

S Series



Digital Uninterruptible Power System

1,250 VA to 2,400 VA

For Non-Life-Support Medical Applications



When All Others Fail

Turn to Clary's 60 years of technical expertise, and our unmatched experience in providing high performance and reliable UPS systems for applications ranging from extreme temperature environments to offshore drilling rigs, military shipboard, 911 emergency systems and life-support systems. Clary starts where the competition stops.

Reliability

Clary units supply reliable Continuous Digital Power during brownouts, dirty unstable electrical power and loss of input power. Unlike most other UPSs, the S Series will run continuously from batteries or auxiliary generator systems as long as power is available.

True On-Line Technology

Clary specializes exclusively in True On-Line Double Conversion systems. This technology provides ultimate protection from all power anomalies, keeping mission-critical applications out of harm's way. Our systems provide a digitally controlled precision regenerated output sinewave, unlike common standby or line interactive designs.

Uncompromising Performance

The Clary S Series UPS is the only UPS of its class to offer medical grade performance. By supplying clean, regulated power to sensitive

medical devices, the S Series also protects the patient and procedure being performed by isolating the input from the output. This reliable power system is built to the highest quality standards.

Communications

Connectivity features include remote control, configuration and monitoring of the UPS. Clary products are compatible with all major network operating systems.

Off-the-shelf and Custom Solutions

In 1977, Clary Corporation pioneered On-Line Double Conversion UPS technology, and in 1996 introduced digital control for continuous power UPS systems for mission-critical applications. Today, Clary manufactures a variety of superior power products here in the USA, and can customize specs to meet your application requirements. What's more, our in-house field service department consistently sets the industry standard. Clary systems are found in hospitals, police and fire emergency systems, oil fields, rugged industrial applications, traffic signals, computer networks, military aerospace systems and numerous other applications.

MODEL	RATING	WATTS
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S1250	1,250VA	875
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S1500	1,500VA	1050
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S2000	2,000VA	1,400
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S2400	2400VA	1,680
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Features

- Keeps equipment running at all times
- Improves power quality
- Protects all connected equipment
- Easy installation in the office or lab environment
- No interrupted procedures
- Enhanced patient security
- No invalid test result
- No revenue disruption

Where POWER is a way of life

Scientific Grade Digital Uninterruptible Power System

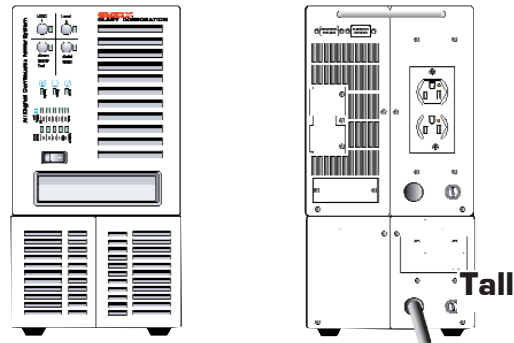
CLARY

The Continuous Power Company™

S Series

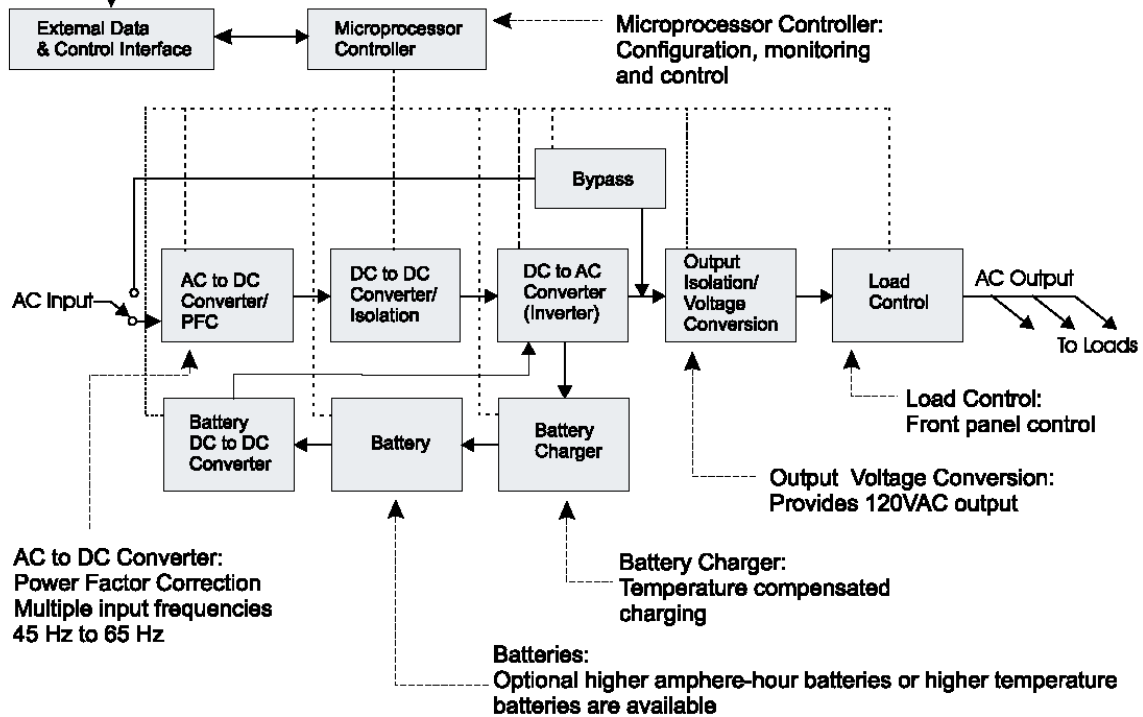
S Series Diagrams

Tower Chassis S1250 through S2400



Block Diagram

External Data & Control Interface:
RS-232 (DB-9) Interface
(SNMP Optional)



Where POWER is a way of life

Features and Benefits

Features	Benefits
Input Voltage Range: 120 VAC +12%, -25%; 90 to 135 VAC before switching to batteries	Assures continuous system operation during electrical surges and sags without switching to the batteries and depleting their capacity.
True On-Line Technology	True On-Line means Fully Regenerative, Dual Conversion operation. It assures complete isolation from voltage and frequency variations. Unlike "line-interactive," "off-line" or "standby" systems, there is absolutely no interruption of power output or shift in line frequency to cause system crashes or resets. Complete compatibility with emergency standby generator systems is assured.
Full Microprocessor Control	Every aspect of system operation is monitored and controlled by the internal microprocessor. This assures flawless operation regardless of load, environmental or input power conditions. Clary has over 30 years experience designing with Digital Technology, which ensures reliability.
Power Factor Correction	Power Factor Correction eliminates distortion and harmonic currents caused by today's high-tech loads. Eliminating this distortion assures that all of your equipment works together without problems. It also reduces your energy bill.
Communications and Control Interface	Allows interactive system control over a variety of network connections and communication interfaces - RS-232 (standard), Contact Closure and TCP/IP - SNMP (optional).
Complete Power Distribution Center	Six NEMA 5-15R connectors on two separate circuits are standard. An ergonomic design feature is two receptacles at 90° enabling a wall mounted transformer to only cover one receptacle. Custom rear panels are available with a variety of connectors to fit special applications.
Remote Control of Receptacles (Two Output Circuits)	Each row of output connectors can be individually switched on or off at the front panel. Locked-up devices are a fact of life and this control allows the user to reboot devices powered by the UPS. Using a communications link, a remote operator (and/or network administrator) can also control and monitor each circuit.
Long Life Internal Batteries	Special VRLA batteries that offer longer discharge and float life allow full system operation during blackouts and severe brownouts. (See specification page for run time.)
Additional Battery Options	For applications that require longer operation during a power outage, additional matching battery packs that can be connected to the rear panel and extend run times are available.
SNMP Option	SNMP capability via TCP/IP Network connection. Compatible with more software than any other UPS including RUPS™, HP Openview™, CA Unicenter TNG™, Systems Enhancement™ and other major software packages.

S Series Specifications

Scientific Grade

ELECTRICAL

Input	
Voltage	120 VAC +12%, -25% (without battery discharge)
Frequency	45 to 65 Hz
Current	See Table Below, Power Factor Corrected per IEC 555 @ 120 VAC
Output	
Voltage	120 VAC \pm 3%
Frequency	Software Selectable to Sync with Input Utility or Run at Crystal Controlled 50 or 60 Hz \pm 1 Hz
Current	See Table Below
Crest Factor Ratio (Non-linear Load and < 5% THD) Typical	@50% Load Up to 4.8:1 @75% Load Up to 3.2:1 @100% Load Up to 2.4:1
Total Harmonic Distortion (THD)	3% Typical (Non-linear) 5% Max. (Non-linear)
Dynamic Response	\pm 4% for 100% Step Load Change; 0.5 ms Recovery Time
Overload	110% for 10 min; 200% for .05 sec
Efficiency @100% Load	88%
UPS Protection	Input and Output Short Circuit; Input and Output Overload; Excessive Battery Discharge

ENVIRONMENTAL

Operating Temp.	0°C to +50°C (+32°F to +122°F)
Humidity	0% to 95% Non-condensing
Altitude	Sea Level to 10,000 ft (some derating of temp. w/altitude)
Noise Level	39 to 42 dBA at 5 ft

MECHANICAL

Input: 2,000 VA	NEMA 5-20P Plug w/6 ft Cord
1,250/1,500 VA	NEMA 5-15P Plug w/6 ft Cord
Outputs (standard)	(1) Duplex hospital grade recepta cles

CUSTOM OPTIONS

Contact Factory for Other Custom Options

Specifications subject to change without prior notice

DESIGN

Standard Features	Power Factor Corrected Input; Fully Regenerative; True On- Line; Low Distortion Sinewave Output; Inverter Powers Load Continuously; Designed for Non-linear Loads; Extended Brownout Protection; Continuous Operation on -25% to +12% Utility w/o Draining Batteries; Automatic Bypass; RS232 Data Interface; AC Output - 2 Channel Load Control; Rear Mounted Ground Stud
Specifications	UL 1778; CUL Pending; FCC Class A; IEEE 587 / ANSI C62.41; IEC 555 @ 120 VAC
MTBF	In Excess of 100,000 hrs
Typical Recharge Time to 85% Capacity with extended battery option) @ 100% Load	8 hrs (more time required

CONTROLS AND INDICATORS

Sequenced LEDs Single LED	Battery Level, Load Level AC In, Inverter On, Load On, Summary Alarm, Alarm Silence
Front Panel Controls	Power On; Cold Start; Alarm Silence; Test; Load I On-Off; Load II On-Off
Audible Alarms	Utility Interrupt; Inverter Failure; Overload; Low Battery; Self Test
RS232 Data Interface (DB-9)	Full Interactive Remote Computer Monitoring and Control of Most Features, Including Load Control (requires optional monitoring software). Shutdown Software and Utility Package Included. Compatible with Systems Enhancement™ UPS Control Software.
Contact Closures (DB-9) Contact	Open Collector; Optional Dry
Optional SNMP Interface	Allows Full Control and Monitoring over Network Connection. Compatible with HP Openview™, IBM Netview™, CA Unicenter TNG™, Systems Enhancement Corp. and Other Major Software.

Model	VA	Watts	Input Current (A)	Output Current (A)	Backup Time 100% / 50% Load	Unit Weight (lbs)	Dimensions H x W x D (in)
S1250 (Short)*1,250		875	7.2	8.3	5 / 17	55	9.1 x 6.9 x 21.0
S1250*	1,250	875	8.8	10.4	7 / 21	80	14.0 x 7.0 x 21.0
S1500*	1,500	1,050	10.7	12.5	5 / 17	80	14.0 x 7.0 x 21.0
S2000*	2,000	1,400	14.3	16.7	5 / 18	100	14.0 x 7.0 x 21.0
S2400*	2,400	1,610	18.7	29.0	5 / 18	115	14.0 x 7.0 x 21.0

* Includes medical grade options (UL 1778)



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