

UniStar Sx[®]

*Single-Phase ■ Tower and Rackmount ■ Advanced Double Conversion Technology
Uninterruptible Power Supply (UPS)/Power Conditioner ■ 700 VA through 3,000 VA*

“Next Generation”

UPS/Power Conditioning

The Staco Energy Products Company UniStar Sx “Next Generation” UPS/Power Conditioner does exactly what it has to do to *guarantee* clean power ... It generates its own!

The UniStar Sx, a solid-state UPS, has been designed to provide continuously regulated output voltage. For maximum flexibility, the UniStar Sx will operate over a wide input voltage range at either 50 or 60 Hz. Standard output voltages are user selectable.

The UniStar Sx provides output voltage and frequency regulation, harmonic filtration, electrical noise attenuation and protection against voltage fluctuations, frequency fluctuations, brownouts and blackouts. Optional extended runtime battery cabinets can provide protection against extended power outages.

The UniStar Sx “Next Generation” UPS / Power Conditioning system is a unique product designed to overcome the shortcomings of other UPS technologies. This state-of-the-art UPS consists of a full-time rectifier and an inverter that generates clean power specifically designed for today’s power loads. The feature-rich UniStar Sx is available in either tower or rack-mount models for maximum installation flexibility. It is a cost effective UPS / Power Conditioning solution for today’s power quality needs.

Advantages:

- *Industry Leading Three Year Warranty*
- *Hot-Swappable Batteries*
- *True On-Line Double Conversion UPS with Outstanding Power Conditioning Features*
- *Operate on 50 or 60 Hz*
- *Standard Rack Mount or Tower Configuration*
- *Automatic / Continuous Diagnostics*
- *Remote Monitoring Capabilities*
- *Sentry II Web-based Power Management Software Included*
- *Small & Lightweight*
- *Low Cost of Ownership*
- *Optional External Battery Packs for Extended Runtime*



Voltage Fluctuations

Voltage fluctuations such as sags, surges and spikes can cause system lockup, data loss, power supply damage and operating errors. The UniStar Sx is designed to cope with these types of voltage fluctuations.

Special electronic circuits provide load protection against voltage surges and high-energy spikes.

Frequency Fluctuations

Frequency fluctuations can cause equipment to overheat, nuisance tripping and control system internal clock instability.

In its normal operating mode, the UniStar Sx is designed to operate with the input frequency from 45 to 65 Hz without going to battery. Output frequency regulation is user selectable for environments where frequency stability is critical.

Frequency tolerance while on battery is 0.1%

Harmonic Attenuation

Harmonics can be a major concern within most facilities, as they can cause high neutral currents, equipment overheating and circuit breaker nuisance tripping.

The UniStar Sx uses a low harmonic distortion design. Its high tolerance waveform limits its distortion to a maximum of 2% THD and its reflected input to 3-4% THD under any combination of linear and nonlinear loads.

Brownouts

Brownouts reduce equipment performance and cause equipment overheating, system shutdowns and data corruption. Most brownouts are caused by planned and unplanned utility voltage reductions and power line faults.

The UniStar Sx is available in 120 volt (LV) and 240 volt (HV) models. The LV model provides brownout protection from 80 to 84 Vac and the HV model to 160 Vac, providing maximum protection for your critical equipment.

Why UniStar Sx?

UniStar Sx has all the advantages and none of the disadvantages of competitive technologies. The UniStar Sx is small and lightweight with a low cost of ownership yet provides all the protection you need for today's sensitive equipment. As a UPS / Power Conditioner, the solid-state UniStar Sx provides protection against voltage and frequency fluctuations, harmonics, electrical noise, brownouts and blackouts.

Staco Energy Products Model Selection						
Model Number	Power VA/Watts	Voltage (VAC)	Input Connector	Output Receptacles	Dimensions (HxWxD)	Weight (lbs)
120 VAC Tower Models (230 VAC Models)						
SB07001 (SB07002)	700/500	120 (230)	5-15P (IEC320)	5-15R - 4 ea (IEC320 - 4 ea)	8.7x5.7x15.9	33
SB10001 (SB10002)	1000/700	120 (230)	5-15P (IEC320)	5-15R - 4 ea (IEC320 - 4 ea)	8.7x5.7x15.9	33
SB20001 (SB20002)	2000/1400	120 (230)	L5-20P (IEC320)	5-15/20R - 4 ea (IEC320 - 6ea)	14.4x8.5x17.6	70.4
SB30001 (SB30002)	3000/2100	120 (230)	L5-30P (IEC320)	5-15R-4 ea, L5-30R-1ea (IEC320 - 6 ea)	14.4x8.5x17.6	83.6
120 VAC Rack Models (230 VAC Models)						
SB07001RM (SB07002RM)	700/500	120 (230)	5-15P (IEC320)	5-15R - 4 ea (IEC320 - 4 ea)	3.5x16.7x17.3	33
SB10001RM (SB10002RM)	1000/700	120 (230)	5-15P (IEC320)	5-15R - 4 ea (IEC320 - 4 ea)	3.5x16.7x17.3	33
SB20001RM (SB20002RM)	2000/1400	120 (230)	L5-20P (IEC320)	5-15R - 6 ea, (IEC320 - 6 ea)	7.0x16.7x20.0	86
SB30001RM (SB30002RM)	3000/2100	120 (230)	L5-30P (IEC320)	5-15R - 4 ea, L5-30R - 1 ea (IEC320 - 6 ea)	7.0x16.7x20.0	99

Typical Full / Half Load Runtime w/ Internal and Optional External Batteries									
Tower Units					Rack Mount Units				
VA/Watts	700/500	1000/700	2000/1400	3000/2100	VA/Watts	700/500	1000/700	2000/1400	3000/2100
Internal	17/48	11/33	11/31	17/42	Internal	17/48	11/33	11/31	17/42
One Battery	54/115	33/85	44/115	38/99	One Battery	54/115	33/85	33/86	29/74
Two Batteries	91/192	55/141	101/237	87/209	Two Batteries	91/192	55/141	72/169	62/149
Three Batteries	155/309	101/233	159/367	138/323	Three Batteries	155/309	101/233	111/257	97/226
Four Batteries	200/398	130/299	220/505	191/441	Four Batteries	200/398	130/299	152/350	132/305
Five Batteries	266/528	175/396	271/650	245/581	Five Batteries	266/528	175/396	186/447	168/399

2,000 & 3,000 VA Front Panel

Recessed Power ON/OFF Switch

Multi-function Indicator:

- Battery Time Remaining
- Input & Output Voltage
- Input & Output Current
- Input & Output Watts
- Frequency

Normal Mode

Battery Mode

Bypass Mode

Unit Fault Indicator

Battery Charging Indicator

Overload Indicator

Battery Capacity Remaining

% Load Indicator

Alarm Mode



700 & 1,000 VA Front Panel

Power

Alarm Test

Indicators

- Normal Mode
- Battery Mode
- Bypass Mode
- Unit Fault
- Battery Charging
- Unit Overload

Load Indicator

Battery Indicator



Product Specifications

Bad Batteries - No Problem!

Batteries are the weak link in a UPS. They can fail or wear out with use. The UniStar Sx battery management design is so robust that the system will still run even if the batteries have been completely removed.

Smart Slot (internal) Communications and Monitoring Options

SNMP Communications Adapter

The SNMP Communications Adapter card enables SNMP and Web browser based monitoring and management of any Staco Energy Products UniStar Sx series UPS.

Features:

- USB setup for Windows 98.
- Installs into expansion slot on any UniStar Sx UPS model.
- Allows the UPS to be monitored as an independent node on the network.
- Allows Web browser or standard SNMP monitoring and management

Dry Contact (AS400)

Internal smart card allows for dry contact (relay) communication to the AS400 standard.

VA/Watts	700/500	1000/700	2000/1400	3000/2100
General				
Topology	Double Conversion, On-Line			
Case Type	Tower and Rack Mount Versions Available			
Automatic Diagnostics	Full System Test on Power Up			
UPS System Bypass	Automatic Protection for Overload or UPS Failure			
Dimensions & Weight	See Model Selection Table			
Warranty	3 Year, Including Battery			
Input				
Voltage Range (230 VAC Models)	80-138 Vac (160-274 Vac) without		84-138 Vac (160-274 Vac) without	
Nominal Voltage	120 Vac (230 Vac)			
Input Power Factor	> .97			
Reflected Harmonics	3-4%			
Input Protection	Circuit Breaker			
Frequency Range	45-65 Hz Auto Freq. (user defined for start on battery)			
Output				
Output Voltage (230 VAC Models)	100, 110, 115, 120 Vac (220, 230, 240 Vac)			
Voltage Regulation (on utility)	± 2%			
Voltage Regulation (on battery)	± 2% (until low battery warning)			
Overload Capacity:	125%, 1 minutes, 150%, 10 seconds			
Frequency	50/60 Hz +/- 5 Hz (+/- 1% on battery)			
Waveform	True Sine Wave			
Harmonics	<2% Linear Load			
Transient Response	± 0.5%, 100% Load Change			
Surge Energy Rating	240 Joules		450 Joules	
Typical Battery Transfer Time	0 mS			
Battery System				
Battery Type	Valve Regulated Lead Acid (VRLA), Spill Proof, Sealed			
Battery DC Voltage / Rating	36Vdc 7.2Ah		72Vdc 7.2Ah 96Vdc 7.2Ah	
Typical Battery Runtime	See Battery Chart			
External Battery Packs Available	Yes, Available on All Models			
Battery Recharge	< 4 Hours to 90% Capacity			
Battery Replacement	Hot Swappable Internal and External Batteries			
Communications				
Front Panel User Interface	LED		LCD	
Audible Alarms	Alarm Conditions: On Battery, Low Battery, Overload, UPS Fault			
Communications Ports (2 DB9)	Dry Contact (AS/400), RS232			
Smart Slot (for opt. Comm. Card)	SNMP Network Interface Card (10Base-T)			
Network Protection	RJ45 Surge Protection			
Power Management Software	Sentry II, Single Server and Network Capable			
Environmental & Safety				
Agency Approvals	UL, cUL, CE, TUV			
EMI Compliance	FCC Class A			
Surge Suppression	IEEE/ANSI C62.41			
Audible Noise	<45 dBA @ 1 meter			

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