



# SSG Series Industrial UPS

## 1.5kVA-3kVA, 120 & 230Vac Rack/Tower



### Superior Protection for a Wide Range of Applications

Harsh industrial environments demand an on-line industrial UPS. Falcon's on-line industrial SSG<sup>®</sup> UPS is specifically designed with high-grade components, plastics and batteries to provide superior protection in stressful environments. The SSG delivers continuous, clean power required by sensitive microprocessor-based equipment, SCADA, PLCs, VFDs and networks.

### On-line Industrial UPS Operates from -20°C to 55°C

The SSG is one of the only UL, cUL and CE approved UPSs to operate from -20°C to 55°C, far beyond the limited 0°C to 40°C temperature range of office grade on-line UPSs. In addition, unlike off-line and line-interactive designs, Falcon's on-line UPS acts as an electronic firewall between the incoming "dirty" power source and your sensitive equipment. Its double-conversion, on-line design regenerates continuous, clean, tightly regulated power regardless of the incoming power anomalies.

### 10-Year Rated Batteries

Batteries are the life blood of all UPSs and typically require costly replacement on a yearly basis when used in higher temperature locations. All SSG models are equipped with 10-year rated batteries when installed in a 25°C environment. This is double the average UPS battery life. When installed in a 50°C (122°F) location, the battery manufacturer's projected battery life is four years. This is over four times the UPS battery life and one quarter the maintenance cost.

When battery replacement is required, simply slide out the user-replaceable, hot-swappable battery pack and replace with a new one. Replacement is accomplished while the UPS continues to power the critical load and without having to remove the UPS from the equipment rack.

### Optional Frequency Converter Capability

Thanks to Falcon's flexible design platform, the SSG can be configured as a frequency converter for worldwide power applications.

Accepting a 50/60Hz input and providing a fixed 60Hz or 50Hz output, the SSG supplies a tightly regulated output voltage of  $\pm 2\%$  with excellent extended brownout protection.

### RS-232, USB & SNMP/HTTP UPS Management

With the supplied UPSilon<sup>®</sup> software, all models support unattended computer or server shutdown, remote UPS management, data logging and a power diagnostic tool. The software supports all Windows<sup>®</sup> server and workstation platforms, Novell NetWare<sup>®</sup>, LINUX and FreeBSD. UPSilon for UNIX is available at an additional cost and supports most popular UNIX platform and OS versions. MODBUS support is optional.

Falcon's optional SNMP/HTTP agents provide IPv4 and IPv6 addressable remote management and monitoring over any 10/100 Ethernet LAN, WAN or the Internet. Internal and RS-232 connected external agents are available. Remote shutdown client software is supplied supporting most common operating systems. The client installs on a server or workstation for the purpose of their unattended shutdown across any Ethernet based network.

### Remote Emergency Power Off (REPO)

The SSG Series is equipped with an NFPA-70, NEC 645-11 compliant REPO interface assuring code compliant integration. If REPO is not required, remote output receptacle control is a factory configurable option. This allows outlets to be remotely controlled using a wired connection with a remote switch.

### Features & Benefits:

- \* UL, cUL and CE approved to operate from -20°C to 55°C
  - Avoids product safety and liability risks
- \* On-line industrial UPS design
  - Prevents costly failures ensuring the highest level of uptime
- \* Tested and designed with robust components and plastics
  - Assures reliable operation in stressful environments
- \* Hot-swap, 10-year rated batteries
  - Reduces battery replacements and costs
- \* External Battery Banks
  - Hours of battery backup time
- \* Unique optional SNMP Agent
  - Unlimited shutdown client license

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# SSG Series Industrial UPS

# 1.5kVA - 3kVA

Model Number	SSG1.5KRM-1 SSG1.5KRM-2	SSG2.2KRM-1 SSG2.2KRM-2	SSG3KRM-1 SSG3KRM-2
Nominal VA	1500	2200	3000
<b>Electrical Input</b>			
Nominal AC Voltage	-1 Models 120Vac, -2 Models 208-240Vac		
AC Voltage Range	-1 Models 80-138Vac, -2 Models 160-276Vac		
Frequency	50/60 Hz ± 5% (Auto Tracking)		
Power Factor Correction	> 0.97 (at full load)		
Surge Suppression	IEEE/ANSI C62.41		
Efficiency (Typ.)	> 87%		
<b>Electrical Output</b>			
Watts	1050	1540	2100
AC Voltage (User Programmable)	-1 Models = 100, 110, 115 or 120Vac (sinewave) -2 Models = 208, 220, 230 or 240Vac (sinewave)		
Frequency	50/60 Hz (Auto Tracking or user programmable fixed 50 or 60Hz modes)		
Frequency Stability	± 0.3% (Battery Mode), ±5% Synchronized to the input frequency in utility mode		
Voltage Regulation	± 2%		
Step Load Change	± 7% for 100% load variation, recovery in 5ms		
Harmonic Distortion	< 3% Linear Load, < 5% Non-Linear Load		
Overload	150% for 10 seconds, 110% for 20 seconds, 105% for 50 seconds		
Crest Ratio	3:1		
<b>Battery</b>			
DC Bus Voltage (nominal)	48Vdc	96Vdc	
Battery Pack Type	User-Replaceable, Hot-Swappable (Batteries are replaceable through the UPS or battery bank front panels)		
Battery Type	10-Year Rated, Maintenance-Free, Sealed VRLA Batteries, 12Vdc, 7AH		
Back Up Time (Full Load/Half Load)	6 minutes / 18 minutes	10 minutes / 27 minutes	6 minutes / 18 minutes
Recharge Time	8 Hours to 90%		
<b>Transfer Time</b>			
Line Fails/Recovers	Zero		
UPS to Bypass or Reverse	< 4ms		
After Overload	Auto Transfer to UPS		
With Frequency Converter Options	Bypass Disabled		
<b>Electrical Connections</b>			
Input	-1 Models = 6' Cord with 5-15P Plug -2 Models = 6' Cord with Schuko Plug	-1 Models = 6' Cord with 5-20P Plug -2 Models = 6' Cord with Schuko Plug	-1 Models = 6' Cord with L5-30P Plug -2 Models = 6' Cord with Schuko Plug
Output	(8) 5-15R (4) IEC320 C13 Outlets	(4) 5-15R & (1) L5-20R (4) IEC320 C13 Outlets	(4) 5-15R & (1) L5-30R (4) IEC320 C13 Outlets
<b>Environmental</b>			
Temperature	Operational Storage	-20°C to 55°C (-4°F to 131°F) (Extended operation in temperatures above 25°C will shorten the battery life) -20°C to 55°C (-4°F to 131°F) (Extended storage in temperatures above 25°C will shorten the battery life)	
Humidity	10% to 95% Non – Condensing		
Altitude	10,000 Feet (3,000 meters) without derating		
Cooling	Low Velocity Forced Air Fans		
Heat Dissipation (BTU/Hour)	535	784	1071
Audible Noise (@ 1 Meter)	<50dBA		
<b>Controls &amp; Indicators</b>			
LCD Display	MIMIC Graphical Display, Input/Output Voltage, Frequency & Load, Alarm, Programmable settings & UPS state icons		
Audible Alarms	DC Mode, Low Battery, Over/Under Voltage, Over/Under Frequency, High Temp., Over Load, Fault Alarm		
Load Segment Control	Two programmable load segments, one continuous load segment (Except on -2 models)		
Remote Emergency Power Off (or) Remote Output Receptacle Control	(Standard) Meets NFPA 70, NEC 645-11 (REPO connections located on the UPS rear panel) (Optional) UPS Load Segment Controlled Output Receptacles can be turned off and on using a remote isolated switch contact.		
Communications	USB Port, RS-232C Serial Port, Optional SNMP/HTTP Agent Board (UPS Bundled UPSilon Software)		
<b>Mechanical</b>			
Dimensions H x W x D inches (mm)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)	
SSGR Battery Module	(None - Batteries inside UPS)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)	
Weight lb. (kg)		(2U) UPS Module = 32 (14.5)	(2U) UPS Module = 32 (14.5)
Ten-Year VRLA Batteries	UPS with Internal batteries = 55 (24.5)	(2U) External Battery Module = 70.6 (32)	(2U) External Battery Module = 70.6 (32)
<b>Agency Approvals</b>	-1 Models = UL 1778, cUL, FCC Class B, -2 Models = CE, UL 1778, cUL		

## SSG UPS Options

### Extended VRLA Battery Bank Options

Extended Battery Bank Model Numbers		SSGR	SSGR-1	SSGR-2
Battery Type		10-Year Rated, Maintenance-Free, Sealed VRLA Batteries, 12Vdc, 7AH		
Temperature	Operational Storage	-20°C to 55°C (-4°F to 131°F) (Extended operation in temperatures above 25°C will shorten the battery life) -20°C to 55°C (-4°F to 131°F) (Extended storage in temperatures above 25°C will shorten the battery life)		
Internal 2A Charger		No	Yes	Yes
Charger Input Voltage & Current Requirement		None	120Vac, 2.5A	208Vac to 240Vac, 2.5A
Dimensions H x W x D	inches (mm)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)	(2U) 3.5 x 19 x 21.3 (88 x 482.6 x 540)
Weight	lb. (kg)	Extended Battery Module = 70.6 (32)	Extended Battery Module = 72.6 (32.9)	Extended Battery Module = 72.6 (32.9)

### Extended VRLA Battery Runtimes

(Note: Stated backup times are identical for SSGR, SSGR-1, SSGR-2 battery banks and are stated by UPS models below)

UPS Model Numbers	SSG1.5KRM-1 SSG1.5KRM-2	SSG2.2KRM-1 SSG2.2KRM-2	SSG3KRM-1 SSG3KRM-2
Back Up Time by Model	1050W Load / 525W Load	1540W Load / 770W Load	2100W Load / 1050W Load
Full / Half Load	6 minutes / 18 minutes	10 minutes / 27 minutes	6 minutes / 18 minutes
UPS as Shipped	30 minutes / 90 minutes	28 minutes / 68 minutes	19 minutes / 58 minutes
One Extended Battery Bank	60 minutes / 150 minutes	46 minutes / 120 minutes	32 minutes / 80 minutes
Two Extended Battery Banks	94 minutes / 220 minutes	68 minutes / 150 minutes	58 minutes / 115 minutes
Three Extended Battery Banks	125 minutes / 290 minutes	110 minutes / 210 minutes	75 minutes / 155 minutes
Four Extended Battery Banks			

Note: Back up time may vary depending on temperature, battery age and condition. 5U height, 40AH battery bank / charger option available supports long backup requirements.

### Communications Options

Internal COM Board Model Numbers	UA88376-SSG	SNMP-SG-4	SNMP-MEGA-INT
Type	Internal Dry Relay Signal Interface	Internal Ultra Secure SNMP/HTTP	Internal Secure SNMP/HTTP Agent
Communications Interface	DB-9F	10/100 Ethernet (RJ45)	10/100 Ethernet (RJ45)
External COM Board Model Numbers	UA88376-SSG-HW	SNMP-SG-5	SNMP-MEGA-EXT
Type	Internal Dry Relay Signal Interface	External Ultra Secure SNMP/HTTP	External Secure SNMP/HTTP Agent
Communications Interface	Hardwire Terminal Block	10/100 Ethernet (RJ45)	10/100 Ethernet (RJ45)
Communications Specifications	Dry contact signals for: Utility Loss, Low Battery, Summary Alarm & On Bypass, Remote Shutdown while on battery	See SNMP/HTTP datasheets for these models	See SNMP/HTTP datasheets for these models

### External Maintenance Bypass Switch Option

Bypass Switch Model Number	MB2K-1, MB2K-2	MB3K-1, MB3K-2	
Model Selection	MB2K-1 used with SSG1.5KRM-1 MB2K-2 used with SSG1.5KRM-2	MB3K-1 used with SSG2.2KRM-1 MB3K-2 used with SSG2.2KRM-2	MB3K-1 used with SSG3KRM-1 MB3K-2 used with SSG3KRM-2
Nominal Input/Output Voltage	-1, 120Vac -2, 208Vac to 240Vac	-1, 120Vac -2, 208Vac to 240Vac	-1, 120Vac -2, 208Vac to 240Vac
VA Rating	2000	3000	3000
Switch Type	Make-Before-Break		
Utility Input and Load Output Connection	Hardwire		
UPS Input Connection	-1, 5-15R -2, 6-15R	-1, 5-20R -2, L6-20R	-1, L5-30R -2, L6-30R
UPS Output Connection	-1, 6' Line Cord with 5-15P -2, 6' Line Cord with IEC320 C14	-1, 6' Line Cord with L5-20P -2, 6' Line Cord with IEC320 C14	-1, 6' Line Cord with L5-30P -2, 6' Line Cord with IEC320 C20
Dimensions H x W x D	inches (mm)	9.9 x 12.6 x 5.3, (250.1 x 319.8 x 133.4)	
Weight	lb. (kg)	11 lbs. (5 kg)	
Agency		UL, cUL Listed	

Note: Installation of MBS requires the installation of one US88376-SSG contact interface card inside the UPS communications card slot

Typical SSG Rear Panel Configuration



SSG UPS with Hot-Swappable Battery Pack

