

How to build
a partial home backup system with
AC300+B300

User Manual



How to build a partial home backup system With
AC300+B300



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.



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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 AC300+B300 Backup System

AC300+B300's Machine Type is set to "Single Phase" by default. DO NOT change this setting if you are operating a single AC300+B300 set.

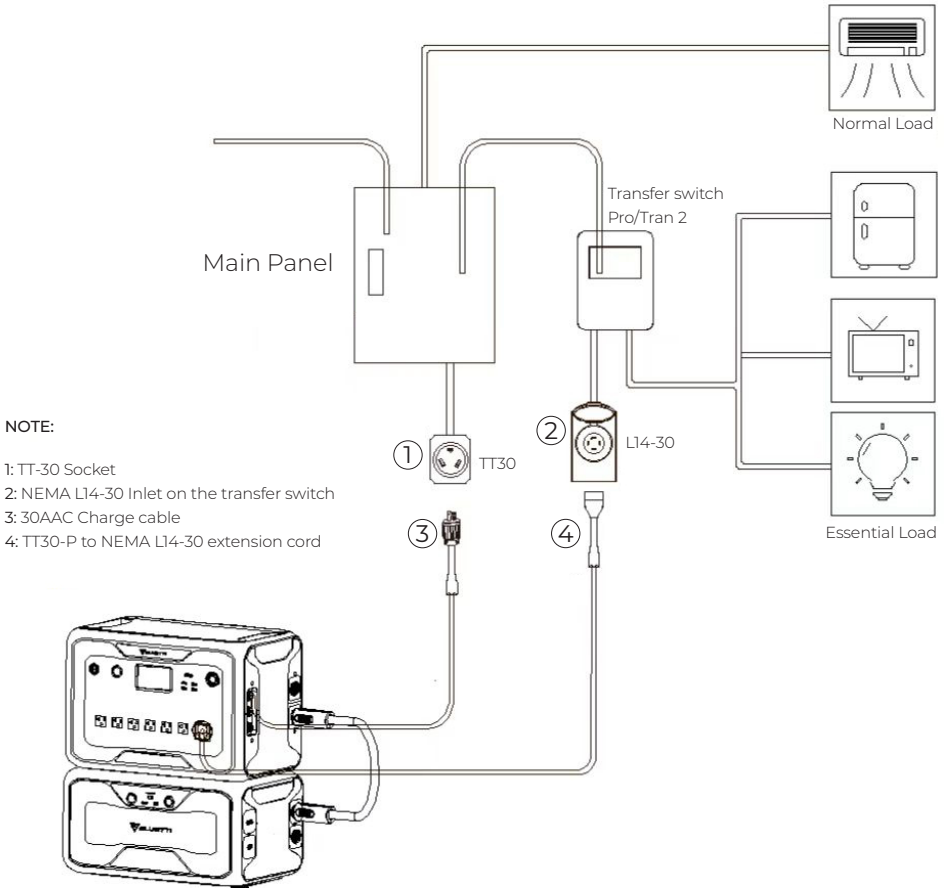
To build the backup system, you need the following:

Accessories	Qty.
Transfer switch: Reliance 310A Pro/Tran 2	1
NEMA TT30-P to L14-30R extension cord	1
30A AC charging cable	1

NOTE: Please read the Reliance 310A Pro/Tran2 manual before installation.

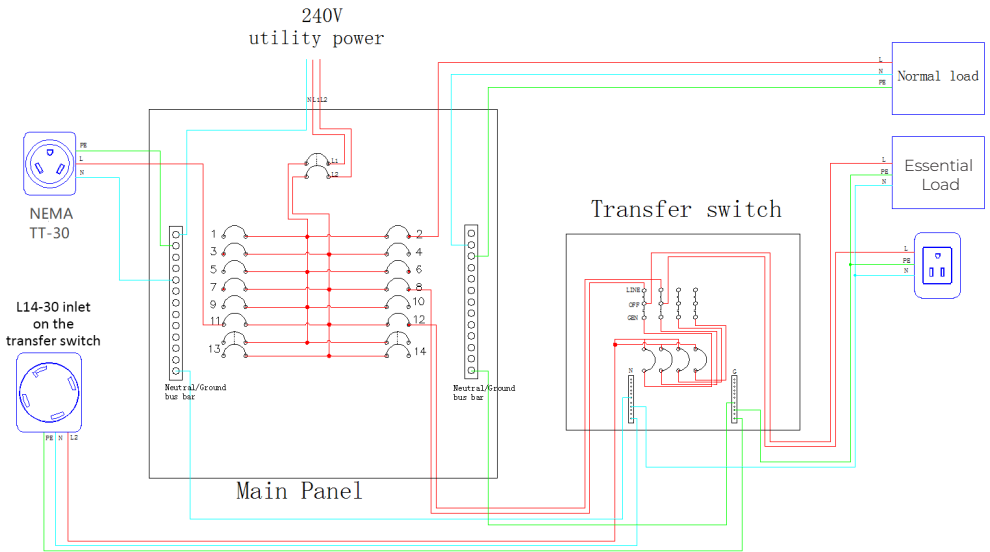
<http://www.reliancecontrols.com/Documents/PT2%20Loadside%20Installation%20and%20Operating%20Instructions.pdf>

Refer to the diagram below for proper installation of AC300+B300 backup system.



NOTE:

- 1: TT-30 Socket
- 2: NEMA L14-30 Inlet on the transfer switch
- 3: 30AAC Charge cable
- 4: TT30-P to NEMA L14-30 extension cord



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 an electrical schematic. For the actual wiring diagram, please refer to Reliance PRO/TRAN2 installation instructions.

2. 240 Volts AC300+B300 Backup System

You can build the 240V Split Phase System by pairing two sets of AC300+B300 together. The system also has double the available output power and capacity.

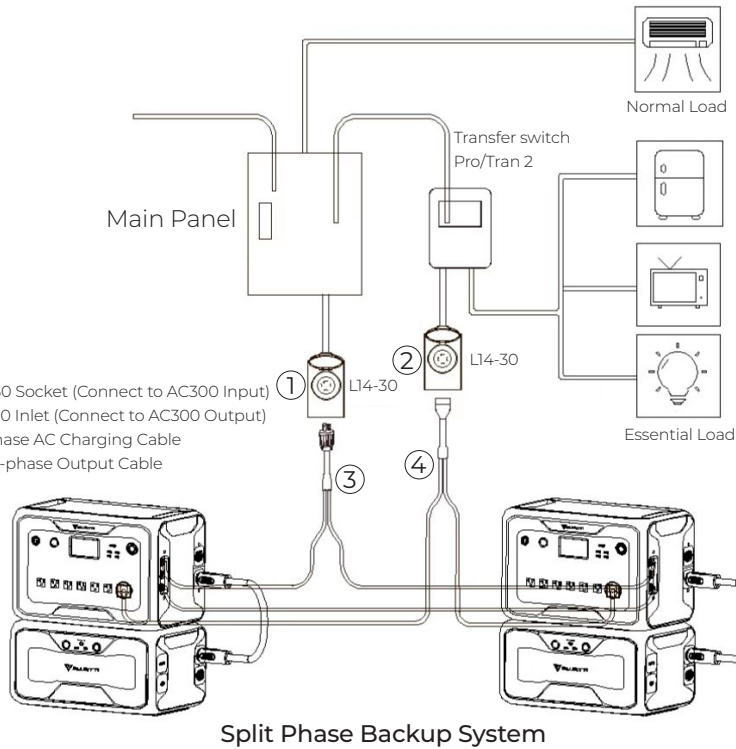
Besides TWO sets of AC300+B300, you also need the following:

Accessories	Qty.
Transfer switch: Reliance 310A Pro/Tran 2	1
AC300 split-phase output cable	1
NEMA L14-30R socket	1
AC300 30A split phase 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 AC300+B300 set.



NOTE:

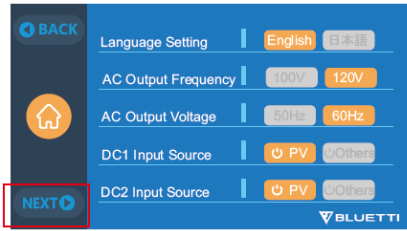
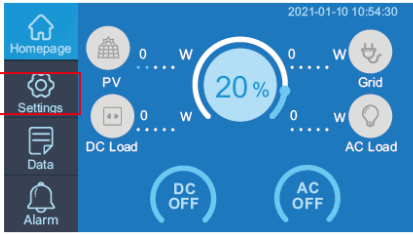
- 1: NEMA L14-30 Socket (Connect to AC300 Input)
- 2: NEMA L14-30 Inlet (Connect to AC300 Output)
- 3: 30A Split-phase AC Charging Cable
- 4: AC300 Split-phase Output Cable

Split Phase Backup System

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

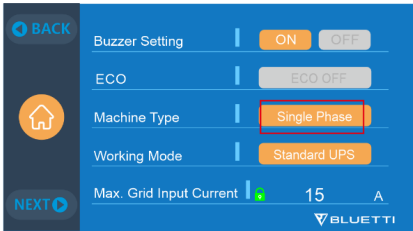
How to configure the AC300+B300 sets:

- Step 1:** Turn off both AC300+B300 sets.
- Step 2:** Connect AC300+B300 sets to transfer switch via the AC300 split-phase output cable. One TT-30 plug goes to a set.
- Step 3:** Connect two AC300 units via the communication cable.
- Step 4:** Turn on either AC300+B300 set.
- Step 5:** Go to "Settings" and tap "Next".

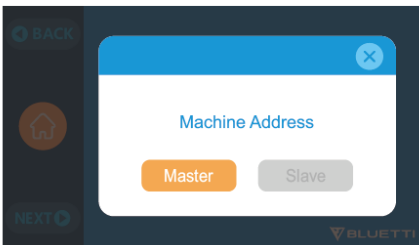


Step 6: Tap “Single Phase”, the machine type option pops up and select “Split phase”.

- Machine Type: Select Split Phase

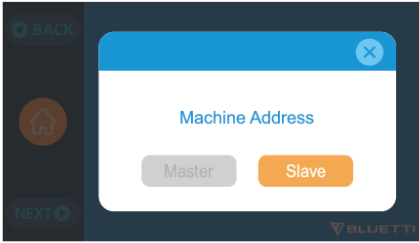


Step 7: Select the “Master” in the Machine Address pop up.

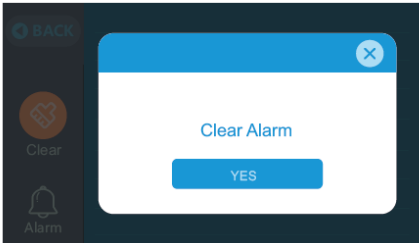


Step 8: Turn on the other AC300+B300 set. Repeat step 5 and 6 to set its machine type to “Split phase”.

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



If the connection fails, clear the alarm history and reconnect.



NOTE:

- Disconnect the AC charging cables from AC300+B300 sets before connecting to the transfer switch.
- The split phase system can be controlled ONLY on the “Master” set.
- If one of the AC300+B300 sets is out of power, the split phase system fails automatically.

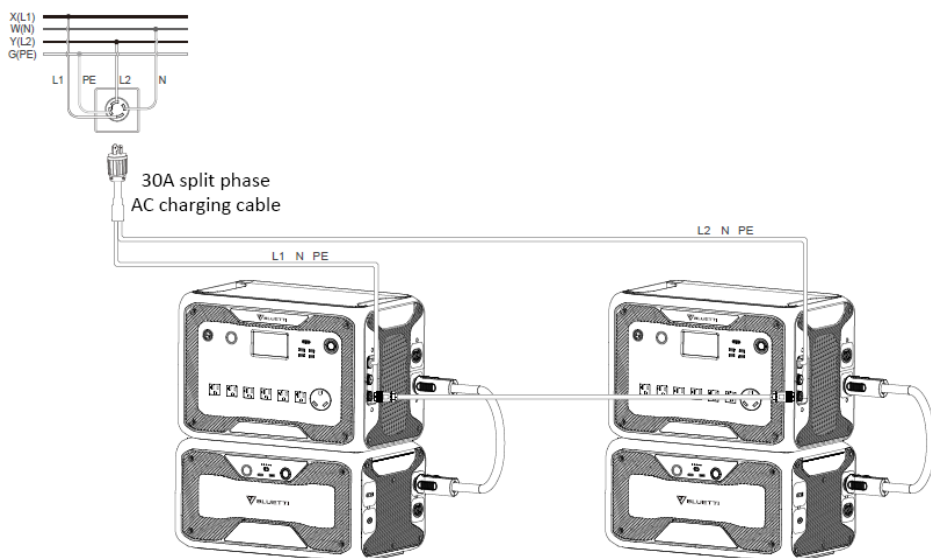
NOTE:

- 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 PRO/TRAN2 installation instructions.
- In the main panel, two Neutral/Ground bus bars have been connected together with copper strips.

Connect the AC300+B300 sets to the main panel

Charge the 240V split phase system with AC300 30A split phase AC charging cable. Plug the cable to a NEMA L14-30 socket (240V)and the other two connectors into AC300s' AC input ports.

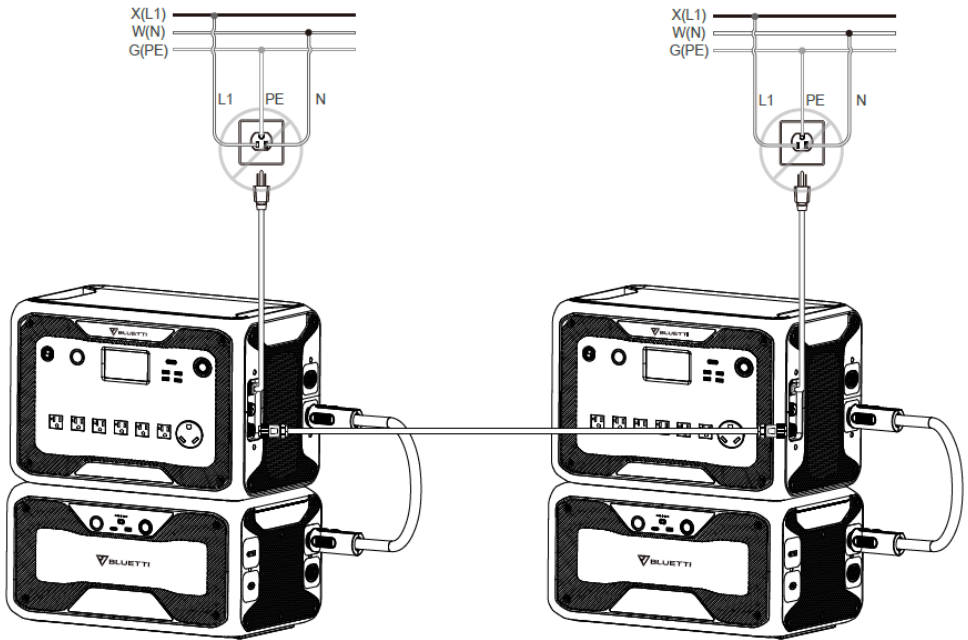
The AC input ports should be connected to L1/N/PE and L2/N/PE, respectively. The current capacity of AC input plug shall be $\geq 30A$.



WRONG CONNECTION

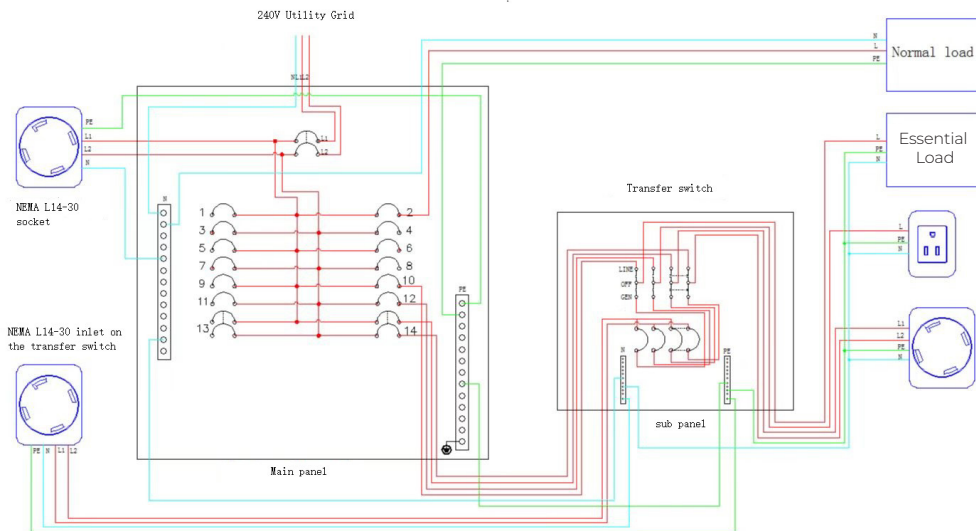
Warning! DO NOT charge AC300+B300 with standard AC charging cable in the split phase system, as this may cause damage to the batteries inside B300s and invalidate your warranty.

L: Live wire N: Neutral wire



NOTE:

The split phase system supports charging via solar panels. You can charge it by PV and the AC300 30A split-phase AC charging cable simultaneously. (AC input only through the AC300 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=eyJxc2MiOiJwLjAwIiwicXNhIjojoiMC4wMCIslInFzcCI6IjAuMDAifQ%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

\$453.67
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
Interrupted 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>



AC300 30A AC Charging Cable

30A AC CHARGING CABLE
★★★★☆ (33) reviews | Ask a question
US\$79.00

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

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

Application Model:

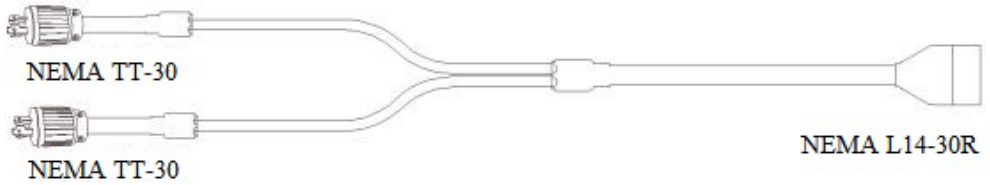
Quantity:
- 1 +

PayPal Pay in 4 interest-free payments of \$19.75. [Learn more](#)
Pay in 4 interest-free installments of **\$19.75** with [Shop Pay](#). [Learn more](#)

3.3 BLUETTI AC300 split-phase output cable

Please buy it from BLUETTI official store.

<https://www.bluettipower.com>



3.4 BLUETTI AC300 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:



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

3.6 NEMA L14-30R socket

For charging the 240V AC300+B300 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&sprefix=%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

\$15.99

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

3.7 NEMA TT30-P to L14-30R extension cord

For connecting AC300+B300 to the sub panel.

Recommendation: Parkworld NEMA TT30-P to L14-30R extension Cord.

https://www.amazon.com/Parkworld-885446-L14-30R-Generator-Receptacle/dp/B08BHVFSN7/ref=sr_1_31?crid=E1CT2MYTUF6Z&keywords=TT30-P+to+L14-30R&qid=1669196060&sprefix=tt30-p+to+l14-30r%2Caps%2C150&sr=8-31



Roll over image to zoom in



Parkworld 885446 NEMA TT-30P to L14-30R Generator Adapter Cord, Transfer Switch Adapter, RV 30A TT-30 Male Plug with Handle to Generator 30A 4-Prong L14-30 Female Receptacle (10 Foot)

Visit the Parkworld Store

★★★★☆ 166 ratings | 8 answered questions

Length: 10 Foot

1 Feet
\$21.99

10 Foot
2 options from \$59.99

25 Foot
1 option from \$138.08

36 Foot
\$114.99

- Recreational Vehicle Adapter cord TT-30P to L14-30R (Two hots bridged), Used STW 10AWG*3 stranded copper inner wire, support max 30 Amp loading.
- RV 30 AMP 3-prong right angle male with handle, easy to pull and push. Generator 30 AMP 4-prong twist lock female.
- Molded with electroplate copper terminal in order to avoid surface oxidation effectively.
- 100% copper conductor inside, Heavy-duty AC power adapter cord , also for Trailer and Mobile Home, Auto house.
- Length : 10FT. Color : Black

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



Roll over image to zoom in

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



Roll over image to zoom in



VIDEO

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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: \$15.99

\$28.64 Shipping & Import Fees Deposit to China Details

Size: 160mmx120mmx95mm


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

- [GREAT QUALITY]: Made of high quality plastic(ABS), Waterproof Rating: IP65; Qualification EPCERHOS
- [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



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			

Roll over image to zoom in



- 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.

NOTE: The length of cable is based on the actual demand.

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=xTqjwT6WJ7o&list=PLpYCE0n7d22iDNwpVnOF9HULSUYBBRY86>

4.2 How to install Reliance Controls ProTran2 - Part2, Mounting

<https://www.youtube.com/watch?v=wNbBHVHgwOY&list=PLpYCE0n7d22iDNwpVnOF9HULSUYBBRY86&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=lkOuaUT-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