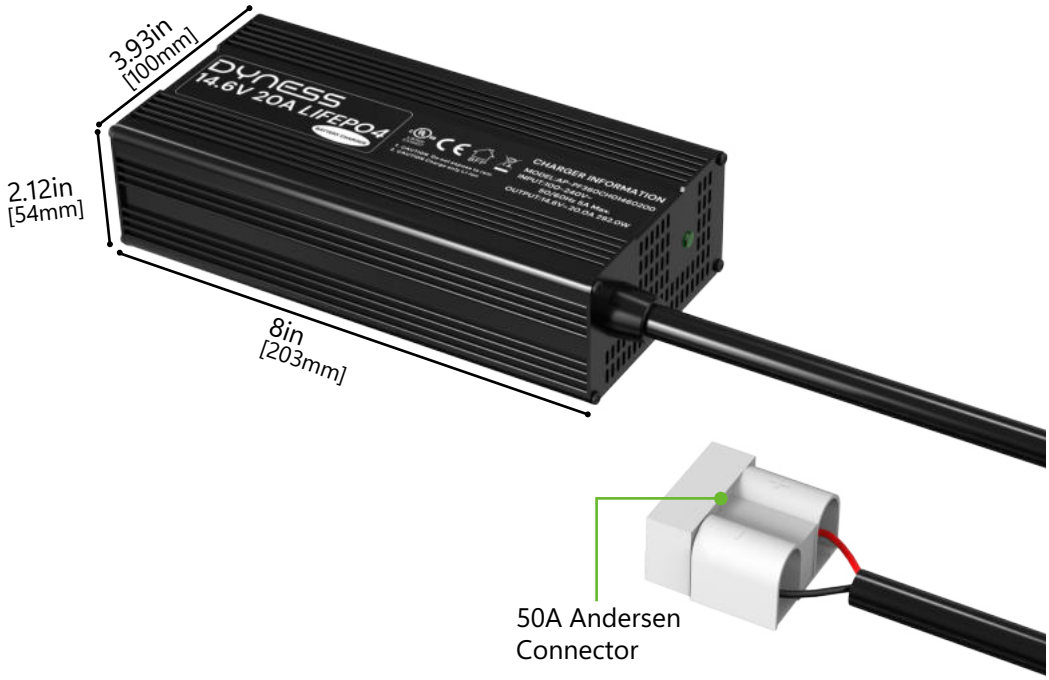
DYNESS

ARC14.6V-20A USER MANUAL

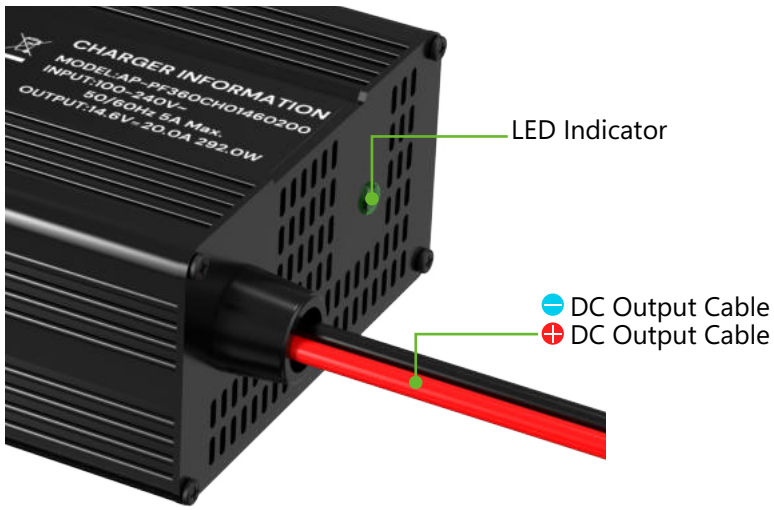
Battery System
14.6V/20A

File version-20250425-V1-EN Information might be subject to change without notice during product improving.

14.6V20A LiFePO4 Battery Charger



DC Port



AC Port

Contents

Statement of Law

This product complies with the design requirements of environmental protection and personal safety. The storage, use and disposal of the products shall be carried out in accordance with the product manual, relevant contract or relevant laws and regulations.

Customer can check the related information on the website of Dyness Digital Energy Technology Co., LTD. when the product or technology is updated.

Please note that the product can be modified without prior notice.

1 Introduction

Use Method

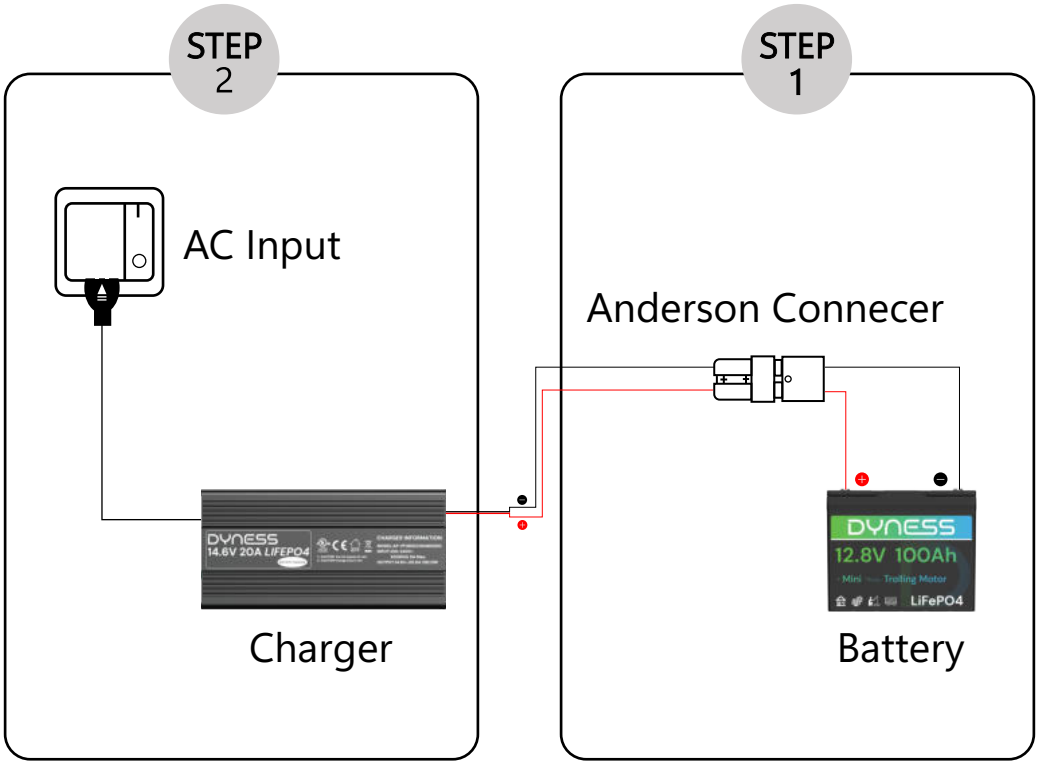


Table 1-1 Usage Steps

STEP 1	Connect the batteries to the output socket with output wires—positive to positive, negative to negative.
STEP 2	Plug the input wires correctly and connect to the AC input power source then.
STEP 3	Disconnect the Anderson connecter or the grid power after charging is complete.

Product Features

1) High efficiency, small size, light weight,proper structure as well as nice thermal design make the charger small and light with good portability.
2) Precharge mode supplies activate, repair and prolonging life functions for long-term unused or deep sleep batteries.
3) The charger is reliable with multiple protections, such as over temperature protection, output short-circuit protection, reverse polarity protection, output over-voltage protection, that prevent damage by faulty operations.
4) The charger case is made of aluminum alloy with surface oxidation treatment, high-grade, fashion, good heat dissipation ability, high hardness, antioxidative, nonfading.

LED Indicator

Table 1-2 LED Indicator

LED Status	Charger Status
LED Always on Green	Fully charged or no connected
LED Always on Red	Battery is being charged
LED Flashes Red	Charger under protection (over temperature protection, output short-circuit protection, reverse polarity protection, output ver-voltage protection)

2 Maintenance and Troubleshooting

Troubleshooting

If the charger cannot work normally, the following methods can help you quickly solve general problems.

Table 2-1 Troubleshooting

Failure Mode	Troubleshooting Methods
LED is not lighting	a. Input connectors must be connected firmly.
Charger is not charging, and the LED is always green	a. Output connectors must be connected firmly. b. Battery failure or damage: replace the battery.
Charger is not charging, and the LED is flashes red	a. Make sure the output polarity is right. b. Battery voltage is too high and cannot match the battery charger.
Battery is not fully charged	a. Output connectors must be connected firmly. b. Output wire cannot be too long. c. Battery failure or damage: replace the battery.

If you still cannot rule out the possibility of failure,please contact **dynesscare@dyness-tech.com**.

Maintenance and Precautions for Using

1) Check the battery technical specification very carefully before charging, to make sure it matches the charger technical data.
2) Make sure charger output connect to the batteries on correct polarity.
3) Input/output connectors must be connected firmly during charging.
4) Reverse connect or short circuit are prohibited during charging.
5) If charger or battery found to be abnormal or damaged during charge, please unplug input and output wires right away.
6) If use other input wires, make sure the cable can withstand for the maximum input current of the charger, and the charger's input voltage is within its working scope.
7) If you need to extend the output connection cable, please make sure the cable can withstand for the maximum output current of the charger, and the voltage-drop between the charger and connection wire of the battery should be less than 1%(≈130mV) of the battery voltage as possible. Otherwise, it may affect the effect of charging process.
8) High voltage and dangerous inside this charger, when there's a defect, please contact with factory. Users and the maintain person who is not professional staff in our company are forbidden to open or re-develop this product.
9) Never use during a lightning storm.

10) Don't wet the charger body, never use it in wet or rained place.
11) Never use it near the heat source or where is shined by the straight sunshine.
12) Never use it in or near the place of flammable gas.
13) Use it in the ventilated and dustless place.
14) Don't place rod or other metal objects at vent or other openings.
15) Never cover the air vent, always leave 10cm space for it at least.
16) Don't shake, bump or throw it strongly.

3 Technical Specifications

Table 3-1 Technical Specifications

Input Voltage	100V to 240VAC;50Hz to 60Hz
MaxInput Current	5A
Output Voltage	14.6Vdc
Output Current	20A
Temperature Range	Operating: -10℃ to 40℃ Storage: -40℃ to 70℃
Dimensions	L7.99×W3.94×H2.13 inch L203*W100*H54 mm
Net Weight	1.3kg/2.87lbs

4 Charging Mode

1) Precharge stage (T1): When the battery voltage is lower than normal standard, the charger cannot withstand large current charging. The charger will supply small current for charging, which has the functions of activation, repair and battery life extension. When the output voltage reach normal value or at the T1 of the timing period, the charger will switch to fast charge stage automatically.

2) Fast charge stage (T2): When battery is on the main period of charging, charger will quickly charge the batteries with a constant flow, at the maximum current which can be used to the battery. When the battery voltage raise up to the set value, the charger will switch to constant voltage charge stage automatically.

3) Constant voltage charge stage (T3): The charger will switch to constant voltage charge stage, the charging current will fall off gradually, when the values drops to the set value or at the T3 of the period,Charger will turns off the output voltage automatically, battery charging is complete.

Charge curve as below:

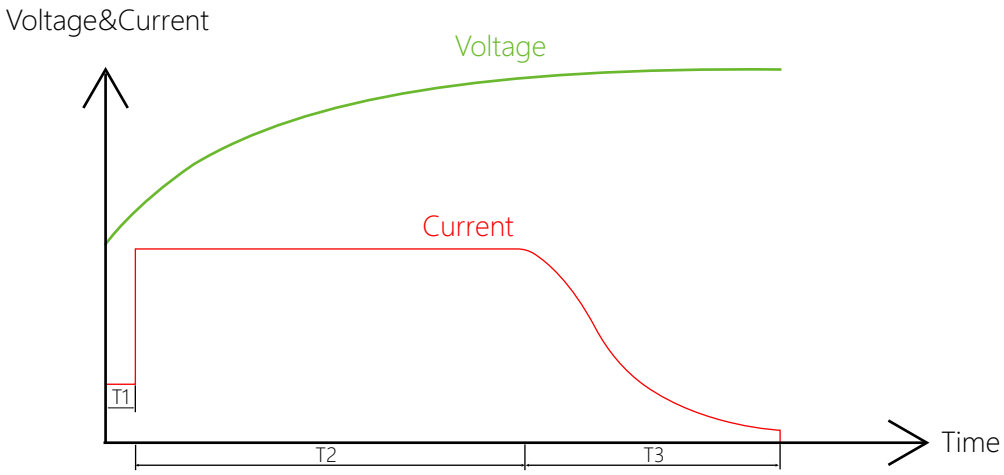


Figure 4-1 Li-Ion Battery Charging Curve

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