APL 12-9Ah
Lithium Iron Phosphate Battery

Datasheet

The Lithium Iron Phosphate batteries (APL12V) are small, efficient, maintenance free and rugged batteries operating at high temperatures for optimal performance in the field. They are designed in Australia and are made to complement the charging characteristics of the Alpha products. 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.

Traditional lead acid systems can be replaced with the APL batteries which can deliver more cycles and greater DoD. Lithium Iron Phosphate technology are designed to offer more service cycles with smaller capacity and still yield the same useable storage as lead acid systems.

The APL12V batteries work most efficiently when connected in parallel. Each module includes a capacity gauge and is weighed less than its equivalent sealed lead acid battery but can provide more Watt-hr/kg.

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Some key features include:

- High cycle life, long service life
- Low maintenance with stable chemistry
- Superior charge and discharge efficiency
- Up to 6 months to its extremely low self discharge rate
- Provide high Watt-hr density
- Extreme high tolerance and suitable for ambient temperature rated up to 60°C
- Possible 100% DoD each cycle
- Australian engineered and designed
- Built-in circuit protection and batttery management system (BMS)
- Zero emissions, no risk of sulphation
- Non-toxic, no lead, heavy metals or leaks
- Weight less than equivalent lead acid batteries

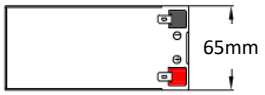
Benefits include:

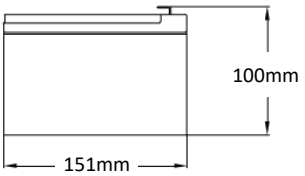
- Light weight and compact for ease of handling
- Cheaper maintenance and less replacements
- > 2000 cycles @ 80% DoD for effectively lower total cost
- All materials are recyclable and accepted by commercial recyclers
- The Lithium compound results in no expansion, emissions or heat generation
- BMS protects cells, great for constant demand from critical systems and against abuse
- Quickly recharge to increase productivity
- Provides more cycles compared with lead acid batteries

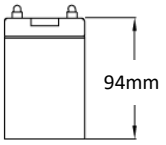
Applications include:

- Outdoor UPS or UPS for roadside traffic devices
- Electricial devices
- Emergency light
- Fishing sonar
- Digital camera
- Remote monitoring
- Switching applications and more

Product Specifications

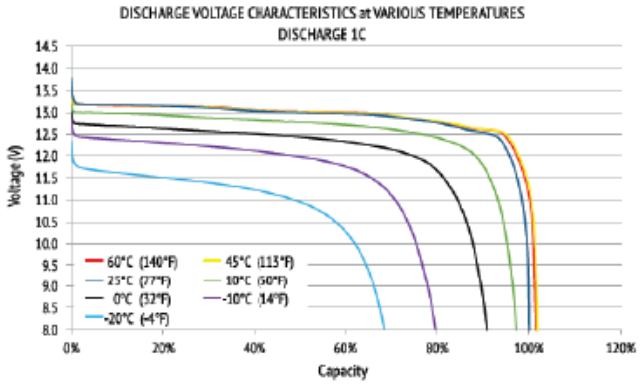


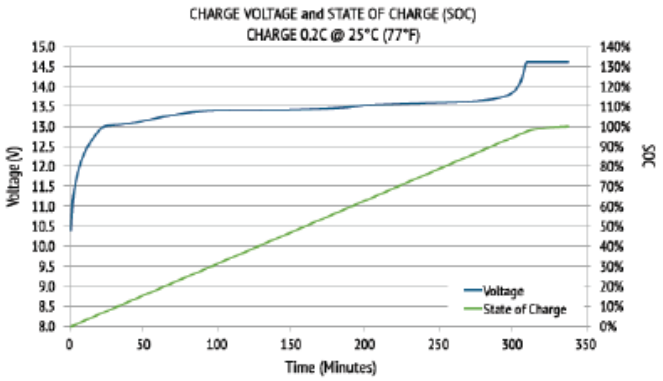


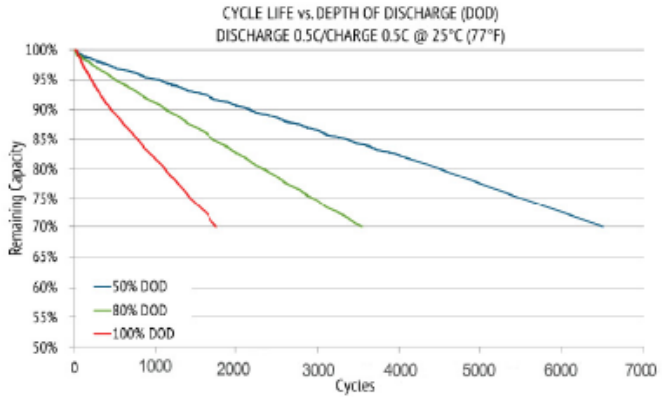


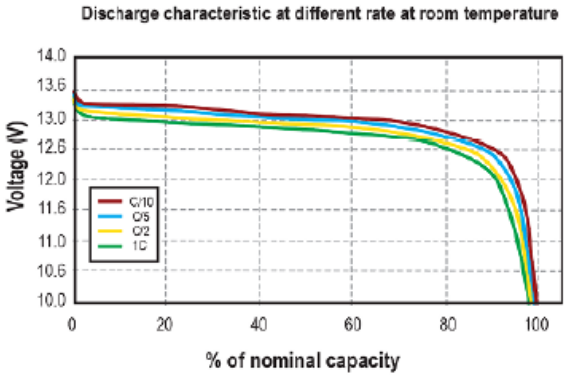
Model No.	**APL12-9Ah**
Nominal Voltage	$12.8V_{DC}$
Nominal Capacity @25±2°C 0.2C	9Ah
Capacity @ 1.8A	300 min
Energy	115 Wh
Resistance	≤ 90mΩ @ 50% SOC
Self Discharge	< 3% / month
Cells	Cylindrical
Recommended Charge Voltage and Current	14.6V and 1.8A
Max Charge Current	9A
BMS Charge Cut-off Voltage	15.6V (3.9V/Cell)
Reconnect Voltage	14.4V (3.6V/Cell)
Balancing Voltage	14.4V (3.6V/Cell)
Maximum Batteries in Series	4
Max Discharge Current	15A
Peak Discharge Current	30A (3s)
BMS Discharge Cut-off Current	45A ± 5A (31ms)
Recommended Low Voltage Disconnect	11.0V (2.75V/Cell)
BMS Discharge Cut-off Voltage	10.0V (2.5V/Cell, 2s)
Reconnect Voltage (by charging)	11.2V (2.8V/cell)
Short Circuit Protection	250 ~ 500 µs
Dimension (L x W x H)	151 x 65 x 100mm
Weight	1.1kg
Terminal Type	F2
Enclosure Protection	IP65
Case Material	Acrylonitrile Butadiene Styrene
Discharge Temperature	-20℃ ~ 55℃
Charge Temperature	0℃ ~ 45℃
Storage Temperature	-5℃ ~ 35℃
BMS High Temperature Cut-off	65℃
Reconnect Temperature	55℃
Certifications	CE, UN38.3, UL1642, IEC62133

Performance Characteristics









Cautions

- Do not short circuit, reverse polarity, crush or disassemble
- Do not heat or incinerate
- Do not immerse in any liquid
- Storage area should be clean, cool, dry and ventilated
- Store at 30% ~ 50% SOC
- Recharging every 3 months is recommended