

How to build
a partial home backup system with
EP500Pro

User Manual



How to build
a partial home backup system with
EP500Pro



Thank You!

Thank you for making BLUETTI a part of your family.

From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions for both indoor and outdoor use while delivering an exceptional eco-friendly experience for our homes and our world.

That's why BLUETTI makes its presence in 70+ countries and is trusted by millions of customers across the globe.



Contents

1. 120 Volts EP500Pro Backup System.....	05
2. 240 Volts EP500Pro Backup System.....	07
3. Accessories.....	15
3.1 Transfer switch.....	15
3.2 BLUETTI 30A AC charging cable.....	15
3.3 BLUETTI EP500Pro split-phase output cable (purchase from BLUETTI: https://www.bluettipower.com).....	16
3.4 BLUETTI EP500Pro 30A split-phase AC charging cable.....	16
3.5 Communication cable for split-phase function.....	17
3.6 NEMA L14-30R socket.....	17
3.7 NEMA L14-30 extension cord.....	18
3.8 Circuit breaker & protection box.....	19
3.9 Solar extension cable.....	20
4. How to install Reliance Controls.....	21
Please refer to Reliance Controls website: www.reliancecontrols.com	21
4.1 How to install Reliance Controls ProTran2 - Part1, Tools and Planning.....	21
4.2 How to install Reliance Controls ProTran2 - Part2, Mounting.....	21
4.3 How to install Reliance Controls ProTran2 - Part3, Wiring.....	21
4.4 How to install Reliance Controls ProTran2 - Part4, Replacing Circuit Breakers.....	22
4.5 How to install Reliance Controls ProTran2 - Part5, Installing The Power Inlet Box.....	22
4.6 How to install dd Controls ProTran2 - Part6, How To Operate.....	22
5. More information:.....	22

Declaration

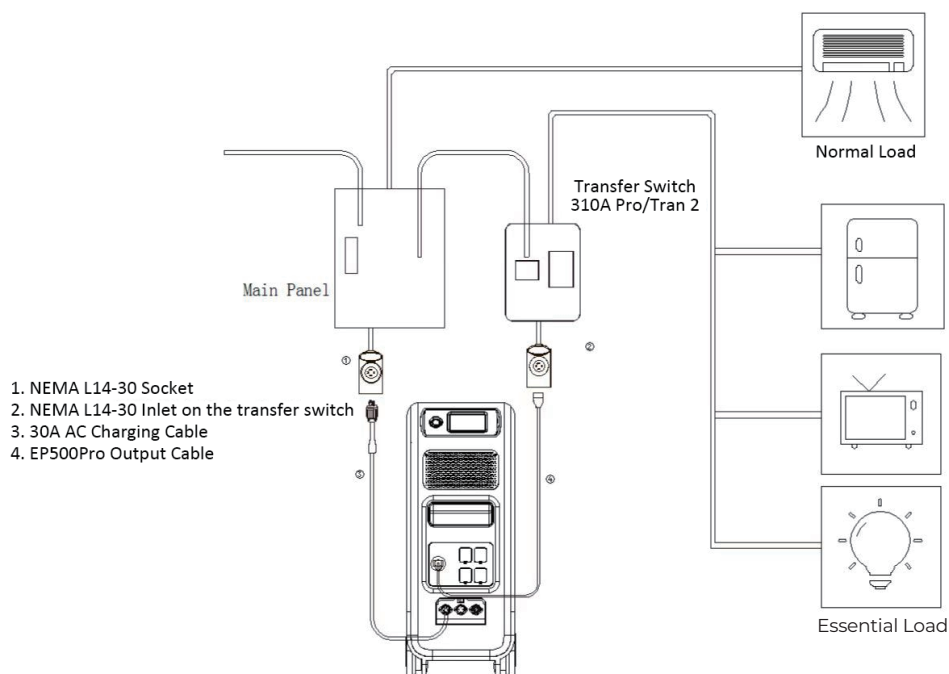
- The installation should be performed by a licensed electrician. Improper installation may result in death or serious injury and property damage.
 - This document is provided for reference purpose ONLY and does not constitute legal advice. Please consult the local licensed electrician for details.
- BLUETTI shall not be liable for any damage or injury caused by improper installation of the backup system.**

1. 120 Volts EP500Pro Backup System

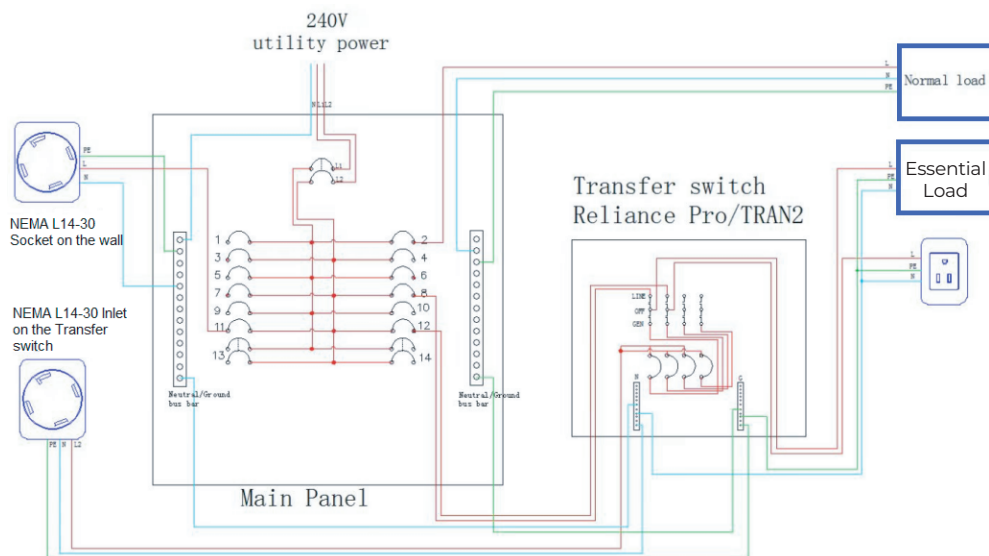
- EP500Pro's Machine Type is set to "Single Phase" by default. DO NOT change this setting if you are operating a single EP500Pro.
- To build the backup system, you need the following:

Accessories	Qty.
Transfer switch: Reliance 310A Pro/Tran 2	1
30A AC Charging cable	1
NEMA L14 extension cord	1

NOTE: Please read the Reliance 310A Pro/Tran2 manual before installation.
<http://www.reliancecontrols.com/Documents/PT2%20Loadside%20Installation%20and%20Operating%20Instructions.pdf>



Refer to the diagram below for proper installation of EP500Pro backup system.



NOTE:

- The backup system must be properly installed by a licensed electrician.
- Please check the voltage at outlets before plugging in your household appliances.
- It is a electrical schematic. For the actual wiring diagram, please refer to Reliance 310A PRO/TRAN2 installation instructions.

2. 240 Volts EP500Pro Backup System

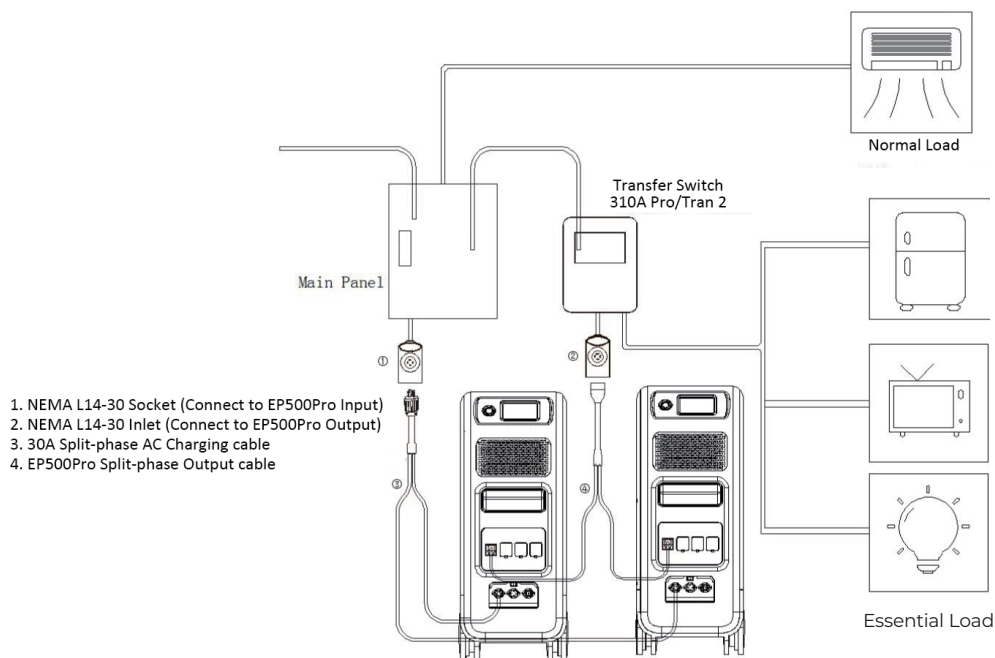
You can build the 240V Split Phase System by pairing two EP500Pro units together. The system also has double the available output power and capacity. Besides Two EP500Pro units, you also need the following:

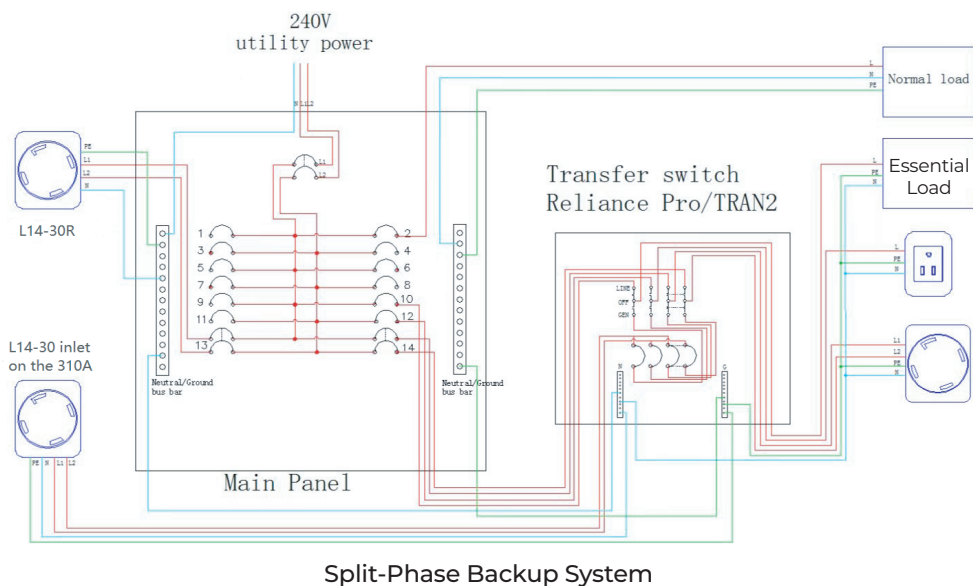
Accessories	Qty.
Transfer switch: Reliance 310A Pro/Tran 2	1
EP500 Pro split-phase output cable(from BLUETTI)	1
NEMA L14-30R outlet	1
BLUETTI 30A-AC-charging-cable	1

Please read the Reliance 310A Pro/Tran 2 manual before installation.

<http://www.reliancecontrols.com/Documents/PT2%20Loadside%20Installation%20and%20Operating%20Instructions.pdf>

Before installing the Reliance Controls transfer switch system, please make a emergency energy plan that includes which appliances you need during a power outage. It is highly recommended to “balance the load” between the two phases of transfer switch, that’s to say, do not connect high-wattage appliances centrally to a single EP500Pro.





! Caution! The backup split phase system must be properly installed by a licensed electrician.

How to configure the EP500Pro units:

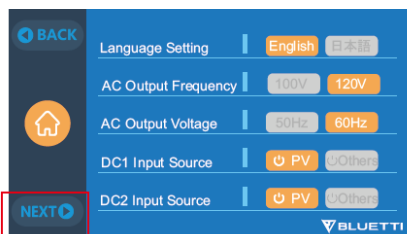
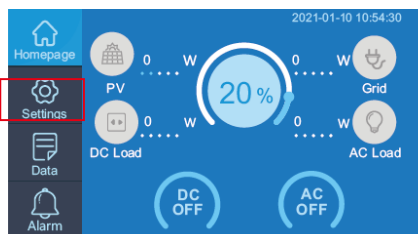
Step 1: Turn off both of the EP500Pro units.

Step 2: Connect the EP500Pro units to transfer switch via the EP500Pro split-phase output cable. One L14-30 plug goes to a unit.

Step 3: Connect the two EP500Pro units via the communication cable.

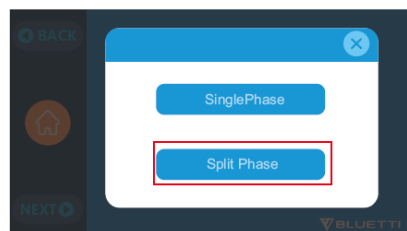
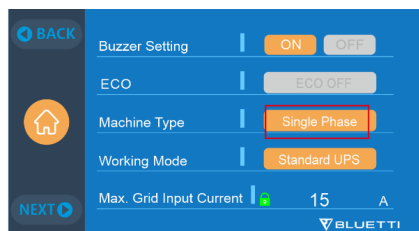
Step 4: Turn on either EP500Pro unit.

Step 5: Go to "Settings" and tap "Next".

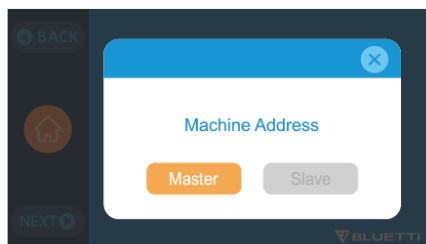


Step 6: Tap “Single Phase”, the machine type option pops up and select “Split phase”.

- Machine Type: Select Split Phase

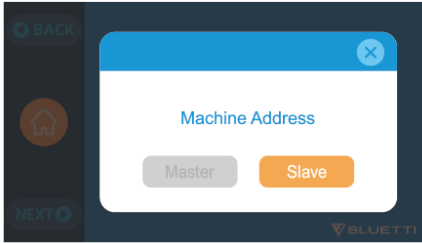


Step 7: Select the “Master” in the Machine Address pop up.

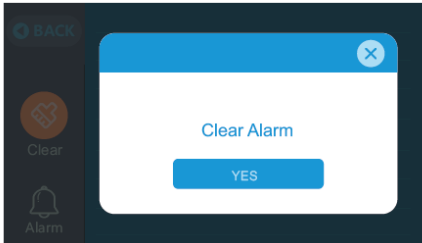


Step 8: Turn on the other EP500Pro. Repeat step 5 and 6 to set its machine type to “Split phase”.

Step 9: Select the “Slave” in the Machine Address pop up.



If the connection fails, clear the alarm history and wait a moment .



Please watch the video from : <https://www.youtube.com/watch?v=aDLxv5oM5kg>

NOTE:

- Disconnect the AC charging cables from EP500Pro units before connecting to the transfer switch.
- The split phase system can be controlled ONLY on the “Master” set.
- If one of the EP500Pro units is out of power, the split phase system fails automatically.

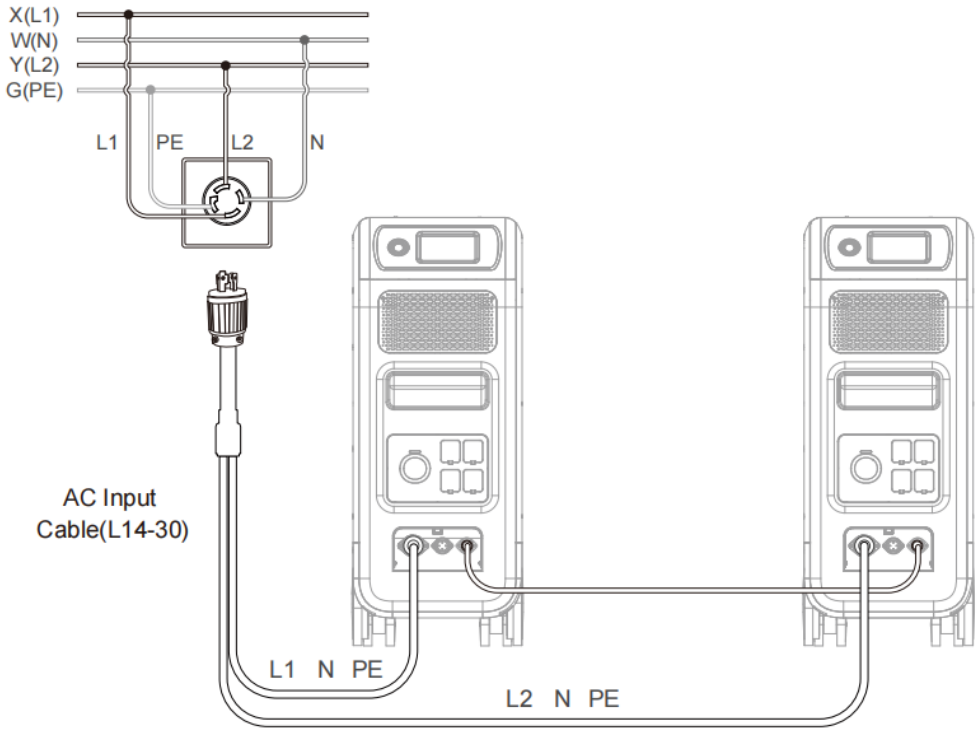
NOTE:

- The backup system must be properly installed by a licensed electrician.
- Please check the voltage at outlets before plugging in your household appliances.
- It is a electrical schematic. For the actual wiring diagram, please refer to Reliance 310A PRO/TRAN2 installation instructions.
- In the main panel, two Neutral/Ground bus bars have been connected together with copper strips.

Connect the EP500Pro units to the main panel

Charge the 240V split phase system with EP500Pro 30A split phase AC charging cable. Plug the cable to a NEMA L14-30 socket (240V)and the other two connectors into the AC input ports of the EP500Pro units.

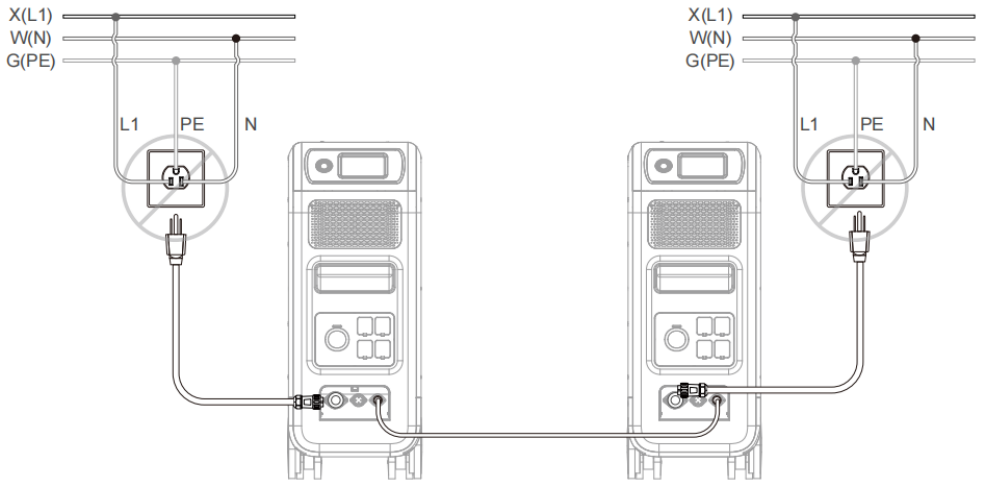
The AC input ports should be connected to L1/N/PE and L2/N/PE, respectively. The current capacity of AC input plug shall be $\geq 30A$.



WRONG CONNECTION

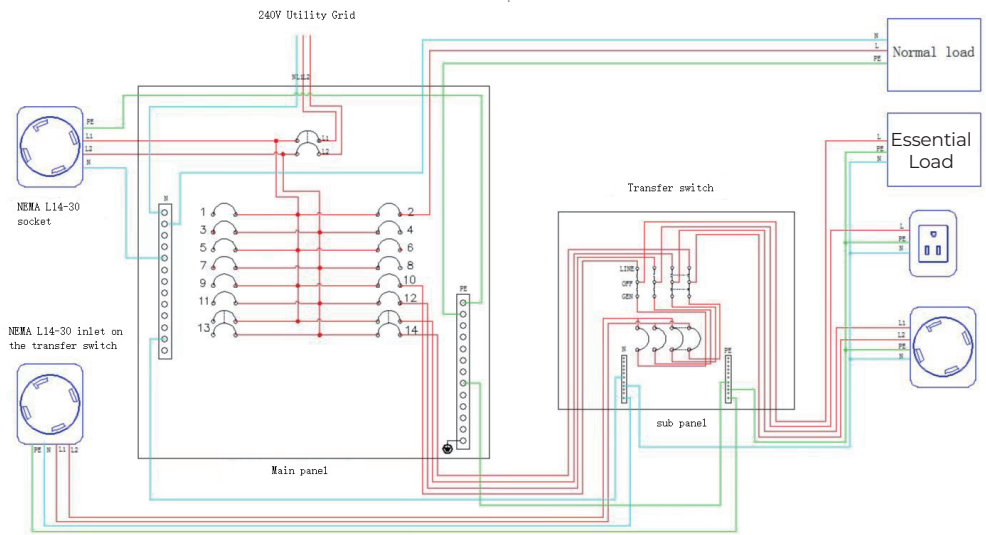
Warning! DO NOT charge EP500 Pro with standard AC charging cable in the split phase system, as this may cause damage to the batteries inside and invalidate your warranty.

L: Live wire N: Neutral wire



NOTE:

The split phase system supports charging via solar panels. You can charge it by PV and the EP500Pro 30A split-phase AC charging cable simultaneously. (AC input only through the EP500Pro 30A split-phase AC charging cable but not the standard AC charging cable).



3. Accessories

3.1 Transfer switch

Recommendation: Reliance Controls 310A PRO/TRAN 2 transfer switch.
<https://www.bluettipower.com/> or
https://www.amazon.com/30-Amp-10-Circuit-Manual-Transfer-Optional/dp/B00YHLCMHM/ref=sr_1_1?crid=39Q2LGVYX2BK6&keywords=310A&qid=1666357623&qu=eyJxc2MiOiJwLjAwIiwicXNhIjojMC4wMCIsInFzcCI6IjAuMDAifQ%3D%3D&prefix=310a%2Caps%2C299&sr=8-1



310A Pro/Tran2 30-Amp 10-Circuit 2 Manual Transfer Switch with Optional Power Inlet

Visit the Reliance Controls Store

★★★★★ 72 ratings

\$453.57

Get 3% back on this item with the Amazon Rewards Visa Card.

Product details

Operation Mode	Manual
Brand	Reliance Controls
Material	Alloy Steel
Item Dimensions LxWxH	11.75 x 4.5 x 11 inches
Mounting Type	Surface Mount
International Protection Rating	IP54

• This refurbished product is tested and certified to look and work like new. The refurbishing process includes functionality testing, basic cleaning, inspection, and repackaging. The product ships with all

~ See more product details

Customer ratings by feature

Instruction quality	★★★★★ 4.6
Easy to install	★★★★★ 4.4

See all reviews

3.2 BLUETTI 30A AC charging cable

Please buy it from BLUETTI official store.
<https://www.bluettipower.com/products/ac300-30a-ac-charging-cable?variant=42518515876059>



EP500PRO AC CHARGING CABLE

30A AC CHARGING CABLE

★★★★★ 5.0 (3 reviews) | Ask a question

US\$79.00

Klarna. 4 interest-free payments of \$19.75. [Learn More](#)

Function: Used to charge the BLUETTI AC300 via 30A wall socket to reach a Max 3000W input.

Application Model:

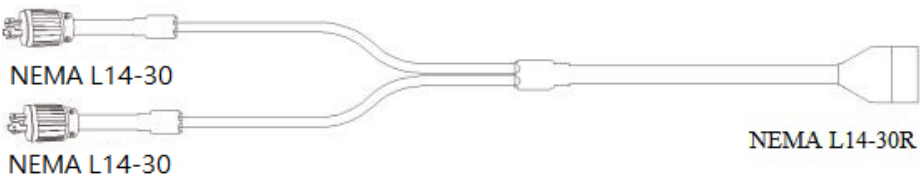
AC300-AC CHARGING CABLE

EP500PRO-AC CHARGING CABLE

Quantity :

- 1 +

3.3 BLUETTI EP500Pro split-phase output cable(purchase from BLUETTI: <https://www.bluettipower.com>)



3.4 BLUETTI EP500Pro 30A split-phase AC charging cable

Please buy it from BLUETTI official store.

<https://www.bluettipower.com/products/30a-ac-charging-cable-for-split-phase-function>



30A AC Charging Cable For Split-Phase Function

★★★★★ [Write a review](#) | [Ask a question](#)

US\$99.00

Klarna. 4 interest-free payments of \$24.75. [Learn more](#)

Applicable Models:
AC300/EP500Pro/EP500

Quantity:

– 1 +

Pay in 4 interest-free installments of \$24.75 with [shop](#) [Learn more](#)

ADD TO CART

BUY IT NOW

3.5 Communication cable for split-phase function

Please buy it from BLUETTI official store.

<https://www.bluettipower.com/products/communication-cable-for-split-phase-function>



Communication Cable For Split-Phase Function

★★★★★ 0.0 (reviews) | Ask a question

US\$39.00

Klarna

4 interest-free payments of \$9.75. [Learn More](#)

Applicable Models:
AC300/EP500Pro/EP500/AC500
Communication Cable For Split-Phase Function

Quantity :

-

1

+

PayPal Pay in 4 interest-free payments of \$9.75. [Learn more](#)

3.6 NEMA L14-30R socket

For charging the 240V EP500Pro split phase system.

Recommendation: Journeyman-Pro HJP 2710 NEMA L14-30R socket.

https://www.amazon.com/Journeyman-Pro-Receptacle-Industrial-Grounding-Generator/dp/B07P8CGH52/ref=sr_1_7?crid=1WRMKA4V397S&keywords=l14-30r+receptacle&qid=1657944329&s=hi&srefix=%2Ctools%2C405&sr=1-7

Back to results



Roll over image to zoom in



Journeyman-Pro 2710, NEMA L14-30R, 30A 125/250 Volt, Flush Mounting Locking Receptacle Socket/Outlet, Black Industrial Grade, Grounding Welding/Generator Rated 7500 Watts (1, 2710 w/SS Faceplate)

Visit the Journeyman-Pro Store

★★★★★ ~ 219 ratings

\$15.07

Get Fast, Free Shipping with Amazon Prime & FREE Returns

Get \$50 off instantly: Pay \$0.00 upon approval for the Amazon Rewards Visa Card.

Item Package Quantity: 1

1

2

Size: 2710 w/SS Faceplate

2710 2710 w/SS Faceplate

Brand

Journeyman-Pro

How to build a partial home backup system with EP500Pro (Only for US standard) 17

3.7 NEMA L14-30 extension cord

If you want to get 10 FT NEMA L14 extension cord , the referenced purchase address as following

https://www.amazon.com/VOGREX-Generator-Extension-L14-30P-L14-30R/dp/B099R9YWT8/ref=sr_1_2?crid=N3G3QLMF57TD&keywords=nema%2Bl14%2Bextension&qid=1658719628&prefix=name%2Bl14%2Bextention%2Caps%2C249&sr=8-2&th=1

amazon

Deliver to New York 10010

Allnema l14 extension

All

Best Sellers

Amazon Basics

Today's Deals

New Releases

Prime

Customer Service

Books

Music

Amazon Home

Kindle Books

Registry

Fashion

Gift Cards

Handmade

Toys & Games

All Electronics

Deals

Best Sellers

TV & Video

Audio & Home Theater

Computers

Camera & Photo

Wearable Technology

Car Electronics & GPS

Portable Audio

Cell Phones

Office Electronics

Musical Instruments

New Arrivals

Back to results



VOGREX 4 Prong 30 Amp 10 Feet Generator Extension Cord, NEMA L14-30P/L14-30R, 125/250V Up to 7500W 10 Gauge SJTW Generator Cord, ETL Listed

Visit the VOGREX Store

★★★★★83 ratings | 8 answered questions

\$39.96

& FREE Returns

Save 6% on 2 select item(s). Shop items

Get \$50 off instantly: Pay \$0.00 \$59.96 upon approval for the Amazon Rewards Visa Card. No annual fee.

Extra Savings Save 8% on 4 select item(s). 2 Applicable Promotion(s)

Size: 10 ft

10 ft20 ft50 ft100 ft

3.8 Circuit breaker & protection box

If you have a residential solar array with a voltage of 12V-150V, you're strongly recommended to use a DC circuit breaker panel to enable or disable solar charging.

NOTE : If there are two solar panel arrays with a total open circuit voltage of 12-150V, you also need two 2P 16A DC circuit breakers.

Circuit breaker: https://www.amazon.com/gp/product/B07GR32KCT/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&psc=1

Protection box: https://www.amazon.com/gp/product/B07S75TV3V/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&psc=1



Share

16A Low-Voltage Miniature Air Circuit Breaker,Acogedor 250V DC 2P DIN Rail Mount Miniature Circuit Breaker for Solar Panels Grid System, Wind and Solar Hybrid System and Other DC Systems(16A)

Visit the Acogedor Store

★★★★★ 12 ratings

\$15⁰⁰

\$27.73 Shipping & Import Fees Deposit to China [Details](#) ▾

Extra Savings Promotion Available 1 Applicable Promotion ▾

Brand	Acogedor
Current Rating	16 Amps
Voltage	250 Volts
Circuit Breaker Type	Standard
Mounting Type	DIN Rail Mount

- About this item**
- This is a great circuit breaker used to protect an electrical circuit from damage caused by excess current resulting from an overload or short circuit
 - Fast Closing to ensure reliable operation of the load and prolong the life of electrical circuit breakers
 - It is easy and reliable to use, which supports short circuit protection, overload protection
 - It can be mounted conveniently on DIN rail, DIN rail is not included
 - Widely used for solar panels grid system, wind and solar hybrid system and many other DC systems



Share

Awclub Plastic Transparent Cover Power Distribution Protection Box IP65 ABS for Circuit Breaker Indoor on The Wall 5 Way (160mmx120mmx95mm)

Visit the Awclub Store

★★★★★ 276 ratings

-13% \$13⁹⁹

Was: \$16.99

\$28.64 Shipping & Import Fees Deposit to China [Details](#) ▾

Size: 160mmx120mmx95mm

160mmx120mmx95mm	200mmx155mmx92mm	365mmx195mmx110mm
\$13.99	\$18.99	\$34.99

- [GREAT QUALITY]: Made of high quality plastic(ABS), Waterproof Rating: IP65; Qualification:CE,ROHS
- [Designed]: This distribution box is designed for 5 ways circuit breaker,durable and sturdy.
- [TRANSPARENT COVER]: The blue cover is transparent , you can check the condition easily without open the box.
- [EASY TO INSTALL]: This distribution box can be easily installed and very convenient to use, just need a few steps to mount it on your wall.
- [WIDELY APPLICATION] :Great to mount indoors, widely used for home, hotel shop and many other places.

3.9 Solar extension cable

Recommendation: iGreely 12 AWG solar extension cable

https://www.amazon.com/gp/product/B08KZNTYP5/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&th=1



Roll over image to zoom in

Share

iGreely 10 Feet 12 AWG Solar Extension Cable with Solar Panel Female and Male Connector Solar Panel Adapter 12 Gauge (10FT Red + 10FT Black)

Visit the iGreely Store

★★★★★ 2,223 ratings

Amazon's Choice for "12 awg solar cable"

\$16⁹⁹

\$23.54 Shipping & Import Fees Deposit to China [Details](#)

Size: **10Ft 12AWG**

3Ft 8AWG	3Ft 10AWG	3Ft 12AWG	6Ft 10AWG	6Ft 12AWG
10Ft 8AWG	10Ft 10AWG	10Ft 12AWG	20Ft 8AWG	
20Ft 10AWG	20Ft 12AWG	30Ft 10AWG	50Ft 10AWG	
70Ft 10AWG	100Ft 10AWG			

- One pair (1 piece black + 1 piece red) 10ft 12AWG solar extension cable. Made with copper.
- Two cables with solar panel connectors at one end connecting to solar panel and bare on the other end connecting to solar charge controller.
- The wiring is weatherproof and designed to withstand extreme heat and cold.
- Stable self-locking system which is easy to lock and open.

4. How to install Reliance Controls

Please refer to Reliance Controls website: www.reliancecontrols.com

4.1 How to install Reliance Controls ProTran2 - Part1, Tools and Planning

<https://www.youtube.com/watch?v=xTqjw6WJ7o&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86>

4.2 How to install Reliance Controls ProTran2 - Part2, Mounting

<https://www.youtube.com/watch?v=wNbBHVHgW0Y&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86&index=2>

4.3 How to install Reliance Controls ProTran2 - Part3, Wiring

<https://www.youtube.com/watch?v=TKruj9BpZM8&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86&index=3>

4.4 How to install Reliance Controls ProTran2 - Part4, Replacing Circuit Breakers

<https://www.youtube.com/watch?v=IkOuauT-YP8&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86&index=4>

4.5 How to install Reliance Controls ProTran2 - Part5, Installing The Power Inlet Box

<https://www.youtube.com/watch?v=0M8sYRhEVPY&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86&index=5>

4.6 How to install dd Controls ProTran2 - Part6, How To Operate

<https://www.youtube.com/watch?v=O4GA9AK8Tmo&list=PLpYCE0n7d22iDNwpVnOF9HULSUYYBBRY86&index=6>

5. More information:

Website: www.bluettipower.com

Email: service@bluettipower.com