



# User Guide

## Freedom Power Pack (FPP)

### Models:

LBS-1250-FPP

LBS-1275-FPP

V3

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### 1.0 Introduction

Congratulations!

You have purchased a state-of-the-art portable lithium battery and we hope you enjoy many years of trouble-free life. This User Guide describes how to connect and safely operate the 12V Freedom Power Pack (Figure 1).

This User Guide cover the following FPP battery range:

- LBS-1250-FPP; and
- LBS-1275-FPP.

As with all batteries, you should consider the mechanical and environmental conditions that you intend to operate the battery in to maximise overall performance and achieve the longest battery life. LBS offer these general guidelines; however, you should seek LBS advice or that of a qualified electrical tradesperson if you are in doubt.



Figure 1 – FPP Portable Battery

## 2.0 Do's and Don'ts

This battery contains lithium iron phosphate (LFP) cells. While LFP cells are the safest Li-Ion chemistry, the stored chemical energy represents a risk of fire, burns or explosion if misused.

Avoid injury to yourself and others, adhere to the warnings in this Guide.

- Avoid mechanical shock;
- Do not expose to fire;
- Do not pierce battery;
- Do not disassemble;
- Do not drill into battery enclosure;
- Do not short the battery terminals;
- Do not allow water to enter the battery; and
- Do not expose battery to > 60°C temperatures.



To ensure a long and safe life from your battery, please ensure you consider the following.

### 2.1 Ensure the battery is physically secure

Even though lithium batteries are light weight in comparison to lead acid, they can still become a dangerous projectile in a moving vehicle, RV, cart or boat if not secured. Ensure the battery is safely secured before travel. If in doubt seek LBS advice and consider making use of LBS custom brackets to safely secure the battery.

### 2.2 Do not penetrate the battery enclosure

You may be tempted to drill into the aluminum enclosure to secure mounting brackets. Doing so may inadvertently penetrate one of the cells which could cause thermal runaway and lots of smoke. Do not under any circumstances drill or penetrate into the enclosure. Use only existing mounting holes in the battery with screws of maximum length 13mm (½ inch). We recommend the LBS mounting kit with screws and brackets that are designed to safely attach to the battery; alternatively use strapping and clamping to secure the battery in place.

### 2.3 Maintain an acceptable temperature range

Like all batteries, LBS batteries operate and perform the best as well as last the longest in a cool and stable temperature environment of between 10°C and 25°C. The maximum window of acceptable operation is 0-45°C.

If you regularly operate outside of this suggested range you should consider changing the battery location or actively cool or heat the environment in order to preserve battery life. If the ambient temperature that the battery operates in is greater than 60°C you should cease use immediately. Operating outside of these guidelines diminishes the life and performance of the battery and voids the warranty.

### 2.4 Avoid repeated shock and vibration

Whilst the battery is robustly constructed and protected in an aluminum enclosure, it is not designed to operate continuously in high shock or high vibration environments. Normal use in a 4WD environment is acceptable and the battery has been designed in accordance with these expected conditions. However, dropping the battery or exposing the battery to a high number of excessive vibrations may lead to a fault or failure of the battery.

### 2.5 Avoid water or salt spray

Whilst the battery is mechanically protected, the enclosure is not designed for a wet environment. Do not submerge the battery in water or expose the battery to direct water spray.

Avoid exposing the battery to salty water spray such as in a marine environment to avoid corrosion. Salt laden air may also cause corrosion in the long term; minimise exposure by installing the battery in a protected hatch or compartment.

### 3.0 User Guide

Your lithium Freedom Power Pack is a portable 50Ah or 75Ah lithium battery with convenient plugs to provide power for a variety of purposes. Like all electronic devices you need to treat your appliance carefully and not expose to excessive temperatures, water, dirt or undue rough handling.

The FPP features:

1. 2 x dual USB ports (1A & 2.1A) for charging phones and tablets;
2. 1 x voltmeter to indicate the battery voltage;
3. 1 x red switch to turn on or off the voltmeter, ciga and USB ports;
4. 2 x Ciga sockets to supply power to attached devices with Ciga connections;
5. 2 x 50A grey Anderson plugs which are bidirectional; and
6. 2 x 25A blade fuses to protect the Anderson plugs
7. 1 x 15A fuse.

Figure 2 – FPP Features



#### 3.1 Charging the FPP

12V AC chargers, solar chargers and DC-DC chargers connect to the grey Anderson Plugs. All charging sources must be under 50A. The FPP can be charged from 2 sources at the same time as long as the 50A total limit is not exceeded.

The FPP will automatically cut out when the battery is fully charged. It also cuts out when battery gets too low.

When fully charged the battery will be at 13.3-13.5V.

Discontinue use when the battery is approximately 11V. It will automatically cut out at approximately 10V.

### 3.2 Voltmeter

The voltmeter with the circular ring of LED's will give the pack voltage and an indication on how full the battery is. When an appliance is connected, the voltage will dip a small amount and when a charge is applied the voltage will raise a small amount. This is normal.

If storing for extended periods it is recommended that you switch off the battery. The lithium cells will self-discharge very slowly if not charged for prolonged periods, so it is a good idea to charge the battery every couple of months.

### 3.3 Anderson Plugs

The grey Anderson plugs are bi-directional and can handle loads or charging to a maximum of 50A.

This means a maximum inverter size of 600W.

### 3.4 Ciga Sockets and USB sockets

Ciga sockets should only be used as intended to charge devices with a maximum load of 10A.

Dual USB ports are max 1A or 2.1A.

### 3.5 Fuses

The top 2 blade fuses (25A each) in parallel protect the Anderson plugs.

The bottom blade fuse is 15A.

### 3.6 Red Switch

The red switch turns on/off the:

1. Voltmeter
2. 2x USBs
3. 2x Ciga sockets

### 4.0 Troubleshooting Guide

**When I turn the voltmeter on there is nothing on the screen.**

The battery is most likely completely discharged. Connect a charger and give the battery a good charge up.

Note: if you leave your battery for an extended period you will need to use a charger that automatically provide charge without sensing any voltage from the battery. At very low voltages the battery will appear to be dead because it is protecting itself and will only come to life when you apply a charge.

**The voltmeter is on but I am not getting any power.**

One or more of the fuses is likely blown. Remove the cover from the fuse holders inspect and replace fuses as necessary. They are standard automotive fuses available from any many locations including service stations and automotive supply stores.

The top 2 fuses (25A each) in parallel protect the Anderson plugs.

The bottom fuse is 15A.

### 5.0 Specifications

LBS Battery	Max Charge Current	Discharge Current		Battery Weight	Dimensions (mm)			
		Cont	Surge		Length	Depth	H1*	H2*
LBS-1250-FPP	50	50	200	8	175	125	300	335
LBS-1275-FPP	60	60	200	8	175	125	300	335

### 6.0 Contact Us

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