



DC POWER OVERVIEW BROCHURE

Powerful Solutions for Critical Data  
and Telecom Applications





## VERTIV™ DC POWER SOLUTIONS ARE IDEAL FOR...

- CATV Headend
- Central Office /MTSO
- Computer Room
- Data Center
- Enterprise (PBX, LAN)
- Network Closet
- Outside Plant Cabinets & Shelters
- Radio Base Station/ Microwave Site
- Wireless & Wireline Access

From major switching and data centers to remote shelters and computer rooms, Vertiv DC power systems have the features and proven performance to match your network application needs.

### A Brilliant Combination of Technology and Real-World Capability

The Vertiv line of DC power systems demonstrates unparalleled reliability and industry-leading efficiency ratings at 24, 48 and 400 VDC. Vertiv rectifiers — the heart of the power system — possess some of the highest power densities and smallest footprints in the business. These power solutions can be further enhanced with the addition of intelligent controllers, remote system monitors, battery management units and a full range of distribution modules.

#### Mini DC Power Systems, 120 or 220/240 VAC Single Feed

High-density mini-sized DC power solutions for outside plant enclosure, central office or embedded applications.

#### NetSure™ 211 Series

The NetSure 211 Series of compact -48V DC power systems offers 1 RU and 2RU configurations, combining reliable NetSure™ rectifiers with an advanced Ethernet-accessible controller for mini power applications. The 1 RU model allows for up to three 1000 watt 48 VDC rectifiers in a 23" shelf and two 1000 watt rectifiers in a 19" configuration.

The 2 RU model allows for up to six 1000 watt 48 VDC rectifiers in a 23" shelf and up to four 1000 watt rectifiers in a 19" configuration.



NetSure 211, 1 RU Configuration



NetSure 211, 2 RU Configuration with Optional GMT Distribution Panel



Optional NetSure 211 Battery Cabinet

Vertiv™ provides a complete range of communications network infrastructure solutions and services built on an industry-leading reputation for quality, reliability and value.

## Small DC Power Systems, 120/240 VAC Single Phase

Highly reliable, uninterruptible cost-effective power systems for small data or telecom installations.

### NetSure™ 502 Series

The NetSure™ 502 DC Power Solution is a flexible system capable of providing DC power through the use of 2000 W rectifiers and a variety of output distribution options. The system is available in a bulk output configuration, integrated distribution configuration and a distribution panel style configuration.

The NetSure 502 is available with both 19" and 23" rack-mount options, suited for up to 22 kW power requirements in the most harsh environments. The system is supported by a single SCU+ controller that provides all operational conditions, as well as historical site data and external signal conditioning and monitoring. Distribution is either provided by output bus bars, fuses or breakers located in the power shelf, or an externally mounted distribution panel.



*NetSure 502, 2 RU 23" Configuration with Internal Distribution*



*NetSure 502, 4 RU, 23" Configuration with External Bulk Output Distribution*



*NetSure 502, 19" Configuration with External Distribution*



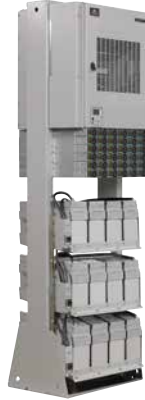
## Medium DC Power Systems, 240 VAC Single Phase and 208/240 VAC 3-Phase

Modular, flexible design for switching, wireless base stations, transmission, LAN, WAN & other networking operations.



### NetSure™ 710 Series

The NetSure 710 power system with 3000 watt rectifiers and 1500 watt DC to DC converters provides up to 2000 amps of current for +24 volt systems with up to 500 amps at -48 volts. This modular system is ideal for wireless applications such as cell sites, co-location, huts and large vaults or enclosures.



### NetSure 721 Series

The modular NetSure 721 power system with 3500 watt or 2000 watt high efficiency eSure™ rectifiers and 1500 watt DC to DC converters provides up to 4000 amps of current for -48 volt systems with up to 500 amps at +24 volts. The basic components of the power system include the ACU+ control unit, module mounting shelf assemblies which house the rectifiers and converters, and a modular distribution cabinet.



### NetSure 702 Series

Combines the advantages of the smaller 3200 watt eSure high-efficiency rectifiers from the NetSure 701 system with the controller capability and plant architecture of the NetSure 801 system. Arranged for 208/240 VAC three-phase input, the rectifier bays are rated at 2000 A each for up to 10,000 amps of power at -48 VDC with 3200 watt rectifiers.

## Converter Systems



### NetSure DCS Series

This compact 2 RU +24V to -48V DC to DC converter system provides a 30 amp capacity. The DCS Series includes integrated distribution and alarming within a 19" or 23" mount. Bulk converter systems from -48 V to +24 V are also available.

## Rectifiers

### eSure High-Efficiency Technology

The eSure rectifier, R48-3500e, approaches 97% efficiency and is the first of the ultra high efficient eSure rectifier line from Vertiv. eSure rectifiers deliver world-class reliability and the highest efficiency in the industry, reducing power consumption and lowering operation cost.



## Large DC Power Systems, 208/480 VAC 3-Phase

Power systems for data center and central office applications such as wireline & wireless switching, transmission, data routing and large telecom hotels.

### NetSure™ 801 Series

The NetSure 801 high-density power system offers the increased flexibility of a cabled plant in a centralized or distributed architecture. The system consists of individual power bays and distribution bays that may be configured with modular 5800 watt rectifiers that operate at 96% efficiency to meet any -48 volt application requirement.

### NetSure 802 Series

Integrated -48 VDC 3-phase rectifiers, distribution, control and monitoring in a single frame. Expandable to 16,000 amps with additional frames.



NetSure 801

NetSure 802

## DC Power Distribution

### NetSure 801DB Series

The NetSure 801DB (formerly the Lorain DB 484800) Battery Distribution Fuse/ Circuit Breaker Bay (BDF/CBB) features high capacity, modularity, and simplified installation. These features provide effective secondary load distribution and protection for multiple -48 VDC feeds up to 600 amps.

### LORAIN® DB 48500 Series

This modular system provides effective secondary load distribution for single or multiple -48 VDC feeds.



Lorain DB

NetSure 801DB

## 400V DC Power Systems

Power systems designed to address emerging applications in telecommunications, data centers, and commercial building.

Vertiv™'s line of AC to DC power systems offers output up to 400V DC. Our NetSure 400V DC power systems are built with proven topologies including modular, hot-swappable 15 kW rectifiers that achieve greater than 97% peak efficiency, providing a low cost of operation on top of exceptional NetSure reliability.

400V DC power distribution can significantly reduce copper cabling costs compared to -48V DC and can improve availability and efficiency compared to traditional AC power. NetSure 400V DC to -48V DC converter systems can also be used to extend the copper reduction benefits of 400V DC to existing -48V DC networking loads in core telecom applications.



NetSure 9500 Power Module/Bay with Bulk and Load Distribution Panels and Distribution Module/Bay



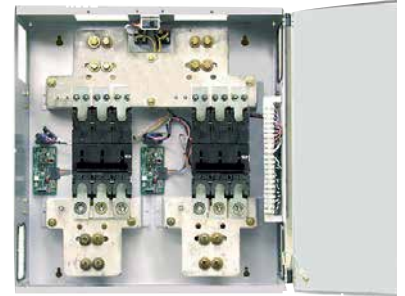
The NetXtend™ Flex Series utilizes a proven structural system, integrated mechanical components, and a sealing system that withstands rain, dust, snow and hurricane winds.

## Batteries & Accessories

Products frequently used together with DC power systems are available, including battery disconnects, batteries, battery strands, battery trays, bus covers, assorted panels, circuit breakers and much more.

### LBD800 & LBD2000

Battery disconnects that provide disconnection and overcurrent protection from 300 A to 2,000 A for +24 VDC or -48 VDC battery strings.



## Enclosure Solutions

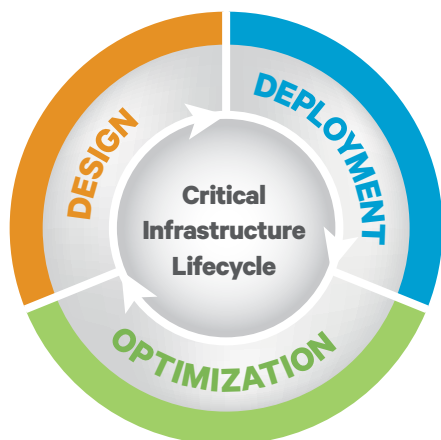
Custom designed or standard enclosures available for all types of data and telecom equipment.

### NetXtend Flex Series

Vertiv™'s NetXtend Flex Series of integrated outdoor enclosure solutions is designed to ensure environmental stability for sophisticated electronic equipment, and provide years of trouble-free service wherever the outdoor enclosure is deployed. The NetXtend Flex Series utilizes a proven structural system,

integrated mechanical components, and a sealing system that withstands rain, dust, snow and hurricane winds. This innovative global design is consistent throughout all geographic regions and can support both wireless and wireline outside plant enclosure requirements.

The highly configurable and expandable enclosure can also provide multiple battery housing options and support indoor racks for use in outdoor applications. The NetXtend Flex Series is designed and tested to meet global industry standards.



NetPerform™ Program Management Solutions offer a turnkey platform of telecom services ranging from network design and planning, to engineering, furnishing and installing, and all the way to field service, parts and repair – enabling speed to market worldwide.

## Optimization Services

- EnergyMaster™ Remote Supervision**  
 For the complete range of site infrastructure equipment, Vertiv™ combines state-of-the-art monitoring technology to provide energy savings, intelligent maintenance and expert reporting.
- Preventive Maintenance**  
 We can customize DC power preventive maintenance plans according to the specific needs of your business. And with the comprehensive documentation and equipment inventory we provide, you get a clear picture of the system's status as well as recommendations for corrective steps to prevent future problems.
- Training**  
 We offer courses targeted at those who want to achieve and demonstrate a high degree of proficiency in the operation, troubleshooting and maintenance of Vertiv products.

- Repair and Refurbishment**  
 When total replacement is impractical or too costly, we can help you refurbish aged power system components to keep your business running at peak operating efficiency with our Depot Repair and Refurbishment service.
- Spare Parts**  
 Maximize the benefits of our Preventive Maintenance service with individual parts and pre-packaged kits of expendable spare parts and fuses for Vertiv systems.
- Technical Support**  
 Our dedicated remote support service provides you an immediate interface with experienced technical experts 24 hours a day to help you resolve unexpected system incidents.

## Design Services

- Engineering**  
 Our extensive staff of design engineers work closely with you to provide detailed specifications and ensure that your project is completed according to appropriate standards and practices.

## Deployment Services

- Installation**  
 Backed by industry-leading experience and resources, we respond quickly to your project requirements and ensure the successful installation and testing of your network infrastructure equipment.
- Materials Management**  
 We coordinate with our network of regional centers to consolidate materials from multiple sources and deliver them precisely when needed.
- Test and Turn-up**  
 We work with you to assess third-party installation of Vertiv systems and identify problems before they occur.



**VertivCo.com** | Vertiv Headquarters, 1050 Dearborn Drive, Columbus, OH, 43085, USA

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