LR1.2

USER MANUAL

Battery System
12.8V/100Ah

File version-20240306-V1-EN Information might be subject to change without notice during product improving.

Content

1 Product parameters

Table 1-1

Num.	Item	Parameter
1.1	Housings	Black（synthetic resin）
1.2	Terminals	M8×14mm
1.3	Dimensions（mm）	L×W×H:330mm×172mm×214mm
1.4	Charging Voltage	14.6V±0.2V,CC/CV
1.5	Maximum continuous output power	1280W
1.6	Maximum continuous charge/discharge current	100A
1.7	Working environment temperature	0°C~50°C(Charge)
		-20°C~55°C(Discharge)
1.8	Storage temperature	0°C~60°C

2 Unpacking Instructions

When the product is first unpacked, verify that it is working properly.

- Prepare a multimeter,
- Open the carton and take out the product,
- Pull out the positive and negative insulated guards,
- Test positive and negative voltage with the multimeter (red is positive, black is negative),
- Determine the power available for the product, the standard is shown in the table below (if the voltage is out of the range of the table, please contact after-sales service):

Table 2-1

Voltage range	Available power
＜10.8V，Please recharge the battery immediately, refer to "3.2, Charger".	0%
10.8V~12.9V	1%~20%
12.9V~13.0V	20%~30%
13.0V~13.2V	30%~70%
13.2V~13.3V	70%~95%
13.3V~14.0V	95%~100%

- Check that the M8 terminals that match the positive and negative terminals can be tightened and loosened properly.

3 Charging Instructions

At least two charging methods can be selected: solar controller (MPPT), adapter.

Solar controller

Solar panel (PV) and solar controller (MPPT) are required. It is recommended that the solar panel (PV) is in the range of 300W~600W (if the solar panel is 300W, its efficiency is about 80%, and the effective light time is 5~6h, it can be fully charged in one day). Please choose Li (LiFePO4) mode.

The controller is set up according to the following parameters:

Table 3-1

Charging settings		Discharging settings	
Charge Voltage	14.4/14.6V	Under Voltage Warning	11.6V
Absorption Voltage	14.4/14.6V	Under Voltage Recover	12V
Over Voltage Protect	15V	Low Voltage Protect	10.8V
Over Voltage Reconnect	14.2V	Low Voltage Reconnect	12.4V
Tail Current	5A	/	

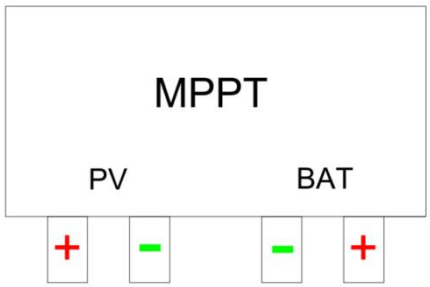

Figure 3-1 MPPT conceptual graph

Charger

Requires alternator/grid and AC-DC charger. The charger is connected between the generator/grid and the battery. Recommended charger specifications are as follows:

Table 3-2

Lithium charger specifications	Charging time
14.6V10A	10h
14.6V20A	5h
14.6V50A	2h

For long time storage, please charge and discharge the product every 6 months (first discharge the product to protection level, then recharge it to 60Ah, see table below).

Table 3-3

Lithium charger specifications	Charging time
14.6V10A	6h
14.6V20A	3h
14.6V50A	1.2h

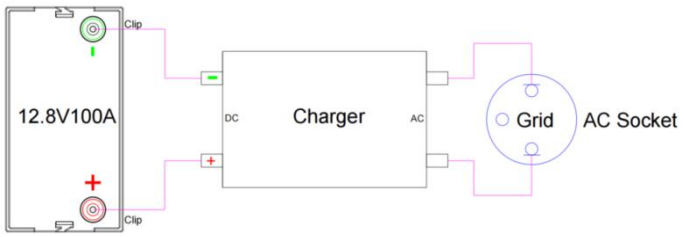

Figure 3-2

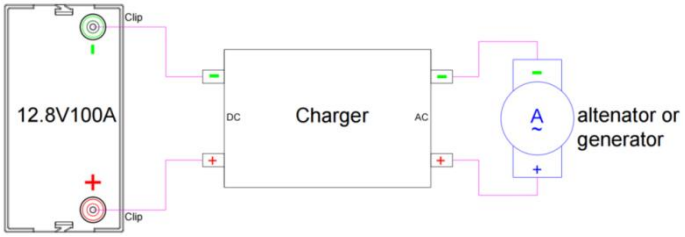

Figure 3-3

4 Inverter Configuration and Usage

For some inverters, battery mode can be selected, during the setting process, select Li(LiFePO4) mode.

If you can't select battery mode, please select "user mode", and the related parameters are

set as follows:

Table 4-1

Charging settings		Discharging settings	
Charge Voltage	14.6V	Under Voltage Warning	11.6V
Over Voltage Reconnect	14.2V	Under Voltage Recover	12V
Over Voltage Protect	15V	Low Voltage Protect	10.8V
		Low Voltage Reconnect	12.4V

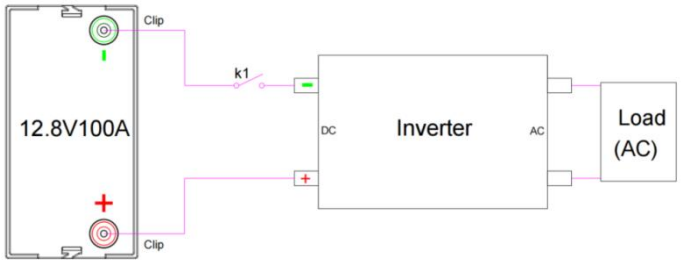

Figure 4-1

5 Procedure Instructions for Use

Single battery:

- Fully charge the battery.
- As lead-acid batteries, connect the positive and negative terminals of the battery to the system.

Use in series and parallel:

- Please wear insulated gloves,
- Fully charge all batteries and ensure that each battery is left to stand for more than 30 minutes after being fully charged,
- Series connection schematic (up to 4 in series, 51.2V100Ah (corresponding to 48V for lead-acid batteries), as in Figure 5-1

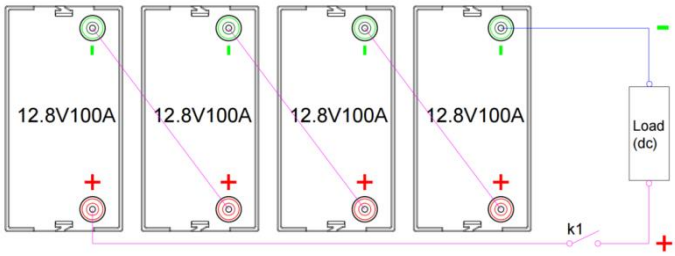

Figure 5-1 Series Application: 4S1P,51.2V100Ah

- Parallel connection schematic (up to 4 in parallel, 12.8V400Ah), as in Figure 5-2

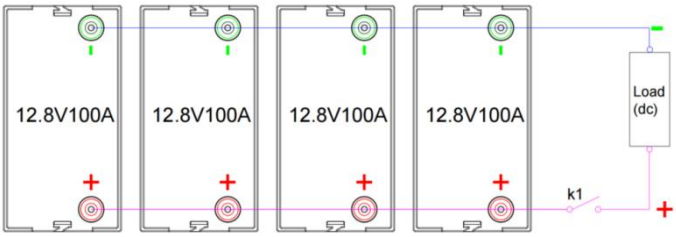

Figure 5-2 Parallel Application: 1S4P,12.8V400Ah

- Series-parallel connection schematic(2 series, 2 parallel, 25.6V200Ah, up to 4 series, 4 parallel), as in Figure 5-3, 5-4

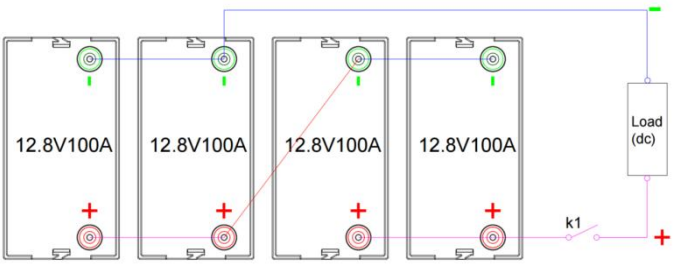

Figure 5-3 Series-parallel Applications: 2S2P,25.6V200Ah

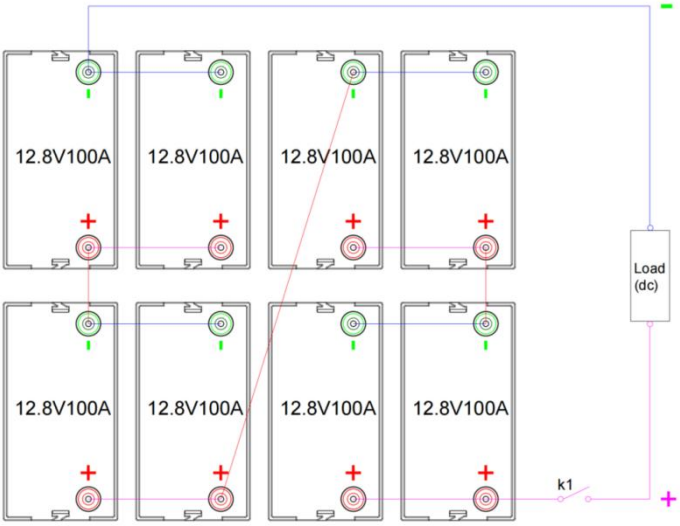

Figure 5-4 Series-parallel Applications: 4S2P,51.2V200Ah

6 FAQ's

If the battery cannot be discharged, the BMS may be shut down. You can try to restore as follows:

After disconnecting all the positive and negative connections of the battery, let it sit for more than 5 minutes and measure the voltage with a multimeter. When the voltage is >10V, it can be used normally.

If the voltage is <10V, there are two ways to activate:

Method 1: Use a 0V charger to charge the battery until the charging voltage is between 14V and 14.6V.

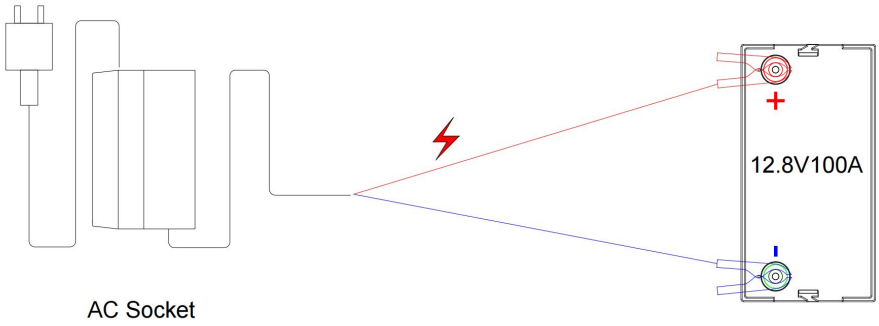

Figure 6-1

Method 2: Connect 18V~36V solar panel, no solar controller (MPPT) required, charging 10~30 minutes under sunny conditions.

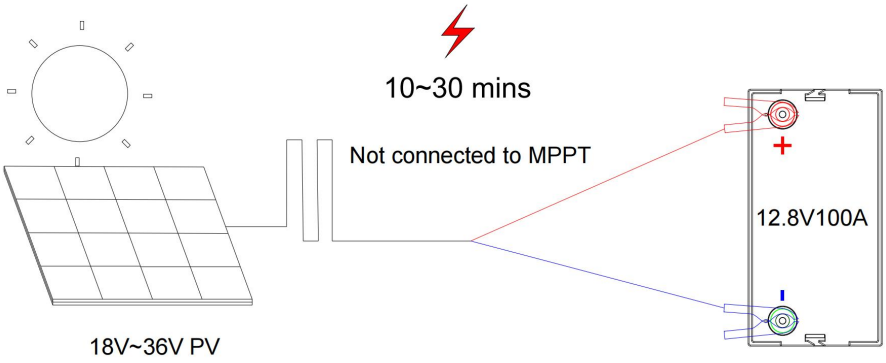

Figure 6-2

7 Precautions

- When using this product, please strictly follow this user manual.
- It is strictly prohibited to reverse the positive and negative poles of the battery.

- The maximum number of batteries connected in series and parallel shall not exceed 4 series and 4 parallel.
- Please use a professional lithium battery charger.
- Please do not use unofficial parts.
- Please stop using the battery if it smells, changes color, makes noise, leaks, or is severely deformed.
- It is strictly forbidden to place this product close to heat sources, such as fire sources or heating furnaces. Excessive temperature may cause the battery to catch fire or even explode. If the product catches fire, use water or water mist, sand, fire blanket, dry powder, or carbon dioxide fire extinguisher to extinguish the fire.
- It is strictly prohibited to charge below zero. If the temperature is too low, the performance of the product will be seriously reduced, and it may even be unable to meet the requirements of normal use.
- It is strictly prohibited to immerse this product in water and do not use this product in the rain. If the product accidentally falls into the water during use, please place it in a safe open area and stay away from the product until the product is completely dry; the dried product must not be used again and should be properly disposed of according to the discard method.
- It is strictly prohibited to dismantle the product without permission or puncture it with sharp objects; it is prohibited to use wires or other metal objects to cause short circuit of the product.
- It is prohibited to stack heavy objects on this product.
- It is prohibited to use the product in an environment with strong static electricity or strong magnetic field.
- Avoid impacts, drops, and violent vibrations. If there is a serious external impact, please stop using it immediately.
- Avoid long-term sunlight exposure. It is recommended to use or store this product in an environment of 15°C to 35°C.
- Please secure it during transportation.
- Please store this product out of the reach of children and pets.
- When products need to be scrapped, they must be scrapped in accordance with local laws and regulations.

Address: No. 511 Chenzhuang West Road, Sanshui Street,
Jiangyan District, Taizhou City
Email: service@dyness-tech.com
Tel: +86 400 666 0655
Web: www.dyness.com

Official Website

Digital version access