

Critical Power
from GE



NE100AC24ATEZ Infinity Rectifier



Features and Advantages

- Compact – 1RU form factor provides high power density 24 Watts / Cubic inch.
- Efficient – Peak efficiency of 95.6% occurs at 50% load matching sweet spots with customer use patterns.
- Flexibly provides 100 Amps of 24 Volt power.
- Operates over a broad temperature range (-40°C through +75°C).
- Starts and runs at any AC voltage from 95 to 305 V_{ac}.
- Fail safe performance – hot insertion capabilities allow for rectifier replacement without system shutdown; soft start and inrush current protection prevent nuisance tripping of upstream breakers.
- Extended service life – parallel operation with automatic load sharing ensures that units are not unduly stressed.

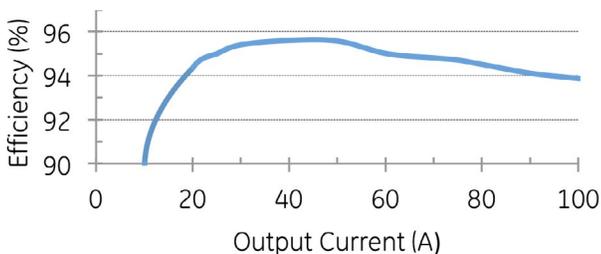
Uncompromised Advanced Technology to Simplify Your Network

GE Energy's NE100AC24 Infinity Singlephase Rectifier is designed to efficiently transform energy from any AC source into the 24 Volt DC power needed for wireless cell sites. This means that one single rectifier can be used globally to meet all your 24V powering needs.

Efficiency is market leading for diode protected, true hot pluggable, 24 Volt rectifiers.

Efficiency vs. Output Current (Temp: 25C, Vin: 240V_{ac}, 60Hz)

Efficiency % Typical at 240V_{ac}



The NE100AC24 offers a powerful combination of efficiency, network simplicity and reliability.

A True System Solution

Infinity Rectifiers are part of the proven Infinity Power System particularly designed to meet the unique needs of wireless sites.

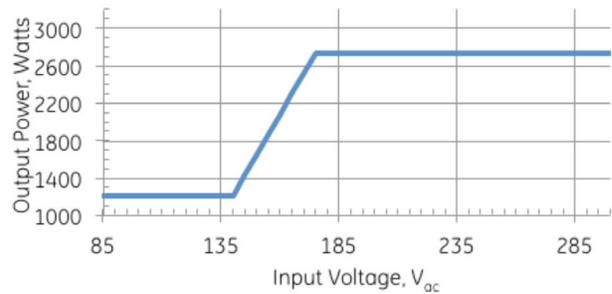
- Monitoring/control – the built in microprocessor controls and monitors all critical rectifier functions and communicates with the system controller using the built in Galaxy Protocol serial interface.
- Dual Voltage Compatible – unique connector pin designation allows the 24 Volt rectifiers to be used in a “Universal” power shelf, alongside DC-DC converters supporting loads at 48 Volts DC.
- Plug and Play – installation of the rectifier in a shelf connected to a compatible system controller initializes all set up parameters automatically. No adjustments are needed.
- Proportional Load Share – All rectifiers share equal amount of load in relation to each unit’s capacity.
- Meets most 3 phase needs. Works with 208V 3 Phase in a phase to phase configuration. Works from 480V 3 Phase in a line to neutral configuration.
- As part of the Infinity family of power system solutions, the NE100AC24 likely already has a complimentary shelf, battery and distribution system available to meet your power needs.

Electrical Specifications

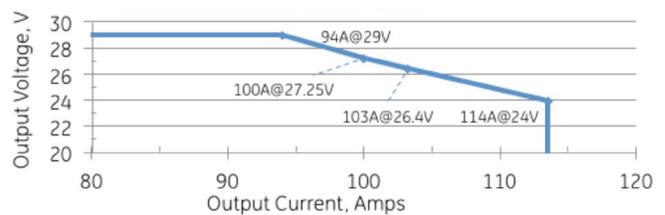
INPUT VOLTAGE & OUTPUT POWER	
Response to AC Input Voltage	Operates according to figure, turning on at all V_{in} above $90V_{ac}$. Output power $1200W < 140V_{ac}$ $2725W > 175V_{ac}$ Output power follows linear path between defined points. 300V max excursion voltage
AC Input Current	15A max @ $120V_{ac}$ 16A - 10.5 @ $200-277V_{ac}$
Inrush Current	<18A after narrow EMI capacitor peak
Power Factor	0.98 @ loads over 50%
THD	< 5% @ loads over 50%
Harmonics	EN6100-3-2
Holdover	15 milliseconds, with $V_{out\ final} > 21V$
Frequency	45-66Hz or Dc

OUTPUT	
V_{out}	21 - $27V_{dc}$ range Default = $27.25V_{dc}$
I_{out}	44A @ low input line 100A @ high input line
Regulation	FFL 0.05% w/ controller 2% over life load and temperature
Dynamic Response	20 to 80% load step settles to less than 1% in 5ms
Ripple	$100mV_{rms}$, $250mV_{p-p}$
Voice Noise	<55dBnC
Efficiency	Approaching 96% dc
Start Up	Start up is monotonic
Soft Start	Starts up out into fully discharged batteries
Walk In	Current walk in over 8 to 10 seconds, can be disabled
Overload Shutdown	Shuts down with no damage when presented with a 15 milliohm short
Thermal Protection	Derates at $55^{\circ}C$ and self protects with recoverable shutdown above $75^{\circ}C$

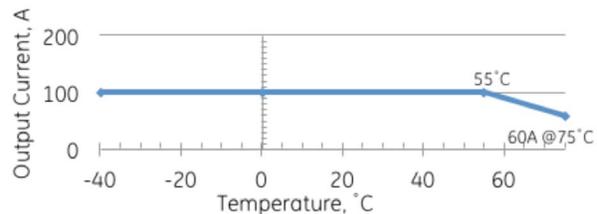
Output Power vs Input Voltage



Constant Power to 24 Volts



Rated Output Current (at $V_{in} > 175V_{ac}$)



Environmental, Compliance & Physical

Operating Ambient Temperature Range	$-40^{\circ}C$ to $+75^{\circ}C$ (Output derates at $2\%/^{\circ}C$ beginning at $55^{\circ}C$)
Cooling Method	Front to back airflow with onboard temperature controlled fans
Operating Relative Humidity	0 - 95% (non-condensing) for use in a controlled environment
Electromagnetic Compatibility	FCC Part 15, EN 55032 (CISPR32), EN 55035, Level A, GR-1089
Lightning Surge	EN/IEC 61000-4-5 Level 4 (Error free), ANSI C62.41 Category B 100 kHz ring and 1.2/50 μ s combination waves (6kV damage free)
Agency Certifications* Planned	ANSI/UL60950-1-2014, EN60950-1 2nd ed+A1+A2, CAN/CSA C22.2 No. 60950-1-07 +Am2: 2014, NEBS GR-1089, GR-63-CORE, CE, RoHS6/6
Heat Release	174 Watts, or 594 BTU/hr at full load of 2725 Watts, Noise <60 dBA @ $25^{\circ}C$
Mean Time Between Failure (MTBF)	300k Hours @ $25^{\circ}C$ per Telcordia SR-332, Method 1, Case 3
Height x Width x Depth, Weight, Packaged Weight	1.63x5.23x13.85in (42x133x352mm), 5.05 lbs (2.2kg), 5.95 lbs (2.7kg)

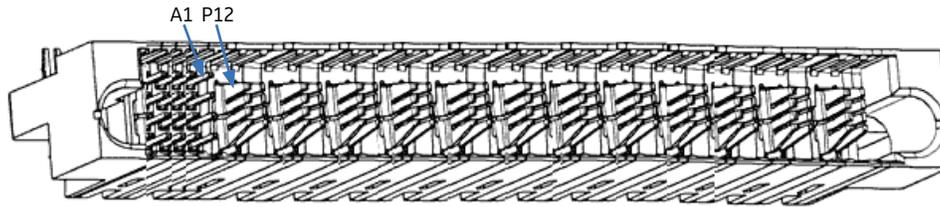
Power Unit and Power Unit Shelf Connectors

Power Unit PWB

A4	A3	A2	A1	-48V	-48V	RTN	RTN	RTN	RTN	+24V	+24V	+24V	PE/ GND	L2/N	L1
B4	B3	B2	B1										(ACEG)		

OUTLINE DRAWING

Shown looking into the rear of the power unit



Power Unit Connector - AMP Multi-Beam XL (FCI # 51939-234LF or Tyco # 1900948-1)

Signals and Signal Pins

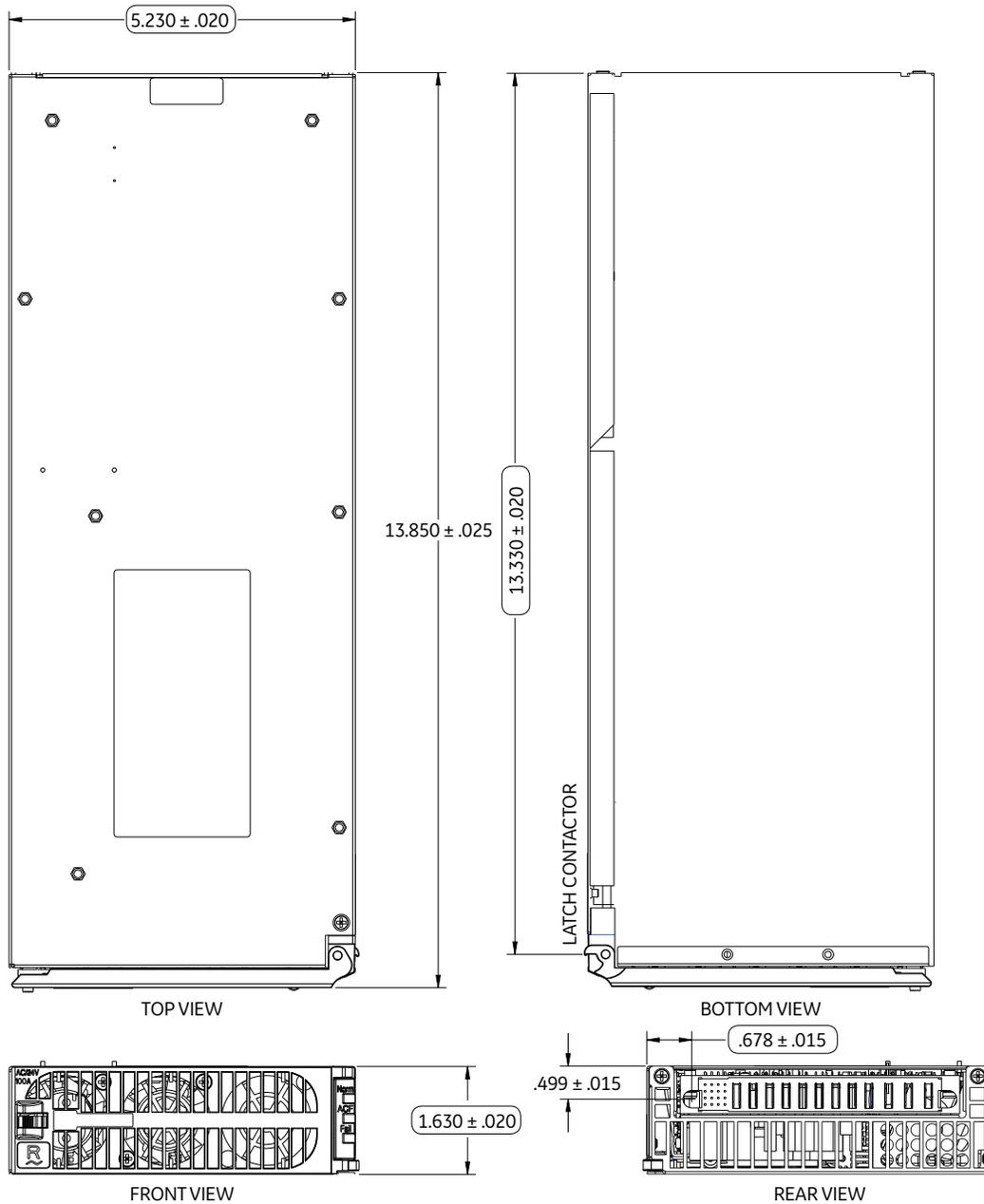
PIN	LENGTH	SIGNAL	DESCRIPTION
A1	Long	RS-485-	Non-Inverting RS-485 signal line (RS-485 A)
B1	Long	RS-485+	Inverting RS-485 signal line (RS-485 B)
C1	Long	Factory Programming	Reserved for Factory Programming - Open Circuit in the system shelf
D1	Long	Return	<ul style="list-style-type: none"> Signal Return for PSIDn, SIDn, & Interlock Power Units Connect Return to NE Common Return internally Power Units diode isolate the Return signals from each Power Slot
A2	Long	PSID0	Power Slot Address 0
B2	Long	PSID1	Power Slot Address 1
A3	Long	SID4	Shelf Address 4

Logic 1 = Open Circuit (~3.3V)
Logic 0 = Connection to the Return signal (~0.7V)

Left slot (front view) is Power Slot 1 and has address 000B

Physical Interface Dimensions

OUTLINE DRAWING



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