

UNISTAR[®] P Series

6, 8, and 10 kVA
Tower Model

On-line, Single-phase Parallel Redundant UPS System

- Power range and runtime scalability
- Full-time Digital Signal Processor Control
- LCD/LED mimic panel
- Easy-to-set user personalization
- Up to 98% energy efficiency
- Continuous power conditioning, even when not running on battery
- Smooth, uninterrupted switching from utility power to battery mode, and back again
- Wide fluctuations in utility power are handled without going to battery
- Parallel up to four units for added capacity or redundancy, using a simple connection on the rear panel without additional cabinets
- Unlike most UPSs in this size range, the UniStar[®] P has a very low rate of added and reflected harmonics, which protects the integrity of your entire electrical system



Full Three Year
Warranty

STACO
ENERGY
PRODUCTS CO.

UNI STAR[®] P Parallelable UPS

Proven Technology

Higher reliability and greater immunity from power anomalies is achieved through our field-proven Digital Signal Processor architecture. The front panel controls are intuitive and user friendly. The system display clearly communicates all major system parameters, system status, and system diagnostics, and includes access to system information and unit personalization via the front panel.



UniStar[®] P Series Tower shown paralleled and with battery cabinet

Simple Parallel Installation

For increasing power capacity, or making redundant systems, the UniStar[®] P can be installed in parallel. By simply connecting the parallel control lines through an RJ-45 connector on the rear panel and CAN-bus, communication is established to all units. Up to four units can be paralleled together without a paralleling cabinet.

Power Range and Runtime Scalability

The UniStar[®] P provides an excellent return on investment. The system is fully modular, allowing you to increase the overall power output and battery runtime as your system grows. It is important however, that you plan your electrical installation to fit your needs. Our worldwide network of sales representatives and distributors can assist you with a tailored solution that meets your needs.

Full Time Digital Signal Processor Control

The full-time DSP control system inside the UniStar[®] P provides a pure sine wave using our patented inverter control technology. The UniStar[®] P provides N+1 scalability without additional components.

Three Year Warranty

Electronics:

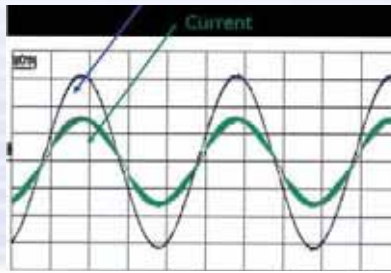
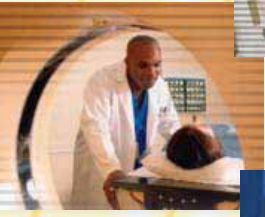
A full **Three Year** parts with depot repair or replacement warranty is standard.

Battery:

A full **One Year Warranty**, 4-year pro-rated, 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.*

On-line, Single-phase Parallel Redundant UPS System



High Input Power Factor and Low Current THD

The UniStar®P meets today's industry standard for energy savings and low reflected harmonics, and achieves up to 0.99 Power Factor as well as <5% THD.

Energy Efficient UPS

The AC to AC efficiency of the UPS may reach up to 91% at 25% load, and better with larger loads and normal VFI operation. Using the ECO mode, up to 98% efficiency can be achieved.

Smart ECO Mode

In ECO operation mode, the UniStar®P normally supplies power to load via bypass utility. It will automatically transfer to inverter supply with SmartECO Mode if the bypass utility becomes out of tolerance.

Programmable Frequency Converter

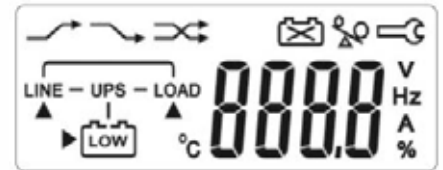
Using the front panel keypad, you may reprogram the UniStar®P to act as a frequency converter for either 50 Hz or 60 Hz. (Consult factory for further information)

EPO Function

The Emergency Power Off Function enables user shutdown of the UPS in an emergency situation.

Manual Maintenance Bypass

The internal manual bypass ensures a continuous supply of power to the critical load during service or periodic maintenance of the UPS system. The bypass switch is electrically interlocked with the inverter to provide safe operation.



LCD/LED Mimic Panel

A concise LCD/LED display provides real-time status and readings such as operation modes, AC voltage, frequency, battery voltage, load level, inner temperature, and more. A full-size microprocessor-based graphical LCD display provides advanced monitoring functions.

Intelligent Self-Diagnostics

The DSP self-diagnostics assists the service engineer in pinpointing system faults rapidly, making repairs fast and easy.

Silent Fan Control

The UniStar®P employs forced air cooling by internally mounted fans with speed control that is based on load percentage. This means low audible noise levels, suitable for most environments.

Applications

- Broadcast
- Computer Networks
- Retail
- Robotics
- Printing
- Medical/Pharmaceuticals
- Paper Production
- Food Processing

STACO
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Your tailored power solutions provider™

User Personalization

Through the LCD front panel, you may easily change the parameters and settings built in to the DSP controllers, such as UPS operation modes, voltage configurations, synchronization frequency windows (for use with generators), bypass voltage tolerances and audible alarm.

Advanced Battery Management

The UniStar[®]P automatically manages the end of discharge voltage according to load. This function prevents deep-discharge of the built-in battery during a power failure and saves battery life.

Galvanic Isolation Transformer

The galvanic isolation transformer provides not only complete isolation between the input and the output, but also various secondary voltages, such as 220/230/240 Vac, 208/120 Vac and 240/120 Vac.



Cold Start Function

Users can turn on the UPS without utility power available.



Variety of Customer Options Slots

This UPS also provides two customer option communication slots in addition to the standard RS232 port. All communications cards are designed for simple installation; electrical connections are made through a 26-pin edge card connector. The first RS232 port on the rear panel will remain active, even though optional communication cards are installed.

Communications Capability

The UniStar[®]P is shipped with standard monitoring/shutdown software. The software allows control of the UPS and graceful shutdown when the utility power fails, but also allows the user to:

- Remotely test the major operating functions of the UPS
- Communicate via SNMP/WEB card
- Access UPS functions via the WEB



Hot-Swappable Battery

The UniStar[®]P allows users to replace batteries without electric shock hazard, while the UPS supplies continuous power to your application.

Optional External Battery Charger

The optional charger can be installed for fast recharge of the extended battery pack.

- Power Output: 1000W
- Mounting: UPS or wall mount



Matching Extended Battery Pack

Optional matching battery packs are available to easily extend the UPS runtime to several hours.



6, 8 & 10kVA Single Phase UPS Tower Extended Battery Run Times (minutes)

| 40 X Cabinet (2 strings) | | | | | | | |
|--------------------------|--------------|------------------|----------|----------|----------|-----------|---|
| UPS Size | Part Number | Qty. of Cabinets | 25% Load | 50% Load | 75% Load | 100% Load | |
| 6kVA | SC-BP6000T-2 | Internal | 0 | 56 | 22 | 12 | 8 |
| | | 1 | 226 | 95 | 56 | 38 | |
| | | 2 | 420 | 180 | 109 | 75 | |
| | | 3 | 629 | 273 | 166 | 116 | |
| | | 4 | 847 | 370 | 226 | 158 | |
| 5 | 1073 | 471 | 289 | 203 | | | |
| 8kVA | SC-BP1100T-2 | Internal | 0 | 64 | 21 | 12 | 7 |
| | | 1 | 216 | 91 | 54 | 37 | |
| | | 2 | 402 | 172 | 104 | 72 | |
| | | 3 | 602 | 261 | 158 | 110 | |
| | | 4 | 812 | 354 | 216 | 151 | |
| 5 | 1028 | 451 | 276 | 194 | | | |
| 10kVA | SC-BP1100T-2 | Internal | 0 | 40 | 15 | 8 | 5 |
| | | 1 | 164 | 68 | 40 | 27 | |
| | | 2 | 307 | 131 | 78 | 54 | |
| | | 3 | 461 | 198 | 120 | 83 | |
| | | 4 | 623 | 270 | 154 | 114 | |
| 5 | 790 | 345 | 210 | 147 | | | |
| 60 X Cabinet (3 strings) | | | | | | | |
| UPS Size | Part Number | Qty. of Cabinets | 25% Load | 50% Load | 75% Load | 100% Load | |
| 6kVA | SC-BP6000T-3 | Internal | 0 | 56 | 22 | 12 | 8 |
| | | 1 | 321 | 137 | 82 | 56 | |
| | | 2 | 629 | 273 | 106 | 116 | |
| | | 3 | 959 | 420 | 257 | 180 | |
| | | 4 | 1305 | 576 | 354 | 249 | |
| 5 | 1660 | 737 | 454 | 321 | | | |
| 8kVA | SC-BP1100T-3 | Internal | 0 | 64 | 21 | 12 | 7 |
| | | 1 | 307 | 131 | 78 | 54 | |
| | | 2 | 602 | 261 | 158 | 110 | |
| | | 3 | 919 | 402 | 246 | 172 | |
| | | 4 | 1251 | 551 | 338 | 238 | |
| 5 | 1594 | 706 | 435 | 307 | | | |
| 10kVA | SC-BP1100T-3 | Internal | 0 | 40 | 15 | 8 | 5 |
| | | 1 | 234 | 98 | 58 | 40 | |
| | | 2 | 461 | 198 | 120 | 83 | |
| | | 3 | 706 | 307 | 187 | 130 | |
| | | 4 | 963 | 422 | 258 | 181 | |
| 5 | 1229 | 541 | 332 | 234 | | | |

Note: External 1000W Battery Charger (P/N SC-CHG-1000) required every (2) External Battery Cabinets

UNISTAR[®] Tower Models

| Tower Models | SC60021T | SC60022T | SC80021T | SC80022T | SC11021T | SC11022T |
|--|--|--|--|--|--|--|
| INPUT | | | | | | |
| Connection | Hardwire / Optional 6ft. Line Cord with L6-30P Plug | | Hardwire | | | |
| Voltage Range | 160 -280Vac | | | | | |
| Frequency | 45 ~ 65 Hz | | | | | |
| Phase/Wire | Single, Line + Common + Ground | | | | | |
| Power Factor | Up to 0.99 at 100% Linear Load | | | | | |
| Current THD | <5% at 100% Linear Load | | | | | |
| OUTPUT | | | | | | |
| Connection | Hardwire | | | | | |
| Voltage | 208/120 or 240/120Vac | 208/220/230/240Vac | 208/120Vac or 240/120Vac | 208/220/230/240Vac | 208/120 or 240/120Vac | 208/220/230/240Vac |
| Voltage Adjustment | +/- 0%; +/- 1%; +/- 2%; +/- 3% For All Voltages | | | | | |
| Voltage Regulation | +/- 2% | | | | | |
| Capacity | 6000VA/4200W | | 8000VA/5600W | | 10000VA/7000W | |
| Parallel Capability | Redundancy or Capacity – 4 Units | | | | | |
| Rated Power Factor | 0.7 Lagging | | | | | |
| Wave Form | Sine Wave, THD < 3% (no load to full load) | | | | | |
| Frequency Stability | +/- 0.2% (Free Running) | | | | | |
| Frequency Regulation | +/- 1 Hz | | | | | |
| Transfer Time | 0ms/instantaneous | | | | | |
| Crest Factor | 3:1 | | | | | |
| Efficiency (AC to AC Nominal) | 91% | | | | | |
| Efficiency (AC to AC ECO Mode) | Up to 97% | | Up to 93% | | | |
| Leakage Current | < 3mA @ Full Load | | | | | |
| Manual Bypass Switch | Make – Before - Break | | | | | |
| DC Start | Yes | | | | | |
| Cooling | Load Dependant Variable Speed Fans | | | | | |
| DISPLAY, ALARMS, DIAGNOSTICS, COMMUNICATIONS & EMERGENCY FUNCTION | | | | | | |
| Status On LED + LCD | Line Mode, Backup Mode, ECO Mode, Bypass Supply, Battery Low, Battery Bad/Disconnected, Overload, Transferring with interruption & UPS Fault | | | | | |
| Readings On LED + LCD | Input Voltage, Input Frequency, Output Voltage, Load Percentage, Battery Voltage & Unit's Inner Temperature | | | | | |
| Self-Diagnostics | Upon Power-on, Front Panel Setting & Software Control, 24 Hour self check | | | | | |
| Audible Alarms and Visual | Line Failure, Battery Low, Transfer to Bypass, System Fault Conditions | | | | | |
| Communications | RS232 Serial Port (2 slots available for optional SNMP/WEB, USB or Dry Contact Card) | | | | | |
| Emergency Power Off (EPO) Connection | Emergency Power Off shuts down UPS when activated by customer supplied EPO Circuit | | | | | |
| PHYSICAL | | | | | | |
| Dimensions (HxWxD) | 29.5" x 11.4" x 25.4" | 34.7" (21T), 29.5" (22T) x 11.4" x 25.4" | 34.7" (21T), 29.5" (22T) x 11.4" x 25.4" | 34.7" (21T), 29.5" (22T) x 11.4" x 25.4" | 34.7" (21T), 29.5" (22T) x 11.4" x 25.4" | 34.7" (21T), 29.5" (22T) x 11.4" x 25.4" |
| Weight (lbs.) | 265 (21T), 190 (22T) | 320(21T), 203(22T) | 320(21T), 203(22T) | 320(21T), 203(22T) | 340(21T), 223(22T) | 340(21T), 223(22T) |
| Safety and Performance | UL1778, c-UL; CE – FCC Class A, N 50091-2, EN 61000 (various), IEC 61000 (various), IEC 62040-2, CISPR 22 | | | | | |
| INTERNAL BATTERY | | | | | | |
| Battery Run Time@Full Load | 8 | | 7 | | 5 | |
| Type | Sealed Lead Acid Maintenance Free, 20 each 12V/7AH, 240Vdc | | Sealed Lead Acid Maintenance Free, 20 each 12V/9AH, 240Vdc | | Sealed Lead Acid Maintenance Free, 20 each 12V/9AH, 240Vdc | |
| Hot – Swap Batteries | Yes | | | | | |
| Recharge Time | 4 hours to 90% | | | | 5 hours to 80% | |
| *Extended Run Time Battery Cabinets | SC-BP6000T-2, SC-BP6000T-3, SC-BP1100T-2, SC-BP1100T-3 (Refer To Run Time Chart) | | | | | |
| OPTIONAL COMMUNICATION Cards and Shutdown Software | | | | | | |
| SC-SNMP1 | SNMP/WEB Network Card & Shutdown Software | | | | | |
| SC-Contact/EPO | Dry Contact & EPO Card | | | | | |
| SC-PK | Parallel Cable kit contains two RJ45 cables and miscellaneous hardware for paralleling | | | | | |
| Note: (2) slots available; both cards can be used simultaneously; RS232 Port is disabled when communication cards are installed. | | | | | | |
| OPTIONAL EXTERNAL EXTENDED BATTERY CABINETS | | | | | | |
| Model | SC-BP6000T-2 & -3 | | | SC-BP1100T-2 & -3 | | |
| Type | Sealed Lead Acid Maintenance Free, -2: 40 each & -3: 60 each 12V/9AH, 240Vdc | | | Sealed Lead Acid Maintenance Free, -2: 40 each & -3: 60 each 12V/9AH, 240Vdc | | |
| Hot – Swap Cabinets | Yes | | | | | |
| Battery Connection | Connector | | | | | |
| Dimensions (HxWxD) | 29.5" x 11.4" x 25.4" | | | | | |
| Weight (lbs.) | 326 | | | | | |
| OPTIONAL EXTENDED BATTERY PACK CHARGER | | | | | | |
| SC-CHG-1000 | 1000W External Mount Battery Charger (1) charger per every (2) External Battery Packs Required | | | 3.4"H x 6.6"W x 11.1"D | | 7 lbs. |
| OPTIONAL PARALLEL DISTRIBUTION / BYPASS MODULE (Note 1) | | | | | | |
| SC-PKIT-2 | Parallel Distribution Bypass 60Amp for (2) UPS Modules | | | 3.7"H x 10.5"W x 9.5"D | | 11 lbs. |
| SC-PKIT-4 | Parallel Distribution Bypass 120Amp for (4) UPS Modules | | | 3.7"H x 10.5"W x 16.4"D | | 20 lbs. |

Notes:

Parallel for capacity configurations can use (1) battery system sized for the ultimate capacity.
 Parallel for redundancy configurations require (1) battery system for each UPS.

Service Options

With our ServiStar® program, a wide range of planned maintenance and extended service options are offered to maximize equipment life and reliability of your FirstLine® UPS. Through an extensive network of factory trained professionals you receive:

- Start-Up and Training
- Annual Service Plan
- 24/7 Emergency Service
- Preventative Maintenance
- Programs tailored to meet your needs

About Staco Energy Products Company

Since 1937, customers worldwide have been relying on Staco Energy Products Company to deliver voltage control and power quality solutions tailored to their needs.

As a leading power quality resource, we offer our customers world-class support; from our thorough applications assessment, to our ability to design and deliver a solution that is tailored to the specific needs of our customers; through delivery and commissioning.

Our professional, factory trained service team is in place to ensure that our customers' revenues are protected, and their investment provides them with many years of trouble free operation.

Staco develops total power solutions for OEM and end user applications.

Represented locally by:

In addition to the UniStar® P we offer a wide array of power quality products, including:

- **Uninterruptible Power Supplies**
- **Power Conditioners**
- **Voltage Regulators**
- **Power Factor Correction and Harmonic Mitigation**
- **Active Harmonic Filters**
- **Variable Transformers**
- **Custom Engineered Test Sets**



**STACO
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Your tailored power solutions provider™

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