

GALAXY Switchmode Rectifier ***596B4***

+24 Vdc, 100 A, 208 Vac / 240 Vac



The new GALAXY Switchmode Rectifier 596B4 provides the highest-quality dc power for telecommunications and data processing systems and their batteries.

The GALAXY Switchmode Rectifier 596B4

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 Tyco Electronics GALAXY Power System (GPS) 2424 Battery Plants, the 596B4 rectifier converts ac input voltage into the dc-voltage level required to power end-user equipment, as well as to float-charge batteries at precise voltage levels.

Operation over a wide temperature range (-40°C to $+85^{\circ}\text{C}$) makes the 596B4 suitable for controlled and uncontrolled environments.

Benefits

Compact, Power-Packed

For high power density, Tyco Electronics' revolutionary technology packs ever-greater power into ever-shrinking packages. The result is a rectifier that packs more power per cubic inch, weighs just 20 lb. (9 kg), requires minimal maintenance, and frees up valuable floor space.

Quick Setup

Installation is swift and straight-forward. Interconnections to ac-input, dc-output, and control signals are automatic during insertion. No adjustments or settings are required.

Power Systems

Economical Operation

The 596B4 exhibits an excellent 0.98 power factor and high efficiency, thereby minimizing ac usage and contributing to highly reliable, low-cost operation.

Extended Service Life

For greater reliability and robust operation, the 596B4 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 596B4 is

equipped with overvoltage/overcurrent protection. A variable-speed fan maintains safe operation in -40°C to 85°C ambient temperatures. The 596B4 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.

Overall, the unit is easy to install with minimal labor, lowers typical operating and installation expense, and

delivers the reliable high performance required by the most stringent telecommunication and data processing applications. The 596B4 is UL* recognized and CE† marked.

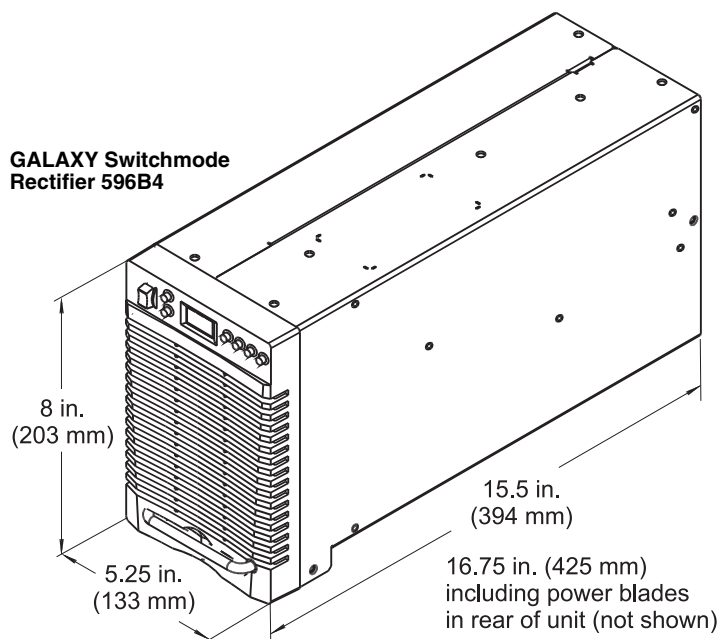
Features

- Microprocessor controlled
- Digital load-sharing
- 2-wire interface
- Three-digit meter: current, failure codes, rectifier ID
- Hot pluggable
- Compact, modular construction
- 3000W output (110A at 27.24V)
- UL Recognized
- CE marked

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

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

Outline Drawing



Specifications

Electrical	
Input	
Nominal Voltage, Single-Phase	208 Vac / 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	16.8A at 208 Vac 14.6A at 240 Vac
Power Factor	>0.98 from 50% to 110% load
Total Harmonic Distortion	<10% from 50% to 110% load
Output	
Float/Boost Voltage Limits	22 Vdc to 30 Vdc
Regulation (with GALAXY controller)	±0.5%
Ripple	100 mVrms
Noise	<2 mV psophometric
Output Current	-40°C to +65°C: 110 Adc max +65°C to +85°C: derate at 2A per °C
Current-Limit Set Point	30 Adc to 110 Adc
Physical	
Width	5.25 in. (133 mm)
Height	8 in. (203 mm, 5U)
Depth	15.5 in. (394 mm)
Weight	20 lb (9 kg)
Environmental	
Efficiency	>86% from 50 Adc to 110 Adc output current
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
Operating Relative Humidity	0% to 90% (noncondensing)
Storage Temperature	-40°C to +85°C (-40°F to 185°F)
Storage Relative Humidity	5% to 90%
Audible Noise	0°C to 30°C: <52 dBA 31°C to 50°C: <60 dBA
EMC	EN55022, 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 73/23/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	Remote sense, load share, voltage set points, current set points, selective HVSD set points, float/boost 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

* 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

Ordering Information

Description	Comcode
596B4 Switchmode Rectifier +24 Vdc, 100 Adc, 208/240 Vac	108687765

Related Product Literature

Document Title	Document Number
GALAXY Power System 2424	DS03-043



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