

**GUARDIAN**

# FMP20.24G

## 24VDC RECTIFIER

### 83 Amps | 2000 Watts

### Overview

The FMP20.24G rectifier is a 2000W, AC to DC power-factor-corrected (PFC) power supply unit that converts standard AC mains power into DC output in the range of 23-28.5VDC for powering telecommunication, data communication and other distributed power applications and can be used in hot-swap redundant systems. The FMP20.24G rectifier incorporates “resonance- soft-switching” technology to reduce component stresses, providing increased system reliability and very high efficiency.

A wide variety of distribution options are available to provide the maximum system flexibility for a wide range of communications applications that demand efficiency, reliability and flexibility; including wireless base stations, remote switches and broadband access. Status information is provided with front panel LEDs and via RS485 management interface. FMP20.24G is one of several rectifier types that can be installed in the Guardian Series DC power systems.

### Features

- Highly efficient topology with PFC
- Wide output voltage range: 23-28.5VDC
- High density design: 1.4kW/l
- Over temperature, output overvoltage and output overcurrent protection
- Hot-swappable
- International standards compliance
- Three Year Warranty

### Ordering Guide

Max. Power	Output Voltage	Output Current	Input Voltage <sup>2</sup>	Input Current <sup>4</sup>	Model No.
2000W	24.0VDC 26.8VDC <sup>1</sup>	83.3A 74.6A	85-275VAC	14.1A/9.0A	FMP20.24G
2000W	24.0VDC <sup>1</sup>	83.3A	85-275VAC	14.1A/9.0A	FMP20.24S101G <sup>4</sup>

Notes:

1. Default factory setting.
2. Units will operate over the full range from 85VAC to 275VAC, automatically limiting output current according to the actual input voltage range applied.
3. Input currents shown are nominal values at 110VAC/240VAC as appropriate.
4. Walk-in feature factory set to OFF.



### Safety Certification


CAN/CSA C22.2 No 62368-1:2014  
 UL 62368-1:2014  
 EN 62368-1:2014/A11:2017

# FMP20.24G Specifications

## Input

Voltage	Operating Range: 85-275VAC
	Permitted variation: 85-300VAC (L-PE and N-PE <250VAC)
Current	<9.0A @ 240VAC <14.1A @ 110VAC
Frequency	47-63Hz
Power Factor	>0.96 at >30% load
Fuse	Two 25A fast blow (L & N)

## Output

Voltage Range	23-28.5VDC
Power	2000W at ≥180VAC; 1337W at 110VAC; 1100W at 85VAC
Current	@ 24V 83.3A at ≥180VAC; 55.7A at 110VAC; 45.8A at 85VAC
	@ 26.8V 74.6A at ≥180VAC; 50.0A at 110VAC; 41.1A at 85VAC
Derating	9.5W/Vin from 180-85Vin
Efficiency	 <p>EFFICIENCY (@ 230VAC)</p>
Tolerance	Vout ±1.0%
Transient Response	±3% at load variation 10-90% or 90-10%
Load Sharing	<5% of nominal current
Ripple	<100mV p-p (BW 20MHz)
Psophometric	<2mV, according to CCITT norms

## Standards

Inrush Current	ETSI ETS 300 132-1
Harmonics	EN61000-3-2
EMC	ETSI EN300 386 V1.3.2 EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4 EN55024 performance criterion A EN55022 Class B Telcordia NEBS GR1089
Safety	CAN/CSA C22.2 No 62368-1:2014 UL 62368-1:2014 EN 62368-1:2014/A11:2017
Environmental	Storage: ETSI EN300 019-2-1 Transport: ETSI EN300 019-2-2 Operation: ETSI EN300 019-2-3 Damp Heat: IEC60068-2-78

## Mechanical

Dimensions, inches (mm)	4.2 W x 14.0 D x 1.6 H (107 W x 355 D x 41 H)
Weight	4.6lbs. (2.1kg)
Cooling	Fan-cooled, speed controlled
Insulation	4.25kVDC primary-secondary 2.12kVDC primary-ground 0.2kVDC secondary-ground
Enclosure	IP20
Mounting	19in/23in x 1RU sub-rack up to 4/5 modules

## General

Protection	Short circuit protection, automatic current/power limiting, input/output overvoltage protection, thermal protection.
Alarms	Fan failure Short circuit/arcing protection High temperature/output voltage Low output voltage Input voltage out of range Low fan speed (warning) Internal communication failure
LED Indicators	Green: AC normal operation Yellow steady: Low fan speed, High temperature Yellow flashing: Comms. failure Red: Module alarm / shutdown
Audible Noise	<54.5dBA @ ≤25°C (70% load)
Operating Temperature	-40°C to +75°C up to 2000m Reduced spec -40°C to -20°C  Derate linearly from full power at 55°C to 50% output power at -74°C. Thermal shutdown at 75°C.  For 3000m altitude derated by 5°C
Storage Temperature	-60°C to +85°C
MTBF @ 25°C (without fan)	>350,000 hours (without fan) at 25°C to MIL-HDBK-217F-2

## ABOUT GREEN CUBES TECHNOLOGY

Green Cubes Technology harnesses over 30 years of industry experience to ensure we design, develop and deliver solutions for the most challenging energy needs. We offer battery technology innovation, application design and performance management to drive productivity, scalability and sustainability.

Green Cubes provides complete power systems to the stationary power industry. With the addition of the Guardian and Aspiro Product lines offered under the UNIPOWER brand, these industry proven DC plant systems serve critical applications all around the world. Green Cubes offers complete power solutions including energy storage, power conversion, and seamless integration.

For more information, email [contact@greencubes.com](mailto:contact@greencubes.com) or visit [greencubes.com](http://greencubes.com)

