Uninterruptible Power for Traffic Signal Applications

SP Series, Model PD
Featuring an Integrated PIM and Programmable Display

The SP Series, Model PD UPS and the 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).

SP1250PD-N/R, SP1250PD-N/R (PLUS), SP2000PD-N/R, SP2400PD-N/R

SP Series, Model PD (Standard Model with Integrated PIM and Programmable Display and six Programmable Relays)

Universal UPS Systems for LED Traffic Signals Featuring:

- Local Keypad programmability - no laptop necessary
- Local display of; battery status, power system status, UPS system status, UPS information and event logs
- Integrated PIM with external By-pass to support ease of connection
- Eight Programmable Relays with 16 assignable status conditions to set or reset relays
- Signaling via open collector contacts, RS232 Serial Interface or SNMP Adapter (Internet)
- Can keep an intersection running for up to 8 hours or longer
- Online or Full Flash modes available for system flexability
- Does not compromise existing cabinet wiring for ease of installation
- Provides ON-LINE conditioned, re-manufactured power for cabinet equipment protection
- TCP/IP- Communicates with monitoring center or other equipment for fast status notification
- SP1250PD R/N (PLUS): 1,250 VA, 875Watts (1400 watts for 10 seconds)
- Multi-state DOT and NEMA compliant
- Optional NEMA 3R Type II and Type III cabinets available
- Power Factored Corrected for reliable, safe power

Where POWER is a way of life

Uninterruptible Power for Traffic Signal Applications

SP Series

SP Series

Clary Power Products are 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 Series, Model PD

SP-PD
By-pass Switch
with GFCI Plug, Circuit Breaker and
Generator Plug

Keeping intersections alive during power failures, Clary's SP Series, Model PD is the world's most advanced Uninterruptible Power System (UPS) for traffic applications. Without compromising existing cabinet wiring, the SP Series, Model PD 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 NEMA temperature specifications. Optional, NEMA 3R Type II and Type III cabinets are available.

The SP Series, Model PD systems also provide clean, regulated dual conversion power for controllers and other sensitive equipment inside the cabinet. The SP1250PD-R/N systems are intended for application where load usage will exceeds 700 watts. Specifically, the SP1250PD-R/N (PLUS) will allow for 875 watts standardly or 1,400 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 an SP2000PD-R/N/SP2400PD-R/N systems that will sustain a continuous 1400/1800 watt load. These systems require eight batteries and cabinet space or a separate cabinet such as the CBO-123 UPS traffic cabinet.

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

SP Series, Model PD systems are available for both NEMA, (N option) and 332 style rack mount cabinets (R option).

OUTPOST BATTERIES

OPB-1241 / OPB-1251
or
OP72A - Battery Set

These 41 and 51Ahr 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. Absorbed Glass Mat (AGM) technology assures a safe environment. Especially designed for outdoor and extreme temperature applications, they are capable of operating from -40^{o}C to +74^{o}C (-40^{o}F to +165^{o}F). This makes them ideal for use with Clary's SP1250PD PLUS Series Traffic Signal solutions, and IT communication solution or other extreme temperature applications.

CLARY®
The Continuous Power Company™

Features List

SIGNAL POWER™

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 potentiometer to set or fail • Intelligent software interface for monitoring and configuration • Optional Web-based network interface allows monitoring with common web browsers • Economically priced
UPS Electronics	• Microprocessor controlled • Power handling capacity: 1,250 VA, 875 watts to, 1,400 watts (10 sec.) • 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/SVRLA battery technology • Sizes available for 2,4,8 or more hours of operation • Mounting trays available for 170 style cabinets
Integrated Power Interface Module (PIM) with By-pass switch	• By-pass switch allows hot swapping of entire UPS without disturbing intersection operation • Minimum disruption of cabinet wiring • Uses high reliability, industry standard contactors • Six sets of independent auxiliary contacts standard eight optional for flash, delayed flash and monitoring functions
Alarm Functions	• Input bad • Output bad • Temperature • Overload • General alarm

SP Series, Model P/PD Specifications

ELECTRICAL

Input

Voltage	120 VAC +12% (135 VAC), -25% (90 VAC) (before battery use)
Frequency	48 to 62 Hz

Output

Voltage	120 VAC +3%	
Frequency	50 or 60 Hz	
Rating:		
SP1250PD	1,250 VA/875 Watts	
SP1250PD PLUS	1,250 VA/875 Watts, (1400 for 10 seconds)	
SP2000PD	2,000 VA/1400 Watts	
SP2400PD	2,400 VA/1800 Watts	
Crest Factor Ratio (Non-linear Load and < 5% THD) Typical	@50% Load @75% Load @100% Load	Up to 4.8:1 Up to 3.2:1 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

MECHANICAL

Input	Utility Hardwired to PIM
Outputs	Hardwired to PIM, w/single 15 Amp

CUSTOM Options

Cabinet	NEMA, 332 or CBO-123 Cabinet style configurations available; NEMA 3R Type II and Type III Optional

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

CONTROLS AND INDICATORS

Ramping LEDs Single LEDs	Battery Level; Load Level 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 EIA 232. Optional NTCIP and TCP/IP via Standard RJ45 Connector	Full Interactive Remote Computer Monitoring and Control of Most Features Including Load Control (requires optional monitoring software); NTCIP and TCP/IP Ready
Contact Closures ("D" connector)	Open Collector for Remote 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

Model	VA	Watts	Input Current (A)	Output Current (A)	Backup Time 100% / 50% Load	Unit Weight (lbs)	Rackmount H x W x D (in)
SP Series, Model PD-R/N							
SP1250PD-N/R	1,250	875	8.8	10.4	2.0 hrs. / 4.0 hrs.	27	6.00 x 19.0 x 10.0
SP125PD-N/R (+)	1,250	875 / 1400	8.8	10.4	2.0 hrs. / 4.0 hrs.	27	6.00 x 19.0 x 10.0
SP2000PD-N/R	2,000	1400	14.3	16.7	1.0 hrs. / 3.5 hrs.	28	6.00 x 19.0 x 10.0
SP2400PD-N/R	2,400	1800	18.0	20.0	1.0 hrs. / 3.5 hrs	28	6.00 x 19.0 x 10.0

CLARY®
The Continuous Power Company™

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