CONDOR
DC Power Supplies

# 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**
- **CE 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 µs 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/µs. 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.

Efficiency
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 µA | 80 µA |
| 264 Vac, 60 Hz | 200 µA | 400 µA |

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 | EN55011, Class B; FCC Part 15, Class B |
| Static Discharge | EN61000-4-2, Level 3 |
| Conducted RF Susceptibility | EN61000-4-6, Level 3 |
| Radiated RF Susceptibility | EN61000-4-3, Level 3 |
| Fast Transients/Bursts | EN61000-4-4, Level 3 |
| Surge Susceptibility | EN61000-4-5, Level 3 |
| Voltage Sags & Surges | 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.

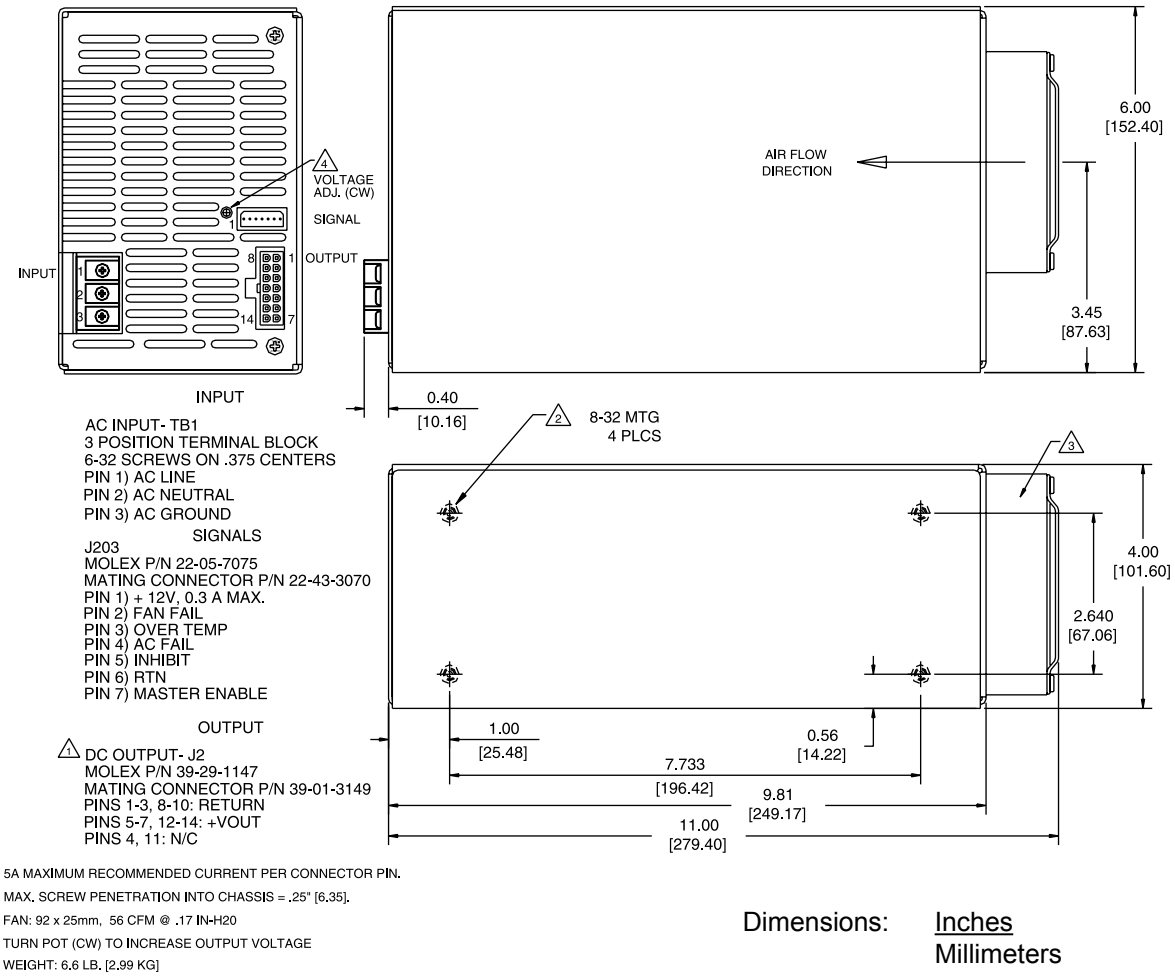
| Signal | Pin | Description |
|---|---|---|
| +12 V | 1 | Auxiliary +12 V output, 0.3 A load maximum |
| Fan Fail | 2 | Output, indicating that the fan has failed |
| Over Temp | 3 | Output, indicating excessive internal temperature |
| AC Fail | 4 | Output, indicating failure of the input AC source |
| Inhibit | 5 | Input, to shut down the power supply from an external command |
| RTN | 6 | Common return for all the logic signals |
| Master Enable | 7 | Input, to control the power supply |

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

| 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 µF 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 $g_{pk}$ | 40 $g_{pk}$ |
| Altitude | -500 to 10,000 ft | -500 to 40,000 ft |
| Vibration (C) | 1.5 $g_{rms}$ 0.003 $g^2$/Hz | 5 $g_{rms}$ 0.026 $g^2$/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 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.

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