

# **GPFM1200 Medical**

## Single Output Power Factor Corrected

## 1200 WATT GLOBAL PERFORMANCE SWITCHERS

#### **FEATURES:**

- Eliminates isolation transformer requirement
- Ideal for distributed power applications
- Allows the use of commercial "off the shelf" dc/dc converts in medical system
- Active Soft-Start, 0.99 PF minimizes ac line disturbance
- Overtemperature Shutdown with advance warning
- External Inhibit, Enable, Power Good
- Auxiliary Voltage for peripheral logic
- Meets all medical EMC requirements
- 2 year warranty
- . (€ marked to LVD



## **SPECIFICATIONS**

#### Ac Input

85 - 264 Vac, 47 to 63 Hz.

#### Input Current

17 A line current maximum, at 90 Vac, 60 Hz with full rated load, power factor .99 typical, .96 minimum. Input current harmonic content meets the requirements of IEC 1000-3-2 A14 for all load conditions.

#### Input Protection

Internal ac fuse provided on all units blows only on unit failure. (Additional external fusing required for some medical applications.)

#### Turn-on

1.0 second maximum; overshoot < 2% at turn-on; < 1% at turn-off.

#### Hold-Up Time

21 ms minimum from loss of ac input at full load to the output decreasing 4%. Ac fail warning signal occurs at least 5 ms before the output decreases 4%.

#### Inrush Current

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

#### **Temperature Coefficient**

0.03%/oC, typical.

## **Transient Response**

300  $\mu s$  max. response time for return to within 0.5% of final value for a 50% load change within the load range of 25% to 100%, with  $\Delta i/\Delta t <$  0.2 A/ $\mu s$ . Maximum voltage deviation is 0.3%.

#### Overload Protection

Fully protected against short circuit and output overload. Power limiting is cycling type with automatic recovery.

#### Reverse Voltage

Outputs protected against momentary reverse current not to exceed 20 A peak for 10 ms max. with 0.5 A avg. Sustained reverse current at high levels may damage unit.

#### Efficienc

Minimum value at full rated load, nominal input voltage. 48 V units 80%.

## Medical Leakage Current

The maximum leakage current is as follows;

Conditions	Normal	Single Fault
132 Vac, 60 Hz	90 μΑ	80 μΑ
264 Vac, 60 Hz	200 μΑ	400 μΑ

### EMI / EMC Compliance

All models include built-in EMI filtering to meet the EMC requirements of IEC60601-1-2.

EMI SPECIFICATIONS	COMPLIANCE LEVEL	
Conducted Emissions Static Discharge Conducted RF Susceptibility Radiated RF Susceptibility Fast Transients/Bursts Surge Susceptibility Voltage Sags & Surges	EN55011, Class B; FCC Part 15, Class B EN61000-4-2, Level 3 EN61000-4-6, Level 3 EN61000-4-3, Level 3 EN61000-4-4, Level 3 EN61000-4-5, Level 3 EN61000-4-11, Level 4	

#### Safety

All medical models comply with the latest editions of UL2601-1, CSA-C22.2 No. 601.1, EN60601-1. CB certificate to EN60601 standard is available.

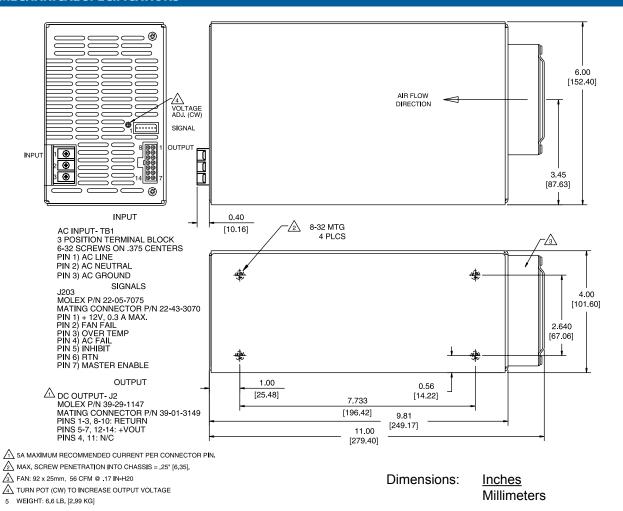
Signal	Pin	Description	
+12 V Fan Fail Over Temp AC Fail Inhibit	1 2 3 4 5	Auxiliary +12 V output, 0.3 A load maximum Output, indicating that the fan has failed Output, indicating excessive internal temperature Output, indicating failure of the input AC source Input, to shut down the power supply from an external command Common return for all the logic signals	
Master Enable	7	Input, to control the power supply	

Medical Model	Output Voltage (1)	Output Current (2)	Total Regulation (3)	Ripple and Noise (4)	OVP Set Point
GPFM1200-48	48 V	25 A	2%	480 mV p-p	51.0-59.0 V

#### Notes:

- 1.Output voltage is manually adjustable +5%.
- 2. Maximum continuous current rating is with integral fan.
- 3. Combined initial voltage set point, line, load and temperature regulation.
- 4.Differential mode noise measured with scope probe (20 MHz bandwidth) directly across output connector of the power supply with load terminated with 0.1  $\mu$ F capacitor.
- 5.Output is floating (500 Vac or +700 Vdc); either +Vout or Vout Return may be connected to chassis ground.

## **GPFM1200 MECHANICAL SPECIFICATIONS**



ENVIRONMENTAL SPECIFICATIONS	OPERATING	NON-OPERATING
Temperature (A)	0 to 50°	-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. Cooling provided by internal fan—heatsink temperatures should not exceed 90oC for extended periods in the installation. Derated maximum output power by 2.5% per degree C above 50oC.
- B. 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.
- C. Shock testing—half-sinusoidal, 10  $\pm$  3 ms duration,  $\pm$  direction, 3 orthogonal axes, total 6 shocks.

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