

STACO ENERGY[®]

PRODUCTS CO.

UNI STAR[®] V Series 120/120VAC

**Standard 1000VA, 2000VA & 3000VA Universal Tower/Rack Mount
LB Extended Models 900VA, 1700VA & 2500VA**

On-line, Single Phase, Double Conversion UPS

The UniStar[®] V features a field-proven Digital Signal Processor (DSP) achieving high reliability, while providing protection from electrical power disturbances to the connected load. The convertible tower/rack design offers maximum flexibility, enabling UPS integration into a wide variety of environments.

Industry-leading functionality is standard and includes hot swappable battery, powerful internal charger, emergency shut-down and programmable receptacles. The UniStar[®] V is an ideal power protection solution for servers, networks, telecommunications, industrial equipment, and manufacturing processes. LB Models are for those critical applications that require extended battery backup times.

True Double-Conversion On-Line UPS

- A true double conversion UPS will provide clean, high level quality power to fully protect mission-critical devices such as sensitive networks, small computer center servers, telecom applications, as well as for industrial applications.

Output Power Factor 0.9

- UniStar Series V is a high-density UPS with an output power factor 0.9 to provide higher performance and efficiency to critical applications.

User-Friendly and Easy-Shift LCD Display

- The front panel digital display can be easily shifted through LCD setting to suit the installation format, Tower or Rack mount

Rack/Tower Design

- The Series V is designed in a true universal-mount case. It can be easily installed as a free-standing tower or in a 19-inch rackmount configuration.

Programmable Power Management Outlets

- With programmable power management outlets, users can easily and independently control load segments. During power failure, this feature enables users to extend battery time to mission-critical devices by shutting down the non-critical devices.

50/60 Hz Frequency Converter Mode

- Lock output frequency at 50Hz or 60Hz to suit power sensitive equipment.

ECO and Advanced ECO Mode for Energy Saving

- It allows the UPS to operate in high efficiency up to 97% in energy-saving ECO mode. In this operation mode, load is supplied by the mains. In the event of a mains failure, the inverter takes over the load and provides supply continuity to the connected systems. The Series V even offers advanced ECO mode to allow UPS to operate at higher efficiency up to 98%.

Emergency Power Off Function (EPO)

- This feature can secure the personnel and equipment in case of fires or other emergencies.

Hot-Swappable Battery Design

- Ensures clean and uninterruptible power to protected equipment during battery replacement.





On-Line, Single Phase UPS System

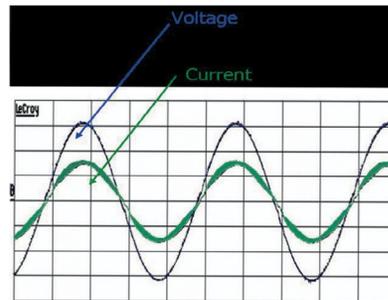
The UniStar® V represents the latest in single-phase technology at an affordable price. Its true on-line performance provides a constant clean, steady sine wave safeguarding the most sensitive equipment.

Double Conversion

The UPS provides clean AC power with voltage and frequency independent from the utility. On-line technology completely regenerates utility power to correct electrical disturbances in the mains.

High-Efficiency and Protection

PWM sine-wave topology yields excellent overall performance. The high crest factor of the inverter handles all high in-rush current loads without the need to upgrade the power rating.



Wide frequency and voltage windows of 40-70Hz and 55-150Vac (for 120Vac input), or 110-300Vac (for 230Vac input), are provided, which help to extend the life of the battery.

Near unity input power factor meets today's industry standard for energy savings and efficiency with low current harmonic pollution to the utility.

To protect the unit from overloading, the UPS will automatically switch to bypass mode in 30 seconds if loading is at 105%~120% of rated capacity.

It will automatically switch back to inverter mode once overload condition ceases. Selectable bypass input voltage tolerance (low/high sensitivity) prevents under or over voltage being

supplied to the loads while in bypass mode.

User Controls

An easy-to-read user-friendly LCD display provides real-time indication of all major system parameters and status, including load level, battery remaining, and fault signals for easy service.



Digital signal processing (DSP) also provides the UPS with powerful communication capability, which enhances the flexibility for easy remote control and monitoring.

Features

DC-start function ensures the start-up of UPS even during power outages.

Programmable receptacles offer the capability to load shed during any power interruption, while in battery power mode or during overload condition, via the use of special communication software provided, thus reserving backup power for priority loads.

Emergency shutdown control through EPO allows users to shutdown the UPS completely in an emergency to ensure a safe operating environment.

Applications

- Broadcast
- Processing Manufacturing (food/beverage, pharmaceutical, plastics, packaging)
- Water and Waste Water Treatment
- Hospitals/Medical
- Education/Research Laboratories

Communication software allows not only the control of the UPS and its smooth shutdown when utility fails, but also allows the user to:

- Completely test the major operating functions of the UPS
- Communicate via SNMP/Web/Network adapter
- Access UPS functions via the Web
- Alert users via SMS messages against specific events

Custom options slot allows further flexibility in network configuration.

An internal WEB/SNMP card, USB card, and True Relay card provide isolated contacts for industrial and remote alarm panel application.

User-friendly Plug-and-Play design

allows hassle-free installation. All units up to 3000VA are supplied with input cables and output receptacles as standard.

Innovative battery management circuit

analyzes battery discharging status to adjust battery cut-off point and extend the batteries' life span.

Internal maintenance-free sealed VRLA batteries

minimizes the need for frequent after-sales service. The hot swappable battery feature allows users to replace the batteries without the hazard of electric shock, while the UPS supplies power continuously to critical load applications.

Built-in Charger

provides ability to re-charge internal battery to approximately 90% in four hours. Matching battery cabinets are available to extend the UPS runtime easily to several hours.

Optional extended runtime capability

by simply connecting additional battery packs. Just plug in the battery connectors between the UPS and battery packs without the requirement for additional chargers.

Extended run time battery packs are available for all models.

Size, capacity, and estimated run times

are shown in the table below. Back-up time is for the battery pack used with the UPS internal batteries. Battery packs are external and hot swappable.

Optional Make-Before-Break

Bypass Switch—manually operated, external—ensures continuous supply of power to the critical load in the event of unexpected or scheduled maintenance.



Three Year Warranty

Electronics:

A full **Three Year** parts with depot repair or replacement warranty is standard.

Battery:

A full **One Year Warranty** on the Battery System ensures that your batteries are protected from system failure now and in the future. *(Warranty provided by battery manufacturer.)*

Extended warranties, customized service plans and preventative maintenance are also available.

Please refer to our warranty statement for complete details.

Optional Maintenance Bypass

Model Number	Rating	Input Connection	Output Receptacles
USC-MBPDU-11RT	1000VA & 900VA	Attached 6' Cord with 5-15P	(8) 5-15R
USC-MBPDU-21RT	2000VA & 1700VA	Attached 6' Cord with 5-20P	(6) 5-15R & (2) 5-20R
USC-MBPDU-31RT	3000VA & 2500VA	Attached 6' Cord with L5-30P	(4) 5-15R & (1) 5-30R

Dimensions: 3.50" H x 17.30"W x 3.00"D (2U) / [88.9 x 439.4 x 76.2]

UniStar V Series, Universal Rack/Tower Mount 120VAC, 1000VA, 2000VA & 3000VA & LB Models, 900VA, 1700VA & 2500VA

UPS On-line, Double-Conversion – LCD Panel, USB and RS-232 Standard

Model Number	VA/Watts	Internal Battery (Minutes)	Input Cord	Output Connection	*Dimensions H" x W" x D" / [mm]	*Wt. lbs. / (kg)
SCV-10001	1000VA / 900W	2.7	5-15P	(4) 5-15R	3.39" x 17.24" x 16.44" (2U) [86.2 x 438.0 x 417.5]	29 / (13)
SCV-20001	2000VA / 1800W	2.7	5-20P	(8) 5-20R	3.39" x 17.24" x 20.38" (2U) [86.2 x 438.0 x 517.5]	47 / (21)
SCV-30001	3000VA / 2700W	2.7	L5-30P	(4) 5-20R & (1) L5-30R	3.39" x 17.24" x 27.74" (2U) [86.2 x 438.0 x 704.6]	65 / (29)
SCV-10001-LB	900VA / 810W	0	5-15P	(4) 5-15R	3.39" x 17.24" x 16.44" (2U) [86.2 x 438.0 x 417.5]	20 / (9)
SCV-20001-LB	1700VA / 1530W	0	5-20P	(8) 5-20R	3.39" x 17.24" x 20.38" (2U) [86.2 x 438.0 x 517.5]	28 / (13)
SCV-30001-LB	2500VA / 2250W	0	L5-30P	(4) 5-20R & (1) L5-30R	3.39" x 17.24" x 27.74" (2U) [86.2 x 438.0 x 704.6]	33 / (15)

Standard Models: Maximum (1) External Battery Pack (SCV-BAT-1K, SCV-BAT-2K or SCV-BAT-3K)
LB Models: Maximum (5) External Battery Pack (SCV-BAT-1K, SCV-BAT-2K or SCV-BAT-3K)

- Note:
1. LB Models do not have internal batteries.
 2. Unit ships with bundled NetAgent 9 Shutdown Software.
 3. All units ship with floor stand and rack mount hardware.

*Always reference Spec Control Drawing (SCD) for the most current & accurate dimensions and weights

Specification for 120/120VAC

MODEL (SCV)		10001	10001-LB	20001	20001-LB	30001	30001-LB
Capacity VA / Watts		1000 VA	900 VA	2000 VA	1700 VA	3000 VA	2500 VA
		900 W	810W	1800 W	1530 W	2700 W	2250 W
INPUT							
Capacity	Rated Volts	100VAC-120VAC					
	Low Transfer	Low Voltage 80 VAC/70 VAC/60 VAC/55 VAC ± 5 % (based on load percentage 100%-80% / 80%-70% / 70%-60% / 60%-0)					
	Re-Transfer	Low Voltage Re-Transfer 85 VAC/75 VAC/65 VAC/60 VAC ± 5 %					
	High Transfer	High Voltage 150 VAC ± 5 %					
	Re-Transfer	High Voltage Re-Transfer 142 VAC ± 5 %					
Frequency Range		50Hz/ 60Hz					
Power Factor		≥0.99 @nominal voltage					
OUTPUT							
Output Voltage		100*/110*/115*/120VAC					
AC Voltage Regulation		± 1%					
Frequency Range		47 ~ 53 Hz or 57 ~ 63 Hz (Synchronized Range)					
Frequency Range		50Hz ± 0.5% or 60Hz ± 0.5% (Bat. Mode)					
Current Crest Ratio (CF)		5:1 (max.)					
Harmonic Distortion (THDU)		≤ 2% (Linear load) 8% max (Battery mode before shut down)					
Transfer Time	AC to DC	Zero					
	Inv. to Bypass	4 ms (Typical)					
Waveform (Battery Mode)		Pure Sinewave					
EFFICIENCY							
AC Mode		86% (typical), 88% (peak)			88% (typical), 90% (peak)		
Battery Mode		83% (typical), 86% (peak)			85% (typical), 88% (peak)		
BATTERY (NON-LB MODELS)							
Battery Type		(2) 12V/9Ah	No Internal	(4) 12V/9Ah	No Internal	(6) 12V/9Ah	No Internal
Battery Time (Full Load)		2.7	0	2.7	0	2.7	0
Typical Recharge Time		4 hours recover to 90% capacity (for Non-LB models only)					
Charging Current (max.)		1 Amp	6 Amp	1 Amp	6 Amp	1 Amp	6 Amp
Charging Voltage		27.4 VDC ± 1%		54.7 VDC ± 1%		82.1VDC ± 1%	
LCD DISPLAY							
Status		Load level 0-25%, 26-50%, 51-75% and 76-100%, Low Battery and Battery Good, Programmable Management Outlets working, UPS On-Line, UPS in Frequency Converter Mode, UPS On Bypass, Alarm Disabled Indicator and Battery Charger Working.					
Readings		Input Voltage and Frequency, Output Voltage and Frequency, Battery Backup Time (hours/minutes), Fault Indicator, Battery Voltage, Overload, and/or UPS Output is short circuited.					
Control/Select Buttons		Off/Enter - Turn UPS Off, Switch LCD Message, Mode Settings, Navigation Key, On/Mute + Select Button to switch to Bypass Mode.					
AUDIBLE & VISUAL ALARMS							
Warning Indicators		Low battery, Overload, Battery Not Connected, Overcharge, Site Wiring Fault, EPO Enabled, Over Temperature, Charger Failure, Battery Fault, Bypass Out of Range and Bypass Frequency Unstable					
**PHYSICAL WEIGHT & DIMENSIONS H" x W" x D" / [mm]							
Rack Mount		3.39" x 17.24" x 16.44" (2U) [86.2 x 438.0 x 417.5]		3.39" x 17.24" x 20.38" (2U) [86.2 x 438.0 x 517.5]		3.39" x 17.24" x 27.74" (2U) [86.2 x 438.0 x 704.6]	
Tower		17.24" x 3.39" x 16.44" (2U) [438.0 x 86.2 x 417.5]		17.24" x 3.39" x 20.38" (2U) [438.0 x 86.2 x 517.5]		17.24" x 3.39" x 27.74" (2U) [438.0 x 86.2 x 517.5]	
Net Weight lbs. / (kg)		29 / (13)	20 / (9)	47 / (21)	28 / (13)	65 / (29)	33 / (15)
ENVIRONMENT (Electronics)							
Operating		32°F (0°C) to 104°F (40°C)					
Humidity		20-90 % RH (non-condensing)					
Storage		-13°F (-25°C) to 104°F (40°C) BATTERIES (REFRESH Charge @ 3 months)					
Noise Level		Less than 50dBA @ 1 Meter					
MANAGEMENT / COMMUNICATION							
Smart RS-232/USB		Supports Windows 2000/2003/XP/Vista/2008/7, Linux, Unix, and MAC					
Optional SNMP Card		Power management from SNMP manager and web browser					
Optional MODBUS Card		Communications from MODBUS					
Optional AS400 Card		With DB9 or 9 Pin Connector					
AGENCY							
Listing		UL1778/cUL	UL1778/cUL	UL1778/cUL	UL1778/cUL	UL1778/CE/cUL	UL1778/CE/cUL

* Derate capacity to 95% when the output voltage is adjusted to 115VAC. Derate capacity to 90% when the output voltage is adjusted to 110VAC. Derate capacity to 80% when the output voltage is adjusted to 100VAC.

**Always reference Spec Control Drawing (SCD) for the most current & accurate dimensions and weights

The UniStar® V Series Battery Run Time Charts

Standard External Battery Run Time Chart - Minutes Used with UniStar V Series, 120 VAC, Universal Tower/Rack 1000VA, 2000VA & 3000VA

UPS Rating	Part Number	Quantity Cabinets	# Strings Internal/External	25% Load	50% Load	75% Load	100% Load	*Dimensions H" x W" x D" / [mm]	*Wt. lbs. / (kg)
1000VA	Internal	0	1/0	25	10	5	2.7	3.39" x 17.24" x 17.04" (2U) [86.2 x 438.0 x 432.7]	38 / (17)
	SCV-BAT-1K	1	1/2		40	25	18		
2000VA	Internal	0	1/0	25	10	5	2.7	3.39" x 17.24" x 20.97" (2U) [86.2 x 438.0 x 532.7]	64 / (29)
	SCV-BAT-2K	1	1/2		40	25	18		
3000VA	Internal	0	1/0	25	10	5	2.7	3.39" x 17.24" x 25.70" (2U) [86.2 x 438.0 x 652.7]	91 / (41)
	SCV-BAT-3K	1	1/2		40	25	18		

Note: 1. ONLY (1) Standard Battery Pack can be used on the SCV-X0002 Models without effecting recharge time.
 If (2) battery packs are used the recharge will take twice the time.
 2. If longer run times are needed or future expansion is planned the LB Model is recommended.
 3. Run times included total of internal and external battery strings.

*Always reference Spec Control Drawing (SCD) for the most current & accurate dimensions and weights

Standard External Battery Run Time Chart - Minutes Used with UniStar V, 120VAC, LB Models, Universal Rack/Tower 900VA, 1700VA & 2500VA

UPS Rating	Part Number	Quantity Cabinets	# Strings	25% Load	50% Load	75% Load	100% Load	*Dimensions H" x W" x D" / [mm]	*Wt. lbs. / (kg)
900VA	Internal	0	0	0	0	0	0	3.39" x 17.24" x 17.04" (2U) [86.2 x 438.0 x 432.7]	38 / (17)
	SCV-BAT-1K	1	2	70	28	16	10		
		2	4	163	70	42	28		
		3	6	264	115	70	49		
		4	8	373	163	99	70		
		5	10	491	213	130	92		
1700VA	Internal	0	0	0	0	0	0	3.39" x 17.24" x 20.97" (2U) [86.2 x 438.0 x 532.7]	64 / (29)
	SCV-BAT-2K	1	2	76	32	19	13		
		2	4		76	45	32		
		3	6			76	53		
		4	8				76		
		5	10				112		
2500VA	Internal	0	0	0	0	0	0	3.39" x 17.24" x 25.70" (2U) [86.2 x 438.0 x 652.7]	91 / (41)
	SCV-BAT-3K	1	2	77	32	19	13		
		2	4		77	46	32		
		3	6			77	54		
		4	8				77		
		5	10				112		

Note: Weights include the total of all cabinets

*Always reference Spec Control Drawing (SCD) for the most current & accurate dimensions and weights

The UniStar® V Series Battery Run Time Charts (Continued)

Extended Battery Run Time Chart - Minutes Used with UniStar V, 120VAC, LB Models, Universal Rack/Tower 900VA, 1700VA & 2500VA

UPS Rating	Part Number	Quantity Cabinets	# Strings	25% Load	50% Load	75% Load	100% Load	*Dimensions H" x W" x D" / [mm]	*Wt. lbs. / (kg)	
(2) HR1251W Batteries per string										
900VA	SCV-BAT-51-1K-1	1	1	51	23	13	9	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	55 / (25)	
	SCV-BAT-51-1K-2	1	2		51	32	23		71 / (32)	
	SCV-BAT-51-1K-3	1	3			51	37		88 / (40)	
	SCV-BAT-51-1K-4	1	4			76	51		104 / (47)	
	SCV-BAT-51-1K-5	1	5				68		120 / (54)	
	SCV-BAT-51-1K-6	1	6				98		136 / (62)	
	SCV-BAT-51-1K-7	1	7				118		152 / (69)	
	SCV-BAT-51-1K-8	1	8				140		169 / (77)	
(2) HR1290W Batteries per string										
900VA	SCV-BAT-90-1K-1	1	1	110	44	26	18	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	69 / (31)	
	SCV-BAT-90-1K-2	1	2	247	110	65	44		100 / (45)	
	SCV-BAT-90-1K-3	1	3	376	180	110	76		130 / (59)	
	SCV-BAT-90-1K-4	1	4	528	247	157	110		160 / (73)	
	SCV-BAT-90-1K-5	1	5		311	203	145		190 / (86)	
(2) HR12150W Batteries per string										
900VA	SCV-BAT-150-1K-1	1	1	242	105	64	44	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	90 / (41)	
	SCV-BAT-150-1K-2	1	2		243	148	105		141 / (64)	
	SCV-BAT-150-1K-3	1	3		402	242	171		193 / (88)	
(4) HR1251W Batteries per string										
1700VA	SCV-BAT-51-2K-1	1	1	54	24	14	9	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	71 / (32)	
	SCV-BAT-51-2K-2	1	2		54	34	24		104 / (47)	
	SCV-BAT-51-2K-3	1	3			54	40		136 / (62)	
	SCV-BAT-51-2K-4	1	4			85	54		169 / (77)	
(4) HR1290W Batteries per string										
1700VA	SCV-BAT-90-2K-1	1	1	117	47	28	19	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	100 / (45)	
	SCV-BAT-90-2K-2	1	2	260	117	69	47		160 / (73)	
	SCV-BAT-90-2K-2	2	4	563	260	166	117		17.44" x 19.00" x 22.94" (10U) [443.0 x 482.6 x 582.5]	320 / (146)
	SCV-BAT-90-2K-2	3	6		398	260	191		26.16" x 19.00" x 22.94" (15U) [664.5 x 482.6 x 582.5]	480 / (219)
	SCV-BAT-90-2K-2	3	6		398	260	191		26.16" x 19.00" x 22.94" (15U) [664.5 x 482.6 x 582.5]	480 / (219)
(4) HR12150W Batteries per string										
1700VA	SCV-BAT-150-2K-1	1	1	257	112	68	47	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	141 / (64)	
	SCV-BAT-150-2K-1	2	2		257	157	112		17.44" x 19.00" x 22.94" (10U) [443.0 x 482.6 x 582.5]	282 / (128)
	SCV-BAT-150-2K-1	3	3		429	253	181		26.16" x 19.00" x 22.94" (15U) [664.5 x 482.6 x 582.5]	423 / (192)
(6) HR1251W Batteries per string										
2500VA	SCV-BAT-51-3K-1	1	1	54	24	14	9	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	88 / (40)	
	SCV-BAT-51-3K-2	1	2		54	34	24		136 / (62)	
	SCV-BAT-51-3K-2	2	4			85	54		17.44" x 19.00" x 22.94" (10U) [443.0 x 482.6 x 582.5]	272 / (124)
	SCV-BAT-51-3K-2	3	6				98		26.16" x 19.00" x 22.94" (15U) [664.5 x 482.6 x 582.5]	408 / (186)
(6) HR12150W Batteries per string										
2500VA	SCV-BAT-150-3K-1	1	1	257	112	68	47	8.72" x 19.00" x 22.94"(5U) [221.5 x 482.6 x 582.5]	193 / (88)	
	SCV-BAT-150-3K-1	2	2		257	157	112		17.44" x 19.00" x 22.94" (10U) [443.0 x 482.6 x 582.5]	386 / (176)
	SCV-BAT-150-3K-1	3	3		429	257	181		26.16" x 19.00" x 22.94" (15U) [664.5 x 482.6 x 582.5]	579 / (264)
	SCV-BAT-150-3K-1	4	4			375	261		34.88" x 19.00" x 22.94" (20U) [886.0 x 482.6 x 582.5]	772 / (352)

- Note:
- Battery Times are based on new batteries +/- 5%.
 - Extended Battery Packs are Hot Swappable, not individual batteries.
 - Weight includes total number of all cabinets.
 - Consult Factory for longer Run Times.

*Always reference Spec Control Drawing (SCD) for the most current & accurate dimensions and weights

Staco Service

Field Service Program

Staco specializes in providing choice and flexibility by developing tailored solutions for preventive and remedial maintenance services, as well as emergency repairs for all of our products. Staco Service is built upon a nationwide network of highly trained and motivated customer support engineers and technicians who can provide professional services and care throughout the life of your equipment.

- **Start-Ups**
- **Preventive Maintenance**
- **Spare Parts**
- **Battery Analysis/Refresh/Replacement**
- **On-Site Training**
- **Time & Material Services**
- **ServiStar: Providing security beyond our standard warranty**

Why Staco Energy Products?

Because we are your tailored power solutions provider!

Unique application design demands, harsh environment concerns, the need to meet non-standard physical space requirements—providing the “not so usual” is what we do best. From leading edge uninterruptible power supplies, power conditioners, power factor and harmonic correction equipment, to the world's most stable voltage control systems, we have the technology you need to protect and manage your business, and the knowledge to make it work for you.

Since 1937, customers worldwide have relied on Staco Energy as their tailored solutions provider, to solve a wide range of electrical power problems. Headquartered in Dayton, Ohio, Staco Energy Products is a wholly owned subsidiary of Components Corporation of America, located in Dallas, Texas.



STACO ENERGY PRODUCTS CO.

Your Tailored Power Solutions Provider™

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