

2MWh-500KW BESS

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Henan Liyue New Energy Co., Ltd.

1.Product Introduction

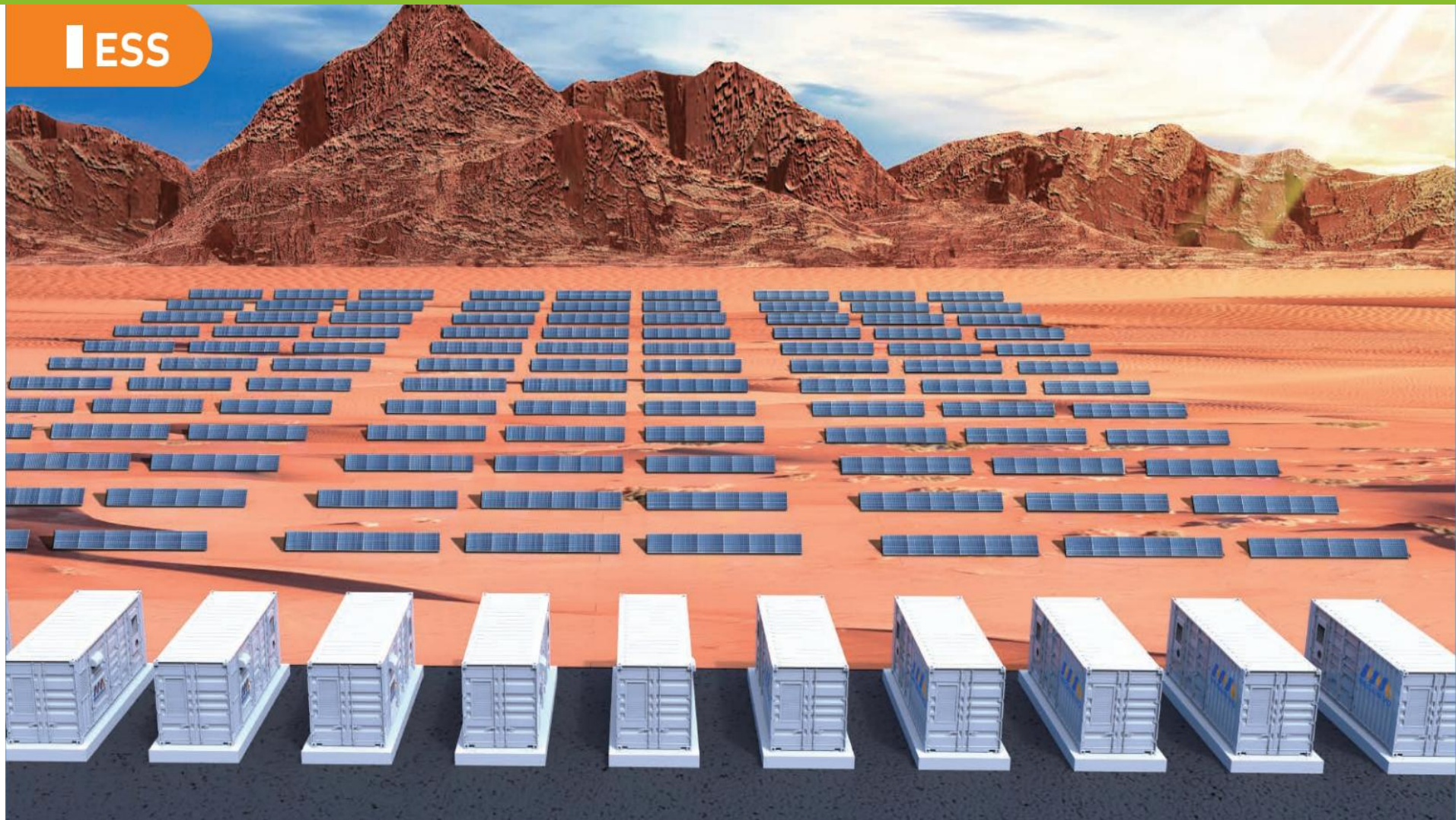
2.Product design

3.Equipment List



Product Introduction

ESS



Product Introduction

Feature:

Integrated MPPT controller

Support on-off grid

Integrated EMS

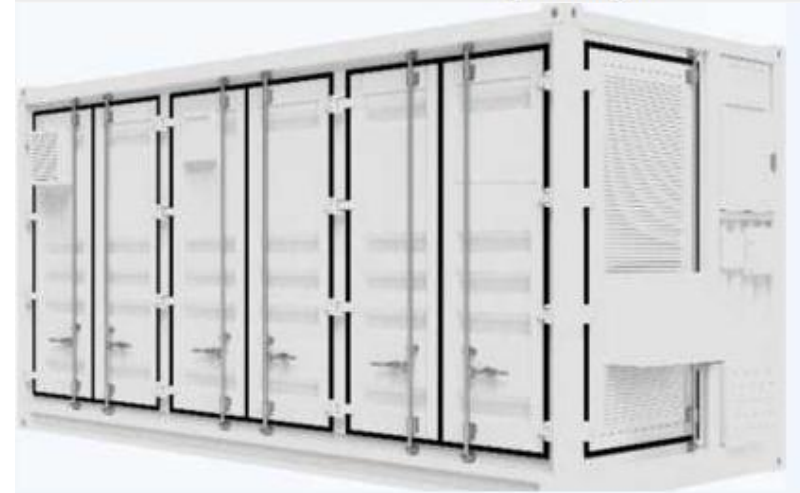
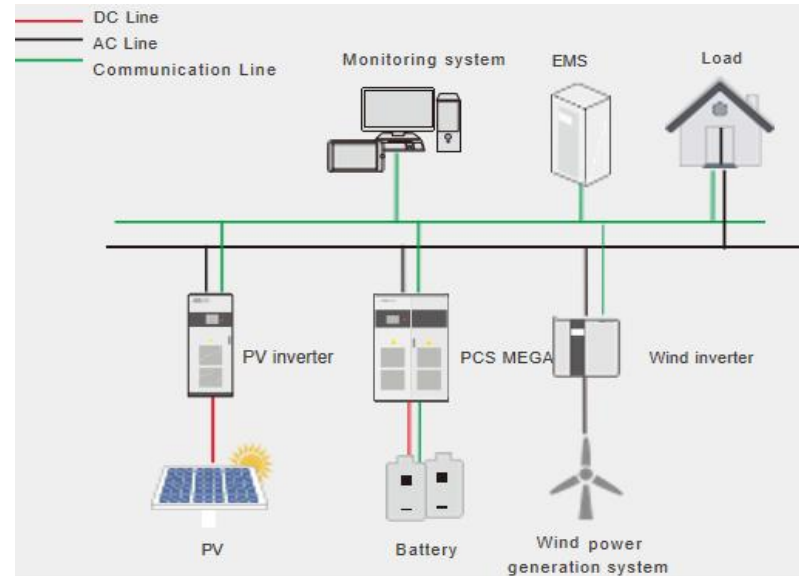
20 foot container

MAX 2MWH Capacity

500KW PCS

Liquid cooling

Comprehensive fire protection



Product design

2.1 Cell

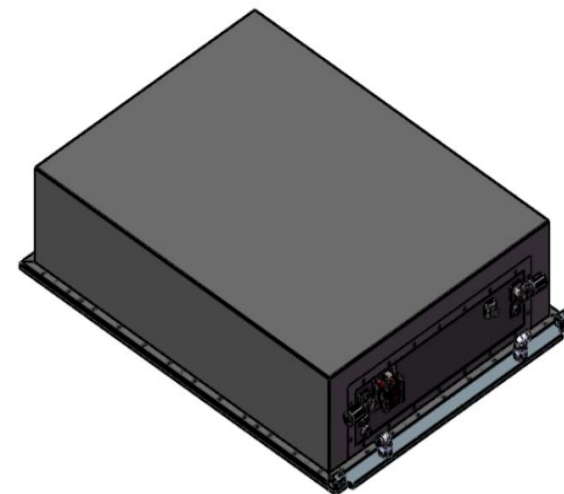
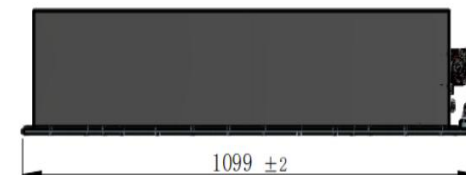
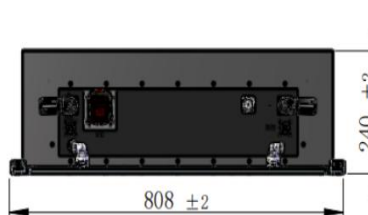
NO.	Item	Parameters
1	Battery type	LFP
2	Size	173.9 × 71.7 × 207.2mm
3	Weight	5.35±0.3kg
4	Rated capacity	280Ah RT@0.5C
5	Voltage range	2.5~3.65V
6	Rated voltage	3.2V
7	Maximum charging/discharging current	280A
8	Ambient Temperature	charge : 0~55°C
		discharge : -20~55°C



Product design

2.2 Pack

NO.	Item	Parameters
1	Size	808 × 1099 × 240mm
2	weight	308±5kg
3	Series parallel mode	2P24S
4	Rate voltage	76.8V
5	Voltage range	67.2V-86.4V
6	Ambient Temperature	-20~60℃
7	kWh	43.008
8	Charge discharge rate	0.5C
9	Communication protocol	CAN
10	IP level	IP65
11	Heat dissipation method	Liquid cooling method




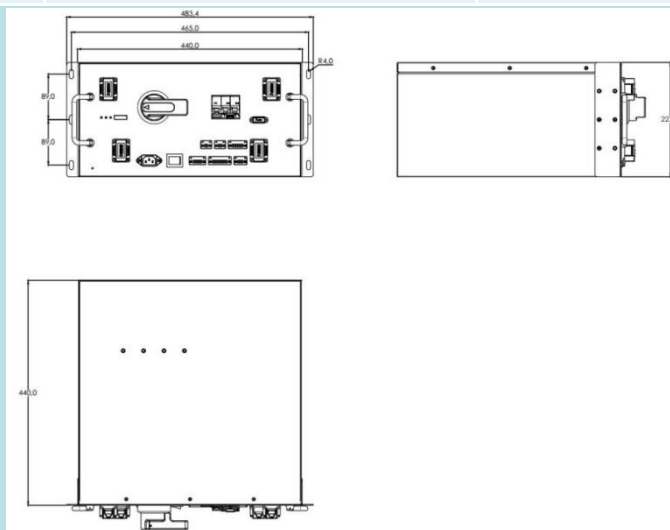
2.3 Cluster

NO.	Item	Parameters
1	weight	2490±40kg
2	Rate voltage	614.4V
3	Voltage range	537.6V-691.2V
4	Number of cycles	≥7000 (25°C, 0.5C)
5	Ambient Temperature	-20~60°C
6	kWh	344.064
7	Charge discharge rate	0.5C
8	Communication protocol	CAN
9	IP level	IP65
10	Heat dissipation method	Liquid cooling



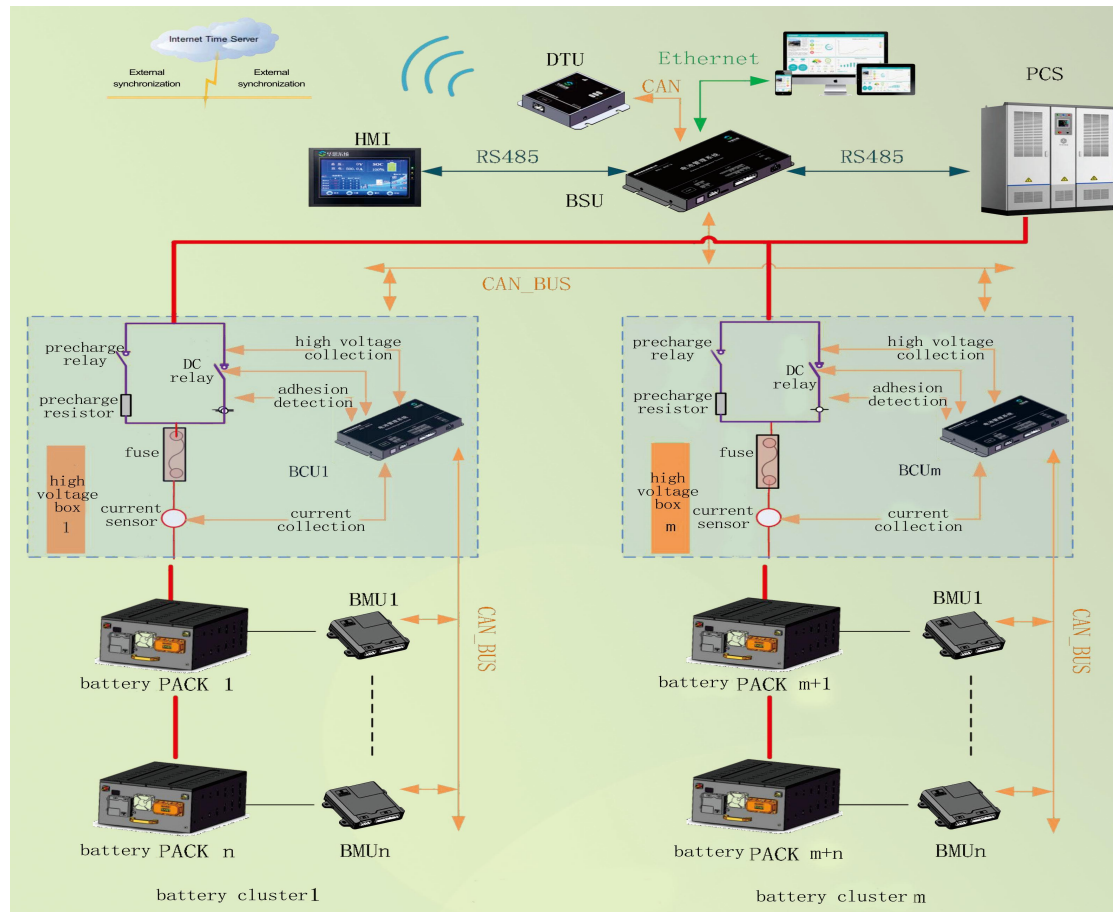
2.4 Standard High-Voltage Box

	Standard High-Voltage Box		
1	Battery voltage input range	200V--900V	
2	Rated Current	100A/250A	
3	AC input interface	220V 50/60Hz	
4	DC input interface	24V	
5	DC output interface	24V	
6	External communication interface	CAN/RS485	
7	Internal communication interface	CAN/RS485	
8	Dry contact control	Optional(not available by default)	
9	LCD	Optional(not available by default)	
10	Dimensions	482mm*560mm*223.7mm	
11	Total weight		

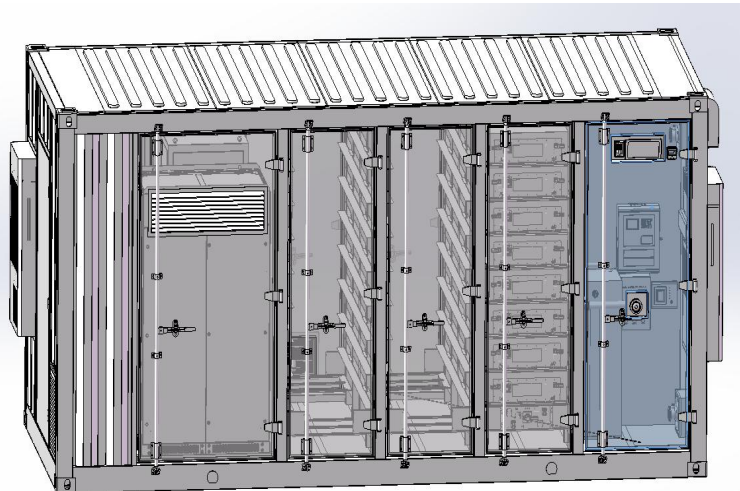


Product design

2.5 Energy Storage Battery System Schematic diagram



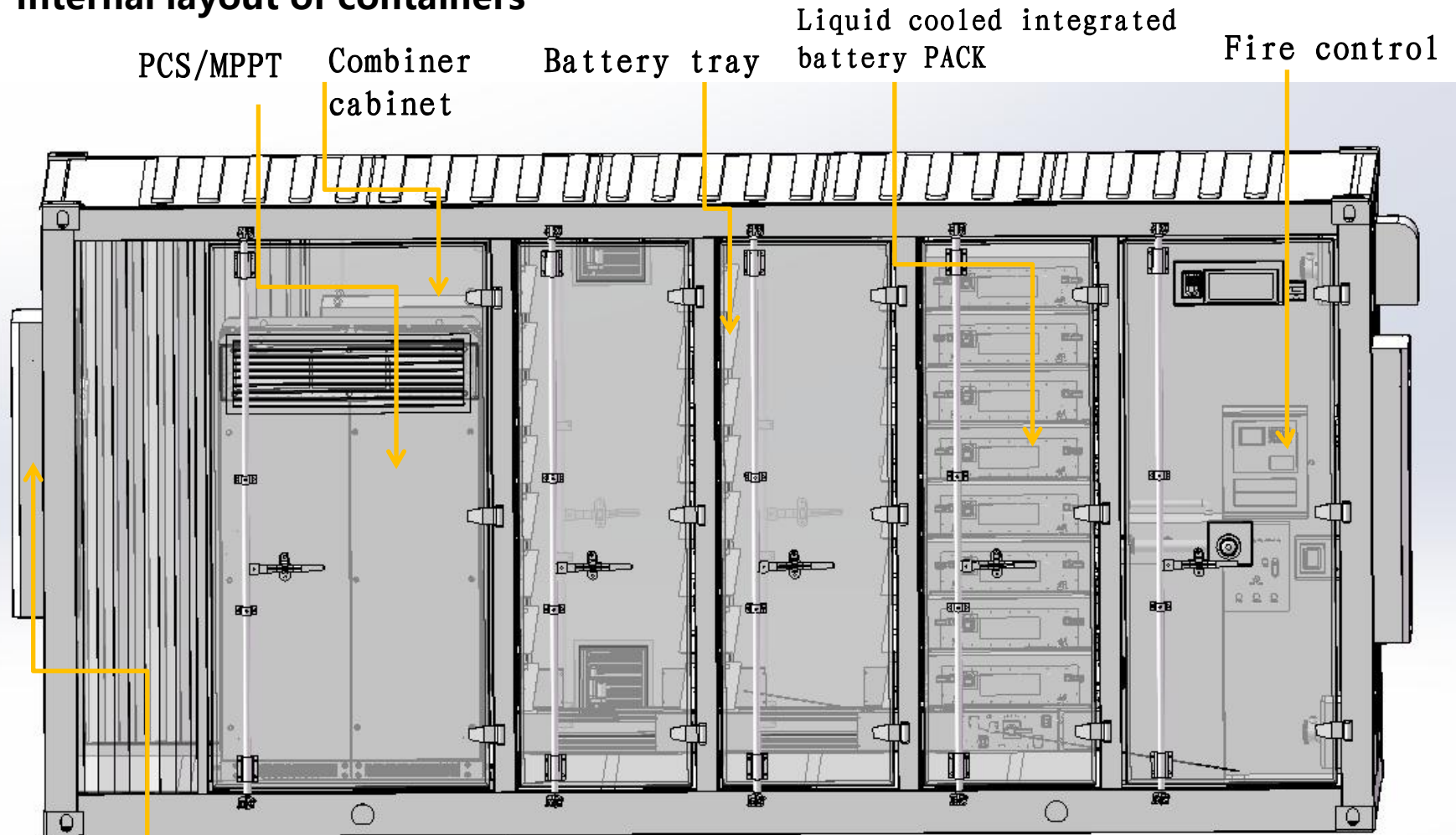
2.6 System

	Item	Data	Note
	Battery System		Subsequent capacity expansion can be supported
1	Total energy (kWh)	2064.384	
2	Total rated voltage (V)	614.4	
3	Battery cluster No.	6	
4	Max. PCS power (KW)	500	
5	PCS Rated voltage (V)	400	
6	PCS Output AC Connector	3W+N+PE	
7	The total number of PACK in the system	48	
8	Container Size	20-inch	
9	Weight	20000kg	
10	Cooling method	Liquid cooling	
11	Certification	UN3536 /CCS	



Product design

2.7 Internal layout of containers



Dehumidifying air conditioning



Product design

2.8 Integrated Solar Storage and Charging Machine

See 500Kw Data

MPS microgrid hybrid inverter



KEY STRENGTHS

- Internal integration of PV/ storage / PCS equipment, more unified bus control, increased system stability.
- Highly integrated, easy to deploy, shorten the installation and debugging time.
- Easy expansion, support PV flexible configuration.
- EMS functions are integrated into hybrid inverter , improve the economic benefits of the system.
- Support unattended, improve the operation and maintenance efficiency of the operator.
- With Mixed economy mode.

APPLICATIONS

- » Off-grid mine
- » Off-grid island
- » Nomadic farm
- » Villages without electricity

AC(on-grid)

Model	MPS0030	MPS0050	MPS0100	MPS0150	MPS0250	MPS0500
Max output power(kVA)	33	55	110	165	275	550
Rate output power(kW)	30	50	100	150	250	500
Rated voltage(V)	400					
Voltage range(V)	320~460					
Rated current(A)	43	72	144	216	361	722
Rated frequency (Hz)	50/60					
Frequency range (Hz)	45~55/55~65					
THDI	<5%					
Power factor	lagging-leading (Settable)					
AC connection	3W+N+PE					
Transformer ratio	100/400	200/400	270/400	270/400	270/400	315/400

AC(off-grid)

Max output power(kVA)	33	55	110	165	275	550
Rated power(kW)	30	50	100	150	250	500
Rated voltage(V)	400					
Rated current(A)	43	72	144	216	361	722
THDu	≤1% linear, or ≤5% nonlinear					
Rated frequency(Hz)	50/60					
Overload capacity	110% long-term					

PV input

Max.PV input voltage(V)	1,000					
Max.PV power(kW)	36/72	60/120	120/180/240	120/180/240	300/360	600/660/720
MPPT voltage range(V)	250-850					
MPPT voltage range@full load (V)	450-850					

Battery

Battery voltage range(V)	250~850	320~850	420~850	420~850	420~850	500~850
Max. charging power(kW)	36/72	60/120	120/180/240	120/180/240	300/360	600/660/720

General data

Dimension W*D*H (mm)	800*800*1,900	800*800*1,900	1,200*800*2,050	1,200*800*2,050	1,600*720*2,050/1+ 1,200*800*2,050	1,600*720*2,050*2+ 1,600*1050*2,050
Net weight (kg)	576/607	720/750	1,120/1,150/1,180	1,250/1,280/1,310	1,980/2,010	3,265/3,295/3,325
Operation temperature (°C)	-30 ~ 55					
Relative humidity	0 ~95% non-condensing					
Ingress protection	IP20					
Noise emission (dB)	<70					
Operating altitude	5,000m(>=3,000 Derating)					
Cooling	Air Cooling					

Display and communication

Display	LCD touch-screen
BMS communication	RS485, CAN
EMS communication	RS485, TCP/IP
Certificates	EN62109-1/-2, EN62477-1, EN61000-6-2, EN61000-6-4, South Africa NRS097-2-1:2017, Pakistan & India IEC61727, IEC62116, IEC 61683

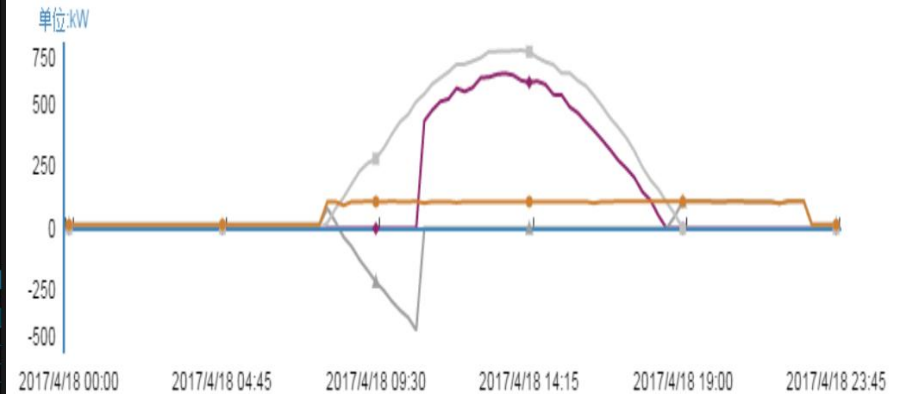


Product design

2.9 Interface of EMS



◆◆ 1#EMS100-1000k(11)负荷总有功功率 ◆◆ 1#EMS100-1000k(11)光伏逆变器总有功功率 ◆◆ 1#EMS100-1000k(11)储能逆变器总有功功率
◆◆ 1#EMS100-1000k(11)并网功率



Equipment List

	Item	Model and Specification	Unit	Quantity	Note
1	battery	2064.384KWh	set	1	LFP (6battery cluster)
2	BMS	Three-level architecture system	set	1	Including wiring harness
3	high-voltage Controller	1000V-250A	set	6	
4	EMS	EMS	set	1	
5	PCS/MPPT	500KW	set	1	
6	Combiner cabinet	BreenBatt	set	1	
7	lighting system	LED, switch, emergency indicator, emergency stop button	set	1	
8	fire Fighting System	Smoke, temperature, fire alarm control host, heptafluoropropane fire extinguisher	set	1	
9	air conditioner	Integrated vertical air conditioner	set	2	
10	container	Tentatively 20-inch (including battery rack)	set	1	easy to expand capacity
11	others	15KW Liquid cooling unit	set	1	

