# **GPFC250 Commercial/GPFM250 Medical** 250 Watt Global Performance Switchers





## SPECIFICATIONS:

### Ac Input

85-264 Vac, 47-63 Hz single phase.

### Input Current

Maximum input current 3.7 A at 90 Vac, 60 Hz with full rated load. Input current harmonic content meets the requirements of IEC1000-3-2 Class A for all load conditions.

### Hold-upTime

25 ms minimum from loss of ac input at full load, nominal line (115 Vac).

Minimum Load: No minimum load required

### **Output Power**

250 W fan cooled, 180 W convection

### **Overload Protection**

Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit or foldback type depending on model and output. Recovery after fault is automatic. Individual output current limits are a function of load distribution and degree of overload.

### **Output Noise**

0.5% rms, 1% pk-pk, 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.

### **Transient Response**

Main Output–500  $\mu$ s typical response time for return to within 0.5% of final value for a 50% load step change, Di/ Dt< 0.2 A/ $\mu$ s. Maximum voltage deviation is 3.5%.

### **Remote Sense**

Provided as a standard feature. Capable of compensating for 0.25 V total of cabling losses in voltage.

### **Overvoltage Protection**

Built in on all models. Output voltage decay is dependent upon loading.

### Voltage Adjustment

Main output ±5%.

### Efficency

Minimum 80% on 12-48 V units, 75% on 5 & 3.3 V units at full rated load.

### Input Protection

Internal ac fuses provided on all models. Fuses do not blow on overload or short circuit—fuses blow only if catastrophic failure occurs in the unit.

### FEATURES:

- · 3.6 watts/cu.in. power density
- Compact size (5.0" x 8.0" x 1.75")
- Power factor corrected to IEC 1000-3-2, Class A
- Less than 300 µA leakage
- Conducted EMI exceeds FCC Class B and CISPR 22 Class B (Commercial models) and CISPR 11 Class B (Medical models)
- Commercial Approved to UL1950, IEC950, EN60950 and CSA 22.2 No. 950
- Medical Approved to UL2601-1, IEC601-1/60601-1 and CSA-C22.2 No. 601.1
- RoHS Compliant model available
- 2-year warranty
- CE marked to LVD

# EMI/EMC Compliance

All models include built-in EMI filtering to meet emissions requirements:

| EMI SPECIFICATIONS          | COMPLIANCE LEVEL                    |
|-----------------------------|-------------------------------------|
| Conducted Emissions GPFC250 | EN55022 Class B; FCC Class B        |
| Conducted Emissions GPFM250 | EN55011 Class B; FCC Class B        |
| Static Discharge            | EN61000-4-2, 6 kV contact, 8 kV air |
| RF Field Susceptibility     | EN61000-4-3, 3 V/meter              |
| Fast Transients/Bursts      | EN61000-4-4, 2 kV, 5 kHz            |
| Surge Susceptibility        | EN61000-4-5, 1 kV diff., 2 kV com.  |

### Inrush Current

Inrush 240 Vac is less than 37 A, averaged over the first ac half-cycle under cold start conditions. Limiting provided by internal thermistors.

### Fan Output

An additional 12 Vdc, 250 mA output suitable for powering a dc fan is included in all models.

### **Thermal Shutdown**

Provided as a standard feature. Designed to protect unit from prolonged over temperature.

### **Power Fail**

TTL or CMOS compatible output goes low (<0.5 V) 8 ms before output voltage drops more than 4% below nominal voltage upon loss of ac power. The signal is factory set to trip when input power can no longer sustain the output.

#### **Temperature Coefficient** 0.03% / °C typical on all outputs.

### Leakage Current

70μA under normal conditions (132 Vac @ 60 Hz). Maximum under single fault conditions (254 Vac @ 50 Hz), 130 μA.

### Power Good

TTL/CMOS compatible output goes high more than 100 ms after V1 reaches the under voltage threshold and should assure that sufficient energy is stored in the input section to provide normal power fail/shutdown. The signal will fall to a low state (<0.5 V) when V1 goes below 95% of the rated voltage.

### **External Off**

TTL/CMOS compatible input shuts down power converter. A logic high (>2.7 V with 400 uA source) shuts down the power converter. A logic low (<0.5 V) or an open circuit allows the supply to run.

# GPFC250 Commercial/GPFM250 Medical 250 Watt Single Output

| Commercial Model | Medical Model | Output No. | Output | Voltage Adjustment | Output Maximum (A) | Output Peak (B) | OVP Setpoint | Total Regulation | on Notes |
|------------------|---------------|------------|--------|--------------------|--------------------|-----------------|--------------|------------------|----------|
| GPFC250-3.3      | GPFM250-3.3   | 1          | 3.3 V  | ±5%                | 36 A               | 50 A            | 6.2 ± 0.6 V  | 2%               | С        |
| GPFC250-5        | GPFM250-5     | 1          | 5.1 V  | ±5%                | 36 A               | 50 A            | 6.2 ± 0.6 V  | 2%               | С        |
| GPFC250-12       | GPFM250-12    | 1          | 12 V   | ±5%                | 15 A               | 21 A            | 14 ± 1.1 V   | 2%               | С        |
| GPFC250-15       | GPFM250-15    | 1          | 15 V   | ±5%                | 12 A               | 16.7 A          | 18.5 ± 1.5 V | 2%               | С        |
| GPFC250-24       | GPFM250-24    | 1          | 24 V   | ±5%                | 7.5 A              | 10.5 A          | 28 ± 2.5 V   | 2%               | С        |
| GPFC250-28       | GPFM250-28    | 1          | 28 V   | ±5%                | 6.5 A              | 9 A             | 34 2.8 V     | 2%               | С        |
| GPFC250-48       | GPFM250-48    | 1          | 48 V   | ±5%                | 3.8 A              | 5.3 A           | 55 ± 4.0 V   | 2%               | С        |

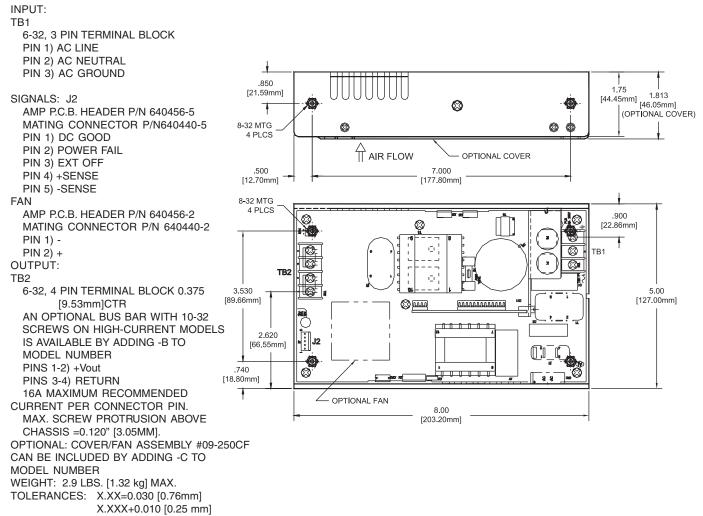
Add "G" suffix for RoHS compliant model. Contact factory for availability. RoHS compliance does not affect agency approvals. For agency listing use base model number.

A. Output rating with unrestricted convection cooling.

B. Output rating with 26 cfm airflow or -C option.

C. Add "-C" suffix for factory installed cover with fan option.

## **GPFC250/GPFM250** MECHANICAL SPECIFICATIONS



| Environmental<br>Specification | Operating                          | Non-operating                    |
|--------------------------------|------------------------------------|----------------------------------|
| Temperature (A)                | 0 to 50°C                          | -40 to +85°C                     |
| Humidity (A)                   | 0 to 95% RH                        | 0 to 95% RH                      |
| Shock (B)                      | 20 g <sub>pk</sub>                 | 40 g <sub>pk</sub>               |
| Altitude                       | -500 to 10,000 ft                  | -500 to 40,000 ft                |
| Vibration (C)                  | 1.5 g <sub>rms</sub> , 0.003 g²/Hz | 5 g <sub>rms</sub> , 0.026 g²/Hz |

- A. Units should be allowed to warm up/operate under non-condensing conditions before application of power. Derate output current and total output power by 2.5% per °C above 50°C.
- B. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.

C. Random vibration—10 to 2000Hz, 6dB/octave roll-off from 350 to 2000Hz, 3 orthogonal axes. Tested for 10 min./axis operating and 1 hr./axis non-operating.