

LP450A48VID-SMPS

UC 450A OUTPUT AT 48-58VDC



PRODUCT DESCRIPTION

The SMPS system based on rectifier **EP3000V48-T1** is a high efficiency, single/three phase AC input, 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 (22500W i.e. 450A at 50V) characteristic supplies the specified power over the full output voltage range (48 to 58Vdc). There is a digital communication (CAN bus) between the rectifier and the controller.



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.

- 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
- Can work up to $+70^{\circ}\text{C}$

Optimum power performance

Constant power between 176V ... 300V ac, linearly de-rated power between 176V ... 85V ac

Compact and light

Nine rectifiers are accommodated in a small footprint implying a more compact system

Applications

The typical applications for this SMPS rectifier system 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
- Capacity 300A with 6+1 Rectifier module of 50A single phase,
- Modular design,
- Hot swap option for modules,
- LCD display controller with key pad,
- Lithium & VRLA battery suitable,
- Port for remote data monitoring,
- Smoke / Fire alarm,
- PFC alarms for NMS,
- Door open alarm,
- LED light to work on during nights with door sensing,
- Temperature controlled cooling fan
- Fan & Filter cooling,
- Floor mountable,
- Outdoor installation,

PARAMETER	SPECIFICATION
Ultimate capacity	450A (9*50A rectifier modules)
AC Input Voltage Range	(100-250VAC provided) [Permitted variation: 90-300 VAC (L-PE and N-PE)]
Frequency	50 $\pm$ 5 Hz
Power Factor	> 0.99 at 50-100% load
Output Voltage	Float voltage 54.0 VDC or as recommended by battery manufacturer Boost voltage(for VRLA) 55.2 VDC or as recommended by battery manufacturer 43.5 - 57.6 VDC (adjustable range)
Battery Type	Compatible with both VRLA & Lithium ion Batteries
Front Panel LCD user interface	8-line by 40-character LCD; Three status LEDs
System Configuration Methods	Front panel LCD display, menu keys and RS232 port
PFC extension	Alarm PFC extension for configurable major alarms (Mains out of range , rectifier fail, SPD fail, Battery fuse fail, LVDB fail, Very High / low voltage, Temperature probe fail (Only for VRLA))
Charging Methods	Float charging, Boost; Equalization(only for VRLA batteries)
System alarms in Display	Load Voltage high / low, Rectifier fail, Rectifier fan fail, Mains on battery discharge, LVBD fail, Battery Fuse fail, Temperature probe fail , Mains out of range/Ac fail, load MCB fail, AC SPD Fail, system Fan Fail etc.



PROTECTION (AC)	
Input Mains	3 X MCB 63A & TB 35 SQMM for Neutral
Contactor	Suitable contactor with Voltage monitoring relay
Rectifier	32A SP MCB for each rectifier modules
Surge protection	Class-C protection at AC input
AC MEASUREMENTS	
AC	Voltages, Current, kWh, Run hours

DC MEASUREMENTS AND DISTRIBUTION

Battery	FUSE: 3 X 400A for battery termination LVBD: 3 X 500A contactor for low voltage battery disconnect Shunt :3 x 500A for current measurement
Load	Shunt: 1 x 500A for current measurement Distribution: MCB 80A SP x1, MCB 63A SP x3, MCB 32A SP x1 MCB 16A SP x 1
Battery	Voltage, Current, Run hours, Charge & Discharge kWh, SOC
Load	Current, kwh



MECHANICAL

Cabinet Type	IP 55 Outdoor, GI Sheet with Powder Coating
Cabinet Dimensions	H 1000mm x W 800mm x D 687mm
Mounting	Floor Mountable
Access	Front & Rear
Cooling	Forced Fan cooling

ENVIRONMENTAL

Operating Temperature Range	-5 to 55°C ; power de-rating above 50 Deg. C.
Humidity	10% to 95% non-condensing
Audible Noise	< 60 dB

RECTIFIER SPECIFICATION

Rating	50A
AC Voltage range	90Vac to 300Vac
Full Power	176Vac to 300Vac
De-rated Power	175Vac to 90Vac (linear Deration)
Frequency	45 to 65 Hz
Power Factor	> 0.99 at 230Vac,100% load
Output voltage	48 volts: from 42 volts to 58 volts
Output current	50A per module
Rectifier Efficiency	>= 95%

Short Circuit Protection	Continuous
input protection	shut down at high & Low voltage
Output protection	Over voltage shutdown, Blocking diode, High temperature protection
Visual Indications on rectifier module	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)
Alarms	rectifier fail, rectifier fan fail, communication fail, output voltage high, output voltage low, etc,
Operating temperature	-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



CONTROLLER SPECIFICATION

Input Voltage	40V to 60Vdc
Power	10W
Front Panel LCD user interface	8-line by 40-character LCD; Three status LEDs;
System Configuration Methods	Front panel LCD display and menu keys;
Digital Input	Options Up to 8 nos.
Digital Output	Options Up to 8 nos.
External Communication	RS-232 Port for Local configuration
	RS485 for External Device Communication (MODBUS)
DC Energy Metering	Built-in Provision upto DC Energy Metering
Alarm Events	1000 Alarm Event
Display	128 X 64 dot LCD; Severity sensitive backlit LCD
	4 Status Four status LEDs
	Keypad for Menu entry
Remote Communication	RS 485/RS422
Measurements	DC kWh (Energy) and Run Hours
	DC Voltage
	DC Current
Real time Display	Battery Voltage, Current
	Load Current
	Battery Status – Charging/Discharging
	DC Current from Rectifier
Alarm Display	in LCD/LED combination
	Alarm Logs -1000 alarm events

MODELS

MODEL NOS.	CAPACITY (KW)	MODEL NOS.	CAPACITY (KW)
EP4806-3R	9.0	EP4806-9R	27.0
EP4806-4R	12.0	EP4806-10R	30.0
EP4806-5R	15.0	EP4806-12R	36.0
EP4806-6R	18.0	EP4806-15R	45.0
EP4806-7R	21.0	EP4806-20R	60.0
EP4806-8R	24.0		



ORDERING INFORMATION

Please contact your Lineage Power Sales Representative for pricing, lead-time/availability of the listed model nos. and in case of any customized requirement.