



# UTILITY-SCALE ESS SOLUTION

WS-L5000-BC-2

WS-MV5000

## WS-L5000-BC-2 | The Low LCOS Multi-intelligent Energy Storage Solution

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**Economical and efficient**
  - 20-foot container 5016kWh
  - Maximum efficiency 94.5%
  - Shoulder-to-shoulder/back-to-back installation
  - Maximum support for 10-year warranty
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**Flexible and convenient**
  - Liquid cooling circuit equipped with bidirectional shut-off valve
  - Equipped with waste liquid collection device
  - Single/dual circuit output, 2/4h application
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**Smart Cloud Management**
  - AI-Powered Load Optimization
  - 24/7 Remote Monitoring & O&M
  - Real-Time Battery Health & Safety Alerts
  - Cloud-Connected Ecosystem
- 
**Ultimate Safety**
  - 2+3 Level Fire Protection System
  - 3+2+1 Level Electrical Safety Protection

## WS-MV5000 | Integrated Boost and Conversion Solution

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**Intelligent Collaboration**
  - AI-Power Load Optimization
  - 24/7 Remote Monitoring & O&M
  - Cloud-Connected Ecosystem
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**Safe and Reliable**
  - 3+3 level overcurrent and loop protection
  - Equipped with dual fire detection
  - Multi-chamber independent heat dissipation to avoid hot spot effect
  - Strong environmental adaptability, corrosion resistance grade C5M, protection rating IP54
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**Grid-friendly**
  - Supports connection to 12kV-36kV, 50Hz/60Hz power grid
  - Supports ring network configuration, redundant load power supply
  - Equipped with PQ/VF/VSG/SVG functions
  - Equipped with primary frequency regulation, LVRT, HVRT capabilities
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**Economical and efficient**
  - 20-foot integrated machine size design, easy to transport, small footprint
  - PCS adopts three-phase boost topology, maximum conversion efficiency 99%

# Liquid-Cooled ESS

## Model

WS-L5000-BC-2

### Battery Data

Battery Type	LiFePO4
Nominal Capacity ( Cell )	314Ah
PACK Configuration	1P104S
RACK Configuration	4*1P104S
System Configuration	2*6P416S (12P416S)
Nominal Voltage	1331.2Vdc (1144-1497.6Vdc)
Nominal Energy	5016kWh (12× 418kWh)
Nominal Current	2*939A
Charge/Discharge Rate	0.5P
DC efficiency	≥94.5%

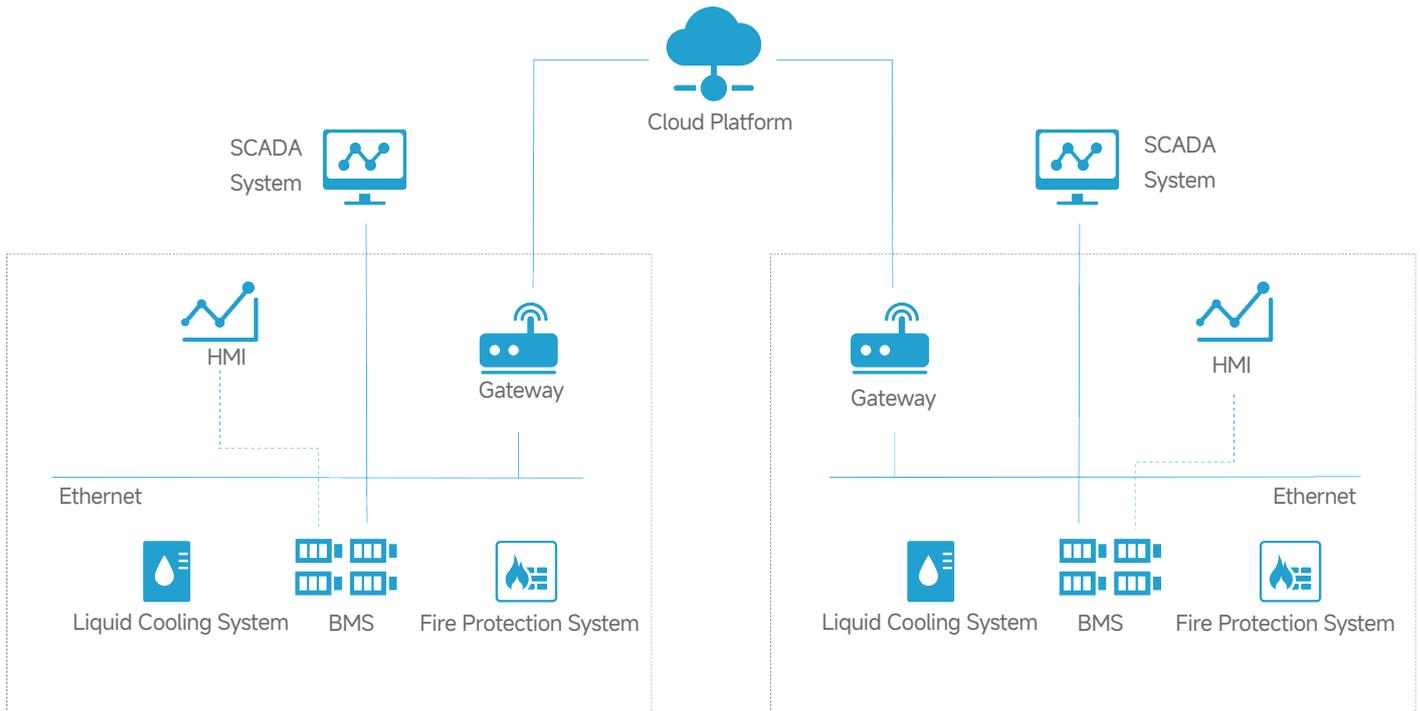
### System Data

Operating Temperature	-30°C ~ +55°C (>45°C derating)
Storage Temperature	-30°C ~ +60°C
Humidity	0 ~ 95%RH
Type of cooling BAT	Liquid cooling
Fire Suppression	Aerosol、Water
Ingress Protection	IP55
Anticorrosion grade	C4/C5
Altitude	≤3000m
Weight	≤42T
Dimensions ( W × D × H )	6058*2438*2896mm
Communication	Ethernet/CAN

Standard compliance

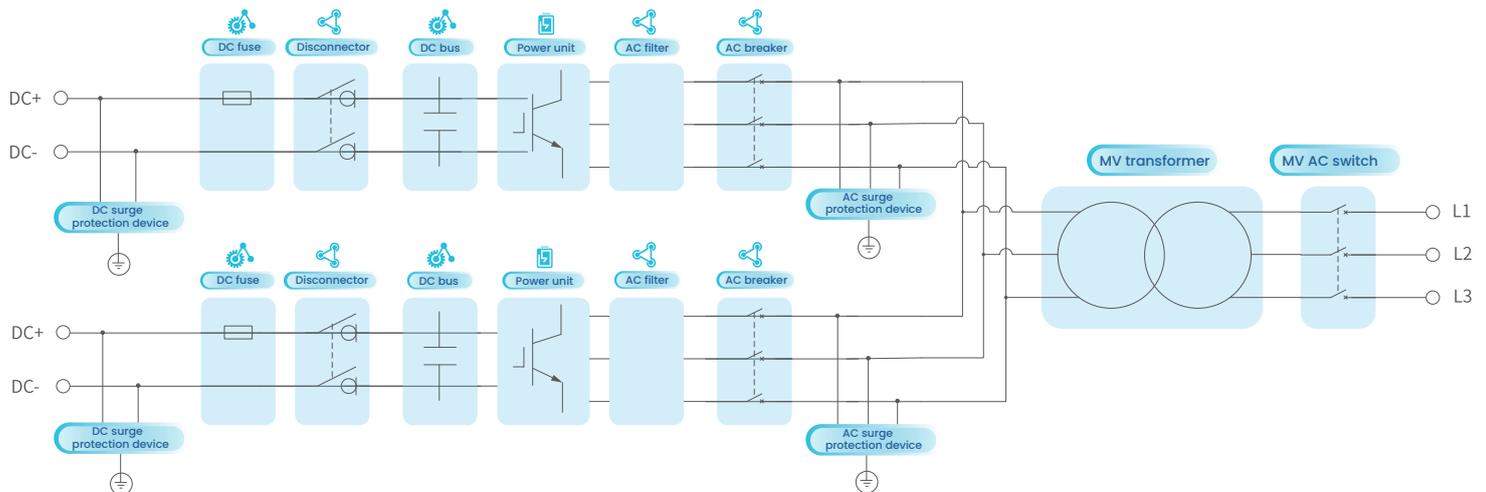
IEC62619,IEC62477,IEC62933,IEC63056,IEC61000,UN38.3,UN3536,NFPA855,UL9540A

## Architecture Diagram



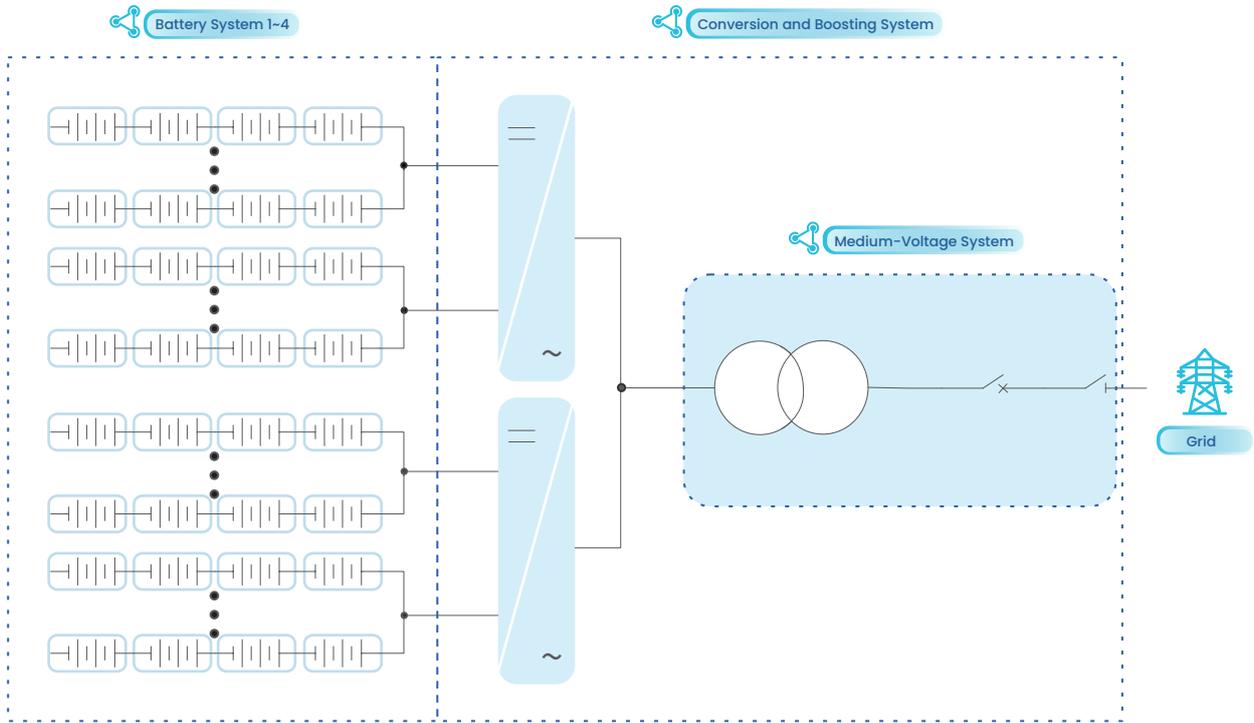
Model	WS-MV5000-2
<b>DC Side Data</b>	
Max. DC voltage	1500Vdc
DC voltage range for nominal power	1000Vdc~1500Vdc
Max. DC current	1404A*4
No. of DC inputs	4
<b>PCS AC Side Data</b>	
Rated output power	2500*2 kVA
Max output power	2500*1.1*2 kVA @35°C
Rated AC voltage	690Vac
AC voltage range	621~759Vac (-10%~+10%)
Max AC current	2300*2 A
Nominal grid frequency	50Hz/60Hz
Grid frequency rage	45~55Hz/55~65Hz
AC current THD	< 3% @Pn
Power factor at nominal power	> 0.99
Power factor range	1 leading ~ 1 lagging
<b>Efficiency</b>	
Average efficiency	≥98.3%
<b>Transformer</b>	
Isolation Mode	Oil-Immersed Transformer
Transformer Rated Power	5200kVA
LV/MV Voltage	0.69kV/10~35kV
Transformer Vector	Dy11
Cooling Type	ONAN/KNAN
<b>General Data</b>	
Dimensions (W*D*H)	6058*2438*2896mm
Weight	≤23T
Protection degree	IP65 for PCS, IP54 others
Cooling method	Natural air cooling (transformer)/Air-water cooling (PCS)
altitude	4000m (> 2000m derating)
Operating temperature range	-30°C~60°C (> 45°C derating)
Humidity range	0~95%
Anticorrosion grade	C4/C5
Over voltage range	DC OVC II / AC OVC III
Surge protection	DC Type II / AC Type II
Communication	RS485/ETH/CAN
Standard compliance	IEC 62477, IEC 61000, IEC 62920, IEC 61727, IEC 62116, IEC 60076, IEC 62271-100/103/200, EN 50549-2/-10, ANSI C57.12.10/20

## Topology



# Typical 4H Application Circuit Diagram

The 5MW product series includes the energy storage container (WS-L5000-BC-2) and the integrated PCS & step-up transformer unit (WS-MV5000-2). It can be configured to form GW-scale energy storage power stations with 2-hour/4-hour duration for the generation/grid side, and is equipped with the capabilities of primary frequency regulation and inertial support.





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