

ALL-IN-ONE PV ESS CONVERTER

Smart Ess Unit - M50-100

Introduction

Smart Ess Unit - M50-100 All-in-one Cabinet consists of powerbattery cluster, hybrid inverter, variable frequency temperaturecontrol system, BMS, EMS, combined precision suppressionand burst suppression fire protection system, electrical auxiliaryequipment and weather-resistant sheet metal cabinet, and the capacity of the ESS is 50kW/103.68kWh.



Features

Safe:

- Electrical multi-dimensional fusion perception, multi-level fuse protection;
- Internal integration of PV/ESS/PCS equipment, more unified bus control, improving system stability;
- Early thermal runaway prewarning design, integrating detection, fire suppression, combustible gas detection, smoke prevention and explosion relief functions, which interacts with BMS and EMS to realize PACK-level targeted fire extinguishing;
- Smart temperature control system, system temperature difference $\leq 5^{\circ}\text{C}$, battery cycle life increased by 12%.

Simple:

- All-in-one design and modular installation, single cabinet covering an area of just 1.21m²;
- Applicable to multiple industrial scenarios and easy to connect to the grid;
- Anti-installation short-circuit error, convenient and safe for maintenance;
- simple capacity expansion covering power range from 50kW to 300kW;
- Factory prefabrication and integrated transportation to reduce the transportation, installation and commissioning fees by 15%.

Smart:

- Remote cloud operation and maintenance, supporting remote and local monitoring;
- Smart balancing strategy and system AI prewarning to ensure the consistency of battery life cycle;
- Support black start function with reliable power supply in off-grid/micro-grid mode;
- Support multiple operation modes (VPP, grid-connected, off-grid) to improve revenue.



Commercial Premises



Industrial Park



Mine



Pastoral



Petrol Station



Island



Data center

*The product diagram is for reference only !

Technical Parameters

MODEL		Smart Ess Unit - M50-100
PV Parameters		
Max. Input Power		50KW
Start-up Voltage		200V
PV Max.voltage		1000Vdc
PV Rated Voltage		630Vdc
MPPT Operating Voltage Range		200 ~ 850Vdc
MPPT Qty.		4
Qty. Of Single MPPT Input Channels		2
Max.input Current		30A
Max.short Circuit Current		40A
ESS Parameters		
Rated Power		103.68KWh
Rated Capacity		150Ah
Rated Voltage		691.2Vdc
Battery Voltage Range		604.8 ~ 777.6 Vdc
Rated Charge / Discharge Current		75 A
Max.charge / Discharge Current		90 A
AC Parameters		
Rated Output Power		50KW
Max.input Apparent Power		50 KVA
Grid-connected Max.output Apparent Power		50 KVA
Off-grid Max.output Apparent Power		50 KVA
Max.output Current		75 A
Rated Voltage (Input & Output)		3L/N/PE; 400V
Grid Frequency		50HZ / 60HZ
THDU		<3%@ Rated Power & Linear Load
Efficiency Parameters		
Max.PV Conversion Efficiency		98.4%
EU Efficiency		97.5%
Ambient Parameters		
Operating Temperature		-20°C ~ 50°C (45°C Derating)
Storage Temperature		-20°C~45°C
Humidity		5~95%, No Condensing
Altitude		2000m (2000m Derating)
Cooling Mode		Smart Air Conditioner, Smart Fan
Other Parameters		
liFePO4 Cell Cycle Life (0.5C/0.5C, RT 25 C)		6000 Cycles @ DOD 80%
Maximum in parallel		6 units (Up to 300KW)
Dimension (W*D*H)		1100*1100*2000mm
Weight		1300 kg
Ingress Protection		IP54
Communication Mode		Rs485, Ethernet ,4G

Product continues to iterate, specifications may be updated without prior notice.