

# 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
- Optional Auxiliary Voltage
- 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.

**CONDOR**

### Specifications

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

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

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| 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  |
| 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%.

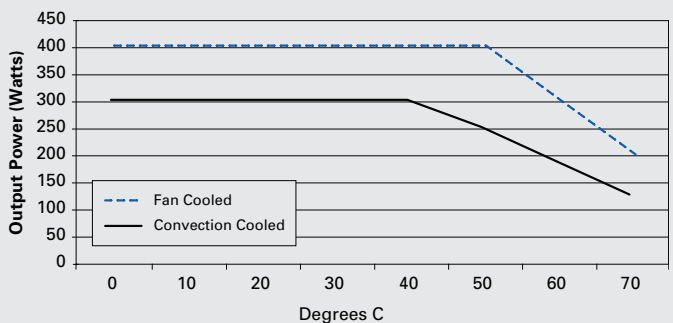
##### Vibration

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

##### Shock

MIL-STD-810E, 516.4 part IV.

#### Output Power Derating Curve



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## Mounting Options

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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  $\oplus$

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.

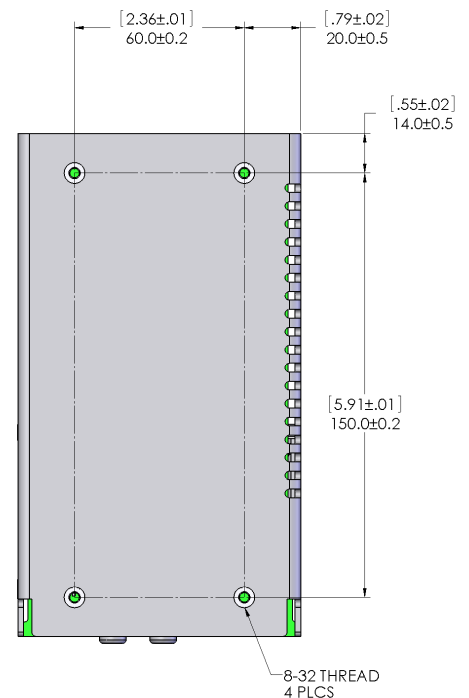
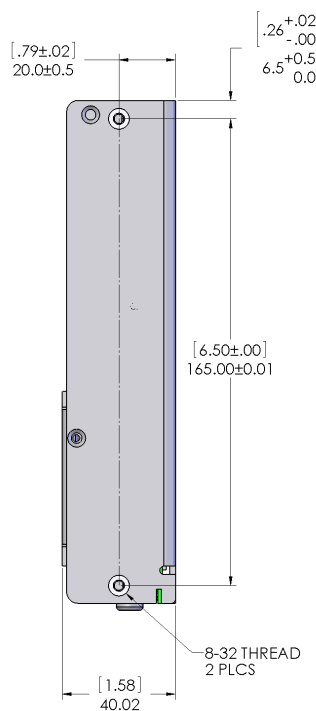
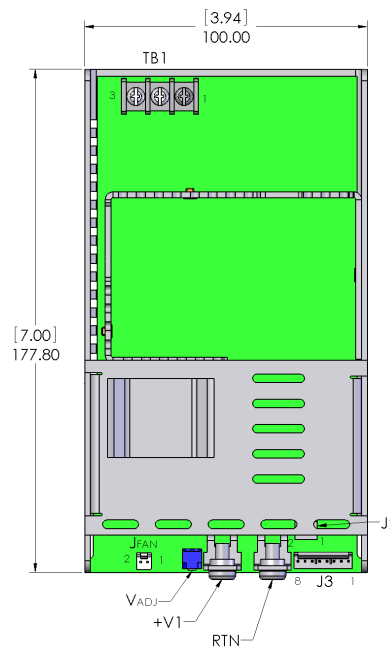
J3 - AMP P/N 640456-8

- 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 =  $\pm 0.2$  [ .008 ]  
XX.X =  $\pm 0.5$  [ .020 ]  
XX. =  $\pm 1.0$  [ .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   |

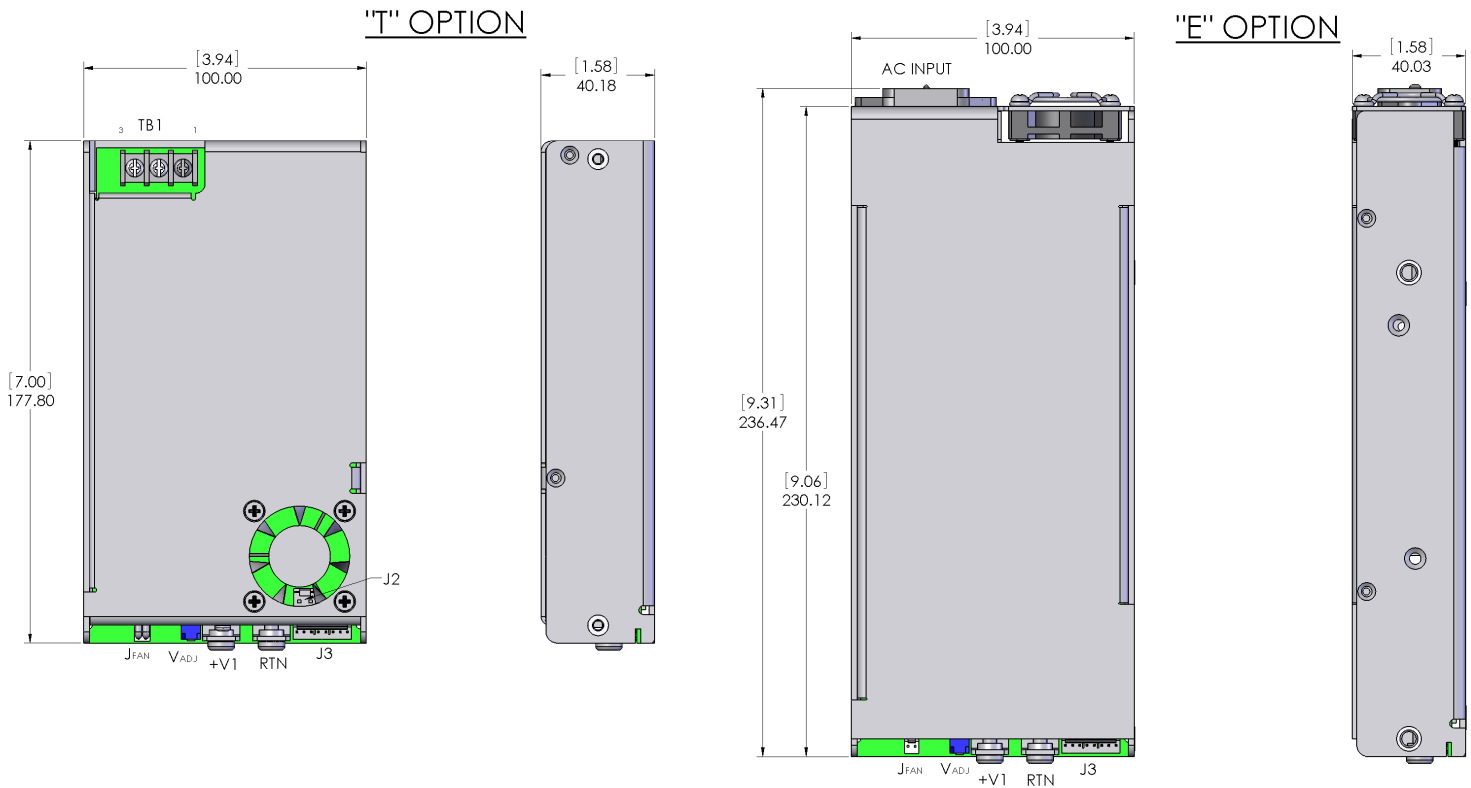


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## Mounting Options (continued from p.3)



## GNT4XX X X X G

