# **GPFM115 Medical**

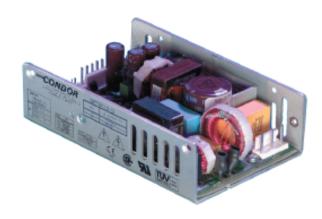
115 Watt Global Performance Switchers



CONDOR.

# 2 Year Warranty

- 115 Watts of continuous power with forced air
- Power factor corrected
- 74-81% efficiency
- Small package 3.3" x 5.25" x 1.5" inches
- Power fail warning, remote sense
- · Optional cover with cooling fan
- Medical Approval to UL2601-1, CSA-C22.2 No. 601.1, EN60601-1
- RoHS Compliant Model Available (G suffix)



# **International Safety Standard Approvals**



# **Specifications**

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

#### AC Input

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

#### Input Current

Maximum input current at 90 VAC, 60 Hz with full rated load is 1.7 A. Input current harmonic content meets the requirements of IEC1000-3-2 for all load conditions at 230 VAC input. Active input circuitry provides high power factor of .96 min, .99 typical.

# Inrush Current

Inrush 240 VAC is less than 37 A, averaged over the first AC halfcycle under cold start conditions. Limiting provided by internal thermistors.

# Input Protection

Internal AC fuse provided on all models. Fuse does not blow on overload or short circuit -- fuse blows only if a catastrophic failure occurs in the unit.

#### Leakage Current

90 μA normal conditions (132 VAC @ 60 Hz input) or 250 μA (264 VAC) single fault.

### **Output Power**

Continuous rating is 80 W with unrestricted natural convection, or 115 W with forced convection. All models capable of 110% of rated power for 60 sec., 10% duty cycle maximum.

#### **DC Output Specification**

Total regulation is the maximum deviation from the nominal voltage for all steady state loading conditions. Peak ratings are for 60 s maximum duration, 10% duty cycle. Consult factory for application assistance.

# Power Fail

TTL / 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 before there is insufficient power stored in the primary to sustain the output. Signal can sink 1.6 mA or source 400  $\mu$ A at 2.7 V (Fan-out = 1).

# Voltage Adjustment

Main output ±5%.

#### 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.

# Minimum Load

No minimum load required to maintain output specifications. An abrupt change in output current from > 90% to < 2% load may cause a false triggering of the power fail signal.

# **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,  $\Delta i/\Delta t$ <0.2 A/ $\mu$ s. Maximum voltage deviation is 3.5%.

#### **Hold-up Time**

25 ms minimum from loss of AC input at full load.

#### **Overload Protection**

Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit. Recovery after fault is automatic. Consult factory for specific condition limits.

#### Overvoltage Protection

Built in on all models - See voltage and current chart for individual model output limits. When OVP fires, the output converter stops providing input power to output. Output voltage decay is dependent upon loading.

#### Remote Sense

Provided as a standard feature on all models. Capable of compensating for  $0.25~\mathrm{V}$  total of cabling losses.

#### Thermal Shutdown

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



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Medical Model	RoHS Suffix*	Voltage Output	Output Adjustment	Output Maximum (A)	Maximum (B)	Output Peak	Total Regulation	OVP Setpoint	Ripple/ Noise	Notes
GPFM115-5	G	5.1 V	±5%	12 A	20 A	25 A	2%	6.2 ± 0.6 V	1%	С
GPFM115-12	G	12 V	±5%	6.7 A	9.6 A	10.8 A	2%	14 ± 1.1 V	1%	С
GPFM115-13	G	13 V	±5%	6.2 A	8.8 A	9.9 A	2%	15 ± 1.1 V	1%	С
GPFM115-15	G	15 V	±5%	5.3 A	7.7 A	8.7 A	2%	18.5 ± 1.5 V	1%	С
GPFM115-24	G	24 V	±5%	3.3 A	4.8 A	5.4 A	2%	28 ± 2.5 V	1%	С
GPFM115-28	G	28 V	±5%	2.9 A	4.1 A	4.6 A	2%	34 ± 2.8 V	1%	С
GPFM115-48	G	48 V	±5%	1.7 A	2.4 A	2.7A	2%	55 ± 4.0 V	1%	С

#### **Notes**

- \* Add "G" suffix to part number for RoHS compliant model. Contact factory for availability.
- A. Maximum continuous current rating for unrestricted convection cooling.
- B. Maximum continuous current rating with 150 LFM air or cover option.
- C. Add "-C" suffix for cover with fan option.

# **General Specifications (continued from p. 1)**

#### Efficiency

74 to 81% depending upon model.

#### **Temperature Coefficient**

0.03%/°C typical on all outputs.

#### Fan Output

An additional 12 VDC (nominal 10.5 V), 100 mA output suitable for powering a DC fan is included in all models. The fan output is referenced to +out. Due to high pk-pk noise and low regulation, it is not recommended that this output be used for any other purpose.

#### **EMI/EMC Compliance**

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

# **EMI SPECIFICATIONS**

COMPLIANCE LEVEL Static Discharge EN61000-4-2, 6 kV contact, 8 kV air RF Field Susceptibility EN61000-4-3, 3 V/meter EN61000-4-4, 2 kV, 5 kHz Fast Transients/Bursts Surge Susceptibility EN61000-4-5, 1 kV diff., 2 kV com. Conducted RF Immunity EN61000-4-6, 3V Voltage dip Immunity EN61000-4-11 Line Frequency Harmonics EN61000-3-2 Class A

### **Medical Safety Standards**

All models are Certified to be in compliance with the applicable requirements of UL 2601, CSA 22.2 No. 601.1-M90, IEC 601-1 (1988), EN 60601-1: 1990. (Consult factory for approval status).

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 g <sup>2</sup> /Hz	5 g <sub>rms</sub> . 0.026 g <sup>2</sup> /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. For operation in a confined space, moving air may be required. Under all conditions, the cooling vs. load profile should be such that chassis temperatures do not exceed 90°C for extended periods.

B. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.

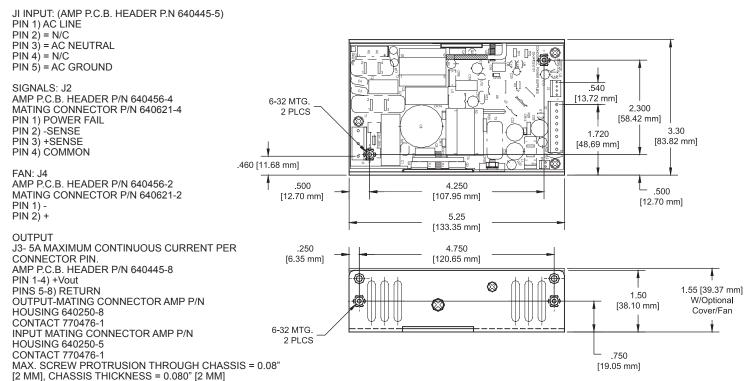
C. Random vibration—10 to 2000Hz, 6dB/octave roll-off from 350 to 2000Hz, 3 orthogonal axes. Tested for 10 min./axis operating and 1 hr./axis non-operating.

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# **Mechanical Specifications**

WEIGHT: 1.9 LBS [0.86 kg] MAX.



OPTIONAL COVER/FAN ASSEMBLY AVAILABLE P/N 09-115CF