

# 1500V Intelligent Liquid ESS

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INTELLIGENT POWER EDGE



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# Intelligent ESS Solutions



**Own technology**

**1GWh+ deliveries**



**Design and  
manufacturing**

**3 GWh capacity  
10GWh in constructing**



**DC side solutions**

**60+engineers**



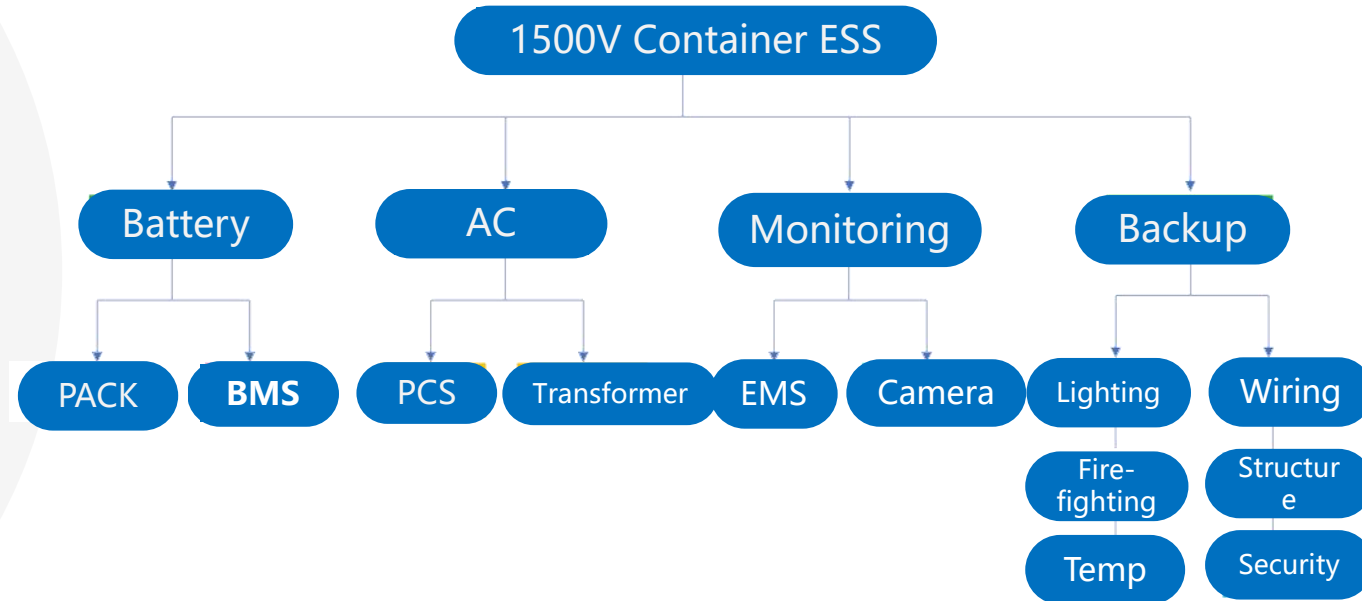
**Cloud platform**

**lifetime  
management**

# System structure



Modular design, expandable  
upon project requirements



# System Parameters



Capacity	2.1MWh
Specifications	1248V280AH*6P
Voltage range	975V ~ 1423.5V
Recommended discharging current	140A*6P
Max discharging current	280A*6P
Working temp	-20℃~55℃
Designed life	> 10 years
Cycles	6000 times (@25℃)
Weight	About 21 ton
Ingress Protection	IP55
Size	6058mm*2438mm*2519mm
Battery cluster	1P390S
Communication	CAN/485/Ethernet
Cooling	Liquid
DC Conversion Efficiency	94%
Standards	GB/T36276,IEC62619,UL1973, UL9540,UL9540A,UN38.3



# System Applications



## Where to use:

- ✓ User side,
- ✓ Renewable energy grid connection
- ✓ Power grid auxiliary services
- ✓ Power grid transmission and distribution
- ✓ distributed and microgrid

## Why ESS?

- ✓ Drawing energy from new energy plant and release energy to grid
- ✓ Grid power staggered allocation
- ✓ Backup battery
- ✓ Mobile battery



# System features

## Price-cost Competitiveness

Higher energy density  
System cost reduction 10%

## System life

Advanced thermal management  
cell life extended 10%

## Quality control

GB/IEC62619/UL9540  
Regional requirements



## Pre-assembled in factory

Assembled and debugged in factory  
Shorter constructing time, less constructing cost

## Low energy consumption

System energy consumption reduction 20%  
Chrysanthemum topology BMS

## EMS Cloud

Real time monitoring and management  
System lifetime management

# System expand

Battery Cabinet



PCS Cabinet



Expanded by requirements



Booster Cabinet



Grid





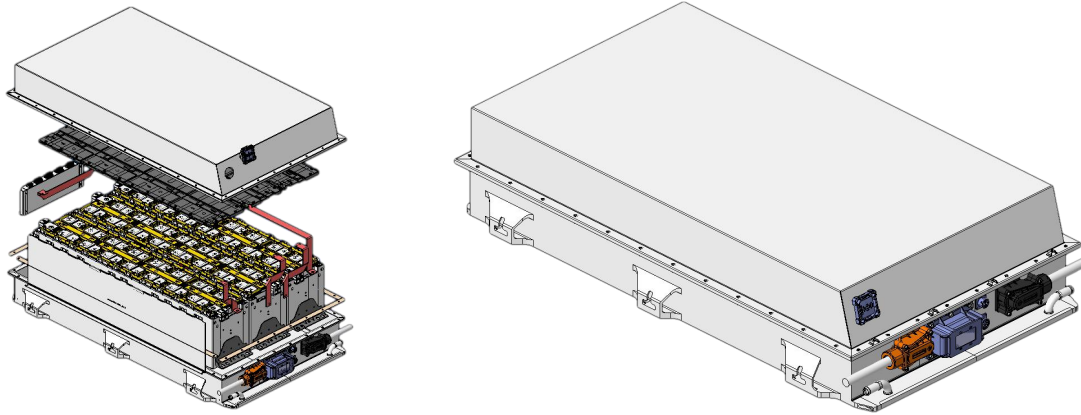
# Battery RACK



**Cluster balance**

<b>Energy</b>	349.44KWh
<b>Model</b>	1248V280AH
<b>Configuration</b>	1P390S
<b>Voltage</b>	975V ~ 1423.5V
<b>Recommended charge/discharge current</b>	140A
<b>Max charge/discharge current</b>	280A
<b>Temp</b>	-20℃~55℃
<b>Life</b>	6000C (@25℃ 0.5C)
<b>Waterproof rating</b>	IP67
<b>modular</b>	1P30S
<b>Communication</b>	CAN/485/Ethernet
<b>Cooling</b>	Liquid cooling
<b>Efficiency</b>	94%
<b>Size(mm)</b>	718*947*2257
<b>Weight</b>	2741kg
<b>Designed life</b>	> 10 years

# Battery PACK



Configuration	1P30S
Voltage	75V~109.5V
Recommended discharge current	140A
Max discharge current	280A
Temp	-20℃~55℃
Designed life	> 10 years
Cycles	6000次 (@25℃ 0.5C)
Weight	195kg
Waterproof rating	IP67
Size(mm)	968*625*260
Cooling	Liquid cooling
Efficiency	94%

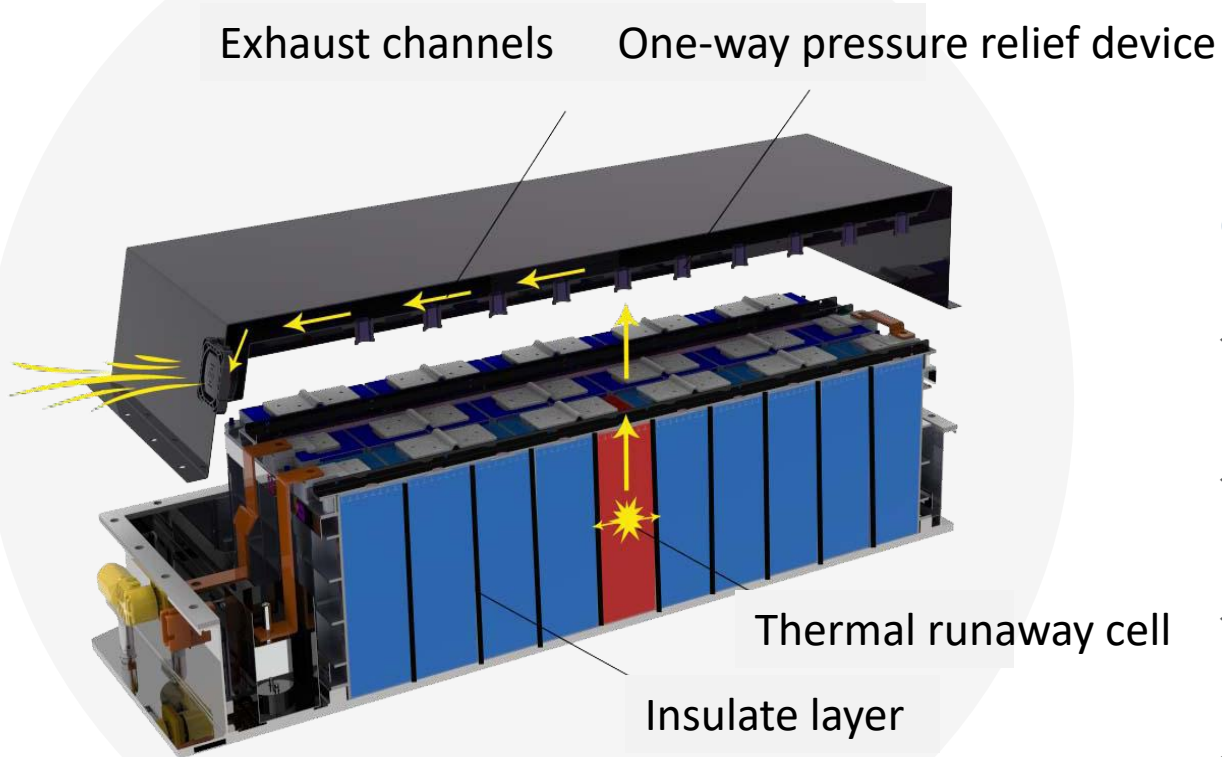
## Delivery

- ✓ Intelligent BMS R&D capability
- ✓ System integration capability
- ✓ One station solution for PACK,BMS and EMS, high price-cost competitiveness
- ✓ Strong pre-sale and after-sale service

## Features

- ✓ Multiple anti-thermal runaway design, effectively isolating the battery cell continuous thermal runaway
- ✓ LFP battery, higher safety and performance, life > 10 years
- ✓ Perfluorohexanone dual fire extinguishing system, environmentally friendly and reliable,
- ✓ Meet the standards of GB/T36276, IEC62619, UL1973, UL9540, UL9540A

# Anti-thermal constant runaway



## Leading Technology

- ✓ Insulating layers between cells to prevent constant thermal runaway
- ✓ Pressure relief device to remove high temperature gases/substances
- ✓ Detecting flammable gases and smoke, cooling down and preventing fires
- ✓ Patented technology for inter-cluster balancing, sequential parallel connection, reduce circulation and improve efficiency

# 4-level Battery management



master control unit  
BAU



slave control unit  
BCU



Collecting slave unit  
BMU

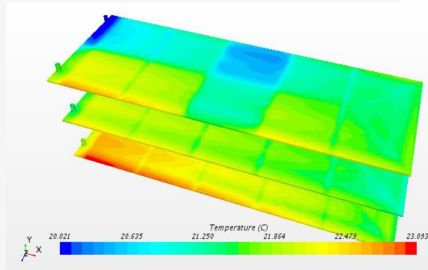
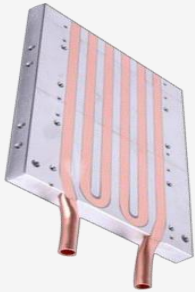


EMS Cloud

## Leading technology

- ✓ Intelligent circulation control, ensuring system balance
- ✓ Integrated CAN, 485 and Ethernet communication methods
- ✓ Comply with IEC61850, J1939 standards
- ✓ High-precision SOC calculation, <3% error
- ✓ High-precision SOH measurement, ~5% error
- ✓ Monitoring and recording operation data in real time online via cloud platform

# Air cooling VS Liquid cooling



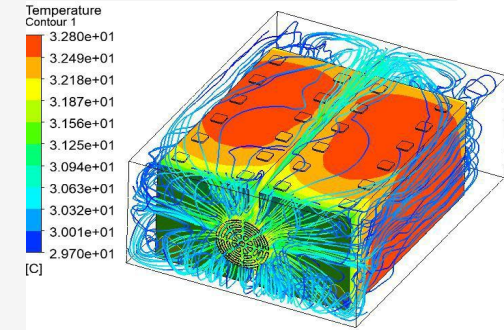
Temp difference in container  $\leq 5^{\circ}\text{C}$

Tempe difference in cabinet  $\leq 3^{\circ}\text{C}$

Battery life improve 10%

Energy consumption reduction 20%

VS



Temp difference in container  $\leq 10^{\circ}\text{C}$

Tempe difference in cabinet  $\leq 8^{\circ}\text{C}$

Poor consistency

Low cooling speed, low efficiency



# Liquid cooling ESS vs Air cooling ESS

40ft air cooling ESS



2\*20ft liquid cooling ESS



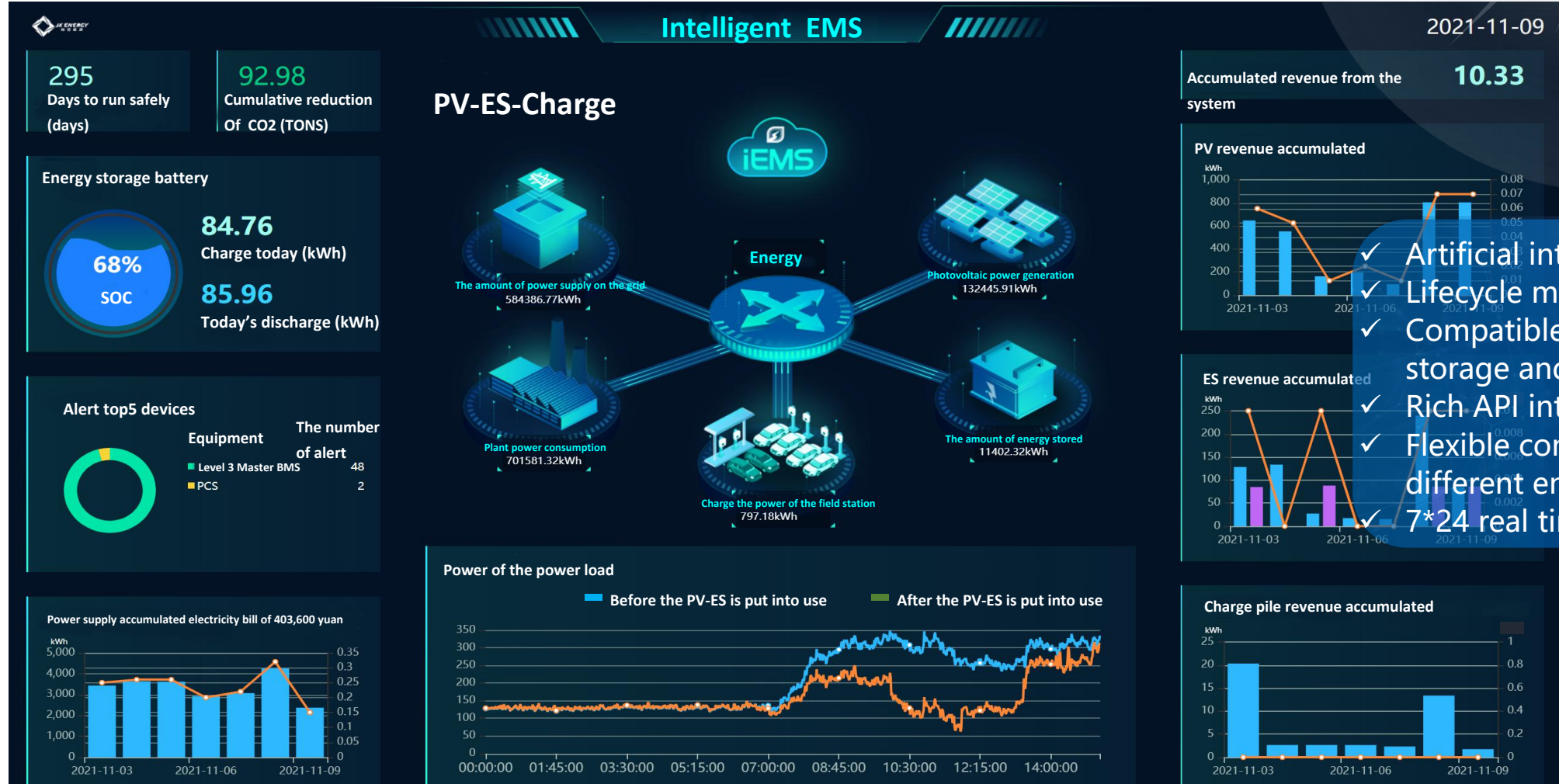
Items	40ft air cooling ESS	2*20ft liquid cooling ESS
Capacity	3.6MWh	4.2MWh
Space	30 m <sup>2</sup>	30 m <sup>2</sup>
Ocean shipment	Separate bill battery	All in one SOC container
Installation	Field installation	Land to use

Liquid cooling

- ✓ Higher efficient
- ✓ Higher energy density
- ✓ Easier shipment
- ✓ Less cost

# Intelligent cloud platform

Monitor, analysis and manage energy via iPotisEdge cloud platform.





# THANK YOU

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