VERTIV™

NetSure™

801 Series

DC Power System

WE ARE VERTIV

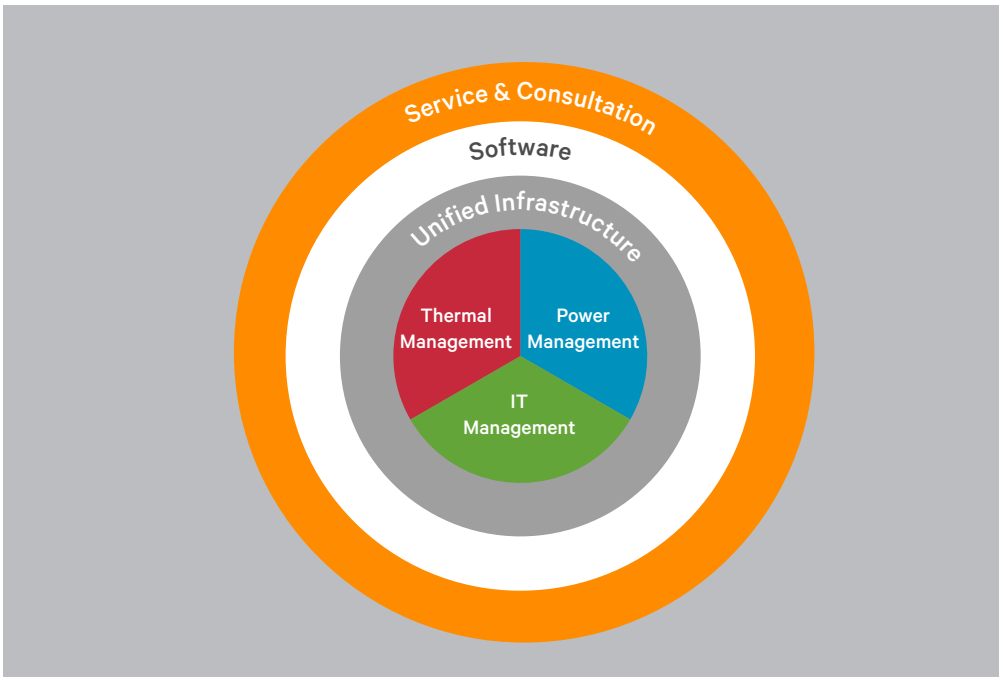
Vertiv, formerly Emerson Network Power, designs, builds, and services mission critical technologies that enable vital applications for data centers, communication networks, and commercial & industrial environments.

We support today's growing mobile and cloud computing markets with our portfolio of power, thermal and infrastructure management products, software and solutions, all complemented by our extensive global service network.

We help strengthen the world's most vital applications by bringing together global reach and local knowledge, and our decades-long heritage, including brands like Chloride®, Liebert®, NetSure™, and *Trellis*™.

Vertiv
Your Vision, our Passion

With a unique combination of industry expertise, technology, and resources, our mission is to support and power mission-critical technologies that drive possibility.



Chloride®

Our global industrial power solutions meet the most demanding technical specifications and provide safe, reliable power- no matter the challenge

Liebert®

Our global power and thermal management solutions are some of the world's most efficient and reliable power and cooling technologies

NetSure™

Our global intelligently engineered DC power systems deliver high availability, energy efficiency and scalability for converged networks

Trellis™

Our industry-leading software gives customers an integrated view of operations across IT and facilities resources, enabling better decisions that save time and money

The NetSure™ 801 series is a next-generation, large-capacity DC power system with a cutting-edge design, tailored to meet the ever-increasing power needs of telecom core sites. This power system from Vertiv is well-equipped with advanced technologies, including digital dual-DSP control, active PFC, soft-switching, and patented primary clamping technology. The 801 series power systems exhibit high efficiency, peak power density, utmost reliability, and ultra-low radiation, while facilitating easy maintenance and significant energy savings-all in a minimal footprint.

Features

- This NetSure power system functions effectively in the wide voltage range of 260-530 Vac; in addition, the robust design helps withstand an extreme input voltage of 600 Vac.
- Remote monitoring: Real-time remote access capabilities through network, RS232, and RS485 interfaces apart from modems.
- Digital active current-sharing attribute helps equalize the current leading to vital stability; in this case, the rectifier module can work steadily without any dependency on the monitoring units.
- Full-surge protection design for AC, DC, and communication signals ensures and amplifies the safety and reliability.
- Plug'n'play — add rectifiers without changing the settings and making adjustments; no system interruption
- Full frontal access operation with flexible cable entry arrangement
- Battery pole reversal protection eliminates the risk of a module explosion in instances where the battery poles are reversed.
- Stores up to 4000 historical alarm information, 10 battery logs, 3000 system logs, and 500 historical events.

NetSure™ 801 Series Power System

NetSure™ 801 series

System Configuration	
Rectifier module	R48-5800A/R48-5800e
Monitoring module	M831D
Rectifier cabinet	Rack1000-A, Rack1500-A, Rack2000-A
AC distribution cabinet	PD380/400AFH-A-Y1, PD380/630AFH-A-Y1, PD380/630AFA-A-Y1
DC distribution cabinet	PD48/1600DF-A-Y1, PD48/2500DF-A-Y1
Fittings	Temperature compensation cable, parallel copper bar set, top cover, and side panel
Environment	
Operating temperature	-10°C~+65°C (derated when the temperature is within a wide range of +45°C ~+65°C)
Relative humidity	≤95%RH
Altitude	≤2000m (derated when the altitude is above 2000m)
Storage temperature	-40°C ~ +70°C
Relative humidity for storage	≤95%RH
System Parameters	
Input line voltage	260~530Vac (half-load output at 260~304Vac)
Input voltage frequency	45-65Hz
Power factor	≥0.99
Efficiency	≥92% General System; >95%Efficient System
Output DC voltage	-42 ~ -58Vdc
Total regulation	≤1%

Patented dormancy technology

Enables enormous energy-savings

Space-savings

A single rectifier shelf with a maximum capacity of 2000A facilitates space-savings of 20% for the whole system-all in a compact footprint.

Environment-friendly

Complies with RoHS standards of the EU & the environmental protection directives of China and EN300386 ClassB of EMC

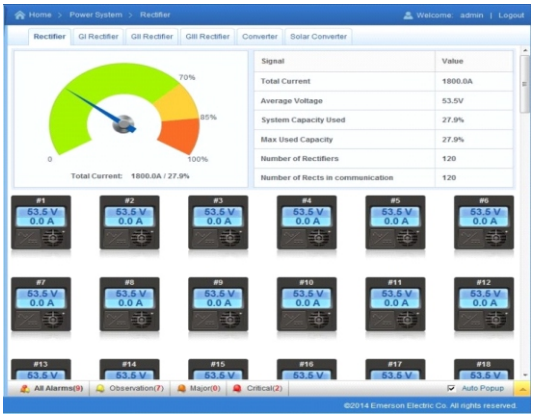
Applications

The NetSure 801 system is ideal for wireline, wireless and datacenter applications such as switch sites, co-location, MTSO and data processing centers.

Monitoring Module -M831D

- Simplified user-interface includes an installation wizard, graphical color display, and user-friendly web pages
- Advanced Battery Management features include temperature compensation, thermal runaway management, recharge current limit, reserve time prediction, and optional midpoint monitoring
- Intelligent Load Management functionality
- Easy-configurable file for upload/downloads- reduces the installation time
- Supports encrypted (HTTP) multiple browsers such as IE 6.0 or above, also compatible with the modern versions of the Firefox, Chrome, and Safari browsers.
- Supports Ethernet connectivity via IPv4/IPv6

M831D



Web Interface Page

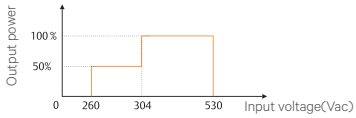
Controller Module -M831D	
General	
Power Supply	19VDC to 60VDC
Power consumption, Maximum	18W
Safety & standard compliance	
Electrical	IEC 60950-1, EN 60950-1, UL 60950-1
EMC	EN 300 386, 2001 Class B, FCC Part 15, Class B
Environmental	CE; NEBS Level 3
Inputs/Outputs	
Display	320 x 240 Pixels TFT LCD
Communication	RS232, RS485, Ethernet, USB
Protocol	IPv4, IPv6, HTTPS, SNMP V2/V3, EEM, SocTpe, Rsoc, Modbus
Analog Inputs	2 battery currents, 1 load current, 1 bus voltage, 2 battery voltages, 2 temperatures, 2 fuel level sensor
Digital Inputs	1 input for status of surge protective device auxiliary contacts, 12 load fuses, 6 battery fuses, bi-stable contactor status
Mechanical Data	
Dimensions (H x W x D)	86.2 x 87 x 208 mm
Weight	<1kg

Rectifier Modules R48-5800A & R48-5800e

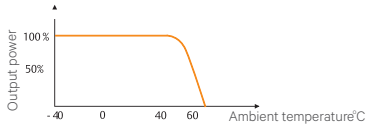
Basic Parameters	
Safety Regulation	IEC 60950, EN 60950, UL 60950
EMC	EN 300 386; R48-5800A (Class A) & R48-5800e (Class B)
Reliability	MTBF >570,000 hours
Input Parameters	
Input Voltage	260 ~ 530Vac
Input Frequency	45 ~ 65Hz
Power Factor	≥ 0.99
THD	≤5% (50% ~ 110% load)
Output Parameters	
Output Voltage	-42 ~ -58Vdc
Output Current	0 ~ 120.8A
Maximum Output Power	5800W (100A @ 58Vdc)
Power Density	13.5W/In3 - 85 (H) x 224 (W) x 371 (D) in mm
Efficiency	>93% (R48-5800A)
	>96% (R48-5800e)

R48-5800A

R48-5800e



Relationship between the Output power & Input voltage at 45˚C



Relationship between the Output power & Ambient temperature when Vin is larger than 304Vac

Rectifier Cabinet Configuration

Model	Rack 1000-A	Rack 1500-A	Rack 2000-A
Rectifier Model	R48-5800A/R48-5800e	R48-5800A/R48-5800e	R48-5800A/R48-5800e
No of Rectifier Modules	1-10	1-15	1-20
Control Model	M831D	M831D	M831D
No of Control Modules	1	1	1
Dimensions (W x D x H) in mm	600 x 600 x 2000	600 x 600 x 2000	600 x 600 x 2000
Weight (kg)	<140 (without rectifier modules)	<160 (without rectifier modules)	<180 (without rectifier modules)

AC Distribution Cabinet

- Intelligent & compact design; independent operation
- Equipped with an advanced monitoring unit that displays the Input AC voltage, current, frequency & SPD status parameters
- Audible and visual alarm reporting for local input over voltage and under voltage, frequency anomalies, and SPD faults
- Manual and Automatic switching of the two mains input in a secure & reliable way.
- Emergency DC lighting for easy maintenance
- Built-in top & bottom cabling with frontal access for ultimate convenience and flexibility.
- Safety regulations and SPD systems meet the industry-level IEC standards while guaranteeing device-and-body safety.
- Meets the stringent environmental protection requirements of the European Union and China.

Cabinet Configuration

	PD380/400AFH-A-Y1	PD380/630AFH-A-Y1	PD380/630AFA-A-Y1
AC input	Three-phase four-wire or three-phase five-wire system	Three-phase four-wire or three-phase five-wire system	Three-phase four-wire or three-phase five-wire system
	Dual feed, Manual Changeover	Dual feed, Manual Changeover	Dual feed, Auto Changeover
	Input current 400 A	Input current 630 A	Input current 630 A
AC output	Three-phase 4 x 160 A (MCCB)	Three-phase 6 x 160 A (MCCB)	Three-phase 6 x 160A/3P (MCCB)
	Three-phase 2 x 100 A (MCB)	Three-phase 2 x 100 A (MCB)	Three-phase 2 x 100 A (MCB)
	Three-phase 2 x 63 A (MCB)	Three-phase 4 x 63 A (MCB)	Three-phase 4 x 63 A (MCB)
	Three-phase 2 x 32 A (MCB)	Three-phase 2 x 32 A (MCB)	Three-phase 2 x 32 A (MCB)
	Single-phase 2 x 63 A (MCB)	Single-phase 4 x 63 A (MCB)	Single-phase 4 x 63 A (MCB)
	Single-phase 2 x 32 A (MCB)	Single-phase 4 x 32 A (MCB)	Single-phase 4 x 32 A (MCB)
Emergency lighting output	100A@48Vdc	100A@48Vdc	100A@48Vdc
Dimensions	2000 (H) × 600 (W) × 600 (D) in mm		
Weight(kg)	≤280	≤280	≤280

DC Distribution Cabinet

- Cutting-edge design with an advanced monitoring unit; independent operations, power supply distribution with flexible installation and capacity expansion
- Built-in Top & Bottom cable entry with frontal access for easy reach and simplified operations; Comprehensive space (i .e. two-thirds of the cabinet) is available for cabling in a convenient and secure way
- One-to-one display of output status on the local LCD for easy maintenance
- Intra- and inter-cabinet parallelling for easy installation and capacity expansion
- Meets the stringent environmental protection requirements of the European Union and China.

Cabinet configuration

	PD48/1600DF-A-Y1	PD48/1600DF-A-Y2	PD48/2500DF-A-Y1	PD48/2500DF-A-Y2	PD48/2500DF-A-Y3
Battery fuse	2 strings of 2 x 800A (NT4)	2 strings of 2 x 800A (NT4)	2 strings of 2 x 1000A (NT4)	2 strings of 2 x 1000A (NT4)	2 strings of 2 x 1000A (NT4)
DC output	12 × 400A (NT3)	4 × 630A (NT3)	16 × 500A (NT3)	6 × 630A (NT3)	12 × 500A (NT3)
	4 × 200A (NT2)	6 × 500A (NT3)	4 × 200A (NT2)	8 × 500A (NT2)	2 × 200A (NT2)
	2 × 100A (NT00)	4 × 200A (NT2)	2 × 100A (NT00)	4 × 400A (NT2)	4 × 100A (NT00)
		2 × 100A (NT00)		2 × 100A (NT00)	
Shunt Current Detection	8 shunts	4 shunts	8 shunts	6 shunts	12 shunts
Mechanical Parameters					
Dimensions	2000 (H) × 800 (W) × 600 (D) in mm				
Weight (kg)	≤280	≤280	≤290	≤290	≤290

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