

50-600 amp, -48 VDC Power System with 50 amp Rectifiers

Key Features

- **50-600 amp Capacities**—to match your exact power requirements
- **Supplemental Bays**—available for larger systems and rack mounted battery configurations
- **Lorain SMART Monitoring**—provides enhanced power system control and monitoring
- **Seismic Approved**—rectifier modules, battery racks and frameworks for Zone 4 installations
- **Modular Design**—means easy on-site configuration to your current and future needs
- **N+1 Redundancy**—for full capacity backup without system duplication
- **Front Access Design**—to simplify installation and maintenance procedures
- **Protected Distribution**—a fully enclosed, front access distribution cabinet features circuit breaker protected distribution positions
- **Complete System Control**—with an easy-to-read digital meter/control panel or a microprocessor control/monitoring unit
- **UL Approved Systems**—compliance to local codes

Description

The Lorain® -48 VDC modular power systems combine high density technology and modular design for a power system that can be easily configured to meet your current and future capacity requirements.

The key components of the modular power systems are the compact 50 amp rectifier modules. These modules provide capacity flexibility from 50 to 600 amps and can be configured for N+1 redundancy.

Circuit breaker protected distribution positions are neatly arranged in a front accessible distribution cabinet. Power system control and monitoring with a multi-function digital meter is a standard feature. A Lorain SMART microprocessor control/monitoring unit can be specified for local and remote control and monitoring.

Build in ringing power with a Lorain SFT5 modular ringing supply that can be arranged for redundant operation.

The system can be easily configured to include a variety of battery installation methods. Supplemental bays can be specified for larger systems.

Application

This series of power systems is ideal for a broad range of -48 VDC applications that include switch sites, CEVs, huts, remote sites and customer premises installations.



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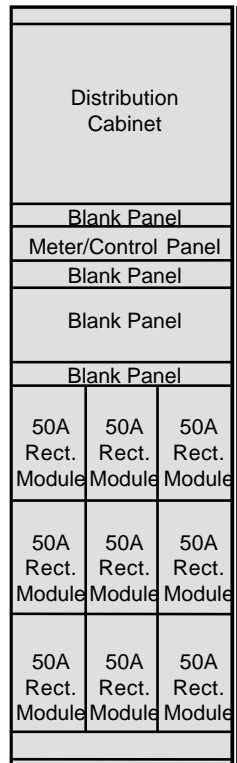
200-400 amp Redundant System

Typical Configuration

Common Equipment: Wiring and assembly for 1 -48 VDC power system. Includes 48 position distribution cabinet, a meter/control panel and 3, three-position rectifier module shelves.

Additional Information

For additional specification, engineering or installation information, specify model 1231A2, spec. number 582114100.



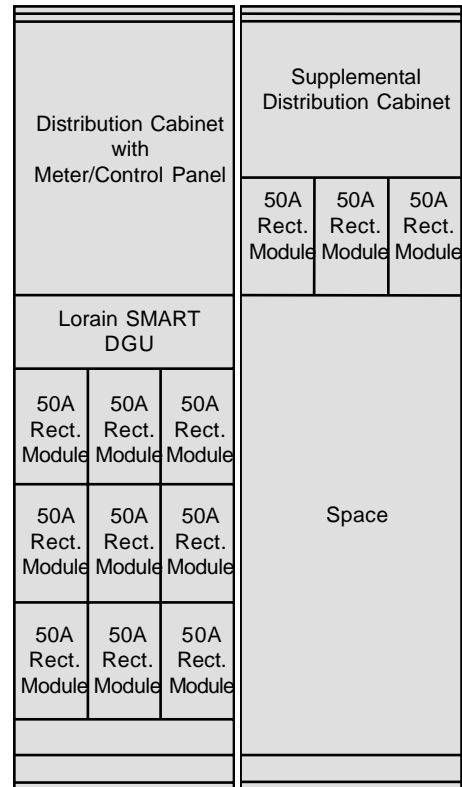
550 amp Redundant System

Typical Configuration

Common Equipment: Wiring and assembly for 1 -48 VDC power system. Includes 24 position main and supplemental distribution cabinets, built-in meter/control features and 4 three-position rectifier module shelves. This equipment is mounted in two 23" (58.42cm) wide x 7' (2.13m) high relay racks.

Additional Information

For additional specifications, engineering and installation information, specify model 1231A2, spec. number 582114700.



23" (58.42cm) x 7' (2.134m) Relay Racks

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250 amp Redundant System (with Supplemental Bay)

Typical Configuration

Common Equipment: Wiring and assembly for (1) -48 VDC power system mounted in a 39.13" (99.38cm) high by 24.38" (61.913cm) wide Zone 4 relay rack that can be companion installed with Zone 4 battery racks. Included is a 24 position distribution cabinet, a meter/control panel and 1 three-position rectifier module shelf.

Additional Information

For additional specifications, engineering and installation information, specify model 1231A2, spec. number 582114500.

Distribution Cabinet			Supplemental Bay Distribution Cabinet		
Meter/Control Panel			50A Rect. Module	50A Rect. Module	50A Rect. Module
50A Rect. Module	50A Rect. Module	50A Rect. Module	Blank Panel		
Lorain SMART Reporter			Blank Panel		
Blank Panel			Blank Panel		
Blank Panel			Blank Panel		
Batteries Mounted in Zone 4 Rack			Batteries Mounted in Zone 4 Rack		

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Rectifier Module Specifications

Design Technology: High frequency

Input

Voltage: 208/240 (176-254) VAC, single phase

Frequency: 50/60 Hz (47-63)

Protection: 2 pole circuit breaker (in module). If the input voltage falls below approximately 158 volts, the rectifier module power conversion circuitry inhibits, disabling module output. When the input voltage increases to approximately 176 volts, the module will automatically restart.

Output

Voltage:

Float — Adjustable from 48.0 to 58.0 VDC

Equalize — Adjustable from 53.0 to 60.0 VDC

Current: 50 amps, full load

Regulation: Steady state output voltage remains within $\pm 0.5\%$ in a 48.0 to 58.0 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 200 A/H battery, the following specifications apply

Voice Band Noise — Less than 32dBnC

Wide Band Noise — Does not exceed 500 mv peak-to-peak over a 10 Hz to 14 MHz frequency range

Protection

Current Limiting — Adjustable from 50% 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 48.0 to 60.0 VDC.

Automatic restart, remote HVSD

Status/Alarm Indicators — AC-On LED; Fan-Failure LED; Rectifier-Failure LED; Rectifier-Current LED Bar Graph (5 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: -40°C to $+65^{\circ}\text{C}$ (-40°F to $+149^{\circ}\text{F}$)

Storage Temperature: -40°C to $+85^{\circ}\text{C}$ (-40°F to $+185^{\circ}\text{F}$)

Humidity: 0-95% relative humidity

Altitude: The maximum operating ambient temperature should be derated by 10°C at 10,000' (3,048m) above sea level. For elevations between 3,000' (914.4m) and 10,000' (3,048m), derate the maximum operating temperature linearly.

Heat Dissipation: Fan cooled front to rear; 1 module @ 50 amps, 1704 BTU/hr.; 2 modules @ 100 amps, 3409 BTU/hr.; 3 modules @ 150 amps, 5113 BTU/hr.

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

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

Physical Characteristics

Mounting: Plug-In installation into Lorain model A150CAB.

Dimensions:

Height: 12.19" (30.96cm)

Width: 6.31" (16.03cm)

Depth: 14.75" (37.47cm)

Weight: 38.5 lbs. (17.46 kgs)

Safety Compliance

UL: UL Listed (UL 1950)

CSA: CSA Certified

Seismic: Zone 4

(TR-EPO-000063)



Model A50B50
50 amp Rectifier Module



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