OWNER'S OPERATING MANUAL

SSG Series™ Rackmount Industrial-Grade UPS Plus®

Uninterruptible Power Supply Models:

SSG1KRP-1 - 1kVA, 700W, 120Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG1KRP-2 - 1kVA, 700W, 230Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG1.5KRP-1 - 1.5kVA, 1050W, 120Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG1.5KRP-2 - 1.5kVA, 1050W, 230Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG2KRP-1 - 2kVA, 1400W, 120Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG2KRP-2 - 2kVA, 1400W, 230Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG2.5KRP-1 - 2.5kVA, 1750W, 120Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG2.5KRP-2 - 2.5kVA, 1750W, 230Vac, -30ºC - 65ºC (-22ºF to 149ºF) Operation
SSG3KRP-1 - 3kVA, 2100W, 120Vac, -30ºC - 60ºC (-22ºF to 140ºF) Operation
SSG3KRP-2 - 3kVA, 2100W, 230Vac, -30ºC - 60ºC (-22ºF to 140ºF) Operation

SSG-RP Model

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SSG Series™ Industrial-Grade High Temperature UPS Features

- **True Double Conversion On-Line Sinewave Design**
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- **Output Load Segment Control**
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- **Input Power Factor Correction**
- **Wide Input Voltage Window**
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- **Optional Extended Battery Banks & Chargers**
- **RS-232C, USB & Optional SNMP/HTTP Communications**
- **UPSILON UPS Monitoring & Management Software**
- **Two-Year Warranty**

SSG -RP Series Double-Conversion On-line UPS Block Diagram
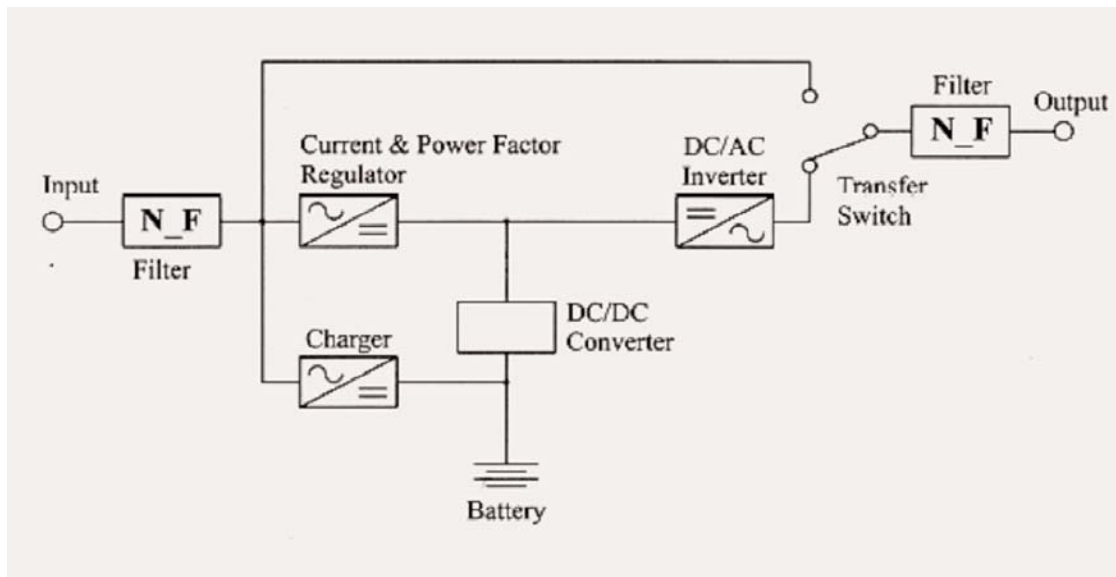
IMPORTANT SAFETY INSTRUCTIONS,
SAVE THESE INSTRUCTIONS

RETAIN THIS USER MANUAL!

This manual contains important instructions which must be followed during the installation, operation and maintenance of the SSG -RP Series UPS, battery banks, options and batteries. **Please read all instructions before operating this equipment and save this manual for future reference.**

All of the models presented herein are designed for installation and use in a temperature controlled environment, free of contamination.

This UPS operates from utility power and contains a number of high current back-up batteries; this information is important to all personnel involved. Please read this manual first before continuing to unpack, install or operate this UPS.

STORAGE AND TRANSPORTATION
This UPS must be handled with care and given special attention due to the high amount of energy stored within its internal sealed, lead acid batteries. Please retain the UPS shipping container in the event the UPS needs to be returned for service. It has been designed to ship the UPS safely,
without shipping damage.

INSTALLATION
This UPS must be installed in a clean environment, free from moisture, flammable gases or fumes and corrosive substances. Operate the UPS in an indoor environment with an ambient temperature range specified by model number herein.
This UPS is designed for use with industrial class equipment.
DO NOT USE TO POWER LIFE SUPPORT EQUIPMENT, OR OTHER DESIGNATED
"LIFE CRITICAL" APPLICATIONS.

The maximum UPS output load (in watts) must never exceed that shown on the UPS rating label. NEVER CONNECT equipment that could overload the UPS or demand half-wave
rectification from the UPS, for example: electric drills, vacuum cleaners or hair dryers.

Storing magnetic media on top of the UPS may result in data loss or corruption.

WARNING
This UPS should be installed according to the instructions in this manual. Failure to do so could result in unsafe operation and could invalidate your warranty.

WARNING
Once batteries have reached the end of their life, ensure they are disposed of properly.

PLEASE REFER TO YOUR LOCAL LAWS AND REGULATIONS FOR BATTERY RECYCLING
REQUIREMENTS. NEVER DISPOSE OF BATTERIES IN A LAND FILL.

Do not dispose of battery pack or batteries in a fire. The battery may explode. Do not open or mutilate the battery pack. Released electrolyte is harmful to skin and eyes. It may be toxic.

CAUTION
Observe all warnings, cautions, and notes before replacing batteries. Batteries can present a risk of electrical shock and burns due to high short circuit current. The following precautions should be observed when working on batteries:
*   **Remove watches, rings, and other metal objects.**
*   **Use tools with insulated handles.**
*   **Do not lay tools or metal parts on top of batteries.**
*   **Do not attempt to alter any battery wiring or connectors. Attempting to alter wiring can cause injury.**
*   **Do not dispose of batteries in a fire. The batteries may explode. Refer to your local codes for disposal requirements.**
*   **Do not open or mutilate the battery packs or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.**

1.0 INTRODUCTION

Manual Overview

This user manual has been written to provide basic information about the Falcon SSG -RP Series Industrial Grade high-temperature UPS. SSG -RP models are available in nominal power ratings of 1000VA, 1500VA, 2000VA, 2200VA and 3000VA . The SSG -RP Series is a compact, rugged, double conversion, "on-line" UPS. It provides continuous power conditioning and accepts a wide range input voltage while providing tight output voltage regulation with a true sinewave output. The SSG Series UPS protects sensitive industrial equipment against the widest range of power problems in the harsh industrial power environment. The SSG -RP protects against power failures, power sags, power surges, brownouts, line noise, high voltage spikes, frequency variations, switching transients, and helps reduce harmonic distortion.

This manual describes unpacking instructions, the unit installation, the major features of the SSG -RP Series UPS and its detailed operation, configuration and troubleshooting.

The specifications located at the end of this manual give detailed parameters of operation for the SSG -RP Series UPS, and provides general information on approvals and certifications.

Brief SSG Overview

The Falcon SSG -RP Series Industrial-Grade UPS may be positioned vertical for desktop or floor standing applications. Brackets are supplied to accommodate installation into a standard 19 inch equipment rack. For vertical installation the supplied stabilization brackets must always be intalled.

The SSG Series front panel features a graphical LED display, providing detailed operational information at a glance. The display enables the user or field service engineer to easily monitor the UPS operation. UPS control and programming is easily accomplished using the Standby, Function/Test and Set/Alarm Silence buttons. Two levels of audible alarms are also provided when the unit is operating on battery.

The SSG Series rear panel supports the following:

a. Load Segment Control - Multiple output receptacles are grouped into one continuous and two programmable load segments. The two programmable load segments may be set to "shed" or turn off the load segment at loss of utility voltage or when the low battery level has been reached. This allows non-essential loads to be turned off, extending the amount of battery runtime.

b. **Remote Emergency Power Off (REPO)** - SSG -RP models are equipped with a REPO connector that may be interfaced with a computer room's isolated, normally closed REPO and meets NFPA 70, NEC645-11.

c. RS-232 and USB Ports - These ports may be used to provide communications between the UPS and a network server or other computer systems. When used in conjunction with the supplied UPSILON software, they give the ability to remotely monitor and control the UPS. The software will automatically save all open computer files and initiate an unattended shutdown in the event of a loss of utility. It supports most MS Windows and Linux operating systems. An optional Unix version is available through Falcon at an additional cost.

d. Communications Option Board Expansion Slot - The slot supports the installation of an optional SNMP/HTTP Agent board or contact closure interface board. The SNMP/HTTP Agent board is a TCP-IP addressable solution to remote UPS monitoring and management via LAN, WAN or the Internet. The agent board is supplied with client software that will remotely shutdown multiple servers or computers through the Ethernet LAN. A CD containing software clients and a SNMP MIB II compliant MIB is provided that supports most popular operations systems.

2.0 SSG UPS CIRCUIT DESCRIPTIONS

Input Filter

This portion of the circuit provides surge protection, certified to meet IEC 61000-4-5 and IEC 801-5. It also filters out both electro-magnetic interference (EMI) and radio frequency interference (RFI) and prevents excessive levels from being conducted back to the utility source. All SSG Series rackmount models have been tested and comply with FCC Class B requirements.

Input Power Factor Correction

While the UPS is operating from the utility source, this circuit converts utility AC power to regulated DC power for inverter use. It corrects the input current to maintain a sine waveform to minimize the amount of current distortion that will be reflected back to the utility.

DC/DC Converter

The DC/DC converter utilizes energy from batteries and boosts up the DC bus voltage to a level required by the inverter. This allows the inverter to operate continuously at optimum efficiency and voltage. The converter incorporates a patented circuit which reduces the amount of ripple current and EMI interference to the battery, increasing the overall battery life.

DC/AC Inverter

In utility mode operation, the inverter utilizes the regulated DC output to invert DC back into clean, regulated sinewave AC power. When utility power fails, the inverter will receive its energy from the battery through the DC/DC converter. In both modes of operation, the UPS inverter is on-line and continuously generating clean, regulated AC output power to the load. The IGBT, PWM inverter is of a very robust design and produces a pure sinewave output with a +/-2% voltage regulation. Having a very low output impedance, it can supply the high current demands of high inrush and non-linear loads.

Battery Packs

The SSG -RP Series UPS utilizes a flame retardant battery pack comprised of four 12V, 5AH, valve-regulated, sealed lead acid (VRLA) batteries in each pack. All SSG battery packs are interchangeable between SSG -RP 1kVA-3kVA models.

To maintain the optimum battery life, the user should operate the UPS in an ambient temperature of 68ºF to 77ºF (20ºC to 25ºC). The SSG -RP Series UPS models use batteries that are rated for the full operational temperature range of the specific UPS model. Please refer to the specificaitons page located at the end of this manual. At temperatures above 25C the battery life will be substantially reduced. Optional extended battery modules are available through Falcon and will extend the amount of battery runtime. Please refer to the exact UPS model in the attached specificaitons for the operational temperature range and the specific battery option part number.

Battery Charger

The internal UPS battery charger utilizes energy from the utility power to continuously charge the UPS batteries. The charger operates in "constant power" mode. The UPS batteries are being charged whenever the UPS is plugged in, turned on and operating from utility power. The internal UPS battery charger output is rated at 1 amp.

CAUTION: When making battery bank connections to the UPS, alwasy verify the battery bank circuit breaker(s) are in the off position. PRIOR to turning on the first battery bank circuit breaker, ALWAYS DEPRESS AND HOLD THE BATTERY PRECHARGE PUSHBUTTON LOCATED ON THE UPS REAR PANEL WHILE TURNING ON THE FIRST BATTERY BANK CIRCUIT BREAKER TO PREVENT UPS DAMAGE.

Manual Bypass Function

A manual bypass button is located on the SSG front panel. When the UPS is operating from utility in the normal on-line state, depressing this button will cause the UPS to transfer to bypass. Depressing the bypass button again will return the UPS to the on-line mode.

Automatic Bypass Transfers

The SSG -RP Series UPS will automatically switch to bypass to energize the connected load when the UPS is first turned on, encounters an overload, encounters an over temperature condition, or upon a UPS failure condition. Should any of these events occur, the UPS will transfer to bypass mode, sound an audible alarm and provide a "bypass" indication on the LED display.

Output Filter

As with the input filter stage, the output filter maintains conducted (EMC) and RFI levels below FCC Class B limits.

3. 0 INSTALLATION

Unpacking

The SSG Series UPS may be shipped in a number of boxes, depending on the model and configuration ordered. The number of boxes you have received should be as indicated:

MODEL	BATTERY MODULE	NUMBER OF BOXES
SSG1KRP-X	n/a (internal battery pack)	1 box shipped
SSG1.5KRP-X	1 battery module	2 boxes shipped
SSG2KRP-X	1 battery module	2 boxes shipped
SSG2.2KRP-X	1 battery module	2 boxes shipped
SSG3KRP-X	1 battery module	2 boxes shipped

If you have not received the proper number of boxes, please contact Falcon Electric Customer Service at 1-800-842-6940.

This UPS is shipped complete with all cables required for operation, including UPSILON software, and rackmount ears for 19" rackmount mounting. Due to the weight of the UPS & battery they must be installed on a rack shelf rated for the total UPS and battery weight.
A full list of the box contents is provided as follows:

SSG1KRP-X	SSG2KRP-X - SSG3KRP-X
Box 1 contains:	Box 1 contains:
UPS module with fitted battery pack	UPS module without battery
RS-232 cable	RS-232 cable
Software CD	Software CD
Manual	Manual
19" rack ears (plus mounting hardware)	19" rack ears (plus mounting hardware)
	Box 2 contains:
	Battery module
	Battery/UPS connection cable
	Keyhole hardware
	19" rack ears (plus mounting hardware)
	1 set of mounting plates & securing hardware

Inspecting The Equipment

Visually inspect the UPS for freight damage. If any the UPS or Battery has been damaged during shipment, keep the shipping cartons and packing materials for the carrier, and immediately file a claim for "shipping damage" with the carrier. If you discover damage after acceptance, file a claim for "concealed damage".

To file a claim for shipping damage or concealed damage:
1.   YOU MUST file with the carrier within 15 days of receipt of the equipment;
2.   YOU MUST send a copy of the damage claim within 15 days to Falcon Electric, Inc.

⚠️ **CAUTION**

The UPS and Battery Module are heavy. Take proper precautions when lifting or moving them.

1. Always install the SSG -RP UPS in a controlled environment.
2. Place the UPS in an area with unrestricted airflow around the unit, away from water, flammable liquids, gases, corrosives, and conductive contaminant.
3. Maintain a minimum clearance of 4 inches in the front and rear of the UPS.
4. Maintain an ambient temperature range specified in the model specificaiton. To maximize the life time of the batteries, an ambient temperature of 68ºF to 77ºF (20ºC to 25ºC) is recommended. **OPERATION IN TEMPERATURES ABOVE 77ºF (25ºC) WILL REDUCE BATTERY LIFE**.

5. The SSG Series UPS can be installed in either a free-standing mini-tower or into a 19 inch equipment rack. Follow the appropriate instructions in either Rackmount UPS Setup or Free-standing UPS Installation.

Rackmount UPS Setup

All SSG Series models are shipped with front panel mounting ears that allow the unit to be installed in a 19" equipment rack. Each UPS unit and external battery enclosure requires 2U (3.5 inches) of vertical rack space.

NOTE !

The rack-mounting ears **WILL NOT** support the weight of the UPS or battery bank by themselves. They are only to be used to secure the UPS to the front rails of the rack. Unless Falcons optional UPS and Battery slide rail kits is purchased and installed, an equipment shelf is required to support the weight of the UPS and battery modules.

Use the following procedure to install the UPS in an standard 19" equipment rack:
1.   Place the UPS on a flat, stable surface with the front of the UPS facing you.
2.   Align the mounting ears with screw holes on the side of the UPS and secure with the supplied screws.
3.   If installing the Battery Module, repeat the above STEPS.
4.   For slide rail installations, fasten the inner parts of the slide rails to the UPS on both sides with the screws provided.

CAUTION: When making battery bank connections to the UPS, alwasy verify the battery bank circuit breaker(s) are in the off position. PRIOR to turning on the first battery bank circuit breaker, ALWAYS DEPRESS AND HOLD THE BATTERY PRECHARGE PUSHBUTTON LOCATED ON THE UPS REAR PANEL WHILE TURNING ON THE FIRST BATTERY BANK CIRCUIT BREAKER TO PREVENT UPS DAMAGE.
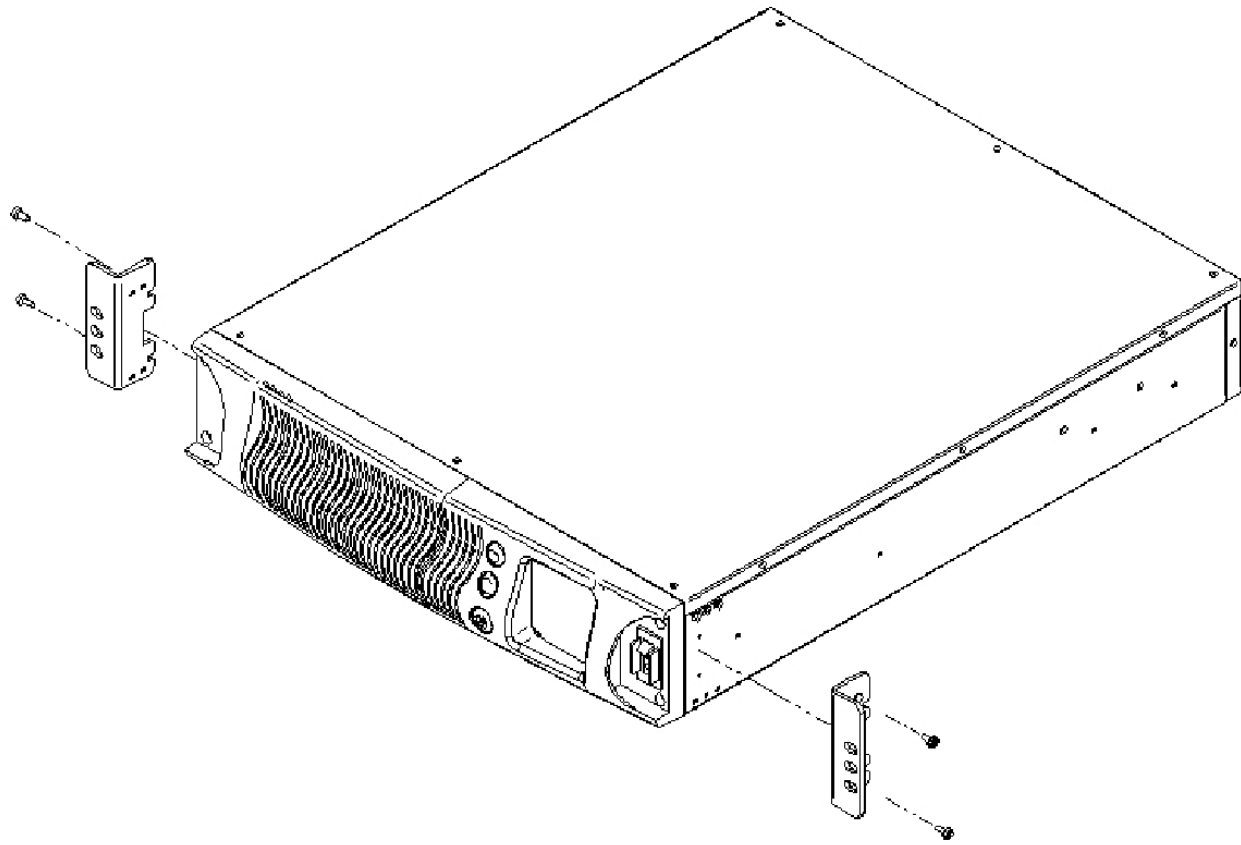
5.   ** **Securing hardware, slide rails and rail extensions are sold separately**. Contact Falcon Electric for these additional options and any assistance needed.**

6.   Attach the two mounting brackets to the rack's mounting rails. The brackets allow adjustment of up to eight inches of the slide assembly mounting position, front-to-back, on the rack-mounting rails. Determine which adjustment holes to use on the bracket, and attach it to the slide assembly on the stationary outer slide.
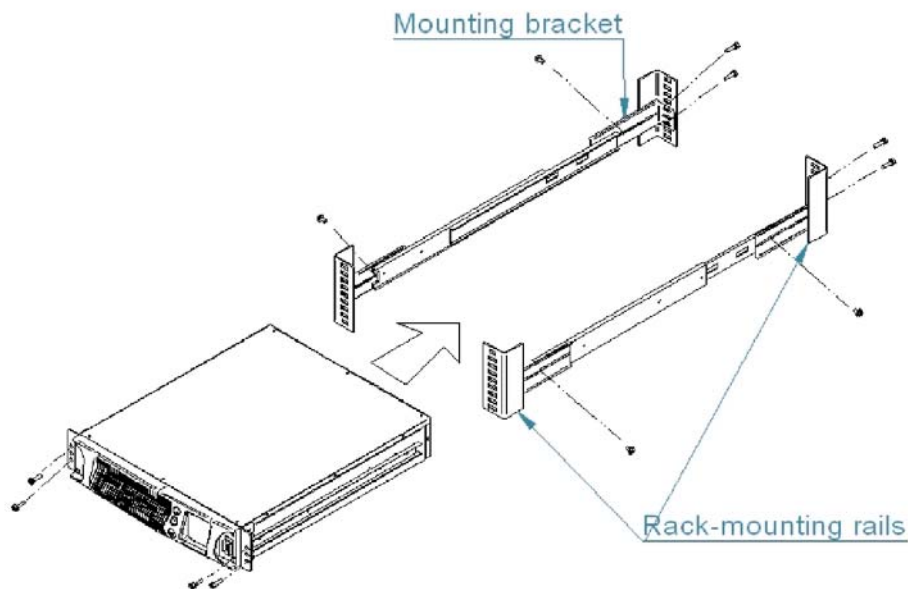
7.   Install the slide assemblies, with brackets into the rack enclosure.
The return flanges on the mounting brackets and outer parts fit to the inside of the rack-mounting rails.
8.   Verify the slide assemblies are in the same alignment position on all four rack-mounting rails. After checking alignment, TIGHTEN ALL SCREWS.
9.   Insert the UPS, with inner parts attached, into the slide assemblies. You may need to depress the locking mechanisms on the inner and outer parts of the slide assemblies to allow the slides to retract. The UPS should move smoothly forward and backward on the slide assemblies. If not, recheck alignment.
10. Once the UPS is installed in the rack, the load may be connected to the output of the UPS. Ensure the equipment being connected is turned off. Plug all loads into the output receptacles on the rear of the UPS. Plug the UPS into a dedicated wall receptacle that is protected by a circuit breaker or fuse in accordance with national and local electrical codes.
Use a 15 amp rated outlet for 1000VA &1500VA models, a 20 amp outlet for the 2200VA model, and a 30 amp outlet for the 3000VA model. The wall receptacle used must be grounded.
11. To turn on the UPS, switch on the input circuit breaker; wait for the UPS to switch from bypass to inverter mode and then turn on the connected equipment.

Free-standing (tower) Installation
When installing the SSG Series UPS in a free-standing configuration, mounting feet for the SSG - RP models are provided and must be used to stableize the UPS when installed in a free-standing, verticle position.The feet are shown below. SSG models are provided with keyhole hardware to "lock" the UPS and battery bank units together. This key lock is also required if additional battery packs are added.

Mounting feet

X
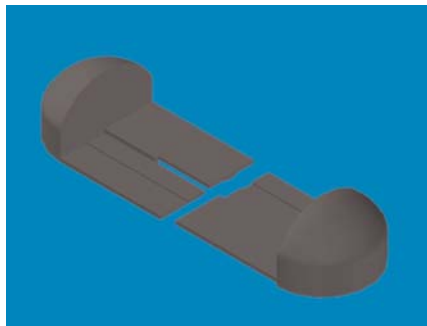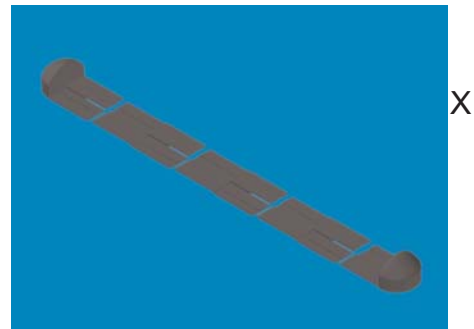
Mounting feet for additional battery banks
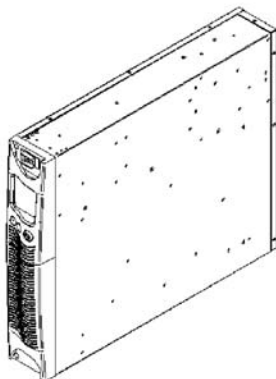
SSG1.5KRP-X Free Standing
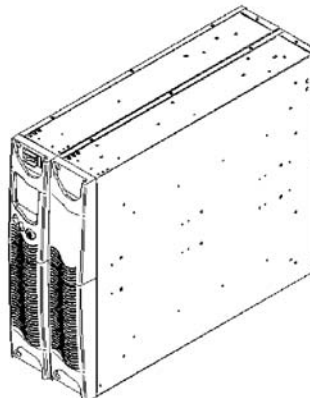
SSG2KRP-X to SSG3KRP-X Free Standing

Battery Bank Installation Procedure

The battery modules have been designed to be placed on one side of the UPS as shown below.
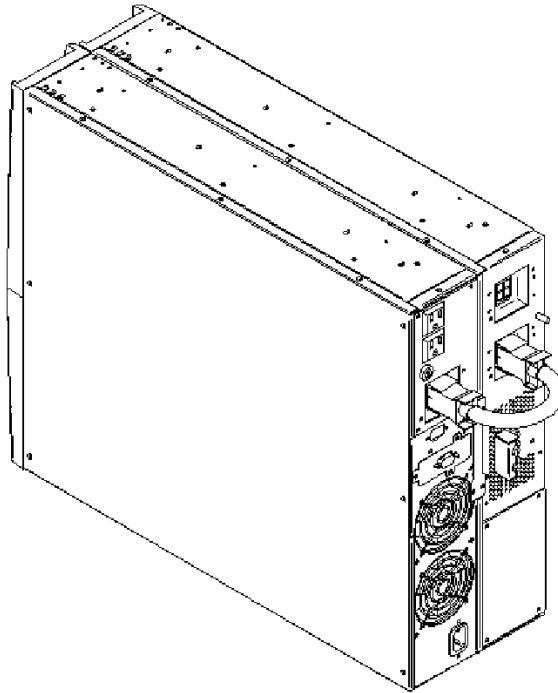
1. Visually inspect the battery module for any freight damage. Report damage to the carrier and Falcon Electric immediately.
2. Use the mounting feet to secure the unit and to prevent them from tipping over. One additional set of mounting feet base extensions ships with each battery bank.
3. Turn off the battery disconnect switch and connect the supplied battery bank cable to the UPS connector located on the rear of the battery bank. Next connect the other end of the cable to the battery bank connector located on the rear of the UPS as shown.
4. Turn on the battery disconnect switches located on the back on the rear of the battery bank(s).
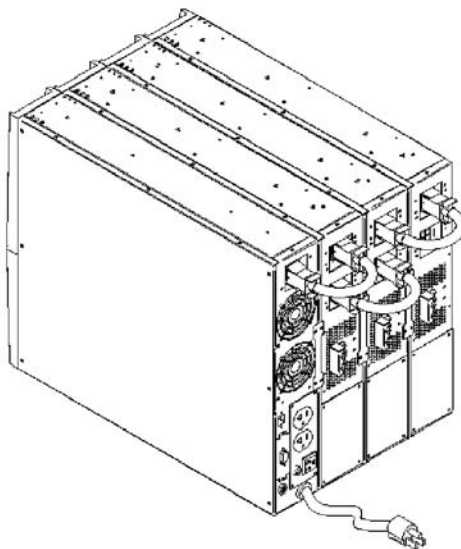
4.0 DISPLAY & CONTROLS

The diagram below shows the basic functions of the front panel for all SSG Series 1.5-3kVA UPS models.
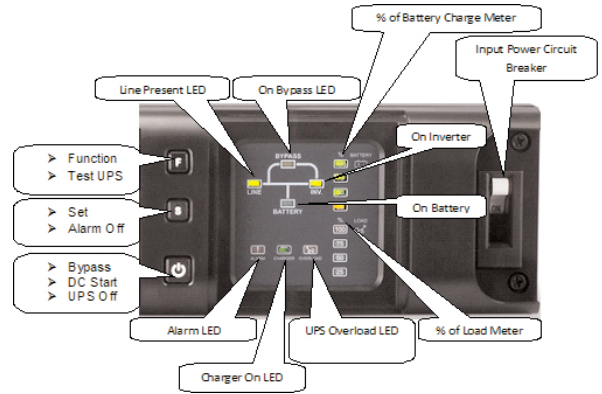
LED Indicators located on the SSG-RP LED display:

UPS Alarm Condition: This LED will be lit when an alarm condition exists. Refer to page 29 of this manual and attempt to correct the alarm condition.

Output Load %: The greater the load, up to four LEDs will be illuminated . Each LED represents 25% of the UPS output rating.

On Inverter: This LED will be lit when the UPS is in Inverter mode.

Line Present: The Line Present LED will be lit when utility power is present and within valid limits.

Charger On: When the battery charger is operating, the LED will be lit.

Battery Mode: When the UPS is operating from battery this LED will be lit.

% Of Battery Charge Meter: The battery meter LEDs indicates the % of battery charge remaining. The more battery capacity available, the more LEDs that will be illuminated. Each LED represents 25%.

On Bypass: This LED will be lit when the UPS is in bypass mode.
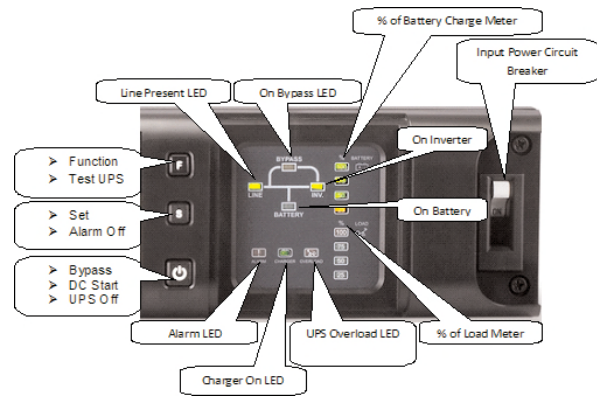
Controls (all models):

The primary front panel user controls consist of one input circuit breaker and three push-buttons:
The switch located to the right of display is the main input circuit breaker and controls the connection of utility power to the UPS and its internal battery charger.
.
The three buttons located to the left of the LED display are for primary manual control and programming of the UPS. From top to bottom they are designated "Function/Test", "Set/Alarm Silence", and "Bypass/DC Start/UPS Off".

Function/Test Button

This button has two functions:
1 Initiates internal UPS Setup mode to allow for configuration changes. Setup mode is initiated by pressing both the "Function/Test" and Set/Alarm buttons down and holding them for one second.
2 Manual Battery Test - If depressed for less than three seconds, it initiates an immediate battery test.

Manual Battery Test Description - When the UPS is operating normally from utility power, pressing the test button will cause the UPS to test the voltage status of the batteries for 10 seconds. During that period, the battery, if first determined to be good, will supply power to the UPS. Should defective batteries be detected, the audible alarm will sound one long tone, and the UPS will continue to operate from the utility voltage, without going to battery mode. During the battery test, the output of the UPS will not be adversely affected.

Set/Alarm Silence Button

This button has three functions:
1 Disables the audible alarm buzzer
2 Scrolls the display through the various UPS parameters.
3 Sets configuration changes (when pressed in setup mode only).

Disable the Audible Alarm - Pressing the button for one second will turn off the audible alarm. This will cause future notification of minor alarms to be silenced.

> **NOTE!**
> **THE FOLLOWING ALARMS CANNOT BE SILENCED:**
> **OVER TEMPERATURE, PFC OVER CURRENT, INVERTER OUTPUT OVER LOAD, LOW BATTERY AND UPS OR CHARGER FAILURE.**

How to Display The UPS Parameters - Repeat pressing of the Set/Alarm button will cause UPS input and output parameters to be displayed on the lower portion LED display in the following order. The input voltage, output voltage, output frequency, battery voltage, percentage of output load, input current, internal UPS temperature and the output current.

UPS Alarm Status Display

Upon the UPS sounding a continious alarm condition, the alarm status bit will be displayed on the LED display located on the UPS front panel. Please note the status bit number displayed and contact the Falcon service department immedately. To assist please inform them of the bit(s) displayed.
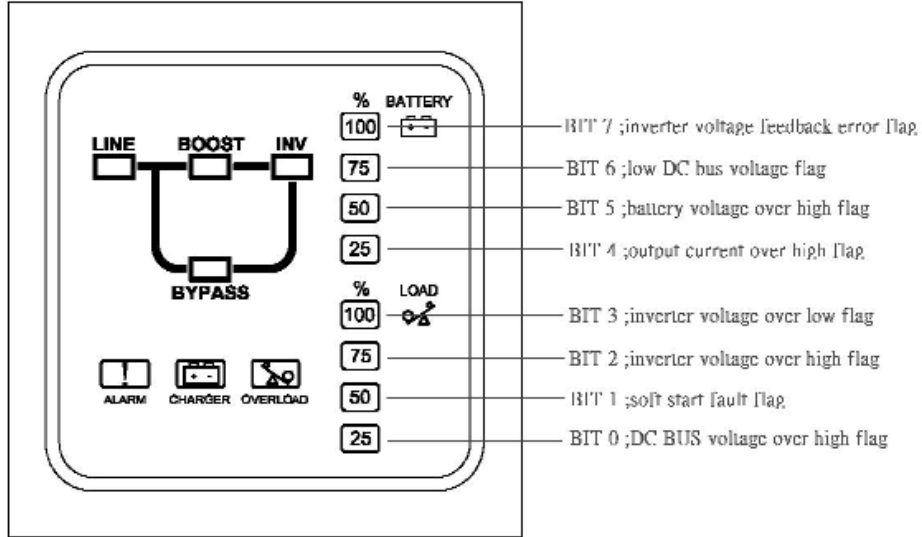
Warning: Upon experiancing errors Bit, 0, Bit 1, Bit, 2, Bit 3, Bit 6 and Bit 7 errors the UPS must be immediately turned off and the Falcon service department contacted. Attempting to turn the UPS back on may result in furter damage to its internal electronics.

Programming Bit Designations
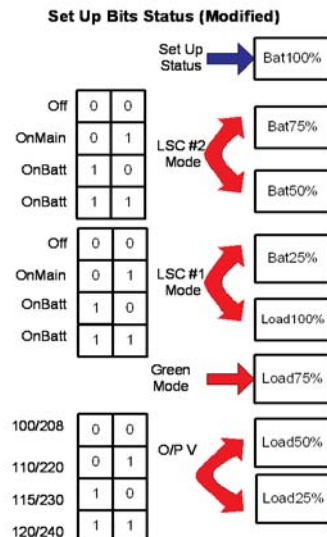
⚠ <u>**CAUTION**</u>

When the UPS is in Normal On-line mode, pressing the bypass button once will put the UPS into Bypass Mode. While in bypass, should the utility power become unavailable, the UPS output will turn off and the UPS will shut down.

Once the unit is in Bypass Mode operation, pressing this button again will force UPS back to on-line mode operation.

5.0 UPS OPERATION

OPERATING MODES (LED models)
The following outlines the UPS status for each mode of operation as displayed by the LED.

NORMAL ON-LINE MODE OPERATION

During normal on-line operation, utility power provides energy to the UPS. The filters, power factor corrector and the inverter process the power to provide computer grade power to connected loads. The UPS maintains the batteries in a fully charged state.

The LED display will indicate on-line mode operation, indicate the percent of load, inverter, line, charger and battery status.

The dark, solid line on the MIMIC portion of the display indicates the normal mode power flow from input, through the inverter, to load and from the input, to the charger and into the battery.

BATTERY MODE OPERATION

When in battery mode, the UPS battery supplies energy to the DC to DC converter, and then on to the inverter, which powers the connected load. During the battery discharging, the audible alarm will beep. The rate of the beeping will increase as the battery runs low (low battery), prior to UPS shut down. Once the low battery warning is sounded, there will be about one minute of battery runtime remaining.

After the UPS has shut down, when utility power has been restored, the UPS will automatically restart.

The LED display will indicate the UPS Line is off and the inverter LED is on. The battery LED indicates the UPS is in Battery Mode. The dark solid line indicates battery power flow to the DC to DC converter and on to the inverter. The LEDs of the battery charger display indicates the amount of battery capacity remaining; each LED represents a 25% capacity increment. As capacity decreases, fewer LEDs will remain illuminated. The charger LED is turned off.

BYPASS MODE OPERATION

The UPS will automatically transfer to Bypass Mode in the event it is overloaded, experiences an internal failure for the conditions listed below. When in bypass, the UPS will transfer the connected load directly to the incoming utility power. _When in bypass mode, Battery Mode will not be available_. However, the utility power will continue to be passively filtered by the UPS. Additionally, the UPS will sound an audible alarm and switch to Bypass Mode automatically upon the following conditions:

* The UPS has experienced an over temperature condition.
* The UPS has experienced an overload condition of 101 to 110% for over 120 seconds.
* The UPS has experienced an overload condition of 111 to 150% for over 20 seconds.
* The UPS has experienced an overload condition of over 150%.
* The UPS detects a fault in the battery or UPS electronics.

The Bypass LED illuminated indicates the UPS is in Bypass mode.

GREEN MODE OPERATION

When Green Mode is turned on, using the UPS programming interface, the SSG -RP unit will automatically switch to "Green Mode" (Bypass Mode), once the connected load drops to less than 3% of the UPS's rated output. The load will operate directly from utility power, similar to Bypass Mode. The LED display will indicate the UPS is in Bypass Mode, the Green Mode LED will be flashing. If the load is increased to over 3% of the UPS output rating, the UPS will automatically switch back to normal on-line operation. All SSG -RP models are shipped from the factory with Green Mode turned off. To enable Green Mode, refer to the section on UPS Setup, Configuration & Programming. See the green mode configuration section for further details and cautions.

How to Turn On the UPS (with utility power)

Once installation has been complete, the UPS can be powered up. With utility power present, turn on the UPS input circuit breaker located on the front panel. The UPS will enter an Auto-Test state and all of the LED indicators will be illuminated flashing for ten seconds and then return to a normal state. The UPS will start up in bypass mode and after several seconds should transfer to the normal on-line mode.

How to DC Start the UPS (without utility power)

In the event utility power is not available, the UPS may be started up in battery mode. To turn on the UPS without utility power available, press and hold the "BYPASS" button. The UPS will start on battery and supply power to the connected loads until the batteries are depleted. Always recharge the batteries immediately by connecting the UPS to utility power and turning on the UPS input circuit breaker after any full battery discharge. For DC start operation the load segment control must be set to Continuous Mode operation.

How to Turn Off the UPS

To turn off the UPS:
While in normal on-line mode, press the Bypass button for one second. The UPS will go into Bypass Mode. Next, turn off the input circuit breaker. The unit will shut down after about 30 seconds.

While in battery mode: Press the Bypass button for one second. The unit will shut down after about 30 seconds.

NOTE!
DURING SHUT DOWN, DO NOT PRESS ANY BUTTON SINCE UPS MIGHT BE RE-ENERGIZED AND DELIVER POWER TO ITS OUTPUT UNEXPECTEDLY.

6.0 UPS SETUP, CONFIGURATION & PROGRAMMING

The following section describes how to reconfigure the internal UPS setup options, by using the Setup, Configuration & Programming Mode. The setup options include: The UPS output voltage, enabling or disabling Green Mode and output Segment Control operational mode settings.

CAUTION
Never change the voltage settings when the UPS is ON and powering any connected loads.

How To Place the UPS Into Setup/Configuration Mode

To place the UPS into configuration mode: press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will emit one audible beep and the Load and battery LED displays will function the setup configuration display. See page14

(Ref. the LED diagram on page 14)

Note on the right side of the display panel, you will see a row of 8 LEDs (battery & load). Forming an 8 BIT column located on the right side of the display. The bottom most LED bit is function BIT 0, with the remaining upper most six LED bits, function bits 1 through 6. The Top LED is BIT 7 is the Status Bit which indicated the setting of the setting status of the seven other Function bits. Repeat pressing of the "Function/Test" button will light the LEDs from function BIT 0 (bottom) to function BIT 6. When selecting function BIT 0 through BIT 6, observe whether status BIT 7 LED is lighted (1) or off (0). To change the function you are presently in, press the "Set/Alarm Silence" button to turn on the Status LED or turn off the Status LED. Next, press the "Set/Alarm Silence" and "Function/Test" buttons at same time, and hold for one second. The audible alarm will sound one short beep to acknowledge the UPS has stored the selected settings.

Setting the Green Mode Function (set to disabled from factory)

Green Mode is a power saving feature that should only be used in non-critical applications when the connected computer or equipment is the only device being protected by the UPS and when turned off, UPS battery backup is no longer necessary. When the Green Mode is enabled and the connected load decreases to less than 3% of the full rated UPS output capacity, the UPS will automatically switch from on-line to Bypass Mode, 30 seconds after the drop in load has been detected. After the UPS has switched to Bypass Mode, the Green Mode LED will flash to indicate the UPS is in the energy saving Green Mode. While in Green Mode, should the load increase to greater than 3% of the UPS's full output rating, the UPS will automatically return to normal On-line Mode operation.

CAUTION- When Green Mode is enabled, and the UPS has switched to Bypass Mode due to a reduction in load, **THE UPS WILL NOT GO TO BATTERY MODE IN THE EVENT OF A UTILITY FAILURE. THE CONNECTED LOAD WILL BE TURNED OFF. Turning Green Mode off in configuration mode will restore normal UPS operation.**

Green Mode Setup (Ref. the LED diagram on page 14)

Status Bit 7	Function Bit 6	Function Bit 5	Function Bit 4	Function Bit 3	Function Bit 2	Function Bit 1	Function Bit 0
Set or Clear	LSC#2 Low Batt	LSC#2 Uty. Loss	LSC#1 Low Batt.	LSC#1 Uty. Loss	Green Mode	120V or 240V- On 115V or 230V- On 110V or 220V- Off 100V or 208V- Off	120V or 240V- On 115V or 230V- Off 110V or 220V- On 100V or 208V- Off

How to Enable or Disable Green Mode (Function Bit 2)

To Enable:

1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will sound one beep and then enter the Configuration Mode.
2. Press the "Function/Test" button two times to move the dot from function BIT 0 to function BIT 2 (The Green Mode function).
3. Press the "Set/Alarm Silence" button to enable **(LED OFF)** BIT 7. (The reverse of other feature enable settings)
4. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm will sound one short beep to acknowledge the UPS has stored the setting.

To Disable: (Factory Default)

1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will sound one beep and then enter the Configuration Mode.
2. Press the "Function/Test" button two times to move the dot from function BIT 0 to function BIT 2 (Green Mode function).
3. Press the "Set/Alarm Silence" button to turn **(LED ON)** the BIT 7 LED. (The reverse of other feature disable settings)
4. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm buzzer will sound one short beep to acknowledge the UPS has stored the setting.

How to Set the UPS Output Voltage (Function Bits 0 & 1)

The SSG Series UPS is shipped configured from the factory with its output voltage set to 120Vac. **For most North American applications, the UPS output voltage will not have to be changed.**

CAUTION: NEVER CHANGE THE UPS OUTPUT VOLTAGE WHILE IT HAS EQUIPMENT CONNECTED TO ITS OUTPUT RECEPTACLES.

Make output voltage configuration changes and verify the desired output voltage is present at the UPS output using the UPS output voltage display function. Next, verify that all of the equipment to be connected to the UPS will operate satisfactorily on the newly selected output voltage.

CAUTION: **When the UPS output voltage is set to 100Vac, the maximum amount of load that can be connected to the UPS must be derated (reduced) by 15%.**

Output Voltage	Function BIT(s)	Status Bit (BIT 7)
120Vac	BIT 0 & BIT 1	For BIT 0, set bit 7 On (LED on, For BIT 1, set bit 7 On **(default)**
115Vac	BIT 0 & BIT 1	For BIT 0, set bit 7 Off (LED off), For BIT 1, set bit 7 On
110Vac	BIT 0 & BIT 1	For BIT 0, set bit 7 On (LED on), For BIT 1, set bit 7 Off
100Vac	BIT 0 & BIT 1	For BIT 0, set bit 7 Off (LED off), For BIT 1, set bit 7 Off

Status Bit 7	Function Bit 6	Function Bit 5	Function Bit 4	Function Bit 3	Function Bit 2	Function Bit 1	Function Bit 0
						120V or 240V- On	120V or 240V – On
Set	LSC#2	LSC#2	LSC#1	LSC#1	Green	115V or 230V – On	115V or 230V – Off
Or	Low Batt	Uty. Loss	Low Batt.	Uty. Loss	Mode	110V or 220V – Off	110V or 220V – On
Clear						100V or 208V - Off	100V or 208V - Off

Example - How to Set the UPS Output Voltage to 115Vac (-1 models) or 230Vac (-2 Models)

1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will emit one alarm beep and then enter the Configuration Mode.
2. Press the "Function/Test" button eight times to move to the function LED, BIT 0 (on).
3. Press the "Set/Alarm Silence" button turn off Status BIT 7.
4. Press the "Function/Test" button one time and move the to the function LED BIT 1 (on).
5. Press the "Set/Alarm Silence" button to turn on Status BIT 7.
6. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm buzzer will sound one short beep to acknowledge the UPS has stored the settings.
7. **You must now restart the UPS before the new voltage setting will be in effect.**

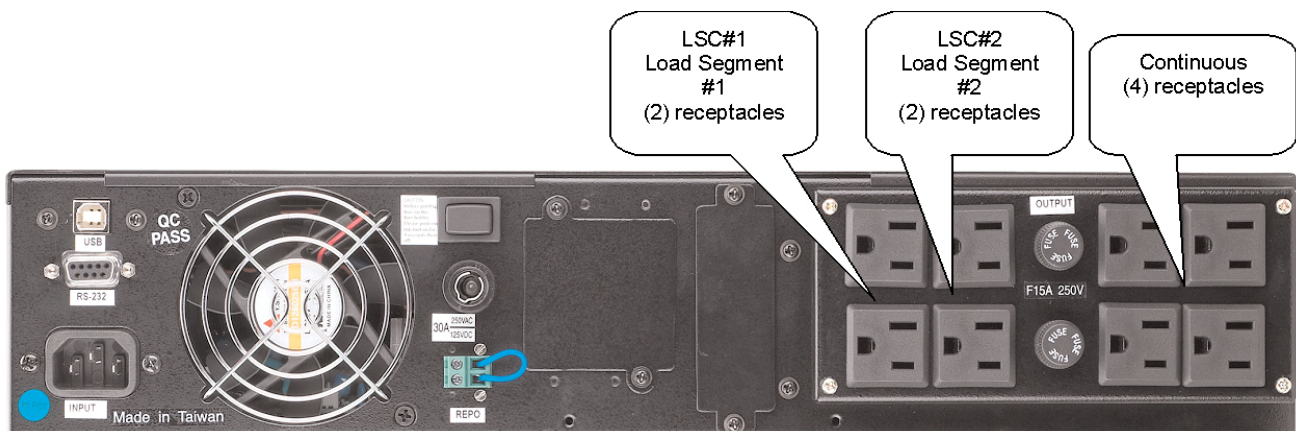### How to Set the UPS Load Segment Control Options (Function Bits 3, 4, 5 & 6)

Three conditions of automatic load segment control may be programmed for two separate output load segments. Additionally, one continuous load segment is provided. Per the model-specific rear panel pictures that follow, the two programmable and one continuous load segments are assigned to specific output receptacles located on the UPS rear panel.

For each programmable load segment, the following conditional states may be selected:
1. Turn off the assigned load segment when utility power is lost (bits 3 & 5)
2. Turn off the assigned load segment whenever low battery is reached (bits 4 & 6).
3. Load segment bits are turned off making the load segment continuous.

Load Segment Control Setup (Ref. the LED diagram on page 14)

Status Bit 7	Function Bit 6	Function Bit 5	Function Bit 4	Function Bit 3	Function Bit 2	Function Bit 1	Function Bit 0
						120V or 240V- On	120V or 240V – On
Set	LSC#2	LSC#2	LSC#1	LSC#1	Green	115V or 230V – On	115V or 230V – Off
Or	Low Batt	Uty. Loss	Low Batt.	Uty. Loss	Mode	110V or 220V – Off	110V or 220V – On
Clear						100V or 208V - Off	100V or 208V - Off

LSC#1 Load Segment #1 (2) receptacles

LSC#2 Load Segment #2 (2) receptacles

Continuous (4) receptacles

Making Load Segment Settings

A. Setting load segments to automatically turn off the load segment when utility power is lost
1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will emit one alarm beep and then enter the Configuration Mode.
2. Press the "Function/Test" button repeatedly and move to the function BIT 3 LED (on) (for load segment 1), or BIT 5 LED on (for load segment 2).
3. Press the "Set/Alarm Silence" button once to turn on Status BIT 7 LED.
4. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm buzzer will sound one short beep to acknowledge the UPS has stored the settings.

B. Setting load segments to automatically turn off the load segment at low battery
1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will emit one alarm beep and then enter the Configuration Mode.
2. Press the "Function/Test" button repeatedly and move to the function BIT 4 LED (on) (for load segment 1), or BIT 6 (for load segment 2).
3. Press the "Set/Alarm Silence" button once to turn on (dot) Status BIT 7.
4. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm buzzer will sound one short beep to acknowledge the UPS has stored the settings.

C. Setting load segments for continuous mode operation
1. Press the "Function/Test" and "Set/Alarm Silence" buttons at same time and hold them for one second. The unit will emit one alarm beep and then enter the Configuration Mode.
2. Press the "Function/Test" button repeatedly and move the dot to function BIT 3 (for load segment 1), or BIT 5 (for load segment 2).
3. Press the "Set/Alarm Silence" button once to turn off (no dot) Status BIT 7.
4. Press the "Function/Test" button repeatedly and move the dot to function BIT 4 (for load segment 1), or BIT 6 (for load segment 2).
5. Press the "Set/Alarm Silence" button once to turn off (no dot) Status BIT 7.
6. Press the "Set/Alarm Silence" and "Function/Test" buttons at same time again and hold for one second. The alarm buzzer will sound one short beep to acknowledge the UPS has stored the settings.

7.0 COMMUNICATIONS

All SSG Series UPSs are provided with the following communication ports:
* RS-232 port with standard DB-9F serial port connector.
* USB port supporting the connection of a standard USB interface cable.
* One advanced communications option slot is provided on the rear panel of the UPS. Unless an advanced communications option board has been previously purchased and installed, the port will be covered with a small cover plate. This plate will be secured with screws.

> **CAUTION:** **NEVER INSTALL OPTION CARDS THAT HAVE NOT BEEN SUPPLIED BY FALCON ELECTRIC OR ARE FOR ANOTHER FALCON MODEL WITHOUT CONSULTING WITH FALCON SERVICE.**

Advanced communications option cards available from Falcon are:
Internal SNMP/HTTP Agent Board
Standard Dry Contact Interface Board

Note: A special external SNMP/HTTP Agent device is available that may be connected to the UPS's RS-232 port. This allows for one dry contact interface board to be installed into the Advanced Communications Option Slot concurrently.

> **CAUTION:** **When an internal SNMP/HTTP AGENT device is installed into the Advanced Communications Option Slot, the RS-232 port and UPSilon software may not be used. The USB port may be used in conjunction with UPSilon software concurrently with the SNMP/HTTP agent.**
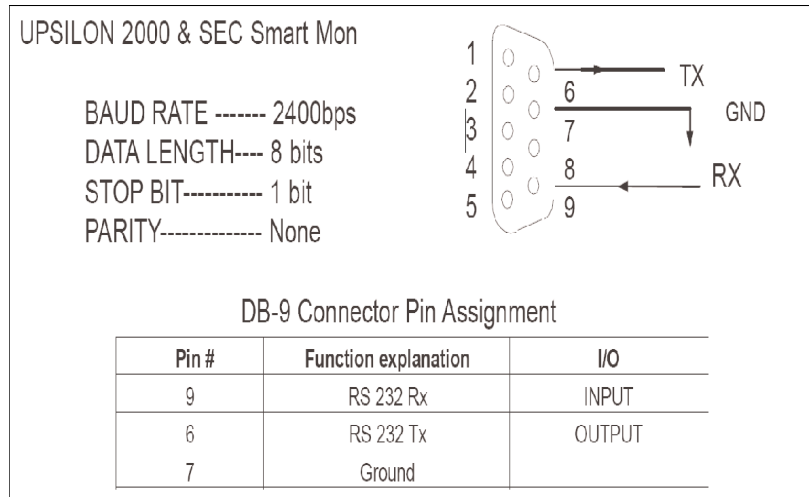
RS-232 & USB Ports

This UPS is equipped with (1) RS-232 and (1) USB port located on the UPS rear panel. A standard RS-232C interface cable is provided to allow for the connection of the UPS to another RS-232 port found on most computers. The USB port interfaces with a standard USB cable to be supplied by the end-user. The USB cable required is a - 4 Pin USB Type A (M) connector - 4 PIN USB Type B (M) connector. The USB and RS-232 ports cannot be used concurrently. When an RS-232 or USB cable has been connected, and the supplied UPSilon Computer Shutdown and Management software has been properly installed on the connected computer, a high level of UPS management and protection against lost or corrupted files is in effect. **Please follow the installation and setup instructions supplied on the UPSilon software CD.**

The UPSilon users manual is also located on the UPSilon CD supplied with this unit. UPSilon supports most popular operating systems. Should you have special UNIX requirements, please contact Falcon Sales for information and pricing of UPSilon for UNIX.

PIN #	PIN Definition (UPS)	PIN Definition (PC)
2	Transmitted data	Received data
3	Received data	Transmitted data
4	DTE Ready	DTE Ready
5	Signal Ground	Signal Ground

The supplied Falcon RS-232 interface cable pin designations are as follows:

UPSILON 2000 & SEC Smart Mon

BAUD RATE ------- 2400bps
DATA LENGTH---- 8 bits
STOP BIT---------- 1 bit
PARITY------------- None

1 2 3 4 5 6 7 8 9

TX
GND
RX

DB-9 Connector Pin Assignment

Pin #	Function explanation	I/O
9	RS 232 Rx	INPUT
6	RS 232 Tx	OUTPUT
7	Ground	

The computer RS-232 Port settings should be set to the following:

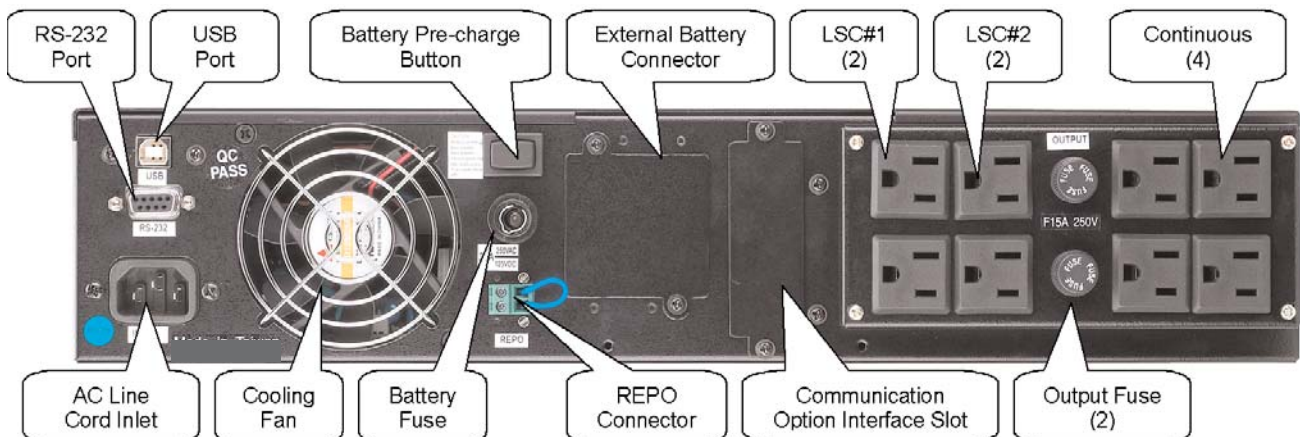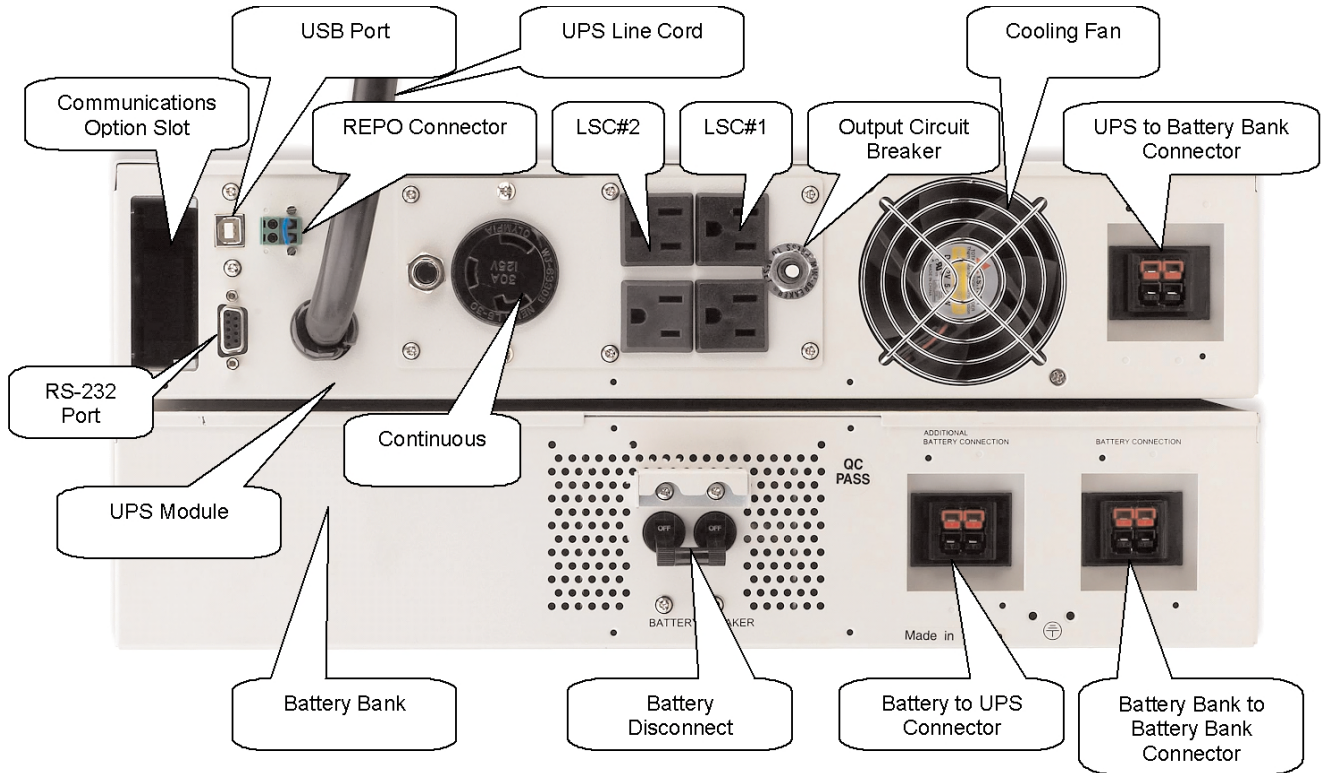| Baud Rate	2400 bps
Data Length	8 bits
Stop Bit	1 bit
Parity	None

Remote Emergency Power Off (REPO)

A two-pin REPO connector is located on the rear panel of the UPS. The connector is shipped with a jumper wire installed, to facilitate the normal operation of the UPS in the event an REPO connection is not used.

The REPO function provides an interface for a NFPA 70, NEC 645-11 compliant Remote Emergency Power Off (REPO) switch. The switch must have a normally-closed contact state that opens when the REPO button is depressed (REPO ACTIVE).

When the REPO switch contacts are opened, which also turns the equipment room power and UPS power off, the UPS output will immediately turn off all connected loads and then will shut down within one minute. When the REPO switch contacts are closed, restoring the equipment room's power, the UPS will restart.


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SSG2KRP-1 to SSG3KRP-1 Rear Panel Layout

USB Port

UPS Line Cord

Cooling Fan

Communications Option Slot

REPO Connector

LSC#2

LSC#1

Output Circuit Breaker

UPS to Battery Bank Connector

RS-232 Port

Continuous

UPS Module

Battery Bank

Battery Disconnect

Battery to UPS Connector

Battery Bank to Battery Bank Connector

Contact Closure Interface Card Option (New UA88376-SSG) Replaces UA88374

Note: This card installs into the Communicaitons Option Slot
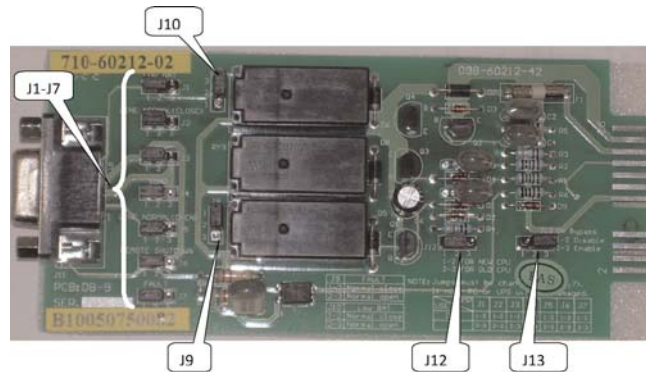
JUMPER SETTINGS

J1 through J7 = 1-2 DB-9 configured for Green cable (Default)
J1 through J7 = 2-3 DB-9 configured for standard RS-232 cable
Note: J1-J7 must be all configured 1-2 or 2-3, or UPS and PC may be damaged.
J9 Summery Alarm - 1-2 Normally Closed (Default), 2-3 Normally Open
J10 Low Battery = 1-2 Normally Closed, 2-3 Normally Open (Default)
J12 Model Selection = 1-2 XG & SSG Models, 2-3 IG & SVR-Pro-2 Models
J13 On-Bypass = 1-2 Disable, 2-3 Enable (Default)

DB-9 PIN ASSIGNMENTS

1 = Not Used
2 = Utility Loss, Normally Open
3 = Utility Loss, Normally Closed
4 = Common (tied to pin 7)
5 = Low Battery
6 = Remote Shutdown (5-12Vdc)
7 = Common (tied to pin 4)
8 = Alarm / Bypass
9 = Not Used

8.0 MAINTENANCE

All SSG Series UPS (except -RP models) requires very little maintenance. The batteries are located inside user replaceable packs containing (6) Enersys Cyclon X Cell, wide temperature range, sealed, VRLA, maintenance-free,lead-acid batteries.

Batteries must be kept recharged to prevent excessive self-discharging, which may result in their premature failure. **The UPS will continuously recharge the batteries when plugged in and turned on.**

1. The UPS and Battery Care
Keep the area around the UPS clean and dust free. If the area around the UPS becomes very dusty, clean the area and the UPS with a vacuum cleaner. To assure the full 10 year battery life, keep the UPS at an ambient temperature of 25ºC (77ºF).

2. Storing the UPS and Batteries

When storing the UPS for any length of time, it is recommended to plug and turn on the UPS for at least 24 hours. Please refer to page 27 for more details.

3. When to Replace Batteries

We suggest the battery pack(s) containing 10 year batteries, have the batteries replaced every 8-10 years for SSG -RP units that are operated and maintained in a 25ºC environment. Higher temperature operating environments will decrease the battery life. For 10 year batteries installed in a 50ºC enviroments, they will need to be replaced about every year.

In order to assure the performance of the SSG -RP Series UPS, check the battery every two to three months by pressing "Function/Test" button and conducting a battery test. If the UPS goes back to normal On-line Mode in less than 10 seconds with one long beep, the batteries need replacing. Contact Falcon Electric Service Department to order replacement battery packs.

### 4. Battery Pack Replacement
With the hot-swappable battery bank, the SSG -RP Series UPS battery bank is easily replaced, without having to turn the UPS off or disconnecting the load. Refer to the battery replacement section of this manual for replacement instructions. Refer all SSG-RP model battery replacement and servicing to the Falcon Electric service department.
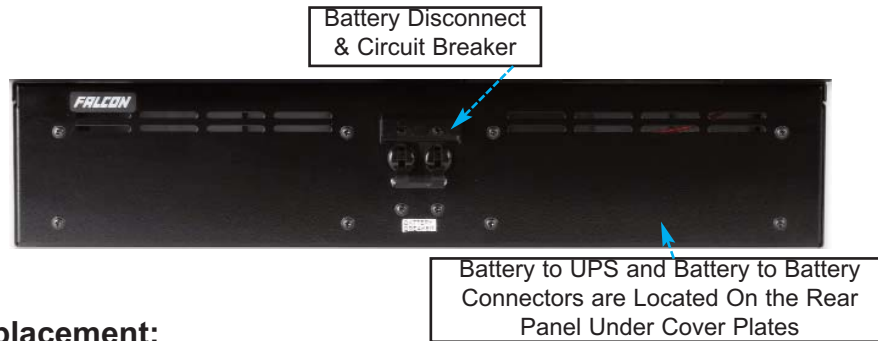
NOTE!
NEVER ATTEMPT TO DISCONNECT THE BATTERIES OR REMOVE THE BATTERY FUSE OR TURN OFF THE BATTERY DISCONNECT WHILE THE UPS IS IN BATTERY MODE.

SSG -RP Battery Bank Replacement
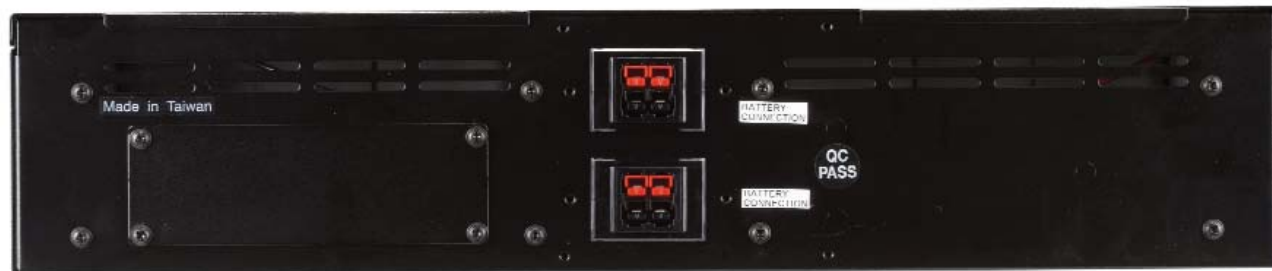
1.   Disconnect the battery bank to UPS and any battery bank to batter bank interconnect cables.
2.   Loosen and remove the screws securing the battery bank.
3.   Remove the battery bank from the rack.
4.   Install the replacment battery bank into the rack.
5.   Reinstall the screws to secure the battery bank to the rack.
9.   Reconnect the battery bank to UPS and any battery bank to batter bank interconnect cables previously removed.

SSG-RP-X UPS Models with Standard, SSGH-B (4), SSGH-B (8) and SSGH-1 (8) Extended Battery Modules

Battery Disconnect
& Circuit Breaker

Battery to UPS and Battery to Battery
Connectors are Located On the Rear
Panel Under Cover Plates

SSG-RP Battery Replacement:

The standard SSG-RP UPS battery module contains special high-temperature battery packs designed specifically for the -RP Falcon models. **PLEASE REFER ALL -RP MODEL BATTERY MODULE SERVICING AND BATTERY REPLACEMENT TO THE FALCON ELECTRIC SERVICE DEPARTMENT.**

Battery Module Installation:

1. Mount the battery module directly above or below the UPS or battery module in the equipment rack.
2. Verify the battery disconnect is in the off postion.
3. Remove the battery inteconnect connector cover plate located on the module rear panel.
4. Connect the battery cable to the newly installed battery module. Next, connect the other end of the cable to the UPS.
5. If the an extended module is being installed, verify all battery module battery disconnect switches are turned to the "off" position. Two battery interconnect connectors are provided on each battery module to allow for a daisy chain connection to all modules and the UPS.

Performing a Manual Battery Test:

Pressing the "Function/Test" button for three seconds while the UPS is operating in Normal Mode will initiate a manual battery test. If the UPS goes to Battery Mode and returns to Normal On-line Mode after 10 seconds, the batteries are good.

If a single, long audible tone is sounded and the unit does not switch to battery mode, this indicates that either the batteries are defective, installed incorrectly, the battery pack is not installed, the battery bank interconnect cable is not installed, or the battery doscpnnect(s) are not in the "on" position. If the problem cannot be resolved, contact Falcon Service.

Recycling the Used Battery Packs

<u>NEVER</u> discard the UPS, the UPS battery pack, or batteries in the trash.   Contact your local recycling or hazardous waste center for information on proper disposal of the used battery pack and batteries. The entire spent battery packs may be returned to the Falcon Service Center at the end user's expense for recycling. Prior to returning the spent battery pack(s), please call the Falcon Service Center and obtain a Return Materials Authorization (RMA) number.

<u>NEVER</u> dispose of batteries in a fire, as batteries will explode.

<u>NEVER</u> dispose of used batteries or the UPS in the trash or a landfill as it is a violation of federal and state laws. The UPS and batteries must be recycled. For UPS and battery recycling information, please contact Falcon Service for the name and address of the nearest battery recycling facility.
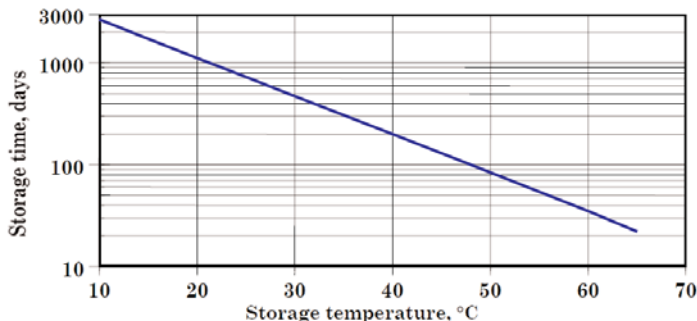
<u>NEVER</u> open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic. A battery can present a risk of electrical shock and burns due to high short circuit current.

⚠ CAUTION

Observe all warnings, cautions, and notes before replacing batteries. Batteries can present a risk of electrical shock and burns due to high short circuit current. The following precautions should be observed when working on batteries:

* **Remove watches, rings, and other metal objects.**
* **Use tools with insulated handles.**
* **Do not lay tools or metal parts on top of batteries.**
* **Do not attempt to alter any battery wiring or connectors. Attempting to alter wiring can cause injury.**
* **Do not dispose of batteries in a fire. The batteries may explode. Refer to your local codes for disposal requirements.**
* **Do not open or mutilate the battery packs or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.**

Battery Storage

Recharge Interval vs. Storage Temperature

The CYCLON batteries used in this UPS may be stored for up to one year at room temperature (25°C or 77°F) and recharged with no loss in cell reliability or performance capabilities.

When batteries are stored at or near 25°C (77°F) we recommend recharging every year. If storage temperatures are significantly higher than 25°C (77°F), even for short durations, the frequency of battery recharging must be increased per the graph on the left.

Float Life Characteristics

The life expectancy of CYCLON VRLA batteries is not limited by loss of electrolyte due to the sealed design. Instead, life expectancy is determined by longterm corrosion of the positive current collecting grid. The corrosion effect on cell capacity is minimal until the cell approaches end-of-life, which is defined as the inability of the cell to provide at least 80% of its rated capacity. Battery life is reduced substantially when batteries are subjected to sustained temperatures above 25°C.

9.0 TROUBLESHOOTING

Audible Alarms

The SSG Series UPS features audible alarm codes to alert the user of potential problems. Please refer to the following table to identify and resolve alarms and the conditions causing the alarms.

Alarm and Possible Cause	Solution
Three short beeps, continuously • *Utility voltage out of range*	• *The UPS is in Battery Mode Check the input voltage*
Four short beeps, continuously • *Utility Frequency out of range*	• *The UPS is in Battery Mode, remove the input power and check the input frequency*
Five short beeps, continuously • *UPS internal over temperature* • *The Fan is not turning*	• *Check the ventilation and remove any blockage* • *Call Falcon Service for a fan replacement*
Six short beeps, continuously • *PFC over current protection in action*	• *Verify the input AC voltage is not too low, remove some load from UPS output*
Seven short beeps, followed by three long beeps, every five seconds • *Battery low after utility loss*	• *Save the data, turn off the equipment and wait for utility power to return*
One long beep every few seconds • *Output overload* • *Charger Fail* • *UPS Alarm, continuous*	*Check the LCD display* • *Remove some load* • *Call Falcon Service* • *Call Falcon Service*

Troubleshooting Guide

Prior to attempting any troubleshooting, always verify the UPS battery fuse is installed and the input voltage, input plug and wiring are correct. Please refer to the table below and attempt to solve the problem prior to contacting Falcon Service.

Problem and Possible Cause	Solution
UPS will not turn on ● Input breaker not switched ON ● UPS input breaker tripped ● Input/battery cables not correctly fitted	● Verify the UPS Input breaker on front panel is turned ON ● Verify the connected load is less than the rating of the UPS ● Verify the input cable and battery is connected to the UPS and battery module. Verify the battery circuit is turned ON
UPS will not provide power to the load ● Power only present on one output receptacle ● No output from any output receptacle ● Output fails as soon as load is connected	● Check the output fuse ● Check the connected cable ● Ensure the load does not exceed the maximum rating of the UPS
UPS operates from battery despite utility power presents ● Check fuse ● Generator does not power UPS	● Input fuse may need replacing ● Check generator is properly governed for both frequency and voltage. Some low grade generators will not supply a stable enough supply to run an UPS
UPS drops the load and is in bypass mode with alarm	Check the load status; the UPS may be overloaded
UPS battery time is not long enough or the unit does not run on battery at all	Test the battery by pressing "Function/Test" button. If the battery fails the test, replace the battery pack.
UPS Beeping	Refer to the audible alarms table

Problem and Possible Cause	Solution
Button on front panel does not work • UPS in green mode • Key damaged	• Wait for a while to operate • Call Falcon Service for a Returned Material Authorization (RMA)

FCC Considerations

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   *   Reorient or relocate the receiving antenna.
   *   Increase the separation between the equipment and receiver.
   *   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   *   Consult the dealer or an experienced radio/TV technician for help.

10.0 Technical Support

In the event your SSG -RP Series UPS requires service or should any other technical support be required, write, call, fax or email Falcon Service.

Falcon Electric Inc.
5116 Azusa Canyon Road
Irwindale, CA. 91706
Service 800.842.6940
Voice 626.962.7770
Fax 626.962.7720
Email: service@falconups.com
WWW.FALCONUPS.COM

Please have your UPS model, serial number and date of purchase on hand prior to your call. This information is located on the identification label on the rear panel of the UPS. This information is essential in retrieving your unit's historical records. Should our service department determine service is required, you will be given a Return Material Authorization number (RMA) along with return shipping instructions.

The RMA number issued must appear on the outside of the shipping carton. The original shipping container must be used when returning any SSG Series product. **Failure to use the original shipping container and packing materials will likely result in the unit being received by Falcon with shipping damage.**

Falcon® Electric will not assume any responsibility for shipping damage. In the event shipping damage is found, you will be notified of the damage and be instructed to file a claim with the freight carrier. You will be billed for all required repairs due to the shipping damage. You must submit a copy of our repair invoice to the carrier for reimbursement.

All units must be returned prepaid. The address and shipping instructions will be given to you at the time the RMA is issued.

Requesting Technical Information or Support

You may request technical information or support by email or telephone.

Please send your technical or support questions by email to:
SUPPORT@FALCONUPS.COM

You may contact a FALCON support engineer directly by calling the FALCON support line between 9:00 am and 4:00 pm PST.
800.842.6940

FALCON Web Support

Product data sheets, specifications and owner's manuals are available in Adobe® Acrobat .PDF format on our corporate website at:
WWW.FALCONUPS.COM

FALCON ELECTRIC, INC.

NEW PRODUCT LIMITED WARRANTY

Limited Warranty: Falcon warrants that this product will be free from defects in materials and workmanship for a period of two years from the date of shipment by Falcon.

Procedures: Any defective product must be returned to Falcon. No product can be returned without first obtaining a Return Material Authorization (RMA) number from Falcon. Falcon will repair, replace or refund the purchaser price, at Falcon's sole discretion, for any defective product that is returned to Falcon with an RMA number. For defective product returned within 30 days of shipment, Falcon will pay for shipping costs to and from its service center. For defective product returned after 30 days but within 90 days of shipment, Falcon will only pay for shipping costs in sending the new or repaired product back to the end-user. For defective product returned more than 90 days after shipment, all shipping costs will be borne by the end-user.

Exclusions: This limited warranty does not cover damage caused by: (i) improper installation, misuse or neglect; (ii) unauthorized repairs or modifications or use of unauthorized parts; (iii) acts or events outside of Falcon's control, such as fire, accidents, impacts; (iv) normal wear and tear, such as cleaning and replacement of batteries. The warranty is null and void if: (i) the product is used in conjunction with life support equipment; (ii) the factory seal is broken or shows signs of tampering; or (iii) the battery is allowed to discharge below the minimum battery cutoff point. To prevent this discharge, remove the battery fuse, or switch the battery disconnect to the "off" position when the unit is to be stored without the AC power being supplied to the UPS for more than two days. The battery must be recharged every four to six months when not in use. This limited warranty is not transferable.

Limitations: IN NO EVENT IS FALCON RESPONSIBLE FOR ANY SPECIAL, INDIRECT, SECONDARY OR CONSEQUENTIAL DAMAGES, SUCH AS PERSONAL INJURY, DAMAGE TO PROPERTY, LOSS OF DATA, LOST PROFITS, ETC. IN NO EVENT WILL FALCON'S LIABILITY UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCT IN QUESTION.

Disclaimers: The limited warranties set forth in this document are the only warranties that apply to Falcon's products. **ALL OTHER WARRANTIES ARE EXPRESSLY DISCLAIMED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER LEGAL RIGHTS THAT VARY FROM STATE TO STATE.**

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