

LP300A48VOD-CCU

UC 300A OUTPUT AT 48-58VDC



PRODUCT DESCRIPTION

The CCU system is designed as a hybrid type with MPPT + SMPS system based on rectifier & MPPT modules with high efficiency, single phase AC input & 4-channel solar input hot-pluggable, fan-cooled MPPT, 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 (15000W i.e. 300A at 50V) characteristic supplies the specified power over the full-output voltage range (48 to 58Vdc). There is a digital communication (CAN bus) between modules and the controller.



KEY FEATURES

Highly efficient rectifier & MPPT

Efficiency $\geq 95\%$

Minimum shadow effect

Highly rugged rectifier & MPPT

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 - Rectifier
Constant power between 70 - 100V dc, linearly de-rated power between 70V - 60V dc - MPPT

Compact and light

6+1 rectifiers & 4 MPPT accommodated in a small footprint implying a more compact system

Applications

The typical applications for this Hybrid system are both in indoor and outdoor environments and include:de:

- 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 + 10kw Solar MPPT
- 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,

SPECIFICATION FOR CHARGE CONTROLLER UNIT (CCU)

PARAMETER	SPECIFICATION
Solar Ultimate capacity	10kW (4*52A charge Controllers)
CCU Module Input Characteristics	Module Input Voltage Range: 58-150VDC (Max)
	Module Input Current (Max): 45A
CCU Module output Characteristics	Output Voltage: 53.5Vdc (Range 43.2Vdc to 58Vdc)
	Rated Current : 52A @ 48VDC
	Efficiency: ≥96% @ 100Vdc/40%~70% Load-at 53.5VDC
Battery Compatible	CCU compatible with both VRLA & Lithium Ion Batteries
Input termination	Input: 80A DP 110Vdc MCB for each Charge controller module Surge: PV SPD at input
Input Protection	Shut down / Module off at high or Low specified voltages
Output Protection	Output Over voltage shutdown, Output Short circuit shutdown, High temperature protection
LED Indication on CCU module	Green: ON→OK OFF→No Input Voltage Yellow: ON→Communication Failure RED: ON: Module fault
Operating Temperature	Operating Temperature: -40°C~75°C, De-rated Power: Linear de-rating above 55°C
Humidity	5% to 95% relative humidity (non-condensing)



SMPS (SWITCH MODE POWER SUPPLY)

Ultimate Capacity	350A (50A Rectifier Modules X 7 with N+1 configuration)
Rectifier Module Input Characteristics	Module Input Voltage Range: 85-300Vac (Max)
	Frequency: 45Hz~66Hz
	Input Current : ≤18A
	Power factor: ≥0.99 (220Vac@20%~100% load)
Rectifier Module Output Characteristics	Output Voltage: 53.5Vdc Range: 42Vdc ~ 58Vdc
	Rated Current: 50A
	Efficiency: ≥93% @ 230Vac
Power (voltage)	Full Power: 176Vac~300Vac Derated Power: below 175Vac

Input Termination	AC input: 125A DP MCB (for AC termination) Rectifier module Input: MCB 32A SP for each module Surge: SPD class B+C at AC input Earth : suitable TB or Bus bar
Input Protection	Input Under /Over voltage protections
Output Protection	Output Over voltage protections, Output Short circuit protection, High temperature protection
LED Indication on Rectifier module	Green: ON→OK OFF→No Input Voltage Yellow: ON→Communication Failure RED: ON: Module fault
Operating Temperature	Operating Temperature: -40°C~75°C, Full Power: -40°C~50°C, De-rated Power: Linear de-rating above 50°C
Humidity	5% to 95% relative humidity (non-condensing)



SYSTEM LEVEL SPECIFICATION

System Capacity	Solar (CCU): 10kW SMPS(FR/FC Rectifier system) :350A (50A x 7 no's with N+1 configuration)
Battery Termination	Fuse: 2x 400A, LVBD: 1x 400A for battery disconnect Battery Shunt: 400A x 1
Load Termination	MCB: MCB 63A SP X 2, MCB 32A X2, MCB 16A X 2 Load Shunt: 125A
Cabinet Type	IP 55 , OUTDOOR, GI Sheet with Powder Coating
Cabinet Dimensions	Approx. 1075mm(H) x 750(W) x 685mm (D)
Mounting	Floor Mountable
Access	Front & Rear

CONTROLLER SPECIFICATION (COMMON FOR CCU & SMPS)

Input Voltage	38V to 60Vdc
Power	10W
Front Panel LCD user interface	128*32 pixel LCD
System Configuration Methods	Front panel LCD display and menu keys;
Digital Input	Up to 8 nos.
Digital output	Up to 8 nos.
Communication	RS 485 For Battery Communication RS422/RS485 for External Device Communication (MODBUS)
Remote Communication	RS485/ RS422

Measurements	DC Voltage
	Load Current
	DC kWh (Energy) and Run Hours
	AC : voltage, run hours
	Solar: Input voltage & current, output current,
	Solar run hours
Lithium Ion battery	Communication & displays battery modules voltage, current, SOC, temp & SOH
Solar Charge Controller Unit	Communication & data display up to 8 solar CCU modules with voltage, output current, temperature
Real time Display	Battery Voltage, Current
	Load Current
	Battery Status – Charging/Discharging
	DC Current from Rectifier
Alarms	Solar CCU related: PV input voltage high/Low, Module Fail/Fault, Module comm Fail,
	SMPS related: Rectifier fail, Rectifier AC input Fail, Rectifier comm fail, Rectifier fan fail, Battery Low voltage, BLVD open, Battery fuse fail, Load MCB fail, System Over load
	System Level: System Door Open, System Fan fail, Smoke/Fire alarm,
Alarm Display	in LCD/LED combination
	Alarm Logs -1000 alarm events



TECHNICAL SPECIFICATIONS



MODELS

MODEL NOS.	CAPACITY (KW)	MODEL NOS.	CAPACITY (KW)
LP3000V48-3R	9.0	LP4000V48-9R	36.0
LP3000V48-4R	12.0	LP4000V48-12R	48.0
LP3000V48-5R	15.0	LP4000V48-15R	60.0
LP3000V48-7R	21.0	LP4000V48-21R	84.0
LP4000V48-3R	12.0	LP4000V48-27R	108.0
LP4000V48-5R	20.0	LP4000V48-30R	120.0
LP4000V48-6R	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.

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