

# Galaxy

## 596D SMR Rectifier

**-48Vdc, 100A dc, 208 Vac / 240 Vac**

### Packing More Power and Efficiency into Small Spaces

The Galaxy 596D SMR integrates the latest Switchmode technology with superior power, protection, and control features in a compact, cost-efficient power-conversion system. It is the newest in the line of reliable 596 series rectifiers. Lineage Power's revolutionary technology packs greater power into ever-shrinking packages. The result is a rectifier that packs 9.2W/in<sup>3</sup>, weighs just 20 lb. (9kg), requires minimal maintenance, and frees up valuable space. Installation is swift and straight-forward. Ac-input, dc-output, and control signals are automatically connected during installation. No adjustments are required.

Designed as a key element in the Lineage Power GALAXY Power System (GPS) 4812/24 Battery Plant, the 596D rectifier converts ac input voltage into the dc-voltage level required to power end-user equipment, as well as float-charge batteries at precise voltage levels. Operation over a wide temperature range (-40°C to + 75°C) makes the 596D suitable for controlled and uncontrolled environments.



### applications

- Small to Medium Central Office
- Battery-backed energy reserve systems
- 48V Wireless base stations
- Outdoor cabinets

### key features

- Microprocessor manages internal alarms and serial digital communication with GALAXY controller
- Digital load-sharing
- Softstart circuits and inrush control
- Overvoltage and overcurrent protection
- Variable speed fan
- Operates with or without batteries
- 2-wire digital interface to GALAXY controller
- Three-digit meter: displays current, failure codes, and rectifier ID
- Hot pluggable
- Compact, modular construction
- 6000W output (110A at 54.48V)
- UL Recognized
- CE marked

## economical operation

The 596D exhibits an excellent 0.98 power factor and high efficiency, thereby minimizing ac usage and contributing to highly reliable, lo-cost operation.

## extended service life

For greater reliability and robust operation, the 596D features parallel operation with digital load sharing, which evenly balances the load current among multiple rectifiers in the event one fails or is removed from the system.

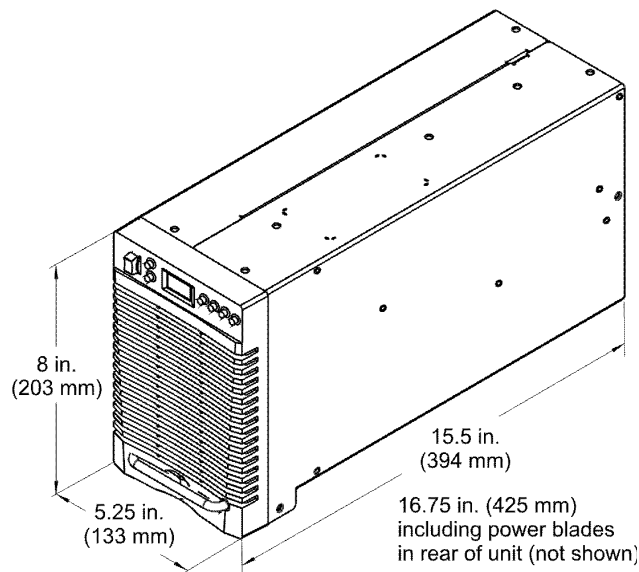
## fail-safe performance

Hot-insertion capabilities allow for rectifier replacement without system shutdown; softstart circuits and inrush control prevent upstream breakers from tripping. To avoid load or rectifier damage the 596D is equipped with overvoltage/overcurrent protection. A variable-speed fan maintains safe operation in  $-40^{\circ}\text{C}$  to  $75^{\circ}\text{C}$  ambient temperatures. The 596D operates with or without batteries.

## 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, and, for more extensive monitoring and control capabilities, provides serial digital communication with the GALAXY family of controllers.

## outline drawing



# specifications

Electrical	
<b>Input</b>	
Nominal Voltage, Single-Phase	208/220/240 Vac, 2-wire plus ground
Voltage Limit, Steady State	176 Vac to 264 Vac
Frequency	47 Hz to 63 Hz
Nominal AC Input Current	27.2 Aac at 240 Vac, 54.4 Vdc, 110 Adc
Power Factor	>0.98 from 50% to 110% load
Total Harmonic Distortion	3.7% @ 50A, 2.5% @ 100A, <5% from 35% to full load at 230Vrms input
<b>Output</b>	
Float/Boost Voltage Limits	42 Vdc to 60 Vdc
Regulation (with GALAXY controller)	± 0.5%
Ripple	200 mVp-p 0 to 20 MHz
Noise	<2mV psophometric
Output Current	-40°C to + 45°C : 110 Adc max +45°C to + 50°C : derate at 2A per °C +50°C to + 60°C : derate at 1.5A per °C +60°C to + 75°C : derate at 2.5A per °C
Current-Limit Set Point	30 Adc to 120 Adc
Physical	
Width	5.25 in. (133 mm)
Height	8 in.
Depth	15.5 in. (394 mm)
Weight	20 lb (9kg)
Environmental	
Efficiency	>91% (typical)
Operating Temperature	-40°C to + 75 °C (-40 to + 167°F)
Operating Relative Humidity	10% to 85%
Storage Temperature	-40 to + 75 °C (-40 to + 167°F)
Storage Relative Humidity	10% to 85%
Audible Noise	<60 dBA as per GR-947-CORE
EMC	EN 55022, CISPR22, Level B, conducted and radiated
Safety/Standards Compliance	
NEBS	Evaluated by independent test lab with NRTL status to Telcordia GR63 and GR1089 (including level 3 testing)
Safety Standard	UL1950, EN60950/IEC950, and CSA* 234/950
CE Marks	UL Recognized ( Canada and U.S.), VDE† Licensed, CE Marked (meets 72/23/EEC and 93/68/EEC directives)
Control and Monitoring	
Visual Indicators	ON (green), STBY (yellow), LIM (yellow), ALM (red), FAN ALM (red)
Meter	Three digit: current, failure codes, rectifier ID
Control Switch (One)	ID/ON/STBY
Serial Interface Signaling : Controller-to-Rectifier	Rectifier current, rectifier temperature, ID, serial number, manufacturing information, RFA, DB, ON/STBY, ACF, phase fail, TA, fan fail

\* CSA is a registered trademark of Canadian Standards Association.

† VDE is a trademark of Verband Deutscher Elektrotechniker e.V.

Note: STBY = Standby, EQL = Equalize, LIM = Limit, ALM = Alarm, HVSD = High-Voltage Shutdown, RFA = Rectifier Fail Alarm, CB = Circuit Breaker, ACF = AC Failure, TA = Temperature Alarm

## ordering information

Item	Description	Comcode
596D	Switchmode Rectifier	108962895

**With our wide range of product offerings along with extensive application notes, development tools, pre- and post-sales support including technical support, Lineage Power can provide a total solution to your current and future powering needs.**

Lineage Power is the industry's most trusted provider of reliable and innovative power conversion solutions, holding more than 400 power supply patents. A long-standing leader in the telecom industry, Lineage Power leverages an 80-year design history that includes highly regarded companies like Bell Labs, Western Electric, AT&T, Lucent Technologies and most recently, Tyco Electronics. Engineering talent, superior service and energy efficient solutions make Lineage Power the right choice for addressing your power requirements and network challenges.