Features

- Single-phase AC input
- 3U height
- Active current share
- Power Factor Correction (PFC) Meets EN61000-3-2
- Remote voltage adjust, and current monitoring
- Overtemperature, overload, and overvoltage protection
- Power supply status indicators
- Output current meter (bar graph)
- MTBF> 700,000 hours

Description

The NHC3000 Series of chassis-mounted power systems provides AC front-end capability to telecom, data communications and other distributed power designs. The NHC3000 can also be used for many other applications requiring bulk power.

NHC3000 power supplies provide excellent protection against input voltage transients. A connector at the rear of the supply provides access to interfaces for remote sensing, remote voltage adjust, current sharing, power supply status, standby logic voltage, remote on/off, and power connections.

Airflow for the NHC3000 is from the front through the rear. The output is floating with respect to the chassis and may be used as a positive or negative polarity supply.

Model Selection

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT	LINE REGULATION	LOAD REGULATION (NOTE 1)	RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
NHC3011-5	24V	21.6V to 26.4V	125A	0.2%	0.4%	1%	23.95V to 24.05V
NHC3011-6	28V	25.2V to 30.8V	107A	0.2%	0.4%	1%	27.92V to 28.08V
NHC3021-8	48V	43.2V to 52.8V	62.5A	0.2%	0.4%	1%	47.90V to 48.10V

NOTES: 1) With Remote Sense connected.
2) Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.

Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Input Voltage - AC	Single-phase continuous input range.		180		264	VAC
Input Frequency	AC input.		47		63	Hz
Hold-up Time	AC turn-off to output greater than or equal to 95%.		16			ms
Input Current	At full rated load per module.	at 230 VAC		15.0		ARMS
Inrush Surge Current					30	APK
Power Factor	Per EN61000-3-2 at full load. At half load.		0.99 0.98			W/VA
Operating Frequency	Switching frequency			140		kHz

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full rated load.		88		%
Minimum Loads	Minimum loading required to maintain regulation.	0			A
Output Power	Per module.			3000	Watts
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on.			±3.0	%
Transient Response	Maximum recovery time, to within 1% of initial set point due to a 50-100-50% load change, 1A/µs, ±3.0% max. deviation.			500	µs
Turn-On Delay Time	AC turn-on to output >95%.		1.2	2.0	Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.		100		ms

Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection	Latch style overvoltage protection.	24V model 28V model 48V model	26.4 30.8 52.8		27.6 33.8 55.2	V
Overcurrent Protection	Constant current limit, as a percentage of maximum rated load.		100	105	110	%
Short Circuit Protection	Short circuit current, as a percentage of maximum rated load. Output recovers automatically after removal of short.				110	%
Overtemperature	Module shuts down when internal temperature reaches an unsafe level.					
DC OK, Output Good (Module)	Output low threshold measured at output studs. Form C contacts, rating is 500 mA at 30 VDC.		±2	±5	±8	%
Input Power Fail Warning	Relay closes >5 ms before output drops to <95%. Relay opens after output is in regulation. Form C contacts, pull-up to +5 V through a 1 kΩ resistor.		5			ms
Current Monitor	Signal provides an output of 0-10V which applies over 10-100% of rated load. At 50% load:		4.5		5.5	VDC
Current Share Accuracy	Applies over 10-100% load as a percentage of full load.			±5		%
Remote Sense	Total voltage compensation for cable losses with respect to the main output.		0.5			V
Auxiliary Power (Logic Power)	Referenced to negative output terminal and derived from the internal 5.1 VDC.				50	mA
Output Margin	Margin High - Connect Margin input to Margin Ref. Margin Low - Connect Margin input to Logic Common.			+5 -5		%
Power Fail Signal & PF Warning Time	PF drops to "0" before output drops to 95% due to loss of AC. PF goes to "1" (logic high) after +5 V is in regulation. Form C contacts pull up to +5 V through a 1 kΩ resistor.	Warning Time:	5			ms
Output Voltage and Current Programming	Optional - Consult factory for details..					

Mechanical Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Input Connector	Terminal block.				
Output Connector	Copper bus bar blade with single round hole for 5/16 screw.				
Signal Connector J1	Power-One P/N 10X0172-001, Amp 247846-4, ITT Common ZEDBL25SBA Mates with Power=One P/N 10X0105-000, Amp 202208-1, ITT Common DBA25-K87-F0 Mating Pin P/N 12X0005-000, Amp 66506-8				
Visual Indicators	AC-OK LED and DC-OK LED located on the connector end of the supply.				
Cooling	Internal fan; approximately 100 CFM.				
Mounting	See outline drawing.				

Safety, Regulatory, and EMI Specifications

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL 60950-1 (UL), CSA C22.2 No. 60950-1, EN60950-1 (TÜV), CE Mark, and CB Report					
Electromagnetic Interference Conducted & Radiated	FCC CFR title 47 Part 15 Sub-Part B. EN55022 / CISPR 22.		A A			Class
ESD Susceptibility	Per EN61000-4-2, level 3, direct discharge. Per EN61000-4-2, level 3, air discharge.		8 15			kV
Radiated Susceptibility	Per EN61000-4-3, level 3.		10			V/m
EFT/Burst	Per EN61000-4-4, level 3, @ 5 kHz.		2			kV
Input Transient Protection	Per EN61000-4-5, level 3.	Line to Line	2			kV
Conducted Susceptibility	Per EN61000-4-6, level 3; 10V from 150 Hz to 80 MHz.					
Leakage Current	Per EN60950.	at 240 VAC			1.5	mA

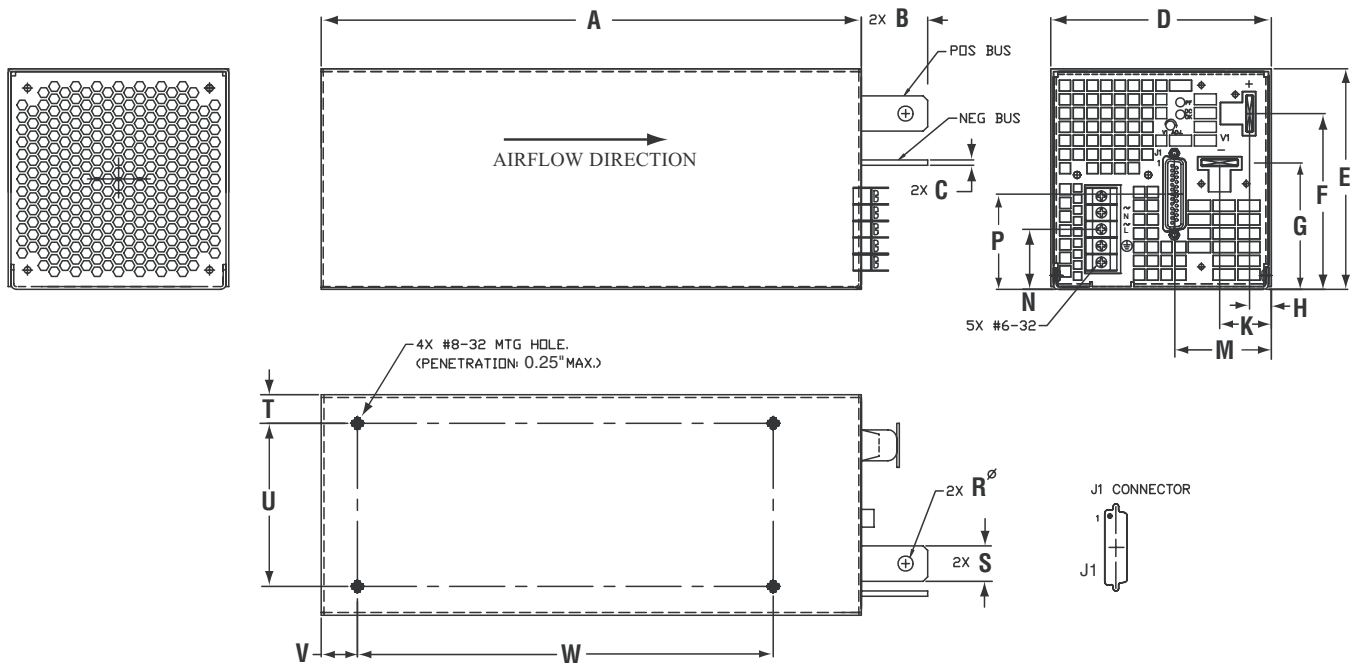
Environmental Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Storage Temperature		-40		85	°C
Operating Temperature	Derate linearly to 60% at 70 °C	0		50	°C
Temperature Coefficient	After 15-minute warmup.		0.008		%/°C
Humidity, Non-Condensing		5		95	%
Altitude	Derate at 7°C/1000 ft above 8000 ft.			13,000	ft
Shock	Operating: half-sine 10 ms, 3 axis. Non-operating: half-sine 10 ms, 3 axis.			+20 +40	GPK
Vibration	Operating: swept sine 5-2000-5 Hz, 5-32 Hz, 0.02îDA, 32-2000 Hz. Non-operating: random 10-2000 Hz.			1 6.15	GPK Grms
Acoustics	Sound pressure level at 1 meter.			57	dbA
Weight				12.1 5.49	lb kg

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

NHC3000 OVERALL SIZE: 12.25" x 5.00" x 5.00" (311.2mm x 127.0mm x 127.0mm)



Callout	Inches	Millimeters
A	12.25	311.2
B	1.50	38.1
C	0.12	3.1
D	5.00	127.0
E	5.00	127.0
F	3.98	101.1
G	2.86	72.6
H	0.49	12.5
K	1.17	29.7
M	2.19	55.6
N	1.36	34.5
P	2.16	54.9
R	Ø 0.34	Ø 8.6
S	0.80	20.3
T	0.650	16.51
U	3.700	93.98
V	0.825	21.0
W	9.425	239.4

J1 Connector Pinout

Pin	Description	Pin	Description
1	DC OK N/C	13	CURRENT SHARE
2	DC OK COM	14	+5V LOGIC
3	DC OK N/O	15	(-) SENSE
4	POWER FAIL PULL UP	16	(+) SENSE
5	ENABLE PULL UP	17	N/U
6	POWER FAIL	18	N/U
7	POWER FAIL RTN	19	I PROGRAM (OPTIONAL
8	REMOTE ON/OFF	20	LOGIC COM
9	REMOTE ON/OFF RTN	21	N/U
10	CURRENT MONITOR	22	N/U
11	MARGIN REF	23	N/U
12	MARGIN	24	N/U
		25	RESERVED FOR OPTIONS