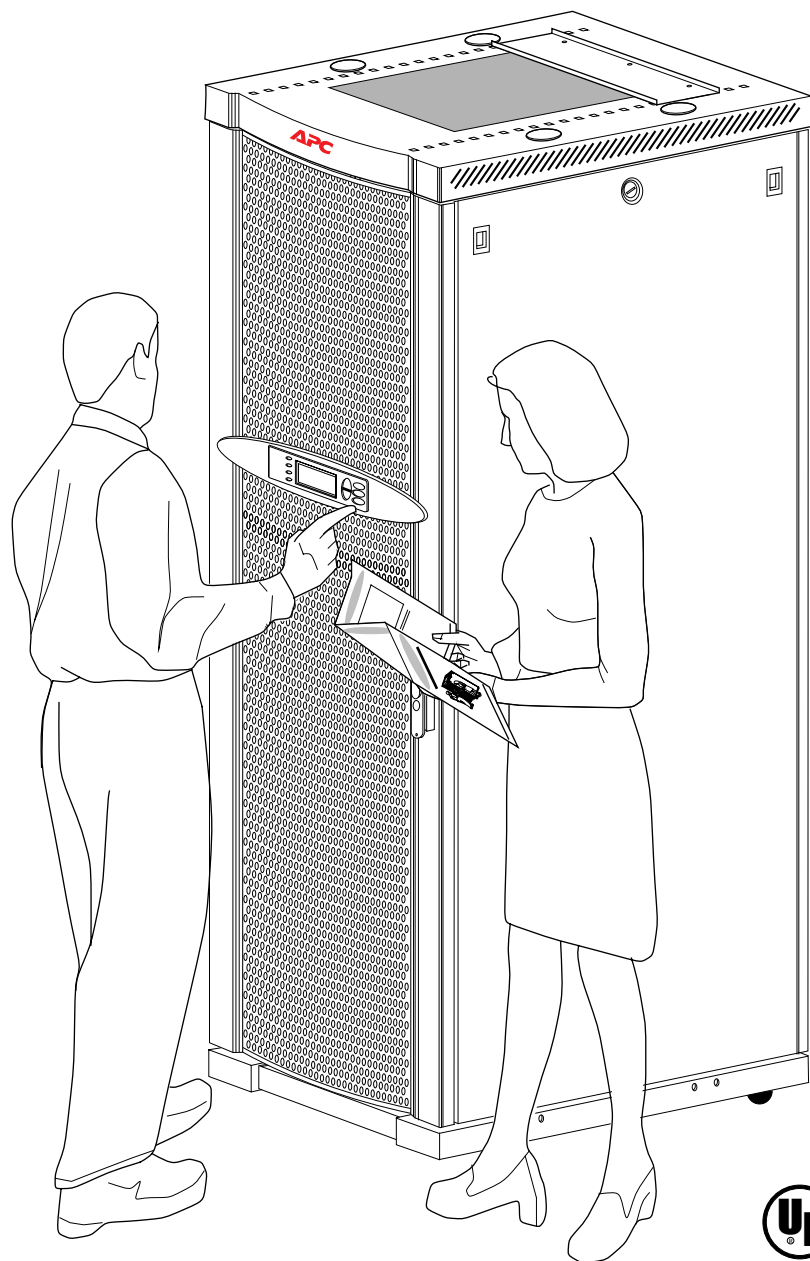




# Symmetra® PX

## 10 - 40 kW, 208 V

### Basic Operation Guide



# 1 IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS

This guide contains important instructions for the UPS that should be followed during the installation and maintenance of the UPS and batteries.



**WARNING!**  
Risk of Electric Shock



**WARNING!**  
Only trained persons familiar with the construction and operation of the equipment, and the electrical and mechanical hazards involved, may install and remove system components.



**CAUTION!**  
Read this important information.



Indicates that a switch or current protection device is in the “ON” position.



Indicates that a switch is in the “OFF” position.



Indicates that a switch is in the “STAND-BY” position.

- The Symmetra contains an internal energy source. Hazardous voltage can be present even when disconnected from the utility power source. Follow Total Power Off Procedure to completely de-energize system (Appendix B).
- Remove all conductive jewelry such as chains, watches, and rings before handling the Battery Units.
- Battery Units do not contain serviceable parts. Do not open.
- Do not dispose Battery Units in a fire for they may explode. Do not mutilate Battery Units for released electrolyte may be toxic and is harmful to the skin and eyes.
- For configurations including customer-supplied external batteries, refer to manufacturer's battery installation and maintenance instructions.

|                                             |                     |                             |                              |                      |
|---------------------------------------------|---------------------|-----------------------------|------------------------------|----------------------|
|                                             |                     |                             |                              |                      |
| Do not lift heavy loads without assistance. | <40 lb.<br>(<18 kg) | 40 - 70 lb.<br>(18 - 32 kg) | 70 - 120 lb.<br>(32 - 54 kg) | >120 lb.<br>(>54 kg) |

Figure 1

**UPS (empty)**  
600 lb. (275 kg)

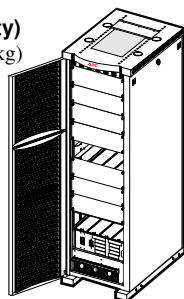


Figure 2

**POWER MODULE**  
60 lb. (26 kg)

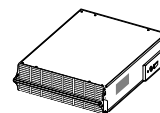


Figure 3

**BATTERY MODULE**  
4 x 50 lb. (4 x 23 kg)

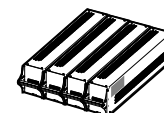


Figure 4



# 2 Introduction

After the Symmetra has been electrically wired, it is ready for start-up. This guide will allow you to quickly start up the UPS. It contains information on Safety, System Components, Securing the UPS, Module Installation, Network Cable Installation, Start-Up Procedure, and Basic Troubleshooting. For advanced operation please refer to the Product Manual CD shipped with the unit, or to our website [www.apc.com](http://www.apc.com).

# 3 System Components

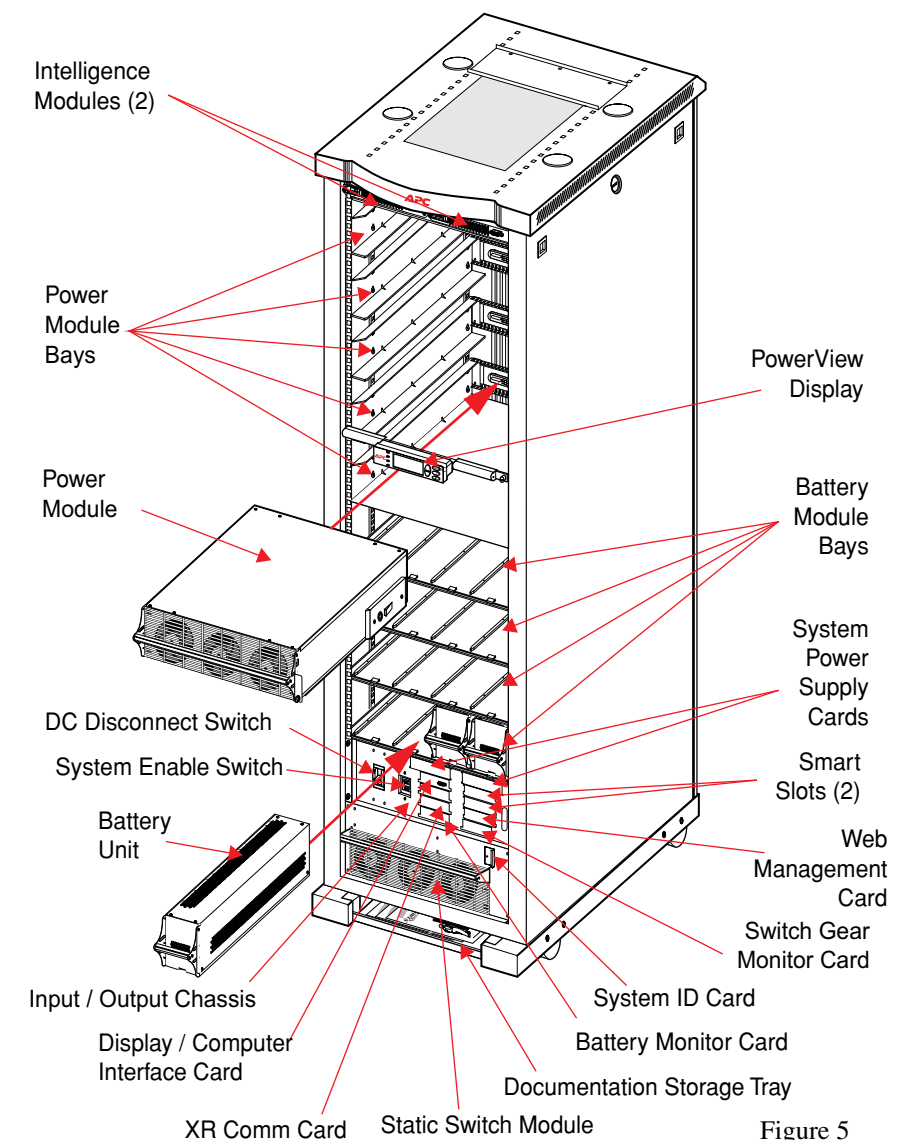


Figure 5

## 4 PowerView Display

The PowerView is the Symmetra user control interface used to configure the functionality, monitor the system, set alarm thresholds, and to provide audible and visual alarms.

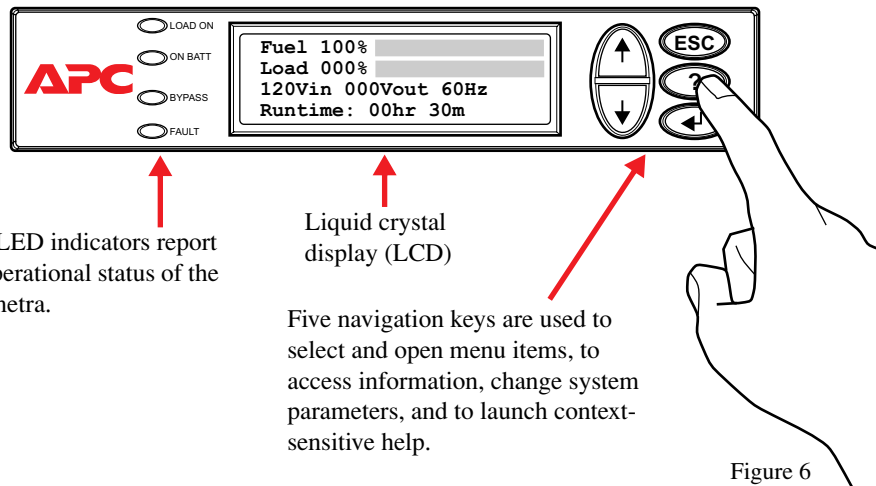


Figure 6

Press **ESC** (ESC) until you get to the **Top Level Status Screen**, which provides you with basic system status information.

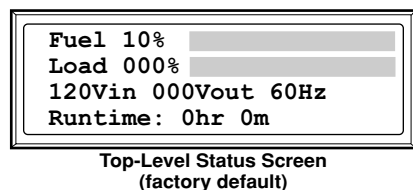


Figure 7

Press **Enter** (Enter) to open the **Top-Level Menu** screen. This screen is the **launching pad** to command, configure, and monitor the system.

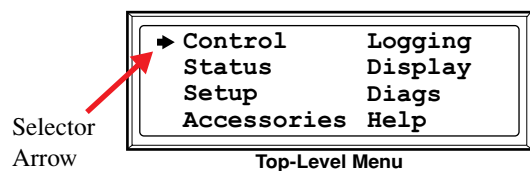


Figure 8

Press **Up and Down** (Up/Down) to navigate the selector arrow and view all sub-menu screens.

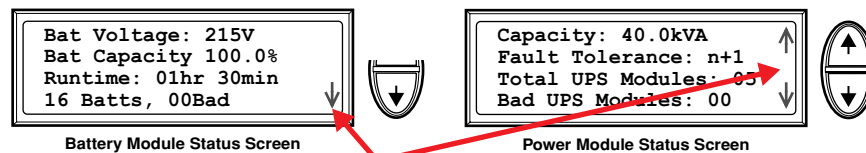


Figure 9

Press **Up, Down** (Up/Down), and **Enter** (Enter) to move input arrow to select and enter information.

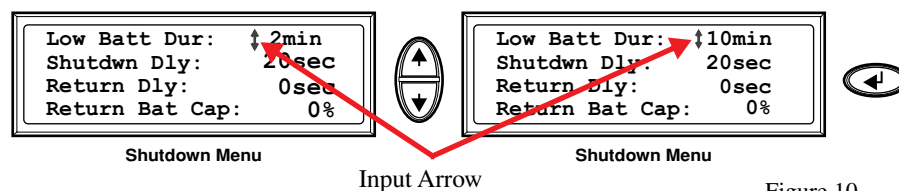


Figure 10

## 5 Basic Operation

### Control Functions

#### Turn load on/off:



Figure 11

#### Turn into/out of bypass:



Figure 12

**CAUTION!**  
This function terminates battery back-up.

### Status Functions

#### Verify general module status:



Figure 13

### Verify voltage on all phases:



Figure 14

### Verify battery voltage/capacity:



Figure 15

### Set-up Functions

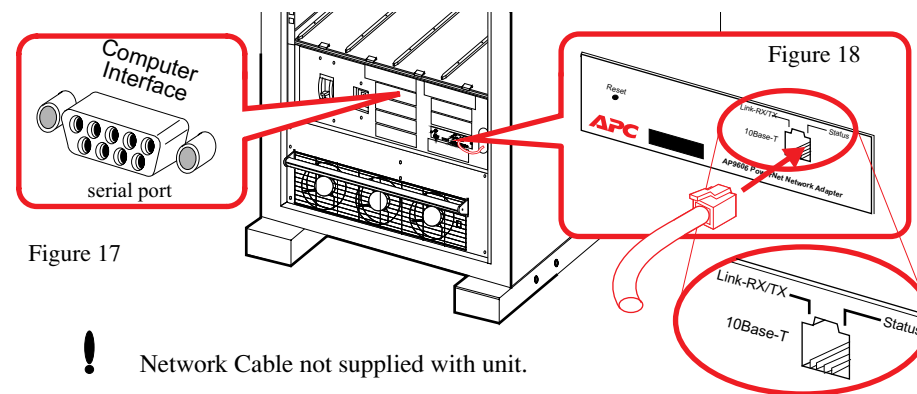
Display parameters are set to factory defaults. To change these settings refer to Product Manual CD.

### Changing factory default settings:



Figure 16

## 6 Network Connection / APC Web Management Card

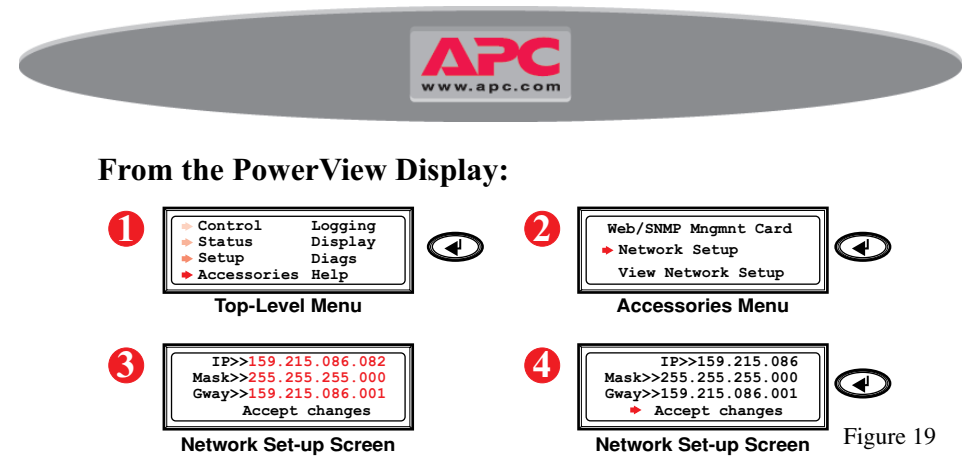


**!** Network Cable not supplied with unit.

### Quick Configuration

You must configure three TCP/IP settings before the Management Card can operate on a network:

- IP address
- Subnet mask
- Default Gateway



**Note:** If a Default Gateway is unavailable, use the IP address of a computer located on the same subnet as the Management Card that is usually running. The Management Card uses the Default Gateway to test the network when traffic is very light. See “Watchdog Features” in the “Introduction” of the *Network Management Card User’s Guide CD* (.\\doc\\usrguide.pdf) for more information about the watchdog role of the Default Gateway. The Management Card User’s Guide CD is located in the documentation tray.

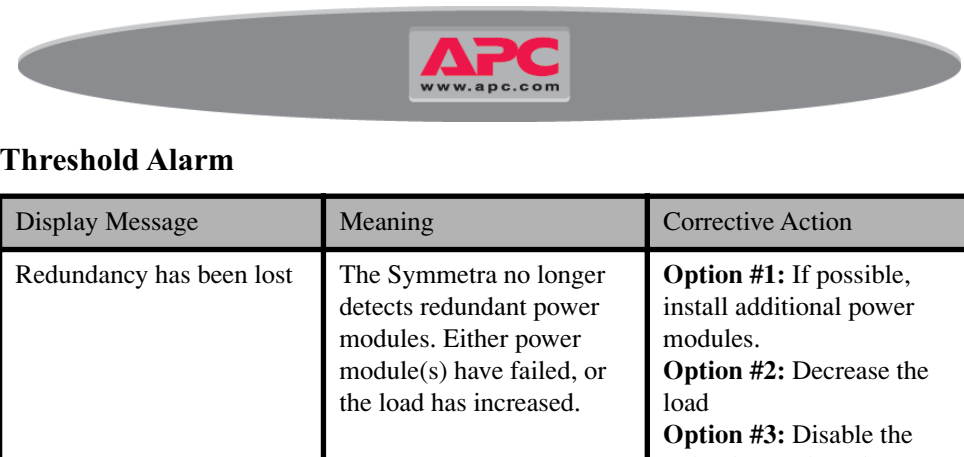
## 7 Basic Troubleshooting

This Basic Troubleshooting section will allow you to solve most problems using the PowerView display.

! If a problem is reported, ensure that the system component in question is correctly installed (refer to Module Replacement, Section 8).

### General Status

| Display Message                        | Meaning                                                                                                                                                                  | Corrective Action                                                                                                                                                                                                                                                          |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Freq outside configured range    | The input frequency to the Symmetra is outside the configured range. The output frequency will not synchronize with the input frequency. Normal bypass is not available. | <b>Option #1:</b> Improve the frequency of the incoming voltage.<br><b>Option #2:</b> Widen range of acceptable incoming frequency with the PowerView. (Path: Startup-Setup-Output Freq Select.<br><b>Option #3:</b> Proceed with startup. Normal bypass is not available. |
| AC adequate for UPS but not for bypass | The Symmetra will function online with the input voltage, but in the event that bypass is required, the input voltage is not adequate to power the load equipment.       | <b>Option #1:</b> Improve the incoming voltage.<br><b>Option #2:</b> Proceed with startup. Normal bypass is not available.                                                                                                                                                 |



### Threshold Alarm

| Display Message                  | Meaning                                                                                                                                                       | Corrective Action                                                                                                                                                                                                                                                                                            |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Redundancy has been lost         | The Symmetra no longer detects redundant power modules. Either power module(s) have failed, or the load has increased.                                        | <b>Option #1:</b> If possible, install additional power modules.<br><b>Option #2:</b> Decrease the load<br><b>Option #3:</b> Disable the redundancy alarm by setting redundancy to zero. (Path: Startup-Setup-Alarms-Redundancy-select zero)                                                                 |
| Runtime is below alarm threshold | The predicted runtime is lower than the user-specified minimum runtime alarm threshold. Either the battery capacity has decreased, or the load has increased. | <b>Option #1:</b> Allow the battery modules to recharge.<br><b>Option #2:</b> If possible, increase the number of battery modules.<br><b>Option #3:</b> Decrease the load.<br><b>Option #4:</b> Use the display to decrease the minimum runtime alarm threshold (Path: Startup-Setup-Alarms-Runtime-select). |

### Bypass

| Display Message                                 | Meaning                                                                                                                                                                                   | Corrective Action                                                                                                                                                                                  |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bypass is not in range (either freq or voltage) | The frequency and/or voltage is out of acceptable range for bypass. This message occurs when the Symmetra is online, and indicates that the bypass mode may not be available if required. | <b>Option #1:</b> Decrease the sensitivity to input frequency. (Path: Startup-Setup-OutputFreq-select).<br><b>Option #2:</b> Correct input voltage to provide acceptable voltage and/or frequency. |

### General Fault

| Display Message      | Meaning                                                | Corrective Action                                   |
|----------------------|--------------------------------------------------------|-----------------------------------------------------|
| Need Bat Replacement | One or more battery modules are in need of replacement | Refer to Module Replacement Section for procedures. |

|                                                 |                                                                                                                                   |                                                                                      |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| The Redundant Intelligence Module is in control | The main intelligence module has failed, and the redundant intelligence module is functioning as the primary intelligence module. | Replace the intelligence module. Refer to Module Replacement Section for procedures. |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|

If the problem persists, note UPS model #, serial #, and date purchased before calling Tech Support at: 1 (800) 800 4272.

For advanced configuration, refer to Product Manual CD (shipped with unit) and/or our website @ [www.apc.com](http://www.apc.com).

## 8 Modular Component Replacement



**WARNING!**  
Only trained persons familiar with the construction and operation of the equipment, and the electrical and mechanical hazards involved, may install and remove system components.

### Replacing Intelligence Modules

Loosen the 2 Phillips screws at both sides of the module (top of module). Push down the small tab on the left side of the module to de-activate the module. Using the handle, carefully pull out the module. Reverse procedures for installation. Display shows message saying it has registered the new module.

! One intelligence module can be replaced without interrupting power to the connected equipment provided another functioning intelligence module is installed.

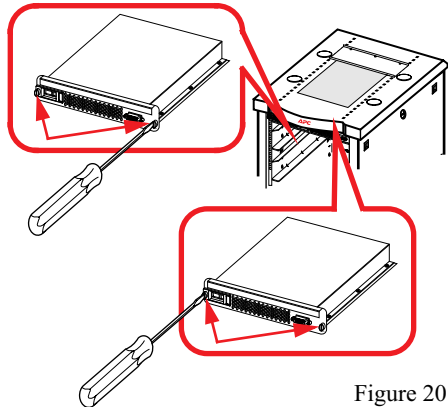


Figure 20

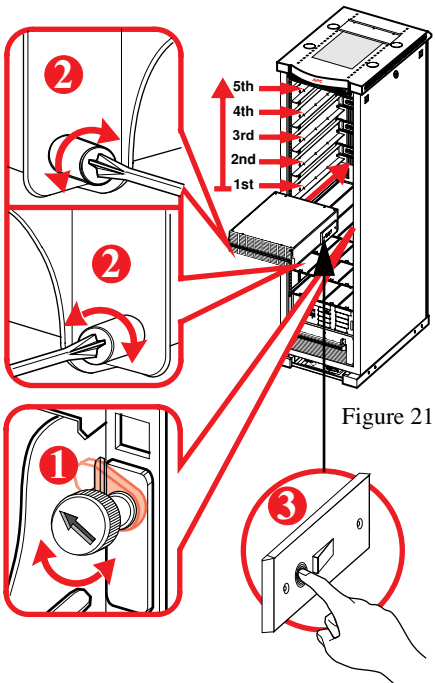




Replacing Power Modules



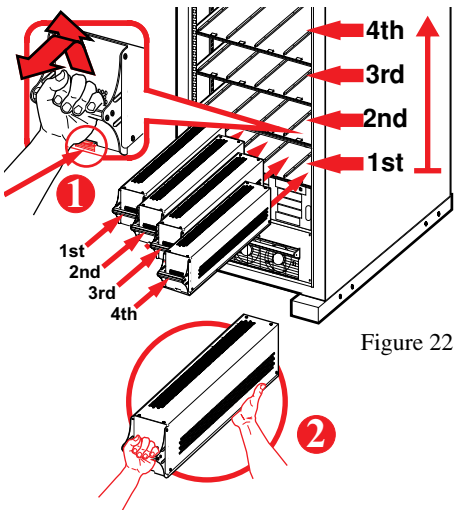
- 1 To de-activate the module, turn Locking Latch (with arrow pointing towards the module) counter-clockwise until it points downwards.
  - 2 Unscrew spring-activated knobs on both sides of the module until they pop out. Standing on either side of the UPS, 2 people can now pull the module almost free of the UPS (the lock mechanism prevents the module from being pulled clear of the UPS). With the module still resting in the UPS, release the lock by pushing the black plastic tab on either side of the module.
  - 3 Pull out the module. Reverse procedures for installation. Display shows message saying it has registered the new module.
- ! Power Module will not start unless Locking Latch is engaged.



Replacing Battery Units

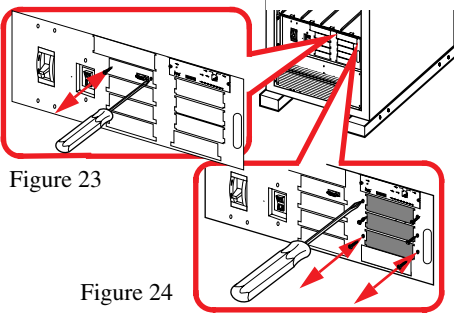


- 1 Holding the handle, gently push the Battery Unit upwards and pull it halfway out of the UPS. A lock mechanism prevents it from being pulled all the way out. To release it from the lock mechanism, gently push the battery upwards again and pull out while supporting the battery with the other hand.
- 2 Reverse procedure for installation. Display shows message saying it has registered the new unit.



Replacing Cards

Loosen the 2 Phillips screws at both sides of the card. Carefully pull out the card. Reverse procedures for installation. Display shows message saying it has registered the new card.



Replacement Parts and Numbers

| Part                                  | No        | Part                                | No                              |
|---------------------------------------|-----------|-------------------------------------|---------------------------------|
| 40kW Enclosure Only                   | SYCF40KF  | Display and Computer Interface Card | SYDCI                           |
| 10kW Power Module                     | SYPM10KF  | Battery Monitoring Card             | SYCBTMON                        |
| Battery Module                        | SYBT4     | Switch Gear Monitoring Card         | SYCSGMON                        |
| Battery Unit                          | SYBTU1    | System ID Card                      | SYCSYSID                        |
| Intelligence Module                   | SYMIM4    | XR Communication Card               | SYCXRCOM                        |
| Symmetra 3-Phase Static Switch Module | SYSSW40KF | Web Card SNMP                       | AP9606 Web/Management Slot Card |
| System Power Supply Card              | SYCSPS    | XR Battery Enclosure only           | SYCFXR8                         |

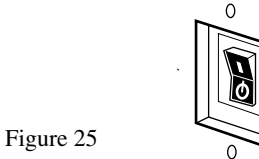
- CAUTION!**  
A battery can present a risk of electric shock and high short-circuit current. The following precautions should be observed when working on batteries:
- Remove watches, rings or other metal objects
  - Use tools with insulated handles
  - Wear rubber gloves and boots
  - Do not lay tools or metal parts on top of batteries

When replacing batteries, replace with same number and type as installed. For customer-supplied external batteries, see manufacturer's installation and safety instructions.

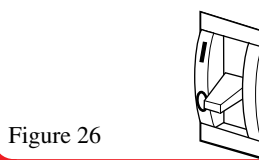


Appendix A: Total Power OFF Procedure

- 1 Set System Enable Switch to the STAND-BY Position



- 2 Set DC Disconnect to the OFF Position



- 3 Disconnect ALL Battery Units by removing or pulling out to Red Disconnect Line

Figure 27

- 4 Set Utility Power to the "OFF" or "LOCKED OUT" position.

Figure 28

