



# V1000A1-HE

## Rectifier Module

### Overview:

Eltek Valere's high efficiency "HE" rectifiers provide an outstanding AC-to-DC conversion rate, substantially reducing the energy losses of industry-standard rectifiers. Each line of HE products is developed from an established, reliable product line and designed for full interchangeability and interoperability with existing Eltek Valere power systems. The **V1000A1-HE** is **95.5%** efficient and fully compatible with V-series solutions, including the *Compact* and *Integrated* systems.

### Product Advantages

#### High Efficiency

A typical conversion efficiency rate of 95.5% reduces thermal waste, thereby reducing AC utility consumption and cooling costs. The HE rectifier also increases savings by maintaining high conversion efficiency at low load.

#### Compatibility

HE rectifiers are optimized for applications that already use the *Eltek Valere* V-series product line. The V1000A1-HE module is completely compatible and interoperable with existing 48V V-series rectifiers, providing highly-efficient, seamless upgrade solutions for the V-series *Compact* and *Integrated* systems.

#### Instant Upgrade

Upgrading existing deployments of *Compact* and *Integrated* systems just involves hot-swapping rectifiers. Simply install the V1000A1-HE module to benefit from savings in operation costs. There is no additional setup for upgrade!

#### Small Size, Big Power

At only 2RU in height, each V1000A1-HE rectifier can output up to 1120W of DC power. The small footprint enables system size reduction and incorporation of additional equipment. New breakthroughs in technology boost efficiency and reduce rectifier components by 40%.

### Key Features

- 95.5% efficiency
- 48V, 1000W output
- Simple hot-swap upgrade for existing V-series systems (*Compact* and *Integrated*)
- Interoperable with all V-series 48V rectifiers
- 2RU in height
- Vertical airflow
- 90VAC to 264VAC operating input range
- Constant current limit
- Operates in temperatures up to 75°C
- Power factor correction
- Hot-plug/hot-swap installation
- Operates either stand-alone or with a BC-series controller
- Redundant parallel operation
- Active load sharing
- Advanced internal monitoring
- Front status LEDs
- Internal over-temperature protection
- Internal surge protection
- Safety and compliance approvals pending

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## Target Technical Specifications

Document  
2050733 R3

AC Input	
Operating Voltage	90VAC to 264 VAC
Frequency	47 Hz to 63 Hz
Input Current	13A @ 90VAC and full load 6.6A @ 180VAC and full load
Power Factor	0.99 @ 230VAC, full load
Inrush Current	30 amps peak (excludes X caps in the EMC input filter)
Total harmonic distortion (THD)	< 10% typical

DC Output	
Voltage	42 VDC to 56 VDC
Default Voltage	48 VDC
Output Power	1120W
Efficiency	>95.5%
Current Limit Setpoint	105% of maximum rated load
Current Sharing	±5% of full load
Static voltage regulation	±1% line & load regulation
Ripple and Noise	20mV rms typical (10kHz to 20MHz) 32 dBnC (without external battery)
Turn on Delay	3.5 seconds; measured from application of valid AC voltage to regulation set-point
Short Circuit Current (RMS amps)	20 Arms
Output Rise Time	100-400 milliseconds; measured at 10% to 90% of final output level
Dynamic Response (maximum)	±5%, <50ms for 10% to 90% load step, and the reverse (90% to 10%)
Over-voltage protection	60 VDC

Typical specifications (unless otherwise stated): Nominal line: 230VAC Nominal setpoint: 54VDC Nominal load: 100% of rated current
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Environmental Conditions	
Operating temp	-40°C to 75°C (-40°F to 167°F)
Storage temp	-40°C to 85°C (-40°F to 185°F)
Altitude	-200 ft to 6000 ft (-60m to 1829m); maximum operating temperature de-rates by 2°C (3.6°F) per 1000 ft above 6000 ft (per 305m above 1829m) for temperatures above 50°C (122°F)
Humidity	5% to 95%; relative humidity, non-condensing
Acoustic noise	<55 dBA at low fan speed

Auxiliary Output	
Nominal Voltage	12V
Vmin/max	10.5/14
Source Current Rating (min/max)	0/500mA

Physical Specifications	
Depth	282.9 mm (11.14 in)
Height	87.6 mm (3.54 in)
Width	86.7 mm (3.41 in)
Weight	3.2 kg (7.0 lbs)

Target Standards			
NEBS Level 3	EMC, surge standards, and electrical safety per GR-1089-CORE Seismic rating Zone 4, per GR-63-CORE	EN61000-4-4	Electrical fast transient/burst immunity test.
EN55022 Level B	Radiated EMI Conducted Emissions	EN61000-4-5	Surge immunity test. 6kV: Line to line 6kV: Line to ground
EN61000-3-2	Limits for harmonic current emissions	EN61000-4-6	RF common mode. 3Vrms
EN61000-3-3	Limits for voltage and flicker in low voltage systems	EN61000-4-8	Magnetic field. 10 A/m
EN61000-4-2	Electrostatic discharge immunity test, 15kV air, 8kV contact.	EN61000-4-11	Voltage dips, short interruptions and voltage variations
EN61000-4-3	Radiated radio-frequency, electromagnetic field immunity test. 10 V/m		

Specifications subject to change without notice