

# ***APL 48-100 LFP***

## ***Lithium-ion Battery***

### **Datasheet**



APL48-100 LFP is a 48V LifePO<sub>4</sub> battery module. With the advanced Lithium Ferro Phosphate LiFePO<sub>4</sub> cell technology and smart BMS, the product has the benefit of long cycle life, small size, light weight, high safety, efficient, maintenance free, environmental protection and strong environment adaptability. It can operate at high temperatures for optimal performance in the field. The APL-LFP batteries are designed in Australia and are made to complement the charging characteristics of the FXM series UPS. Each battery is fitted with a battery management system (BMS) which provides protection from over voltage, under voltage, over temperature, over current, over charging as well as managing internal cell balancing. The BMS also reacts to any fault condition and automatically resets once the fault is cleared.

Traditional lead acid systems can be replaced with the APL batteries boasting LFP technology which can deliver more cycles and greater DoD. LFP systems are designed to offer more service cycles with smaller capacity and still yield the same useable storage as lead acid systems; lead acid storage cannot exceed 75% DoD.

The APL-LFP batteries work most efficiently when connected in parallel. Each module includes a capacity gauge and circuit breaker for individual isolation of each module before removal. The battery is ideal for backup and energy storage application in harsh outdoor environment.

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**Some key features include:**

- Proven LiFePO<sub>4</sub> technology
- Longer life with increased charge cycles and hybrid applications
- High energy density
- Deliver up to 3X the energy density of conventional lead acid batteries
- Zero emissions
- Fully recyclable
- Light weight and saving space
- Rated up to 60°C
- Possible 100% DoD each cycle
- Australian engineered & designed
- Built-in smart battery management system (BMS)
- Non-toxic, no lead, no heavy metals or leaks
- Simple Anderson quick release connector system
- Two thirds less weight than equivalent lead acid batteries
- Bluetooth and CAN communication
- Intelligent monitors, remote measure, remote communication

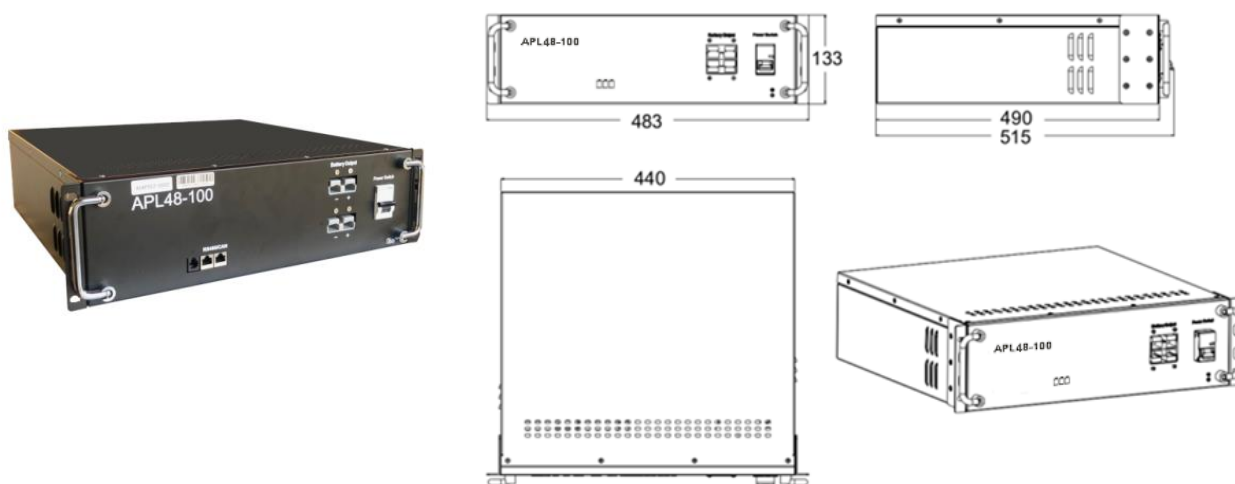
**Benefits include:**

- Light weight & compact for ease of handling
- 4 x longer cycle life therefore cheaper maintenance & less replacements
- Fast charge capability
- All materials are recyclable & accepted by commercial recyclers
- The LFP compound results in no expansion, emissions or heat generation
- BMS protects cells, great for constant demand from critical systems
- Utilities available sunlight from PV panels
- Provides more than 2000 cycles compared with 1000 cycles for lead acid batteries
- Support parallel connection to increase capacity
- Maintenance free

**Main Applications:**

- Telecommunication
- UPS and IDC Datacentre
- Renewable Energy Storage System

## APL48-100LFP Battery Module

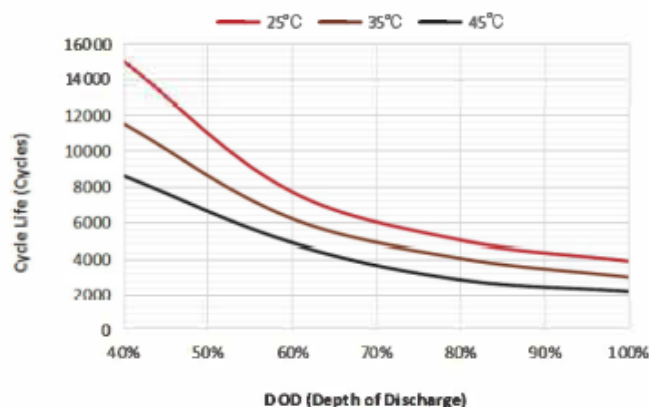


## Product Specifications

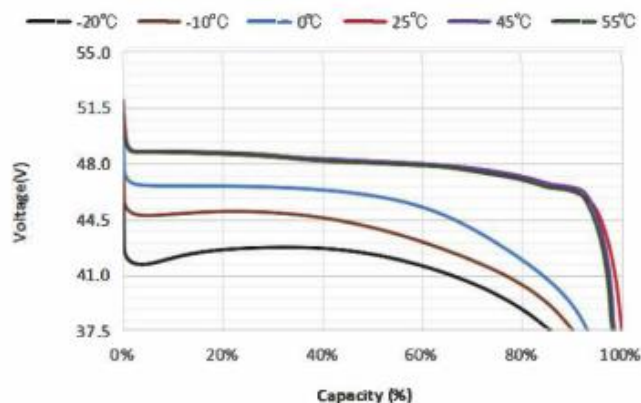
Model No.	APL48-100LFP
Nominal Voltage	48V <sub>DC</sub>
Nominal Capacity	100Ah (0.2C to 41.0V @ 25°C)
Discharge End Voltage	41V
Charge Voltage	54V
Maximum Charge Current	100A (1C)
Standard Charge Current	20A (0.2C)
Maximum Discharger Current	100A (1C)
Dimensions W x D x H	440mm x 490mm x 133mm (3U)
Weight	45kg (±2kg)
Design Life	15+ years @ 25°C
Communication	RS485, CAN, RS232
Temperature Range	Discharge -20 to 60°C Charger 0 to 60°C Storage -5 to 45°C
Temperature Recommendation	Discharge 15 to 35°C Charge 15 to 35°C Storage 0 to 40°C (6 months, > 50% SOC)
Humidity	5% to 95%, no condensation

## Performance Curve

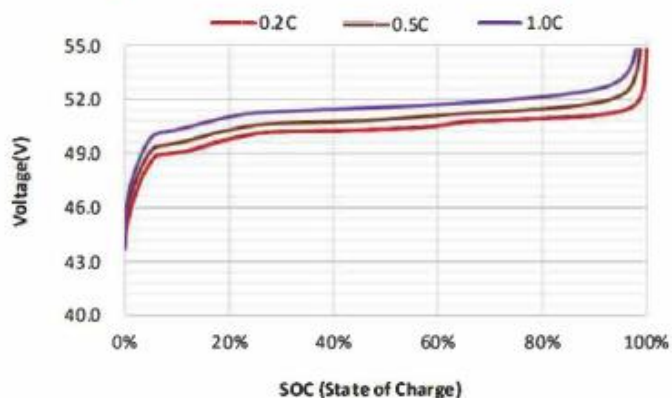
Cycle life vs. DOD at different temperature



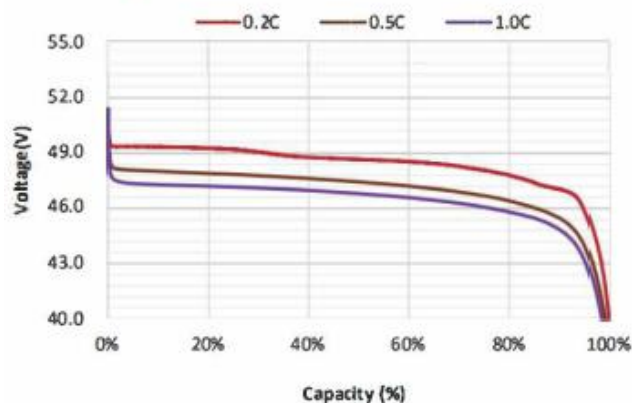
Discharge curve at different temperature



Charge curve with different current rate @ 25°C



Discharge curve with different current @ 25°C



## Charge/ Discharge Modes and Conditions

Charge Modes and Conditions

Cell Temperature	Recommended Charge	Fast Continuous Charge
< 0°C	No charge allowed	No charge allowed
0°C ~ 10°C	Charge current 0.1C	Charge current 0.2C
10°C ~ 20°C	Charge current 0.2C	Charge current 0.5C
20°C ~ 30°C	Charge current 0.3C	Charge current 1.0C
30°C ~ 40°C	Charge current 0.3C	Charge current 1.0C
40°C ~ 60°C	Charge current 0.3C	Charge current 0.5C
> 60°C	No charge allowed	No charge allowed

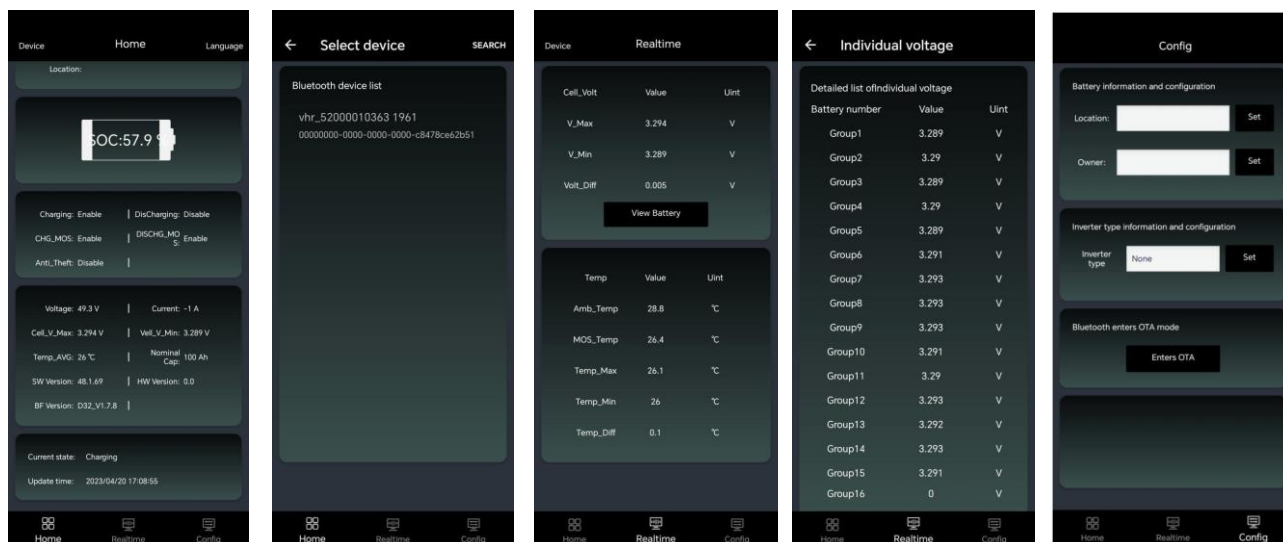
Discharge Modes and Conditions

Cell Temperature	Recommended Discharge	Fast Continuous Discharge
< -20°C	No discharge allowed	No discharge allowed
-20°C ~ 0°C	Discharge current 0.2C	Discharge current 0.5C
0°C ~ 20°C	Discharge current 0.5C	Discharge current 1.0C
20°C ~ 50°C	Discharge current 0.5C	Discharge current 1.0C
50°C ~ 60°C	Discharge current 0.5C	Discharge current 0.5C
> 60°C	No discharge allowed	No discharge allowed

## BMS (Bluetooth Communication)



### Battery Managing System BMS by Mobile App



#### Instructions:

1. Download the BmsManagement App from Google Play.
2. Turn on Bluetooth of your mobile device.
3. Open the App and Search and Select the batteries from the list (you can find the battery number on the front of your battery).
4. Your battery is now connected to the App.
5. Click Home or Realtime to see different battery status and other data.

Scan to download



#### Note:

1. Your mobile device must support Bluetooth 4.0 BLE.
2. Measuring distance up to 15m.
3. Real-time remotely monitor battery status.

#### Features:

- Battery pack voltage
- Cell voltage
- Current
- State of charge (SOC)
- Charge or discharge State
- Average temperature
- Battery number
- Update time
- Battery detail configuration