Small DC Power Systems

BULLETIN: 02.230/a
MARCH 2001

-48 VDC @ 20 to 60 AMP
127NHL LOW PROFILE DIGITAL POWER SYSTEM

127NHL
19" Rack Mount System
with 2 Rectifiers and Distribution

Model. No. 127NHL **Spec. No. J438127NH**

- LOW PROFILE (5.25" HIGH)
- MODULAR "HOT INSERTABLE" RECTIFIERS
- 20 TO 30 AMP "DIGITAL" RECTIFIERS
- CIRCUIT BREAKER OUTPUT DISTRIBUTION
- 85 TO 265 VAC 50/60 Hz INPUT
- INDIVIDUAL RECTIFIER AC INPUTS
- 19" or 23" RACK MOUNTING
- RELAY LOOP-CLOSURE ALARMS
- BATTERY & BATTERYLESS OPERATION
- LOW VOLTAGE DISCONNECT
- BATTERY TEMPERATURE VOLTAGE COMPENSATION*
- BATTERY MIDPOINT VOLTAGE MONITORING*
- UL LISTED - CE CERTIFIED
- FULL 2 YEAR WARRANTY

*OPTIONAL

DESCRIPTION: The PECO II 127NHL Low Profile -48 VDC, 20 to 60 Amp Power System converts 85 thru 265 VAC to -48 VDC using two 30 Amp Modular Rectifiers (20 Amp output with a 115 VAC @ 15 Amp input circuit). The rectifiers are paralleled for increased power and redundancy and are capable of "Hot Insertion". The Low Profile plant is self-contained and includes DC Distribution plus a system Simple Controller. Each Rectifier Module contains a *Microcontroller*, which monitors internal temperatures, voltages and currents, and makes adjustments to reliably deliver maximum output power. Rectifier Modules digitally exchange status data with the Simple Controller via a data bus. The system "Simple Controller" evaluates all data, displays rectifier and system parameters, compensates the battery voltage for temperature, extends alarms, and provides access to changing setpoints and system status. Monitors for battery string temperature and midpoint are optional. Connections are plug and play to facilitate installation.

TECHNICAL SPECIFICATIONS

INPUT

Voltage: 85 to 265 VAC (Continuous)
45 to 70 Hz

Current: 12 Amp maximum
The rectifier's microcontroller adjusts the output current to limit the input current, allowing each rectifier module to be plugged into a standard 115/230 VAC @15 Amp IEC outlet.

Power Factor: >90% for 20% to100%loads

OUTPUT

Voltage: 50.00 to 60.00 VDC
54.00 VDC Factory Set (Default)

Current: 20 Amperes/Rectifier for 100/120 VAC
30 Amperes/Rectifier for 200/240 VAC

Regulation: ±1.0 %(Includes output orring diode)

Overvoltage: 50.00 to 60.00 VDC
57.00 VDC Factory Set (Default)
"RED" [Fail] LED indication and shuts down rectifier providing output current.

Noise: <32 dBrnC (Voice Frequency)
<100 millivolts-RMS (Wide Band)
<250 millivolts peak-to-peak

Output Paralleling & Hot Insertion:
Each Rectifier Module has an output orring diode in the -48 VDC lead for the purpose of paralleling and hot insertion in a working system.

ENVIRONMENTAL TEMPERATURE

	MINIMUM	MAXIMUM
Storage Ambient:	-40ºF (-40ºC)	185ºF (85ºC)
Operating Ambient :		
Sea Level to 4800 ft.	32ºF (0ºC)	122ºF (50ºC)
4800 ft. to 7000 ft.	32ºF (0ºC)	113ºF (45ºC)
7000 ft. to 10,000 ft.	32ºF (0ºC)	104ºF (40ºC)

WEIGHT

58 lbs. Plant without Rectifiers
7 lbs. Rectifier

RECTIFIER INDICATORS

	LED
Good	Green
Standby	Yellow
Fail	Red

CLICK TO EXIT

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PLANT INDICATORS

	LED
Major Alarm	Red
Minor Alarm	Yellow
Distribution Alarm	Yellow
Float Mode	Green *
Equalize Mode	Yellow *
Low Voltage Disconnect	Yellow
High/Low Voltage Alarms	Yellow
Controller Watchdog	Green (Pulsing)

* Note: Float & Equalize LEDs Flash when the system is Temperature Compensating

COMMON 127NHL PLANT FEATURES

Basic features of all 127NHL plant include Distribution, a Distribution Monitor, and a Simple Controller. The Distribution Monitor provides fuse alarm inputs, plant voltage and current monitoring, low voltage disconnect control, and battery monitoring. With the optional Battery Temperature Compensation kits, the 127NHL plant can monitor up to two strings of batteries and adjust rectifier output voltage to compensate for battery temperature, reducing the potential for VRLA battery thermal runaway and potentially extend battery life.

The plant Simple Controller is the user interface and collects and reports monitored signals and alarms. A local display provides a visual indication of plant status, alarm conditions, and plant settings, as well as status of each individual rectifier. The user interface supports the adjustment of setpoints and changing plant status (i.e. Enter Equalize mode). The controller provides two Form C contacts for PMN (Plant Minor) and PMJ (Plant Major) alarms plus a Maintenance Port for a PC interface. PC Interface software and cabling kit is an available option.

ALARMS

Isolated Relay Form-C Closures:

Abrv	Description	Cause
PMN	Power Minor	(1) Rectifier Fail Battery String Mid-Point *>0.5V for 20 Minutes* Battery on Discharge <50V AC Fail
PMJ	Power Major	(>=2) Rectifier Failures Low Voltage Disconnect Temp. Probe Fault Temp. > 50°C Mid-Point (>1.0V) Controller Failure Dist. Fuse/CB Alarm

SYSTEM SETPOINTS

Description	Setting	Default
Rectifier Output Voltage	50 to 60 VDC	54.4 VDC
Rectifier Output Current	20 to 32 Amps	30 Amp
Rectifier High Voltage Shutdown	50 to 60 VDC	57.0 VDC
Individual Rectifier Status	ON/Standby/OFF	ON
Battery High Temperature Alarm	0 to 100ºC	50ºC
Temperature Compensating	ON/OFF	ON
Temperature Compensation Slope	2 to 5 mV/1ºC	3 mV/1ºC
Plant High Voltage Alarm	40 to 60 VDC	57.0 VDC
Battery on Discharge	40 to 60 VDC	52.0 VDC
Plant Low Voltage Alarm	40 to 60 VDC	47.0 VDC
Plant Low Low Voltage Alarm	40 to 60 VDC	45.0 VDC
Low Voltage Disconnect Dropout	40 to 60 VDC	44.0 VDC
Low Voltage Disconnect Pickup	40 to 60 VDC	50.0 VDC
Battery String Midpoint w/time delay	0 to 10 VDC	0.5 VDC
Battery String Midpoint no time delay	0 to 10 VDC	1.0 VDC

Note: The above settings are all settable locally or remotely via the Simple Controller.

DISTRIBUTION

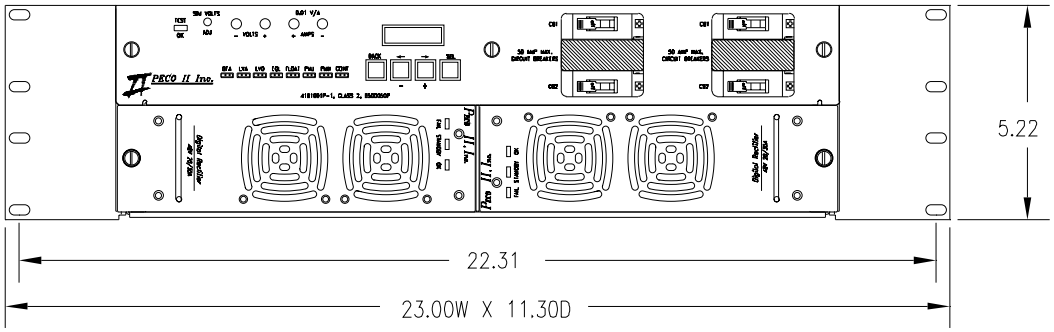
Internal Distribution supports up to 6 plug-in circuit breakers. Connections for two strings of batteries are provided with connections for Battery Monitoring and AC Input. Access to all connections, which are connectorized, are on the rear of the plant.

BATTERY TEMPERATURE COMPENSATION MONITOR MODULE

The Battery Temperature Compensator Module automatically adjusts the output voltage of rectifiers inversely proportional to the temperature of a pilot cell in a battery string or the ambient temperature in the vicinity of the batteries. By lowering the voltage at higher temperatures, the battery charge current can be reduced, and can help prevent thermal runaway.

Specifications are subject to change without notice.
Please contact our website for the latest version.

OUTLINE DRAWING



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