48V DC SYSTEM

For Uninterrupted AC and DC Supply

de
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DATAERA EV SYSTEMS LLP

48V DC SYSTEM

Salient Features:

48V DC System Consists of:

- ✓ DSP Based High efficiency SMPS FCBC
- ✓ DSP Based True sine wave Inverter
- ✓ VRLA Tubular Gel Battery bank
- ✓ AC Distribution Panel for Uninterrupted AC Supply
- ✓ DC Distribution panel for Uninterrupted DC Supply
- ✓ SCADA module for communication with external systems
- ✓ Surge protection
- ✓ RCCB
- ✓ DC Earth leakage protection Circuit
- ✓ See through Glass window for Status monitoring
- ✓ IP54 Compliant Design

Specifications of 48V DC System	
Configuration	
BATTERY PACK	48V 100AH Tubular Gel battery pack
FLOAT CUM BOOST CHARGER	SMPS Based Micro controller driven MOSFET Based Float cum Boost Charger, 48V / 10A with all necessary protections
INVERTER	48VDC input, Output: 230V AC, 50Hz, MOSFET based inverter
DCDB Compartment	Distribution of DC & AC through required MCBs for loads
FLOAT CUM BOOST CHARGER Specifications	
Voltage	48V Nominal
Current	25A
Boost Voltage	56.4 V
Float Voltage	52.25 V
Line & Load Regulation	+/- 1%
Ripple	<1%
Constant Current Mode	
Line & Load Regulation	+/- 1%
Ripple	<1%
General	
Input Voltage	230V AC ±10%, 1 phase, 50Hz
Input Supply protection & Control	MCB
Output supply protection &Control	Overload, over-voltage, Short-circuit Protections
Indicators	input voltage, output voltage, charging current, mode of operation etc.
Float / Boost	Automatic Float and boost operation
Stabilization	Output DC supply will be stable against variations in input mains AC supply.
Cabinet	Charger housed in a cabinet with suitable output terminals.
Dimensions	W : 1200mm x 800mm D x 1600mm H (Approx)
Operating Temperature	0ºC to + 55 ºC
Weight	Approx. 250kgs

Charger Features:

- DSP Based SMPS Charger
- Auto voltage control (CV mode)
- Maximum Voltage Limiter(CV Mode)
- Drooping characteristic
- Soft Start Feature
- DC Overload Trip and Alarm
- DC Over voltage Trip
- DC Under voltage Alarm
- Reverse Blocking
- Communicates with Inverter and Other peripherals

Specification of Charger		
MODEL		**DE-FCBC-4825**
OUTPUT	**BOOST CHARGE VOLTAGE**	54.25V
	FLOAT CHARGE VOLTAGE	52.25V
	CURRENT	25A
	VOLTAGE ADJ. RANGE	47.5 ~ 58.8V
	RECOMMENDED BATTERY CAPACITY(AMP HOURS)	90 ~ 270Ah
	LEAKAGE CURRENT FROM BATTERY(Typ.)	<100mA
INPUT	**VOLTAGE RANGE**	150~264VAC
	FREQUENCY RANGE	47 ~ 50Hz
	POWER FACTOR (Typ.)	0.97/230VAC at full load
	EFFICIENCY (Typ.)	91%
	AC CURRENT(Typ.)	8.5A/230VAC
	INRUSH CURRENT (Typ.)	COLD START 45A/230VAC
	LEAKAGE CURRENT	<2mA / 240VAC
PROTECTION	**OVER VOLTAGE**	50-60V
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down
ENVIRONMENT	**WORKING TEMP.**	-30 ~ +70˚C(Refer to "Derating Curve")
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +85˚C, 10 ~ 95% RH non-condensing
	TEMP. COEFFICIENT	±0.03%(0 ~ 50˚C)
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC	**SAFETY STANDARDS**	UL60950-1, TUV EN60950-1, EAC TP TC 004 approved
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25□/ 70% RH
	EMC EMISSION	Compliance to EN55032 (CISPR32) Conduction Class B, Radiation Class A ; EN61000-3-2,-3, EAC TP TC 020
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), Heavy industry level, criteria A, EAC TP TC 020
Dimensions	19” x 5U x 450 mm	

Inverter Features:

- 48V,1KVA230V Pure Sine wave Inverter
- Proven robust design for Harsh Environment
- Protection and control :
  Over-Load, Over-Voltage, Short-circuit Protections.
- Inbuilt Soft Start feature
- Standard and branded switchgear for
  AC & DC Power distribution

Specification of Inverter		
MODEL NO.		**DE-INV-1000-48230**
OUTPUT	**RATED POWER**	1000W
	MAXIMUM OUTPUT POWER	1150W for 180 sec. / 1500W for 10 sec. / surge power 2000W for 30 cycles
	AC VOLTAGE	230VAC
	FREQUENCY	50Hz
	WAVEFORM	True sine wave (THD<3%)
	AC REGULATION	±3.0%
	SAVING MODE	Default disabled. Load≦5W will be changed to standby mode
	FRONT PANEL INDICATOR	Battery voltage level, output load level, saving mode, fault and operation status
INPUT	**BAT. VOLTAGE**	48V
	VOLTAGE RANGE	42 ~ 54.25VDC
	DC CURRENT	25A
	NO LOAD DISSIPATION	≦6W @ standby saving mode
	OFFMODE CURRENT DRAW	≦1mA
	EFFICIENCY	90%
	BATTERY TYPES	LIFEPO4
BATTERY INPUT PROTECTION	**FUSE**	20A*2
	BAT. LOW ALARM	45±4%
	BAT. LOW SHUTDOWN	42±4%
	REVERSE POLARITY	By internal fuse open
OUTPUT PROTECTION	**OVER TEMPERATURE**	70□ ± 5□
		Protection type : Shut down o/p voltage, re-power on to recover; by internal RTH3 detect on heat sink of power diode
	OUTPUT SHORT	Protection type : Shut down o/p voltage, re-power on to recover
	OVER LOAD (Typ.)	105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec.
		Protection type : Shut down o/p voltage, re-power on to recover
	GFCI PROCTECTION	Optional (Only type F)
ENVIRONMENT	**WORKINGTEMP.**	0 ~ +40˚C @ 100% load ; +60˚C @ 50% load
	WORKING HUMIDITY	20% ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-30~+70˚C/-22~+158°F,10~95%RHnon-condensing
SAFETY & EMC	**WITHSTAND VOLTAGE**	Bat I/P - AC O/P:3.0KVAC AC O/P - FG:1.5KVAC
	ISOLATION RESISTANCE	AC O/P-FG, Bat I/P-FG:100M Ohms/500VDC / 25□/ 70% RH
	EMC EMISSION	Compliance to FCC class A, EAC TP TC 020
	EMC IMMUNITY	Compliance to EAC TP TC 020
OTHERS	**COOLING**	Loading controlled cooling fan for GFCI receptacle-type F ; Thermostatically controlled cooling fan for others.
Dimensions		19” x 5U x 450 mm

Battery Features:

- Positive plates for Long Life
- LifePO4 battery packs
- Synthetic Separator for Long Life at High Temperature
- Improvised Gel Formula for Better performance at Extreme Operating conditions
- Specially designed for Solar application

Model No.		**DE-LP-4810**
Rating		48V/100AH
Controller		High Integrated Battery stack Slave
Measures	**Cell Voltages**	✓
	Current	✓
	Temperature	✓
Stackable Architecture which supports max no of Cells		256
High Speed Industrial Communication	**RS232 / RS485**	✓
	CANBUS	✓
Intelligent Cell balancing		✓
Daisy Chain communication		✓
SOC and SOH Calculations		✓
Onboard capacitive isolation		✓
Open battery Connection detection		✓
Software Integration	**Front End Application**	Provided
Cell Voltage		3.2V
Rated Capacity		100AH
Cell Chemistry		LiFePO4
No. of Cells in series		15 Cells
No. of Cells stackable		Up to 256 Cells
Rating		48V/100AH
Protections	**Cell Over/Under Voltage**	✓
	Over Current	✓
	Over Temperature	✓
Data Logging	**Cell Voltage**	✓
	Current	✓
	Temperature	✓
Dimensions		
Common Applications	**Solar, Electric Vehicles, UPS, EV 3 Wheeler, Laser System**	

Resistive Loads - Custom Designs

Computerized Thermal Battery Test System

Computerized Battery Test System

SMPS Ageing Load Setup

Automated Test Equipment

DC Electronic Load Bank

i-CHARGER

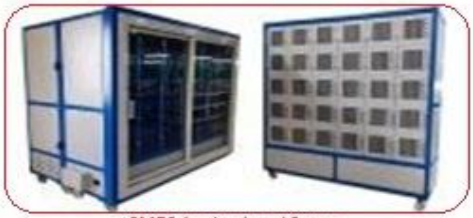
Computerized DC Electronic Load Bank

AC DC Resistive Load Bank

Resistive Loads - Custom Designs

48V DC System

Computerized Battery Test System



SMPS Ageing Load Setup

Battery Analyser KIT

Computerized DC Electronic Load Bank

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