

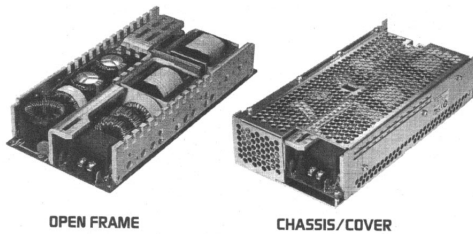
# 400 WATTS

## NXT-400 SERIES

## OUTPUT SPECIFICATIONS

### Features

- RoHS Compliant
- 2 Year Warranty
- High Efficiency, 85% typical
- High Power Density, 8.5 W/cu in.
- Compact 3.9" X 8.0" X 1.5" Size
- EN 60950-1 ITE Certification
- EN 60601-1 Medical Certification
- EMC to EN 61000-6-2 & EN 60601-1-2
- Advanced SMT Design
- Optional Chasis & Cover
- Optional Single Wire Load Sharing
- Optional Remote Inhibit/Enable



Total Output Power at 225w Convection Cooled, Open  
50C Frame 400W  
300 LFM Forced Air, Open Frame

Power Derating 2.5 W<sub>out</sub> / 1V<sub>in</sub> below 100 V<sub>in</sub>  
Voltage Centering +/-0.5% (50% Load)  
Voltage Adjust Range 95-105%

Load Regulation 0.5% (0-100% load change)  
Source Regulation 0.5%

Noise 1.0% or 100mV whichever is greater

Transient Response Output recovers to within 1% of initial set point due to a 50% step load change, 500uS maximum, 4% maximum deviation.

Turn on Overshoot None

Overvoltage Protection Latching, between 110% and 150% of rated output voltage.


Overpower Protection 110-130% rated P<sub>out</sub>, cycle on/off, auto recovery


Hold Up Time 16 mS min., Full Power, 85-264V Input


Start Up Time 3 Seconds, 120V Input


### SAFETY SPECIFICATIONS

General Protection Class: I  
Overvoltage Category: II  
Pollution Degree: 2

 Underwriters Laboratories File E137708/E140259  
UL 60950-1 First Edition 60601-1 First Edition  
UL

 CB Report per IEC 60950-1(2001) First Edition All National Deviations  
CB Certificates per IEC 60601-1(1988) Second Edition A1, A2

 UL Recognition Mark for Canada File E137708/E140259  
CAN/CSA-C22.2 No. 60950-1-03  
CAN/CSA-C22.2 No. 601-1-M90 with updates 1 and 2

 TUV EN 60950-1:2001 EN 60601-1/A2: 1995

 Low Voltage Directive

### INPUT SPECIFICATIONS

Source Voltage 85-264 Volts AC, 120-370 Volts DC

Frequency Range 47-63 Hz

Input Protection Internal 10A Time Delay fuse

Peak Inrush Current 50A (cold)

Efficiency 85% Typical, Full Power varies by model

Power Factor 0.95 (Full Power, 230V), 0.98 (Full Power, 120V)

### ENVIRONMENTAL SPECIFICATIONS

Ambient Operating 0°C to +70°C

Temperature Range Derating: See Power Rating Chart

Thermal Shutdown Output voltage is inhibited during excessive internal temperatures, automatic reset.

Ambient Storage Temp. -40°C to +85°C

## GENERAL SPECIFICATIONS

<b>Deilectric Strength:</b>	
<b>Reinforced Insulation</b>	<b>5656 VDC,Primary to Secondary,1 Sec.</b>
<b>Basic Insulation</b>	<b>2545 VDC,Primary to Ground,1 Sec.</b>
<b>Operational Insulation</b>	<b>707 VDC,Secondary to Ground,1 Sec.</b>
<b>Leakage Current</b>	<b>&lt;300uA Earth Leakage Current</b>
<b>Power Fail Signal</b>	<b>Logic low with input power failure 10 ms minimum prior to output 1 dropping 1%.</b>
<b>Remote Inhibit (optional)</b>	<b>Isolated. Contact closure inhibits output.</b>
<b>Load Share (optional)</b>	<b>Single wire current sharing with return via negative sense return. Minimum current share load is 10% of each module's output current rating. Maximum output voltage deviation between modules is 5% for 2.5 through 5V models and 400mV for remaining models.</b>
<b>Standby Power (optional)</b>	<b>Isolated 5Vdc +/- 10%,10mA available only with Remote Inhibit option.</b>
<b>Remote Sense</b>	<b>400mV compensation of output cable losses</b>
<b>Mean-Time Between Failures</b>	<b>100,000 Hours min.,MIL-HDBK-217F,25 C,GB</b>
<b>Weight</b>	<b>2.65 Lbs Open Frame 3.60 Lbs Chassis and Cover</b>

## ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS

<b>Electrostatic Discharge</b>	<b>EN 61000-4-2</b>	<b>+/-6kV Contact Discharge +/-8kV Air Discharge</b>
<b>Radiated Electro-magnetic Field</b>	<b>EN 61000-4-3</b>	<b>80-2500MHZ, 10V/m, 80%AM</b>
<b>EFT/Bursts</b>	<b>EN 61000-4-4</b>	<b>+/-2kV</b>
<b>Surges</b>	<b>EN</b>	<b>+/-2kV</b>

Range

Operating Relative Humidity Range 20-90% non-condensing

Altitude 10,000ft. ASL Operating  
40,000ft. ASL  
Non-operating

Temperature Coefficient 0.02%/oC

Vibration 2.5g, 10Hz.-2KHz per MIL-STD-810F Method 514.5

Shock 20g, peak per MIL-STD-810F Method 516.5

## ORDERING INFORMATION

Please specify the following optional features when ordering:

C - Chassis

CO -Cover

RI - Remote Inhibit


LS - Single Wire Load Sharing


LSEVB -

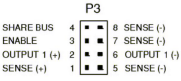
Load Share Evaluation Board

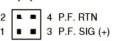
All specifications are maximum at 25<sup>o</sup> C unless otherwise stated and are subject to change without notice.


## CONNECTOR SPECIFICATIONS

<b>P1</b>	<b>AC Input</b>	Terminal block with 6-32 screws on 0.325 centers mates with #6, spade terminals. (8in-lb max)
		

<b>P2</b>	<b>DC Output</b>	10-32 screw down terminal mates with #10 ring tongue terminal.(10 in-lb Max)
		

<b>P3</b>	<b>Load Share,Sense</b>	.100 friction lock header mates with Molex 22-55-2081 or equivalent crimp terminal housing with Molex 71851 or crimp equivalent terminal.
		

<b>P4</b>	<b>Power Fail</b>	.100 friction lock header mates with Molex 22-55-2041 or equivalent crimp terminal housing with Molex 71851 or equivalent crimp terminal.
		

<b>P5</b>	<b>Inhibit, Standby Power</b>	.100 friction lock header mates with Molex 22-55-2041 or equivalent crimp terminal housing with Molex 71851 or equivalent crimp
		

**61000-4-5** Earth **Line to**  
**+/-1kV Line to**  
**Line**

terminal.  
 .187 quick disconnect  
 terminal.



Ground

<b>Conducted Immunity</b>	<b>EN 61000-4-6</b>	<b>.15-80MHz., 10V, 80% AM</b>
<b>Voltage Dips</b>	<b>EN 61000-4-11</b>	<b>95% Dip,10ms 30% Dip,500ms 60% Reduction, 1s (Criteria B)</b>

**Voltage Interruptions** **EN 61000-4-11** **95% Reduction,5s**

<b>Radiated Emissions</b>	<b>EN 55011/22, FCC Part 15</b>	<b>Class B</b>
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<b>Conducted Emissions</b>	<b>EN 55011/22,Class B FCC Part 15</b>
<b>Harmonic Current Emissions</b>	<b>EN 61000-3-2Compliance</b>

**Magnetic Field Immunity** **EN 61000-4-830A/m, 50/60Hz.**

**Voltage Fluctuations and Flicker** **EN 61000-3-3Compliance**

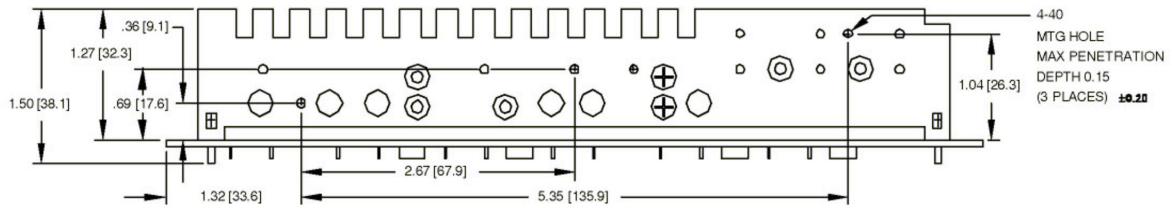
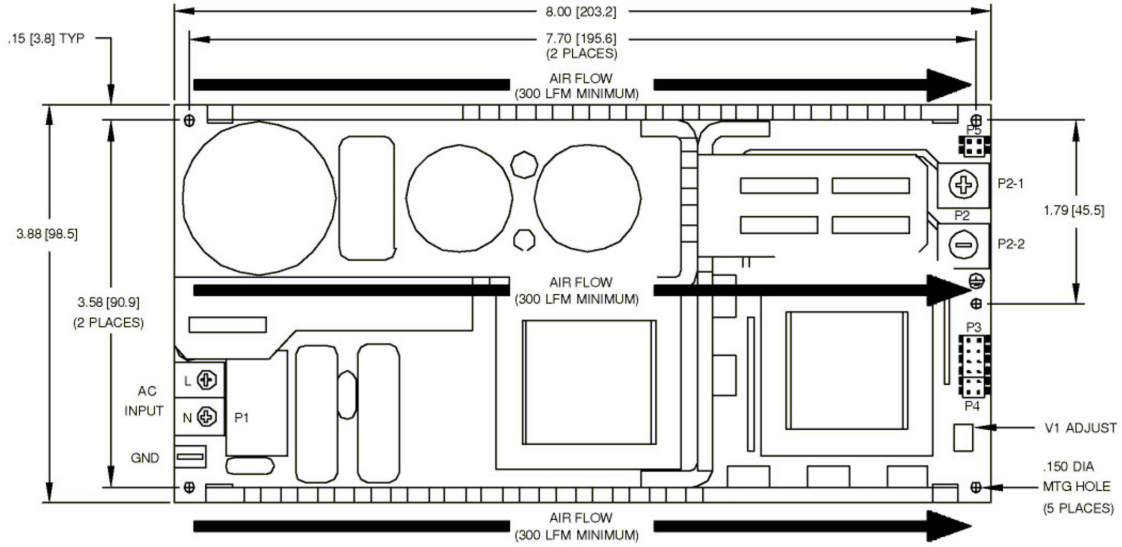
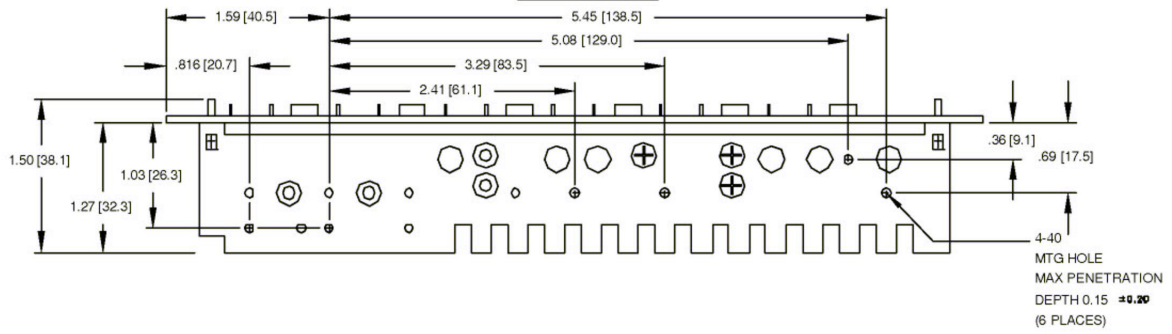
**Power Factor** **EN 61000-3-2Compliance**

**MODEL LISTING**

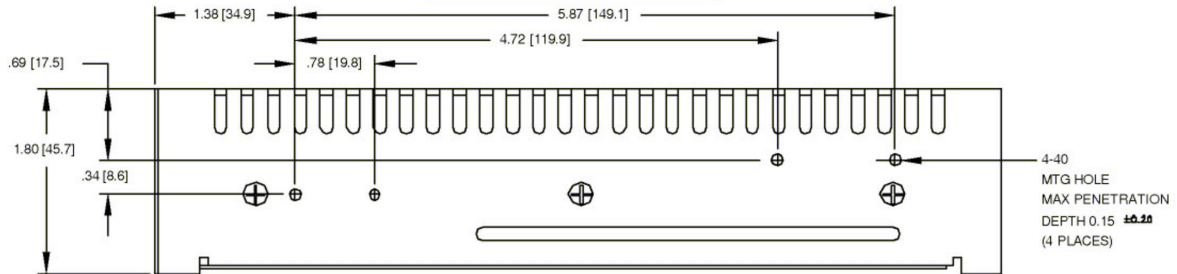
Model	OPEN 300 LFM	FRAME CONVECTION	CHASSIS/ 300 LFM	COVER CONVECTION
		COOLED		COOLED
NXT-400-1001	2.5V/80.0A	2.5V/45.0A	2.5V/72.0A	2.5V/40.5A
NXT-400-1002	3.3V/80.0A	3.3V/45.0A	3.3V/72.0A	3.3V/40.5A
NXT-400-1003	5V/80.0A	5V/45.0A	5V/72.0A	5V/40.5A
NXT-400-1004	12V/33.3A	12V/18.8A	12V/29.9A	12V/16.9A
NXT-400-1005	15V/26.7A	15V/15.0A	15V/24.0A	15V/13.5A
NXT-400-1006	24V/16.7A	24V/9.4A	24V/15.0A	24V/8.5A
NXT-400-1007	28V/14.3A	28V/8.0A	28V/12.8A	28V/7.2A
NXT-400-1008	48V/8.3A	48V/4.7A	48V/7.5A	48V/4.2A

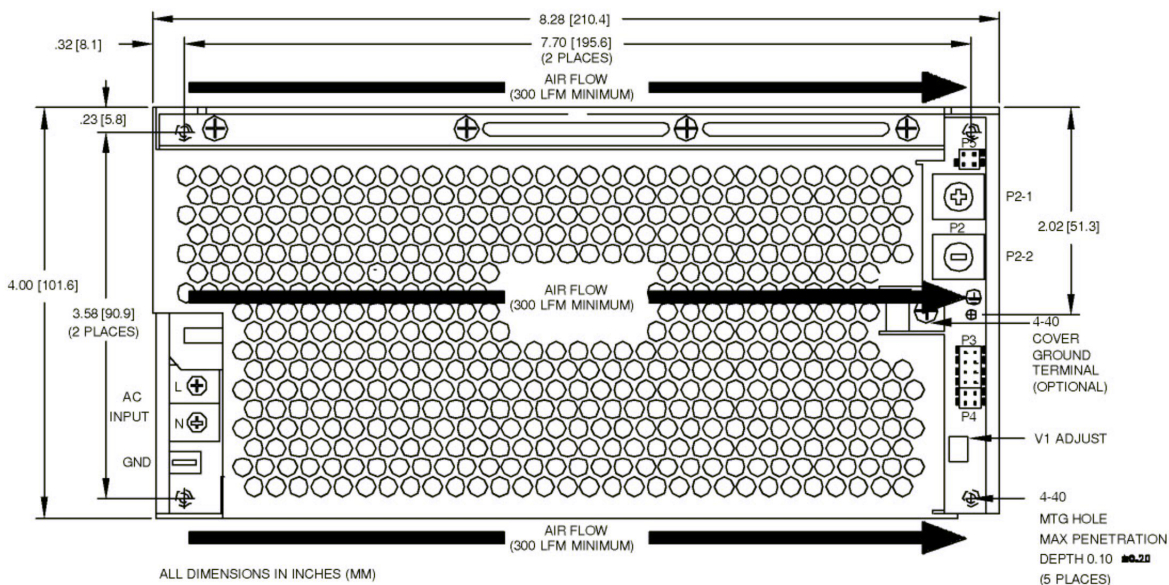
**NXT-400 SERIES MECHANICAL SPECIFICATIONS**

**OPEN FRAME**



**OPTIONAL CHASSIS/COVER**

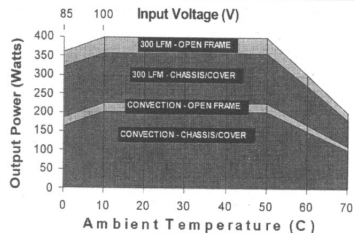




## APPLICATIONS INFORMATION

1. Sufficient area must be provided around power supply to allow natural movement of air to develop in convection cooled applications.
2. 300 linear feet per minute (minimum) of airflow must be maintained along all outside surfaces of exposed heatsinks or chassis. See recommended air flow diagram as a guideline.
3. Generally, adequate cooling is provided when semiconductor case temperatures do not exceed 75° C rise and transformer temperature does not exceed 80° C rise at any specified ambient temperature.
4. This product is intended for use as a professionally installed component within information technology, industrial and medical equipment and is not intended for stand alone operation. Common RF shielding precautions may need to be taken to assure emissions compliance. Refer to operating instructions for additional information.
5. This product includes only one fuse in the input circuit. In consideration of clause 57.6 of UL 60601-1, a second fuse may be required in the end product.
6. Low forward voltage drop oring diodes must be used in all load sharing applications in 2.5 through 15 Volt models. Oring diodes must be used on 24 through 48 Volt models used in fault tolerant applications but are optional in power boosting applications. Oring diode power dissipation must be subtracted from the maximum output power rating of each model.
7. Current carrying conductors in load sharing applications must be short and symmetrical. Remote sense conductors should be a twisted pair. The use of an appropriately rated low impedance capacitor across the load will increase noise immunity.
8. Refer to Load Share Evaluation Board data sheet (page 58) for additional load share applications information.
9. Remote sense terminals may be used to compensate for cable losses up to 400 mV depending on model. The use of a twisted pair, decoupling capacitors and an appropriately rated low impedance capacitor connected across the load will increase noise immunity.
10. A load equal to 5% rated output power must be maintained when using standby power option. An external electrolytic capacitor across standby power output may be used to improve transient response.
11. Peak to peak output ripple and noise is measured directly at the output terminals of the power supply, without the use of the probe ground lead or retractable tip, 20 MHz bandwidth.
12. This product was type tested and safety certified using the dielectric strenght test voltages listed in Table V of UL 60601-1. In consideration of Clause 20.4g, care must be taken to insure that the voltage applied to a reinforced insulation does not overstress basic insulation. Secondary to ground capacitors may need to be removed prior to performing a dielectric strenght type test on the end product. It is highly recommended that the DC test Voltages listed in DVB.1, Annex DVB are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
13. This power supply has been safety approved and final tested using a DC dielectric strength test. Please consult factory before performing an AC dielectric strength test.
14. Maximum screw penetration into bottom chassis mounting holes is .100 inches.
15. Maximum screw penetration into side chassis mounting holes is .150 inches.
16. To comply with emissions specifications, all five mounting hole pads must be electrically connected to a common metal chassis. Chassis/cover option recommended and should be grounded.

## Maximum Output Power vs. Ambient Temperature



Derating requirements- The chart above applies to models 1003 through 1008 only. 400 Watts with 300 LFM forced air, open frame. 225 Watts convection cooled, open frame. Derate 10% with chassis and cover. Derate  $2.5 W_{out}/1 V_{in}$  below 100  $V_{in}$  between 100  $V_{in}$  and 85  $V_{in}$ . Use larger of the two deratings when using chassis/cover below 100  $V_{in}$ . Derate output power linearly to 50% between 50° C and 70° C.

### TYPICAL LOAD SHARE/REMOTE SENSE APPLICATION

#### TYPICAL LOAD SHARE/REMOTE SENSE APPLICATION

