

# 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,  $Dt < 0.2$  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  $\pm 5\%$ .

### Efficiency

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  $\mu$ A 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
- $\text{C}\text{E}$  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% /  $^{\circ}$ C typical on all outputs.

### Leakage Current

70  $\mu$ A under normal conditions (132 Vac @ 60 Hz). Maximum under single fault conditions (254 Vac @ 50 Hz), 130  $\mu$ A.

### 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  $\mu$ A 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	Notes
GPFC250-3.3	GPFM250-3.3	1	3.3 V	±5%	36 A	50 A	6.2 ± 0.6 V	2%	C
GPFC250-5	GPFM250-5	1	5.1 V	±5%	36 A	50 A	6.2 ± 0.6 V	2%	C
GPFC250-12	GPFM250-12	1	12 V	±5%	15 A	21 A	14 ± 1.1 V	2%	C
GPFC250-15	GPFM250-15	1	15 V	±5%	12 A	16.7 A	18.5 ± 1.5 V	2%	C
GPFC250-24	GPFM250-24	1	24 V	±5%	7.5 A	10.5 A	28 ± 2.5 V	2%	C
GPFC250-28	GPFM250-28	1	28 V	±5%	6.5 A	9 A	34 ± 2.8 V	2%	C
GPFC250-48	GPFM250-48	1	48 V	±5%	3.8 A	5.3 A	55 ± 4.0 V	2%	C

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

INPUT:

TB1

6-32, 3 PIN TERMINAL BLOCK

PIN 1) AC LINE

PIN 2) AC NEUTRAL

PIN 3) AC GROUND

SIGNALS: J2

AMP P.C.B. HEADER P/N 640456-5

MATING CONNECTOR P/N640440-5

PIN 1) DC GOOD

PIN 2) POWER FAIL

PIN 3) EXT OFF

PIN 4) +SENSE

PIN 5) -SENSE

FAN

AMP P.C.B. HEADER P/N 640456-2

MATING CONNECTOR P/N 640440-2

PIN 1) -

PIN 2) +

OUTPUT:

TB2

6-32, 4 PIN TERMINAL BLOCK 0.375 [9.53mm]CTR

AN OPTIONAL BUS BAR WITH 10-32 SCREWS ON HIGH-CURRENT MODELS IS AVAILABLE BY ADDING -B TO MODEL NUMBER

PINS 1-2) +Vout

PINS 3-4) RETURN

16A MAXIMUM RECOMMENDED CURRENT PER CONNECTOR PIN. MAX. SCREW PROTRUSION ABOVE CHASSIS = 0.120" [3.05MM].

OPTIONAL: COVER/FAN ASSEMBLY #09-250CF

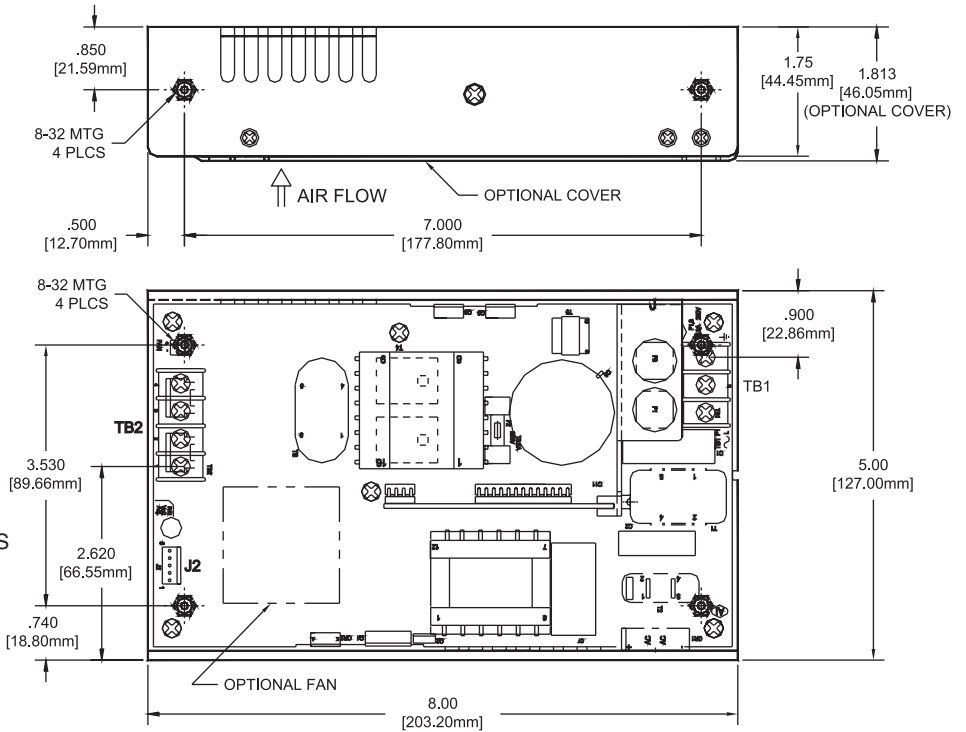
CAN BE INCLUDED BY ADDING -C TO

MODEL NUMBER

WEIGHT: 2.9 LBS. [1.32 kg] MAX.

TOLERANCES: X.XX=0.030 [0.76mm]

X.XXX+0.010 [0.25 mm]



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.

Environmental 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 g <sup>2</sup> /Hz	5 g <sub>rms</sub> , 0.026 g <sup>2</sup> /Hz