

# GNT400

Front End Series 400W AC/DC

Universal Input Medical & ITE Power Supply



2 Year Warranty

- Medical & and ITE (EN60950) Certifications
- Compact 4" x 7" x 1.5" U Channel (1U compatible)
- 9.5 W/in<sup>3</sup>
- 100-240 VAC Input with Active PFC
- 12 to 48 V DC Output at 400W (300W convection rating)
- 5 Vdc, 100 mA Standby Output
- 12 Vdc Fan Output
- Approved to UL, CSA, and EN/IEC Standards
- Less than 100µA leakage
- Compliance to EN55011/22 Conducted Noise, Class B
- RoHS Compliant – Category 6



**CONDOR**™

International Safety Standard Approvals



## Specifications

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

<b>AC Input</b>	100-240VAC, 50/60 Hz, 1Ø. 90-270VAC, 45-65 Hz max	<b>Turn On Time</b>	500 ms max
<b>Input Current</b>	120VAC: 4.2A. 230VAC: 2.1A	<b>Hold-up Time</b>	20 ms at 400W
<b>Inrush Current</b>	Active Circuit, 37A max. peak	<b>Over/Undershoot</b>	3.5% max
<b>Input Fuses</b>	F1 and F2, 6.3A/250V for line and neutral	<b>Overload Protection</b>	Cycling type, 470W typical
<b>Power Factor</b>	0.99 typical, 0.96 minimum	<b>Overvoltage Protection</b>	See chart
<b>Earth Leakage Current</b>	100µA at 120VAC, 60 Hz Normal 400µA at 264VAC, 50 Hz, SFC	<b>Ripple and Noise</b>	1% pk-pk max., 20MHz BW 0.1µF and 10 µF caps on probe
<b>Output Power</b>	400W continuous with 200lfm airflow See chart for convection ratings	<b>ITE Safety Standards</b>	EN/CSA/IEC/UL62368-1
<b>Peak Output Power</b>	450W for 1 minute, 10% duty cycle	<b>Medical Safety Standards</b>	EN/IEC/UL 60601-1, CSA22.2 No. 601-1
<b>Output Voltage</b>	See chart	<b>Thermal Considerations</b>	Keeping the following components below these temp. indicates sufficient cooling: T5: 90°C max., T1: 100°C max
<b>Voltage Adjustability</b>	±5% minimum	<b>Switching Frequency</b>	Output: 170kHz ±8kHz, PFC: 140kHz ±8kHz
<b>Minimum Load</b>	Not required	<b>MTBF</b>	300K hours per Telcordia
<b>Total Regulation</b>	See chart	<b>Overtemperature Protection</b>	Automatic
<b>Transient Response</b>	500µs to 1%, 50% load step, $\Delta I/\Delta t < 0.2A/\mu s$ Maximum voltage deviation is 3.5%	<b>Efficiency</b>	91% typical at 230VAC 88% typical at 120VAC
<b>Remote Sense</b>	Compensates for up to 500mV voltage drop	<b>Temperature Coefficient</b>	0.03% per °C typical on all units

## Model Number Key

GNT 4 XX X X X G

- RoHS Compliant
- Cover Options: Blank = Standard Mini Cover, "E" = Cover with fan on the end, "T" = Cover with fan on top
- Output Connections: "B" = Busbars, "T" = Phoenix P/N 1731721
- Input Connections: "A" = EBY P/N 5002-03-N-12, "B" = Phoenix P/N 1732034, "C" = AMP P/N 540445-5 (pins 2 & 4)
- Output Voltage: (See models chart below)
- Output Power (Watts): "4" = 400W
- Product Family

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Model Number	Volts (V)	Output Current		Ripple & Noise	Total Regulation	OVP Threshold
		Convection	Fan Cooled			
GNT412ABG	12V	25.0A	33.3A	120mV	±2%	14.0 ± 1V
GNT415ABG	15V	20.0A	26.7A	150mV	±2%	17.6 ± 1V
GNT418ABG	18V	16.7A	22.2A	180mV	±2%	20.8 ± 1V
GNT424ABG	24V	12.5A	16.7A	240mV	±2%	26.5 ± 1V
GNT428ABG	28V	10.7A	14.3A	280mV	±2%	32.0 ± 1V
GNT436ABG	36V	8.3A	11.1A	360mV	±2%	39.0 ± 1V
GNT448ABG	48V	6.3A	8.4A	480mV	±2%	55.0 ± 2V

- Notes:**
1. When the input voltage is <90Vac, derate output power to 300W fan cooled or 250W convection.
  2. Using the T or E cover options allows for 400W continuous operation up to 40°C ambient.
  3. For 400W at 50°C, use 100 lfm fan cooling.

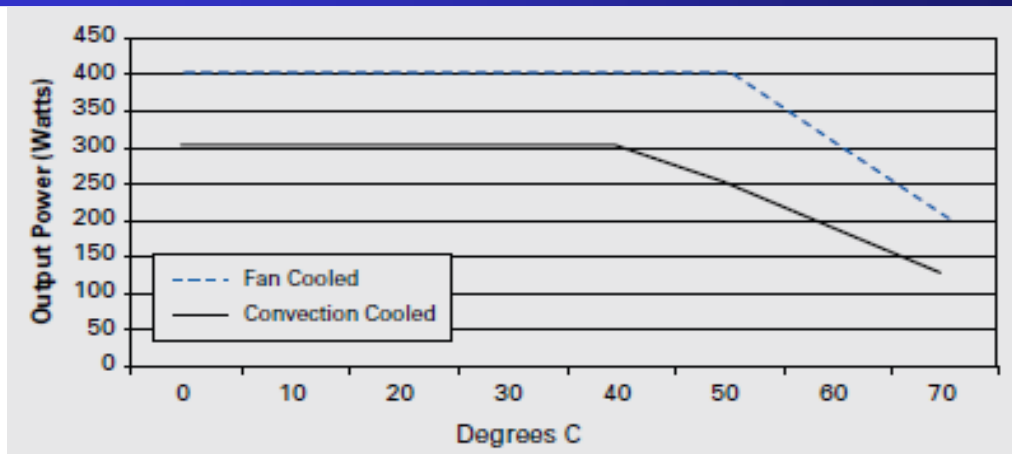
## EMI/EMC Compliance

Conducted Emissions	EN55011/22 Class B
Radiated Emissions	EN55011/22 Class A
Voltage Fluctuations	EN61000-3-3, complies
Static Discharge Immunity	EN61000-4-2, 6kV Contact Discharge, 8kV air discharge
Radiated RF Immunity	EN61000-4-3, 3V/m.
EFT/Burst Immunity	EN61000-4-4, 2kV/5kHz..
Line Surge Immunity	EN61000-4-5, 1kV differential, 2kV common-mode
Conducted RF Immunity	EN61000-4-6, 3Vrms
Power Frequency Magnetic Field Immunity	EN61000-4-8, 3A/m
Voltage Dip Immunity	EN61000-4-11 criteria A @ 250 Watts or less.
Line Frequency Harmonics	EN61000-3-2, Class A

## Environmental Specifications      Auxiliary Outputs and Signals

Operating Temperature	0 to 70°C (See chart)	PS On	Low to Inhibit
Storage temperature	-40 to 85°C	PS Off	TTL HI to Inhibit
Operating Altitude	-500 to 10,000 ft.	Pwr OK	HI when AC is OK, 100-200 msec delay
Non-operating Altitude	-500 to 40,000 ft.	Pwr OK	PF low – 4 msec warning
Relative Humidity	5% to 95%, non-condensing	DC OK	HI when output is >95% of nominal
Vibration	5 Hz – 500 Hz, 2.5g rms	5V Standby Output	Always ON, up to 100mA
Shock	Per MIL-STD-810E, 516.4 part IV	Fan Output	12Vdc @ 250mA (turns off during inhibit)

## GNT400 Output Power vs. Line Voltage & Temperature



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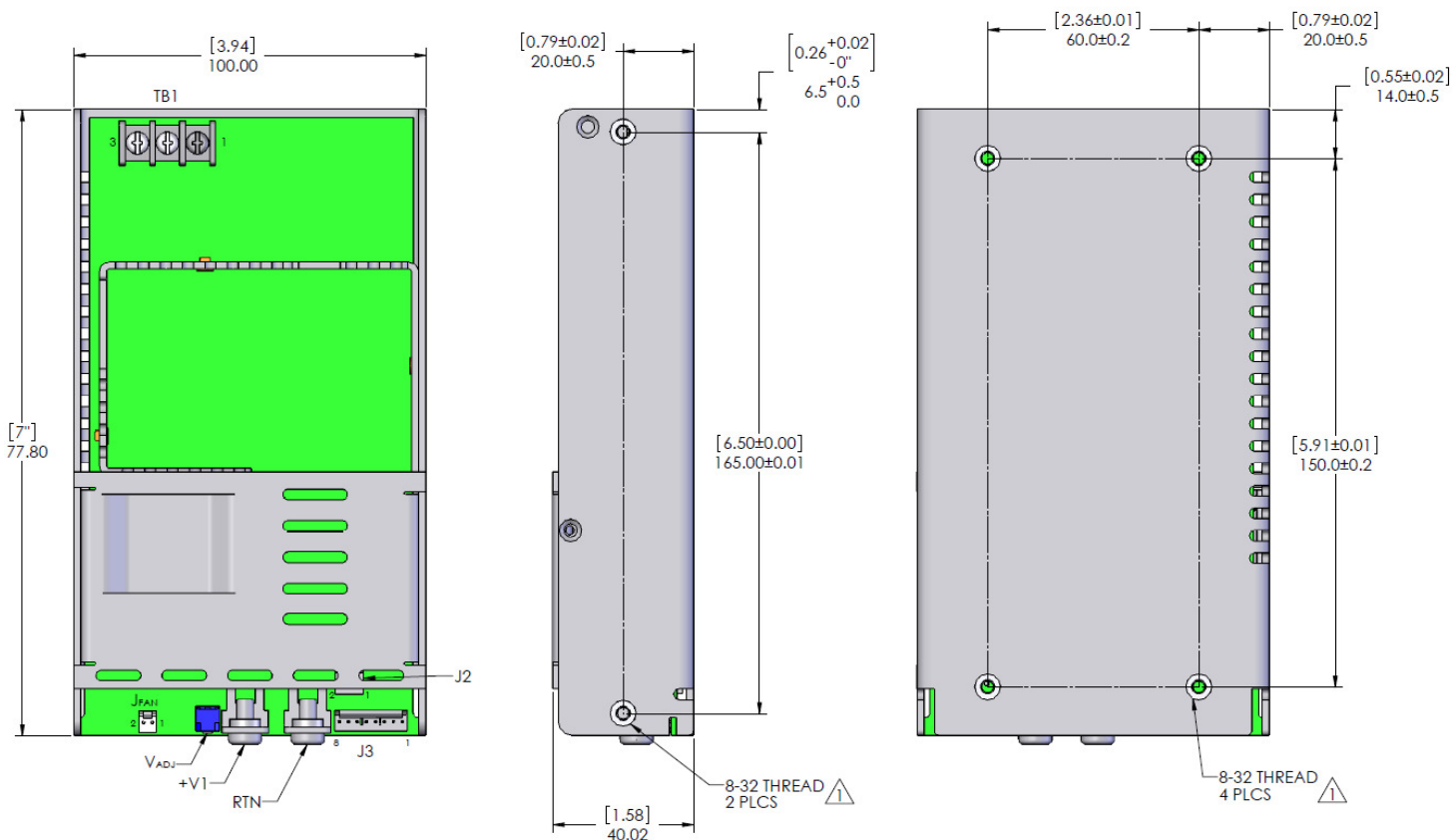


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## Mounting Options

# GNT400 SERIES

WEIGHT: 0.75 Kg [1.6 LBS]



INPUT: TB1 - EBY P/N 5002-03-N-12

- 1 AC LINE
- 2 AC NEUTRAL LINE
- 3 AC SAFETY GND

OUTPUT: BUSSBAR #1 +V1  
10-32UNC X .375 SCREW

BUSSBAR #2 RETURN  
10-32UNC X .375 SCREW

J FAN - AMP P/N 640456-2

- 1 +12V @ 0.25A
- 2 FAN RTN.

J3 - AMP P/N 640456-8

- 1 PS OFF
- 2 INHIBIT
- 3 PWR OK
- 4 DC OK
- 5 SIGNAL RTN
- 6 +5V @ 0.1A
- 7 -SENSE
- 8 +SENSE

TOLERANCE: MOUNTING HOLES ONLY  
CENTER-TO-CENTER

- XX.XX = ± 0.2 [ .008 ]
- XX.X = ± 0.5 [ .020 ]
- XX. = ± 1.0 [ .039 ]

### Mating Connectors (Tyco/Amp)

Location	Option	Type
Input	A	#6-32 Lug .325 CTR
	B	Wire
	C	Amp 640250-5 and 3-770476-1
Output	B	#10-32 Lug
	T	Wire
J3		Amp 64xxxx-8 with sockets
J Fan		Amp 64xxxx-2 with sockets

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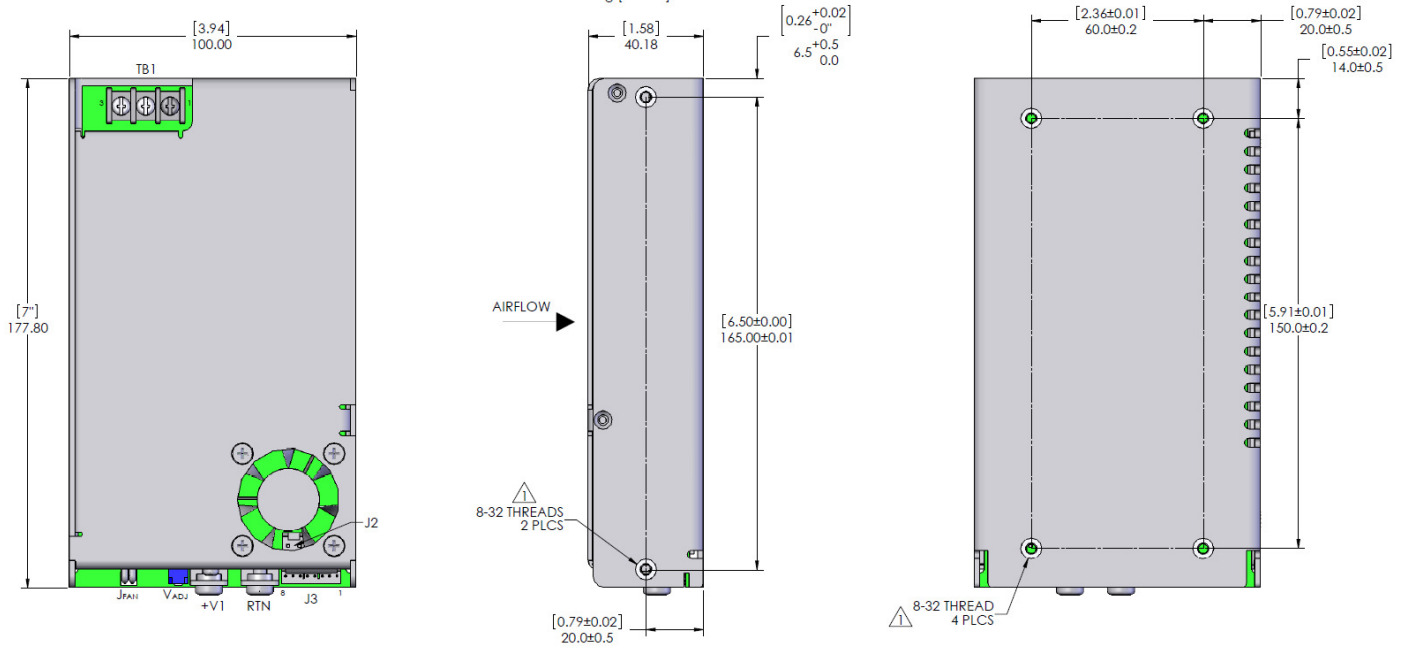


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## Mounting Options (continued)

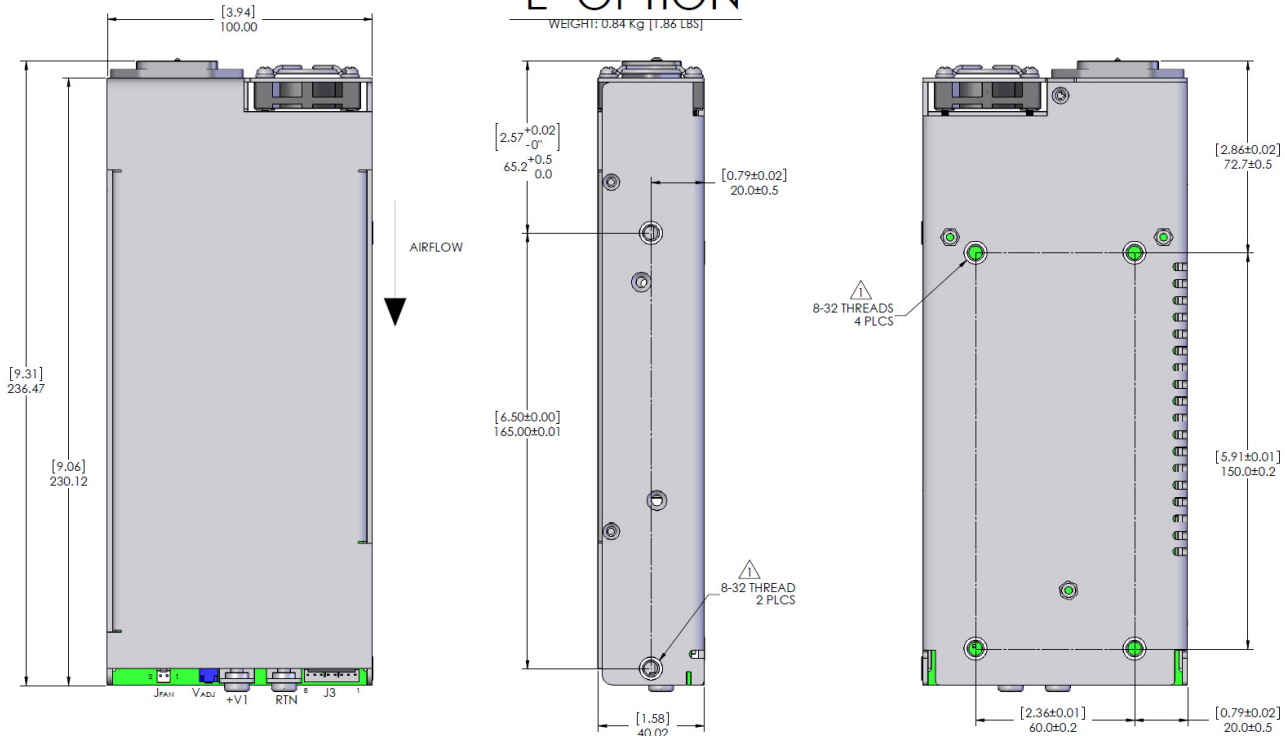
### "T" OPTION

WEIGHT: 0.75 Kg [1.6 LBS]



### "E" OPTION

WEIGHT: 0.84 Kg [1.86 LBS]



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