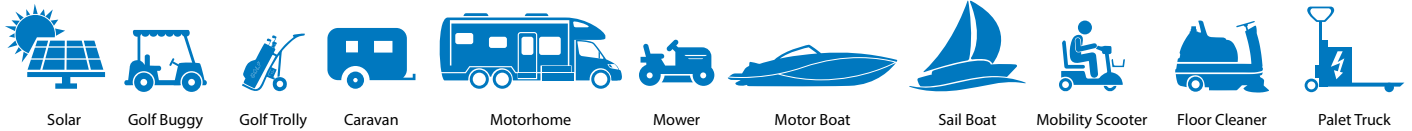




### Product Features ALFP1224

- **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.
- **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.
- **Wider Temperature Range:** -20 C~60 C.
- **Superior Safety:** Lithium Iron Phosphate chemistry eliminates the risk of explosion or combustion due to high impact, overcharging or short circuit situation.
- **Increased Flexibility:** Modular design enables deployment of up to four batteries in series and max ten batteries in parallel.

### Product Applications



### Electrical Characteristics

Nominal Voltage	12.8V	
Nominal Capacity	Minimum: 24Ah	
Energy	307.2Wh	
Internal Resistance	≤30mΩ	
Cycle Life	>2000 cycles @ 1C	100% DoD
	>3000 cycles @ 0.5C	80% DoD
	>5000 cycles @ 0.2C	80-100% DoD
Months Self Discharge	<3%	
Efficiency of Charge	100% @ 0.5C	
Efficiency of Discharge	96~99% @1C	

### Environmental

Charge Temperature	0°C to 45°C (32F to 113F) @60±25% Relative Humidity
Discharge Temperature	-20°C to 60°C (-4F to 140F) @60±25% Relative Humidity
Storage Temperature	0°C to 40°C (32F to 104F) @60±25% Relative Humidity
Plastic Case	ABS+PC
Dimensions (in./mm.)	L181*W77*H170mm
Weight (lbs./kg.)	3.2kg
Terminal	M5
Protocol	None

### Standard Discharge

Continuous Current	30A
Max. Pulse Current	50A/10s, Peck current :80A
Discharge Cut-off Voltage	9.0V

### Standard Charge

Charge Voltage	14.4±0.2V
Charge Mode	CC/CV
Recomm. Charge Current	2-10A
Max. Charge Current	30A
Charge Cut-off Voltage	14.6V

### Certification & Approvals

Certifications	CE (Battery)
	UN38.3 (Battery)
	IEC62133 (Cells)
	UKCA



### BMS Board Voltage

Charging Voltage	DC:14.4V 3.6V/Cell (CC/CV)
Balance Voltage for single cell	3.60±0.05V

### BMS Current

Balance current for single cell	58±5mA
Current consumption	≤600μA
Maximum continuous charging current	30A
Maximum continuous discharging current	30A

### BMS Over Charge Protection

Over charge detection voltage	15.0V \ 3.75±0.05V
Over charge detection delay time	0.5S—2S
Over charge release voltage	14.4V \ 3.6±0.1V

### BMS Over Discharge Protection

Over discharge detection voltage	8.8V \ 2.2±0.1V
Over discharge detection delay time	10mS—400mS
Over discharge release voltage	10.8V \ 2.7±0.1V

### BMS Over Current Protection

Over current detection current	90±20A
Detection delay time	5ms—60ms
Release condition	Cut load,charge release

### BMS Short Protection

Detection Condition	Exterior short circuit
Detection delay time	200-800us
Release condition	Cut load,charge release

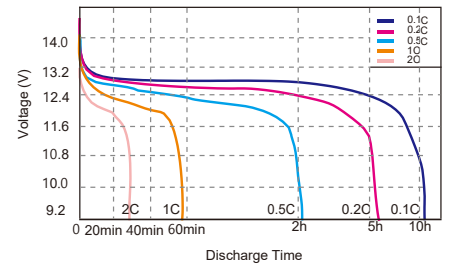
### BMS Resistance

Protection circuitry	≤50mΩ
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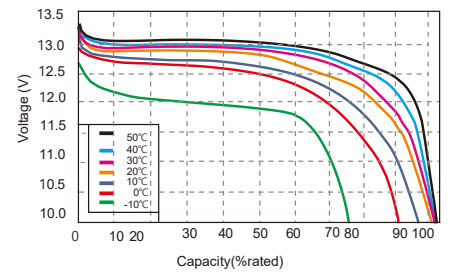
### BMS Temperature

Operating Temperature Range	-40 - +85°C
Storage Temperature Range	-40 - +125°C

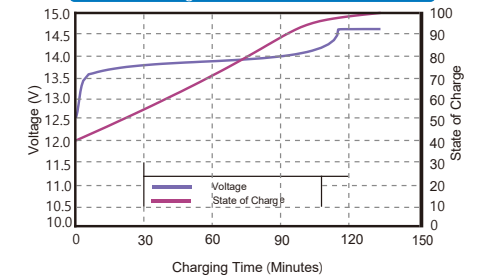
Different Rate Discharge Curve @25°C



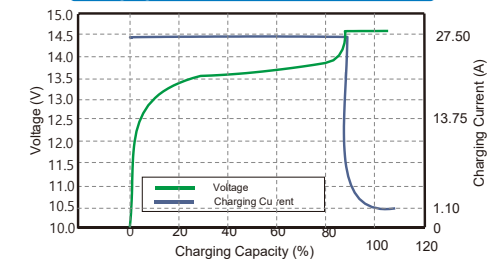
Different Temperature Discharge Curve @0.5°C



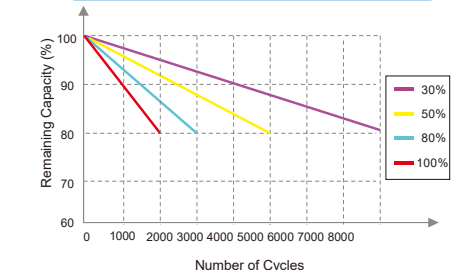
State of Charge Curve @0.5C 25°C



Charging Characteristics @0.5C 25°C



Cycle Life Curve @1°C



Self Discharge Characteristics Curve

