

KEY FEATURES

- Achieves efficiency levels approaching 97%.
- Improves current harmonics from 26% to <5% and power factor from 0.94 to 0.99.
- Eliminates typical transition cost and risk.
- Works with legacy LVPS rectifiers for expansion.
- Compatible with ultra high-efficiency eSure™ rectifiers and standard NetSure™ rectifiers.
- Does not require an updated MCA* or LMS1000 controller.

* MCA versions 5.0.0 and higher do not require update. Earlier versions will not load share proportionately and we recommend upgrading to the latest MCA version.

High efficiency eSure™ rectifiers provide dramatic reductions in energy costs and advanced features for large Vortex® power plants.

The NetSure V200 Retrofit is designed to improve system efficiency and permit expansion. This elegant solution enables ultra high-efficiency eSure rectifiers or standard NetSure rectifiers from Vertiv to be used in existing large power plants without modifying the Vortex® controller.* The NetSure V200 Retrofit also functions side-by-side with existing legacy rectifiers.

Each retrofit module consists of a chassis that mounts in the place of a V200D50 or V200E50 rectifier. The 208V chassis accepts three R483500e rectifiers and the 480V chassis accepts two R485800e rectifiers. The existing controller communicates with the chassis on the serial bus, where information is translated into CAN protocol for use by the eSure/NetSure rectifiers. Communication back to the controller occurs in reverse order. This process enables the controller to work with Vertiv's high-efficiency rectifiers and achieve efficiency levels near 97%.

The NetSure V200 Retrofit is designed with active power factor correction circuitry providing a power factor greater than 99% with less than 5% total harmonic distortion. Thus, integrating a NetSure V200 Retrofit into an existing large Vortex® power plant improves overall system efficiency while optimizing current harmonics.

Upgrading an existing plant could not be simpler. Simply unplug the old rectifiers one at a time, replacing each unit with an updated NetSure V200 Retrofit module. An average size plant can be upgraded in less than an hour. No modifications to the controller or monitoring system are

required.* Voltage settings and alarm thresholds are retained during conversion. When all rectifiers have been converted, the plant will be nearly 6% more efficient, THD will be minimized and operation of the emergency generators will improve.

The NetSure V200 Retrofit provides a simple way to upgrade existing large power plants without the cost of engineering and installing a completely new plant, the need for difficult transition work, and the associated risk of outage related to hot transitions.



Legacy System



Partial Conversion



High-Efficiency System

NETSURE™ V200 DC POWER RETROFIT



NetSure® V200 Retrofit

MCA Compatibility

MCA CONTROLLER VERSION1	RELEASE DATE	UPGRADE	REMOTE SENSE LEAD DROP2
5.2.0	After 9/13/2006	Not Required	50 mV
5.1.0	After 10/8/2004	Not Required	50 mV
5.0.0	After 9/2/2003	Not Required	50 mV
4.9.9 or less	Prior 9/2003	Requires a New MCA	50 mV

1 To determine MCA controller version, go to the front panel: System OK (enter) / Configure Menu (enter) / Verify Inventory (enter) / Navigate to "MCA SWV #####".

2 Maximum voltage drop between local bus and sense point.

Technical Specifications

AC INPUT	486527803 (REPLACES V200D50 486527800/01)	486531003 (REPLACES V200E50 486531000/01)
Nominal voltage	Three phase 208VAC	Three phase 480VAC
Operating voltage range	85-300 VAC	260-530 VAC
Frequency	45-65Hz	45-65Hz
Power factor (Pf)	0.99	0.99
Total harmonic distortion	<5% from 50-100% load	<5% from 50-100% load
Input current	30A	16A
Inrush current	Does not exceed 150% of rated input steady state peak value	Does not exceed 150% of rated input steady state peak value
Input protection	If the input decreases or increases beyond an nonadjustable predetermined value, the rectifier circuitry shuts down disabling the output. The rectifier will recover once the AC input is reestablished and exceeds 95VAC (low voltage restart point) or when it decreases to 285VAC (high voltage restart point). Overcurrent is protected by an internal fuse.	
Operating efficiency	96.7% Peak	96.2% Peak

DC OUTPUT		
Output voltage range	42.0-58.0 VDC	42.0-58.0 VDC
Output power	Constant power limiting operation; 10,500 W maximum	Constant power limiting operation; 11,600 W maximum
Output current	219A max	240A max
Regulation	Steady state output voltage remains within +/- 0.25% for any combination of input and output voltage from 5% to 100% load	
Voice band noise	The voice frequency noise generated does not exceed 32dBnC from 10% to 100% load	
Wide band noise	Does not exceed 250mV peak-to-peak, or 30mV rms per Telcordia GR-947-CORE	
Psophometric noise	Does not exceed 1 mV, 10% to 100% load	Does not exceed 1 mV, 10% to 100% load
Current limiting protection	Output is limited to 219A	Output is limited to 240 amps
Over current protection	Internal fuse	Internal fuse
High voltage shutdown	If the rectifier detects overvoltage it will turn off. 5 seconds later it will restart. If it encounters another over voltage condition within the next 5 minutes it shuts down and locks out until it is manually cycled.	

ENVIRONMENTAL

Temperature	-40 to +167°F (storage), 0 to +50°C (operating)	-40 to +176°F (storage), 0 to +45°C (operating)
Altitude	Up to 6562 ft. (2000m) at full rated output	Up to 6562 ft. (2000m) at full rated output
Relative humidity	0-95%	0-95%
Ventilation	Front to back with speed controlled fan (field replaceable)	Front to back with speed controlled fan (field replaceable)
Audible noise	<53dB(A)	

STATUS/ALARM INDICATORS

Normal operation	Green LED	Green LED
Alarm	Yellow LED	Yellow LED
Rectifier fail alarm	Red LED	Red LED
Fan failure alarm	Flashing Red LED	Flashing Red LED
Status settings	The MCA controller establishes all rectifier settings. The upgraded NetSure V200 Retrofit appears to the MCA the same as a conventional V200D50.	The MCA controller establishes all rectifier settings. The upgraded NetSure™ V200 Retrofit appears to the MCA the same as a conventional V200E50.

RECTIFIER PHYSICAL SPECIFICATIONS

Mounting	Plugs into same slot as V200D50	Plugs into same slot as V200E50
Dimensions	8.63" H x 23.36" W x 15.33" D	8.63" H x 23.36" W x 15.33" D
Weight	33.1 pounds	44 pounds
Safety compliance	UL/EN/IEC 60950-2000 CE & EMC	UL/EN/IEC 60950-2000 CE & EMC

NETSURE™ V200 DC POWER RETROFIT



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