

# SP Series



## Uninterruptible Power for Traffic Signal Applications



1,250 VA and 2,000 VA

The SP Series UPS and Outpost™ Series batteries are designed for outdoor use and will operate in extreme temperature environments of -40°C to +74°C (-40°F to +165°F).

### SP 1000SR/SN - SP 1250SR/SN PLUS - SP 2000SR/SN

#### Universal UPS Systems for LED Traffic Signal Applications

- Can keep an intersection running for up to 8 hours or longer
- Does not compromise existing cabinet wiring
- Provides ON-LINE conditioned re-manufactured power for cabinet equipment
- RS232 or TCP/IP- Communicates with monitoring center or other equipment
- SP 1000SR/SN: 1,250 VA, 875 Watts, continuous power
- SP 1250SR/SN PLUS: 1,250 VA, 875Watts (1400 watts, peak load 10 sec. or less)
- SP 2000SR/SN: 2,000 VA, 1,400 Watts, continuous power
- Multi-state DOT and NEMA compliant
- Optional NEMA 3R Type II and Type III cabinets available
- Power Factored Corrected



### SP 1250U - SP 2000U

#### UPS Systems for IT/Communication Applications

- Provides uninterrupted power for up to 8 hours or longer
- Completely conditions, re-manufactures and regulates power
- Power factor corrected
- RS232 or Optional SNMP Adapter (TCP/IP Protocols)
- SP 1250U: 1,250 VA, 875 Watts, continuous power
- SP 2000U: 1,400 Watts, continuous power
- Optional NEMA 3R Type II and Type III cabinets available



### Outpost™ Series

#### AGM VRLA Batteries for Traffic Applications -40°C to +74°C (-40°F to +165°F)

- Designed for outdoor applications
- Outlives any other battery in extreme environments
- Special connectors allow safe, rapid field replacement
- Configured in a set of six batteries (SP1000SR/SN & SP1250PLUS SR/SN/U)
- Configured in a set of eight batteries (SP2000SR/SN/U)



Where POWER is a way of life

Uninterruptible Power for Traffic Signal Applications

**ELARY**  
The Continuous Power Company™

**SIGNAL**  
POWER™



# SP Series

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Known worldwide for their demanding role in power protection, Clary power products deliver high availability to critical systems. Using the most advanced UPS technology, Clary Corporation has developed a line of power products for traffic systems applications that delivers the same reliability as its military and life support products.

## SP 1000SR/SN - SP 1250SR/SN PLUS - SP 2000SR/SN



Keeping intersections alive during power failures, Clary's SP Series is the world's most advanced Uninterruptible Power System (UPS) for traffic applications. Without compromising existing cabinet wiring, the SP Series keeps LED signal heads running for up to 8 hours or more during power failures. Clary's continuous power systems fit inside most existing cabinets and meet all NEMA temperature specifications. Optional NEMA 3R Type II and Type III cabinets are available.

These systems also provide clean, regulated power for controllers and other sensitive equipment inside the cabinet. The SP1000SR/SN systems are intended for application where load usage will not exceed 875 watts. These systems are also available with an extended load option SP1250SR/SN PLUS that will allow for 1400 watts peak load for a ten second interval. This option accommodates intersections that have not yet replaced the yellow incandescent traffic lamps. Additionally, Clary can provide a SP2000SR/SN system that will sustain a continuous 1400 watt load. These systems require eight batteries and additional cabinet space or a separate cabinet such as the Clary CBO-123 UPS cabinet.

Advanced communication features allow monitoring, configuration and control of the system over RS232, modem or network connections. Available for both NEMA and 170 style cabinets.

## SP 1250U - SP2000U



Providing outdoor equipment with clean, regulated power, these rugged UPSs also provide up to 8 hours or more of backup power. Wherever functionality must be maintained regardless of outside temperature and utility power conditions, these systems are designed for the task.

Advanced communication features allow monitoring, configuration and control of the system over RS232, modem or network connections. Fits most outdoor enclosures.

## OUTPOST BATTERIES



These 41Ah maintenance-free, Absorbent Glass Mat, Valve Regulated, Lead Acid (AGM-VRLA) batteries are designed for deep cycle, extreme temperature applications. They have been field tested and used for years by the military. Absorbent Glass Mat (AGM) technology assures a safe spill-proof environment. Especially designed for outdoor and extreme temperature applications, they are capable of operating from -40°C to +74°C (-40°F to +165°F). This makes them ideal for use with Clary's SP Series traffic signal solutions, IT/Communication UPS solution or other extreme temperature applications.

# Features List



## Component

## Features

### General Features

- Compatible with most traffic cabinets
- Works with intersections that have red LEDs by utilizing flash mode
- Provides full operation in intersections with all LEDs in all positions
- Power event counter records number of power utility failures
- Small size fits most cabinets
- Non-invasive to cabinet wiring (only utility line is rerouted)
- Auxiliary contacts allow full operation for short power interruptions and flash operation for longer interruptions or low battery
- Police panel compatibility allows complete shutdown during emergencies
- All internal calibrations are digital; no potentiometers to set or fail
- Intelligent software interface for monitoring and control
- Optional Web-based network interface allows monitoring with most common web browsers
- Economically priced

### UPS Electronics

- Microprocessor controlled
- Power handling capacity: 1,250 VA, 875 watts to 2,000 VA, 1,400 watts
- Rugged, military grade inverter designed for 24 hour, 7 day, 365 days a year operation
- Built-in TVSS (surge suppression)
- DSP technology
- Automatic periodic self testing
- Interfaces: RS232 intelligent; contact closures; optional NTCIP and TCP/IP network interface

### Battery System

- Sophisticated battery management for recharging and protection
- Temperature compensated battery charging
- Battery run-time counter
- Periodic battery testing checks for: Battery condition; Battery charge; Battery status; Battery temperature
- Foolproof battery connector system allows safe, tool-less installation even in dark or rainy conditions
- Optional "quick charge" battery charger

### Batteries

- Outpost™ batteries specifically designed for outdoor use
- AGM/VRLA battery technology
- Sizes available for 2,4,8 or more hours of operation
- Mounting trays available for 170 style cabinets

### Power Interface Module (PIM)

- PIM allows hot swapping of entire UPS without disturbing intersection operation
- Minimum disruption of cabinet wiring
- Uses high reliability, industry standard contactors
- Three sets of independent auxiliary contacts for flash, delayed flash and monitoring

### Alarm Functions

- Input bad
- Output bad
- Temperature
- Overload
- General alarm

***Where POWER is a way of life***

# SP Series Specifications

## ELECTRICAL

### Input

Voltage 120 VAC +12%, -29%  
(without battery discharge)

Frequency 48 to 62 Hz

### Output

Voltage 120 VAC +3%

Frequency 50 or 60 Hz

Rating: SP 1000 SR/SN 1,250 VA/875 Watts  
SP 1250 SR/SN PLUS 1,250 VA/875 Watts<sup>1</sup>  
SP 2000SR/SN/U 2,000 VA/1400 Watts

Crest Factor Ratio @50% Load Up to 4.8:1  
(Non-linear Load and @75% Load Up to 3.2:1  
< 5% THD) Typical @100% Load Up to 2.4:1

Total Harmonic

Distortion (THD) 4.0% Max.

Dynamic Response ±4% for 100% Step Load Change  
0.5 ms Recovery Time

Overload 110% for 10 sec;  
200% for .05 sec

UPS Protection Input and Output Short Circuit;  
Input and Output Overload;  
Excessive Battery Discharge

## ENVIRONMENTAL

Operating Temp. -40°C to +74°C (-40F to +165°F)

Humidity 0% to 95% Non-condensing

Altitude Sea Level to 10,000 ft (some  
derating of temp. w/altitude > 6,000 ft)

## MECHANICAL

Input Hardwired to PIM

Outputs Hardwired to PIM, w/single 15 Amp  
Receptacle on back of UPS

Cabinet NEMA, 332 or CBO-123 Cabinet  
Style Configurations Available;  
NEMA 3R Type II and Type III  
Optional

## CUSTOM Options

Consult Factory for other Custom options

## DESIGN

Standard Features Power Factor Corrected Input;  
Fully Regenerative;  
True On-Line Continuous Power;  
Low Distortion Sinewave Output;  
Designed for Non-linear Loads;  
Extended Brownout Protection;  
EIA/RS232 Data Interface

Specifications Meets FCC Class A, IEEE  
587/ANSI C62.41, IEC 555 @  
120 VAC and NEMA Stds

MTBF Inverter: > 100,000 hrs  
System w/Bypass: 150,000 hrs  
Calculated from Component Spec

Typical Recharge 48-72 hrs (more time required  
Time to 85% with extended battery option)  
Capacity @ Less than 20 hrs with optional  
100% Load Fast Battery Charger

## CONTROLS AND INDICATORS

Ramping LEDs Battery Level; Load Level  
Single LEDs AC In; Inverter On; Low Battery  
and Summary Alarm; Alarm Silence

Control Panel Power On; Cold Start; Test; Alarm  
Silence; Event Counter (w/Reset);  
Hour Meter; Battery Disconnect

Audible Alarms Utility Interrupt; Inverter Failure;  
Overload; Low Battery; Self Test

Serial Interface for Full Interactive Remote Computer  
EIA 232. Optional Monitoring and Control of Most  
NTCIP and TCP/IP Features Including Load Control  
via Standard RJ45 (requires optional monitoring  
Connector software); NTCIP and TCP/IP  
Ready

Contact Closures Open Collector for Remote  
("D" connector) Annunciation of Power Up,  
Power Down, On Battery, Low  
Battery and Alarms

Specifications subject to change without prior notice.



## Uninterruptible Power for Traffic Signal Applications - 1000, 1250 and 2000VA

Model	VA	Watts	Input Current (A)	Output Current (A)	Backup Time 100% / 50% Load	Unit Weight (lbs)	Rackmount H x W x D (in)
SP1000SN/SR <sup>2</sup>	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP1250SN/SR Plus <sup>1,2</sup>	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP2000SN/SR <sup>2</sup>	2,000	1400	18.0	20.0	15.0 min. / 35.0 min.	30	5.25 x 19.0 x 17.0 (3U)
SP1250U	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP2000U	2,000	1400	18.0	20.0	15.0 min / 35.0 min	30	5.25 x 19.0 x 17.0 (3U)

Note 1 Supports 1400 watt peak load for 10 seconds or less, intended for yellow incandescent applications.

Note 2 Requires Clary PIM30C, G, R, or GR for traffic applications.

**CLARY**  
The Continuous Power Company™

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