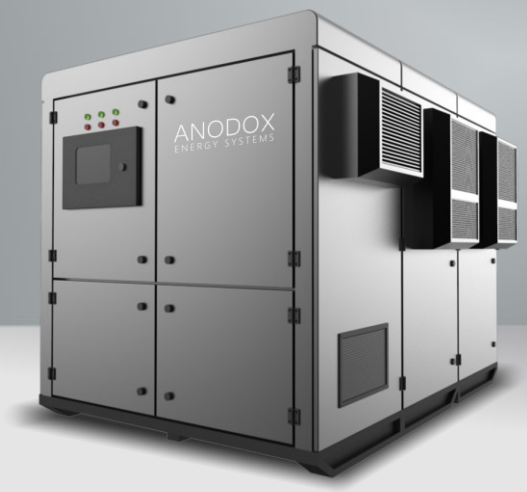
ANODOX ENERGY SYSTEMS

LARGE SCALE

MODULAR, LARGE SCALE ENERGY STORAGE



HIGH POWER ENERGY STORAGE

Extreme Performance with Adaptive Immersion Technology

ANODOX ENERGY SYSTEMS RESISTANT

ANODOX ENERGY SYSTEMS IMMERSION

AVAILABLE VERSIONS:

- ALSES 100-25
- ALSES 100-50
- ALSES 100-100

PRODUCT DESCRIPTION

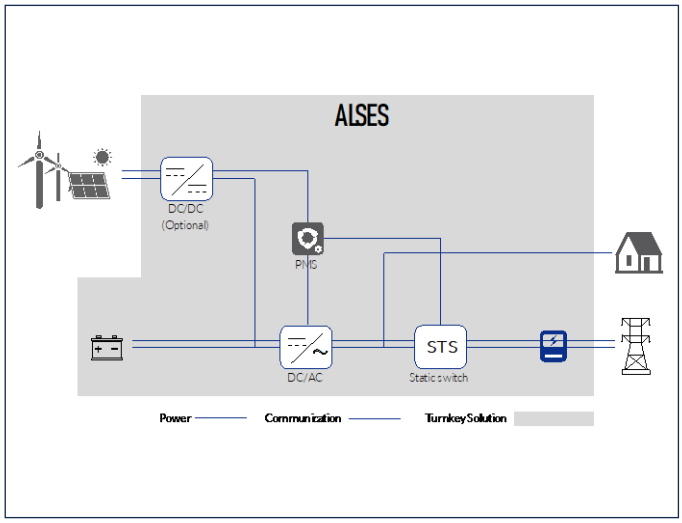
ALSES is an intelligent and modular power supply equipment integrating lithium batteries and PCS. According to different application scenarios, lithium battery bidirectional DC /AC converter, bidirectional DC /DC converter, Static switch and Power management system can be flexibly combined to realize grid connected power supply, off grid power supply and off grid uninterrupted power supply, static reactive power compensation, harmonic suppression and other function etc...

It can access new energy, power grid, diesel generator to realize multi-energy reasonable configuration, scientific utilization, to provide users with green, environmental protection, noise free, high reliability and high security power services. With selected LFP batteries for mobile use, it is a robust energy storage solution which could realize ultra mobile, zero-emission, adaptable to different terrains.

SYSTEM FUNCTIONS

Functions	
Voltage Support	✓
Peak Shaving	✓
Grid Support	✓
Arbitrage	✓
PV Self-Consumption	✓
Flexibility Markets	✓
FCAS (Frequency Control Ancillary Services	✓

SYSTEM TOPOLOGY



SAFETY RELIABILITY

- High Quality Lithium Iron Phosphate Batteries.
- Anodox Adaptive Immersion Thermal Management
- Three level BMS design of module, cabinet and system, multiple state monitoring, hierarchical linkage, comprehensive guarantee of battery system safety.
- Battery module designed with PC Bracket and reinforced steel structure to guarantee the highest of safety of the system, in transportation, installation and operation

EFFICIENCY CONVENIENCY

- Energy system, high energy density, high integration.
- Outstanding high-rate performance, maximum 2C charging and 2C discharging.
- Modular design, convenient for the maintenance, management and expansion.
- Three level BMS design, energy transferring active equalization, to overcome the impact of single cell capacity on system capacity.

The equalization accuracy is less than 2%, and the equalization capacity can reach 10% of the rated output.

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PRODUCT SPECIFICATIONS

	Model	ALSES 100-25	ALSES 100-50	ALSES 100-100
PV Parameter	MPPT Voltage Range		DC200V~DC700V	
	MPPT Full Power Voltage Range		DC370V~DC700V	
	Number of MPPT Channels		0-2 (optional)	
	Maximum Single Channel Current		135A	
AC Parameter (On-Grid)	Rated Output Power	25kW	50kW	100kW
	Maximum Output Power	27.5kW	55kW	110kW
	Rated Grid Voltage		AC380/400V	
	Grid		3W+N+PE	
	Grid Voltage Range		-15%~+10%	
	Rated Grid Frequency		50Hz/60Hz	
	Grid Frequency Range		±2Hz	
	Output Current Harmonics		≤3% (rated power)	
	Power Factor Range		-0.9 - +0.9	
AC Parameter (Off-Grid)	Rated Output Power	25kW	50kW	100kW
	Maximum Output Power	27.5kW	55kW	110kW
	Rated Output Voltage		3W+N+PE, 380V/400V	
	Output Voltage Harmonics		3% (Linear Full Load)	
	Rated Frequency		50Hz/60Hz	
	Overload Capacity		105%]; continuous operation; (105%-120%]: 10min; 120%): 1min	
Battery Parameter	Cell Type		Lithium Iron Phosphate	
	Battery Capacity kWh		100 kWh (99.5 kWh)	
	Running Time	4	2	1
	Cycle Life	6000	6000	6000
Protection	DC Switch		Equipped	
	AC Switch		Equipped	
	Grid Monitoring		Equipped	
	Insulation Monitoring		Equipped	
	DC Reverse Connection Protection		Equipped	
	Ground Fault Protection		Equipped	
	Surge Protection		DC level 2/AC level2	
Basic Parameters	Size (W*D*H) (mm)		1680*2264*1700	
	Weight (kg)		~ 1850 kg	
	Isolation Mode		Non-Isolated	
	Protection Grade		IP54 For Outdoor Use	
	Working Temperature		-20℃-55℃ (derating above 45℃)	
	Relative Humidity (without condensing)		0~95%	
	Maximum Working Altitude		4000m	
	Display		Touch Screen	
	Communication Interface		RS485, CAN, LAN	
	Communication Protocol		Modbus-RTU, Modbus-TCP, CAN 2.0B	

SAFETY STANDARDS

Safety	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62040-1, IEC/EN 62477, (Batteries) IEC 62619, IEC 62368, UN38.3, RPEQ Mechanically certified for lifting, Load Restraint Guide 2018 for Transportation
Grid	AS/NZS 4777-2, VDE-AR-N 4105, 50549-1,TF 3.3.3 B1, EREC G99 (others pending)
EMC	IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4
Environment	ETSI EN 300 019:2-1 (Class 1.2), ETSI EN 300 019:2-2 (Class 2.3), ETSI EN 300 019:2-3 (Class 3.2)

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