



Features

- Currents over 100 Amps
- Fits 1U chassis height constraints
- No minimum load requirement
- Current-share capabilities on all outputs
- Patented high-efficiency design
- Meets European power factor requirements
- Excellent load transient response

Description

Designed to meet the stringent requirements of today’s high-speed datacom and telecom circuitry, Power-One’s NET1 Series is an excellent compact power solution for low-voltage, high-current applications. The NET1’s high efficiency is achieved through the use of synchronous rectification and a newly-patented “Soft Transition Forward Converter”.

The NET1’s rectification method lowers output losses, reduces system cooling requirements (allowing greater power in a smaller package), and eliminates minimum-load requirements.

Advanced surface-mount design and packing technology reduce the NET1’s height to 1.35” (34.3mm) to fit in 1U applications. NET1’s high-performance active power factor circuitry meets EN61000-3-2 requirements for compliance with European Power Line Harmonic Requirements for 2001. A multifunctional output terminal allows connection to #8 ring lugs, 0.25” quick disconnects, cable connectors, and PCB-mounted connectors.

Multiple-Output Model Selection – 240W WITH 300 LFM FORCED AIR COOLING

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE Pk-Pk (NOTE 2)	INITIAL SETTING ACCURACY
NET1-4350	+3.3V	+0.5V	50A	0.2%	1%	50mV	± 30mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+5V	+0.5V	30A	0.2%	1%	50mV	± 50mV
NET1-4230	+3.3V	+0.5V	50A	0.2%	1%	50mV	± 20mV
	+5V	FIXED	5A	0.2%	3%	50mV	± 50mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+2.5V	+0.5V	50A	0.2%	1%	50mV	± 20mV
NET1-4130	+3.3V	+0.5V	50A	0.2%	1%	50mV	± 30mV
	+5V	FIXED	5A	0.2%	3%	50mV	± 50mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+1.8V	+0.5V	50A	0.2%	1%	50mV	± 20mV
NET1-4112	+1.8V	+0.5V	50A	0.2%	1%	50mV	± 20mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+12V	FIXED	4A	0.2%	3%	120mV	± 100mV
	+1.5V	+0.5V	50A	0.2%	1%	50mV	± 20mV

NOTES: 1) Output currents ratings are expressed with 300 LFM forced air @ 18 CFM.
2) Maximum peak-to-peak noise for a 20 MHz bandwidth.

Model numbers highlighted in yellow or shaded are not recommended for new designs.

Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	TYP	MAX	UNITS
Input Voltage - AC	Continuous input range.	85		264	VAC
Input Frequency	AC input.	47		63	Hz
Hold-up Time	After last AC line peak at 240 watts.		20		ms
Input Current	85 VAC at full rated load.		4.0		ARMS
Input Protection	Non-user serviceable internally located AC input line fuse.				
Inrush Surge Current	Internally limited by thermistor. $V_{in} = 220$ VAC, one cycle, 25 °C.			35	APK
Power Factor	Per EN61000-3-2.	0.95			W/VA

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	TYP	MAX	UNITS
Efficiency	Full Rated Load, 110 VAC. Varies with distribution of loads among outputs.		75		%
Ripple and Noise	Full load, 20 MHz bandwidth.	See Model Selection Charts			
Output Power	With 300 LFM forced air cooling. (Note 1)		240		Watts
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on.			0	%
Regulation	Varies by output. Total regulation includes: line changes over the specified. input range, changes in load starting at 20% load and changing to 100% load.	See Model Selection Charts			
Transient Response	Recovery time, to within 1% of initial set point due to a 10-100% load change, 1% max. deviation.		500		µs
Turn-on Delay	Time required for initial output voltage stabilization.		2		Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.		20		ms

Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION	MIN	TYP	MAX	UNITS
Overvoltage Protection	Overvoltage protection on all outputs. Unit latches off when overvoltage is detected. AC input must be recycled to reset.	120		140	%
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition. All outputs are individually current limited.				
Overtemperature Protection	System shutdown due to excessive internal temperature, automatic reset.				
Output Good	Signal indicates output good when at a TTL high state. If any of the outputs are <14% or >14% of the nominal output voltage, then this signal will make a transition to a TTL low state. Pull-up resistance is 1kΩ to 5V Vcc and minimum sink current is 50 mA. Maximum voltage at low state is 0.5 V.				
Input Power Fail Warning	TTL-compatible signal. Pull-up resistance is 1kΩ to 5V Vcc and minimum sink current is 50 mA. Maximum voltage at low state is 0.5 V. Time before regulation dropout due to loss of input power. May be used as independent PSOK signal in redundant applications.	5			ms
Current Share	Available on all outputs. Accuracy of shared current with up to 6 parallel units. Single wire current share. Isolation diodes need to be added for parallel configurations with or without redundancy.		10		%
Remote Sense	Available on all outputs. Total voltage compensation for cable losses with respect to the main output.			500	mV

NOTES: 1) Output current ratings are expressed with 300 LFM forced air @ 18 CFM.

Safety, Regulatory, and EMI Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	TYP	MAX	UNITS
Agency Approvals	UL60950.				
	CSA 22.2 NO. 60950-00 (cUL).			Approved	
	EN60950 (TÜV).				
Dielectric Withstand Voltage	Input to output per EN60950.	2600			VDC
Electromagnetic Interference	FCC CFR title 47 Part 15 Sub-Part B - Conducted.	B			Class
	EN55022 / CISPR 22 Conducted.	B			
ESD Susceptibility	Per EN61000-4-2, level 4.	8			kV
Radiated Susceptibility	Per EN61000-4-3, level 3.	10			V/M
EFT/Burst	Per EN61000-4-4, level 3.	±2			kV
Input Transient Protection	Per EN61000-4-5, class 3.	Line to Line	1		kV
		Line to Ground	2		
Insulation Resistance	Input to output.		10		MΩ

Environmental Specifications

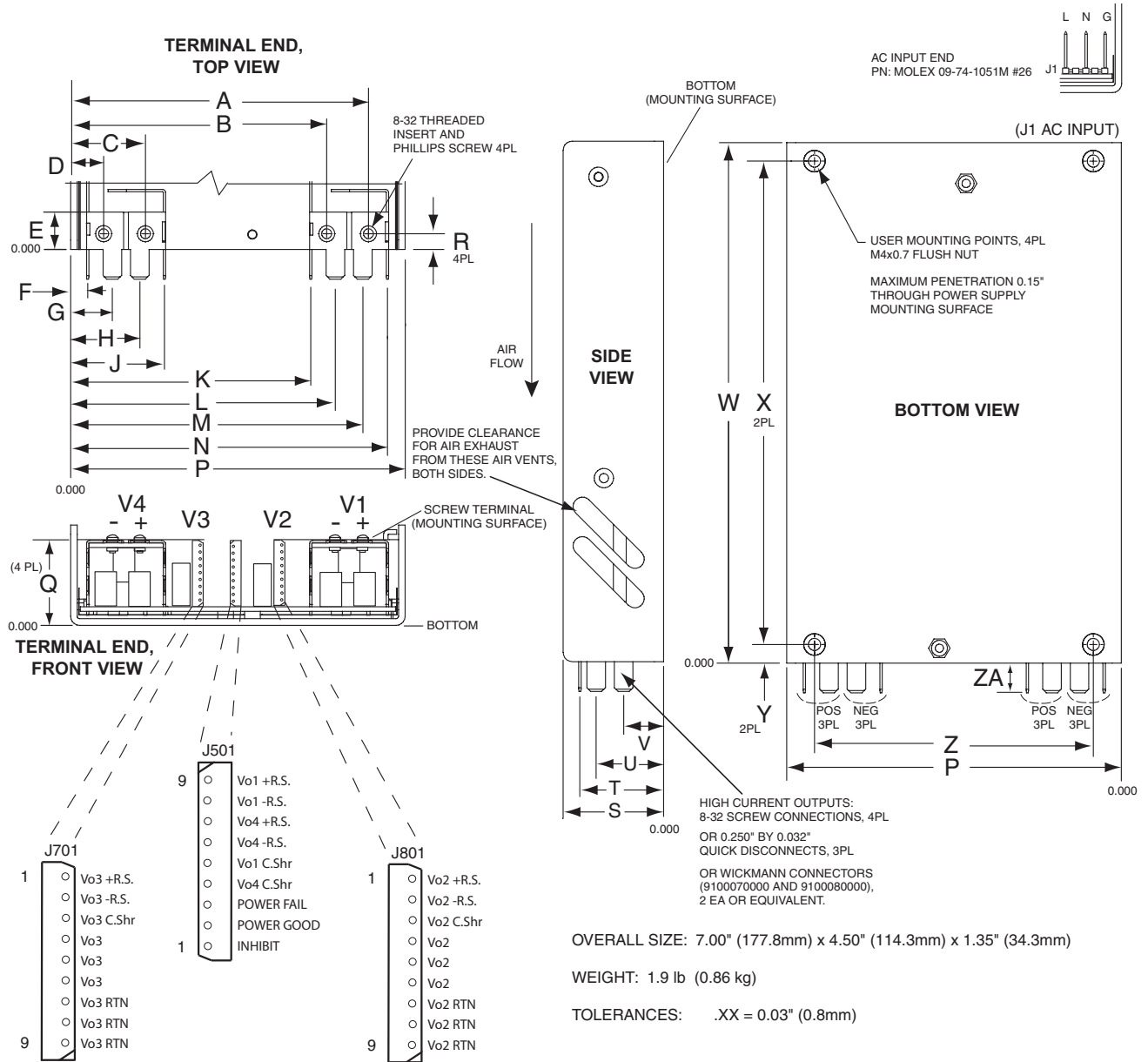
PARAMETER	CONDITIONS/DESCRIPTION	MIN	TYP	MAX	UNITS
Altitude	Operating.			10k	ASL Ft.
	Non-Operating.			40k	ASL Ft.
Operating Temperature	At 100% load	0		50	°C
Storage Temperature		-40		85	°C
Temperature Coefficient	0 °C to 70 °C (after 15-minute warmup).		±0.02	±0.05	%/°C
Relative Humidity	Non-Condensing.	5		95	%RH
Shock	Peak acceleration.			20	GPK
Vibration	Random vibration, 10 Hz to 2 kHz, 3 axis.			6	GRMS

Mechanical

DESCRIPTION	NOTES	SIZE IMPACT
Metric Mounting	M4 x 0.7 mounting inserts: 2 mounting surfaces	
Size		7.00" x 4.50" x 1.35" (177.8mm x 114.3mm x 34.3mm)

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.



Callout	Inches	Millimeters	Callout	Inches	Millimeters
A	4.006	101.75	N	4.26	108.2
B	3.445	87.50	P	4.500	114.30
C	1.006	25.55	Q	1.14	29.0
D	0.445	11.30	R	0.211	5.36
E	0.502	12.75	S	1.350	34.29
F	0.23	5.8	T	1.125	28.58
G	0.56	14.2	U	0.906	23.01
H	0.93	23.6	V	0.536	13.61
J	1.26	32.0	W	7.000	177.8
K	3.23	82.0	X	6.500	165.10
L	3.56	90.4	Y	0.250	6.35
M	3.93	99.8	Z	3.750	95.25
			ZA	0.400	10.20

NET1 Connectors

J501	Housing	50-37-5093
	Pins	08-70-1039
J701	Housing	50-37-5093
	Pins	08-70-1039
J801	Housing	50-37-5093
	Pins	08-70-1039

Note: Part numbers are MOLEX; equivalents are acceptable.