DATASHEET

NE075AC48ATEZ Infinity Rectifier

Feature and Advantages

- Compact – 1RU form factor provides high power density 34 Watts/Cubic inch.
- Efficient – Peak efficiency of 95.6% occurs at 50% load matching sweet spots with customer use patterns.
- Flexibly provides 75 Amps of 48 Volt power from both conventional and sustainable sources of energy.
- Starts and runs at any AC voltage from 95 to 305 Vac.
- Operates over a broad temperature range (–40°C through +75°C).
- 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.

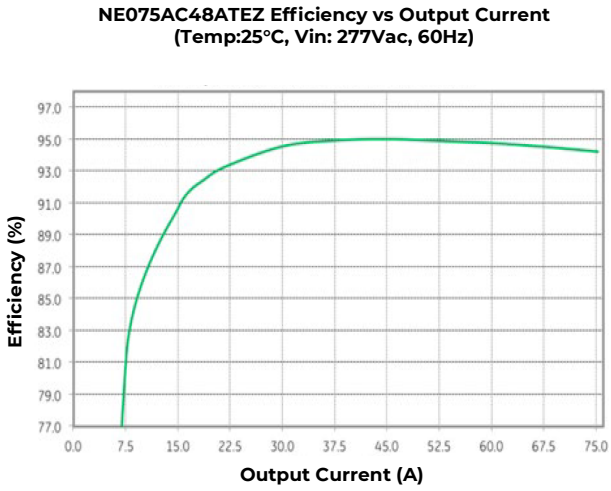
Technical Specification

Uncompromised Advanced Technology to Simplify Your Network

OmniOn Energy's NE075AC48ATEZ Infinity Single-phase Rectifier is designed to efficiently transform energy from any AC source into the 48 Volt DC power needed for Central Office, MTSO and wireless cellular sites. This means that one single rectifier can be used globally to meet all your 48V powering needs.

Efficiency is market leading for diode protected, true hot pluggable, 48 Volt rectifiers. The NE075AC48ATEZ offers a powerful combination of efficiency, network simplicity and reliability.

Efficiency % Typical at 277V



Technical Specification (Continued)

A True System Solution

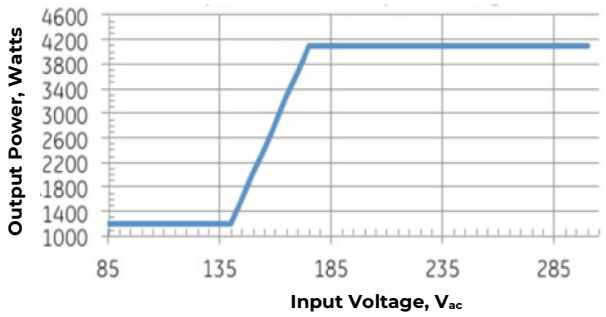
Infinity Rectifiers are part of the proven Infinity Power System platform particularly designed to meet the unique needs of the ever-changing network landscape.

- 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 48 Volt rectifiers to be used in a "Universal" power shelf, alongside DC-DC converters supporting loads at 24 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 – when paired with a NE050, both 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.

Electrical Specifications

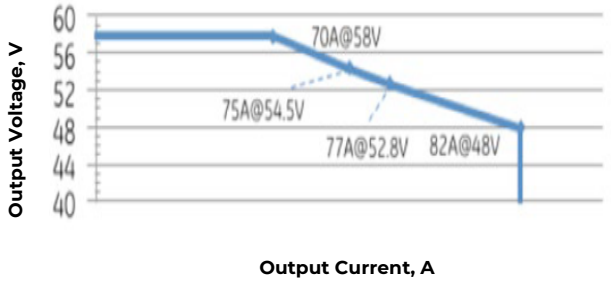
INPUT VOLTAGE & OUTPUT POWER	
Response to AC Input Voltage	Operates according to figure, turning on at all Vin above 90Vac. Output power 1200W < 140Vac 4087W > 175Vac Output power follows linear path between defined points.
AC Input Current	15A max @120Vac
Power Factor	0.98 @ loads over 50%
THD	< 5% @ loads over 50%
Holdover	15 milliseconds, with $V_{out\ final}$ >21 V
Frequency	45-66Hz or Dc

Output Power vs Input Voltage

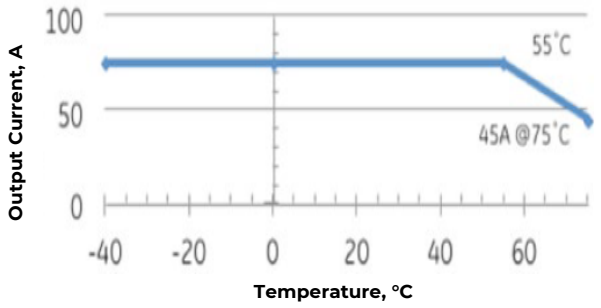


OUTPUT	
V_{out}	+42–58V_{dc} range Default = 54.5 V_{dc}
I_{out}	22A @ low input line 75A @ high input line 50A @ high line in older shelves
Regulation	± 0.05 w/controller
Ripple	100 m_{Vrms}, 250 mV_{p-p}
Efficiency	Approaching 95%
Soft Start	Starts up into fully discharged batteries.

Constant Power to 48 Volts



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



Technical Specification (Continued)

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 55022 (CISPR22), EN 55024, 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	UL1950, EN60950, CSA*234/950, NEBS GR-1089, GR-63-CORE, RoHS 6/6
Heat Release	191 Watts, or 652 BTU/hr at full load of 4087 Watts
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), 5.90 lbs (2.7 kg), 6.95 lbs (3.2kg)

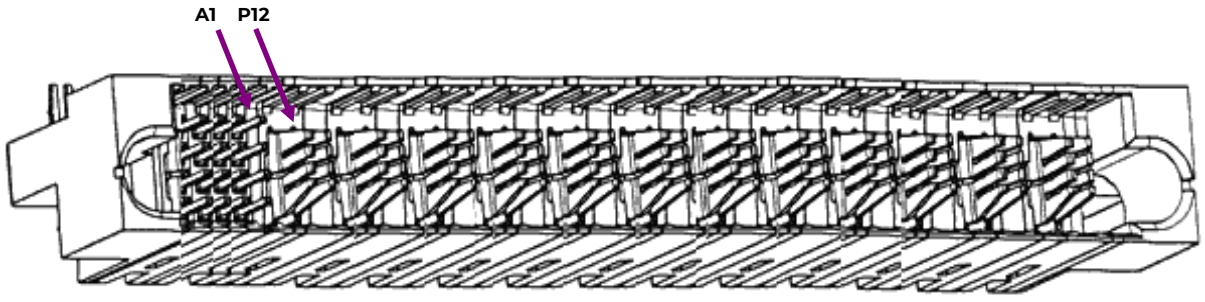
Power Unit and Power Unit Shelf Connectors

Power Unit PWB

A4	A3	A2	A1	-48V	-48V	RTN	RTN	RTN	RTN	+24V	+24V	+24V	PE/ GND (ACEG)	L2/N	L1
B4	B3	B2	B1			(-48/ +24V)	(-48/ +24V)	(-48/ +24V)	(-48/ +24V)						
C4	C3	C2	C1												
D4	D3	D2	D1												
				P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1
4x Pins	4x Pins	4x Pins	4x Pins	Blade	Blade	Blade MFBL (long)	Blade MFBL (long)	Blade MFBL (long)	Blade MFBL (long)	Blade	Blade	Blade	Blade MFBL (long)	Blade	Blade

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)

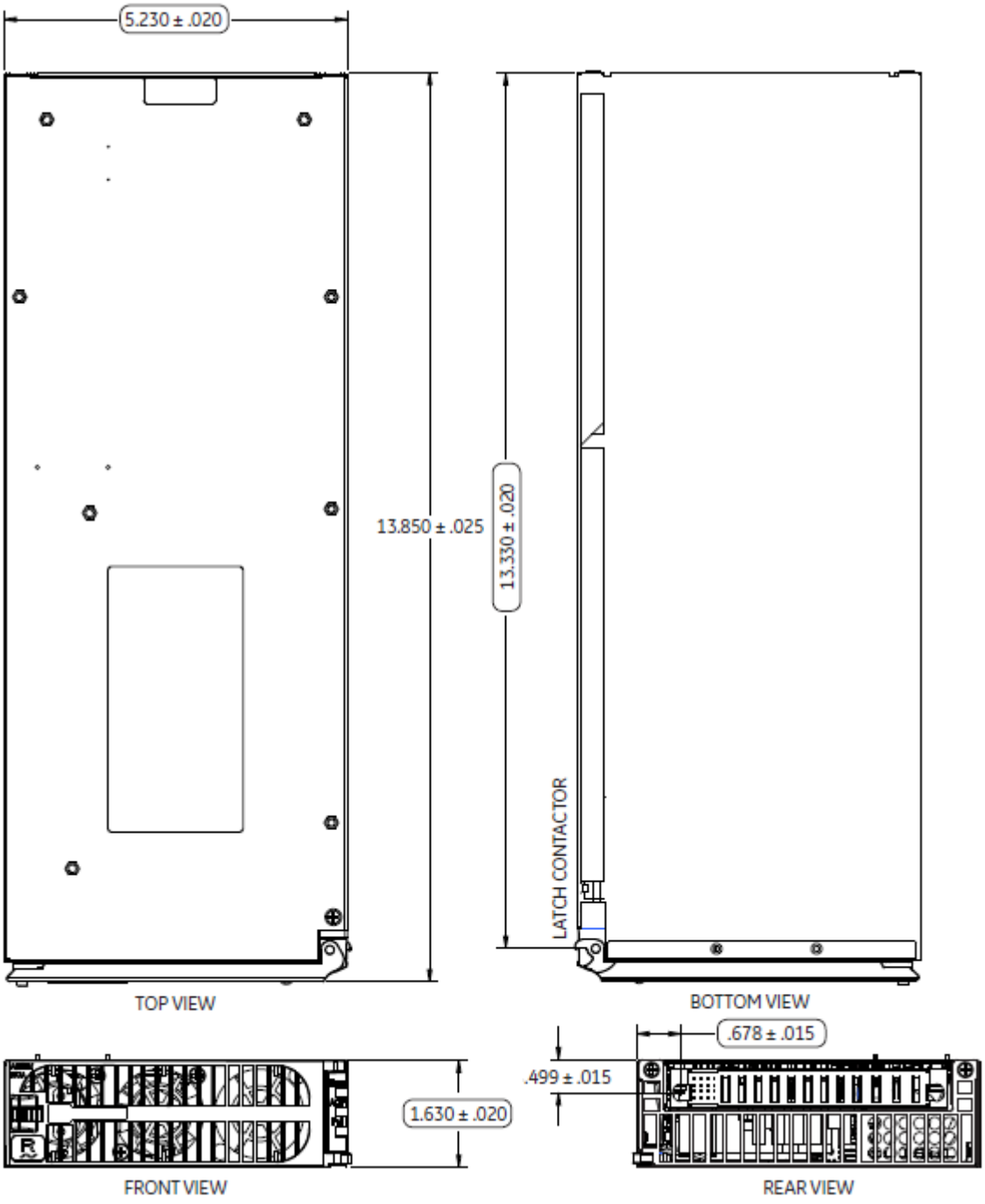
Technical Specification (Continued)

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 Programming	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). • Left slot (front view) is Power Slot 1 and has address 000B. • Power Slot ID signals are connected directly to the Return signal at each Power Slot or left open.
B2	Long	PSID1	Power Slot Address 1	
C2	Long	PSID2	Power Slot Address 2	
D2	Long	SID3	Shelf Address 3	• Logic 1 = Connection to Return signal (~0.7V). Logic 0 = Open Circuit (~3.3V). • Shelf addresses 1 (00001B) through 31 (11111B) are valid. Shelf address 0 (00000B) is invalid. Address 31 (11111B) disables comm. fail LED • Power Unit Shelf ID signals connect to Shelf Return left open
A3	Long	SID4	Shelf Address 4	
B3	Long	SID5	Shelf Address 5	
C3	Long	SID6	Shelf Address 6	
D3	Long	SID7	Shelf Address 7	
A4	Short	Interlock	• Disables power conversion within a Power Unit when not connected to the Return signal • Power Unit Shelves connect Interlock directly to the Return signal at each Power Slot.	
B4	Long	Factory Programming	Reserved for Factory Programming – Open Circuit in the system shelf.	
C4	Long			
D4	Long			

Physical Interface Dimensions

OUTLINE DRAWING



Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
1.2	07-12-2021	Updated as per template
1.3	10/26/2023	Updated as per OmniOn template
1.4	01-04-2024	Updated to change FS to DS
1.5	02-28-2024	Updated Heat Release on Pg 3

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