

100-300 amp, +24 VDC Power System with 100 amp Rectifiers

Key Features

- **Modular Design**—means easy configuration to your system requirements
- **100 amp Rectifier Modules**—can be changed-out without costly system shutdown
- **+24 to -48 VDC Converter**—can be configured to 15 or 30 amp capacity
- **N+1 Redundancy**—eliminates costly backup equipment
- **Front Access Design**—for most effective use of floor space

Description

The Lorain® Rural Service Area (RSA) cellular power system is a compact, easy to install system that incorporates total system capability in a single 7' (2.13m) high, 23" (58.42cm) wide relay rack.

Distribution is simplified with a compact, well configured distribution cabinet that features easy-access, no-hassle connections for either (24) +24 VDC circuit breakers, (10) +24 VDC GMT fuses and (10) -48 VDC GMT fuses or (24) +24 VDC circuit breakers and (20) -48 VDC GMT fuses.

A compact, pull-out drawer, which uses less than 7" (17.78cm) of vertical rack space, accepts up to ten 3 amp +24 V to -48 V high density converter modules. These modules can be added as needed without system shutdown.

The meter/control panel features high-visibility system status indicators, major and minor alarms, output alarm fuses and an easy-to-read multi-function digital meter. A low voltage disconnect feature provides additional system protection.

The system will accept up to six 100 amp rectifier modules. These interchangeable modules can be added or removed without costly system shutdown. The modules can be configured to provide up to 500 amp N+1 redundancy (300 amp version shown above), eliminating the need for double-capacity power. Each rectifier is power factor corrected to reduce AC current draw.

Application

The Lorain RSA power system is ideal for cellular or specialized mobile radio applications requiring redundant +24 VDC power.

Additional Information

For additional specification, engineering and installation information, specify model RSA Cellular power system, spec. number 581103700.

UL listed RSA Cellular
Power System



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Rectifier Module Specifications

Design Technology: High frequency

Input

Voltage: 208 (184-220) VAC, single phase; 240 (212-254)

VAC, single phase

Frequency: 50/60 Hz (47-63)

Protection: 2 pole circuit breaker (in module). If the input voltage falls below approximately 120 volts, the rectifier module power conversion circuitry inhibits, disabling module output. When the input voltage increases to approximately 130 volts, the module will automatically restart.

Output

Voltage:

Float — Adjustable from 24.0 to 29.0 VDC

Equalize — Adjustable from 24.0 to 29.0 VDC

Current: 100 amps, full load

Regulation: Steady state output voltage remains within $\pm 0.5\%$ in a 24.0 to 28.0 VDC range for any load current (no load to full load) within the specified input voltage and frequency ranges.

Filtering: When the rectifier module is connected to a 400 A/H battery, the following specifications apply

Voice Band Noise — Less than 32dB_{BrnC}

Wide Band Noise — Does not exceed 250 mv peak-to-peak over a 10 Hz to 14 MHz frequency range

Protection

Current Limiting — Adjustable from 80% to 105% of full load.

High Voltage Shutdown — If the rectifier module voltage exceeds a preset value, the module will shut down. The high voltage shutdown range is 24 to 30 VDC.

Alarm/Indicators: AC-On LED; Fan-Failure LED Rectifier-Failure LED; Rectifier-Current LED Bar Graph (10 amp increments)

Remote Float/Equalize: Remote location control only

Load Sharing: Programmed slope control

Current Walk-In: Output current gradually increases after rectifier is switched on

Remote On/Off: Rectifier on/off operation can be remotely controlled

Remote Emergency Shutdown: Input circuit breaker on rectifier module can be tripped open from a remote location

Environmental

Operating Temperature: -30° C to +60° C (-22° F to +140° F)

Storage Temperature: -40° C to +85° C (-40° F to +185° F)

Humidity: 0-95% relative humidity

Altitude: The maximum operating ambient temperature should be derated by 10° C (50° F) at 10,000' (3,048m) above sea level. For elevations between 10,000' (3,048m) and sea level, derate the maximum operating temperature linearly.

Heat Dissipation: 2172 Btu/hr, fan cooled front to rear

EMI/RFI Suppression: Conforms to FCC Rules Part 15, Subpart B for Class A computing devices

Audible Noise: 5' (1.52m) from any vertical surface does not exceed 65dBA

Physical Characteristics

Mounting: Plug-in installation into three-position Lorain Model A300CAB Rectifier Shelf

Dimensions:

Height: 12.19" (30.96cm)

Width: 6.25" (15.88cm)

Depth: 14.75" (37.47cm)

Weight: 37 lbs. (16.79 kgs)



Model A100B25
100 amp Rectifier Module



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