LiFePO4 Battery system
ATP-UPS-480V150Ah

Overview

480V150Ah is Lithium iron phosphate battery system which designed for high voltage UPS or ESS system application. This battery system consists of battery racks and control module, every battery rack integrates with intelligent BMU inside. And this system has big advantages on safety, cycle life, energy density, fast charging, temperature range and environmental protection.

Advantages

The battery system consists of battery racks , control module, cabinet.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution;
- Use BMU-RBMS design, protect voltage, current, temperature in whole process
- Integrated communication interface, CAN2.0 and RS485 communicate with UPS or PC
- Integrated LED and LCD indicator, display the SOC and operating status
- Balance between cells, balance between racks
- Packed in 19 inches standard container, easily for installation and capacity expansion
- Can customize the battery system with neutral line
- 15 years design life, Stable performance, maintenance-free

Battery System Specification

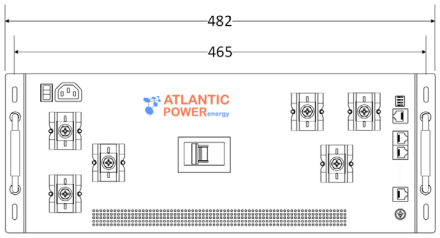
	Item	Specification	Remarks
Normal	Voltage	480V	150S1P
	Capacity	150aH	0.5C°C, @25°C
Weight	Control Module	20kg±0.5kg	1pcs
	Battery Module	84.5kg±0.5kg	10pcs
Dimension	Control Module	482mm*500mm*180mm	
	Battery Module	482mm*800mm*154mm	
Operating Parameters	Charge Voltage	525V~540V	
	Discharge Voltage	405V	
	Charge Current	Max. constant charge: 75A	Recommended 75A
	Discharge Current	Max. constant discharge: 150A	
Temperature	Charge range	0°C~55°C	
	Discharge range	-20°C~55°C	
	Storage range	-20°C~45°C	
Other Parameters	Internal Resistance	20mΩ	
	Thermal Management	/	
BMS	Built-in BMU	Voltage, current, temperature management & cell balance	CAN communication
Service life	Design life	15	
	Cycle life	6000 cycles @80%DOD	25°C

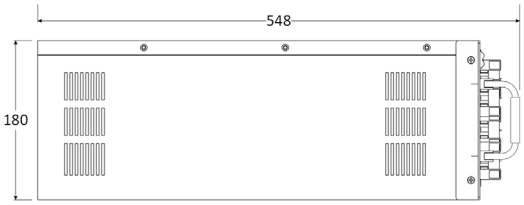
BMS System Parameters

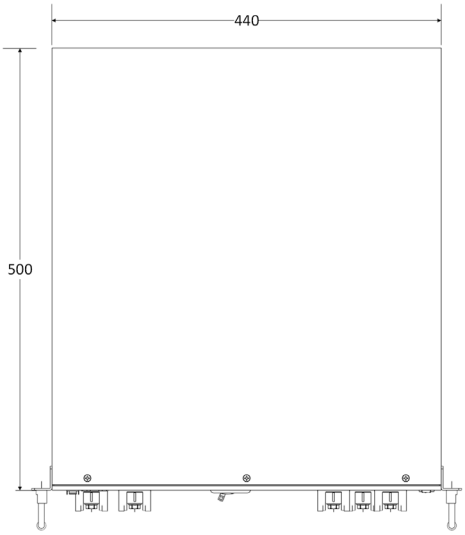
BMS provides complete management and protection for the battery.

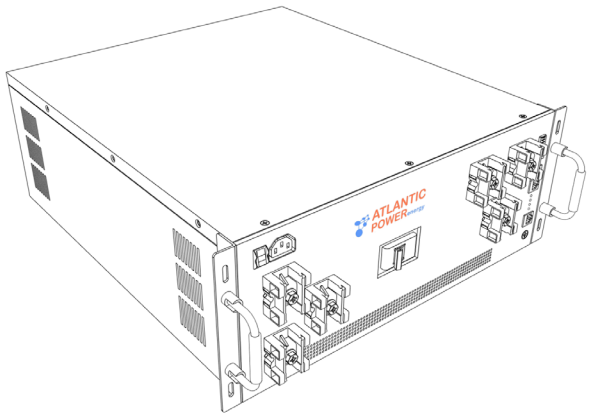
- Voltage warning and protection for module and each single cell.
- Current warning and protection, and the maximum operating current can be customized.
- Temperature warning and protection, 8 sensors for battery module.
- Battery module SOC and SOH calculation, display the accurate battery status.
- Communicate with the UPS or monitor device.
- Pre-discharge logic, make sure soft start .
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.

Control module picture

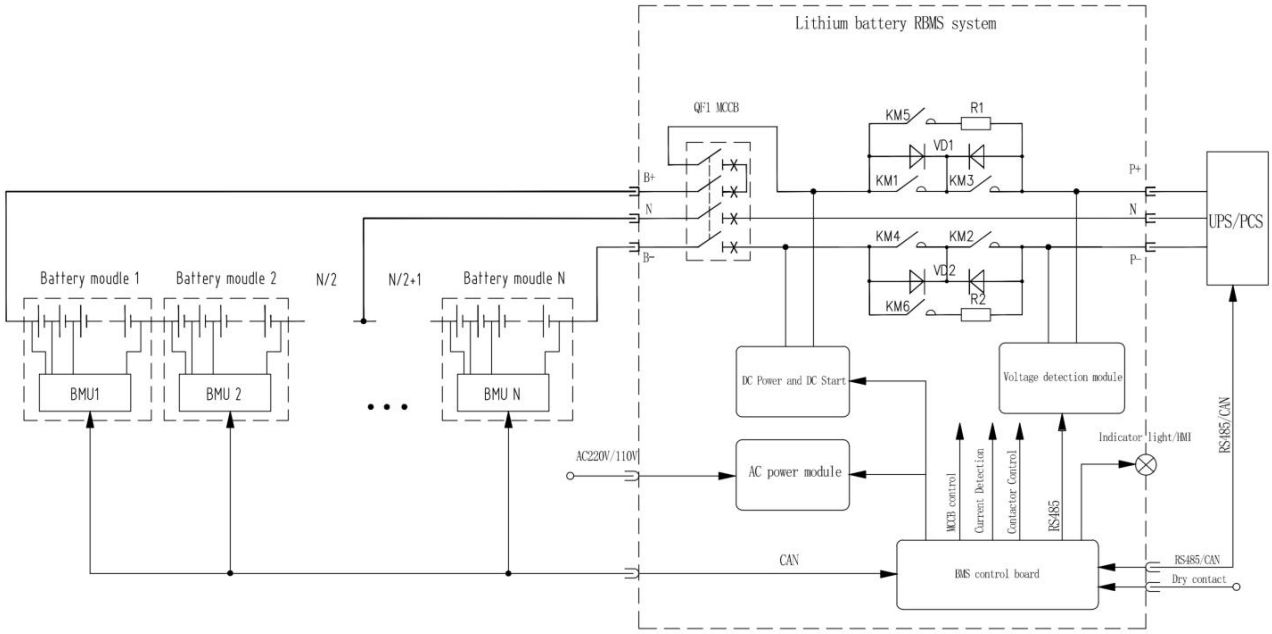




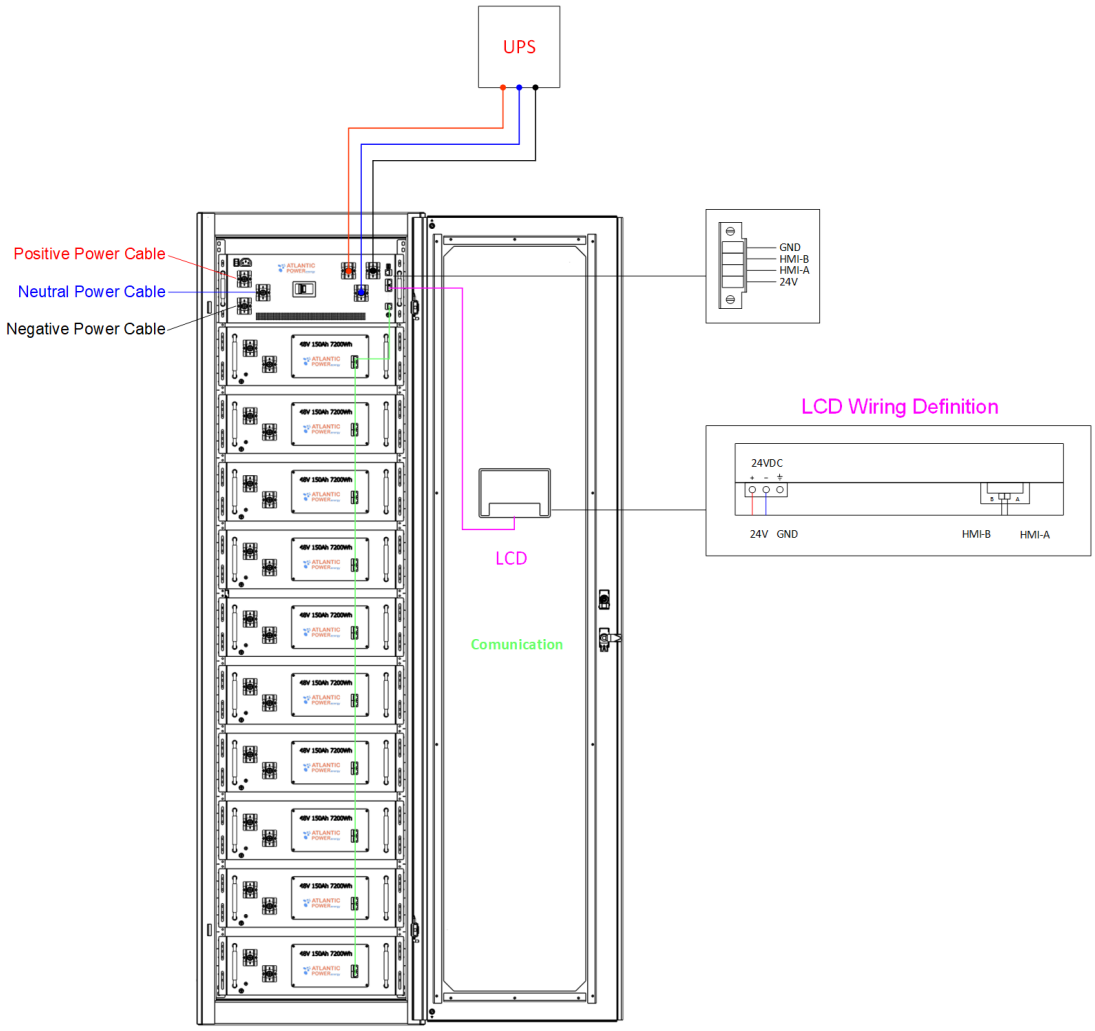




BMS Electrical Schematic Diagram



System Connection Diagram



Address Description

Item		Parameters		Condition
Charge	Cell voltage protection 1	3.80V		
	Cell voltage protection 2	3.90V	Delay 1s	
	Module voltage protection 1	587.2V		
	Module voltage protection 2	600V	Delay 1s	
	Over charging current 1	>85A		
	Over charging current 2	≥95A	Delay 10s	
	Temperature protection	<0°C or >70°C	Delay 1s	
Discharge	Cell voltage protection 1	2.5V		
	Cell voltage protection 2	2.3V	Delay 1s	
	Module voltage protection 1	416V		
	Module voltage protection 2	400V	Delay 1s	
	Over charging current 1	>160A		
	Over charging current 2	>170A	Delay 10s	
	Temperature protection	<-20°C or >70°C	Delay 1s	
BMS	Cell balance	200mA		Cell voltage difference >40mV
	Power consumption	1W	BMU	Operation condition
		25W	RBMS	
	Communication ports	RJ45		TCP/IP, CAN, RS485

Definition :

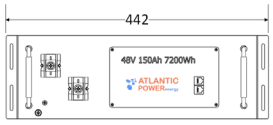
Protection 1 : Open the relay ;

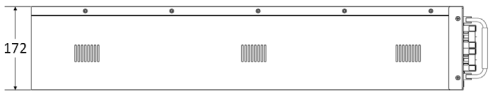
Portection 2 : Tripped circuit breaker ;

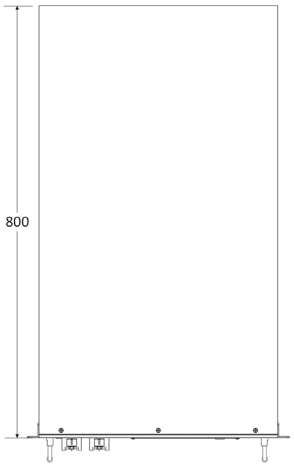
BMU module specification

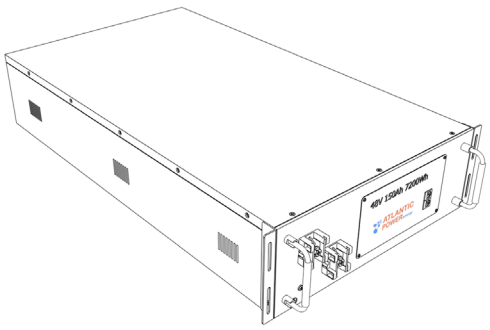
BMU provides complete collection and balance for the battery module.

- Monitor 16pcs series cell voltage
- Install 8 sensors to monitor battery inside temperature.
- Communicate with others BMU modules by CAN.
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.



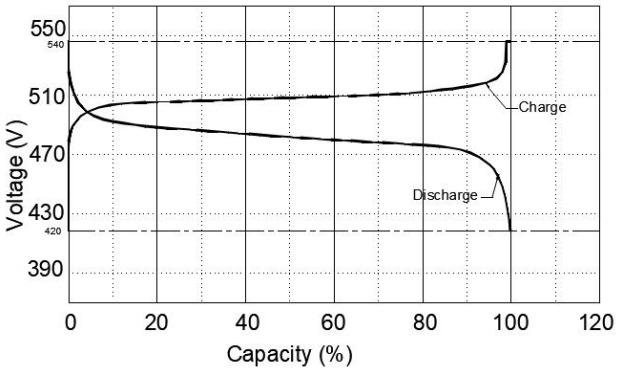




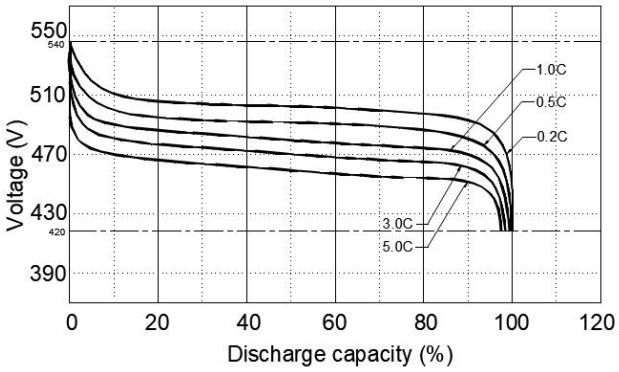


Battery module performance Curve

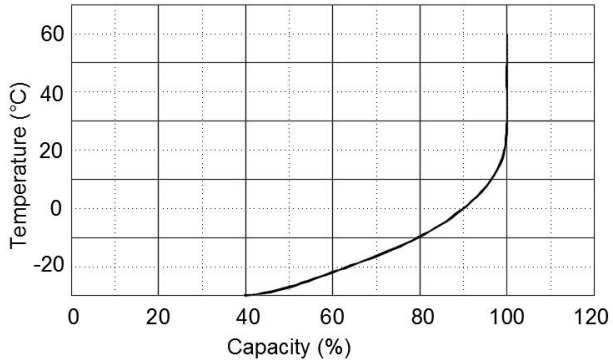
Charge & Discharge curve with1.0C @ 25°C



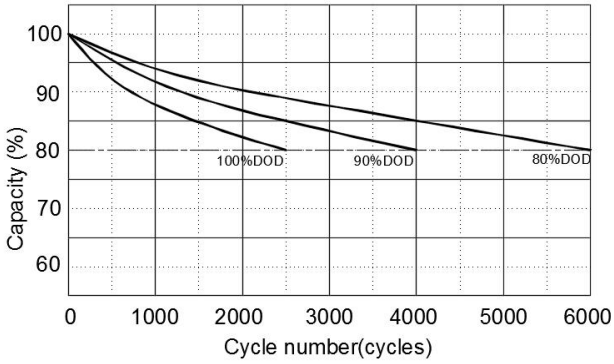
Discharge perfomance with different rate @ 25°C



Discharge capacity with different temperature @ 1.0C



Cycle life with DOD @0.5C，25°C



Self-discharge @ different temperature