

SPECIFICATIONS

Fuelfix & Tanks2Go

ESU Range

Battery Energy Storage System

ESU-50/100/150



The ESU medium range is a smart modular Battery Energy Storage System (BESS) that offers an intelligent and modular power supply integrating lithium battery technology and a Multifunctional Power Conversion System (MPCS). The multi-functional bi-directional converter can realize the bi-directional conversion from DC to AC and from AC to DC. This means it can not only convert AC into DC to charge the battery but also convert DC into AC to supply power to the load or feed back to the grid. Able to connect to multi-energy inputs across solar, grid and diesel the system adopts advanced digital control technology to optimise performance and improve reliability, seamlessly switching between grid-connected discharge, grid -connected charging and off grid operation modes.

Model	ESU50	ESU100	ESU150
POWER CONVERSION SYSTEM			
Rated power (kW)	50	100	150
Max output power (kW)	55	110	165
Rated Voltage (V)	400		
Rated Frequency (Hz)	50		
Overload capacity	105%]: continuous operation; (105% ~ 120%]: 10min; 120%); stop operation		
System Efficiency	95%		
MPPT voltage range	DC200V~DC700V		
MPPT full power voltage range	DC370V~DC700V		
MPPT Max. current per channel	135A		
BATTERY			
Battery Type	Lithium Iron Phosphate (LiFePO4)		
Module Capacity (kWh)	5.12		
Module Quantity	15	50	45
Total Capacity (kWh)	76.8	153.6	230.4
Lifecycle	25C 0.5C/0.5C 100% DOD 80% ≥ 4000s		

BASIC PARAMETERS			
Dimensions (W*D*H)	1680*1500*1700	1680*2270*1700	1680*3050*1700
Weight (kg)	1795	3070	4405
On/off grid switching	Static Transfer Systems (STS) (<= 10ms)		
Protection	IP54		
Working Temperature	-20~55°C (>45°C derating)		
Relative Humidity	0~95%		
Cooling	Intelligent air conditioning		
Max working altitude(m)	4000(>2000 derating)		
Display	Touch Screen		
Communication Protocol	Modbus-RTU, Modbus-TCP, CAN2.0B		

BATTERY MODULES

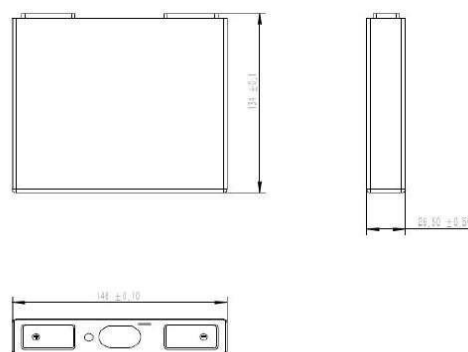
The battery module consists of cells of 3.2V,50Ah. The module has a built-in BMU system, which collects the voltage and temperature of each cell, and manages the cell balance, to ensure the normal operation of the module safely and efficiently.



PARAMETERS	
Rated Capacity (Ah)	100
Rated Voltage (V)	51.2
Max Charge Current (A)	100A (1C)
Max Discharge Current (A)	100A (1C)
Working voltage range	44.8~58.4
Operating temperature range	-20°C~55°C
Weight	55kg
Dimension (W*D*H)	570mm*455mm*156mm
Cooling	Intelligent air-cooled

CELL

The lithium battery system uses 3.2V 50Ah LFP prismatic cell, which reduces the possibility of cell damage caused by mechanical damage and improves the safety performance of the product. The explosion-proof valve on the top ensures that in any extreme case (such as internal short circuit, battery overcharge and over discharge), a large amount of gas quickly accumulated in the cell can be discharged through the riot valve, which highly improves the safety.



PARAMETERS	
Cell Type	Lithium Iron Phosphate (LiFePO4)
Rated Capacity (Ah)	50.0
Rated Voltage (V)	3.20
Max Discharge Current	2C (Continuous), 5C (50%SOC, 30s)
Max Charge Current	1.5C (Continuous), 2C (50%SOC, 30s)
Average working voltage (V)	2.5 ~ 3.65
AC-impedance (mΩ)	≤1.0
Maximum Operating Temperature Range	-20°C / + 60°C
Operating Temperature Range	0°C ~ 45°C (Charge), -20°C ~ 60°C (Discharge)
Optimal Operating Temperature Range	15°C ~ 35°C
Cycle Life	≥4000 times (25°C 1C/1C)