ATLANTIC POWER energy

EFFICIENCY

High quality energy

Battery Module Specification

51.2V100AH

Module Spec

Atlantic Power Energy
www.atlanticpowerenergy.com

51.2V100AH
Module Spec

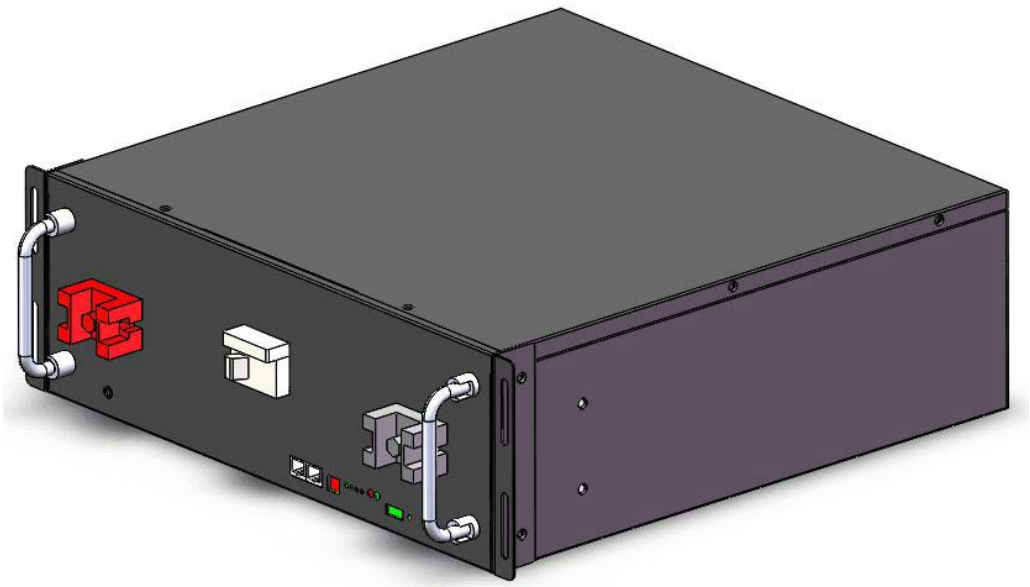
1. Overview

51.2V100Ah is Lithium iron phosphate battery module which designed for backup power application. This battery module integrated with intelligent BMS inside, has big advantages on safety, cycle life, energy density, temperature range and environmental protection. This product specification describes the type, size, structure, electrochemistry performance, service life, and BMS characteristics.

2. Battery Module

The battery module consists of single LFP cells, wire, BMS and metal container.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution;
- Packing with single cell container, fire retardant wire and copper connecting bar, stable and safe.
- Built-in BMS, with battery voltage, current, temperature and health management.
- LED indicate the battery SOC and operating status.
  19 inches metal module container rack, simple installation and expand capacity by parallel.
- Flexible customization of dimensions 10 years design life, Stable performance, maintenance free.



Atlantic Power Energy
www.atlanticpowerenergy.com

Battery module specification

Item Specification Conditions

ITEM		SPECIFICATIONS	CONDITIONS
NOMINAL	Voltage	51.2V	25 °C,0.2C
	Capacity	100Ah	
MODULE WEIGHT		46.0kg	±0.5kg
DIMENSIONS(W*D*H), MM		442*470*155 (3.5U)	±2mm
		442*385*222(5U)	
OPERATING PARAMETERS	Charging Voltage	56.0V~57.0V	
	Discharging Voltage	43.2V	
	Charging current	Max constant charge: 100A	Recommended 30A
	Discharging current	t Max constant discharge: 100A	
TEMPERATURE	Charge range	0°C~45°C	
	Discharge range	-20°C~60°C	
	Storage range	-20°C~45°C	
BMS	Built-in BMS	Voltage, current, temperature management & cell balance	RS485 communication
SERVICE LIFE	Design life	>10years	
	Cycle life	>4000 times	

3. BMS specification

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, 4 sensors for battery pack and 1 sensor for BMS.
- Battery module SOC and SOH calculation, display the accurate battery status.
- Communicate with the SMPS or monitor device, report the battery data.
- Pre-charge/discharge logic, make sure safety charge for the module if under low voltage condition.
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.

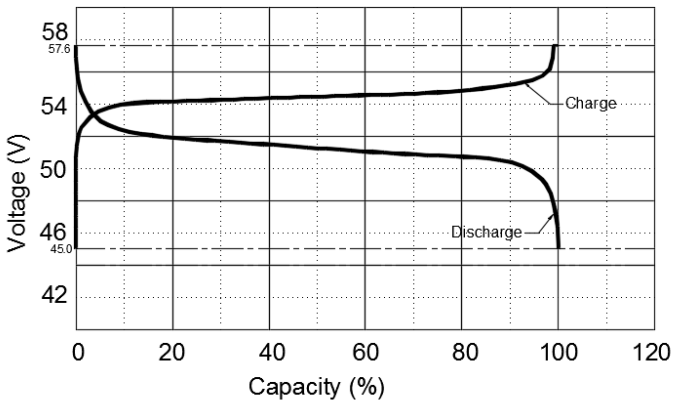
BMS parameters

ITEM		PARAMETERS		CONDITION
CHARGE	Cell voltage protection	3.9V	Delay 1s	Recovery at 3.45V
	Module voltage protection	60.0V	Delay 1s	Recovery at 55.2V
	Over charging current 1	> 100A	Delay 20s	
	Over charging current 2	≥120A	Delay 2s	
	Temperature protection	<0 °C or >70°C	Delay 1s	Recover when >5°C or <60°C
DISCHARGE	Cell voltage protection	2.0V	Delay 1s	Recovery at 3.1V
	Module voltage protection	43.2V	Delay 1s	Recovery at 48V
	Over discharging current 1	> 100A	Delay 15s	Recovery in 60s
	Over discharging current 2	> 150A	Delay 5s	Recovery in 60s
	Short circuit	>250A	Delay 0.1mS	
	Temperature protection	<-20 °C or >75 °C	Delay 1s	Recover when >-10°C or <65°C

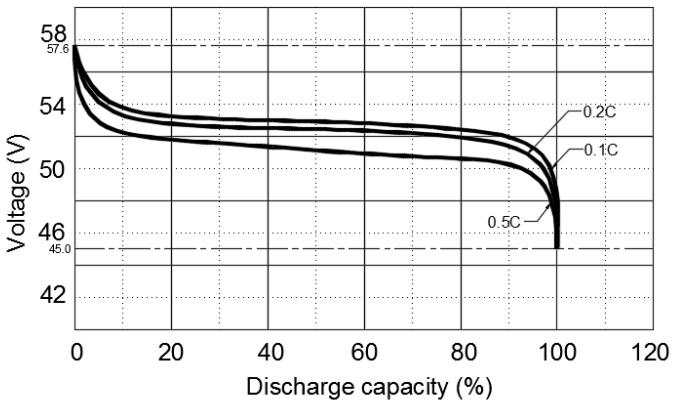
ITEM		PARAMETERS		CONDITION
BMS	PCB Temp protection	>95°C	Delay 1s	Recover when <75°C
	Cell balance	100mA	Passive balance	Cell voltage difference > 40mV
	Temperature accuracy	3%	Cycle measurement	Measuring range -40~100°C
	Voltage accuracy	0.5%	Cycle measurement	For cells and module
	Current accuracy	3%	Cycle measurement	Measuring range -200~+200
	SOC	5%		Integral calculation
	Power consumption with different condition	<300uA	Switch-off mode	Storage & transportation
		<300uA	Sleep mode	Protection & stand-by
		<14mA	Operating mode	Charging & discharging
	Communication ports	RS485		Can be customized to match the device

4. Battery module performance Curve

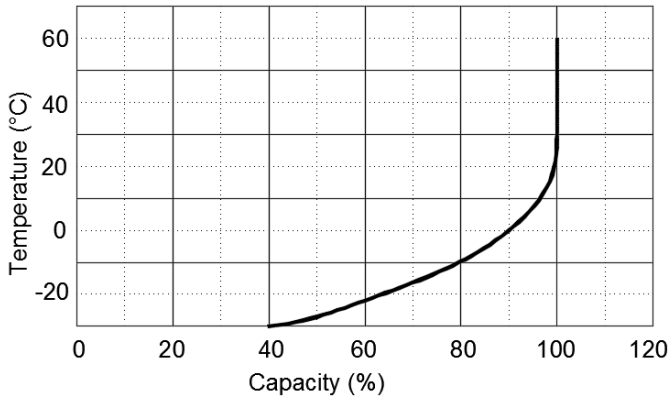
Charge & Discharge curve with 0.5C @ 25°C



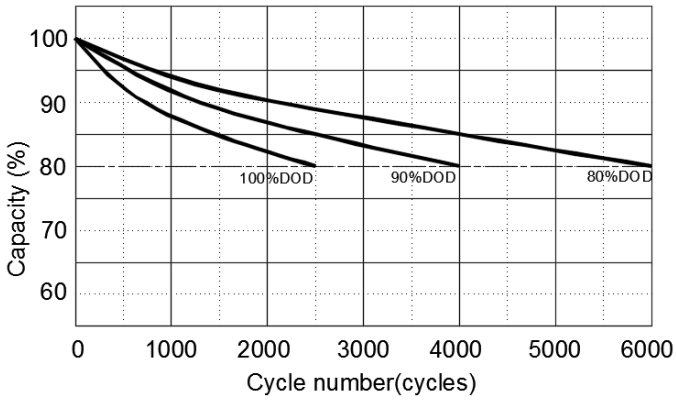
Discharge perfomance with different rate @ 25°C



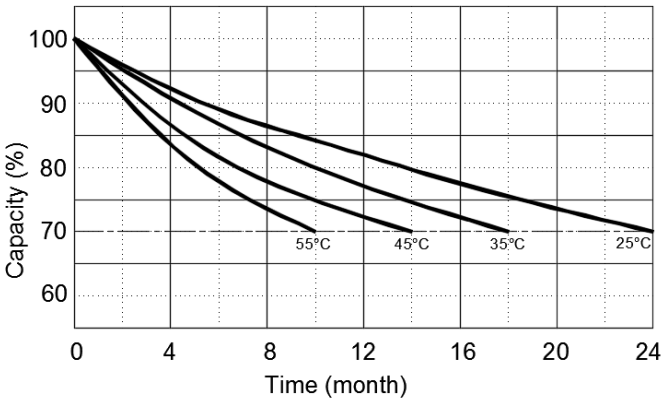
Discharge capacity with different temperature @ 0.5C



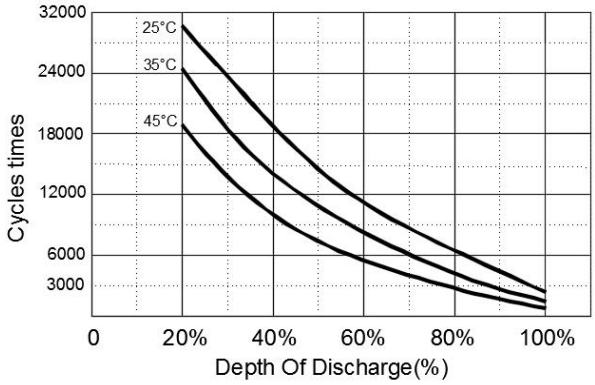
Cycle life with DOD @ 0.5C，25°C



Self-discharge @ different temperature



Cycle life with DOD @ 0.2C



Calendar Life (year) VS. OP. Temperature