen on the display select **UPS System > Operation > Enable ECO Mode**.
2. Select **Yes** to confirm.



Disable ECO Mode (Option)

1. From the home screen on the display select **UPS System > Operation > Disable ECO Mode**.
2. Select **Yes** to confirm.

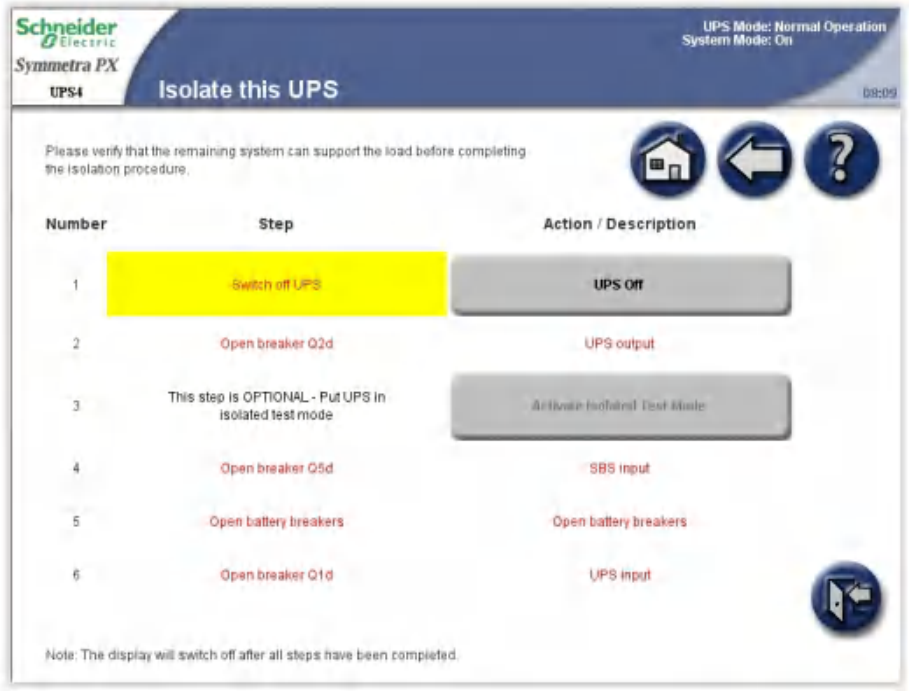


Isolate One UPS from the Parallel System

NOTE: Before you start this procedure, ensure that the remaining UPS units can supply the load.

NOTE: This procedure is only applicable to parallel systems.

1. From the home screen on the display select **UPS System > Operation > Isolate this UPS**.
2. Follow the steps which appear on the screen. Steps will appear in the order in which they need to be completed. A step will initially appear in red and then when it is completed, the step will change to green. The next step to be completed will be highlighted in red text and yellow background.



NOTE: The display will turn off when the UPS input breaker (Q1) is opened.

Start Up UPS and add to a Running Parallel System

1. Close the UPS input breaker (Q1). This will power up the UPS display.
2. When the display becomes active, verify that all UPSs are set up as a parallel system and that all UPSs are shown on the screen.
3. From the home screen on the display select **UPS System > Operation > System Start-up**.
4. Follow the steps which appear on the screen. Steps will appear in the order in which they need to be completed. A step will initially appear in red and then when it is completed, the step will change to green. The next step to be completed will be highlighted in red text and yellow background.



5. Check that the **UPS Mode** has changed to **Normal Operation** in the upper right corner.

Start a Virtual Display Application Session

- Supported browsers include Microsoft Internet Explorer® (IE) 7.x or higher, Google Chrome 18.x or higher and Mozilla Firefox® 3.6 or higher.
- Java version 1.6 or higher must be installed on the computer.
- Multiple Virtual Display Application (VDA) sessions with the same UPS display unit are permitted.

1. Open an internet browser window and enter the IP address or host name for the VDA.
2. When the password request screen opens, type in the user password and complete with **Enter**.

   NOTE: The password for the VDA is identical to the user passwords for the display.

Access a Configured Network Management Card

NOTE: The below procedure shows how to access the Network Management Card (NMC) from a web interface. It is also possible to use the following interfaces: Telnet and SSH, SNMP, FTP, and SCP. See the NMC Installation Manual for more information.

NOTE: Ensure that only one NMC in the entire system is set to synchronize time.

Use Microsoft Internet Explorer® (IE) 7.x or higher (on Windows operating systems only) or Mozilla® Firefox® 3.0.6 or higher (on all operating systems) to access the Web interface of the NMC. Other commonly available browsers may work but have not been fully tested by Schneider Electric.

You can use either of the following protocols when you use the Web interface:

- The HTTP protocol, which provides authentication by user name and password but no encryption.
- The HTTPS protocol, which provides extra security through Secure Socket Layer (SSL): encrypts user names, passwords, and data being transmitted, and authenticates NMCs by means of digital certificates.

NOTE: In v6.8.0 and higher, HTTP is disabled and HTTPS is enabled by default.

To access the web interface and configure the security of your device on the network:

1. Address the NMC by its IP address (or its DNS name, if a DNS name is configured).
2. Enter the user name and password.

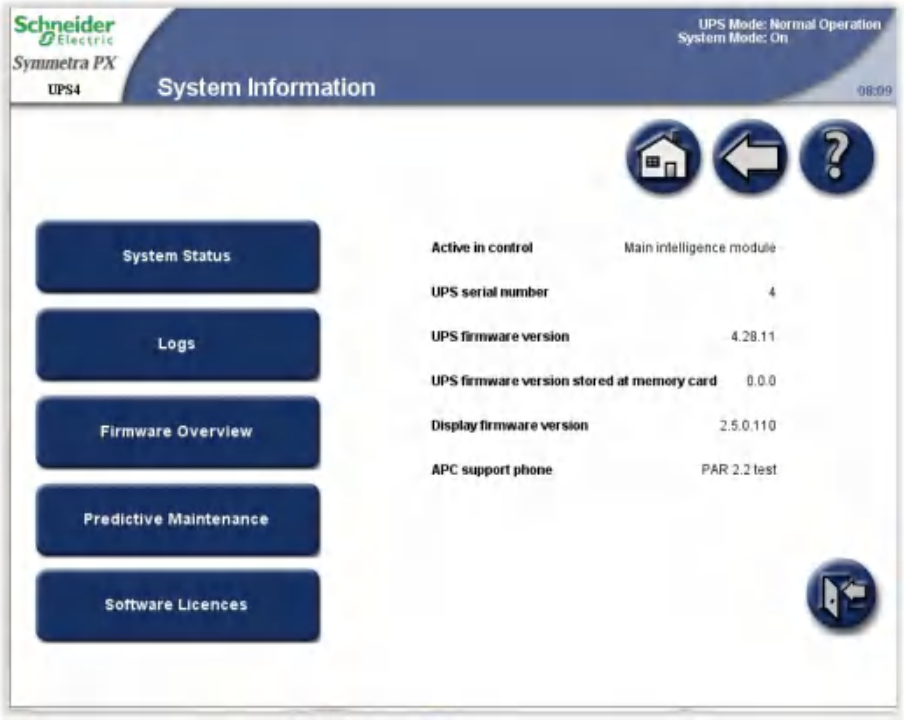
   NOTE: The default user name and password are apc at first login. In v6.8.0 and higher, you will be prompted to enter a new password after you log in.
3. To enable or disable the HTTP or HTTPS protocol, use the **Network** menu on the **Administration** tab, and select the **Access** option under the **Web** heading on the left navigation menu.

Maintenance

Access Predictive Maintenance Screens

NOTE: Tap the home button to go to the **UPS Summary** or **Parallel System Summary** screen.

1. From the home screen on the display select **UPS System > System Information**.

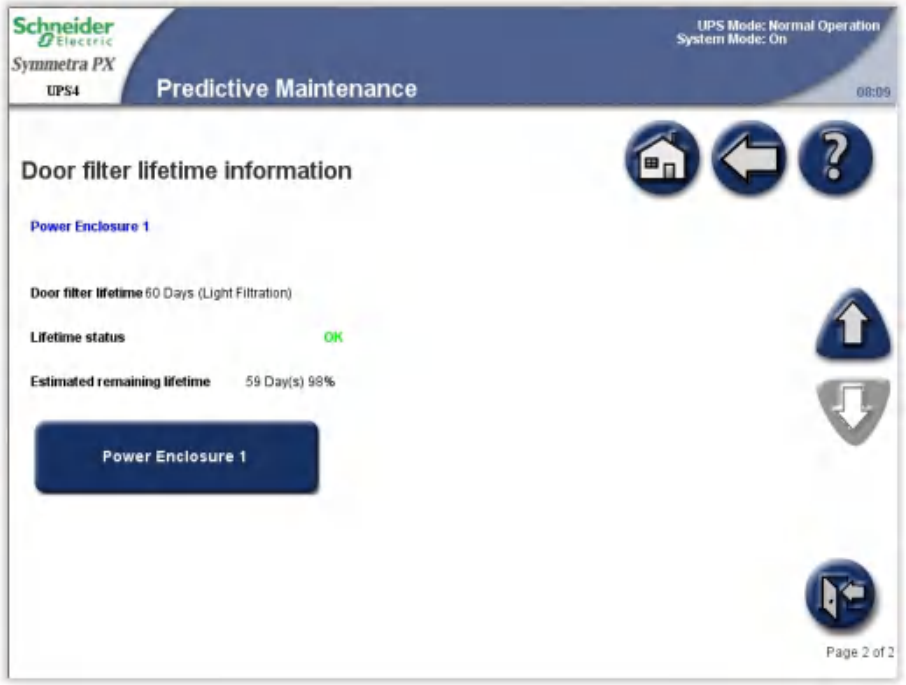


2. Tap **Predictive Maintenance** to access the **Predictive Maintenance** screens.

3. The first **Predictive Maintenance** screen shows the status and the estimated remaining lifetime of the power modules and their fans. The status can be **OK**, **Near end**, or **Exceeded**. Remember to order new spare parts or schedule a maintenance visit when the status is **Near end**.



4. Tap arrow down and go to the next **Predictive Maintenance** screen. This screen shows the estimated remaining lifetime of the door filters.



Determine if you need a Replacement Part

To determine if you need a replacement part, contact Schneider Electric and follow the procedure below so that the representative can assist you promptly:

1. In the event of an alarm condition, scroll through the alarm lists, record the information, and provide it to the representative.
2. Write down the serial number of the unit so that you will have it easily accessible when you contact Schneider Electric.
3. If possible, call Schneider Electric from a telephone that is within reach of the display so that you can gather and report additional information to the representative.
4. Be prepared to provide a detailed description of the problem. A representative will help you solve the problem over the telephone, if possible, or will assign a return material authorization (RMA) number to you. If a module is returned to Schneider Electric, this RMA number must be clearly printed on the outside of the package.
5. If the unit is within the warranty period and has been started up by Schneider Electric, repairs or replacements will be performed free of charge. If it is not within the warranty period, there will be a charge.
6. If the unit is covered by a Schneider Electric service contract, have the contract available to provide information to the representative.

Return Parts to Schneider Electric

To return an inoperable part to Schneider Electric, contact Schneider Electric customer support to obtain an RMA number.

Pack the part in the original shipping materials, and return it by insured, prepaid carrier. The customer support representative will provide the destination address. If you no longer have the original shipping materials, ask the representative about obtaining a new set.

- Pack the part properly to avoid damage in transit. Never use styrofoam beads or other loose packaging materials when shipping a part. The part may settle in transit and become damaged.
- Enclose a letter in the package with your name, RMA number, address, a copy of the sales receipt, description of the problem, a phone number, and a confirmation for payment (if necessary).

  NOTE: Damages sustained in transit are not covered under warranty.

Parts Replaceable by Skilled Personnel

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

ALL safety instructions in the Safety Manual shall be read, understood and followed.

Failure to follow these instructions will result in death or serious injury.

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Apply appropriate personal protective equipment (PPE) and follow safe work practices for all part replacement procedures.

Failure to follow these instructions will result in death or serious injury.

Part	Part number
Battery module	WSYBTU2
Power module	WSYPM25KD
Intelligence module	WSYMIM6
System power supply	WSYPSU2
External connection board	WSYEXCB
ID and relay controller board	WSYIDRC
External switchgear board	WSYEXSG2
Battery breaker motor PSU	WSYBBMOPSU2
Battery monitoring board	WSYBMB2
A-Bus communication board	WSYBATTCOM
Filter option (pads, frame and mounting hardware)	SYOPT005
Filter pad	0J-875–00093

Troubleshooting

Alarms

The color of the top of the screen switches from blue to red and an alarm button is shown when an alarm situation occurs.

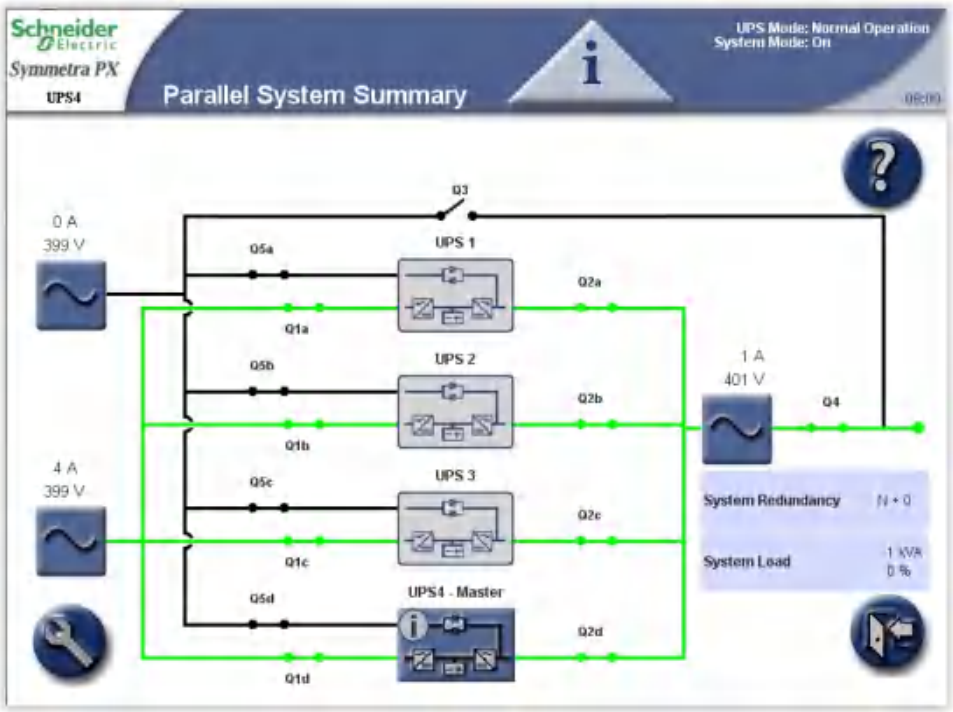
Alarm Button

Tap the alarm button to go to the **Active Alarms** screen that displays all active alarms, along with a corrective action for addressing each alarm. When you tap the alarm button, the alarm will automatically be silenced.

Alarm Levels

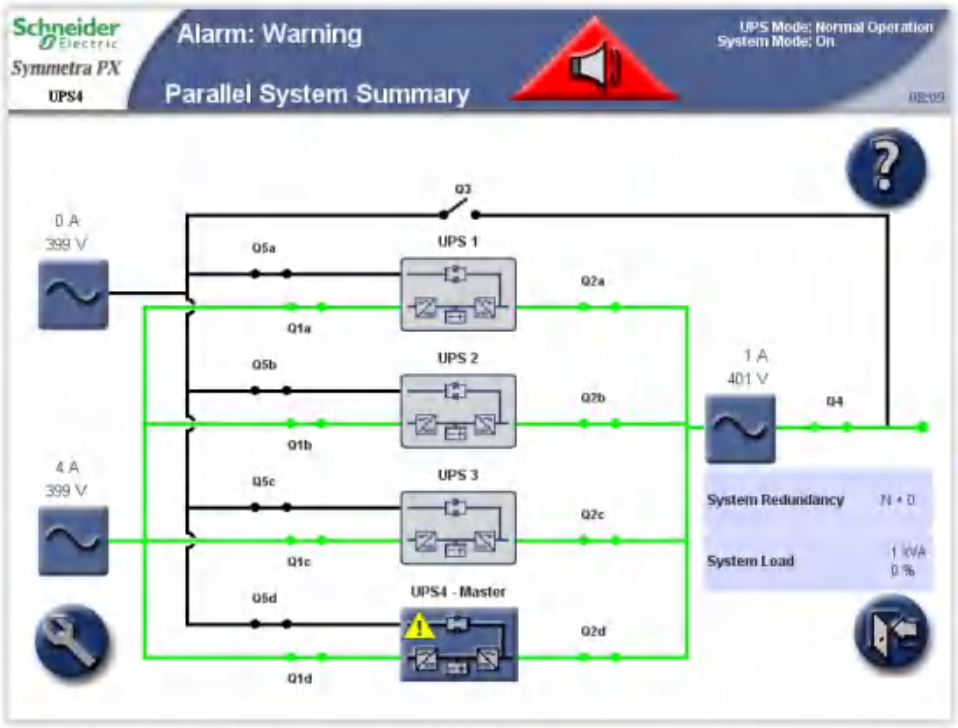
Info

Informational alarm. No immediate action required. Check the cause of the alarm as soon as possible.



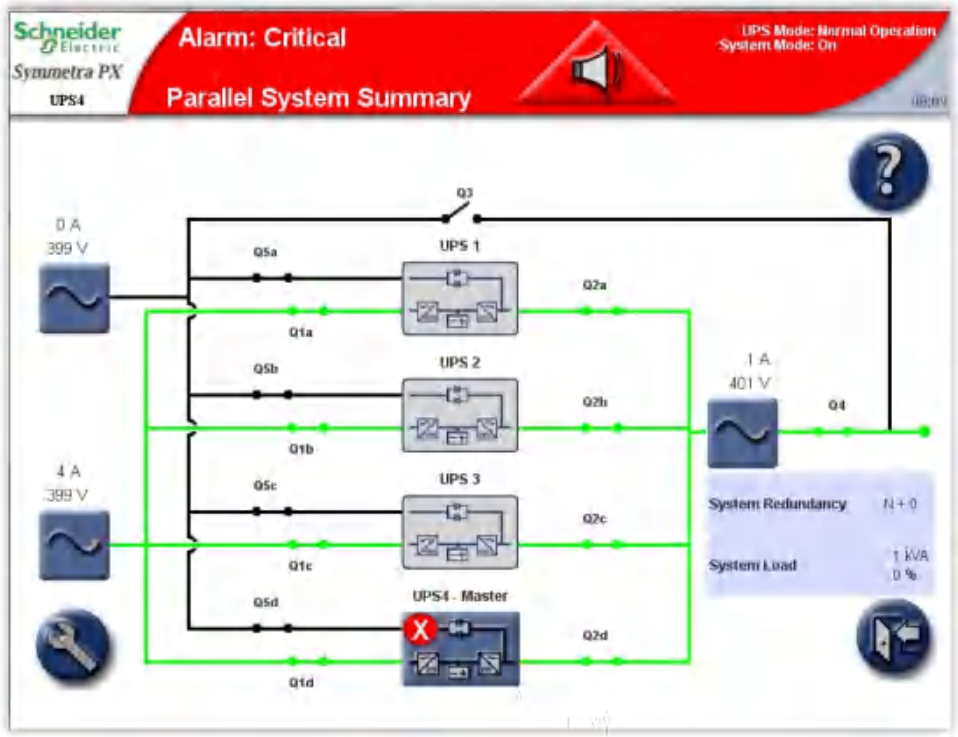
Warning

The load remains supported, but action must be taken. Call Schneider Electric for instructions.



Critical

Take immediate action. Call Schneider Electric for instructions.



View the Active Alarms

1. Tap the **Alarm** button on the top bar when an alarm situation occurs.



2. A list of the active alarms is shown on the screen.
   - Tap **Location** to see the location of the particular module.
   - Tap **Graph** to see voltages and currents at the time the alarm was generated.
   - The three alarm severity icons display at the top of the screen with numbers indicating how many times each severity type has occurred. Tap that icon or number to display the next alarm of that severity type on the screen. When you reach the final alarm, tapping the icon displays the first one of the same severity.

     NOTE: The **RIM Alarms** button gives access to active alarms for the redundant intelligence module, which is the intelligence module that is not in control at the time being.

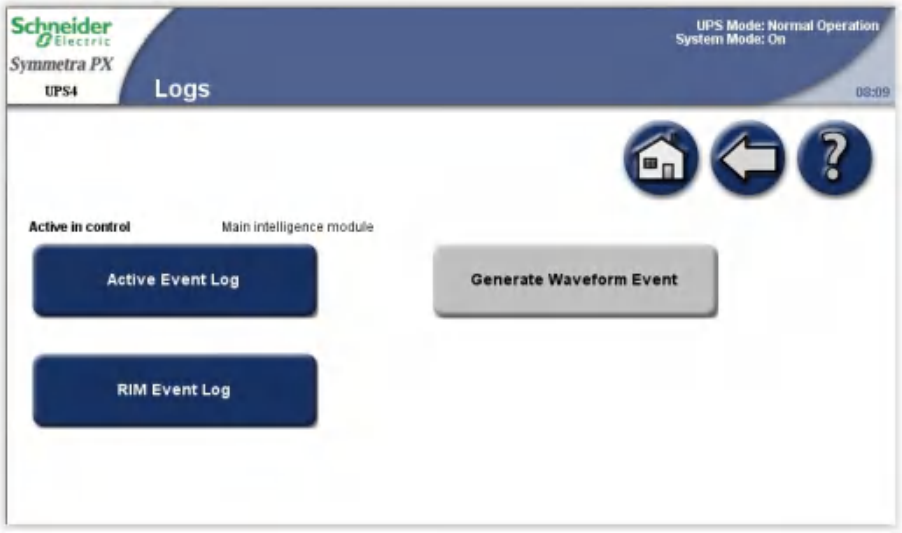


View the Logs

NOTE: Tap the home button to go to the **UPS Summary** or **Parallel System Summary** screen.

The **Event Log** screen can be accessed either by tapping **Event Log** on the **Active Alarms** screen see View the Active Alarms, page 51 or by following this procedure:

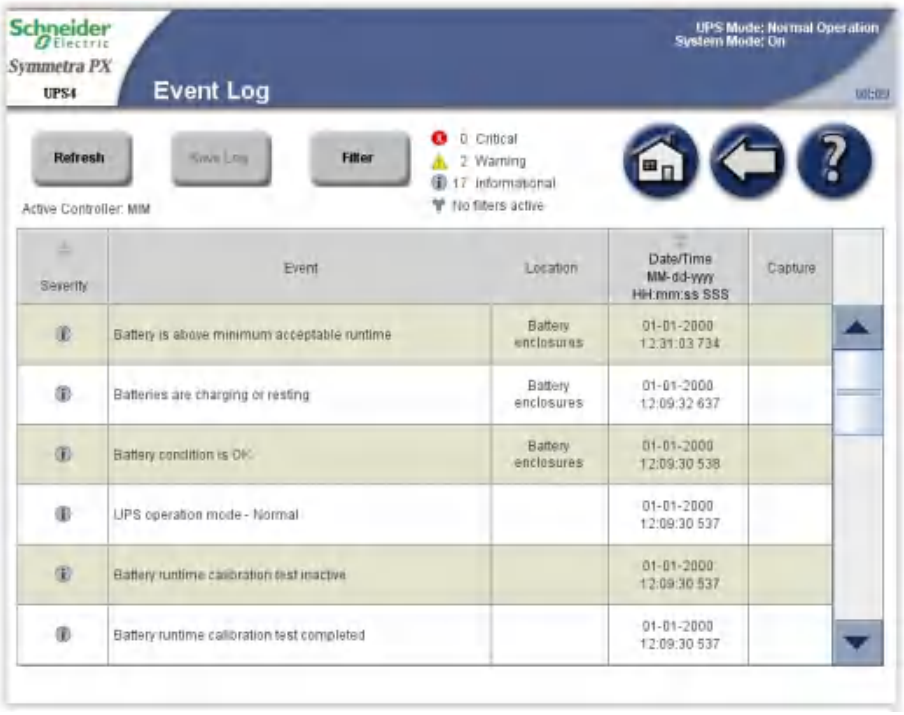
1. From the home screen on the display select **UPS system > System Information > Logs**.
2. **Active in control** indicates which intelligence module is in control of the system. Tap **Active Event Log** to view the records from the intelligence module in control, or tap the **RIM Event Log** to view the records from the intelligence module that is passive.



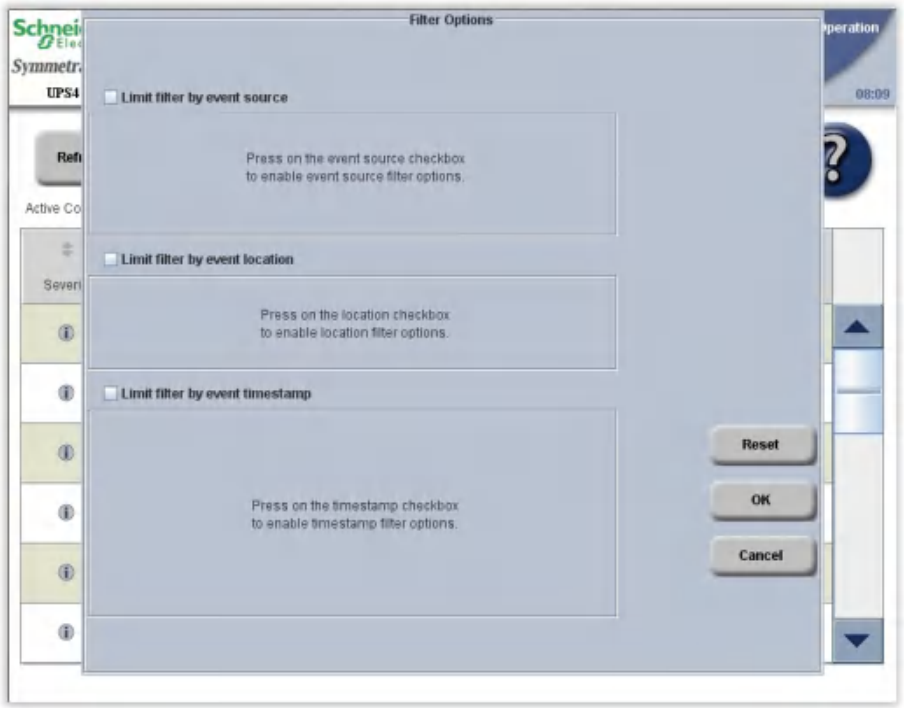
3. The **Recent Events** log contains a detailed record of the 32 latest events. Tap **Full Log** to see the 10000 latest events and access the **Save Log** button.



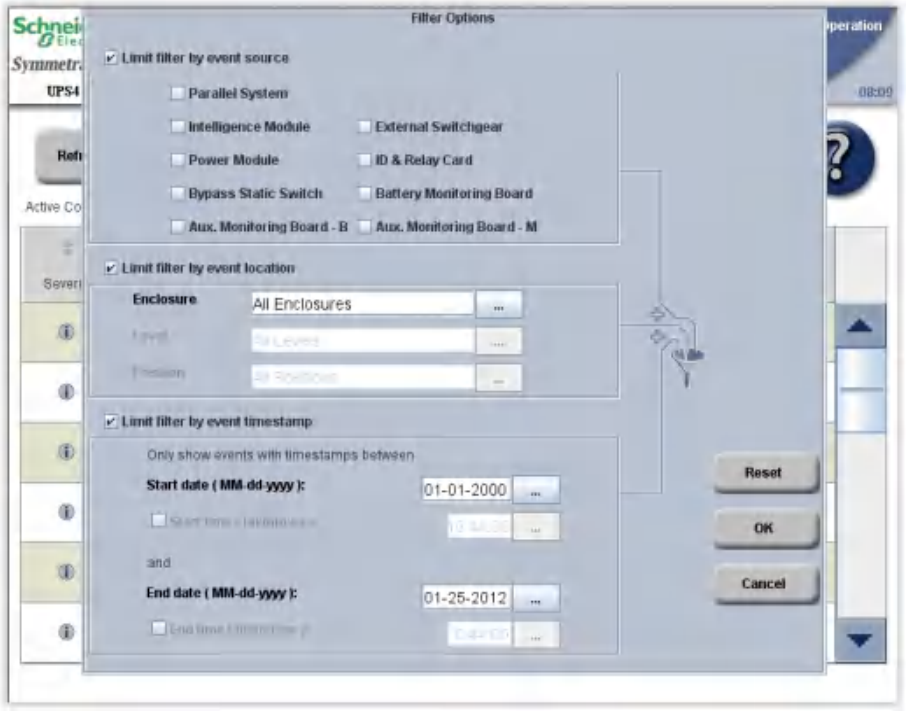
4. Tap **Filter** to filter the event log or go directly to step 9 to save the event log.



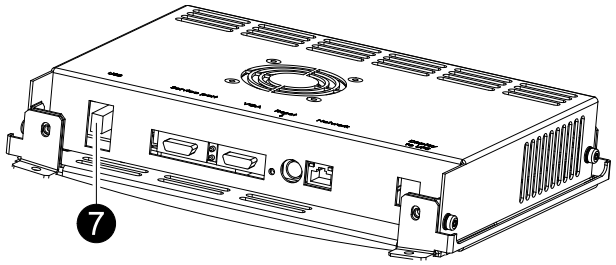
5. Select to filter the events by source, location and/or timestamp and tap **OK**.



6. Set your filter parameters and tap **OK** to initiate the filtering.



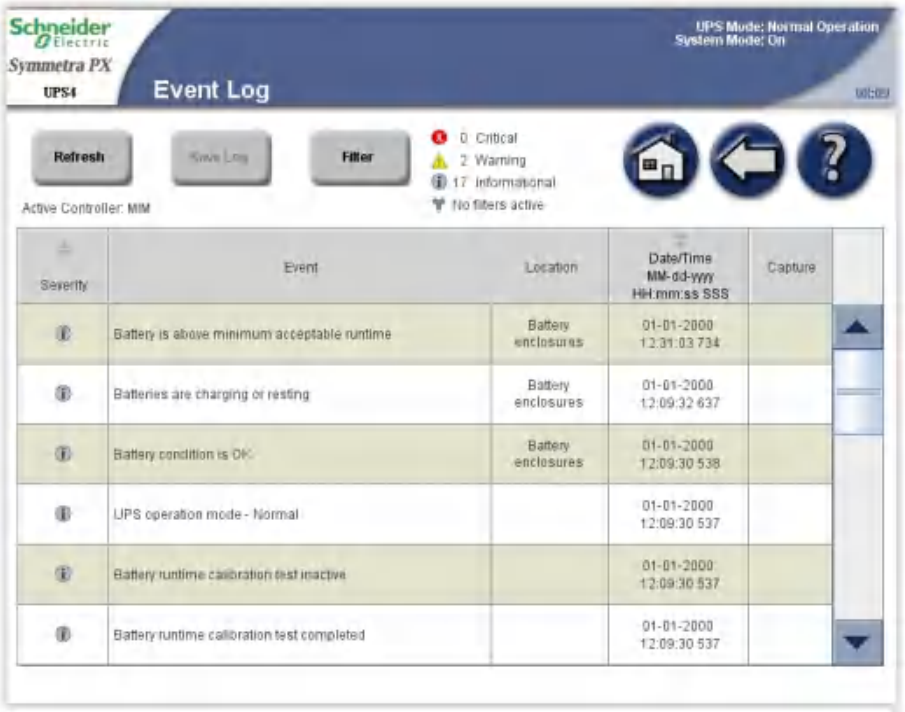
7. To save the log, open the front door of the I/O cabinet and insert a USB flash drive into the USB port on the display.



NOTE: Do not remove the USB flash drive before a dialog box on the display indicates that it is safe to remove the USB flash drive.

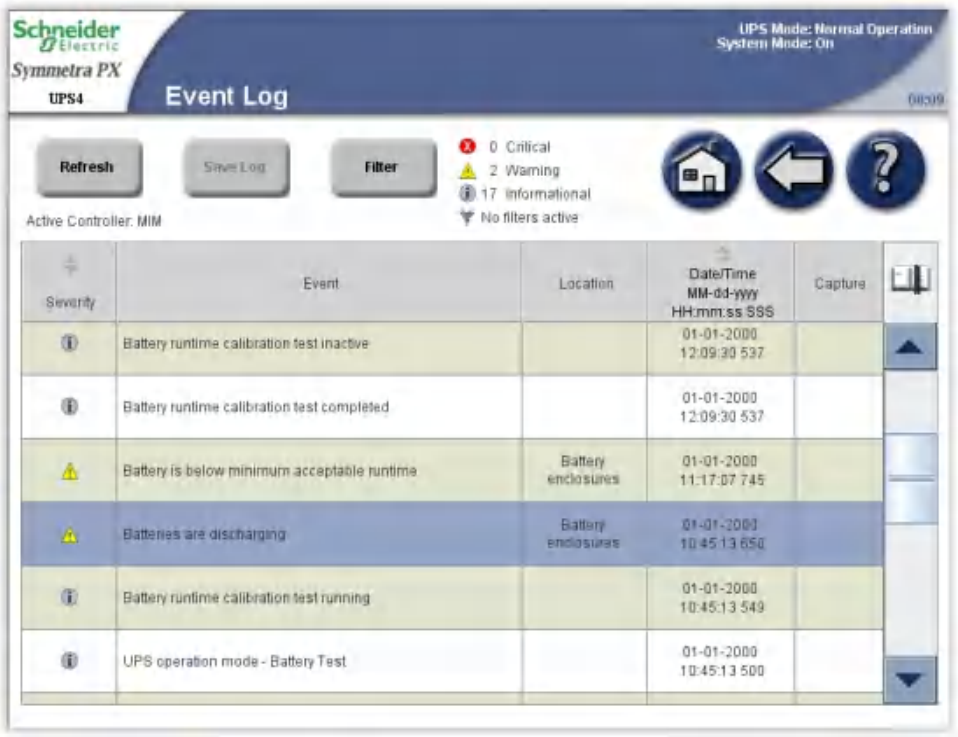
NOTE: USB flash drives from the following manufacturers have passed our tests: Cn Memory, SanDisk, Integral, A-Data, Pqi, PNY, OCZ, Verbatim, Lexar, TwinMOS, Freecom, Toshibia, Sony, LG, and Yifang Digital. If you experience problems using your USB flash drive, please try a different USB flash drive, preferably one from the above list.

8. Tap **Save Log**. The full event log is saved as a text and an HTML file. Associated event capture files are also saved. All files are saved in a single compressed zip-file to the USB flash drive.



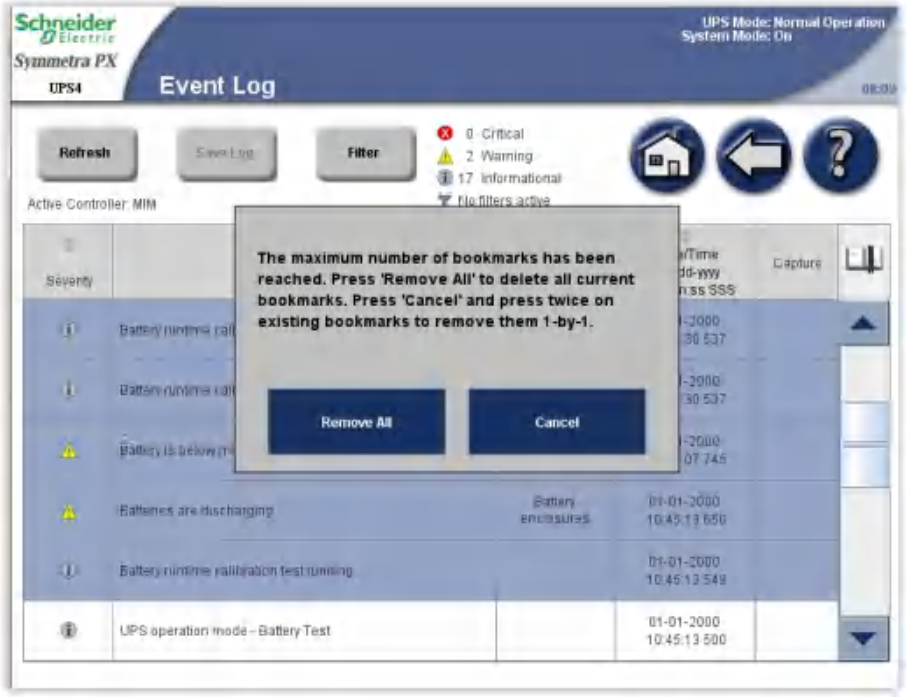
Bookmark an Entry in the Event Log

A maximum of five entries can be bookmarked in the system.



1. Double tap on an event in the event log to bookmark a log entry.
2. Bookmarked entries are highlighted in a darker background colour.
3. Tap the bookmark symbol to cycle through the bookmarks.

   If you try to bookmark a sixth entry in the event log, the following screen will be shown:

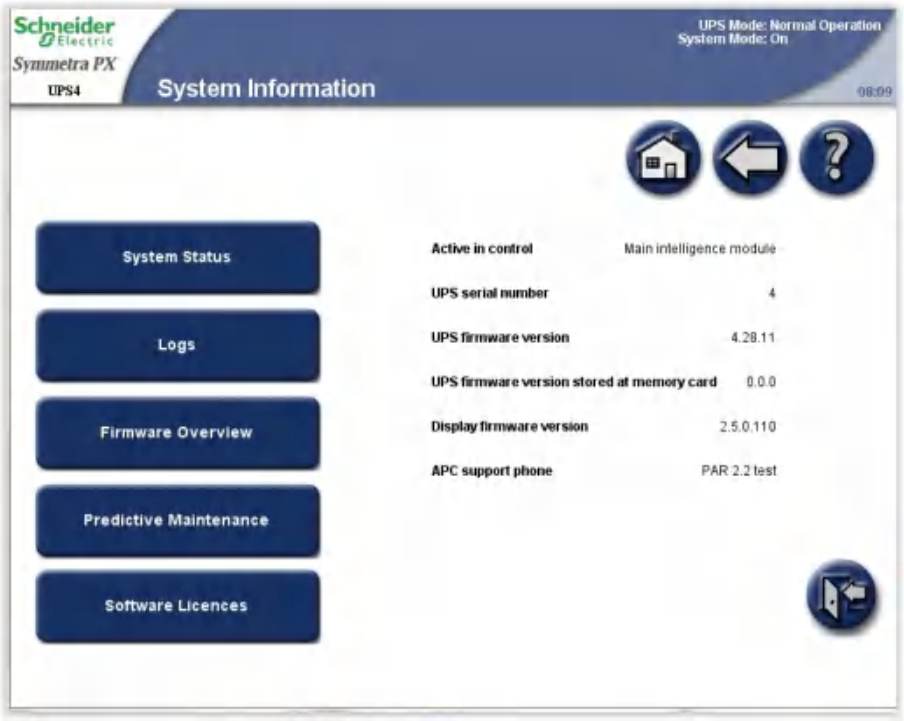


You can choose to remove all existing bookmarks by tapping **Remove All** or tapping **Cancel** to remove them one by one. Tap twice on the log entry to clear a bookmark.

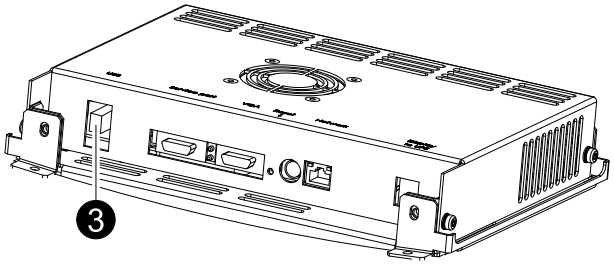
View and Save Information about Firmware Version

NOTE: Tap the home button to go to the **UPS Summary** or **Parallel System Summary** screen.

1. From the home screen on the display select **UPS system > System Information**.



2. Verify that the **UPS firmware version** and **UPS firmware version stored at memory card** are identical. Tap **Firmware Overview**.
3. To save the firmware version list, open the front door of the I/O cabinet and insert a USB flash drive into the USB port on the display.



NOTE: Do not remove the USB flash drive before a dialog box on the display indicates that it is safe to remove the USB flash drive.

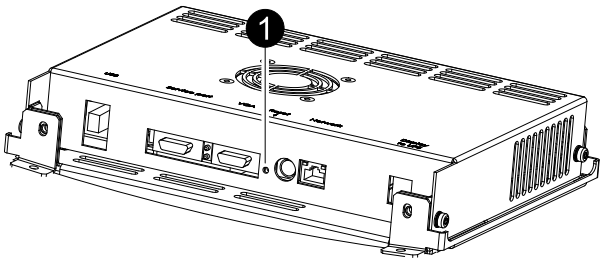
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4. Tap **Save FW* Versions List** to save the firmware version list as an HTML file. Tap the button in the location column to open the **Module Status Details** screen for the particular module.



Reboot the Display

1. Open the front door of the I/O cabinet and press the reboot button at the bottom of the display to reboot the display.



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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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