







Lithium Iron Phosphate (LiFePO4) Battery

MB-LFP1218 (12.8V 18Ah)



APPLICATION

-  Electric vehicles, electric mobility
-  Solar/wind energy storage system
-  UPS, backup power
-  Telecommunication
-  Medical equipment
-  Lighting

FEATURES OF LIFEPO4 BATTERY

Longer Cycle Life

Offers up to 20 times longer cycle life and five times longer float/calendar life than lead acid battery, helping to minimize replacement cost and reduce total cost of ownership.

Superior Safety

Lithium Iron Phosphate chemistry eliminates the risk of explosion or combustion due to high impact, overcharging or short circuit situation.

Lighter Weight

About 40% of the weight of a comparable lead acid battery. A 'drop in' replacement for lead acid batteries.

Higher Power

Delivers twice power of lead acid battery, even high discharge rate, while maintaining high energy capacity.

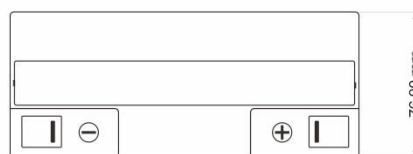
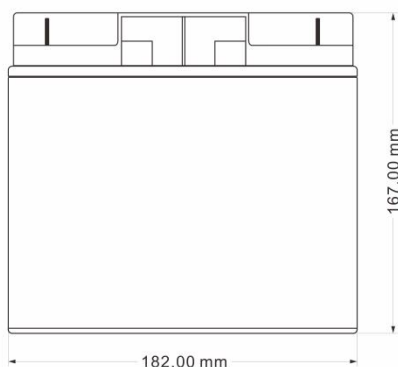
Battery Management System

Melasta Batteries comes with an intelligent Built-in BMS to monitor and manage the current and voltages during charge and discharge. Smart balancing algorithms protect the battery from over-charge and over-discharge.

Increased Flexibility

Modular design enables deployment of up to four batteries in series and up to ten batteries in parallel.

PHYSICAL DIMENSION



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Electrical Characteristics

The battery management system (BMS) is a programmable circuit board used to protect the battery during charging and discharging. The protection is provided by monitoring voltages, current, lithium cell temperature and circuit board temperature and comparing the monitored values to predetermined limits used to protect the battery from damage. If one of the variables being monitored exceeds a limit, the BMS will disable either the charging or discharging circuit, depending on the state of the battery, to prevent current flowing into or out of the battery to protect the battery from damage. The battery will exit the protection mode based on the release method described BMS protections.

GENERAL PERFORMANCE SPECIFICATIONS

Nominal Voltage	12.8V
Rated Capacity	18Ah@ 0.2C Constant Current to 10V
Life Expectancy (Years)	5 years (1 cycle/day)
Cycle Life (100% DoD)	1500 cycles ≥80% of initial capacity
Assembly Method	4S7P
Housing Material	ABS
Series Connection	Cannot be connected in series
Parallel Connection	Can customized designed
Internal Monitoring	BMS
Communication	Bluetooth/ Wifi/SMBus/CANbus/RS485
Total Weight	Approx 2.6±0.5Kg
Terminals	Φ 5. 5
Internal impedance	≤40mΩ at AC 1KHz of 50% SOC
Max Dimension	L*W*H 182x167x76mm

DISCHARGE SPECIFICATIONS

Discharge Temperature Range	-20-60℃	
Standard Discharge	0.2C Constant Current	
Max Continuous Discharge Current	18A at 20℃	
Peak Discharge Current	40A≤3S	
Discharge Cut-off Voltage	About 10V (can be customized designed)	
Standard Discharge	0.2C Constant Current	
Discharge Temperature Characteristics	-10℃	50%
	0℃	80%
	25℃	100%
	55℃	95%

STORAGE SPECIFICATIONS

Self-discharge Rate	<3% / Month	
Storage Temperature Range	<3 Months	-5-35℃
	<1 Year	15-25℃
Recommended Storage SOC	Recommended storage range is 50% State of Charge. We recommend cycling the battery once every three months if it is in long-term storage.	

CHARGE SPECIFICATIONS

Charge Temperature Range	0-45℃
Charge Voltage	14.6V
Recommended Float Charge Voltage (For Standby Use)	13.8V
Max Continuous Charge Current	0.5C at 20℃
Recommended Charge Current	≤5A
Charge Cut-off Voltage	15.6±0.2V
Standard Charge	0.2C constant current charge to 14.6V then constant voltage 14.6V charge until charge current declines to ≤0.01C

BMS SPECIFICATIONS

Voltage	Charging	14.6V
	Balancing per series	3.6±0.05V
Current	Self-discharge	≤3%/month
	Max Charging	9A≤20mS
	Max Discharging	50A≤20mS
Over-charging Protection	Over-charging Voltage	3.80±0.025V/Cell
	Over-charge Delay Time	1-2s
Over-discharging Protection	Over-discharging Release Voltage	3.60±0.025V/Cell
	Over-discharging Voltage	2.30±0.1V/Cell
Over-discharging Protection	Over-discharge Delay Time	1-2s
	Over-discharging Release Voltage	2.50±0.1V/Cell
Over-current Protection	Over-current (Discharge)	60±2A
	Over-current Delay Time	100-200ms
	Release Condition	Charge to release
Short Circuit Protection	Do not short circuit the electrodes.	
Over-temperature Protection	Charge Over-temperature Protection	55±5℃
	Charge Release Temperature	50±5℃
	Discharge Over-temperature Protection	65±5℃
	Discharge Release Temperature	50±5℃