Introduction

MOTOMA BESS-500kW/1045kWh integrates a liquid-cooled battery system, a photovoltaic-storage hybrid system, an energy management system, fire protection, lightning protection, and grounding. It features efficient renewable energy utilization, multi-energy coordinated control, seamless off-grid switching, economic optimization, emergency backup power, and flexible operational strategies tailored to customer needs.

Features

- PV and energy storage integration, enabling customers to efficiently utilize renewable energy.
- Three-level design with power quality management and low/high voltage ride-through capability, suitable for industrial and mining enterprises with poor power quality.
- Multiple operation modes and control functions, supporting upper-level dispatching for flexible customer applications.
- Built-in seamless on/off-grid STS switching and VSG function, with soft start and strong load-carrying capability.
- Isolated transformer design, ensuring safe and reliable power supply for users.

Battery Parameters

Name	Parameter	Remarks
Cell type[Ah]	LFP-3.2V-314	
Rated capacity [kWh]	1045	
Nominal voltage [Vdc]	832	
Nominal voltage [Vdc]	728～936	
Charging and discharging rate[CP]	≤0.5	
Cooling method	Liquid cooling	
Fire extinguisher system	Aerosol	Perfluorohexane/Heptafluoropropane(optional)
Working temperature range[℃]	-20 ～ +50	
Storage temperature [℃]	-20 ～ +45	
Working humidity range[RH]	0～95%	No condensation
Cycle Life	8000 Cycles @ DOD 80%	
System communication interface	Ethernet/RS485	
External system communication protocol	ModbusTCP/IEC61850/IEC104/Modbus RTU	

System Parameters

Name	Parameter	Remarks
Nominal battery capacity[kWh]	1045	
PCS power rating[kW]	500	
Photovoltaic input power[kW]	600	
Load capacity	1.500kW resistive load, 2. 300kW inductive load	The motor is the most severe inductive load
Off-grid output voltage	400	Three phase four wire
Off-grid output frequency[Hz]	50/60, ±2	
And off-grid switching time[ms]	20	
Grid-connected voltage	320~460	
Grid connection frequency[Hz]	50/60 adjustable	
Extinguishing and protection	Aerosol	Perfluorohexane/Heptafluoropropane
Operating ambient temperature[℃]	-20-45	
Working environment humidity[RH]	≤95%	-20℃-45℃
Height[m]	＜2000	
Noise[dB]	＜75(A)	
Lightning protection level	Level ll	
Ingress protection	IP54	
Corrosion resistance grade	C3	
Dimensions (W*D*H)[mm]	6058*2438*2896	C4 and C5 are Optional
Weight[kg]	About 15,000	20ft container
Battery system certification	IEC 62619, IEC 60730, CE-EMC	
PCS attestation	EN62477-1, EN61000-6-2, EN61000-6-4, etc	
Maritime certification	Classification Society Certification, UN38.3, UN3536	

Photovoltaic-Storage Hybrid System

AC parameter (on-Grid)		Remarks
Maximum output power (kVA)	550	
Rated output power (kW)	500	
Nominal grid voltage (V)	400	
Power grid voltage range (V)	320~460	
Rated output current (A)	722	
Rated grid frequency (Hz)	50/60	
THDi	<3%	
Power factor	1 Advance ~1 lag (can be set)	
Alternating current system	3W+N+PE	
Isolation transformer ratio	315/400	
AC parameter (off-grid)		
Maximum output power (kVA)	550	
Rated output power (kW)	500	
Nominal output voltage (V)	400	
Rated output current (A)	722	
THDu	Linear ≤ 1%; or nonlinear ≤ 5%	
Rated grid frequency (Hz)	50/60	
overload capacity	110% for a long time, 120% for one minute	
DCDC		
Maximum PV input voltage (V)	1000	
Maximum PV power (kW)	600	
Number of MPPT modules	5/6	
MPPT Voltage range (V)	250-850	
MPPT Full load voltage range (V)	450-850	
Battery input		
Battery voltage range (V)	500~950	
Maximum charging power (kW)	550	
Standard parameters		
Dimension W*D*H (mm)	(600*720*2,050)*2+1600*1050*2050	
Working environment temperature (℃)	-30~ 55	
Relative humidity	0 ~95% no condensation	
Noise (dB)	<70	
Maximum working altitude	<3000 m	
Cooling-down method	forced air cooling	
Display screen	Liquid crystal touch screen	
Communication	RS485,TCP/IP	

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