

# GNT400

## Front End Series 400 Watt AC/DC



**Universal Input Power Supply**

**2 Year Warranty**

- 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 400 W
- 5 Vdc 100 mA Standby Output
- 12 V DC Fan Output
- Approved to UL, CSA and EN/IEC Standards
- 300 W Convection Rating
- Less than 100  $\mu$ A Leakage
- Compliance to EN55011/22 Conducted Noise B
- RoHS Compliant-Category 6



The GNT400 provides 400 W of DC output power in a compact package. Standby, control and monitoring inputs and outputs provide all the essential elements for a variety of applications including, single board computers, running motors, pumps, and solenoids. Approval to EN60601-1 and EN60950 improves design-in time and reduces end system compliance costs.



### Specifications

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

<b>Input Voltage Range</b> Universal input, 80 - 270 VAC (See note).	<b>Transient Response</b> 500 $\mu$ s to 1%, 0.2 A/ $\mu$ s, 3.5% for 50% step load change.
<b>Input Frequency</b> 45 - 65 Hz	<b>Turn On Time</b> 500 ms max.
<b>Input Current</b> 120 VAC, 4.2 A. 230 VAC, 2.1 A.	<b>Hold-up Time</b> 20 ms at 400 W.
<b>Inrush Current</b> Active circuit, 37 A max. peak.	<b>Over/Undershoot</b> 3.5% max.
<b>Input Fuse</b> F1,F2, 6.3 A for line and neutral.	<b>Overload Protection</b> Cycling type, 470 W typical.
<b>Power Factor</b> 0.99 typical, 0.96 minimum.	<b>Overvoltage Protection</b> See chart.
<b>Earth Leakage Current</b> 100 $\mu$ A at 120 Vac, 60 Hz Normal. 400 $\mu$ A at 264 V, 50 Hz Single fault.	<b>Ripple and Noise</b> 1% pk-pk max., 20 MHz BW.
<b>Output Power</b> 400 W with fan cooling. See derating chart for other conditions.	<b>Remote Sense</b> Compensates for up to 500 mV.
<b>Peak Output Power</b> 450 W for 1 minute, 10% duty cycle.	<b>Commercial Safety Standards</b> UL/EN/CSA 60950-1.
<b>Output Voltage</b> See chart.	<b>Medical Safety Standards</b> UL/EN/IEC60601-1
<b>Voltage Adjustability</b> +/- 5% minimum.	<b>Thermal Considerations</b>
<b>Minimum Load</b> Not required.	<b>Component</b> T5 cover indentation T1 Inside coil
<b>Total Regulation</b> See chart.	<b>Recommended Max. Temperature</b> 90°C 100°C
	<b>Switching Frequency</b> Output 170 kHz +/-8 kHz. PFC 140 kHz +/-8 kHz.

# GNT400

## Front End Series 400 Watt AC/DC

### Universal Input Power Supply

Model Number	Volts	Fan Cooled Amps	Convection Amps	Ripple & Noise	Total Regulation	OVP Threshold
GNT412ABG	12 V	33.3 A	25 A	120 mV	+/-2%	14 V +/-0.75 V
GNT424ABG	24 V	16.7 A	12.5 A	240 mV	+/-2%	26.5 V +/-1 V
GNT428ABG	28 V	14.3 A	10.7 A	280 mV	+/-2%	34 V +/-1 V
GNT436ABG	36 V	11.1 A	8.3 A	360 mV	+/-2%	39 V +/-1 V
GNT448ABG	48 V	8.4 A	6.3 A	480 mV	+/-2%	55 V +/-2 V

#### Note

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

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

##### MTBF

300K hours per Telcordia.

##### Overtemperature Protection

Automatic.

##### Efficiency

typical 88% @ 120VAC, 91% @ 240.

##### Signals

PS On - Low to Inhibit.  
 PS Off - TTL Hi to Inhibit.  
 Pwr OK - Hi when AC is OK 100-200 ms delay.  
 Pwr OK - PF Low 4 ms warning.  
 DC OK - Hi when output is > 95 %.

##### Fan Output

12 Vdc @ 250 mA (turns off during Inhibit).

##### 5 V Standby Voltage

Always on, up to 100 mA.

##### EMC/EMI Information

Conducted Emissions	EN55011/22	Class B
Radiated Emissions	EN55011/22	Class A
Line freq. Harmonics	EN61000-3-2	Class A
Voltage Fluctuations	EN61000-3-3	Complies
ESD	EN61000-4-2	Cont. 6 kV, Air 8 kV
Radiated Immunity	EN61000-4-3	3 V/m
Fast Transients (EFT)	EN61000-4-4	2 kV 5 kHz
Line Surge Immunity	EN61000-4-5	2 kV CM, 1 kV Dif.
Conducted Immunity	EN61000-4-6	3 Vrms
Power Freq. Mag. Field	EN61000-4-8	3 A/m
Voltage Dip Immunity	EN61000-4-11	Contact Factory

#### Environmental Specifications

##### Operating Temperature

0 to 70°C (see chart).

##### Storage Temperature

-40 to +85°C.

##### Operating Altitude

-500 to 10,000 ft.

##### Non-operating Altitude

-500 to 40,000 ft.

##### Relative Humidity

5% - 95%.

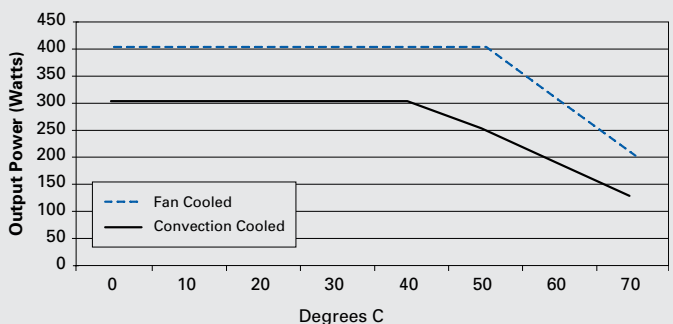
##### Vibration

5 Hz- 500 Hz, 2.5 g<sub>rms</sub>.

##### Shock

MIL-STD-810E, 516.4 part IV.

#### Output Power Derating Curve



# GNT400

Front End Series 400 Watt AC/DC

Universal Input Power Supply

## 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

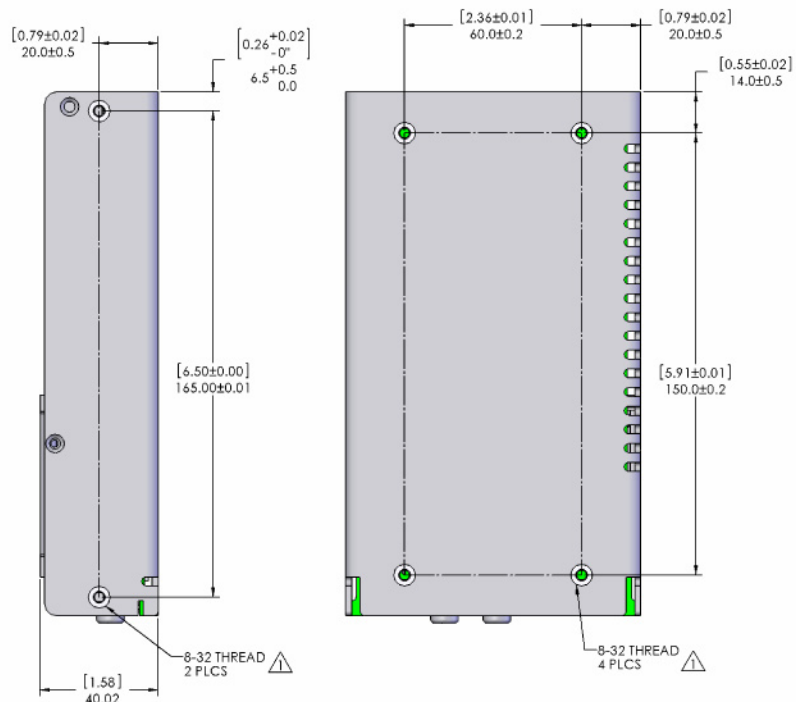
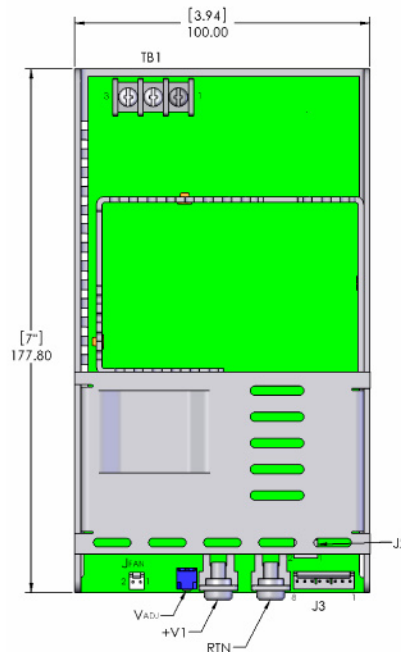
- |   |            |
|---|------------|
| 1 | PS OFF     |
| 2 | INHIBIT    |
| 3 | PWR OK     |
| 4 | DC OK      |
| 5 | SIGNAL RTN |
| 6 | +5V @ 0.1A |
| 7 | - SENSE    |
| 8 | + SENSE    |

OPTIONAL: J2 - AMP P/N 640445-2

- |   |         |
|---|---------|
| 1 | +V2 OUT |
| 2 | V2 RTN  |

TOLERANCE: MOUNTING HOLES ON Y  
CENTER-TO-CENTER

XX.XX =  $\pm 0.2$  [0.008]  
XX.X =  $\pm 0.5$  [0.020]  
XX. =  $\pm 1.0$  [0.039]



# GNT400

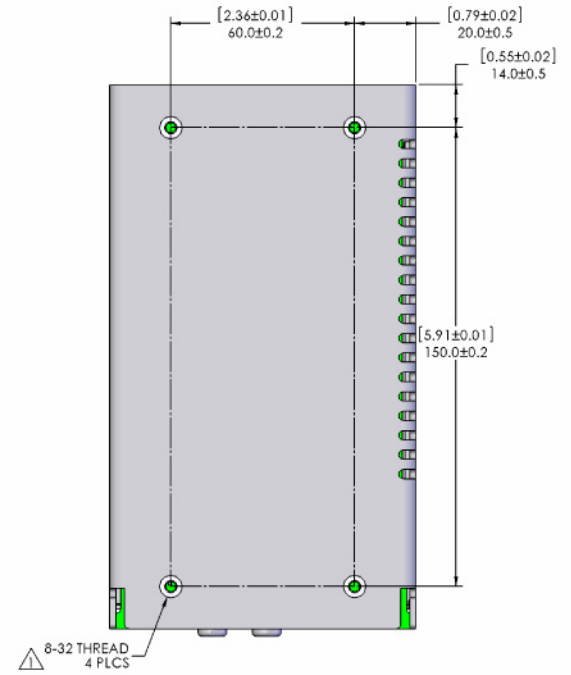
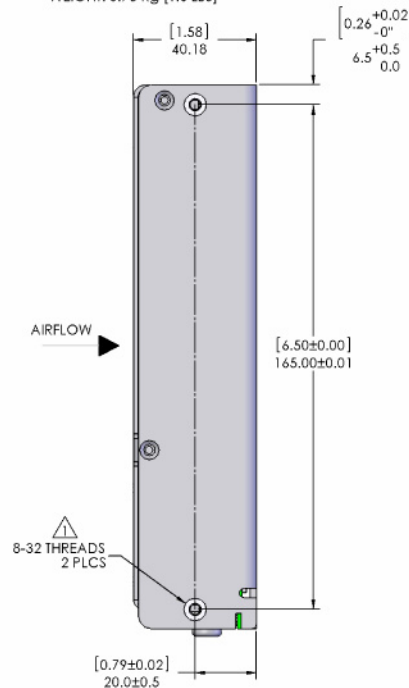
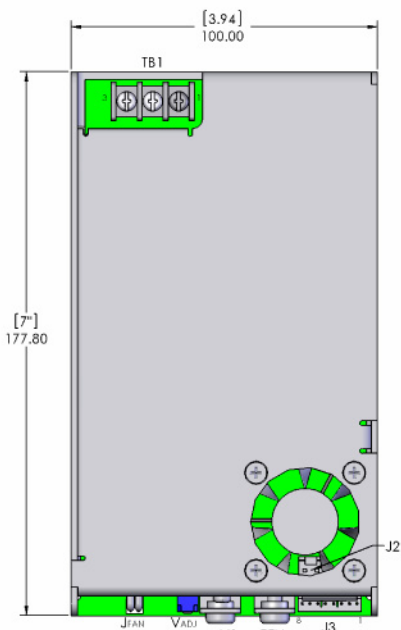
Front End Series 400 Watt AC/DC

Universal Input Power Supply

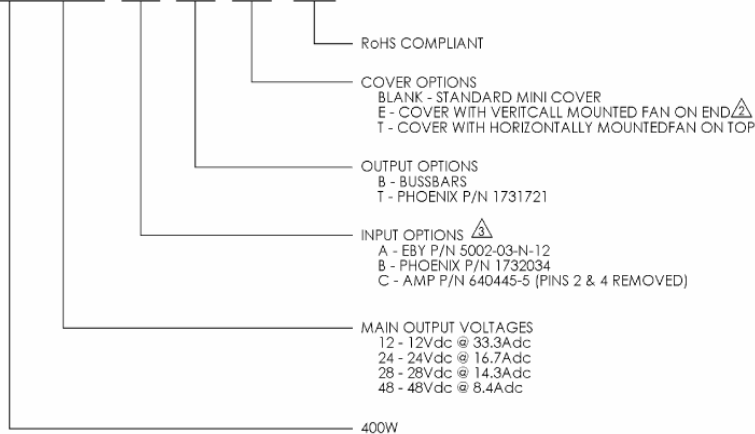
Mounting Options (continued from p.3)

## "T" OPTION

WEIGHT: 0.75 Kg [1.6 LBS]



## GNT4XX X X X G



# GNT400

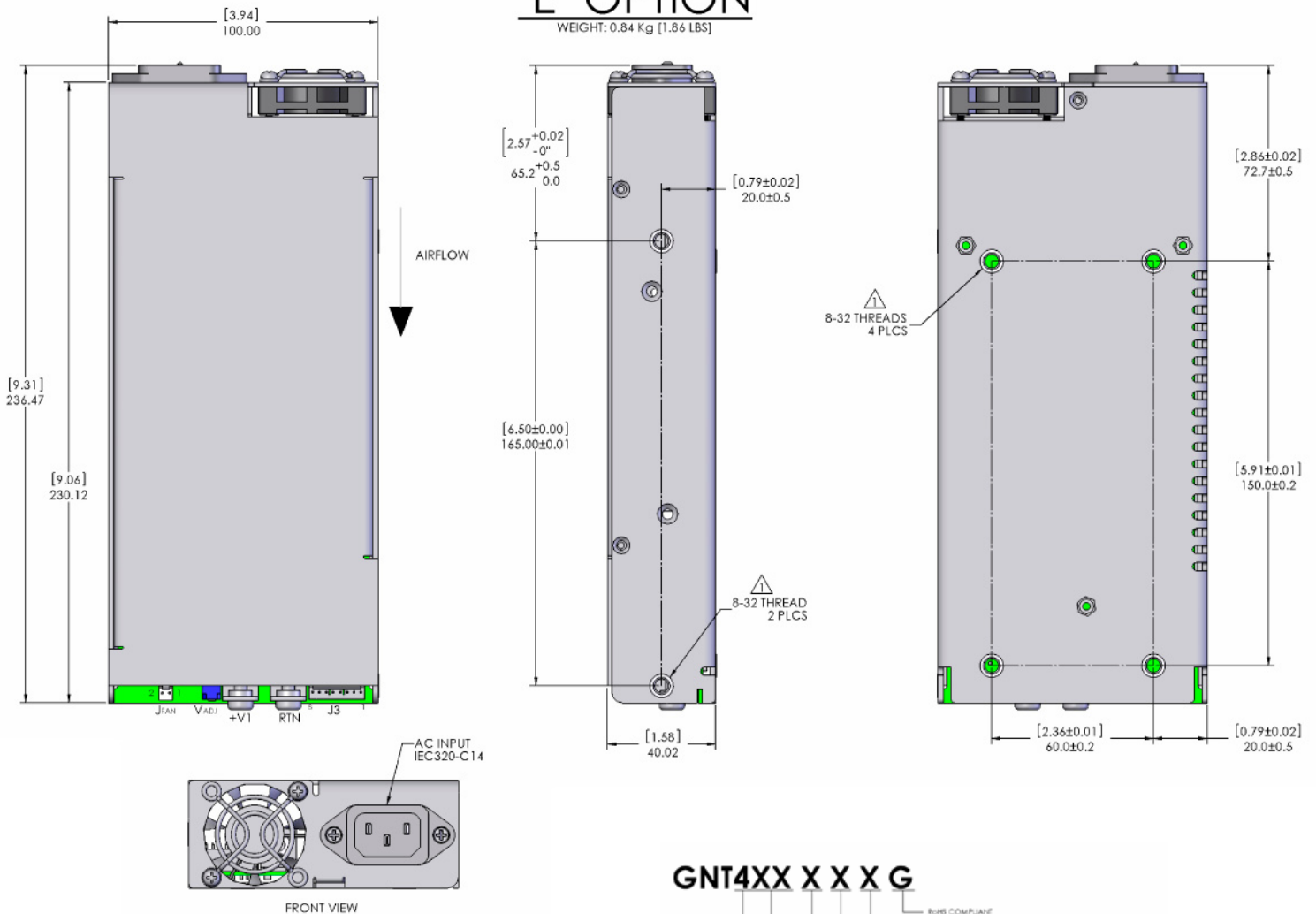
Front End Series 400 Watt AC/DC

Universal Input Power Supply

Mounting Options (continued from p.4)

## "E" OPTION

WEIGHT: 0.84 Kg [1.86 LBS]



## GNT4XX X X X G

- ROHS COMPLIANT
- COVER OPTIONS
  - BLANK - STANDARD MINI COVER
  - E - COVER WITH VERTICAL MOUNTED FAN ON BRAGG
  - T - COVER WITH HORIZONTALLY MOUNTED FAN ON TOP
- OUTPUT OPTIONS
  - B - BUSBARS
  - T - PHOENIX P/N 1731721
- INPUT OPTIONS
  - A - IEC P/N 5002-25/11/12
  - B - PHOENIX P/N 1700034
  - C - AMP P/N 44343-3 (PINS 2 & 4 REMOVED)
- MAIN OUTPUT VOLTAGES
  - 12 - 12Vdc @ 33.3A/dc
  - 24 - 24Vdc @ 16.7A/dc
  - 28 - 28Vdc @ 14.3A/dc
  - 48 - 48Vdc @ 8.4A/dc
- 400W

