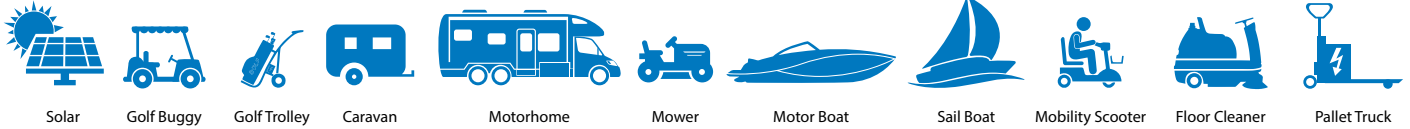




Product Features ALFP1284BT

- **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: 84Ah | |
| Energy | 1075.2Wh | |
| 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.) | L260*W168*H209mm |
| Weight (lbs./kg.) | 10kg |
| Terminal | M6 |
| Protocol | Bluetooth |

Standard Discharge

| | |
|---------------------------|-------------------|
| Continuous Current | 100A |
| Max. Pulse Current | 500A/31ms to 0.5s |
| Discharge Cut-off Voltage | 10V |

Standard Charge

| | |
|------------------------|----------|
| Charge Voltage | 1075.2Wh |
| Charge Mode | CC/CV |
| Recomm. Charge Current | 10-20A |
| Max. Charge Current | 100A |
| 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 | 116±10mA |
| Current consumption | ≤600μA |
| Maximum continuous charging current | 100A |
| Maximum continuous discharging current | 100A |

BMS Over Charge Protection

| | |
|----------------------------------|-------------------|
| Over charge detection voltage | 15.0V \ 3.9±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 | 8.0V \ 2.0±0.1V |
| Over discharge detection delay time | 10mS—400mS |
| Over discharge release voltage | 10.0V \ 2.5±0.1V |

BMS Over Current Protection

| | |
|--------------------------------|--------------------------|
| Over current detection current | 500±50A |
| Detection delay time | 31ms—0.5s |
| 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 |

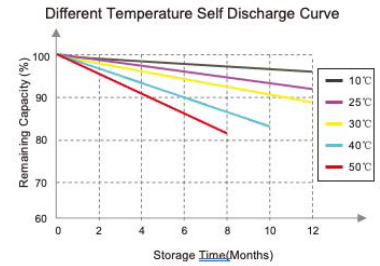
BMS Resistance

| | |
|----------------------|-------|
| Protection circuitry | ≤50mΩ |
|----------------------|-------|

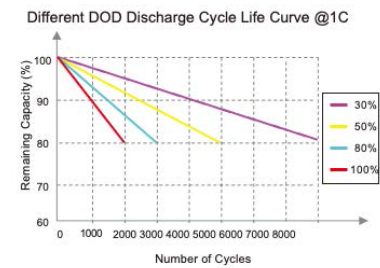
BMS Temperature

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

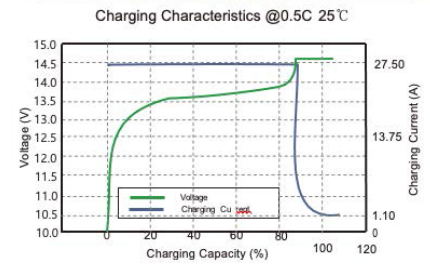
Self Discharge Characteristics Curve



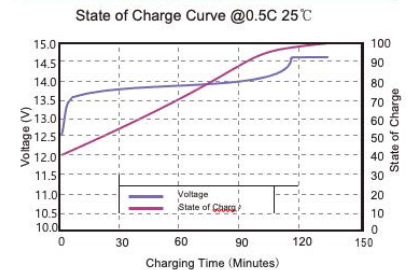
Cycle Life Curve



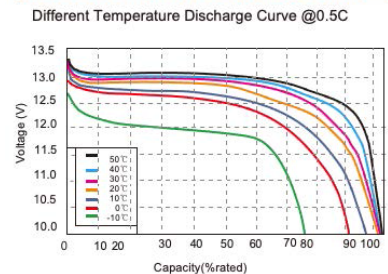
Charging Characteristics



State of Charge Curve



Different Temperature Discharge Curve



Different Rate Discharge Curve

