

How to build  
a partial home backup system with  
**AC500+B300S**

User Manual



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**AC500+B300S**



# 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.**

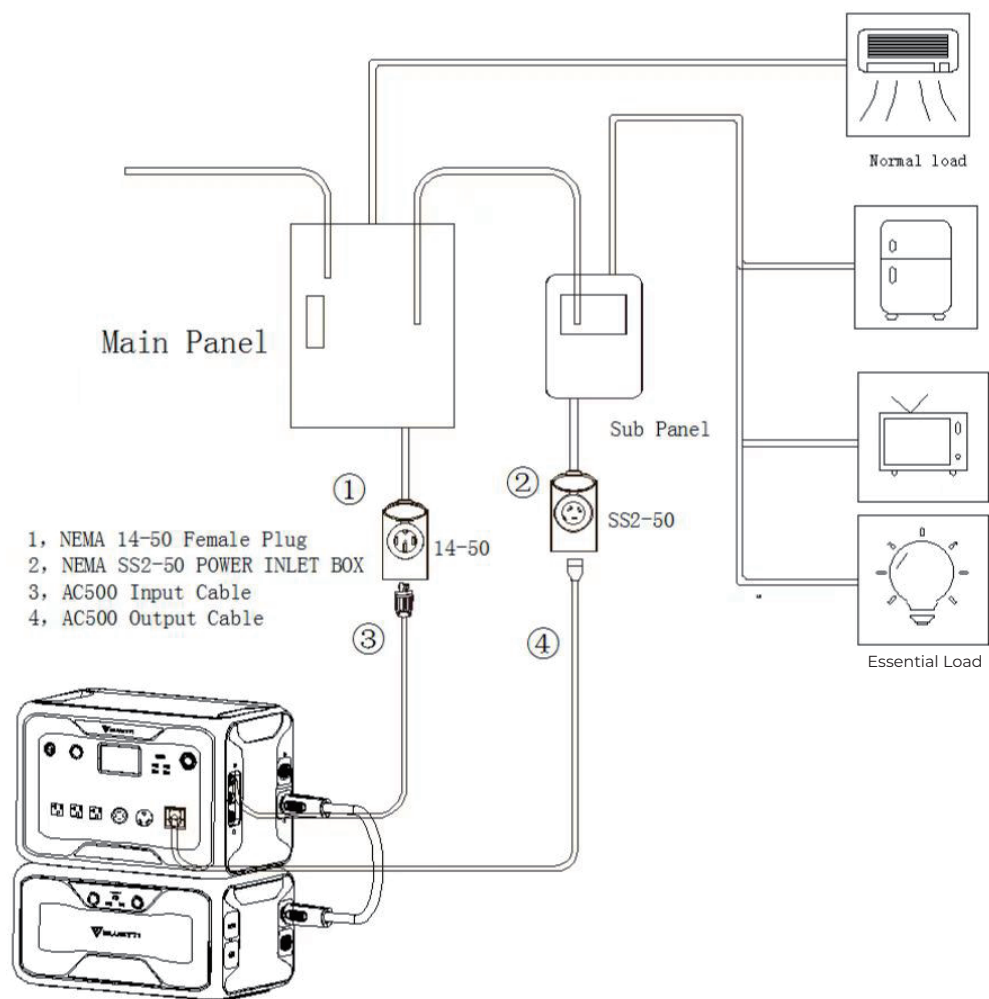
## 1. 120 Volts AC500+B300S Backup System

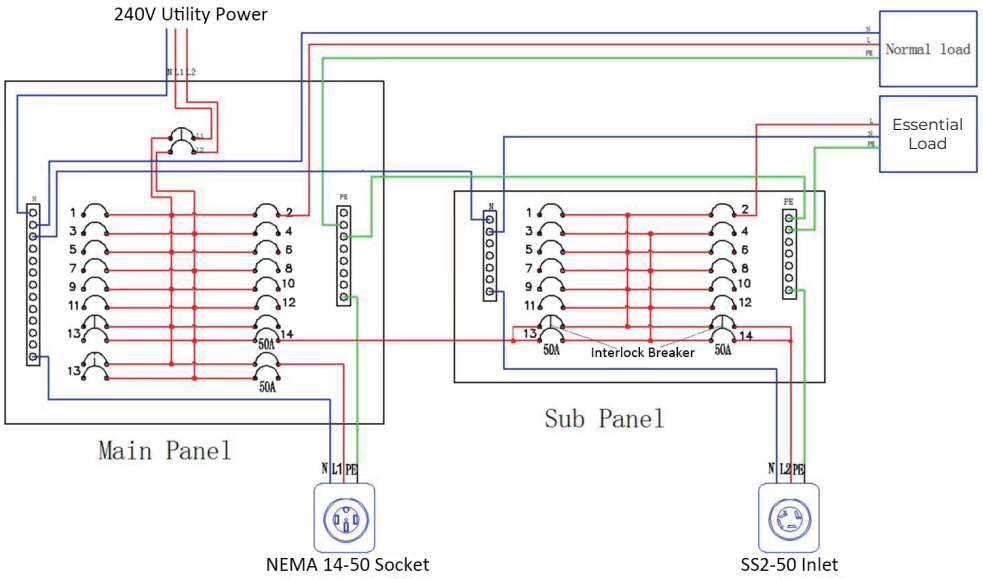
AC500+B300S's Machine Type is set to "Single Phase" by default. DO NOT change this setting if you are operating a single AC500+B300S set.

To build the backup system, you need the following:

Accessories	Qty.
Transfer switch: Reliance TRK0505BR	1
NEMA 14-50P to SS2-50R cord	1
AC charging cable	1

Refer to the diagram below for proper installation of AC500+B300S 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 PRO/TRAN2 installation instructions.

## 2. 240 Volts AC500+B300S Backup System

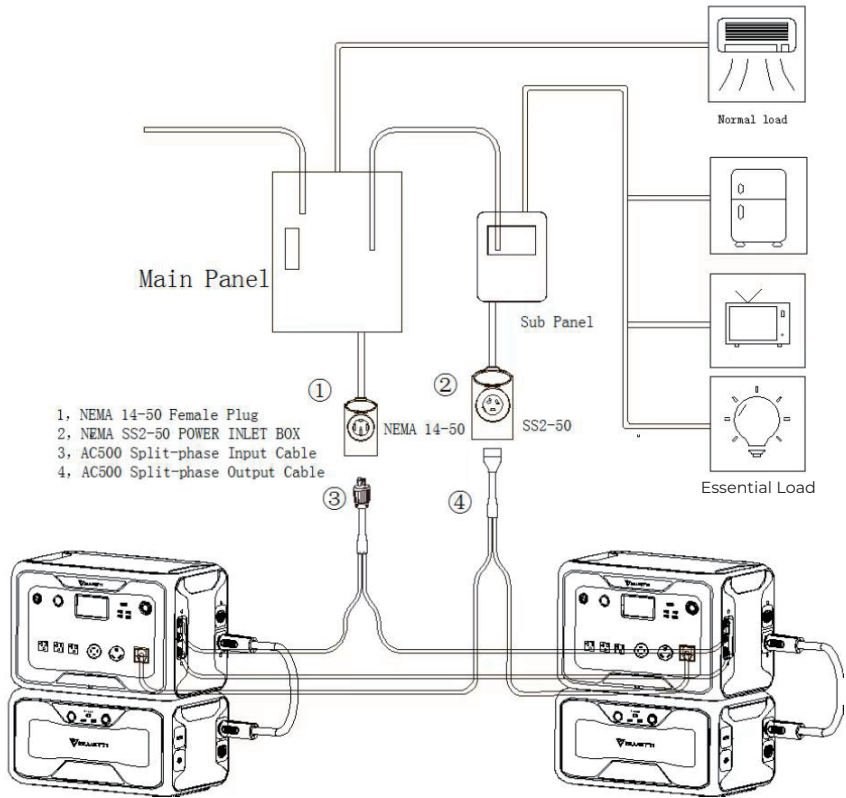
You can build the 240V Split Phase System by pairing two sets of AC500+B300S together. The system also has double the available output power and capacity.

Besides TWO sets of AC500+B300S, you also need the following:

Accessories	Qty.
Transfer switch: Reliance TRK0505BR	1
AC500 split-phase output cable	1
NEMA 14-50 socket	1
AC500 split phase AC charging cable	1

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 AC500+B300S set.





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

How to configure the AC500+B300S sets:

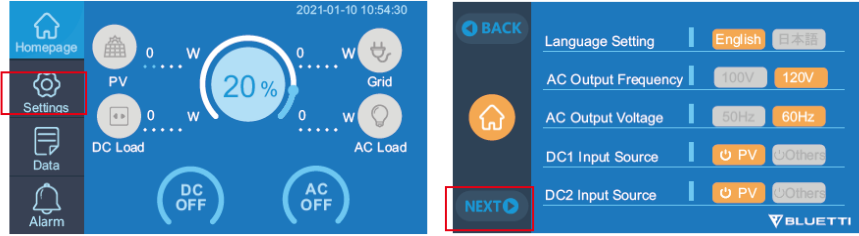
**Step 1:** Turn off both AC500+B300S sets.

**Step 2:** Connect AC500+B300S sets to transfer switch via the AC500 split-phase output cable. One NEMA 14-50 plug goes to a set.

**Step 3:** Connect two AC500 units via the communication cable.

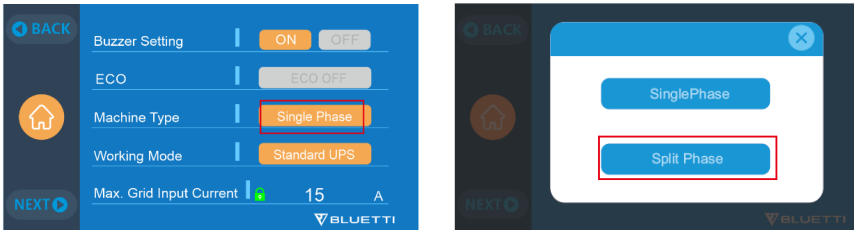
**Step 4:** Turn on either AC500+B300S set.

**Step 5:** Go to “Settings” and tap “Next”.

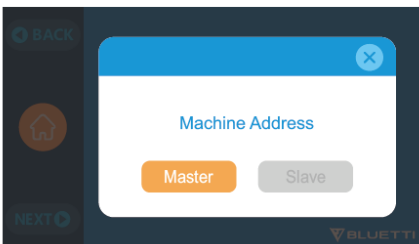


**Step 6:** Tap “Single Phase”, the machine type option pops up and select “Split phase”.

- Machine Type: Select Split Phase

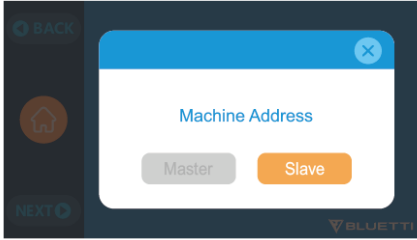


**Step 7:** Select the “Master” in the Machine Address pop up.

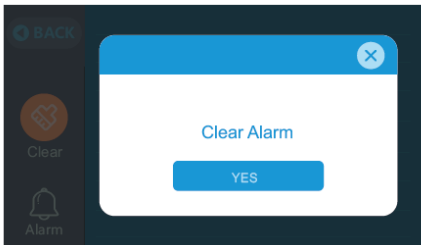


**Step 8:** Turn on the other AC500+B300S set. Repeat step 5 and 6 to set its machine type to “Split phase”.

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



If the connection fails, clear the alarm history, wait for a moment or then try again.



Please watch the video from: <https://www.youtube.com/watch?v=quvcX8mEUCo>

**NOTE:**

- Disconnect the AC charging cables from AC500+B300S sets before connecting to the transfer switch.
- The split phase system can be controlled ONLY on the “Master” set.
- If one of the AC500+B300S sets is out of power, the split phase system fails automatically.

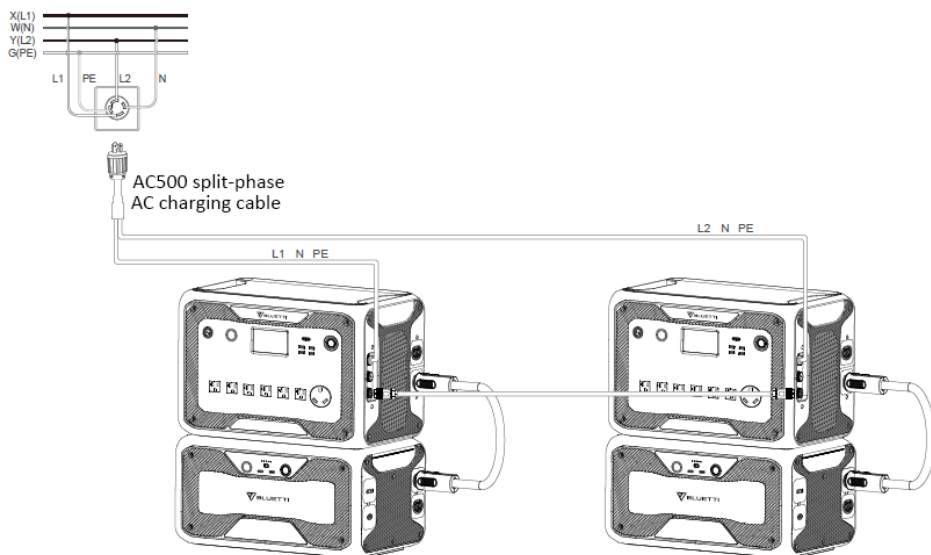
**NOTE:**

- 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 AC500+B300S sets to the main panel

Charge the 240V split phase system with AC500 split phase AC charging cable. Plug the cable to a NEMA 14-50 socket (240V )and the other two connectors into AC500s' AC input ports.

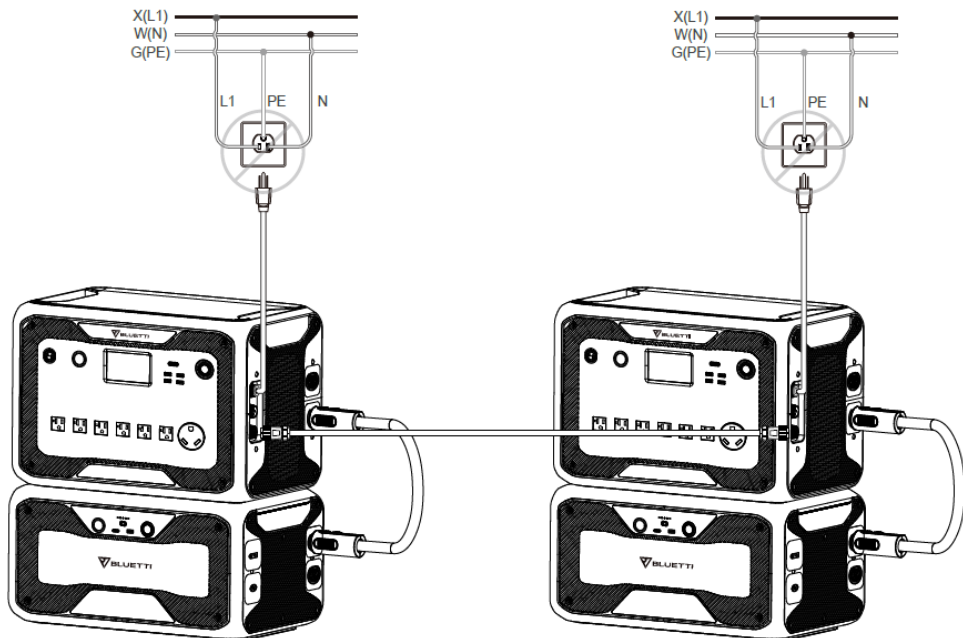
The AC input ports should be connected to L1/N/PE and L2/N/PE, respectively. The current capacity of AC input plug shall be  $\geq 50A$ .



## WRONG CONNECTION

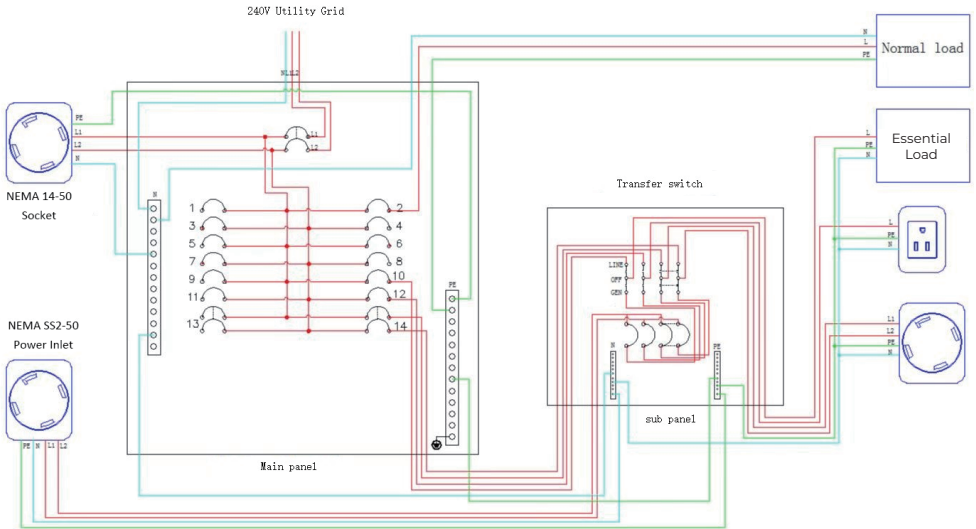
**Warning!** DO NOT charge AC500+B300S with standard AC charging cable in the split phase system, as this may cause damage to the batteries inside B300s and invalidate your warranty.

L: Live wire N: Neutral wire



**NOTE:**

The split phase system supports charging via solar panels. You can charge it by PV and the AC500 split-phase AC charging cable simultaneously. (AC input only through the AC500 split-phase AC charging cable but not the standard AC charging cable)



### 3. Accessories

#### 3.1 Transfer switch

Recommendation: Reliance Controls TRK0505BR transfer switch.

<https://www.bluettipower.com/collections/accessories>

#### 3.2 50A AC Charging Cable

<https://www.bluettipower.com/collections/accessories>

**50A AC Charging Cable**

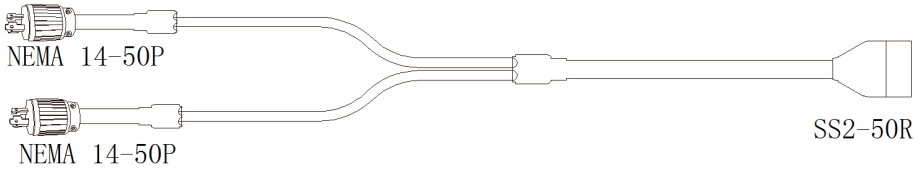


SECRET

**50A AC Charging Cable**

### 3.3 BLUETTI AC500 split-phase output cable

<https://www.bluettipower.com/collections/accessories>



### 3.4 BLUETTI AC500 split-phase AC charging cable

<https://www.bluettipower.com/collections/accessories>

#### 50A AC Charging Cable





### 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 14-50R socket

For charging the 240V AC500+B300S split phase system.

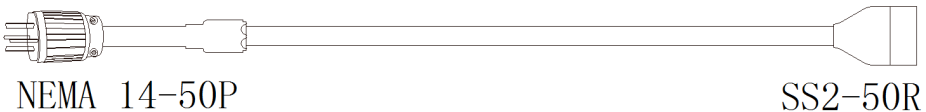
<https://www.bluettipower.com/collections/accessories>



### 3.7 NEMA 14-50P to SS2-50R extension cord

For connecting AC500+B300S to the sub panel.

<https://www.bluettipower.com/collections/accessories>



### 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](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](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

\$15<sup>90</sup>

\$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



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% \$13<sup>99</sup>

Was: \$16.99

\$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; QualificationEPCe,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](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"

\$16<sup>99</sup>

\$25.54 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.

**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](http://www.reliancecontrols.com)

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

<https://www.youtube.com/watch?v=xTqjw6WJ7o&list=PLpYCE0n7d22iDNwpVnOF9HULSUYBBRY86>

## **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=lkOuat-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](http://www.bluettipower.com)

Email: [service@bluettipower.com](mailto:service@bluettipower.com)