



SuperCap

Uninterruptible Power System

USER MANUAL
FOR MODELS:
1000VA and 3000VA

TABLE OF CONTENTS

Introduction	4
System Safety Checklist	5
Future Servicing	7
Section 1: Glossary	8
Section 2: Description of your Supercap System	9
Operation Modes	10
Application Backup Time Considerations	12
Section 3: Installation	13
System Wiring Diagram 1kVA	15
System Wiring Diagram 3kVA	16
Section 4: Operation - LCD Interface	17
Operation	18
The Front Panel	19
Section 5: RS-232 Serial Communication	22
Section 6: Connecting to the Optional SNMP card using the Netility Software	23
Section 7: Understanding and Using the Optional NetAgent SNMP Card	27
Section 8: Optional AS-400 Dry Contact Card	45
Section 9: Optional Power Monitoring & System Management Software	47
Section 10: Frequently Asked Questions	48
Warranty	53
Return Instructions	54

Welcome to the New Generation of Green, Clean Maintenance-Free Uninterruptible Power Supplies

Marathon Power's first battery-less Uninterruptible Power System is a state-of-the-art, double-conversion UPS that uses Supercapacitor technology for energy storage instead of conventional batteries.

The system is designed to provide short-term backup to sensitive loads in applications that either need to ride-through voltage sags and momentary power outages or simply bridge the startup of a generator.

Since most power interruptions (87%) last no more than 1 second according to the Electric Power research Institute, there is seldom a need for long-term storage technology such as batteries. It is targeted specifically at applications that are sensitive to power disturbances that last from a few cycles to around one minute.

This most 'Green' of all UPS technologies offers numerous advantages over conventional UPS's and other energy storage technologies such as flywheels and fuel cells. There is no battery replacement, system maintenance, hazard waste disposal or component recycling.

The system consists of 2 parts – the UPS Electronics module and the Energy Storage module.

The Electronics module is configured as a true-online double conversion UPS. This topology is ideal for the most critical applications where the best level of power protection is required. Connected equipment is not only immune to the slightest power fluctuations, but also other power anomalies such as spikes, surges, sags, swells, harmonics and frequency variations.

The unit features a wide input voltage tolerance, tight output voltage regulation and very low harmonic distortion. Twin microprocessors aid redundancy and an automatic bypass switch ensures that power to the load is not interrupted in the event of a system fault.

The Energy Storage module is a self-contained unit that consists of the Supercapacitors and their associated electronics. The module can be charged independently of the system.

Regardless of model, the systems are designed and configured to provide a backup time of approximately 15 seconds at full load and 40 seconds at half load. Longer run times are available using additional energy storage modules or different Supercapacitor combinations. Recharge time is approximately 2 to 3 minutes.

The system features a user-friendly, multifunction LCD control panel that indicates system status and allows parameter adjustments to be made. Communication options include power-monitoring & system management software and Ethernet capability.

System Safety Checklist

The instructions contained within this safety manual are extremely important and should be closely followed at all times during installation and follow-up maintenance of the Electronic Storage Module and/or The Energy Storage Module.



1. DANGER: (UPS with Internal Supercapacitors): Risk of electric shock - Hazardous live parts inside this unit may be energized from the Supercapacitor supply even when the input AC power is disconnected.
2. DANGER: (No User Serviceable Parts): Risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
3. DANGER: (Non-isolated Supercapacitor Supply): Risk of electric shock, Supercapacitor circuit is not isolated from AC input; hazardous voltage may exist between battery terminals and ground. Test before touching.
4. CAUTION: Intended for installation in a controlled environment.
5. DANGER: Do not dispose of Supercapacitors in a fire, as they may explode.
6. DANGER: Do not open or damage the Supercapacitors, chemicals may be released which is harmful to the skin and eyes.
7. DANGER: Electronic and Energy Storage Modules unit can present a risk of electric shock and high short circuit current.
8. The following precautions should be taken when working with Supercapacitors:
 - a. Remove watches, rings and other jewelry or metal objects.
 - b. Use only tools with insulated handles.
 - c. Wear rubber gloves and boots.
 - d. Do not lay tools or metal parts on top of unit.
 - e. Disconnect charging source prior to connecting or disconnecting Supercap terminals.
9. To reduce the risk of electric shock, disconnect the UPS from the AC input power supply before installing a communication interface cable. Reconnect the power cord only after communication interconnections have been made.
10. DANGER: (1000VA Models): To reduce risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit over-current protection in accordance with the National Electric Code, ANSI/NFPA 70”.
11. DANGER: (3000VA Models): To reduce risk of fire, connect only to a circuit provided with 30 amperes maximum branch circuit over-current protection in accordance with the National Electric Code, ANSI/NFPA 70”.



The unit contains dangerous voltage levels. If the UPS is on, but not connected to an AC power supply, the unit's outlets may still be energized with voltage due to the presence of an internal power source, i.e. the battery or Supercapacitor Energy Storage Unit.

The unit should be installed indoors in an area free of electrically-conductive contaminants. The unit should be installed in a temperature and humidity controlled environment in order to reduce the risk of electric shock.

Only the power cord that is supplied with the unit should be used to connect it to the AC power supply. The equipment should also be located as close as possible to the AC supply.

Servicing and maintenance should only be carried out by qualified service personnel. Before carrying or shipping the unit, first ensure that the unit is turned off and the capacitors are fully discharged and all cables are disconnected.

SAVE THE ORIGINAL SHIPPING BOX

When returning the SuperCap UPS for servicing, use the original shipping box with the supplied Styrofoam protectors. Manufacturer is not responsible for damage caused by improper packaging of returned systems.

Complete the following for records & future servicing:

Model No.: _____

Serial No.: _____

(Above items can be found on the nameplate label attached to the side of the unit)

Products Sales Order No. _____

P/N: _____

Purchase Order No.: _____

Purchased from: _____

(Following details are for installation location)

Installation Date: _____

Installed By: _____

City: _____

Country: _____

Telephone #: _____

Fax #: _____

E-Mail: _____

Contact Customer Service for service or technical information.

Marathon Power is available for customer service between 7:00am and 6:00pm PST, Monday - Friday and can be contacted as follows:

Phone: 310-689-2328

Fax: 310-689-2329

Email: support@marathon-power.com

Website: www.marathon-power.com

Address: 2538 E. 54th St., Huntington Park, CA 90255

READ THE OPERATORS MANUAL

Before installation, become familiar with the SuperCap UPS by reviewing the procedures and drawings in this manual. If you have any questions about safe installation, operation, or maintenance, contact Manufacturer customer service department.

Section 1: Glossary

AC	Alternating Current
ANSI	American National Standards Institute
AWG	American Wire Gage
BBS	Battery Backup System
E-BBS	External Battery Backup System Cabinet
DC	Direct Current
IEEE	Institute of Electrical and Electronics Engineers
EIA	Electronic Industries Association
ITE	Institute of Transportation Engineers
KVA	Kilovolt-Ampere
LED	Light Emitting Diode
LCD	Liquid Chrystal Display
NEMA	National Electrical Manufacturers Association
NC	Normally Close
NO	Normally Open
OD	Outside Diameter
PTR	Power Transfer Relay
UL	Underwriters Laboratories
TB	Terminal Block
THD	Total Harmonic Distortion
UV	Ultraviolet Light
VDC	Volts DC
VA	Voltage Ampere
VAC	Voltage Alternating Current

Section 2: Description of Your SuperCap UPS System

The Supercap System module is a true online double-conversion UPS.

This means that the module is designed with a rectifier directly driving an inverter, even when powered from normal AC current.

It will provide instantaneous protection from input power interruptions by means of one or more attached batteries or an associated 'energy storage unit'.

A multifunction LCD control panel indicates the status of the system and allows the user to make parameter adjustments.

Communication options include power-monitoring & system management software and SNMP capability.

The SuperCap UPS System consists of two parts:

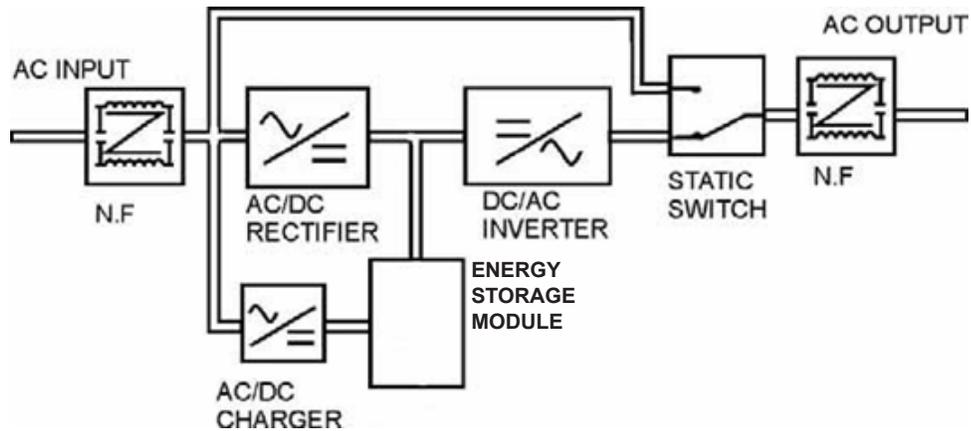
1. Electronic Module
2. Energy Storage Module

The Supercapacitor based Energy Storage Module is an alternative to expensive and hazardous external batteries. The Energy Storage Module is designed specifically for applications requiring short-term backup to sensitive loads that either need to ride-through voltage sags and momentary power outages or simply bridge the startup of a generator.

The Energy Storage Module can be charged independently of the UPS module. Unlike the charging times required by standard UPS batteries, the Energy Storage Unit can charge to near full capacity in less than 5 minutes.

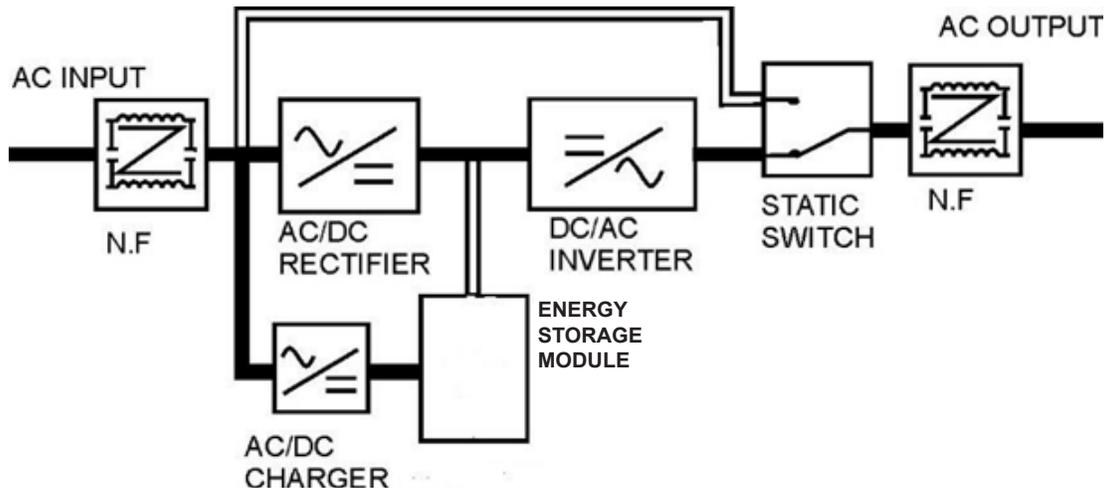
Operation Modes

1. UPS System Block Diagram:

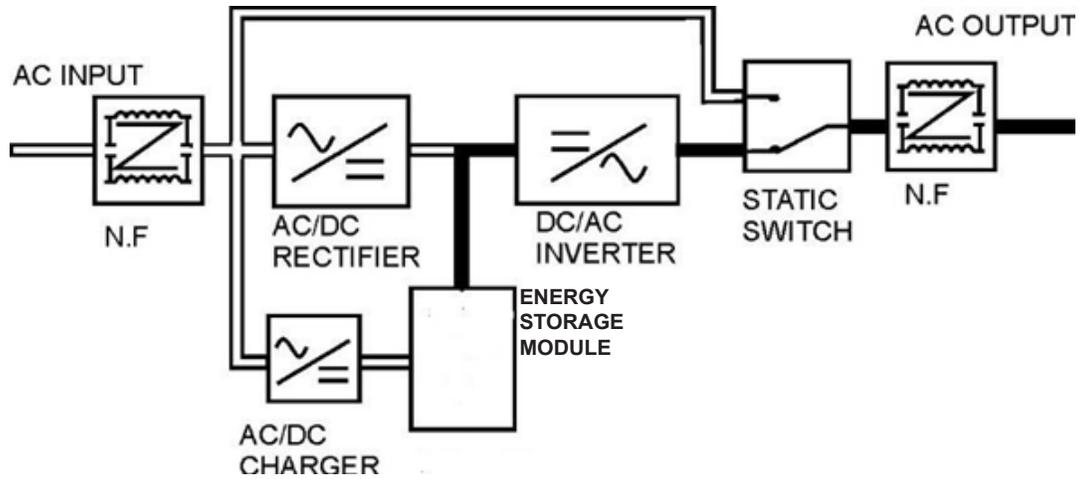


2. Normal Operation:

There are two main loops when AC utility is normal: the AC loop and the capacitor charging loop. The AC output power comes from AC utility input and passes through AC/DC rectifier, DC/AC inverter and static switch to support power to load. The capacitor charging voltage comes from AC utility input and converted by AC/DC charger to support capacitor-charging.



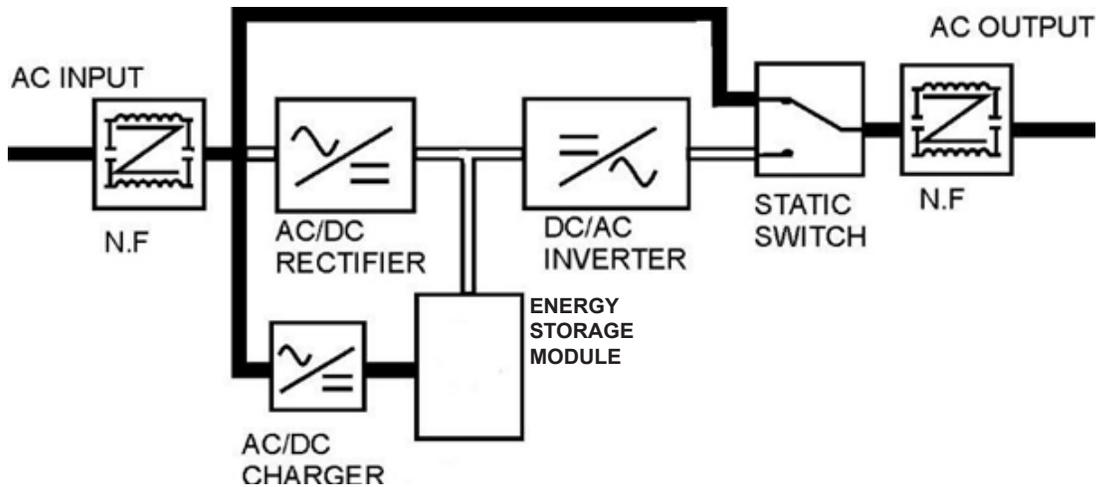
3. AC Utility Failure:



4. Bypass Enable:

Under the following conditions, the bypass will be enabled:

1. Overload.
2. Inverter failure.
3. Over-temperature.



Application Backup Time Considerations

The backup time that a SuperCap system can supply a load depends on the usable energy stored in the Energy Module capacitors as well as the characteristics of the load being supported.

In order to determine if the available power produced by the SuperCap system will be adequate for a specific application, several characteristics of the load must be known or determined. These characteristics include:

- The RMS input voltage
- The load current in amps
- The power factor of the load (a number between 0 and 1)
- The backup time required in seconds

The input voltage, the current can all be measured fairly accurately by using an instrument such as the Fluke 43B Single Phase Power Quality Analyzer or equivalent.

Example, a 3000VA, 2100 Watt model at either 120V or 230V provides an approximate backup time of 15 seconds at full load, and 45 seconds at half load.

Section 3: Installation

Mechanical / Physical

- Do not put the UPS on rugged or inclined surface.
- Do not install the UPS system in damp environments.
- Do not install the UPS system where it will be exposed to direct sunlight or heat source.
- Do not obstruct the ventilation openings in the SuperCap UPS system's housing and do not place objects on the top of the system.
- Allow a minimum distance of 10 cm (3.9 inches) at the rear and two sides of the UPS for ventilation.
- Do not expose the system to corrosive chemicals or gas.
- Install in an area with an ambient temperature of between 0F - 40F (32°F – 104°F)
- Transport the SuperCap UPS system in its correct orientation.
- If possible, transport the UPS system only in the original packaging (to protect against shock and vibration).

We recommend placing each system (UPS module and Energy storage module) on its own shelf or rack. The combined weight of one system on top of another may cause an issue. We suggest supporting the underside with a universal rail kit that is designed for this purpose.

Both the Electronics module (2U) and the Energy storage module (4U) come with rack mount brackets and handles for fastening the front of the units to a 19" rack and are used if the system is to be installed in a 19" rack.

The brackets facilitate the installation or removal of the system. They are not required if the system is "stack mounted".

The supplied rubber feet attach to the energy storage unit and are used if the system is "stack mounted". They are not used if the system is rack-mounted or on rails.

Electrical

The system should be installed and wired only by a qualified electrician in accordance with applicable safety regulations.

The 1kVA system (both the UPS and Energy Storage Module combined) requires a 20A input circuit breaker.

The 3kVA system (both the UPS and Energy Storage Module combined) requires a 30A input circuit breaker.

Place connecting cables in such a way that no one can step on or trip over them. Ensure that no fluids or other foreign objects can enter the UPS system.



WARNING:

The UPS is available in both 120V and 230V models. Be sure to connect the UPS to a suitable rated AC power source. Connecting the UPS to the incorrect power source can cause damage to the UPS and potential injury to the user.

Use caution when connecting the DC input cable. Do not allow the conductors on the DC connector to make contact with any metal object or with each other.

Dangerous and potentially lethal charges can remain on the capacitors of the Energy Storage Unit even after it has been turned off and disconnected from the AC input line.

SYSTEM CONNECTIONS

The correct installation of the SuperCap UPS System requires four connections to be made.

- A. AC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- B. DC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- C. AC input power from a power source to the Energy Storage module. (Optional Cable Available)
- D. AC output connection from the Electronics module to the load. (Optional Cable Available)
The Energy Storage Module comes with a high-current DC output cord with a polarized connector on each end. Check the orientation of the connectors and the DC sockets on the rear panel of the electronics module and the energy storage unit. Plug one end of the DC cord into the DC connector on the back of the energy storage unit and the other end into the DC connector on the back of the electronics module.



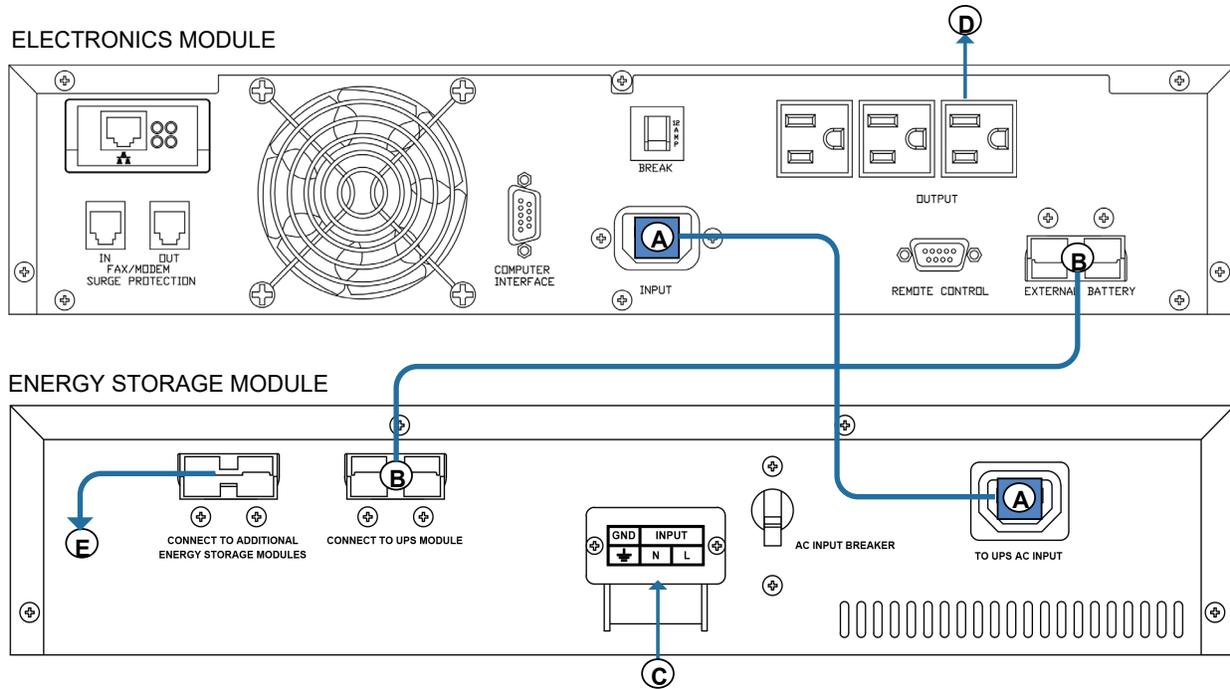
WARNING:

Before moving, storing, or shipping the system, ensure that the Energy Storage Module capacitors are completely discharged by putting the UPS module in backup mode.

To perform this:

1. Ensure that the UPS Module is ON (and in Normal Mode) with a load connected.
2. Remove the AC Input.
3. Let the system run in backup mode until it shuts off.

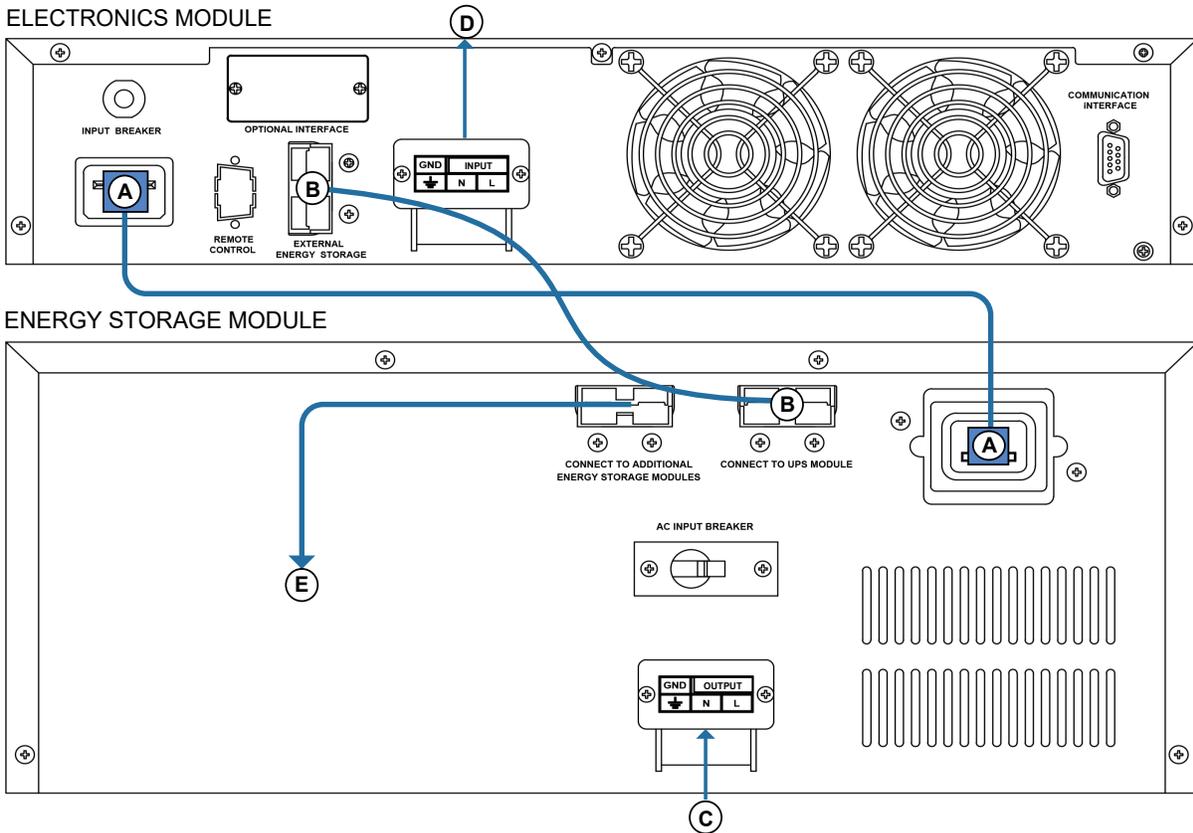
System Wiring Diagram 1kVA Models



Note: Model shown has a NEMA output. Other options are available.

- A. AC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- B. DC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- C. AC input power from a power source to the Energy Storage module. (Optional Cable Available)
- D. AC output connection from the Electronics module to the load. (Optional Cable Available)
- E. Connect to Additional Energy Storage Modules.

System Wiring Diagram 3kVA Models



Note: Model shown has a Hardwire output. Other options are available.

- A. AC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- B. DC connection between the Electronics module and the Energy Storage module. (Cable Provided)
- C. AC input power from a power source to the Energy Storage module. (Optional Cable Available)
- D. AC output connection from the Electronics module to the load. (Optional Cable Available)
- E. Connect to Additional Energy Storage Modules.

Section 4: Operation - LCD Interface

Front Panel Functions

The LCD display illuminates as soon as AC line power is applied to the unit and the MAIN MENU will be displayed.

Use the Up/Down buttons to scroll through the menu to view the available menu options. Use the Enter key to select the option that is currently displayed.

Following is a list of functions/options available via the Main Menu of the LCD display:

- Rating Spec
- UPS Status
- Input and Output Voltages
- Input and Output Frequency
- Battery Voltage and Capacity
- Output Power
- Unit Temperature
- Event History
- Bypass Range Set
- Output Voltage & Frequency Adjust

The last two functions listed above, 'Bypass Range Set' and 'Output Voltage & Frequency Adjust' are UPS control functions, and are described in the following sections.

Operation

Check Prior to Start Up

1. Ensure the UPS is in a suitable position.
2. Check that the input cord is secured.
3. Make sure the load is disconnected or in the “OFF” position.
4. Check that the input voltage meets the UPS rating.

Operation Procedure

Please follow the instructions below for UPS operation.

1. Once the AC source is connected, the LCD Display will light up immediately to display the main menu greeting. The Normal LED will blink to indicate that the inverter is ready to be turned on.
2. By pressing the Enter-key and the Down-key simultaneously for 3 seconds, the UPS will startup after two beeps and the Normal LED illuminates to indicate power is coming from its inverter to the load.
3. When the Down-key and the Up-key are pressed simultaneously for 3 seconds, the inverter will be turned off after two beeps and the UPS is in the standby status (LCD display illuminates and Normal LED is blinking) until the AC source is disconnected.



WARNING:

Prior to Start Up make sure the load is disconnected or in the “OFF” position, and verify that the input voltage meets the rating required by the UPS!

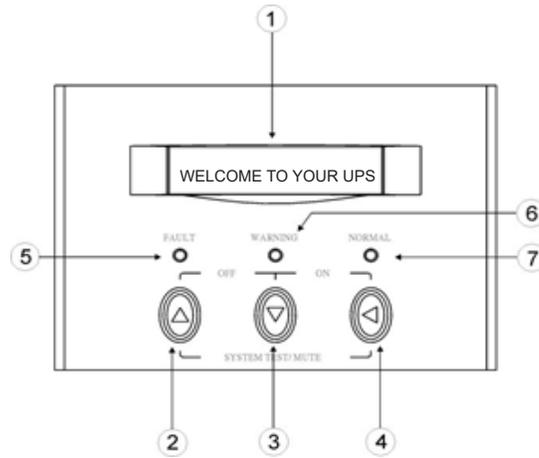


NOTE:

The LCD display illuminates as soon as AC line power is applied to the unit, and the MAIN MENU will be displayed.

The Front Panel

Fundamental operation of the Electronics Module is performed via the front panel. The panel includes an LCD display window, three LED status indicators and three pushbutton keys used for scrolling through the display menu and selecting menu options.



Front Panel Description

1. LCD Display: This indicates the UPS operation information, including UPS status, input / output voltage, input / output frequency, battery voltage, battery capacity left, output load, inside temperature, and the times of history events.
2. Up-key: Use to select upward the UPS status on LCD Display.
3. Down-key: Use to select downward the UPS status on LCD Display. Beside, press it simultaneously with the Up-key to switch off the UPS.
4. Enter-Key: It is pressed with the Down-key to turn on the UPS. In battery operation mode, press it with Up-key at the same time to disable the buzzer. It is also pressed to confirm and enter the item selected.
5. Fault LED (red): To indicate the UPS is in fault condition because of inverter shutdown or over-temperature.
6. Warning LED (yellow): To indicate the UPS is in the status of overload, bypass and battery back-up.
7. Normal LED (green): To indicate the UPS is operating normally.

The buttons are also used in specific sequences to control the UPS as described below.

Turning the unit ON

Press the **Enter-Key** (far right button) and the **Down-key** (middle button) simultaneously for 3 seconds to turn on the UPS.

Placing Unit in Idle Mode (UPS ON but no output)

Press the **Down-key** (middle button) and the **Up-key** (far left button) simultaneously for 3 seconds. The inverter will be turned off after two beeps and the UPS is on standby (the LCD display illuminates and the 'Normal' LED is blinking).

Turning the unit OFF

Place the UPS in Idle mode, by pressing the **Up-key** (far left button) and the **Down-key** (middle button) simultaneously for 3 seconds then, to turn OFF the UPS, disconnect the AC power to the unit.

Adjusting Output Voltage & Frequency:



To adjust the output voltage and frequency follow the steps below:

1. Place the unit in Idle Mode by pressing the Down-key (middle button) and the Up-key (far left button) simultaneously for 3 seconds. (The inverter will be turned off after two beeps and the UPS is on standby (the LCD display illuminates and the 'Normal' LED is blinking)).
2. From the Main Menu scroll to the OUTPUT V&F ADJ. option and press the Enter key.
3. The cursor () will appear in the display.
4. Press the Enter key to select either the Voltage or Frequency setting to be adjusted.
5. Use the Up or Down key to scroll to the desired voltage or frequency value.



NOTE:

The selections available for Voltage are: 100V, 110V, 115V or 120V (Default). The selections available for Voltage are: 50Hz or 60Hz (Default).

6. When the desired voltage or frequency value is displayed, press the Enter key (far right button) to set that value as the output voltage or frequency.
7. Restart the UPS by pressing the Up-key (far left button) and the Down-key (middle button) simultaneously for 3 seconds to switch the UPS off; then, shutdown the unit completely by disconnecting the AC power to the unit. Reconnect the AC and turn the unit on by pressing the Enter-Key (far right button) and the Down-key (middle button) simultaneously for 3 seconds.

Adjusting the Automatic Bypass Range - This setting does not need to be adjusted. Please contact Marathon Power Customer Service at 310-689-2328 before adjusting.

Section 5: RS-232 Serial Communication

RS-232 Communication

Serial Communication:

Power-monitoring & system management:

The UPS Module includes a communication interface (DB9 port) on the back that may be connected to a host computer. The port provides an RS-232 serial-link for monitoring software available from Marathon Power.

The UPS Module communicates with the computer by sending out RS-232 data streams to one of the serial ports. By this method the user is able to monitor the following parameters.

Input Voltage	Indicates the present input voltage to the UPS Module when AC power is present.
Output Voltage	Indicates the present output voltage of the UPS Module.
AC Frequency	Indicates the actual output frequency of the UPS Module.
Capacitor	Indicates the present DC voltage of the Energy Storage Module.
Temperature	Indicates the internal temperature inside of the UPS Module.

In addition to monitoring the UPS the software can also be used to control several functions on the UPS, including configuring and testing the UPS and its communication options.

DB9 PIN Assignment:

The PIN 2: RS232 RXD, PIN 3: RS232 TXD, and PIN 5: GND. The other PINs have no function.

Section 6: Connecting to the Optional SNMP card using the Netility Software

Features:

- Provides SNMP MIB to monitor & control UPS.
- Auto-sense 10M/100M Fast Ethernet.
- Manage and configure via Telnet, Web Browser or NMS.
- Support TCP/IP, UDP, SNMP, Telnet, SNTP, PPP, HTTP, SMTP Protocol.
- Providing easy setup and upgrade tools via MS-Windows.
- Send SNMP, TRAP, E-mail and SMS for events notification.
- Auto email daily UPS history report.

There's no need for the user to open the chassis of the SuperCap to install the relay card. On the back of the unit, upper left-hand side is a cover that is covering the slot for the card. Please be careful removing the screws, they are very small.

To access the NetAgent network interface card using a web browser you will need an Ethernet cable, a computer with the NetAgent utility software program "Netility" installed and a router.

The NetAgent utility is available at:

http://www.marathon-power.com/EN/DownloadCenter/Software/NetAgent/Netility_Windows_v4.53.zip

To connect to the NetAgent card you will need to know IP address assigned to the card.

By default, the card is assigned an IP address using DHCP. This means the NetAgent card will automatically receive its IP address from a router.

Connect the NetAgent card installed in your UPS to your network or router using a Ethernet cable. Then run the Netility software program to determine its IP address.

Install Netility

Execute Netility.exe.

After complete installation, there will be a 'Netility' group in Windows 'Start' 'Program Group'.

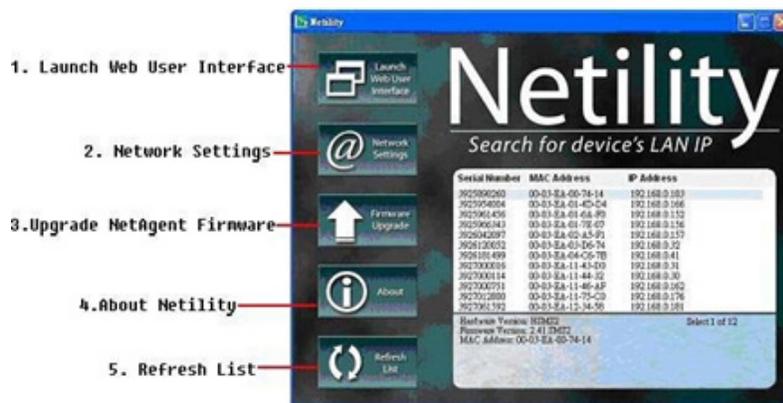


Netility Main Window

Click "Netility" could initiate the Netility and enter the mail window for configuration.

Using Netility

The main window of Netility is here below, left table is to show you all of NetAgent be searched in LAN; right side is function selection menu.



Netility Main Window

Launch Device

Click Launch Device or double click the NetAgent listed in the table to launch it. Enter the Account (Login Name) and Password (Login Password) set earlier to login. If you did not configure one, then just click Apply to login.

Network Settings

Choose the NetAgent from the right of the screen, then click "Configure", would shows the following setting page.

Setting IP address for NetAgent SNMP Card

When use at the first time, please set IP address; subnet mask; and gateway. After setting, enter IP address from Telnet or Browser to connect to NetAgent's website.



Netility Configure

When using DHCP or BOOTP to set up IP address, IP address, Subnet Mask and Gateway would receive directly by the system.

Netility: Set IP address for NetAgent UPS

Advanced NetAgent SNMP Card

In order to ensure the secure management of UPS, Netility provides two protecting function:

Management Protocol

NetAgent UPS provides HTTP/HTTPS(WEB) and Telnet to reference any related parameter setting for the manager. Concerning with security, the manager could build use openly or any advance port setting methods. Followings are the description:

1. At advanced setting, two functions were set as activated by using port number 80 and 23 for Http and Telnet. As for Https and SSH are 443 and 22.
2. Untick means not using the function.
3. Then set to the other port value, full IP Address must be entered in order to login to the website or Telnet.

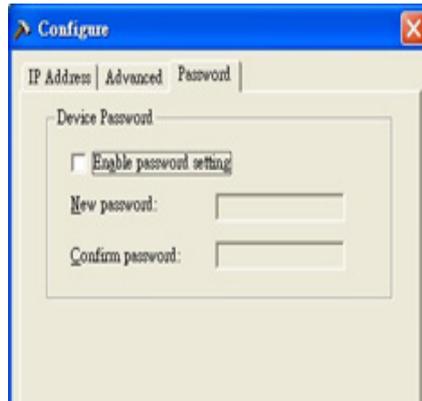
For example:

Set 81 as HTTP port number, then `http://192.168.0.177:81` must be typed at the web address to proceed to NetAgent UPS's website.

Set 23 as Telnet port number, then `"192.168.0.177:24"` must be typed at Telnet to proceed to the Telnet screen of NetAgent UPS.

Netility Password

After password setting here, there is no way to give any command to NetAgent by Netility software without user's password. **(NB. If this password is lost, NetAgent UPS will never be able to complete any upgrade process.)**



Netility: Advanced setting of NetAgent UPS

UPS - Status LED		
Light color	Signal definition	Condition description
Green	Power state	On: Normal power
Red	Connection state with UPS	Flash: no connection with UPS
Orange	Correspondence state	Light flashes when NetAgent transmits command to UPS

UPS - LAN Port LED	
Light color	Condition description
Green	On: Internet correspond speed is 100M Flash: Data transmitting
Yellow	On: Internet correspond speed is 10M Flash: Data transmitting



Section 7: Understanding and Using the Optional NetAgent SNMP Card

Introduction

After finishing hardware installation and IP setup, you are now able to go to SNMP card's user interface to monitor and control UPS by inputting the card's IP address in any web browser.

Starting the Web Browser, enter the IP Address shown Netility, e.g. 192.168.0.156).



Input NetAgent UPS IP address

On the first screen, if no password has been set, just press [ENTER].



NetAgent UPS Login dialog

NetAgent UPS Web Interface

There are four main function items in the first Web page:

1. Information
2. Configuration
3. Log Information
4. Help

Enter the main function item, the sub-menu items will be shown on the left side of the page.

When using this NetAgent for the first time, please enter the Configuration menu to set all the configuration items. Then the UPS status will be correctly revealed on other pages.



Section 1 - Information Sub-Menu:

1. System Status
2. Basic Information
3. Remote Control
4. Meter/Chart

1. System Status

This page is to show NetAgent system information and Network settings. Values shown here are either provided by NetAgent itself or they are user settings from the Configuration pages.

System Information

This section is to show NetAgent system information. Values in Hardware Version/Firmware Version/Serial Number/System Time, are provided by NetAgent itself. Other values are user settings from the Configuration pages.

Network Status

This section is to show NetAgent Network settings. The MAC address is provided by NetAgent. All other values in this section are user settings from the Configuration pages.

2. Basic Information

This page is to show UPS basic information. Values here are either provided by the UPS or they are user settings from the Configuration pages.

UPS Information

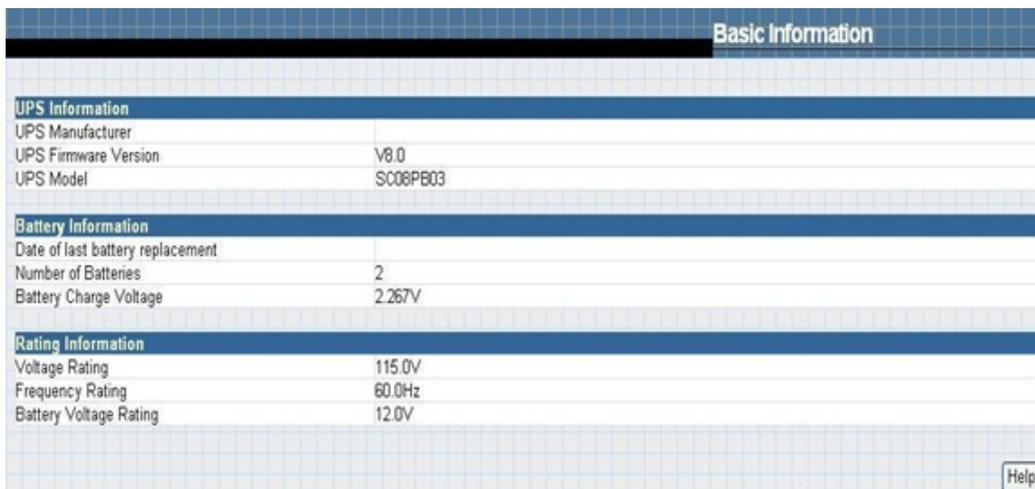
Information about UPS Manufacturer/UPS Firmware Version/UPS Model are provided by the UPS.

Battery Information

Values here are user settings from the Configuration pages.

Rating Information

Values here are provided by the UPS.



The screenshot shows a web interface titled "Basic Information". It contains three sections of data:

UPS Information	
UPS Manufacturer	
UPS Firmware Version	V8.0
UPS Model	SC08PB03

Battery Information	
Date of last battery replacement	
Number of Batteries	2
Battery Charge Voltage	2.267V

Rating Information	
Voltage Rating	115.0V
Frequency Rating	60.0Hz
Battery Voltage Rating	12.0V

A "Help" button is visible in the bottom right corner of the table area.

Basic Information

Current Status

This page is to show the UPS current status. Users can choose an interval from the drop-down box to refresh the status readings. This section is to show the UPS power status.

The abnormal status will be displayed in red at the bottom of the page when there is a power event.

Input Status

This section is to show the UPS input status, including AC Status/Input Voltage/Input Frequency. Values here will be shown in red when an abnormal status condition occurs.

Output Status

This section is to show the UPS output status, including Output Voltage/Output Status/UPS Loading. Values here will be shown in red when an abnormal status condition occurs.

Battery Status

This section is to show the UPS Battery Status, including Temperature/Battery Status/Battery Capacity/Battery Voltage/Time on Battery..etc. Values here will be shown in red when an abnormal status condition occurs.

3. Remote Control

This page is to provide remote UPS test functions. Choose the test item, then click on 'Apply' to execute it.

10 Second Test

This is to perform 10 seconds UPS self-test.

Deep Battery Test

This function is to execute XX minute deep battery test.

Test until Battery Capacity Low

When executed, UPS will test Battery until battery low.

Cancel Test

This function is to abort a test when it is executing.

Turn off UPS when AC failed/Reboot UPS

Selecting 'Turn off UPS when AC failed' will turn off the UPS. You can reboot the UPS by selecting 'Reboot UPS'.

Put UPS in Sleep mode for minutes/Wake up UPS

When the UPS is put into Sleep mode, it will not provide power. The UPS will provide power again after Sleep mode time is complete.

Wake up UPS

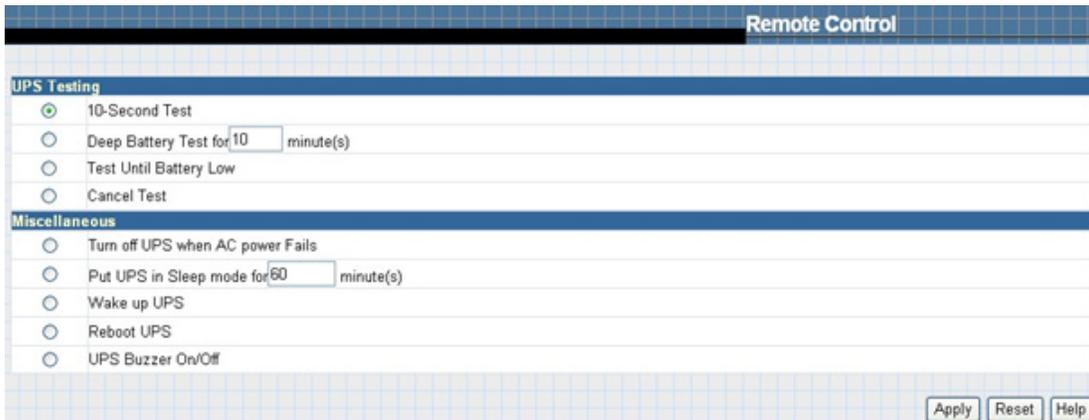
When executed, UPS will be awake from sleep.

Reboot UPS

When executed, UPS load would start over.

UPS Buzzer On/Off

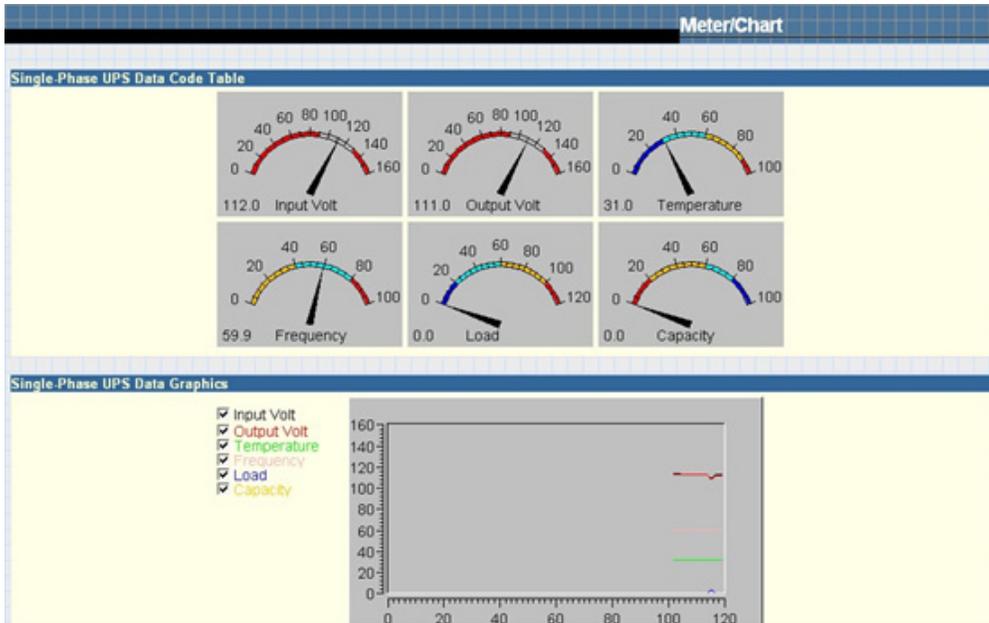
This is to trigger UPS buzzer On. If it is ON already, executing this command will set it OFF.



Remote Control

4. Meter / Chart

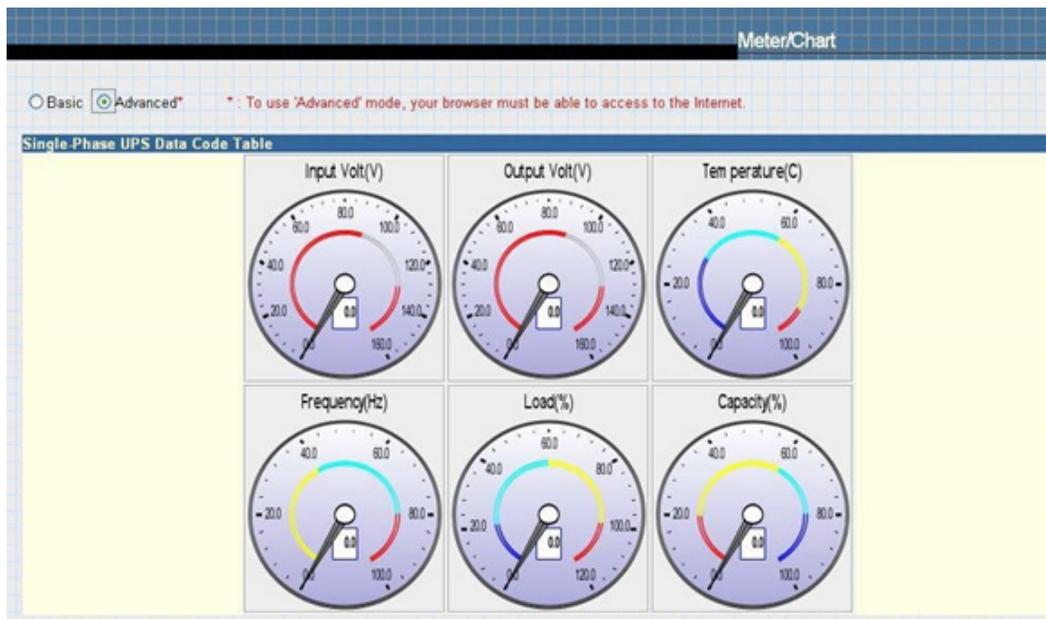
This page displays temperature, capacity, load, voltage..etc of the UPS by appearing with meters/ chart diagram.



Meter / Chart



NetAgent 9 Meter/Chart



NetAgent 9 Meter/Chart

Section 2 - Configuration Sub-Menu:

1. UPS Configuration
2. UPS On/Off Schedule
3. Network
4. SNMP
5. Email
6. WEB/Telnet
7. System Time
8. Language

1. UPS Configuration

This page is to set the UPS configuration.

UPS Properties

This section is to set up the communication interface of the UPS.

UPS Communication Type **MegaTec**

Number of Batteries **18**

Battery Full Charge Voltage (V) **2.267**

Battery Exhausted Charge Voltage (V) **1.667**

Date of last battery replacement (yyyy/mm/dd)

Test UPS

This section is to set how often the UPS data should be logged.

Test UPS for every

This section is to schedule the UPS to test once a week, once every two weeks, once a month or quarterly.

Start Time of UPS Test (hh:mm)

This section is to set the UPS to test at a specific time on the test day.

UPS Test Type

This is to select which test to perform.

Warning Threshold Value

Time out of after lost of connection.

This section is to set a period of time after which NetAgent will send a disconnection warning message. This warning message will be sent after NetAgent has lost contact with the UPS for the time specified.

Critical Loading (%)

This section is to set the UPS critical loading. (shown as %) NetAgent will send a warning message when the UPS is overloaded.

Critical Temperature (C)

This section is to set the UPS critical internal temperature. NetAgent will send warning messages when the UPS overheats.

Critical Capacity (%)

This section is to set the UPS critical battery capacity (shown as%) NetAgent will send warning messages when UPS low battery occurs.

2. UPS On/Off Schedule

This page is to schedule On/Off time for the UPS and Wake On Lan.

Weekly Schedule

This section is to set the time to turn on/off the UPS each day in the week.

Date Schedule

This section is to set the time to turn on/off the UPS on particular days. (Eg, holidays.) The settings here override the settings in Weekly Schedule.

Warning will be initiated before Schedule shutdown event

NetAgent will send a warning message before a scheduled shutdown. This section sets the delay time period after the message is sent and before the scheduled shutdown is started.

Wake On-LAN

This section is to wake the PC within the network. (Make sure the PC has such function supported and configure as "Enabled" under BIOS.) Enter the IP address of that PC and system would search its IP accordingly.

3. Network

This page is to set NetAgent Network settings.

IPv4

IP Address IPv4

This section is to set NetAgent IP address.

Subnet Mask

This section is to set NetAgent Subnet Mask.

Gateway

This section is to set NetAgent Gateway.

Obtain an IP address

This section is to choose to set NetAgent IP address manually or via DHCP.

The above 4 sections can be set in Netility as well.

NetAgent will reboot after any of the above are changed.

DNS Server IP

Primary DNS Server

IP

This section is to set NetAgent primary DNS Server IP address.

Secondary DNS Server IP

This section is to set NetAgent secondary DNS Server IP address. NetAgent will use the secondary DNS Server IP address when the Primary DNS Server IP address is not working.

Ethernet

Connection Type

This section is to set communication speed between NetAgent and Network. NetAgent will reboot after Connection Type is changed.

Stop UPS communication when Ethernet disconnected.

This section is to set if to stop UPS communication when NetAgent disconnects with Ethernet.

Dynamic DNS

This is a service that allows the user to alias a dynamic IP address to a static host name.

Service Provider

NetAgent can be configured to register with any of the Dynamic DNS providers.

Domain Name

This is the Domain Name you have created from the above selected DDNS provider. Login Name

Login Name

This is the Login / Account name that you have created with the selected DDNS provider.

Login Password

Enter the Password you have assigned to your DDNS Account.

Use external STUN server to get Public IP to register.

Choose Yes to ensure that NetAgent uses the WAN / Public IP to update the selected DDNS server.

PPPoE

Use this option to allow NetAgent to connect to the Internet directly using your xDSL modem. Once set-up, NetAgent will connect directly to the Internet without going through a router. The LCD will display the current WAN / Public IP instead of the LAN IP Address.

When Connection should be made

This is to set if use PPPoE to connect with NetAgent UPS.

Disabled (Default setting) or Connect always

NetAgent will automatically dial up and maintain continuous connection.

Login Name

Enter the login name assigned by your ISP.

Login Password

Enter the password assigned by your ISP.

Note: System will reboot if any configuration applies.

4. SNMP

This page is to set NetAgent SNMP settings so it can be used by a NMS (Network Management System). (Eg: SNMPView, SNMPView can be found on the NetAgent Utility CD.)

General

MIB System

System Name

This section is to give a name to a NetAgent.

System Contact

This section is to give a name to the administrator.

System Location

This section is to set NetAgent location.

SNMP UDP

This is to configure the UDP port of the NetAgent and trap receiver. SNMP default port is 161; and Trap MIB is *UDP162 Access Control*

Manager IP Address

This section is to set the IP address that the administrator can manage NetAgent from. It is valid for up to 8 IP addresses. To manage NetAgent from any IP address, enter *.*.* into Manager IP address.

Version

This is to select between SNMPv1& SNMPv2 or SNMPv3

Community

This section is to set a Community name for NMS. The community name has to be as the same as the setting in NMS.

Permission

This section is to set authorities of administrators. Options are Read, Read/Write, and No Access.

Username/password

When select SNMPv3, username/password must be entered. Password must be at least 8 characters. Sender and Recipient's password must match to communicate.

Authentication

This is to select between MD5 and SHA. Length must be at least 8 characters.

Privacy

This is to select DES and AES. Length must be at least 8 characters.

Description

This section is for an administrator to make notes.

Trap Notification

Destination IP Address

This section is to set receivers IP address for receiving traps sent by NetAgent up to 8 IP Addresses.

Community

This section is to set a Community name for NMS. The community name has to be the same as the setting in NMS.

Trap Type

This section is to select if send trap according to PPC MIB or RFC1628.

Severity

This section is to set Trap receiver levels.

There are three levels of Severity Information:

To receive all traps.

Warning: To receive only “warning”

Severe: To receive only “severe” traps.

(Please refer to NMS manual for Trap levels.)

Description

This section is for an administrator to make notes.

Event

This section is to select events for NetAgent to send traps. Clicking on Select will open a Select Events List. Or, Click on Test is to send test trap. Event Traps may be selected from the list.

Device Connected

This section is to set the usage power and connection status of other devices which connects to the same UPS as NetAgent uses.

5. Email

This page is to set Email details for use by NetAgent.

Email Setting

Email Server

Email Server This section is to set Email Server.

Note that free email server such as Hotmail, yahoo, Gmail is not allowed.

Email Port

This is to configure the SMTP port to send email.

Sender's Email Address

This section is to set NetAgent's Email address.

Email Server Requires Authentication

This section is to set whether the Email Server requires authentication.

Account Name

This section is to set an Email account name when the email server requires authentication.

Password

This section is to set a password when the email server requires authentication.

Sending test mail

This is to send a test mail by clicking on Test Mail to the mail address configured.

Email for Event Log

This section is to set Email Addresses to receive warning email sent by NetAgent when an event occurs. It is valid for up to eight email addresses. This section is to select events for NetAgent to send warning email. Clicking on Select will open a Select Events List. Event email may be selected from a list.

Email Daily Report

This section is to set Email Addresses to receive Daily Report email sent by NetAgent when an event occurs. It is valid for up to four Email addresses. Here you can set a particular time for NetAgent to send Daily Report every day.

SMS

When UPS events occurs, it allows Short Message Signals (“SMS”) to be sent and received using a GSM/GPRS/CDMA Modem.

SMS Setting

Send SMS when Event Occurs

This section is to select if use local modem or remote service to send SMS. Select local modem when modem connects with 3 Ports NetAgent. Select remote service if modem connects to PC using SMS Server software or connects with SMS agent. Select Disable if not needed.

SMS Server, SMS Server Port

This section is to set the IP address of the SMS agent or PC if selected remote service. (e.g. 192.168.0.180) and Port Number (default:80).

Account Name, Password

This section is to enter SMS agent’s account and password if configured (SMSAgent webpage- 7 Configuration-7Web/Telnet). Leave blank if no such setting.

Mobile for Event Log

This section is to set the recipient’s mobile number. A total of eight mobile numbers can be assign. (Selectable events list is same as SNMP webpage.)

6. WEB/Telnet

This page is to set up the User Account in NetAgent.

User Name

This section is to set a user name for NetAgent web pages. It is valid for up to eight users. Users have to input the user name to get access to NetAgent web pages from a web browser.

Password

This section is to set a password for NetAgent web pages. Users have to input the password to get access to NetAgent web pages from a browser.

Permission

This section is to set user’s authorizations of Read, or Read/Write.

IP Filter

This section is to set a particular IP address. Users can only gain access to NetAgent web pages if they come from this IP address. If you want to manage NetAgent from any IP address, you can set it as *.*.*

SSL Information

This is to upload the SSL public key.

SSL Certificate Information

This is to upload the SSL certificate. When both public key and certificate are uploaded to NetAgent web server, the communication will be encrypted by SSL on the Internet by entering with Http:// on the browser. (To communicate via Https, make sure to enable Https port 443.)

7. System Time

This page is to set NetAgent system time. You can provide NetAgent with up to 2 time servers or you can set a time zone.

System Time

Time Between Automatic Updates

This section is to set an interval for time synchronization.

Time Server

Choose the nearest Time Server to your NetAgent location. The Administrator can choose from the list of a maximum of 30 Time Servers. If to add new time server, click on Edit and delete any time server from the list provided and add a new one.

Time Zone (Relative to GMT)

This section is to set a different time zone for different countries.

Using Daylight Saving

Time Choose between Yes or No.

System Time

This section is to set NetAgent system time manually. Set this in the format: yyyy/mm/dd hh:mm:ss.

Auto Restart

Auto Restart System for Every n Minute(s)

Use this setting to auto restart the system at a predetermined interval. The default value is set to "0" (disabled). Enter between, 1 to 9999 Minute (i.e., between 1 minute or 166.65 hour) or 1 to 9999 Hour (1 hour to 416.6 days).

Manual Restart System for Every 0 (Default)

Use this feature to manually restart the system NetAgent restart inn minutes or n Hours.

Backup Time

This is to save the event log and data log automatically with the configured hour on external USB flash. This only applies on BX NetAgent models and the USB flash disk must be with FAT/FAT32 format.

8. Language

This page is to set the language interface for NetAgent.

Interface Language

This section is to set the language for NetAgent web pages. When users first start to open the web page of NetAgent, NetAgent will auto detect the language in the computer system and show the same language on its web pages. Users can also choose the languages they prefer from the “Interface Language” list.

Note: Users will have to enable cookies before they use this function.

Email Preferences

Select language preference when receive emails and SMS.

Log Information

Event Log

This page is a UPS Event log. It shows a record of all events, giving the Date/Time of the event and a detailed description of each. When reach to the limit, it rewrites on the previous logs.

Data Log

This page is a UPS data log. It records UPS Input Voltage/Output Voltage/ Frequency/ Loading/ Capacity/ Temperature. When reach to the limit, it rewrites on the previous logs. Logs can be saved in CSV format by clicking on “Save Data Log”.

Help

Search NetAgent

This to display all the found NetAgent within network with its serial number; Mac Address; Hardware/Firmware version and its IP address. Double clicking on the highlighted unit to open the web page of such device.

Serial Port Debug

This function is to know the immediate communication between NetAgent and UPS via serial port.



WARNING:

Clicking on Help, opens another tab showing the web interface only with helpful information about each page. Please close tab to continue to the next sub-menu About.

Help

This is to help to illustrate the operation of NetAgent.

About

This is to check NetAgent's Firmware/Hardware version and serial number.

Save/Restore Settings

Click Save to save the configuration to your PC. The text file will have a default format of YYYY_MMDD_####.cfg. Administrator permission required. Restore previous configuration Use this function to restore a *.cfg configuration that has been saved earlier. Click Browse... to the location of the file and click Restore.

Reset to factory default

This function will reset all settings to its default value.

Firmware Update Settings

Default FTP server is set as ftp.icv99.com with its username/password. Click on Update Now, NetAgent will connects to the FTP server and upgrade to the latest firmware version accordingly.

Auto Update

This is to configure the period of time to check if any updated firmware in FTP and upgrade automatically.

Firmware Update

When click , it links to <http://www.megatec.com.tw/Download.htm#NetAgent> to download the available firmware.

Section 8: Optional AS-400 Dry Contact Card

There's no need for the user to open the chassis of the Supercap to install the relay card. On the back of the unit, upper left-hand side is a cover that is covering the slot for the card. Please be careful removing the screws they are very small.

Definition of DB-9 Pins:

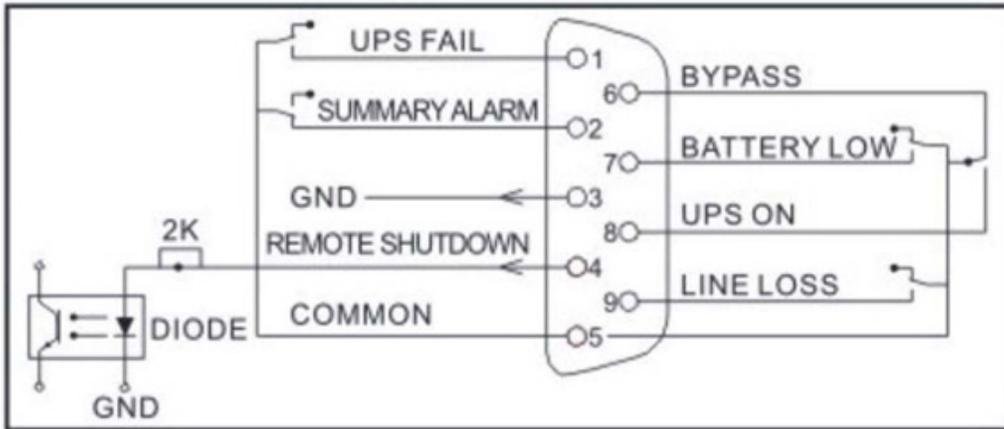
DB9 Pin #	Description of Functionality	Input or Output
1	UPS Failure	Output
2	Summary Alarm	Output
3	Ground	
4	Remote Shutdown	Input
5	Common	
6	Bypass Active	Output
7	Battery Low	Output
8	UPS On	Output
9	Utility Failure	Output

Functionality of DB-9 Pins:

Status	Description of Functionality	Reason / Cause
PIN 1 & PIN 5 Close	UPS failure	UPS Internal Fault
PIN 2 & PIN 5 Close	Summary Alarm	1. UPS on Battery Mode 2. Battery Voltage Low 3. PS Internal Fault
PIN 3	GND, For External Ground	
PIN 4	Remote Shutdown	Remote Shutdown Command
PIN 5	Common	
PIN 6 & PIN 5 Close	Bypass Active	UPS on Bypass Mode
PIN 6 & PIN 5 Open	UPS On	UPS on Inverter Mode
PIN 7 & PIN 5 Close	Battery Low	Battery Voltage Low
PIN 8 & PIN 5 Close	UPS On	UPS on Inverter Mode
PIN 8 & PIN 5 Open	Bypass Active	UPS on Bypass Mode
PIN 9 & PIN 5 Close	Utility Power Failure	Utility Power Failure

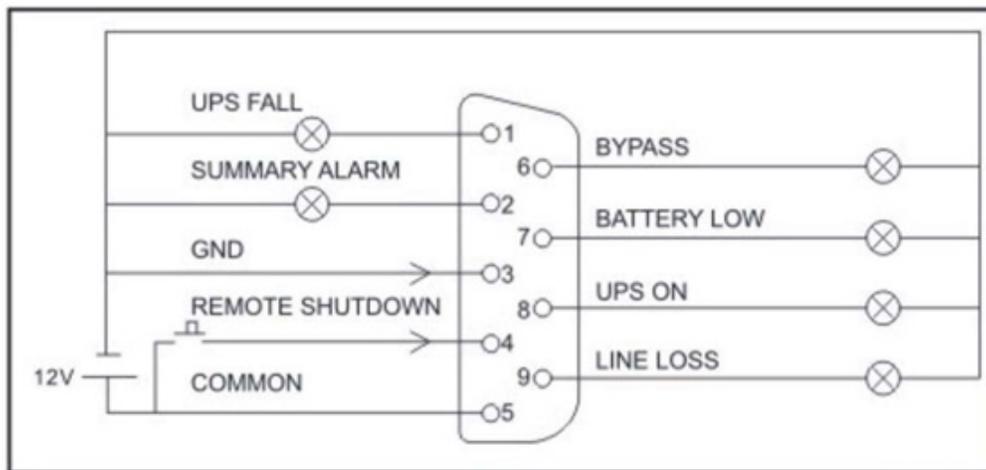
DB9 Internal Wiring Diagram:

The following Schematic shows the internal wiring from the UPS up to the DB-9 connector.



AS400 Relay Card Application User Interface Wiring Diagram:

The following schematic shows the external interface connection at the DB-9 connector.



Part Number: SASR-INTL-01

Version: AS400-01, Rev.01

Section 9: Optional Power Monitoring & System Software

The UPS Module includes a communication interface (DB9 port) on the back that may be connected to a host computer. The port provides an RS-232 serial-link for monitoring software available from Marathon Power.

The UPS Module communicates with the computer by sending out RS-232 data streams to one of the serial ports. By this method, the user is able to monitor the following parameters.

Input Voltage	Indicates the present input voltage to the UPS when AC power is present.
Output Voltage	Indicates the present output voltage of the UPS Module.
AC Frequency	Indicates the actual output frequency of the UPS Module.
Capacitor Voltage	Indicates the present DC voltage of the Energy Storage Module.
Temperature	Indicates the internal temperature of the UPS Module.

In addition to monitoring the UPS the software can also be used to control several functions on the UPS, including configuring and testing the UPS and it's communications options.

DB9 PIN Assignment:

The PIN 2: RS232 RXD, PIN 3: RS232 TXD, and PIN 5: GND. The other PINs have no function.

Section 10: Frequently Asked Questions

General

What are the benefits of such a device and what are the specific locations where this unit would be applicable?

If your application only requires relatively short runtimes to allow your critical equipment to ride through brownouts, voltage sags/dips, momentary power interruptions and possibly for bridge power during a generator startup. Most of these power events last 15 seconds or less, hence our standard rating of approx. 15 seconds at full load. With that said, you will notice an additional DC connector on the rear of the Supercapacitor module. This is provided so that additional capacitor modules can be added for additional run times.

What is the expected lifespan of the capacitors in the Energy Storage module?

The expected lifespan of the supercapacitors in applications such as a UPS system is up to 20 years, in theory/on paper. However, since most commercially available Supercapacitors have only been around 12 -14 years, we cannot guarantee that they will last 20 years. We are therefore specifying around 12 years for the lifespan (with slight decrease in performance near their end of life).

If there is an Inverter Failure, Overtemp Condition or Overload Condition the UPS enters Bypass Mode. What happens if the UPS is already operating in Backup Mode (AC Unavailable)?

If any of these conditions occur in Backup Mode, the electronic protection circuitry for each of those conditions will activate and shut the UPS down to prevent a catastrophic failure. If there is an inverter failure, the UPS will not be able to be restarted. If there is an overload or over-temperature condition, the UPS will be able to be restarted once those conditions have been removed. Remember that this system runs for a relatively short time in backup mode so while any of these conditions is certainly possible, they are less likely to occur than with a battery based UPS.

Are there predominate failure modes for the system?

There don't appear to be any predominant failure modes for this particular system. We do have occasional failures of our battery based UPS's (upon which most of this unit is based) but there is also no predominant mode. The batteries are by far the weakest link. There may occasionally be an input circuit failure IF the load connected to the UPS is variable; i.e. high inrush/startup current or periodic short term high current draw but I don't believe this is the case with your application. Extended high ambient temperatures could cause a reduction in the lifetime of some of the components, but again, I don't think this is the case with your application. Most types of failures within the electronics module would place the unit into bypass mode.

What are the overload limits?

The Overload Protection is set as follows:

1. *An overload of 105% ~ 150% is allowed for 30 seconds.*
2. *An overload of greater than 150% is allowed for 200ms.*

If the load is beyond the capacity of the UPS, you will notice Overload Alarm. The UPS will then start a countdown timer. If the overload continues beyond the delay period, the UPS will shutdown. If the overload clears before the time delay period has elapsed, the UPS will recover back to Line Mode.

How do I determine how much load is connected to the UPS?

With the actual load connected to the UPS and powered on, its current status can be viewed on the LCD display. The actual load will be shown as “UPS load”.

How much current will the SuperCap UPS require?

We have designed the 1kVA system to draw no more than 20A briefly to charge the capacitors and at full load. The 3kVA system was designed to draw no more than 30A briefly to charge the capacitors and at full load.

What are the environmental specifications for the UPS?

Unit	Non-operating / Storage Temp °F	Operating Temp °F	Relative Humidity %	Altitude Ft	Derated Altitude Ft
Electronics Module	(-4°F to 140°F)	(32 to 104)	(0 to 95) non-condensing	(0-3300) No Derating	(3300 -6600) Derate System Capacity by 3%
Energy Storage Module	(-40°F to 158°F)				(6600 -10000) Derate System Capacity by 8%

In addition, there are no pressurized components so the ambient barometric pressure should not be an issue. The cells in the Supercapacitor modules are hermetically sealed.

Will the unit return to operation without degradation of performance after being subjected to non-operating conditions?

Typically yes but it will ultimately depend on how long the unit has been subjected to the non-operating conditions (and to a lesser extent, how severe they are). A batteryless unit such as this will certainly fair better than a battery based system but it does have limitations.

Installation

What are the specifications on the Input Circuit Breakers for the UPS and Storage Module?

The 1kVA system (both the UPS and Energy Storage Module combined) requires a 20A input circuit breaker.

The 3kVA system (both the UPS and Energy Storage Module combined) requires a 30A input circuit breaker.

Is it safe to stack one on top of the other, or should adequate shelving be supplied to keep them separate?

Yes, it is safe to stack the Electronics Module on top of the Energy Storage for one complete system. However, if you are using multiple systems, our recommendation is to place each system (UPS module and Energy storage module) on its own shelf or rack. The combined weight of one system on top of another may cause an issue.

Do the supplied rubber feet attach to the energy storage unit or the electronics unit?

The rubber feet attach to the energy storage unit and are in used if the system is “stack mounted”. They are not used if the system is rack-mounted (on rails).

Can I rackmount the Supercap system and does it come with brackets?

Both the Electronics module (2U) and the Energy storage module (4U) come with rack mount brackets to facilitate the installation or removal of the system. They are used for fastening the front of the units to the vertical posts and we recommend supporting them underneath as well using the universal Rail Kit.

Preventive Maintenance

Are there any recommended Preventive Maintenance (PM) requirements?

Since this unit does not contain any batteries as with a traditional UPS, there is no preventative maintenance to speak of. This is a major benefit of a non-battery based UPS system. The SNMP adapter is an Ethernet card and there is no maintenance required.

Is there any “periodic check” that can be done to ensure that the system is “healthy”?

A manual self-test can be performed by holding the left and right buttons simultaneously on the front panel for 5 seconds. Given the limited runtime available with supercapacitors, having someone physically present to perform this test is essential.

The SNMP card can trigger the UPS to perform self-test and basic voltage based tests available on the UPS. More importantly, its main function is to constantly monitor the status of the UPS. Therefore, it will record and report any change in the UPS’ status as it changes. Any detected fault in the UPS will result in a status change.

Are there any issues with long term storage (such as cell replacement, fluid re- or discharge, etc.)?

There are no chemicals internal to the unit or energy storage section nor is there any fluid recharge required or discharge. Further, we recommended that the Electronics and Energy modules be stored between -4° F to 122° F.

If fans were to fail how is this reported on the UI? I know that there is an internal and ambient temperature reading on the UI but is that internal to the Storage Unit or the UPS Unit?

With regards to the heat load: The SuperCap system consists of two parts: The Electronics (UPS) module and the Energy storage (SuperCap) module. The UPS module is basically a double conversion UPS that is always online and powering the load. As a result, it will generate some heat and has fans for cooling. The SuperCap module contains the Supercapacitors themselves, the charger and the boost converter. This module does generate heat but only for brief periods of time, when changing or discharging. The temperature sensor is located inside the Electronics Module.

Optional SNMP Card

Do you have a password reset procedure for the SNMP card?

If the username/password assigned for login is forgotten, each SNMP card has a master password that can be found on a label affixed to the card.

1. *Open up IE and type `http://xxx.xxx.xx/password.cgi` (xx.xxx is the IP address of the SNMP Card)*
2. *Enter username: admin
password: the unique master password that printed on the label*
3. *Press Continue and Clear*

How can I reset the SNMP Card to it defaults setting?

The reset to factory defaults option is available using the web interface.

It is on the left-hand side under "Help", click on Help/about/. The last option is Reset to factory Defaults.

Optional AS400

What are the specifications for the relays in the AS400 card?

*The specifications for the relays are as follows:
Voltage Rating: 12 ~ 24VDC and Current rating: Max. 1A*

What contacts change state when AC power is lost?

The relay functions as follows: There is no continuity between pins 5 and 9 when the UPS is OFF, in idle mode, or ON. When the UPS is in Battery (Backup) Mode, there is continuity between Pin 5 and 9.

Warranty

Limited Three-Year Warranty and Exclusions

Marathon Power warrants to the original purchaser, who must have properly registered the product within 30 days of purchase, and not for the benefit of anyone else that this product at the time of its sale by Marathon Power is free of defects in materials and workmanship for three (3) years from the original purchase date. Marathon Power will correct such defects by repair or replacement, at its option, if within such three year period the product is returned prepaid and all warranty claim instructions are followed. This warranty excludes labor for removal or re-installation of this product. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with all labels or instructions. There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to three years. Marathon Power is not liable for incidental, indirect, special or consequential damages, including damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation.

Limitations & Claims

This warranty does not cover any Marathon Power UPS or any properly connected electronic equipment which has been improperly installed, overloaded, abused or altered in any manner, or is not used under normal operating conditions, or in accordance with any labels or instructions, and does not cover any damage to properly connected electronic equipment resulting from a cause other than a "surge".

Damage caused by failure to provide a suitable installation environment for the product (including, but not limited to, lack of a good ground) will not be covered by this warranty. This warranty does not apply to damage caused by direct lightning strikes, or damage caused by electrical disturbances that exceed published product specifications. These products are intended to limit the maximum amplitude of transient voltage surges on power lines to specified values. They are not intended to function as surge arrestors. The UPS is intended to be installed on the load side of the service entrance and has been tested to verify that transient voltage surges are limited when subject to non-repetitive transient voltage surge events. This warranty excludes any incidental, indirect, special or consequential damages, including without limitation, labor for removal or re-installation of the Marathon Power UPS or any connected electronic equipment, data loss or alteration loss of equipment use, lost sales or profits and any such damages for delay or failure to perform this warranty obligation. This warranty is in lieu of and excludes all implied warranties of merchantability or fitness for use. In addition, the warranty does not cover restoration of lost data and re-installation of software. Some states may not allow the exclusion or limitation of incidental or consequential damages or other remedies, so the above exclusions or limitations may not apply to you.

Take the following steps to file a warranty claim: Contact us at Marathon Power, Inc., Attn: Returns, 2538 E. 54th Street, Huntington Park, California 90255 or call (310) 689-2328 within 30 days of the occurrence. Be prepared to provide detailed information about the event, any damage, the UPS model number, purchase date and location. You will then be provided with a Return Authorization Number (RAN), and be instructed to forward your proof of purchase (receipt), an explanation of the event and your UPS. If Marathon Power determines that the damage was due to a "surge", we may request that all connected equipment be submitted for evaluation. Marathon Power is not responsible for shipping costs. In the event that the equipment has been damaged by a "surge" Marathon Power will reimburse you for repair or replacement at fair market value (on a pro rata basis) as indicated by the respective amounts above. The warranty coverage is above and beyond, only to the extent needed, of that provided by any other source, including but not limited to any connected equipment coverage, any manufacturer's warranty or insurance policy. To receive payment for repair to damage due to a "surge," the original purchaser should (upon prior approval from Marathon Power) have such equipment repaired by an authorized service center of such equipment's manufacturer. The original purchaser will submit a repair bill along with a statement from the repair facility documenting the nature of the damage and how it was sustained to said equipment.

Return Instructions

Manufacturer does not assume responsibility for damage caused by improper packaging of returned units. The SuperCap system should only be shipped in its original packaging carton of sufficient thickness to withstand handling.

Before returning a UPS or any system component for repair or replacement, a Return Material Authorization (RMA) number must be obtained from Customer service as shown below. Clearly write the RMA number on the original shipping container. If you do not have the original container, pack the unit with at least three inches of shock absorbing material, but do not use popcorn type material. Returns should be prepaid and insured (COD and freight collect cannot be accepted).

Contact Customer Service for service or technical information.

Marathon Power is available for customer service between 7:00am and 6:00pm PST, Monday - Friday and can be contacted as follows:

Phone: 310-689-2328

Fax: 310-689-2329

Email: support@marathon-power.com

Website: www.marathon-power.com

Address: 2538 E. 54th St., Huntington Park, CA 90255



**MARATHON
POWER**

Marathon Power Inc.

2538 E. 54th Street
Huntington Park, CA 90255
Office: 310-689-2328
Fax: 310-689-2329
support@marathon-power.com
www.marathon-power.com