

GALAXY Switchmode Rectifier 596A2

-48 Vdc, 50 A, 208 Vac/240 Vac



The new GALAXY Switchmode Rectifier 596A2 provides the highest-quality dc power for telecommunications and data processing systems and their batteries.

The GALAXY Switchmode Rectifier 596A2 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) 4812 Battery Plants, the 596A2 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 °C) makes the 596A2 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.

■ Economical operation

The 596A2 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 596A2 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; soft-start circuits and inrush control prevent upstream breakers from tripping. To avoid load or rectifier damage, the 596A2 is equipped with overvoltage/ overcurrent protection. A variable-speed fan maintains safe operation in -40 °C to 85 °C ambient temperatures.

The 596A2 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 596A2 is **UL*** recognized and CE† marked.

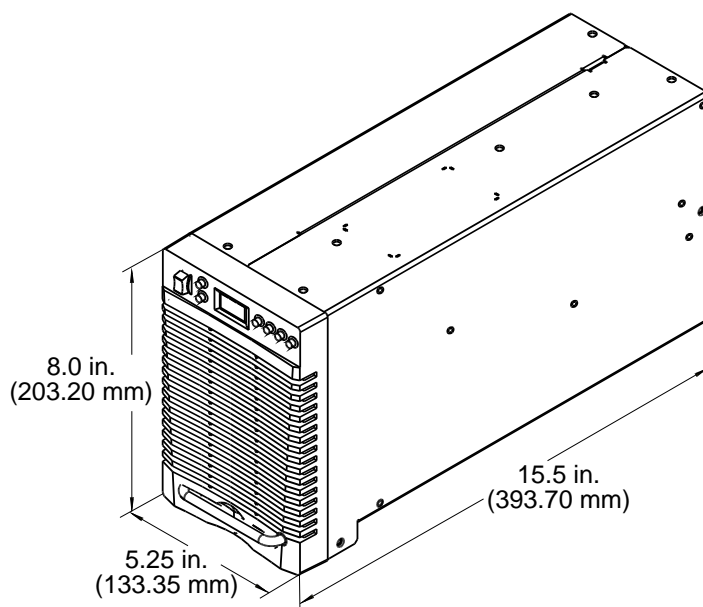
* **UL** is a registered trademark of Underwriters Laboratories, Inc.

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

Features

- Microprocessor controlled
- Digital load-sharing
- 2-wire interface
- Three-digit meter: current, failure codes, rectifier ID
- Hot pluggable
- Compact, modular construction
- 3000 W output (55 A at 54.48 V)
- **UL** Recognized
- CE marked

Outline Drawing



GALAXY Switchmode Rectifier, Model 596A2

Specifications

Electrical

Input

Nominal Voltage, Single Phase	208 Vac/240 Vac, 2-wire plus ground
Voltage Limit, Steady State	176 Vac—264 Vac
Frequency	47 Hz—63 Hz
Nominal ac Input Current	16.0 A at 208 Vac 15.5 A at 220 Vac 14.0 A at 240 Vac
Power Factor	>0.98 at 50%—110% load
Total Harmonic Distortion	<5%

Output

Float/Boost Voltage Limits	44 Vdc—60 Vdc
Regulation (with GALAXY controller)	±0.5%
Ripple	100 mVp-p 0-20 MHz
Noise	<1 mV psophometric
Output Current	-40 °C to +65 °C: 55 Adc max +65 °C to +85 °C: derate at 1 A per °C
Current-limit Set Point	15 Adc—55 Adc

Mechanical

Width	5.25 in. (133.35 mm)
Height	8.0 in. (203.20 mm, 5U)
Depth	19.75 in. (501.65 mm)
Weight	20 lb. (9 kg)

Environmental

Efficiency	90%
Operating Temperature	-40 °C to +85 °C
Operating Relative Humidity	0—95%
Storage Temperature	-40 °C to +85 °C
Storage Relative Humidity	5%—90%
Audible Noise	<60 dBA as per GR-947-CORE
EMC	EN 55022, CISPR22, Level B, conducted and radiated

Safety

Safety Standard	<i>UL</i> 1950, EN60950 (IEC950), <i>CSA</i> *234/950
Certification Marks	<i>UL</i> Recognized (Canada and U.S.), <i>VDE</i> † 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	RFA	— Rectifier fail alarm
EQL	— Equalize	CB	— Circuit breaker
LIM	— Limit	ACF	— ac failure
ALM	— Alarm	TA	— Temperature
HVSD	— High-voltage shutdown		

Ordering Information

Description	Comcode
596A2 Switchmode Rectifier	108796400

Related Product Literature

Description	Document Number
<i>GALAXY Power System 4812</i>	DS03-042



World Wide Headquarters

Tyco Electronics Power Systems, Inc.
3000 Skyline Drive, Mesquite, TX 75149, USA
+1-800-843-1797
power.tycoelectronics.com
email: techsupport1@tycoelectronics.com

Europe, Middle-East and Africa Headquarters

Tyco Electronics (UK) Ltd
Tel: +44 (0) 1344 469 300, Fax: +44 (0) 1344 469 301

Caribbean-Latin America-Brazil Headquarters

Tyco Electronics Power Systems
Tel: +56 2 209 8211, Fax: +56 2 223 1477

Asia-Pacific Headquarters

Tyco Electronics Singapore Pte Ltd
Tel: +65 6416 4283, Fax: +66 6416 4299

India

Tyco Electronics Systems India Pte Ltd
Tel: +91 80 841 1633 x3001

Tyco Electronics Corporation 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.

©2003 Tyco Electronics Power Systems, Inc., (Mesquite, Texas) All International Rights Reserved.
Printed in U.S.A.

July 2003
DS03-040 Rev 2