DATASHEET

NE100AC24ATEZ Infinity Rectifier

Feature 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.
- Compliant to RoHS Directive 2011/65/EU and amended Directive (EU) 2015/863
- Compliant to REACH Directive (EC) No 1907/2006

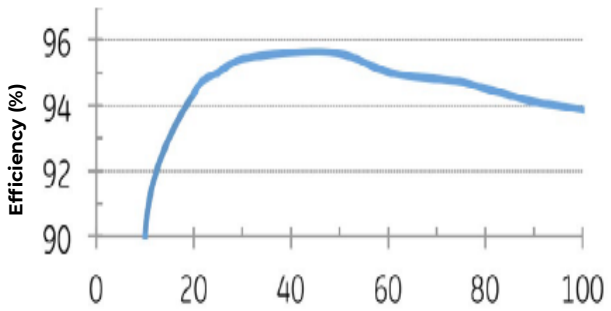
Technical Specification

Uncompromised Advanced Technology to Simplify Your Network

OmniOn Energy's NE0100AC24 Infinity Single phase 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, V_{in}: 240V_{ac}, 60Hz)



Efficiency % Typical at 240V_{ac}

The NE0100AC24 offers a powerful combination of efficiency, network simplicity and reliability.

A true System Solution

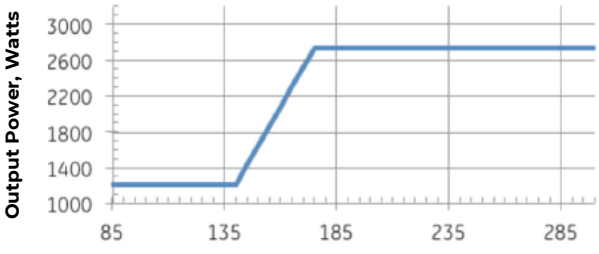
Infinity Rectifiers are part of the proven Infinity Power System particularly designed to meet the unique needs of wireless sites.

- 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.

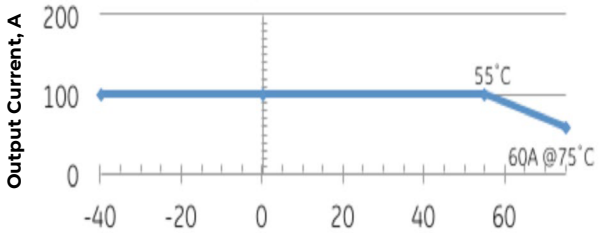
Electrical Specifications

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 $V_{out\ final}$ >21 V
Frequency	45-66Hz or Dc
OUTPUT	
V_{out}	+21–27V_{dc} range Default = 27.25 V_{dc}
I_{out}	44A @ low input line 100A @ high input line
Regulation	FEL 0.05% w/controller, 2% over life load and temperature
Dynamic Response	20 to 80% load step settles to less than 1% in 5 ms
Ripple	100 mV_{rms}, 250 mV_{p-p}
Voice Noise	<55dBrnC
Efficiency	Approaching 96% dc
Start Up	Start up is monotonic
Soft Start	Starts up 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°C and self protects with recoverable shutdown above 75°C

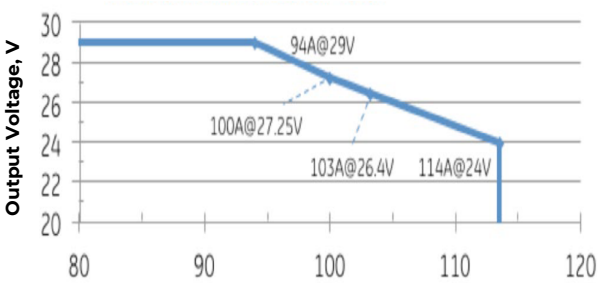
Technical Specification (Continued)



Output Power vs Input Voltage



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



Constant Power to 24 Volts

Environmental, Compliance & Physical

Operating Ambient Temperature Range	-40°C to +75°C (Output derates at 2%/°C beginning at 55°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
Agency Certifications* Planned	ANSI/UL60950-1-2014, EN60950-1 2nd ed+A1+A2, CAN/CSA C22.2 No.
Heat Release	174 Watts, or 594 BTU/hr at full load of 2725 Watts, Noise<60 dBA @
Mean Time Between Failure (MTBF)	300k Hours @ 25°C per Telcordia SR-332, Method 1, Case 3
Height x Width x Depth, Weight, Packaged	1.63x5.23x13.85in (42x133x352mm), 5.05 lbs (2.2 kg), 5.95 lbs (2.7kg)

Technical Specification (Continued)

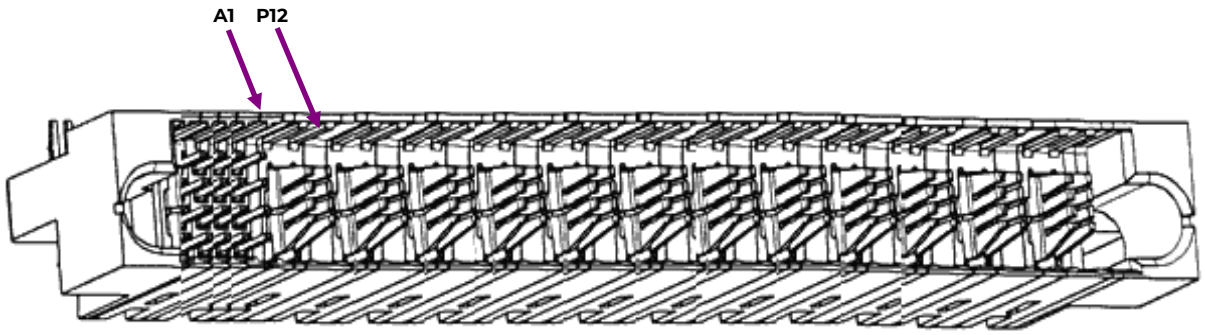
Power Unit and Power Unit Shelf Connectors

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)

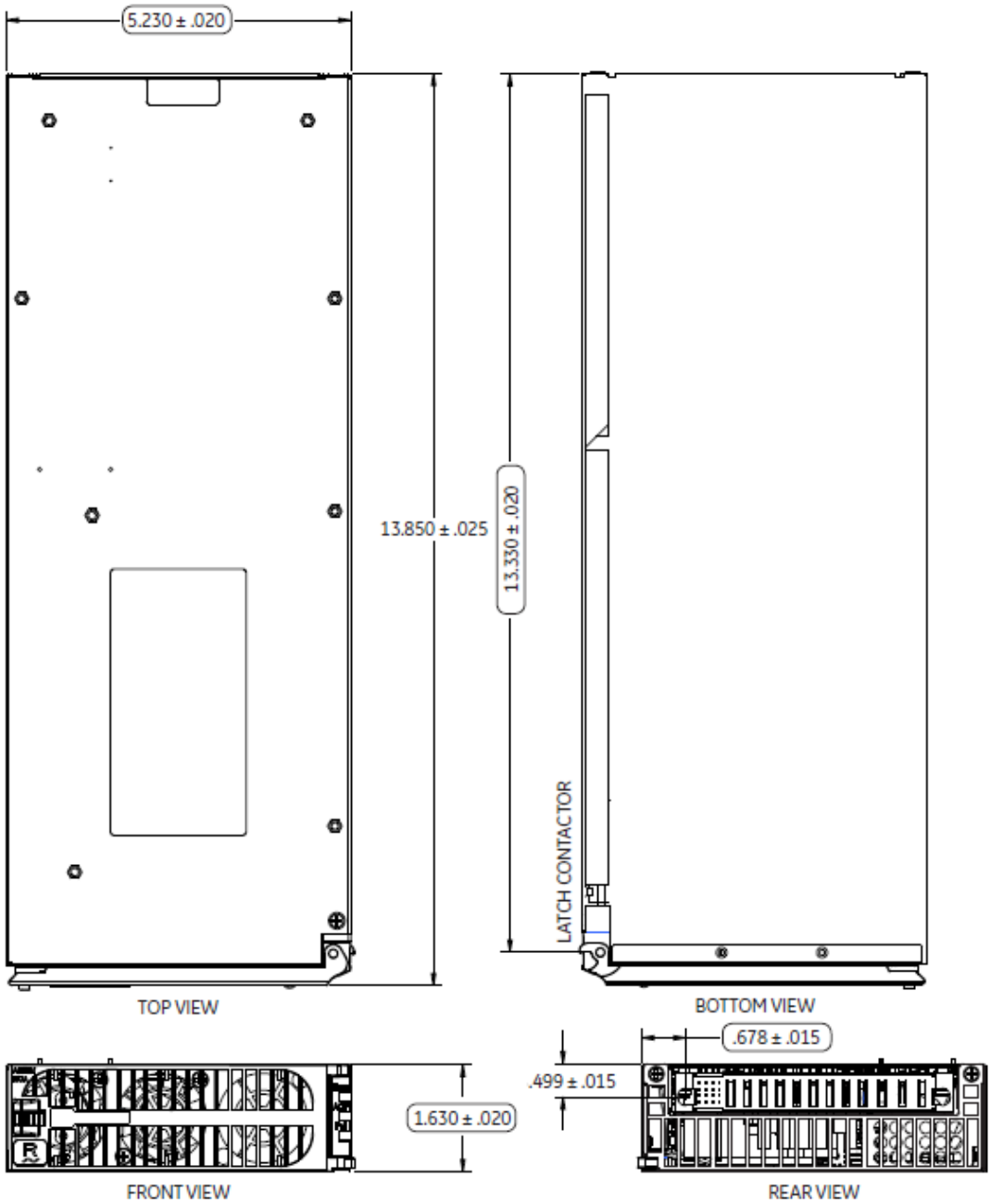
Signals and Signal Pins

PIN	LENGTH	SINAL	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	Reserved for Factory Programming – Open Circuit in the system shelf.	
D1	Long	Return	• 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	• Logic 1 = Open Circuit (~3.3V). • Logic 0 = Connection to the Return signal (~0.7V).
B2	Long	PSID1	Power Slot Address 1	• Left slot (front view) is Power Slot 1 and has address 000B.
A3	Long	SID4	Shelf Address 4	

Technical Specification (Continued)

Physical Interface Dimensions

OUTLINE DRAWING



Contact Us

For more information, call us at

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Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
2.2	12/06/2021	Updated as per template and upgraded RoHS standard
2.3	06/22/2023	Correction in Power Unit PWB table on page - 4
2.4	10/19/2023	Updated as per OmniOn template
2.5	01/04/2024	Updated to change FS to DS

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