

# 2023 OP4 - RENOGY BUILDS

April 2023

This is a guide to OP4 builds with the Renogy battery system installed. This power inverter allows you to use your plugs and AC when not connected to shorepower.

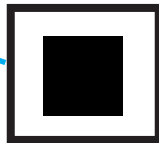


## RENOGY INVERTER CHARGER 2000W

Functions



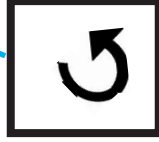
ENTER



CYCLE THROUGH MENU (DOWN)



CYCLE THROUGH MENU (UP)



EXIT (RETURN TO MAIN MENU)

## WIRED REMOTE CONTROLLER

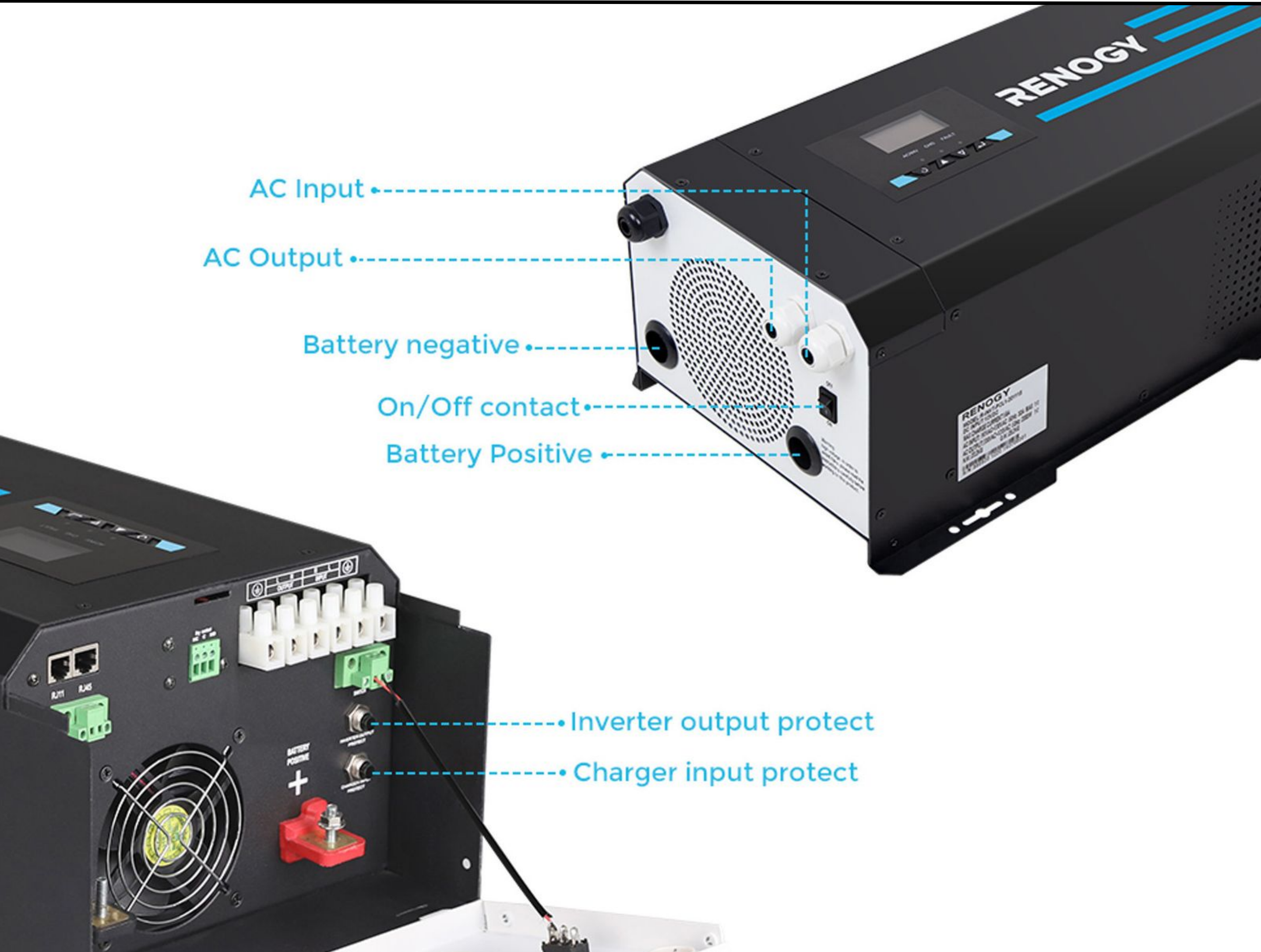
The wired remote controller will give access to turn off and on the inverter manually.



POWER BUTTON

# INSIDE PANEL: WIRE CONNECTIONS

See parts identification below

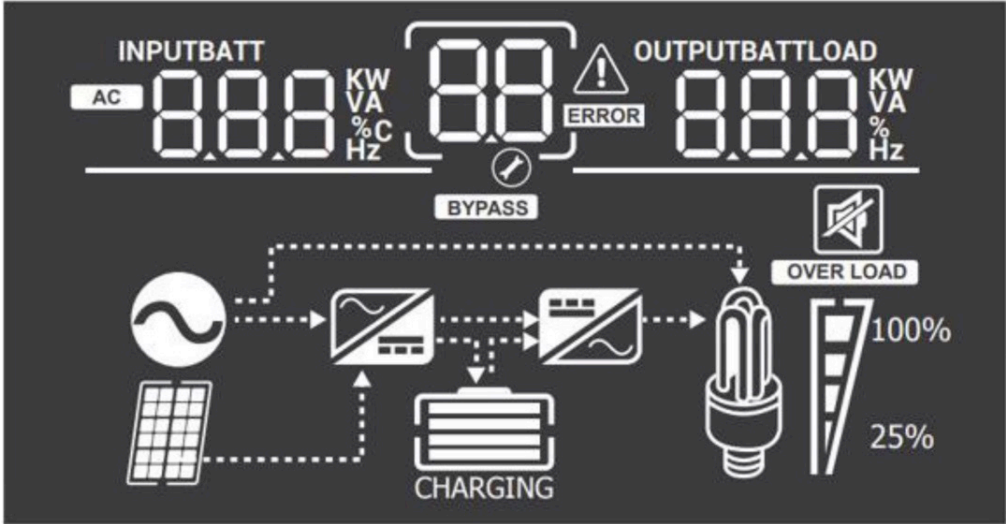




| LED INDICATOR |       |          | PARAMETER                                      |
|---------------|-------|----------|------------------------------------------------|
| AC/INV        | GREEN | SOLID    | Output is powered by an AC source in line      |
|               |       | FLASHING | Output is powered by battery or in invert mode |
| CHG           | GREEN | SOLID    | Battery is fully charged                       |
|               |       | FLASHING | Battery is charging                            |
| FAULT         | RED   | SOLID    | Fault occurred                                 |
|               |       | FLASHING | Warning conditions have occurred               |

LED DISPLAY

ICONS & BEHAVIORS



WIRING SIZE FOR RENOGY INVERTER CHARGER

| MODEL  | RECOMMENDED FUSING | RECOMMENDED WIRE SIZE |
|--------|--------------------|-----------------------|
| 2000 W | 200 A              | 2 / 0                 |
| 3000 W | 300 A              | 4 / 0                 |

## HOW TO:

### Customize Renogy Lithium Battery from Renogy Inveter Charger 2000w

1. Hold the Parameter setting button. Then the display will start to blink.
2. Press cycle through the menu (up) button for program No 5
3. Hold the parameter setting button and the battery setting section will start to blink.
4. Press cycle through the menu (up) button to b-0 setting.
5. Press the exit button to move back to the main setting menu.
6. Press cycle through the menu (up) button for program No 94.
7. Hold the parameter setting button and then Press cycle through the menu (up) button to ALB setting.
8. Press exit button to move back to main setting menu.
9. Press cycle through the menu (up) button for program No 26
10. Hold the parameter setting button and then Press cycle through the menu (up) button to set 14.4V.
11. Press exit button to move back to main setting menu.
12. Press cycle through the menu (up) button for program No 27
13. Hold the parameter setting button and then Press cycle through the menu (up) button to set 13.5V.

## FAQs:

### Renogy Inveter

**Q.** What is the power consumption of the Renogy inverter charger (2000W) when it is not connected to appliances or shore power?

**A.** 20W

**Q.** How do you reset the Renogy inveter?

**A.** Hold the power button of the remote to turn it off and hold it back to turn on.

Q. What is the maximum amperage that Renogy can provide to the inverter current (according to OPUS)?

A. **16 A**

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Q. Does Inverter will function only from Shore Power?

A. **No, it needs battery power (12V) to function the inverter.**

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Q. What will be the highest Amperage that inverter receive from the shore power (according to OPUS)?

A. **32 A**

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Q. What if the battery is dead?

A. **You need to jump the battery first and you can get power to the inverter.**

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Q. What is the operation temperature for the renogy inverter?

A. **The operating temperature for the inverter is from -30F to 104F**

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Q. How long it will take to fully charge 200AH (Two Renogy batteries; 12V and 100AH each)

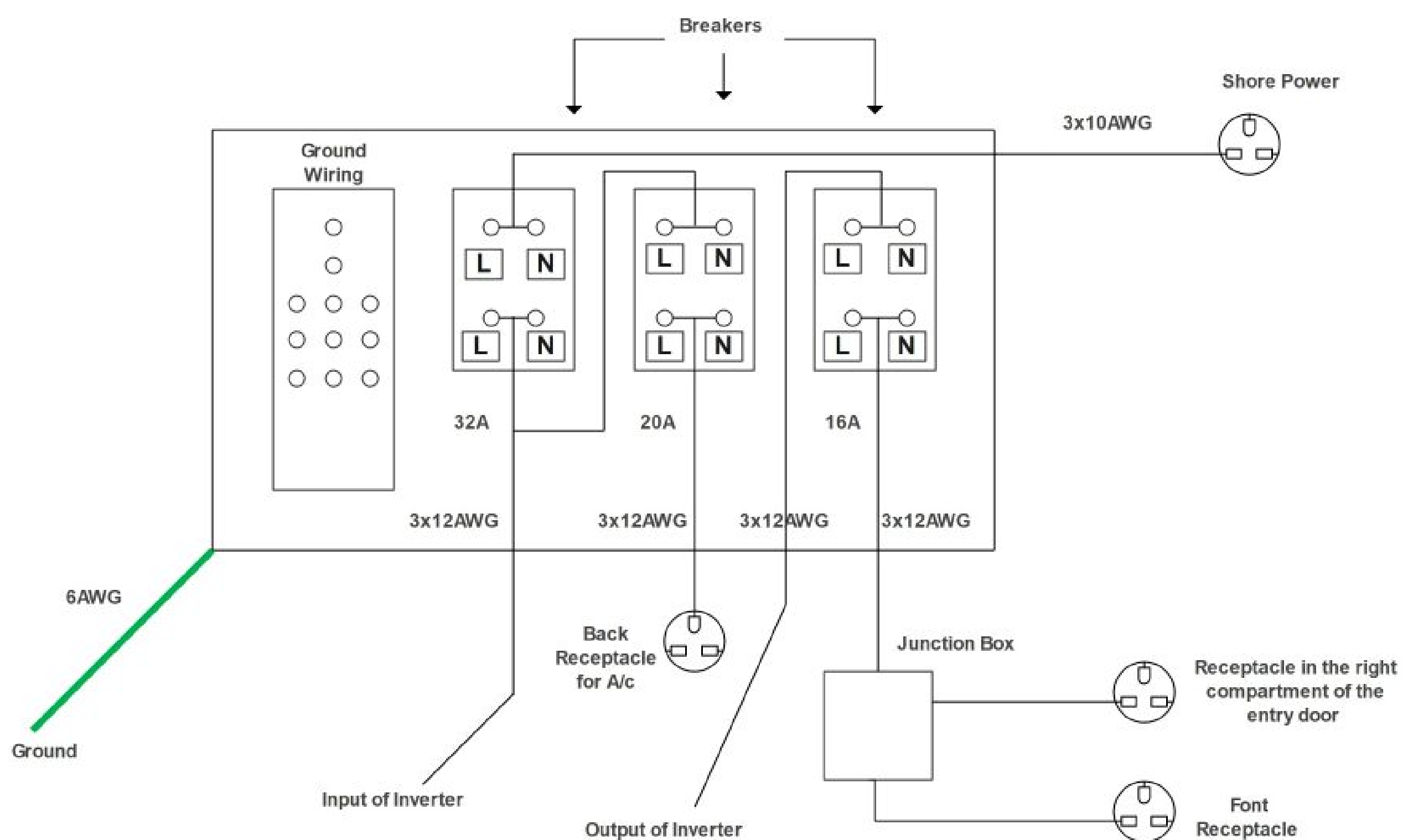
A. **3 hours**

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Q. What is the operation voltage of the Renogy inveter(2000W)?

A. **Only 12V**

# AC WIRING DIAGRAM

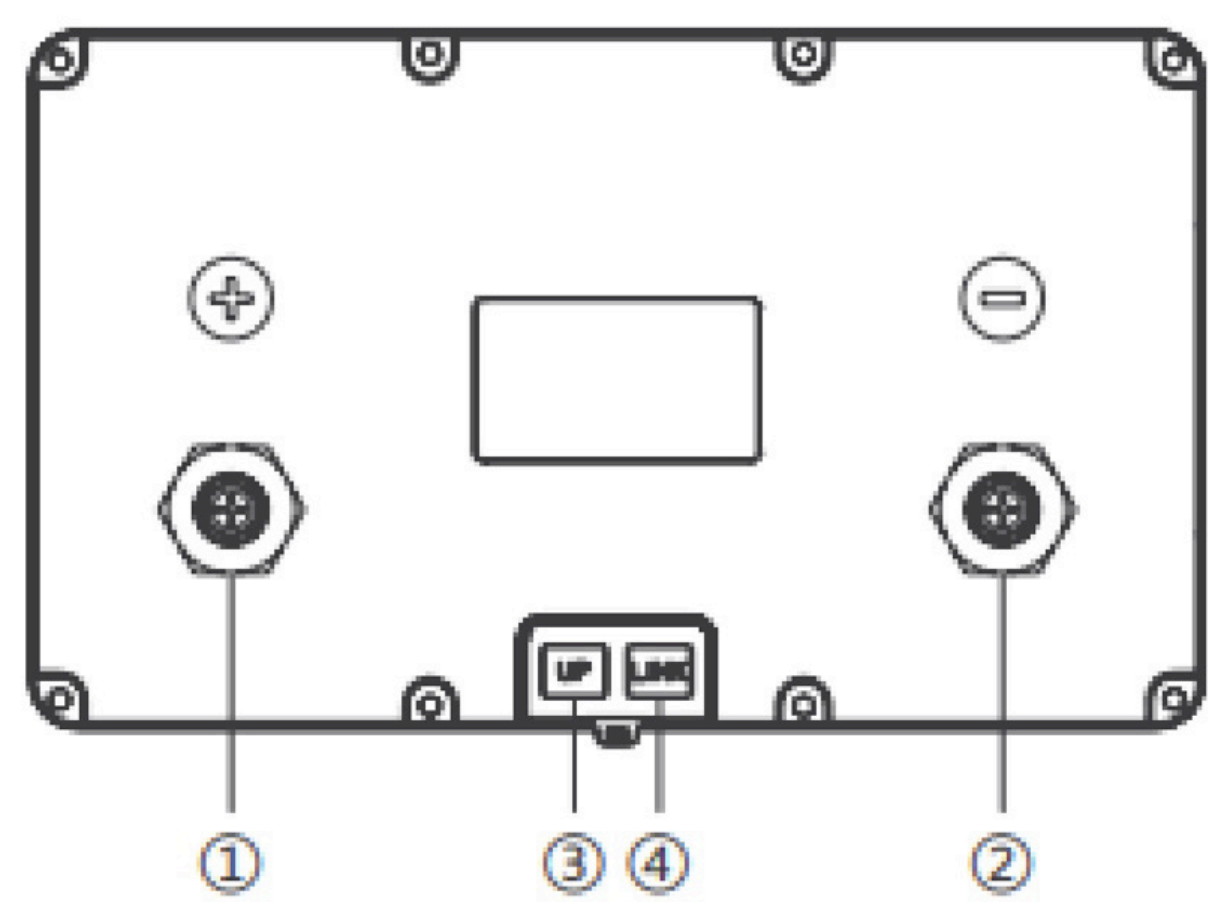


## RENOGY LITHIUM IRON PHOSPHATE BATTERY

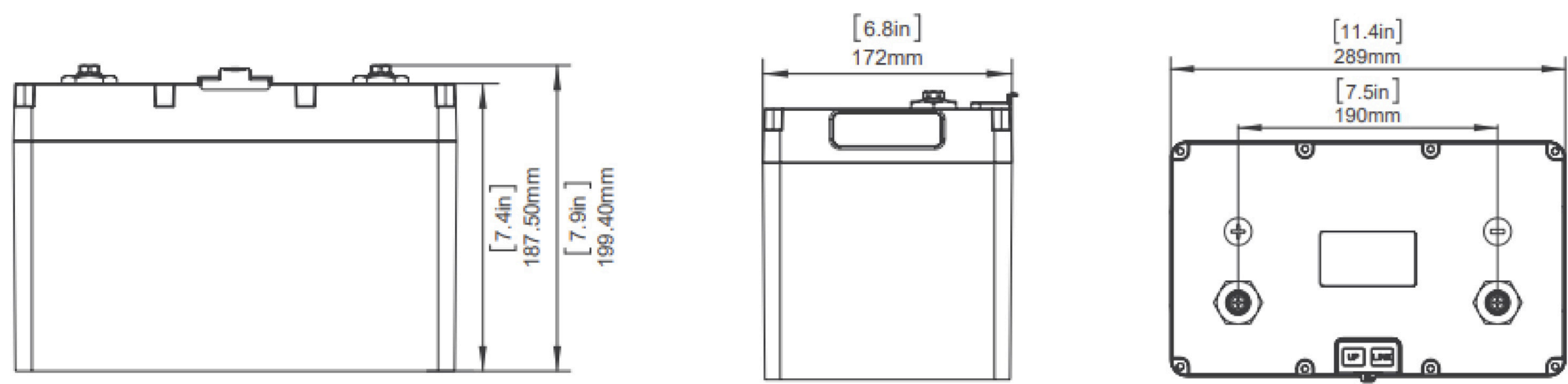
The battery capacity is 100AH and the voltage is 12 V

### PARTS IDENTIFICATION:

- 1. Positive Terminal
- 2. Negative Terminal
- 3. RS485 UP Communication Port
- 4. RS485 LINK Communication Port



DIMENSIONS:



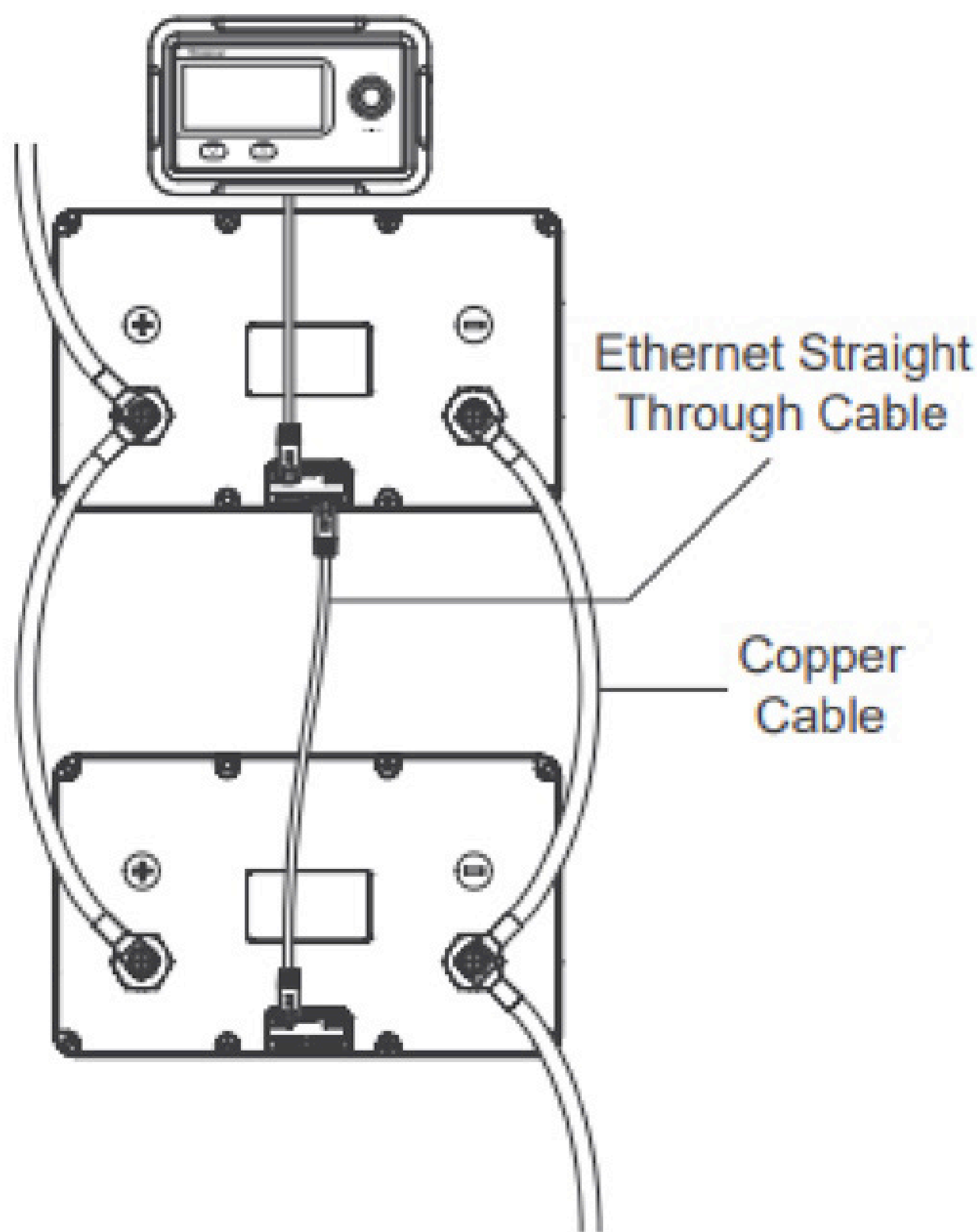
WIRE GAUGING SIZE

**CABLE SIZING:** Battery cables (sold separately) should be appropriately sized to handle the expected load. Please refer to the following table for the ampacities of copper cables with different gauge sizes.

| Copper Cable Gauge Size (AWG/mm²) | Ampacity (A) |
|-----------------------------------|--------------|
| 14 (2.08)                         | 20           |
| 12 (3.31)                         | 25           |
| 10 (5.25)                         | 35           |
| 8 (8.36)                          | 50           |
| 6 (13.3)                          | 65           |
| 4 (21.1)                          | 85           |
| 2 (33.6)                          | 115          |
| 1 (42.4)                          | 130          |
| 1/0 (53.5)                        | 150          |
| 2/0 (67.4)                        | 175          |
| 4/0 (107)                         | 230          |

The above values are from the NEC Table 310.15(B)16 for copper cables rated at 75°C (167°F), operating at an ambient temperature of no more than 30°C (86°F). Lengths in excess of 6 feet (1829 mm) may require heavier gauge cable to avoid excess voltage drop in undersized wiring.

# CONNECTING BATTERIES WITH RENOGY BATTERY MONITOR



## SPECIFICATIONS

| Operating Parameters                 |                          |
|--------------------------------------|--------------------------|
| Charge Voltage                       | 14.4V                    |
| Maximum Continuous Charge Current    | 50A                      |
| Maximum Continuous Discharge Current | 100A                     |
| Standard Operating Temperature       | 77°F±9°F / 25°C±5°C      |
| Charge Temperature Range             | 32°F~131°F / 0°C~55°C    |
| Discharge Temperature Range          | -4°F~140°F / -20°C~60°C  |
| Storage Temperature Range            | -13°F~149°F / -25°C~65°C |
| Operating Temperature Range          | -4°F~122°F/-20°C~50°C    |
| Relative Humidity                    | 5%-95%                   |
| Altitude                             | ≤4000m                   |

| General                     |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Cell Type                   | LiFePO4                                                                        |
| Rated Capacity (0.2C)       | 100Ah                                                                          |
| Nominal Voltage             | 12.8V                                                                          |
| Voltage Range               | 10V~14.8V                                                                      |
| Cycle Life (0.2C, 25°C)     | 4000 Cycles (80% DOD)                                                          |
| Insulation Resistance       | 500VDC, ≥10MΩ                                                                  |
| Dimension                   | 11.4 x 6.8 x 7.4 inch /<br>289 x 172 x 188 mm                                  |
| Weight                      | 26.2 lb. / 11.9 kg                                                             |
| Communication Port          | RJ45 (RS485 Protocol)                                                          |
| Connection Method           | Parallel                                                                       |
| Terminal Bolt Size          | M8 x 1 x 15 mm                                                                 |
| Recommended Terminal Torque | 62.0~70.8 inch·lb / 7~8 N·m                                                    |
| Certifications              | UN38.3, MSDS, CE, FCC, PSE, UKCA<br>UL (Battery Cell), TUV (Battery Cell), ETL |