

cpaphero



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freedom[®]

cpap battery 160

USER MANUAL



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Introduction

The Freedom CPAP Battery 160 is an external lithium-ion battery that powers positive airway pressure (PAP) devices and portable electronic devices like cell phones and tablets when AC power is unavailable.

CAUTION: Please read this manual carefully before using your Freedom CPAP Battery 160 for the first time and observe all safety warnings.



If you have any questions regarding the use of your Freedom CPAP Battery 160 or any other cpaphero product, please contact us at **1-888-202-4376** or **info@cpaphero.com**.

Package Content

The Freedom CPAP Battery 160 comes packaged in a variety of kits that include the output cables required to connect the battery to specific PAP device models. These kits will include the following items:

Single Battery Kit (Model# CHS160)



1x 24V DC Smart Cable for ResMed AirSense™ 10, 11 & AirMini™ Machines.



1x 12V DC Smart Cable for Philips DreamStation® Series Machines.



1x AC Power Supply

What's in the box:

- 1 unit of Freedom CPAP Battery 160
- 1 unit of 24V cable (Compatible with ResMed AirSense 10, Airsense 11, AirMini, and Luna G3)
- 1 unit of 12V cable (Compatible with Philips DreamStation 1, DreamStation 2 and System One 60)
- 1 unit of AC Power Supply
- User Manual





Other Accessories (Sold separately)

Visit www.cpaphero.com for more information.



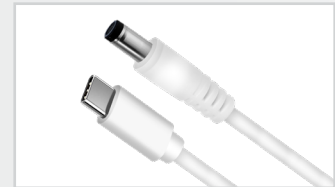
1 Auto
Charge DC Cable
SKU: CHCARC



Replacement
AC Power Supply
SKU: CHFPS



14V Smart Cable for
Transcend Micro
SKU: CH14VC



1x Bridge Cable
SKU: CHFBC

Compatibility

Variable voltage output and DC/DC soft switching technology allow the Freedom CPAP Battery 160 to power most common PAP devices as the voltage output is determined by the power path of the DC output cable.

cpaphero manufactures DC output cables to fit the most common PAP device models.

The original Freedom CPAP battery and its output cables and power supply ARE NOT compatible with the Freedom CPAP Battery 160. The Freedom V2 Battery and its output cables and power supply ARE compatible with the Freedom CPAP Battery 160.

Average Run Times



Many factors can affect how long the Freedom CPAP Battery 160 will power your PAP device, including, but not limited to the device type, elevation, pressure setting, your mask fit, and the use of heated humidification or tubing.

Using heated humidification and/or heated tubing will significantly reduce expected run times by up to two thirds. In some cases, this could prevent the battery from being able to effectively power your PAP device. For optimal battery performance you should disable (or set to zero) heated humidification and heated tubing.

- A leaking mask makes the device work harder to maintain your prescribed pressure setting and thus it draws more power.
- The device type will impact the run time as some types (Bi Level/Bi PAP, VPAP, SV, etc.) draw more power than a standard CPAP.

Battery Starts Then Stops Working

If the battery starts powering your device and then shuts down, the device you are trying to power may:

- Have higher amp requirements ($> 8A$) than the battery can provide.
- Require a constant voltage output to operate properly (the Freedom CPAP Battery 160 operates on a voltage range of 10V-28V).

Air Travel



- The Freedom CPAP Battery 160 complies with FAA (Federal Aviation Administration) regulations for larger lithium-ion batteries (with a capacity of 101-160 Wh) taken in carry-on baggage during air travel. While some airlines may have stricter policies, you can get a copy of our travel letter. Just feel free to get in touch with us at **1-888-202-4376** or via email at **info@cpaphero.com**

Specifications

Cell Type: Rechargeable Lithium-ion (LG/Samsung ICR18650)

Capacity: 160 Wh

Output Voltage: 12V-24V DC (depending on DC output cable)

Output Current: 8A (maximum)

DC Input Voltage Range: 10V-28V

QC 3.0 USB Output Voltage: 5V | 2.4A (maximum)

Charge Input: 10V-28V

Optimal Charging Conditions: 32° F to 104° F

Optimal Operating Conditions: 23° F to 104° F

*battery capacity is reduced by 30% when operating between 23° F to 32° F

Charge Time: 3-4 hrs

*charge times are per battery when two batteries are bridged together

Power Gauge: 5 LED Lights

Storage Conditions: -4° F to 104° F (optimal range: 60° F to 80° F)

Life Span: 500 charge/discharge cycles (100%-0% then back to 100%), or about 2-3 years, whichever comes first

Weight: 2.13 lbs

Dimensions: 7.9 x 5.1 x 1.0 inches (L x W x H)

Frequently Asked Questions

Lower Than Expected Run Time

- Using heated humidification and/or heated tubing is the number one cause of lower than expected run times. For optimal battery performance disable or set set to zero your heated humidification and heated tubing! If heated humidification or tubing is required, lowering your heat settings may help or you can bridge two batteries together.
- A high-pressure setting (> 16 cm/H2O) can impact run times especially when other factors are present. All run time testing is done on a pressure setting of 10 cm/H2O.

freedom[®] cpap battery 160

38
hours



ResMed AirMini™



ResMed AirSense™ 10

24
hours

30
hours



ResMed AirSense™ 11



Philips Respironics®
DreamStation® 1

39
hours

40
hours



Philips Respironics®
DreamStation® 2



React Luna G3®

26
hours

51
hours



Transcend Micro™

*Listed run times are based on standard CPAP devices without heated humidification or heated tubing on a pressure setting of 10cmH2O. For specific PAP device run times, contact cpaphero customer service.

Safety Features

- Battery Management Unit (BMU) provides internal protection against thermal runaway (overheating), over voltage, under voltage, over current, over charging, over discharging, and short circuiting.
- Aluminum alloy shell offers maximum cell protection and durability,
- Meets FAA requirements (101-160 Wh) for larger lithium-ion batteries taken in carry-on baggage only during air travel.
- The Freedom CPAP Battery 160 has been UN 38.3 certified, meets UL2056 testing standards, and all current safety regulations and shipping requirements.

Safety Warnings

The following safety warnings are to be always followed!

- Do not drop, hit, crush, or otherwise cause any impact damage to the battery as this may result in exposure of the cell contents.
- Do not expose the battery to open flames, heaters, incineration or other extreme heat ($> 104^{\circ}\text{F}$) including long term exposure to direct sunlight, as this may result in a hazardous reaction.
- Do not expose the battery to moisture of any type.
- Do not disassemble or attempt to repair the battery or any charging or connection components supplied by cpaphero as there are no user-serviceable parts inside.
- Do not charge the battery on any highly flammable surface.

Using 12V cable + bridge cable + power supply



USB Port Connection

The Freedom CPAP Battery 160 features a Quick Charge 3.0 USB port for charging portable electronics like smart phones, tablets, and more.

- Plug the USB power cable of the electronic device into the USB OUT port of the battery.



Dual Battery Power Backup Connection

- Plug the power supply into the battery DC IN port of Battery A.
- Use the bridge cable to connect Battery A to Battery B. One end of the bridge cable goes to the DC OUT port of Battery A and the other end goes to the DC IN port of Battery B.
- Plug the Output Cable into the battery DC OUT port of Battery B and then into the power inlet port of the PAP device.
- Plug the power supply into the wall outlet.

Using 24V cable + bridge cable + power supply



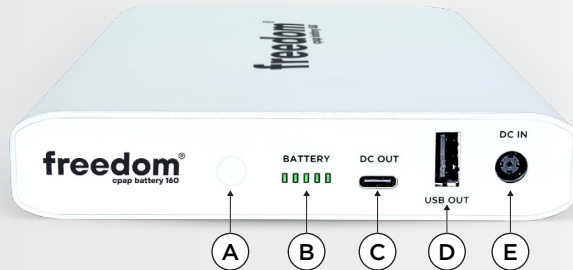
- Do not use the battery with a device that requires higher amperage than the output of the battery ($> 8A$) as this may result in the battery shutting off to protect from overheating.
- Regularly inspect the battery ports, connection cables and any other components for damage or signs of wear, do not use the battery if it is damaged or has been modified.

Warranty & Usage Disclaimer



- The Freedom CPAP Battery 160 and its accessories are under warranty for quality and manufacturing defects for one (1) year from date of purchase. This warrant does not cover damage resulting from normal wear and tear, modification of, or improper use of the product that is not consistent with the instructions provided for the product.
- By purchasing, using or possessing any cpaphero product, you agree to hold harmless cpaphero, its subsidiaries, affiliates, owners, officers and employees from all claims or liability for any damage to any property or injury, illness or death of any person when such damage, injury, illness or death shall be caused in whole or in part from use of the product(s).

Control Board



- A: Charge Level
- B: Battery Level
- C: DC OUT Port (To CPAP machine)
- D: USB OUT Port (To accessory, if applicable)
- E: DC IN Port (To AC Power supply/wall)

- On/Off: The battery turns on or off automatically when a device is connected to or disconnected from the DC OUT or USB OUT ports.
- When not in use, you MUST disconnect all devices from the battery to allow the battery to completely shut down.

Battery Level:

The light indicates the remaining power level of the battery:

5 indicator lights	81 - 100%
4 indicator lights	61 - 80%
3 indicator lights	41 - 60%
2 indicator lights	21 - 40%
1 indicator lights	1 - 20%

Single Battery Power Backup Connection

- Plug the power supply into the battery DC IN port.
- Plug the Output Cable into the battery DC OUT port and then into the power inlet port of the PAP device.
- Plug the power supply into the wall outlet.

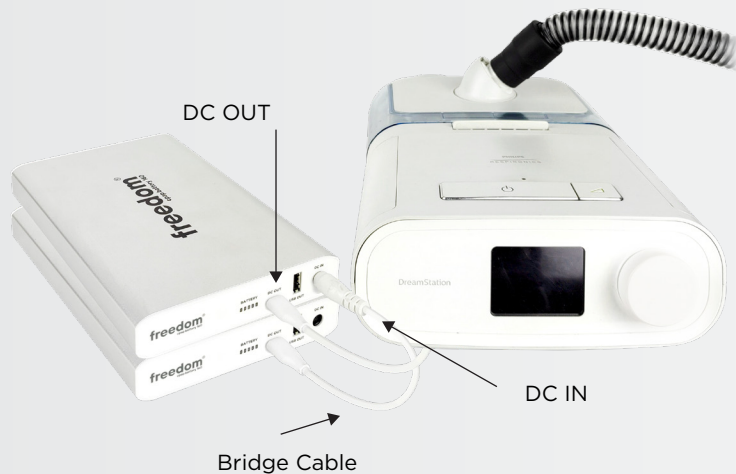
Using 24V cable + power supply



Using the 12V cable + power supply



Using the 12V cable + bridge cable



Power Backup Connection

The Freedom CPAP Battery 160 can be setup as an uninterrupted battery backup system for your PAP device in the event of a power outage. **However, when your PAP machine is not in use, you MUST disconnect all devices from the battery to allow the battery to completely shut down.**

When AC power is available, it will bypass the lithium-ion cells of the battery and power your device normally. If AC power is lost, the battery will recognize this and automatically start powering your PAP device.

Battery Charging

The Freedom CPAP Battery 160 is designed to be charged using the Freedom CPAP Battery 160 power supply.

Battery charge time is 4-5 hours when the battery is fully depleted (0%).

Accessories are also available to charge the Freedom 160W battery in a vehicle.

General Notes/International Charging

- It is normal for the power supply and the battery to be slightly warm to the touch during the charging process.
- The LEDs will show the charge level of the battery. Press the charge level button to display the lights.
- When the battery is at 0% it may take some time before the display begins to show a charge level, while charging, during which time the LEDs may flash.
- When charging is complete, disconnect the power supply from the wall outlet and the battery.
- The included AC Power Supply (CHFPS) can be used with any international electric adapter.

Single Battery Charging

- Plug the power supply into the battery DC IN port and then into the wall outlet to begin the charging process.



Dual Battery Charging

Two batteries may be bridged together for charging; however, they will not charge simultaneously. As shown in the image below, battery B will charge first and then battery A will begin charging.

To begin the dual charging process, battery A must be charged to at least 20%. Battery B can be charged at any level including 0%.

- Plug the power supply into the DC IN port of battery A. The charge level of this battery must be $> 20\%$.
- If a Power Supply Adapter is required, plug it into the DC IN port of battery A and then into the PAP device power supply.
- Plug the Bridge Cable into the DC OUT port of battery A then into the DC IN port of battery B.
- Plug the power supply into the wall outlet to begin charging.

Dual Battery CPAP Connections

To increase your PAP device's run time, you can connect two batteries together using the Bridge Cable (not included) (SKU: CHFBC)

The batteries do not discharge simultaneously. Battery A will start to power your PAP device first (discharge) and once it has depleted then battery B will begin powering your device.

- Plug the Bridge Cable into the DC IN port of battery A and then into the DC OUT port of battery B.
- Plug the Output Cable into the battery DC OUT port and then into the power inlet port of your PAP device.

Using 24V cable + bridge cable

