

# NETSURE™ A50B50 DC POWER RETROFIT



## KEY FEATURES

- Increases efficiency from 85% to >96%; reduces energy consumption by >11%; reduces heat loss by >73%
- NetSure reliability improves mean time between failure (MTBF)
- Constant power limiting feature increases current capacity to 73 amps per rectifier
- Plugs right into A50B50 rectifier slot without any electrical or mechanical adjustments to existing shelf or system
- Operates with or without original A50B50 rectifiers in same system
- Enhanced controller features including single point adjustment and remote access via Ethernet



High efficiency eSure™ rectifiers provide dramatic reductions in energy costs and advanced features for legacy Lorain® A50B50 based DC power systems.

## Product Overview

The NetSure® A50B50 DC Power Retrofit provides a unique solution for maintaining and upgrading legacy Lorain DC power systems based on the A50B50 rectifier. Specially designed frames mount directly into existing rectifier slots without the need for electrical or mechanical adjustments. These frames accommodate the R48-3500E and R48-3200E eSure high efficiency rectifiers as well as the standard R48-3200 rectifier.

Two distinct frames are available. Model A50IFRM accommodates a single rectifier and controller. Model A50EFRM houses a single rectifier. Each system starts with one A50IFRM. The A50EFRM provides growth for up to thirty-six rectifiers in a single system.

The NetSure A50B50 DC Power Retrofit can be used with or without the original A50B50 rectifiers in the same system. The frames contain the necessary connections and circuitry to manage the monitoring and alarming of all rectifiers.

The system's original meter-control-alarm panel can remain in place. Or, if desired, the NetSure controller can be used instead, providing significant enhancements over existing electronics including programmable alarming, customer I/O and local/remote access over Ethernet.

## Application

The NetSure A50B50 DC Power Retrofit is designed for use in existing Lorain DC power Systems containing A150CAB or A200CAB rectifier shelves designed initially to accommodate A50B50 rectifiers. The NetSure A50B50 DC Power Retrofit can be used in conjunction with or in place of A50B50 rectifiers with the following specification numbers: 486522200, 486523401, 486523403, 486523406, 486524801, 486526401.

## Additional information

Additional specification, engineering and installation information may be obtained by requesting SAG588250400 (system application guide) and UM588250400 (User Manual).



## Technical Specifications

AC INPUT	R48-3200	R48-3200E	R48-3500E
<b>Nominal Voltage</b>	Single phase 208/240VAC		
<b>Operating Voltage Range</b>	176VAC to 275VAC		
<b>Frequency</b>	45 Hz to 65 Hz		
<b>Power Factor (PF)</b>	>0.98 from 50% to 100% load		
<b>Total Harmonic Distortion</b>	≤5% from 50% to 100% load		
<b>Input Current</b>	16.0A typical, 20.3A maximum	15.2A typical, 19.6A maximum	16.5A typical, 21.4A maximum
<b>Inrush Current</b>	Does not exceed 150% of the rated input steady state peak value.		
<b>Input Protection</b>	If the input voltage decreases or increases beyond a non-adjustable predetermined value, the rectifier circuitry shuts down, disabling the output. The rectifier will recover automatically when the AC input is re-established and exceeds 95VAC (low voltage restart point) or when it decreases to 285VAC (high voltage restart point). Overcurrent is protected by an internal fuse.		
<b>Operating Efficiency</b>	92% peak	96.8% peak	96.7% peak
DC OUTPUT			
<b>Output Voltage Range</b>	-42.0VDC to -58.0VDC		
<b>Constant power limiting operation</b>	3200W maximum from 176VAC to 290VAC at >48VDC output		3500W maximum from 176VAC to 290VAC at >48VDC output
<b>Output Current</b>	67A max		73A max
<b>Regulation</b>	Steady state output voltage remains within +/-0.25% for any combination of input voltage from 5% to 100% load		
<b>Voice Band Noise</b>	The voice-frequency noise generated by a rectifier does not exceed 32dBnC output noise from 10% to 100% load		
<b>Wide Band Noise</b>	Does not exceed 250 mV peak-to-peak, or 30 mV rms per Telcordia GR-947-CORE		
<b>Psophometric Noise</b>	Does not exceed 1 mV, 10% to 100% load		Does not exceed 2 mV, 10% to 100% load
<b>Current Limiting Protection</b>	Current limit adjustable from 5 to 67A		Current limit adjustable from 6 to 73A
<b>Over Current Protection</b>	Internal fuse		
<b>High Voltage Shutdown</b>	If rectifier detects over voltage it will turn off. After 5 seconds it will restart; if it encounters an over voltage within 5 minutes it will turn off and remain off until reset.		
ENVIRONMENTAL			
<b>Temperature</b>	-40°F to 113°F (-40°C to 45°C) at full rated output -40°F to +167°F (-40°C to +75°C) with derating		
<b>Altitude</b>	Up to 6562 ft (2000m) at full rated output		
<b>Relative Humidity</b>	0 to 95%		
<b>Ventilation</b>	Front to back with speed-controlled fan (field replaceable)		
<b>Audible Noise</b>	The rectifier does not produce sound levels above 53dB(A), measured 0.6m in front of the rectifier, at the same horizontal line as the middle of the rectifier at 25°C		
STATUS / ALARM INDICATORS AND MONITORING			
<b>Visual Indicators</b>	Normal operation = Green LED Alarm = Yellow LED Rectifier failure alarm = Red LED Fan failure alarm = Flashing red LED		
<b>Status Settings</b>	The controller establishes all rectifier settings. Reported via CAN bus to system controller.		
RECTIFIER PHYSICAL SPECIFICATIONS			
<b>Mounting</b>	Plug-in installation		
<b>Dimensions (H x W x D)</b>	5.20 x 3.36 x 11.3 inches (132 x 85.3 x 287mm)		
<b>Weight</b>	7.7 lbs. (3.5kg)		
<b>Compliance</b>	UL recognized (UL 60950) for USA & Canada, CE marked, EN 300 386:2001 class B, FCC part 15 class B, IEC 60950, EN 60950		

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