



## 5MW/10MWh BESS Specifications



Guangzhou Zhiguang Electric Co., Ltd.

December 2024

## ➤ 5MW/10MWh BESS

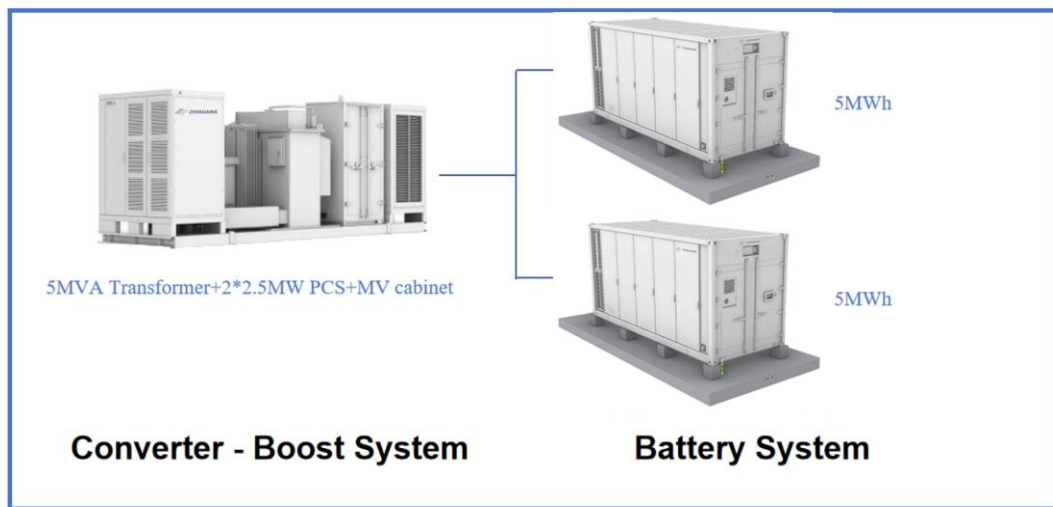


Figure1: 5MW/10MWh BESS Diagram

## ➤ 5MWh Battery system



Figure2: 5MWh Battery system

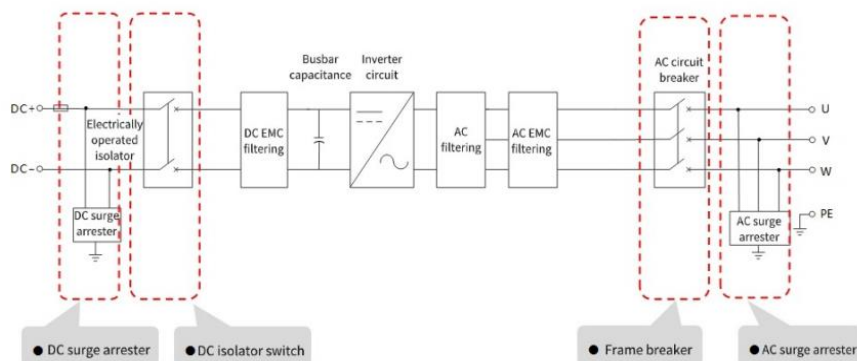
<b>5MWh liquid-cooled energy storage container (10MW system contain 2*5MWh containers)</b>	
<b>General</b>	
Battery Type	LFP cell 314Ah
Configuration	12*(4*1P104S)
Cooling Method	Liquid Cooling
Coolant	50% Ethylene glycol aqueous solution
Operating Ambient Temperature	-25 °C...+55 °C
Storage Temperature	-30°C...+60 °C
Application altitude	≤2000m
Protection Level	IP54
Weight	~44t
Size	6058mm(W)*2438mm(D)*2896mm(H)
Color	RAL7042
Fire protection	Aerosol + water firefighting + explosion-proof fan (combustible gas)
<b>Electrical</b>	
Rated Energy	5015.9616kWh
Rated Voltage	1331.2VDC
Voltage Range	1164.8~1476.8VDC
Communication method	CAN, RS485, TCP/IP
Communication port	RS485, Fiber ST
<b>Fulfill standard</b>	
Cell	UN38.3, IEC 62620, IEC62619
Container	UN3536, IEC62619, EN61000, EN62477, IEC63056, IEC 62933-5-2

## ➤ Converter - Boost System



Figure 3. 5MVA Transformer+2\*2.5MW PCS+MV cabinet

### Energy storage converter circuit block diagram



### Parameters of 2.5MW PCS

General	
Temperature	-20°C to +60°C(De-rating over 50° C)
Protection class	Class I
Cooling Method	Air Cooling
Degree of protection	IP66
Altitude	≤4000m (>3000m derating)
Humidity	0%~95%(Non condensing)
Battery side	
Maximum battery voltage	1500Vd.c.
Operating voltage range	1100~1500 Vd.c.
Rated voltage	1331.2Vd.c.
Max continuous discharge/charging current	2388Ad.c.
Grid side	
Rated voltage	3~PE 750 Va.c.
Rated frequency	50Hz/60Hz
Rated power	2580kVA
Power factor (at rated power)	>0.99
Power factor adjustable range	-1~+1
Total current waveform distortion rate	<3 %(Under rated power conditions)

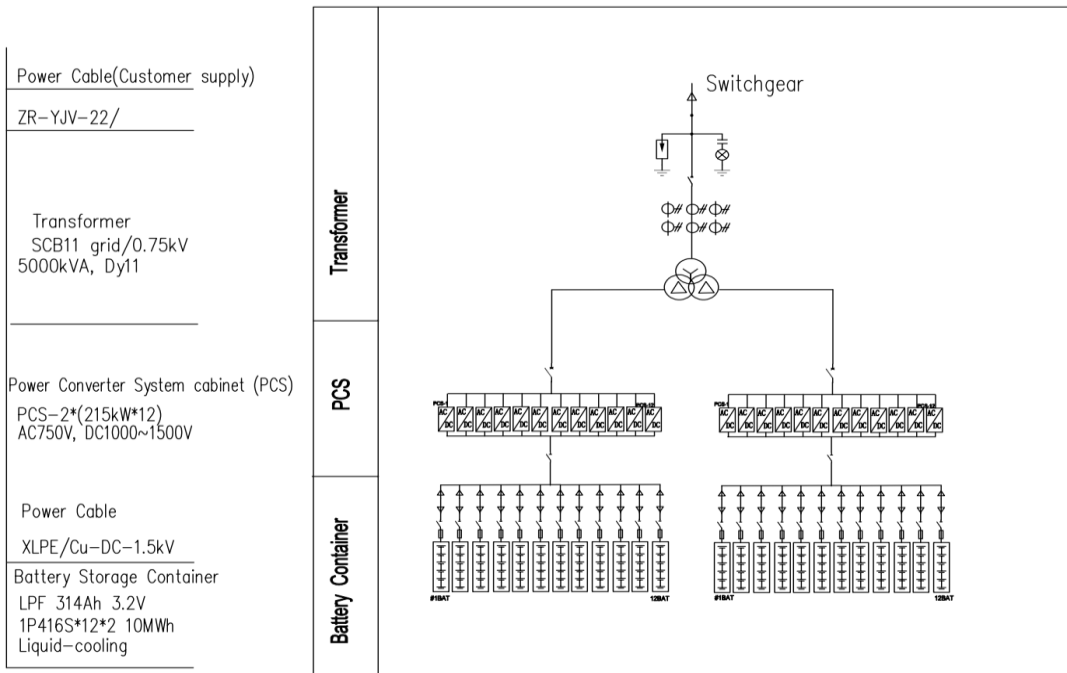
### Certification

CE certification in accordance of IEC standards and, Grid Compliance

### Parameters of 5MVA Transformer

Rated frequency	50Hz/60Hz
Rated power	5000kVA
Rated voltage	Grid/0.75KV
ambient temperature	-25°C to +40°C

# ➤ 5MW/10MWh BESS Single-line Diagram





## ➤ Global References

Power Generation Scenario		
Site pictures		
Project	Guangdong Thermal Power Auxiliary Frequency Modulation Energy Storage Project	Shandong Reservoir Photovoltaic Energy Storage
Capacity	60MW/60MWh	44MW/88MWh
Function	AGC frequency regulation, reducing oscillation probability, improving operational reliability and safety	Energy integration, system frequency regulation, peak valley arbitrage
Power Grid Scenario		
Site pictures		
Project	Shandong Laicheng Independent Energy Storage Power Station	State Grid Corporation of China Hunan Power Grid Integrated Energy Storage Project
Capacity	100MW/200MWh	100MW/200MWh
Function	Participate in provincial power grid assistance, grid peak shaving, and energy storage capacity leasing	Energy integration, renewable energy consumption, peak shaving, frequency regulations