APL 12-125-BL
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 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.

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 up to 1/3 the weight of its equivalent sealed lead acid battery but can provide more Watt-hr/kg.

Alpha Power Systems
Unit 18, 30 Heathcote Road
Moorebank NSW 2170
Australia

T (02) 9602 8331
F (02) 9602 9180
E admin@alphapower.com.au
W www.alphapower.com.au

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
- 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
- 1/3 the weight of equivalent lead acid batteries
- Bluetooth communication

Benefits include:

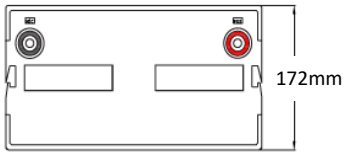
- Light weight and compact for ease of handling
- 4 x longer cycle life therefore cheaper maintenance and less replacements
- > 2000 cycles @ 80% DoD for effectively lower total cost
- All materials are recyclable and accepted by commercial recyclers
- The Lithium compound results in no expansion, emissions or heat generation
- BMS protects cells, great for constant demand from critical systems
- Utilities available sunlight from PV panels
- Provides more than 2000 cycles compared with 1000 cycles for lead acid batteries
- Bluetooth access to battery data without opening the cabinet

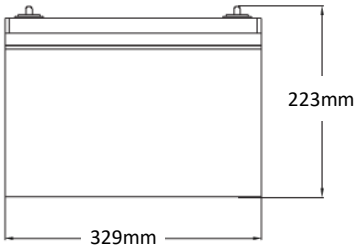
Applications include:

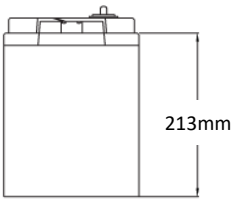
- Outdoor UPS
- UPS for roadside traffic devices
- Solar storage
- Golf car
- Marine
- Remote monitoring
- Switching applications and more

Alpha Power Systems
Unit 18, 30 Heathcote Road
Moorebank NSW 2170 Australia
T (02) 9602 8331
F (02) 9602 9180
E admin@alphapower.com.au
W www.alphapower.com.au

Product Specifications







Model No.	**APL12-125-BL**
Nominal Voltage	$12V_{DC}$
Nominal Capacity @25±2°C 0.2C	125Ah
Capacity @ 25A	300 min
Energy	1600 Wh
Resistance	≤ 8mΩ @ 50% SOC
Self Discharge	< 3% / month
Cells	IFR26650EC
Recommended Charge Voltage and Current	14.6V and 25A
Max Charge Current	125A
BMS Charge Cut-off Voltage	15.6V (3.9V/Cell)
Reconnect Voltage	14.0V (3.5V/Cell)
Balancing Voltage	14.4V (3.6V/Cell)
Maximum Batteries in Series	4
Max Discharge Current	150A
Peak Discharge Current	300A (3s)
BMS Discharge Cut-off Voltage	8.0V (2.0V/Cell, 3s)
Reconnect Voltage	10V (2.5V/cell)
Dimension (L x W x H)	329 x 172 x 223 mm
Weight	15.3kg
Terminal Type	T11
Enclosure Protection	IP65
Case Material	Acrylonitrile butadiene styrene
Discharge Temperature	-20℃ ~ 65℃
Charge Temperature	0℃ ~ 45℃
Storage Temperature	-5℃ ~ 35℃
BMS High Temperature Cut-off	75℃
Reconnect Temperature	65℃
Certifications	CE, UN38.3, UL1642, UEC62133

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

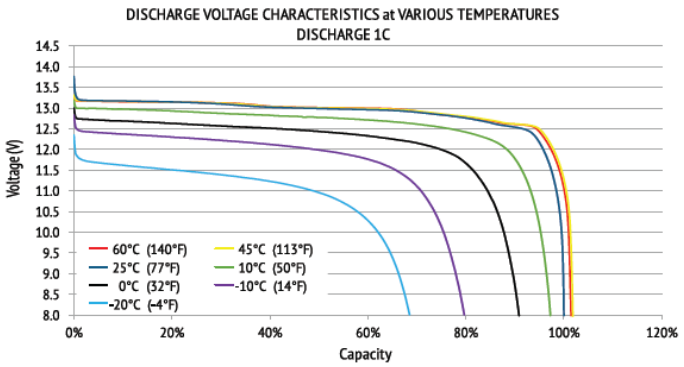
Constant Current Discharge Table

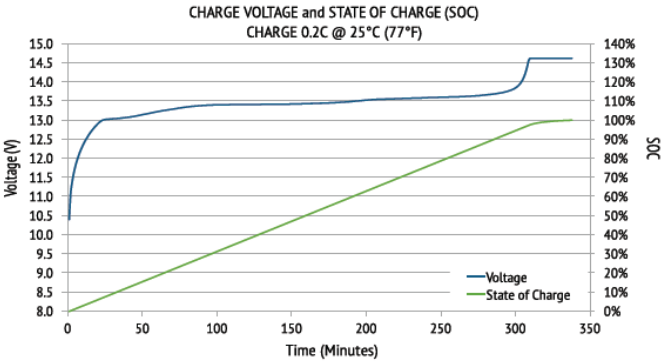
		Discharge Current								
		0.1C	0.2C	0.25C	0.3C	0.4C	0.5C	0.6C	0.8C	1.0C
End Voltage	10.4V	607.2min	303.6min	243min	201min	150.6min	120min	99.6min	74.4min	59.4min
	10.8V	606min	300min	240min	199.8min	149.4min	118.8min	99min	73.8min	58.8min
	11.2V	605.4min	297.6min	238.8min	198.6min	148.2min	117.6min	98.4min	72.6min	57.6min
	11.6V	604.8min	295.2min	236.4min	196.8min	147min	116.4min	97.2min	71.4min	57min
	12V	600min	291.6min	232.8min	193.8min	144.6min	114.6min	95.4min	70.8min	55.2min

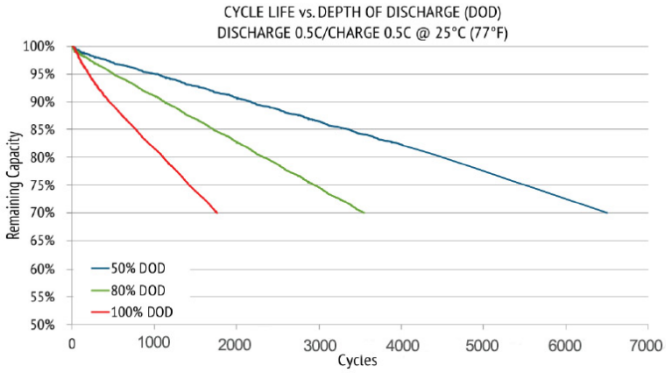
Constant Power Discharge Table

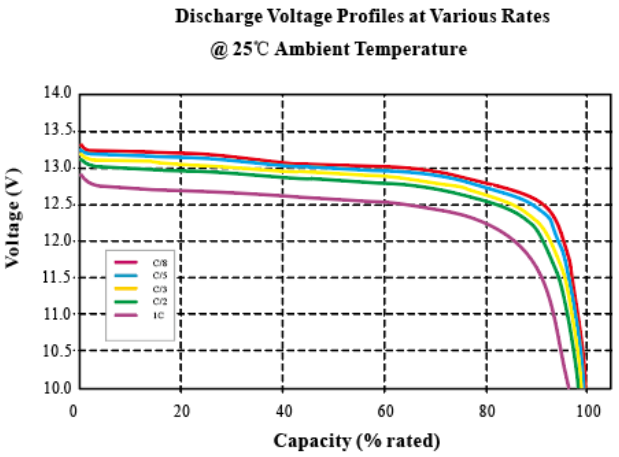
		Discharge Power						
		128W	256W	390W	512W	640W	768W	896W
End Voltage	10.4V	748.8min	372min	246min	187.2min	150.6min	124.8min	106.8min
	10.8V	747min	367.8min	243.6min	185.4min	148.2min	123.6min	104.4min
	11.2V	744min	360.6min	240.6min	183.6min	147min	121.2min	102.6min
	11.6V	713.4min	358.8min	238.8min	181.2min	144min	119.4min	100.8min
	12V	612min	353.4min	237.6min	178.2min	142.8min	118.2min	97.8min

Performance Characteristics



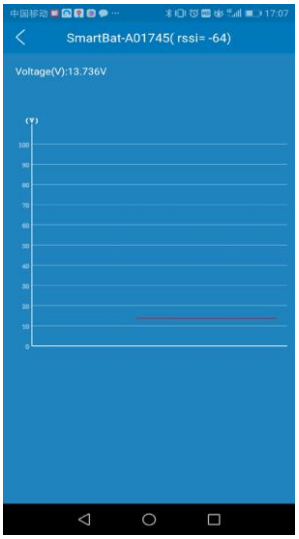






Monitoring System (Bluetooth Communication)

Smart Battery Managing System by Mobile App



Instructions:

1. Download the SmartBat App from Google Play or App Store. Your mobile device must support Bluetooth 4.0 BLE.
2. Turn on Bluetooth of your mobile device.
3. Open the App and select the correct battery from the list (you can find the serial number on the side of battery).
4. Your battery is now connected to the App.

Scan to download

android

iOS

Note:

1. Measuring distance up to 15m.
2. Applicable for 1-16S Li-Ion/ LiFePO4 battery pack.
3. Real-time remotely monitor battery status.

Features:

- Battery pack voltage
- Single block voltage
- Current
- State of charge (SOC)
- Charge or discharge state
- Cycles
- Temperature
- Remaining capacity (RMC)
- Design capacity
- Full charge capacity
- Average time to empty
- Average time to full
- Serial number (SN)

Alpha Power Systems

Unit 18, 30 Heathcote Road
Moorebank NSW 2170 Australia

T (02) 9602 8331
F (02) 9602 9180

E admin@alphapower.com.au
W www.alphapower.com.au