

VANADIUM FLOW BATTERY, VFB



Wontai Power Co.,Ltd.

STACK

No. WT-CHB-Pro



01 Product Features



Safe and Stable

Positive and negative electrode active materials are liquid vanadium electrolytes, eliminating internal short-circuit risks.



Ultra-Long Service Life

The main body of the stack has a service life of up to 20,000 cycles.



Support for Deep Charge and Discharge

Enables 100% deep discharge without damaging the stack.



Easy Maintenance

Modular structure for convenient inspection, repair and component replacement.

02 Parameter

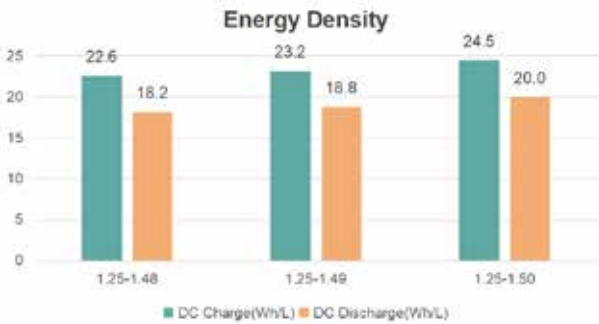
Rated Power	42kW
Upper Power	50kW
Average Rated Current	646A
Voltage Range	52 ~ 80.6V
Energy Efficiency	>80%
Dimension(LxW xH)	1460 x 606 x 686mm
Weight	700 ~ 750kg

03 Operation Condition

Stack Operation Temperature	0 ~ 45°C
Flow Rate	< 8m³/h
Inlet Pressure	< 2bar
Pressure Differential btw. Positive and Negative Electrolytes	< 0.25bar
Humidity	< 95%
Ambient Temperature	-30 ~ 40°C
Ambient Humidity	5 ~ 95%
Standard & Authentication	IEEE519 / IEEE154
Leakage	Btw. The Single Cell Materials
Single Cell Vol. Differential	< 60mV (Charge) < 80mV (Discharge)
Insulating Plate Spacing	396 ~ 406mm
Single Spring Tightening Force	< 42N·m

VANADIUM FLOW BATTERY

VFB-100kW



02 Technical Parameters

Rated Power	100kW
System Duration	4 – 8h
Output Voltage	156 – 241.8V
Output Current	MAX 641A
Energy Efficiency	DC 75%
Depth of Discharge	0 – 100% DOD
Cycle Life	≥20000 times
Dimensions	10650 x 2438 x 3300mm (4h)
Module Weight	≈41 – 65t (Contains Electrolyte)
Operating Ambient Temperature	-30 – 45 °C
Maximum Operating Altitude	2000 meters
Operating Ambient Humidity	5 – 95%

01 Product Features



Integrated Design

Improve integration, occupy small area and reduce cost.



New Control Program

Single-screen control and automatic operation for enhanced operational convenience.



Easy On-site Installation

No secondary connection required; only the main cable needs to be connected for power-on upon on-site delivery.



High Stability & Safety

Equipped with an intelligent temperature control system to ensure the stable operation of the system.

03 Application Scenarios



Industry

Industrial parks, manufacturing factories



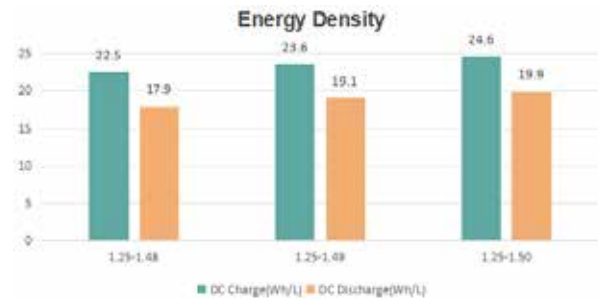
Commercial

Large supermarkets, shopping centers, office buildings

VANADIUM FLOW BATTERY

VFB-500kW

Outdoor-Type



01 Product Features



Modular Design

Facilitates maintenance, features universal components and supports personalized user demands.



High Integration

Enables convenient on-site construction, short project cycles and universal application scenarios.



High Stability

Ensures long-term reliable operation and a long service life of the system.



Strong Environmental Adaptability

The entire system is resistant to low and high temperatures with low environmental requirements.

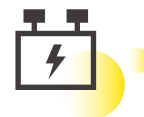
02 Technical Parameters

Rated Power	500kW
System Duration	4 - 8h
Output Voltage	340 - 483.6V
Output Current	MAX 1471A
Energy Efficiency	DC 75%
Depth of Discharge	0 - 100% DOD
Cycle Life	≥20000 times
Dimensions of Power Cabinet	6058*2438*2591mm
Dimensions of Single Capacity Tank	10000*3000*3350mm (4h)
Weight of Power Cabinet	≈20t
Single Capacity Tank Weight	≈85t(Contains Electrolyte (4h))
Operating Ambient Temperature	-30 - 45 °C
Maximum Operating Altitude	2000 meters
Operating Ambient Humidity	5 - 95%

03 Application Scenarios



Energy Storage
Matching
Renewable
Energy

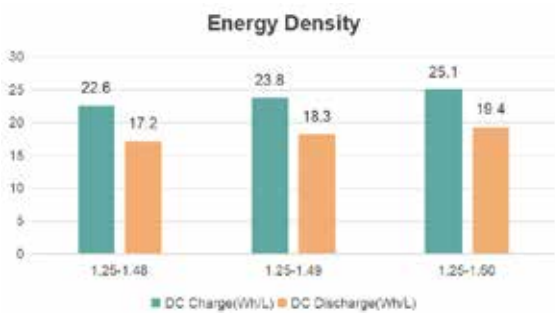


Frequency and
Peak Regulation
Power Stations

VANADIUM FLOW BATTERY

VFB-750kW

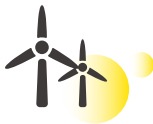
Outdoor-Type



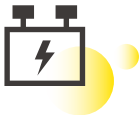
02 Technical Parameters

Rated Power	750kW
System Duration	4 - 8h
Output Voltage	340 - 483.6V
Output Current	MAX 2206A
Energy Efficiency	DC 75%
Depth of Discharge	0 - 100% DOD
Cycle Life	≥20000 times
Dimensions of Power Cabinet	6058*2438*3060mm
Dimensions of Single Capacity Tank	12300*3000*3350mm (4h)
Weight of Power Cabinet	≈28t
Single Capacity Tank Weight	≈95t(Contains Electrolyte (4h))
Operating Ambient Temperature	-30 - 45 °C
Maximum Operating Altitude	2000 meters
Operating Ambient Humidity	5 - 95%

03 Application Scenarios



Energy Storage
Matching
Renewable
Energy



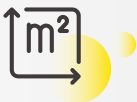
Frequency and
Peak Regulation
Power Stations

01 Product Features



Leading Technology

The power of the single module ranks among the world's top level.



Space Saving

Saves more than 25% of floor space compared with traditional modules.



Lower Cost

Reduced usage of containers, circulation systems, etc., for stronger comprehensive competitiveness.



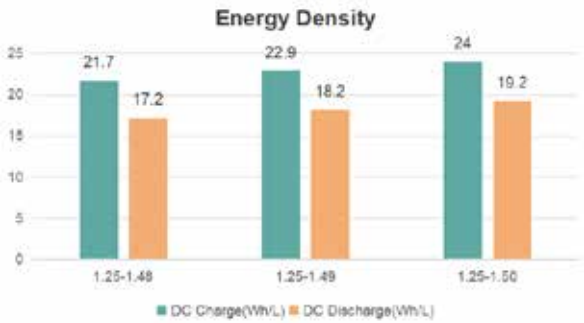
Fast Delivery

Short installation cycle for quick delivery and efficient commissioning.

VANADIUM FLOW BATTERY

VFB-750kW

Indoor-Type



02 Technical Parameters

Rated Power	750kW
System Duration	4 – 8h
Output Voltage	340 – 483.6V
Output Current	MAX 2206A
Energy Efficiency	DC 75%
Depth of Discharge	0 – 100% DOD
Cycle Life	≥20000times
Land Area	120 – 150 m ² (4h)
Weight	≈220t (Contains Electrolyte (4h))
Operating Temperature	-30 – 45 °C
Maximum Operating Altitude	2000meters
Ambient Humidity	5 – 95%

03 Application Scenarios



Indoor Large-Capacity Long-Duration Energy Storage

01 Product Features



Long-Duration High Power

High-power output with flexible duration to meet high-load demands.



Flexible Configuration

Improves consistency, reduces costs and enhances compatibility.



Convenient Operation and Maintenance

Plug-and-play connections for simple and efficient installation and hassle-free maintenance.



Stable and Safe

Intrinsically safe with a long-life design and multiple protections for reliable operation.

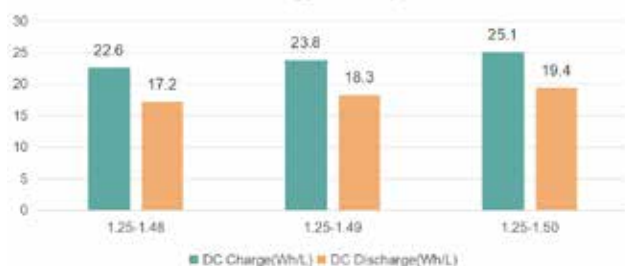
VANADIUM FLOW BATTERY

VFB-834kW

Outdoor-Type



Energy Density



02 Technical Parameters

Rated Power	834kW
System Duration	4 - 8h
Output Voltage	340 - 483.6V
Output Current	MAX 2453A
Energy Efficiency	DC 75%
Depth of Discharge	0 - 100% DOD
Cycle Life	≥20000 times
Dimensions of Power Cabinet	6058*2438*3060mm
Dimensions of Single Capacity Tank	12300*3000*3350mm (4h)
Weight of Power Cabinet	≈28t
Single Capacity Tank Weight	≈103t (Contains Electrolyte (4h))
Operating Ambient Temperature	-30 - 45 °C
Maximum Operating Altitude	2000 meters
Operating Ambient Humidity	5 - 95%

01 Product Features



Leading Technology

Single module power is among the world's leading levels



Space Efficient

Saves more than 25% of the floor area compared with traditional 500kW modules



Lower Cost

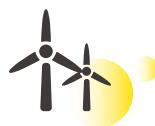
Reduced usage of containers, circulation systems, etc., with enhanced overall competitiveness



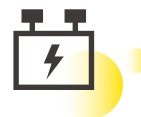
Quick Delivery

Short installation cycle, fast delivery & efficient commissioning

03 Application Scenarios



Energy Storage Matching Renewable Energy



Frequency and Peak Regulation Power Stations

COMMISSIONING CASES

Selective Case Showcase



VFB Project for a Major Chinese Power-Generation Corporation , Northwest China

Scale: 11.5MW/70MWh



Energy Storage Project of a Power Plant in Hebei

Scale: 8MW/32MWh



Gansu Guazhou Beidaqiao Baiyang Wind Power Supporting Energy Storage Project

Scale: 15MW/60MWh



Wenzhou Hongfeng Electrical Alloy Energy Storage Power Station Project

Scale: 2MW/12MWh



China Energy Investment Corporation Shandong Energy Storage Project

Scale: 2MW/8MWh



Guangzhou Modern Energy Storage Project
An urban central park demonstration project

Scale: 0.5MW/2.5MWh

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