

DATASHEET

EP3000AC48TE Rectifier

3000W Output at 48-58V_{dc}



Key Features

Highly efficient rectifier

Efficiency $\geq 95\%$

Highly rugged rectifier

Exclusively designed to take care of wide line fluctuations and extreme climatic conditions prevailing typically in rural/ semi-urban areas ("B" & "C" telecom Circles) of India

- A Can withstand up to 500V_{ac} (Line-Neutral) continuously without any damage (for battery floated application)
- A. Can withstand 96 hrs of salt spray test (as per ASTM B117), Special protective coating on the PCBs and superior plating on the metal parts
- A Operation up to +70°C

Optimum power performance

Constant power between 176V ... 300V ac, linearly de-rated power between 175V ... 90V ac

Compact and light

Six rectifiers can be accommodated in one row (23" shelf) implying more compact system

Product Description

The rectifier EP3000AC48TE is a high Efficiency, single phase, hot- pluggable, fan-cooled rectifier and battery charger for stand - alone use or for working in parallel as part of a DC power system equipped with advanced digital controller. The constant output power (3000W i.e. 55.5A at 54V) characteristic supplies the specified power over the full output voltage range (48 to 58V_{dc}). It's backwardly compatible to earlier version of EP rectifier i.e. EP2500AC48/ EP3000AC48.

There is a digital communication (RS-485 bus) between rectifier and controller which allows flexible system design.

Compliant to RoHS Directive 2011/65/EU and amended Directive (EU) 2015/863

Compliant to REACH Directive (EC) No 1907/2006

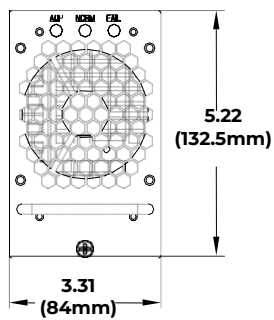
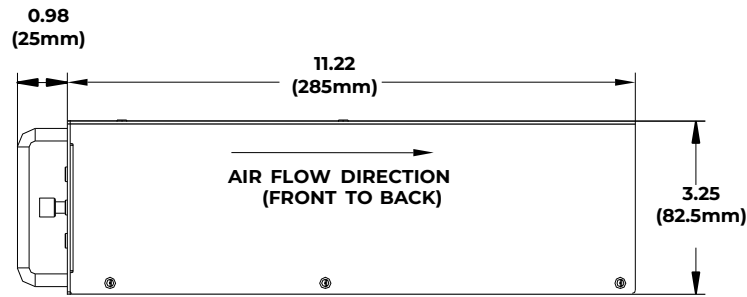
UL and cUL approved to UL/CSA[†]62368-1, TUV (EN62368-1), CE[§] Mark (for LVD) and CB Report available

Applications

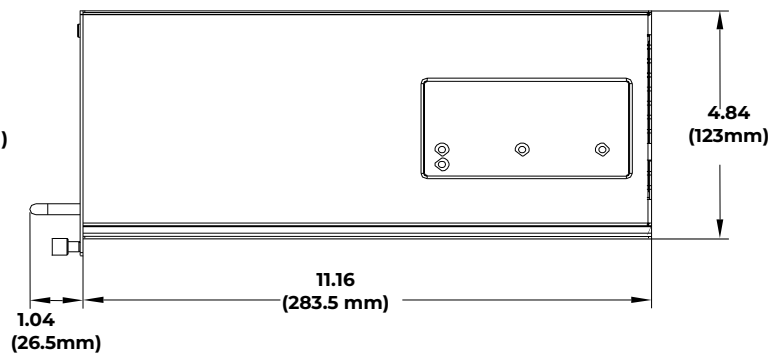
The typical applications for this rectifier are both in indoor and outdoor environments and include:

- Telecommunication Equipment Power
- Wireless Cell Site Power Systems
- Central Office Power Plants
- Base Station Power Plants

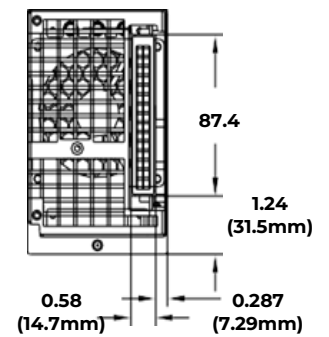
Technical Specifications



FRONT VIEW



SIDE VIEW



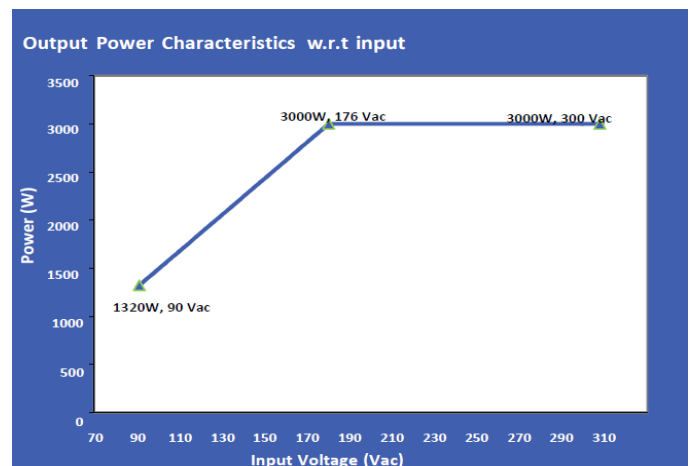
Technical Specifications

Input Parameters	
Operating Voltage range	90-290V _{ac} Disconnect: < 90V _{ac} & > 300V _{ac} No damage up to 500V _{ac} (battery Floated application)
Input voltage range for de-rated power	Linear de-ration of output power from 175 to 90V _{ac} 3000W @ 176V _{ac} 1320W @ 90V _{ac}
Frequency	45 to 65 Hz
Maximum Current	19A (rms)
Power Factor	> 0.99 at 230V _{ac} , 100% load
Total Current Harmonic Distortion (THD)	< 5% at 230V _{ac} , 100% load
Efficiency	≥ 95%
Input protection	In built surge protection (6kV/3kA) Mains fuse in both lines

Output Parameters	
Voltage, nominal	48 V _{dc}
Voltage adjust range	42 ~ 58V _{dc}
Rated output Power	3000W
Output Current @...V	55.5A@54V
Maximum current	62.5A
Static Voltage regulation	±0.5% from 10% to 100% load
Noise (Ripple + spikes)	≤ 250 mV (p-p)
Load sharing	± 3 A _{dc}
I/P and O/P connector	Rear side
Output protection	Over voltage shutdown Over voltage shutdown Blocking diode Short circuit proof High temperature protection

Backward Compatibility	
Backwardly compatibility	EP2500AC48 / EP3000AC48

Other Parameters	
Isolation	3.0 KV _{AC} – I/P & O/P 1.5 KV _{AC} – input & earth 0.5 KV _{DC} – output & earth
Visual Indications	Normal LED (Green): 4 status (Blink, Wink, OFF, ON) Fail LED (Red): 3 status (Blink, OFF, ON) AC Fail LED (Amber): 2 status (OFF, ON)
Operating temp	-10°C to +70°C
Power De-rating	+50°C to +70°C de-ration @ 2.4%/°C
Operating Humidity	5% to 95% RH non-condensing
MTBF	>300, 000 hours Telcordia SR-332, Method 1, Case 3 (Ambient Temperature: 25°C)
Audible Noise	<60dba at an ambient noise level of 45Dba and at ambient temperature of 25°C
Mechanical	
Width	84mm (3.3")
Height	123mm (4.84")
Depth	310mm (11.2")
Weight	Weight 3.3 kg (7.26 lbs)



Note: As a result of continuous product improvement, all specifications are subject to change without prior notice. All performance parameters are valid at Nominal input (230V_{ac}) and nominal output (48V_{dc}) conditions unless otherwise specified.

Applicable Standards-Reference	
Electrical safety	IEC 62368-1 UL 62368-1 CSA 22.2
EMI	As per CISPR-22 CLASS A
EMC	IEC 61000-4-5, Level 1 (Surge immunity limits) IEC 61000-4-6, Level 3 (RF Conducted susceptibility immunity limits) IEC 61000-4-3 Level 3 (Radiated Electromagnetic Field immunity limits) IEC 61000-4-4 Level 4 (EFT/ Burst immunity limits) IEC 61000-4-2, Level 4 (ESD Immunity limits)
Harmonics	EN 61000-3-2
Environment	RoHS compliant, Selected model only

Technical Specifications (continued)

Ordering Information		
Product	Description	Ordering code
EP3000AC48TEZ	3000W rectifier at 48-58V (95% efficiency)	CC109172490

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Contact Us

For more information, call us at
 1-877-546-3243 (US)
 1-972-244-9288 (Int'l)

Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
4.3	12/24/2021	Updated as per template
4.4	05/31/2023	Correction in Technical Specification in table of other parameters at page – 3
4.5	10/31/2023	Updated as per OmniOn template

OmniOn Power Inc.

601 Shiloh Rd.
Plano, TX USA

omnionpower.com

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