

# ***GALAXY Switchmode Rectifier 595 Series***

***Model 595A3: -48 Vdc, 200 Adc, 380/400/480 Vac  
Model 595B3: -48 Vdc, 200 Adc, 208/220/240 Vac***



The updated GALAXY Switchmode Rectifier 595 Series provides highest quality dc power for telecommunications and data processing systems and their batteries.

***The Switchmode Rectifier 595 Series*** integrates the latest switchmode technology with superior power, protection, and control features in a compact, cost-efficient power-conversion system.

Designed as a key element in the Lineage Power GALAXY Power System 4848/100 Battery Plant, the 595 Series Rectifier converts ac input voltage into the dc voltage level required to power end-user equipment. It also provides precise regulation, which is required to maximize battery life.

## ***Benefits***

---

### ***Compact, Power-Packed***

Lineage Power's revolutionary technology packs ever-greater power into ever-shrinking packages. The result is a rectifier that packs more power per cubic inch, weighs substantially less, requires minimal maintenance, and frees up valuable floor space.

### ***Optimum Power Usage***

Functionally, the first conversion stage incorporates a new, high-efficiency topology with low-loss switching to generate a high-voltage intermediate bus from a three-wire, three-phase input ac source. This technology enables direct conversion of voltages up to 480 Vac nominal. The bus transfers power to the switching bridge, dc-dc second stage.

**Quick Setup**

The rectifier weighs approximately 59 lb (27 kg) and is designed to plug into a factory-wired cabinet. Installation is swift and straightforward. Interconnections to ac input, dc output, and control signals are automatic during insertion. No adjustments or settings are necessary.

**Economical Operation**

The system exhibits excellent 92% efficiency, contributing to lower ac usage and operating costs.

**Extended Service Life**

The 595 Series features parallel operation with digital load sharing, which evenly balances the load current among multiple rectifiers.

**Fail-Safe Performance**

To prevent load or rectifier damage, the 595 Series is equipped with overvoltage/overcurrent protection. Two levels of high-voltage shutdown are provided, each powered from a separate voltage source. Two levels of overcurrent protection are also provided. The rectifier's control circuitry limits the current and an output circuit breaker prevents excessive output current.

An intelligent fan-speed control maintains safe operation at ambient temperatures from 0°C to 50°C. The variable-speed control also minimizes acoustic noise.

**Simplified Control/Monitoring**

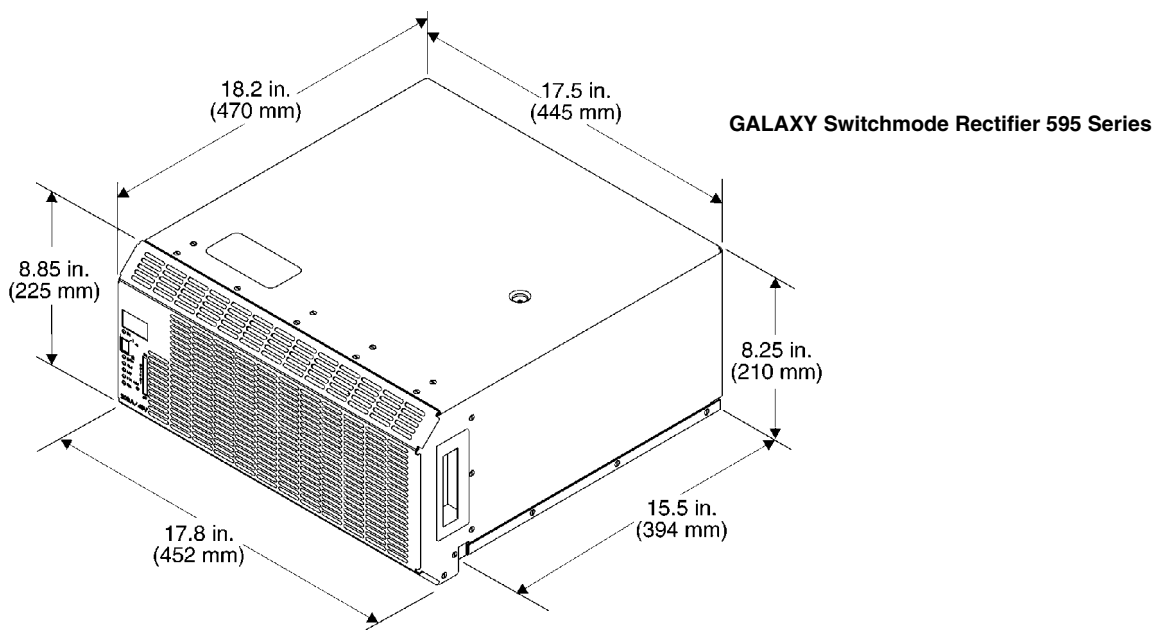
A digital meter indicates current, temperature, or rectifier alarm messages for convenient system status. A microprocessor manages all internal alarm and state decisions. Additional monitoring and control capabilities are provided through serial digital communication with the GALAXY family of controllers.

Overall, the unit is easy to install and delivers the reliable high performance required by the most stringent telecommunication and data processing applications.

**Features**

- High power density
- High efficiency
- Low THD
- Wide ac input range
- Plug-in interface
- Digital load sharing

**Outline Drawing**



**Specifications**

| <b>Electrical</b>                         |  |
|---|--|
| <b>Input</b>                              |  |
| Nominal Voltage, Three-Phase:             |  |
| 595A3                                     | 380 Vac/400 Vac/480 Vac, 3-wire plus ground  |
| 595B3                                     | 208 Vac/220 Vac/240 Vac, 3-wire plus ground  |
| Voltage Limit, Steady State:              |  |
| 595A3                                     | 320 Vac to 530 Vac   |
| 595B3                                     | 176 Vac to 275 Vac   |
| Frequency                                 | 47 Hz to 63 Hz   |
| Power Factor:                             |  |
| 595A3                                     | >0.97 at 50% to 110% load  |
| 595B3                                     | >0.92 at 50% to 110% load  |
| Total Harmonic Distortion                 | <5% at 50% to 110% load  |
| <b>Output</b>                             |  |
| Float/Boost Voltage                       | 42 Vdc to 58 Vdc   |
| Regulation (with GALAXY controller)       | ±0.5%  |
| Ripple                                    | 100 mVrms  |
| Noise                                     | <2 mV psophometric   |
| Permanent Overload                        | 220 Adc  |
| Current-Limit Set Point                   | 60 Adc to 220 Adc  |
| <b>Environmental</b>                      |  |
| Efficiency:                               |  |
| 595A3                                     | >92% typical at 100 Adc-220 Adc output current   |
| 595B3                                     | >91% typical at 100 Adc-220 Adc output current   |
| Operating Temperature                     | 0°C to 50°C (32°F to 122°F)  |
| Operating Relative Humidity               | 5% to 90% (noncondensing)  |
| Storage Temperature                       | -40°C to +85°C (-40°F to 185°F)  |
| Storage Relative Humidity                 | 5% to 90%  |
| Audible Noise                             | 65 dBA at room temperature, mounted in cabinet   |
| <b>Safety/Standards Compliance</b>        |  |
| NEBS                                      | Evaluated by independent test lab with NRTL status to Telcordia GR63 and GR1089 (including level 3 testing)  |
| Safety                                    | UL <sup>1</sup> -recognized (US and Canada) and TÜV <sup>2</sup><br>UL 1950, EN60950/IEC950, and CSA <sup>3</sup> 234/950 (tested for SELV output)   |
| Electromagnetic Compliance <sup>4</sup> : |  |
| Emission                                  | EN55022 (CISPR22) Radiated/Conducted Emission, Class B<br>Meets FCC Part 15 Class B  |
| Immunity                                  | IEC/EN 61000-4-2 ESD level 3 and 4<br>IEC/EN 61000-4-3 Radiated Immunity, 10 Vm<br>IEC/EN 61000-4-4 Electrical Fast Transients/Burst, level 4<br>IEC/EN 61000-4-5 Lightning Surge, level 4 |
| CE Marking <sup>5</sup>                   | CE marked per European Union Council Directives: Low-Voltage Directive (73/23/EEC) as amended by CE Marking Directive (93/68/EEC)  |

1. UL is a registered trademark of Underwriters Laboratories, Inc.

2. TÜV is a registered trademark of Technischer Überwachungs-Verein.

3. CSA is a registered trademark of Canadian Standards Association.

4. Testing to the EMC standards was performed on an individual unit for verification purpose only.

5. This product is intended for integration into end-user equipment. All required procedures for CE Marking of end-user equipment should be followed.

### Specifications (continued)

| Physical  |  |
|---|--|
| Width   | 17.5 in. (445 mm) rear of unit   |
| Height  | 8.25 in. (210 mm) rear of unit   |
| Depth   | 18.2 in. (470 mm) overall, less contactor  |
| Weight  | 59 lb (27 kg)  |
| Control and Monitoring                              |  |
| Visual Indicators (Six)                             | ON (green), STBY (yellow), EQL (yellow 595B3 only), LIM (yellow), ALM (red), FAN ALM (red), BST (yellow 595A3 only)                              |
| Meter   | Three digit: current, rectifier ID   |
| Control Switch (One)                                | ID/ON/STBY   |
| Serial Interface Signaling: Controller-to-Rectifier | Remote sense, load share, voltage set points, current set points, selective HVSD set points, float/boost/equalize mode, HVSD, ON/STBY, lamp test |
| Serial Interface Signaling: Rectifier-to-Controller | Rectifier current, rectifier temperature, ID, serial number, manufacturing information, RFA, CB, ON/STBY, ACF, phase fail, TA, fan fail          |

Note: **STBY** = standby, **EQL** = equalize, **LIM** = limit, **ALM** = alarm, **HVSD** = high-voltage shutdown, **RFA** = rectifier fail alarm, **CB** = circuit breaker, **ACF** = ac failure, **TA** = ambient temperature, **BST** = boost

### Ordering Information

| Description                | Comcode   |
|----------------------------|-----------|
| 595A3 Switchmode Rectifier | 108961822 |
| 595B3 Switchmode Rectifier | 108961814 |

Note: For complete ordering information, please contact your Lineage Power sales representative.

### Related Product Literature

| Document Title                     | Document Number |
|------------------------------------|-----------------|
| GALAXY Power System (GPS) 4848/100 | DS03-044        |

#### LINEAGE POWER

World Wide Headquarters  
3000 Skyline Drive, Mesquite, TX 75149, USA

+1-800-843-1797  
Outside U.S.A.: +1-972-284-2626

<http://www.lineagepower.com>  
e-mail: [techsupport1@lineagepower.com](mailto:techsupport1@lineagepower.com)

©2008 Lineage Power. Lineage Power reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.