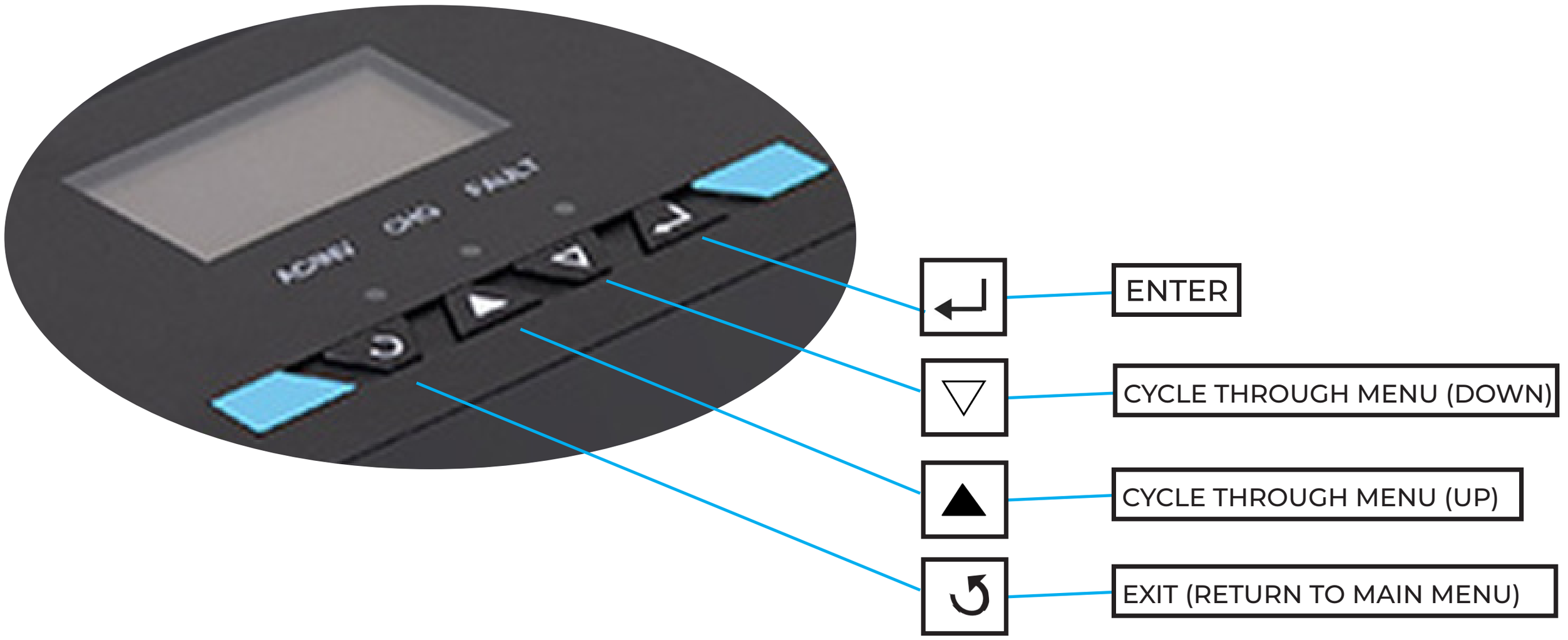
2023 OP4 - RENOGY BUILDS

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

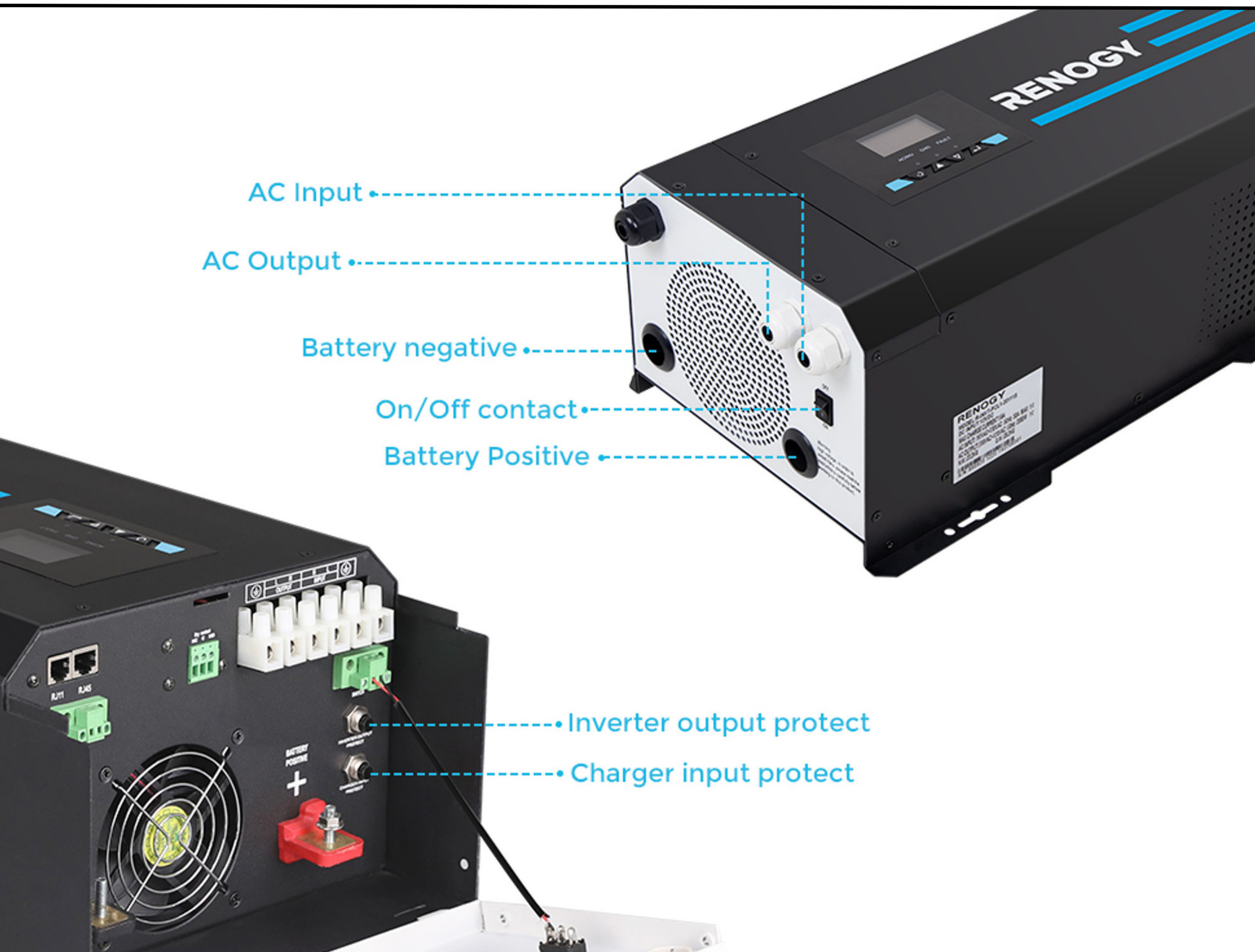


WIRED REMOTE CONTROLLER

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

INSIDE PANEL: WIRE CONNECTIONS

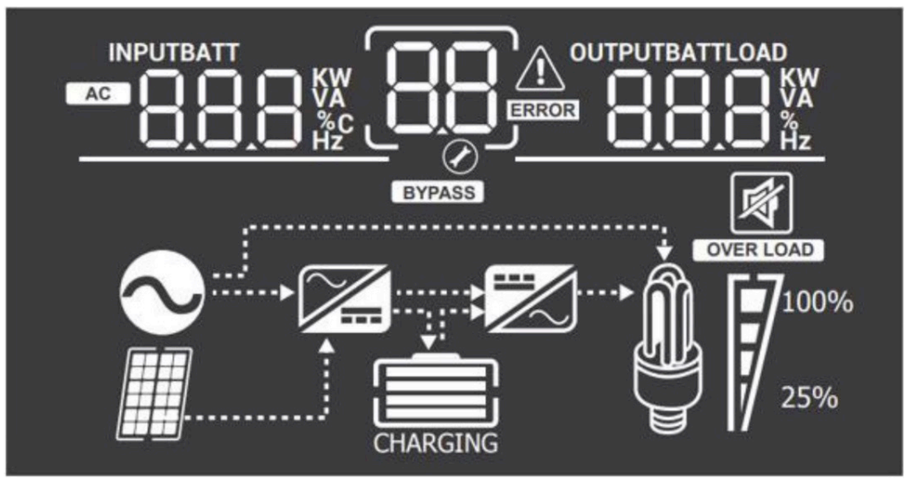
See parts identification below



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 occured
		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**

Q. Does Inverter will function only from Shore Power?

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

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

A. **32 A**

Q. What if the battery is dead?

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

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

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

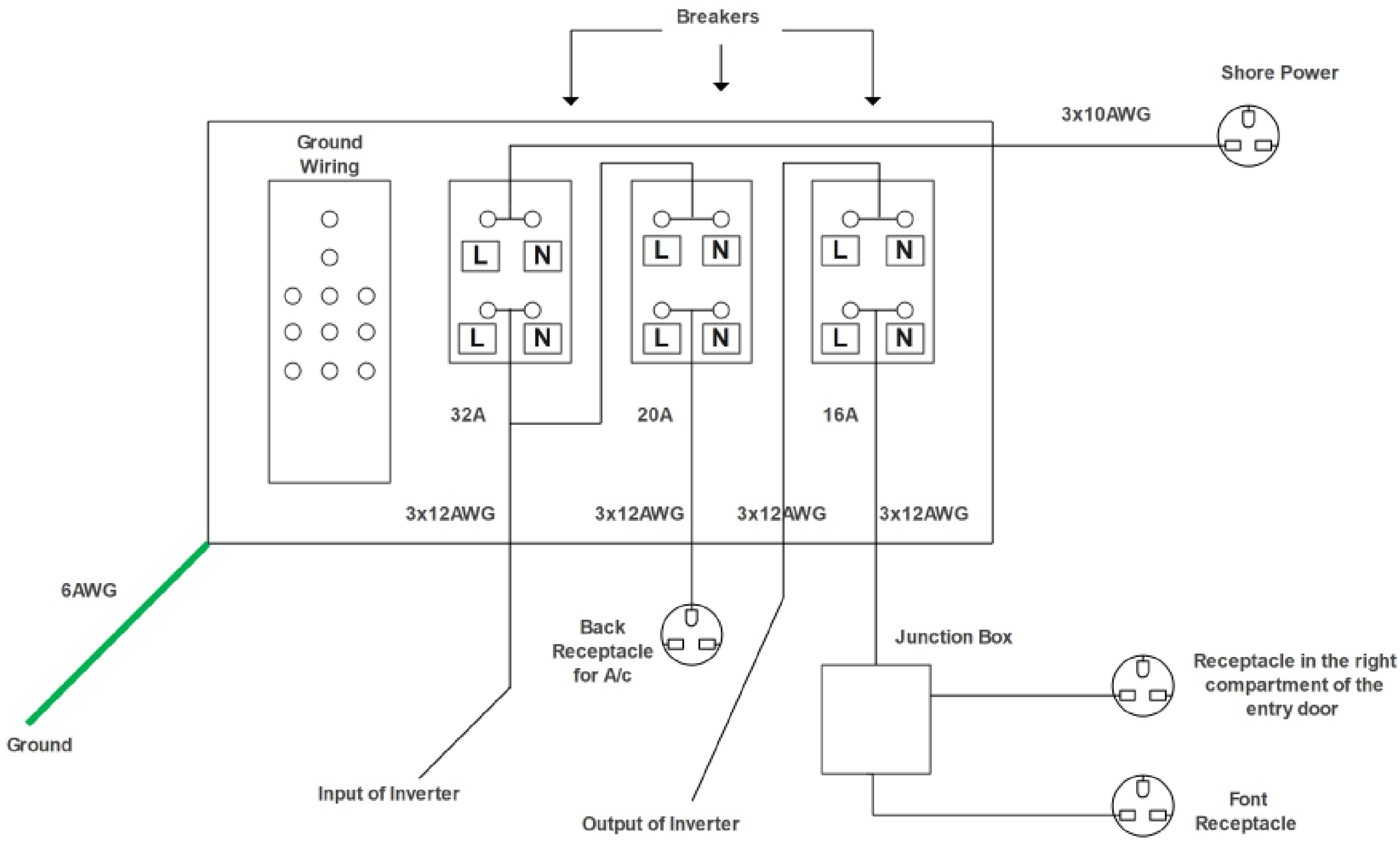
Q. How long it will take to fully charge 200AH (Two Renogy batteries; 12V and 100AH each)

A. **3 hours**

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

A. **Only 12V**

AC WIRING DIAGRAM

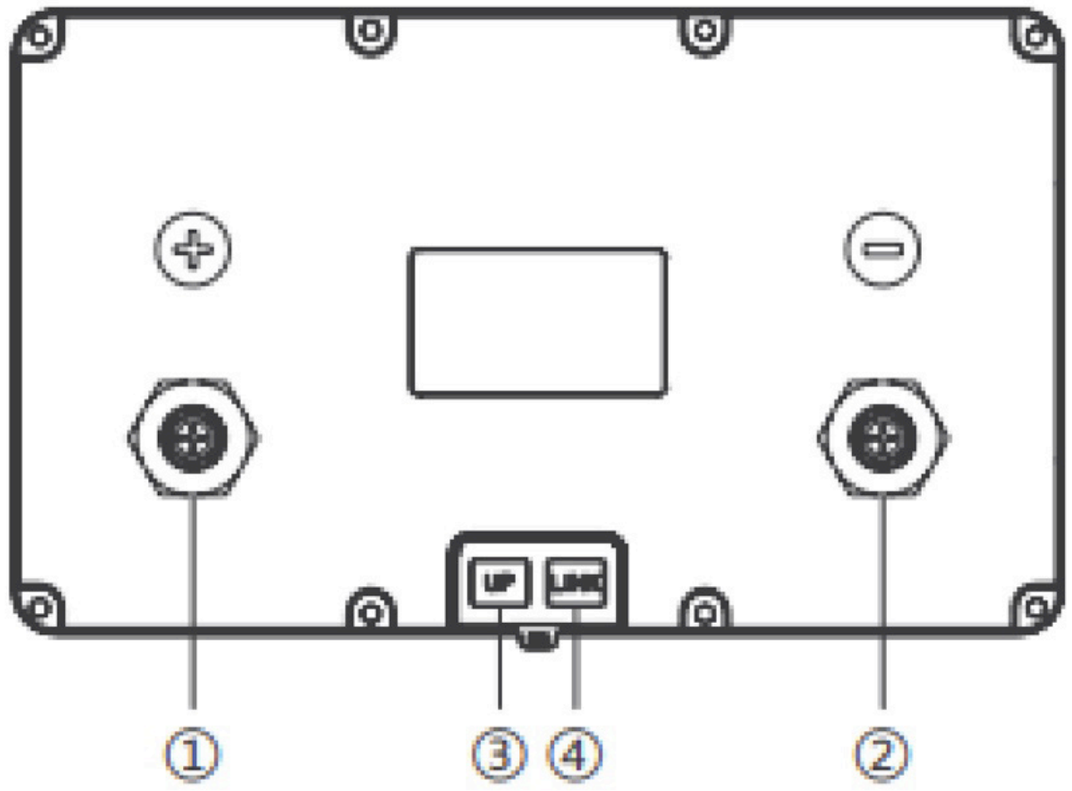


RENOGY LITHIUM IRON PHOSPHATE BATTERY

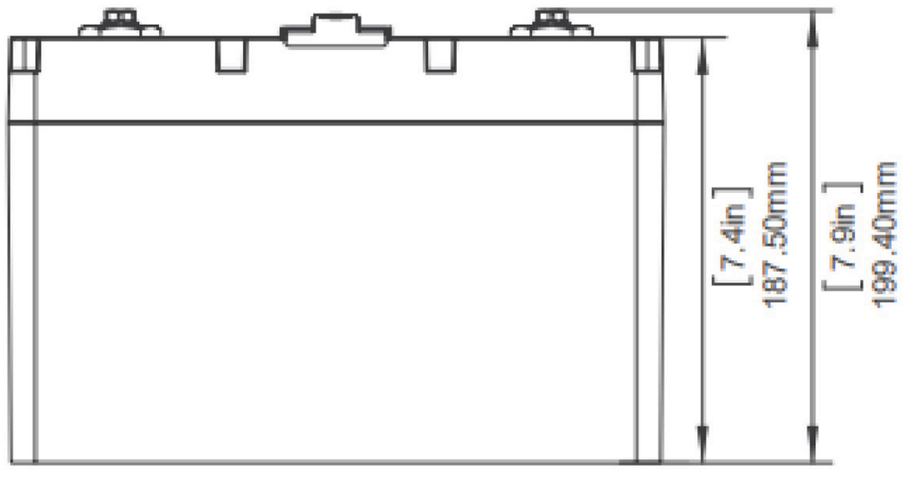
The battery capacity is 100AH and the voltage is 12 V

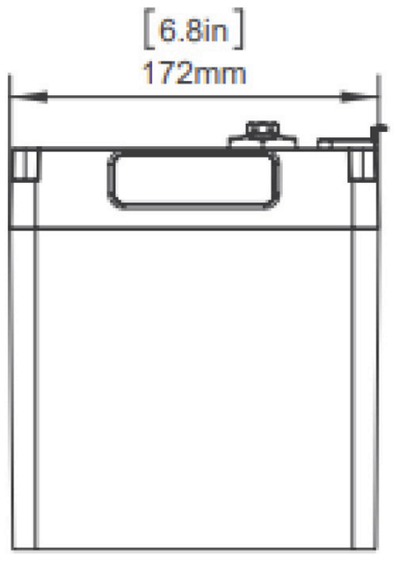
PARTS IDENTIFICATION:

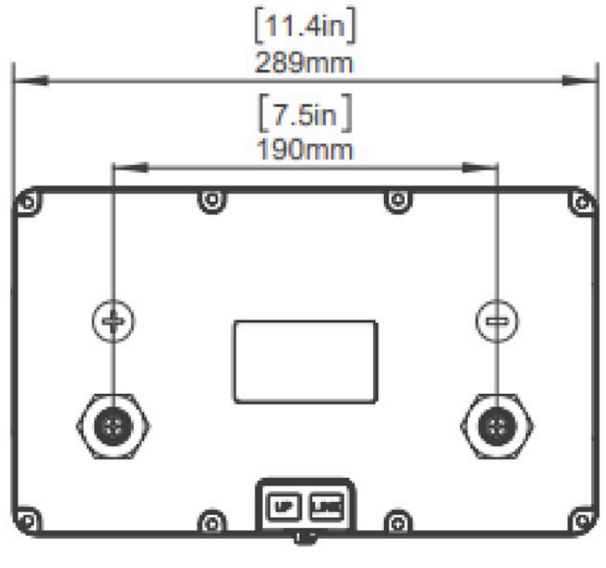
1. Positive Terminal
2. Negative Terminal
3. RS485 UP Communication Port
4. RS485 LINK Communication Port



DIMENSIONS:







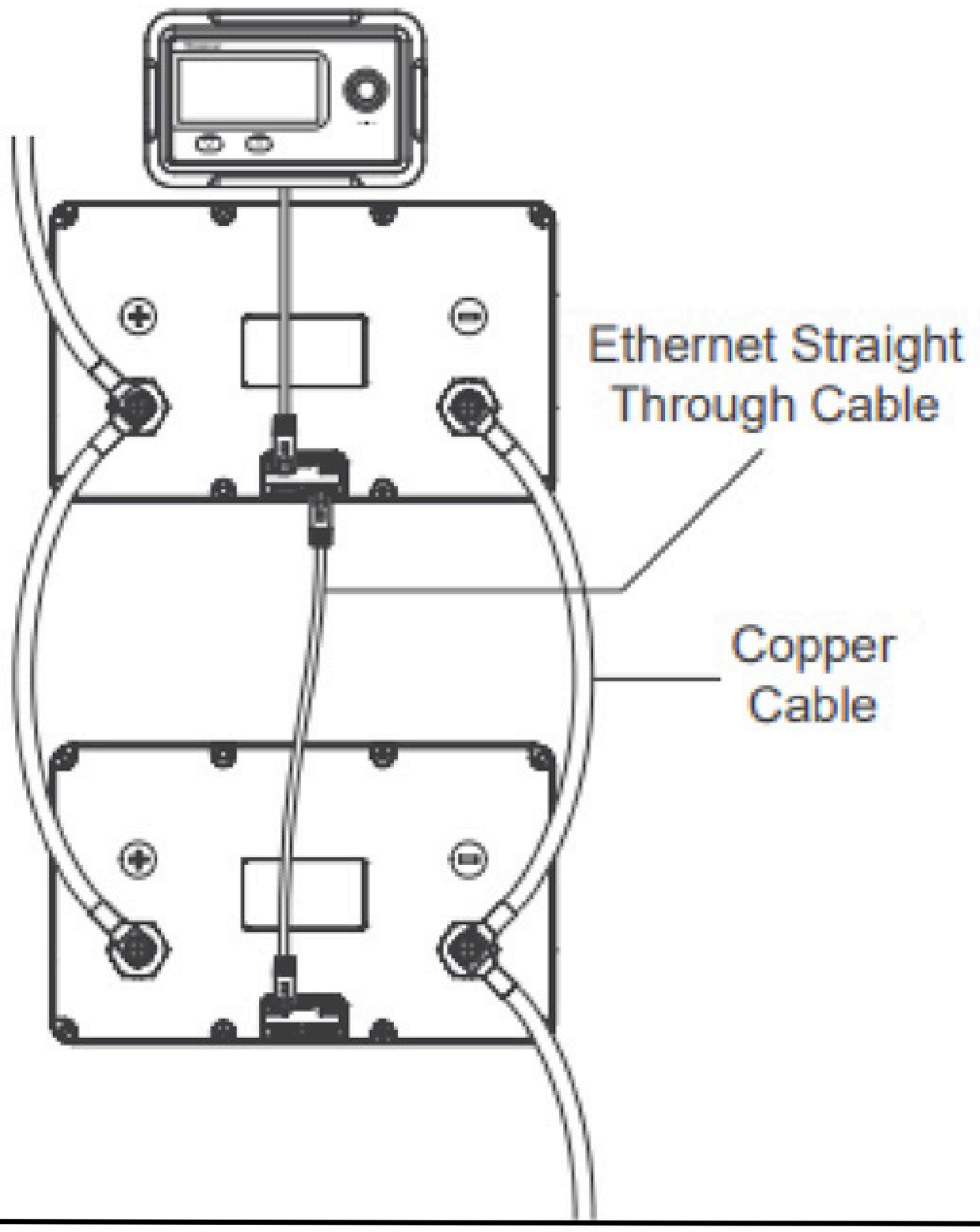
WIRE GAUGING SIZE

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 qauge 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 / 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 UL (Battery Cell), TUV (Battery Cell), ETL