



JUST POWER ON

Stay Powered With BLUETTI





BLUETTI

EP600 Installer Training

Presenter: Mike

20230801





Our Mission: Provide Clean Energy to the World



The Government launched an Energy Price Guarantee initiative to support households with rising energy costs that are currently storming across Europe. Households, however, will still be paying around 2 times more than they did last winter. Use cleaner energy generated from your rooftop solar system and store it in your home battery day or night to save money.



- | | |
|-----------|--|
| 01 | Residential electricity demand |
| 02 | Residential system introduction |
| 03 | Operation principle |
| 04 | Certification |
| 05 | Application examples |

1. Residential electricity demand (Europe)

For customers who want to :

- Use for three phase AC 230V/400V home appliances.
- Use cleaner energy generated from your rooftop solar system and store it in your home battery day or night to increase energy independence and save the bill cost.
- Take advantage of peak and off-peak energy pricing lower electricity bills.
- Make an emergency backup system.
- Install with existing solar PV system or new solar panels.
- Work grid-tied or Off-grid mode.
- Install for indoor or outdoor(with a cabinet).



Take UK for example , from October 1st, 2022, you will be paying more for your energy. Last winter the average home during winter was paying £1,277, now they will be paying £2,500. You should be made aware that this does not mean you will pay a maximum amount of £2,500. If you use more, you will pay more.

◆ 1. Residential electricity demand

Living Room

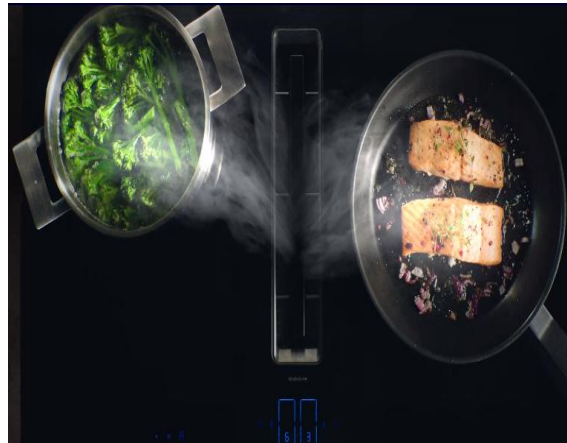


TV: 200W
TV stereo: 120W
Sweeping robot: 1000W
Air purifier: 80W
Floor lamp: 100W
Air conditioner: 8000Btu (rarely installed)
Ceiling lamp: 16W
Water dispenser: 2200W
Embedded wine cabinet: 85W



◆ 1. Residential electricity demand

Kitchen:



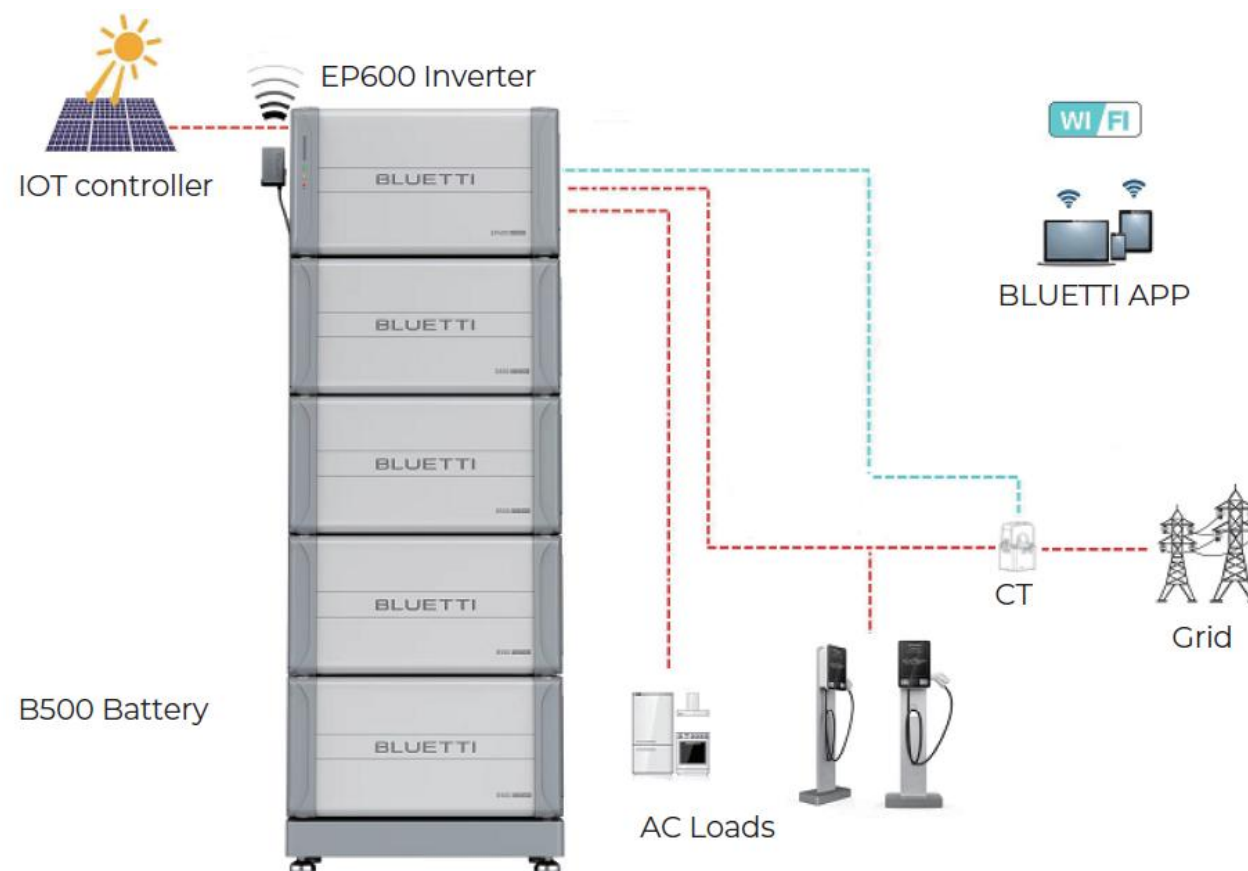
Refrigerator: 100W
Coffee maker: 1600W
Juicer: 400W
Microwave oven: 1000-1100W
Bread maker: 850W
Dishwasher: 1800W
Integrated steaming oven machine
embedded: 2900-3700W
Embedded insulation drawer: 320W
Cook machine: 1200W
Embedded induction cooker: 7400W
Air fryer: 1700W
Kitchen sewage food crusher: 800W

2 Residential system introduction

BLUETTI is a leading innovator in residential energy storage systems and portable power storage products, with patented technology and independent intellectual property rights across the entire industrial chain. BLUETTI's residential energy storage system solutions prioritize high security and practicality, utilizing a divided design that is easy to install, operate, and boasts high-quality performance.

All in one residential energy storage system includes:

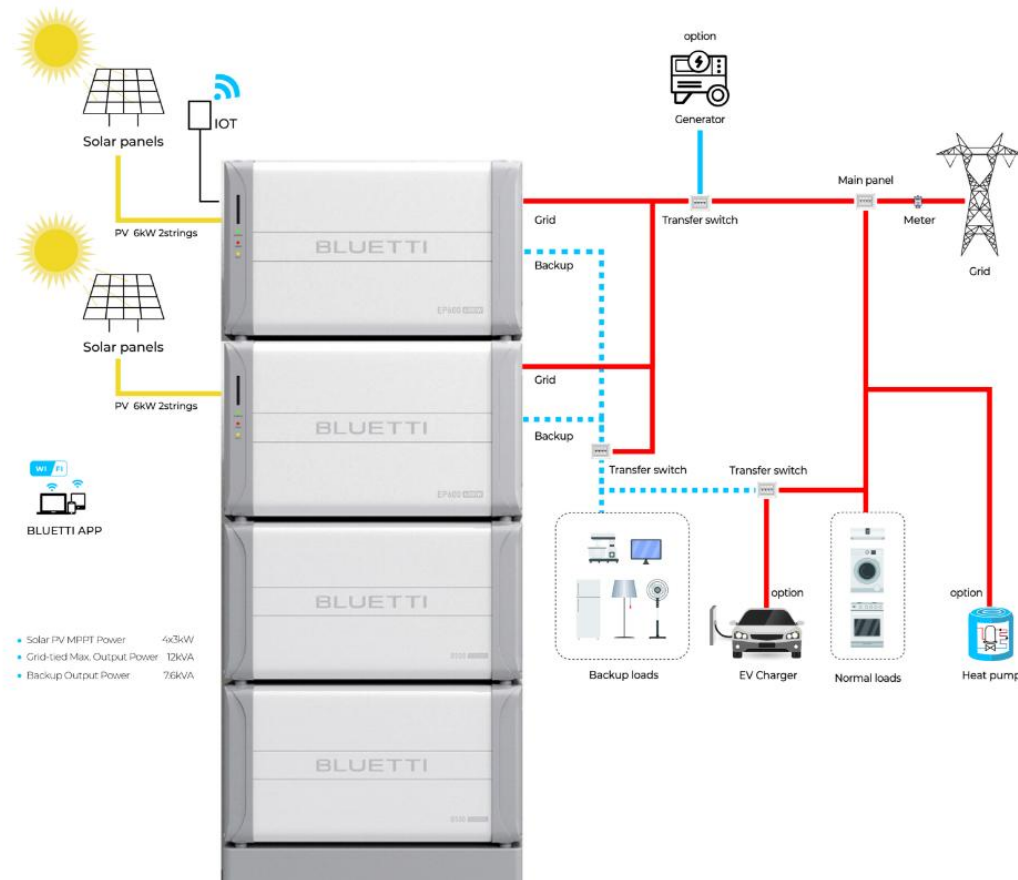
- Solar PV MPPT Controller;
- PCS
- Energy storage batteries;
- BMS
- EMS
- IOT (Smart APP);



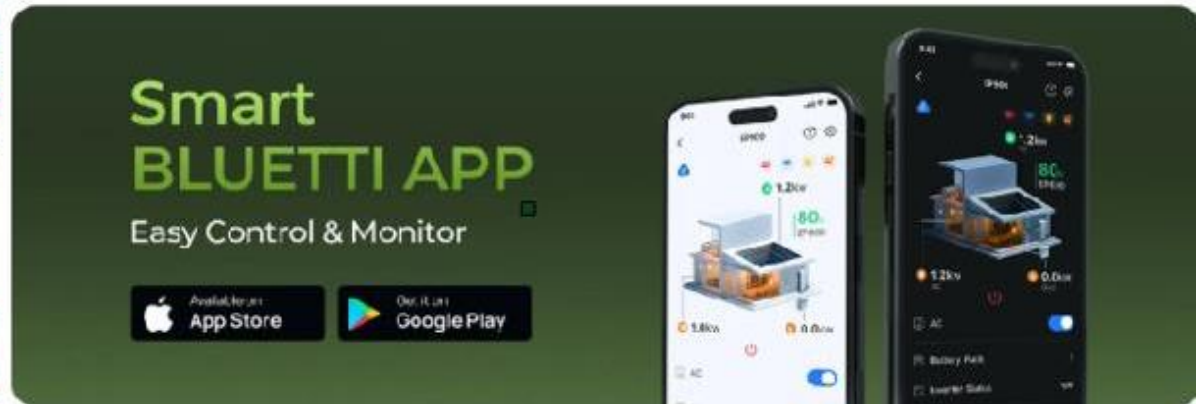
2 Residential system introduction

12kW RESIDENTIAL ENERGY STORAGE SOLUTION

- 12kW/9.9kWh
- More Powerful
- More Independence
- Three Phase

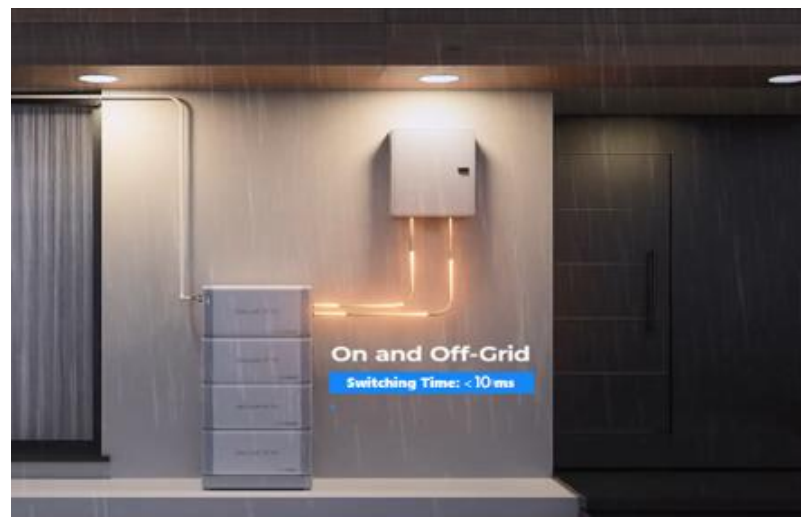


2.1 System Highlights



◆ 2.1 System Highlights

1. Valuable: 6000W solar PV input and up to 6 kW Power output allows you to generate and use electricity for your home, save up to 70% on your energy costs.
2. It is all in one system ,so it is very easy to install , it is modularized .
3. All-aluminum alloy metal shell ,beautiful appearance and low noise.
- 4.Support charging at - 20 °C by intelligent battery heating management system.
5. It is very flexible that it can be installed with existing solar PV system or new solar panels, It can works on-grid or Off-grid mode and it is suitable for indoor or outdoor(with a cabinet).
6. Three phase emergency backup , switch over time to back-up power within approx. 10 ms
7. Intelligent : UPS Modes and app Remote Control



2.2 EP600 Parameter

EP600 is a three-phase all in one inverter. The product supports functions such as PV priority, Parallel, on/ off-grid , UPS, etc. The main technical parameters are shown as follows:

Item	Parameter
Rated power	6kW (AC / PV)
AC voltage	3 / N / PE; 230 V / 400 V
AC frequency	50Hz/60Hz
MPPT Channel	2
MPPT Input Voltage	150V~500V
Battery model	B500
Battery quantity	2~4
Protection Grade	IP65
Noise	≤50dB
Dimensions (L*W*H)	636mm×325mm×370mm



An all-in-one PCS (power conversion system) and energy storage battery system can help achieve your goals. The PCS is responsible for managing the flow of energy between the grid, the energy storage batteries, and the home's electrical loads. It can also convert the energy from DC to AC and vice versa, ensuring that the power generated by the solar panels can be used in the home or stored in the batteries.

2.2 B500 Parameter

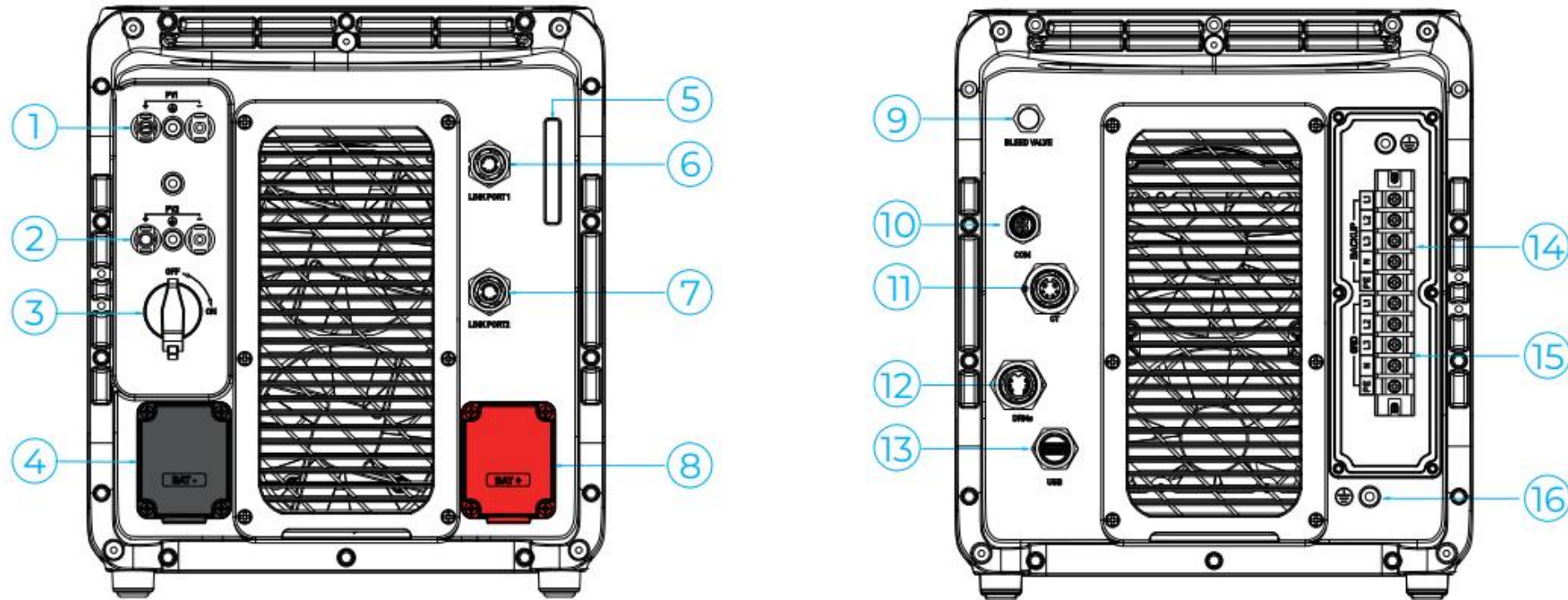
B500 is a battery pack specially developed for EP600/EP760. The design lifespan of this product is 10 years

The main technical parameters are shown as follows:

Item	Parameter
Battery Type	LiFePO4
Rated Capacity	4.96kWh
Cell Capacity	50Ah
Rate battery voltage	99.2V
Discharging Temperature	-20°C~40°C/ -4°F~104°F
Charging Temperature	0°C~40°C/32°F~104°F (off-grid charging)
	-20°C~40°C/ -4°F~104°F (when inverter connect to the grid)
Noise	25dB (no fans)
Protection Grade	IP65 /NEMA 4X
Net Weight	56kg
Dimensions (L*W*H)	636mm×325mmmm×337mm

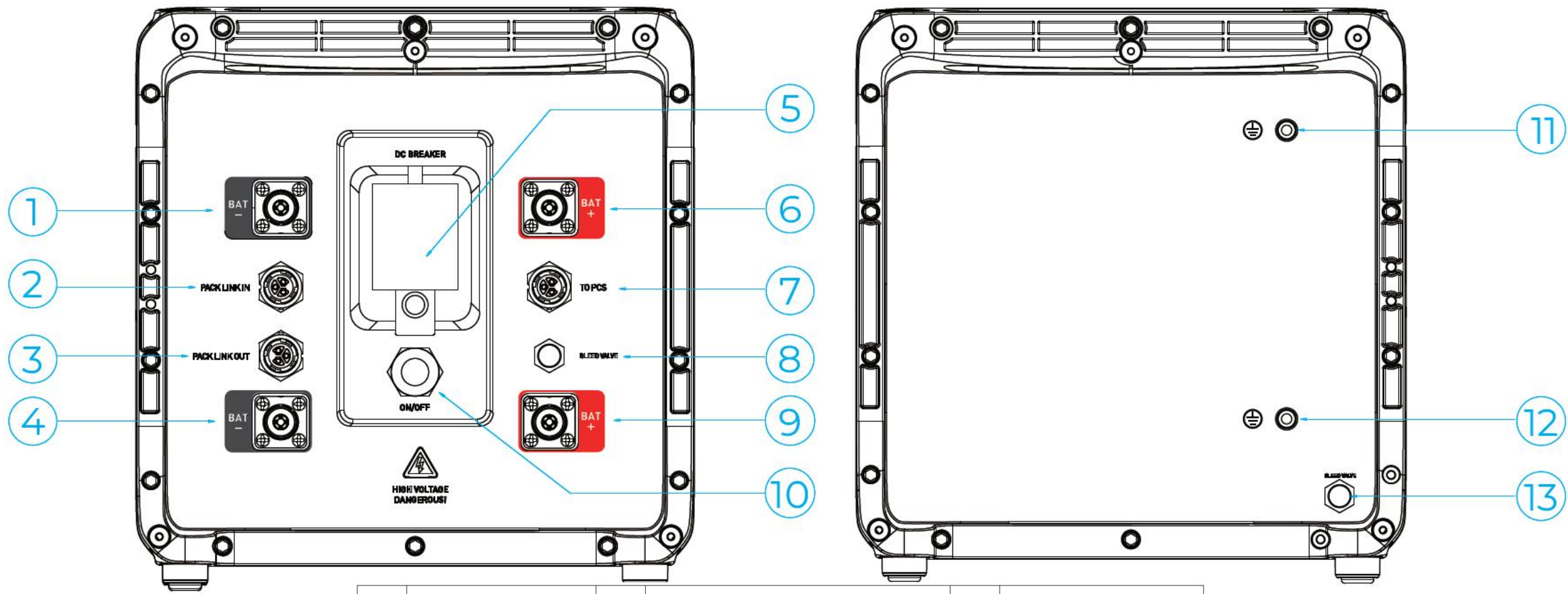


2.3 EP600 Appearance



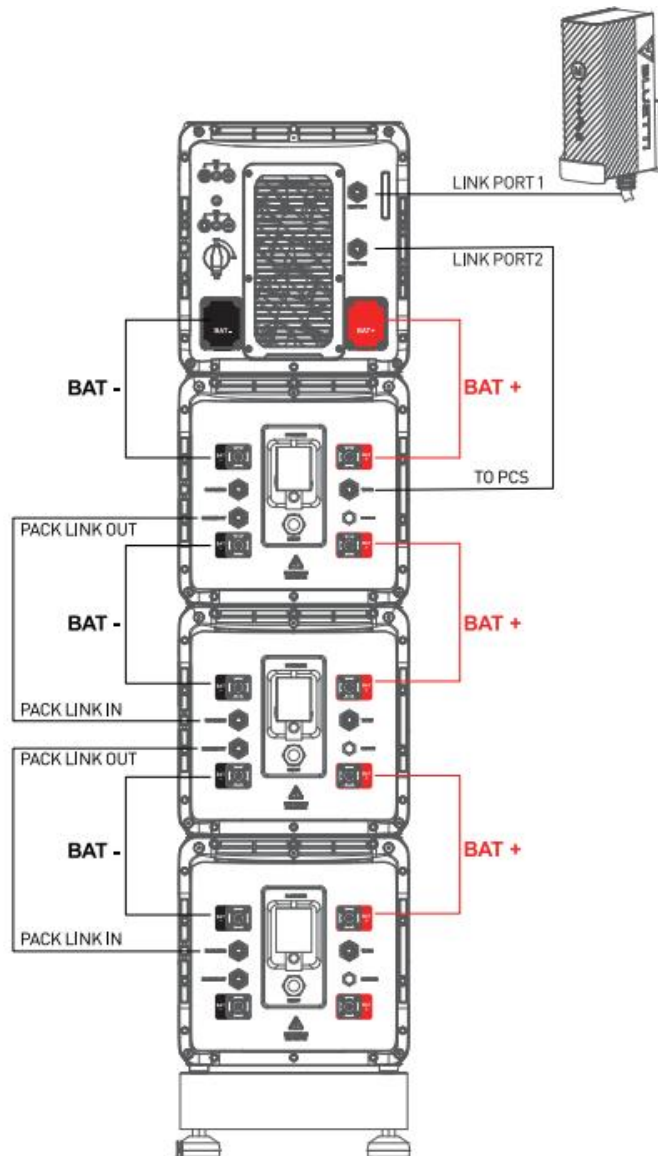
1	PV input 1	5	LED Indicator	9	Bleed valve	13	USB Port
2	PV input 2	6	Signal Port 1	10	COM port	14	Load Port
3	DC switch	7	Signal Port 2	11	CT port	15	Grid Port
4	BAT- terminal	8	BAT+ terminal	12	DRMs Port	16	Grounding port

2.3 B500 Appearance



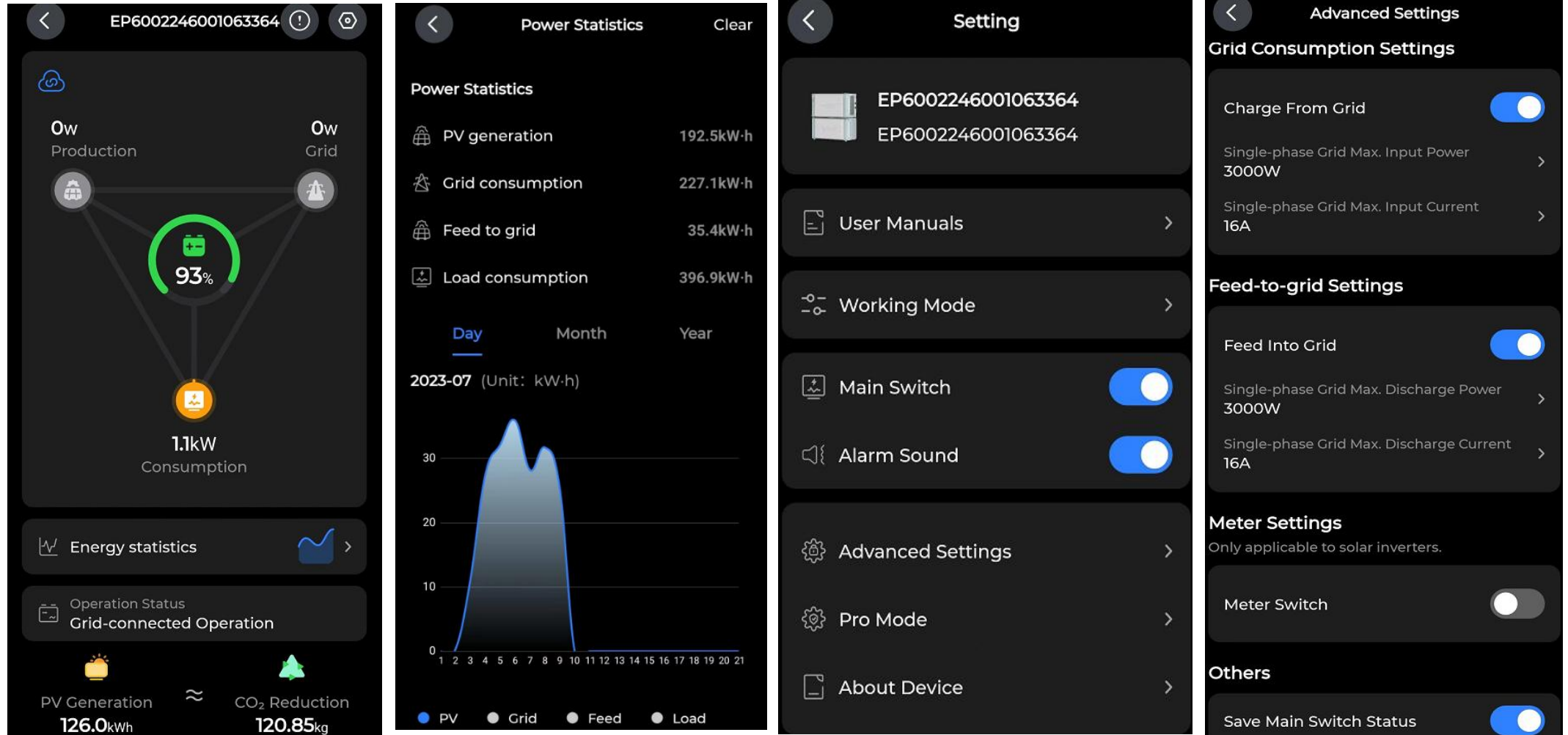
1	BAT- terminal 1	6	BAT+ terminal 1	11	Grounding port 1
2	Pack link-in	7	Inverter signal port (TO Pcs)	12	Grounding port 2
3	Pack link-out	8	Bleed valve 1	13	Bleed valve 2
4	BAT- terminal 2	9	BAT+ terminal 2		
5	Main switch	10	Power button		

2.4 System diagram



2.5 APP introduction

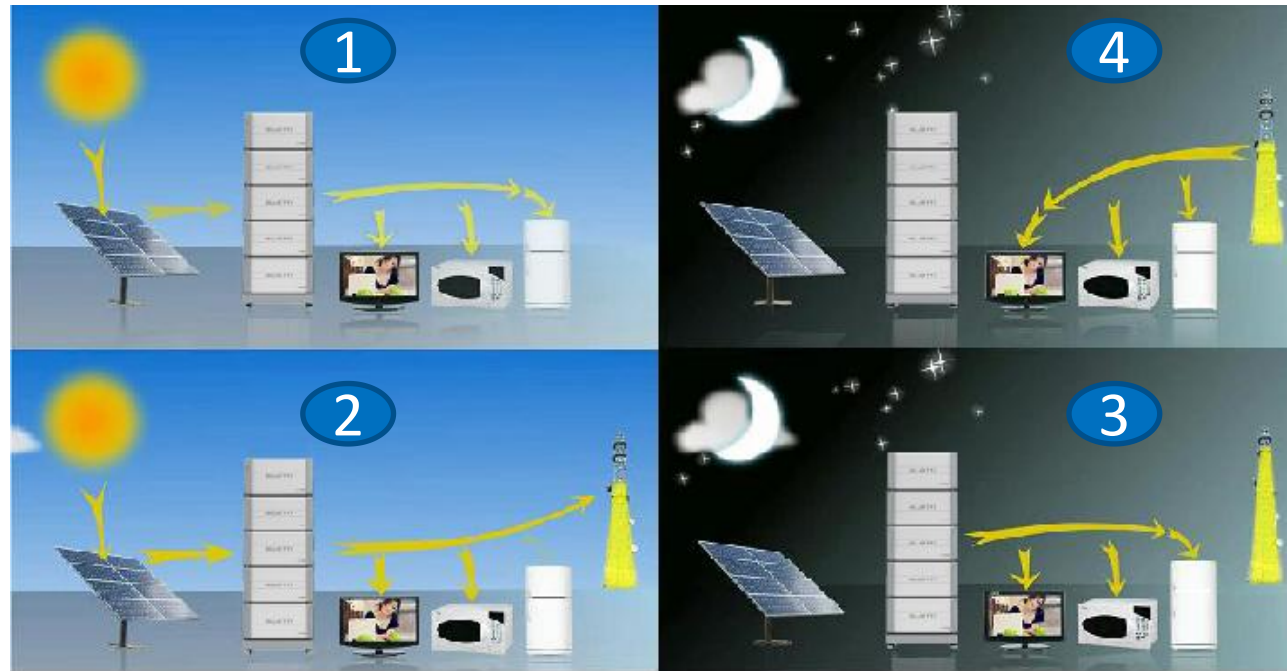
Intelligent monitoring





2.6 EP600 work mode

EP600 is in **self-consumption** mode by default. In this mode, the system maximizes solar energy to power your home. It can also store excess energy for later use or even sell it back to the grid.

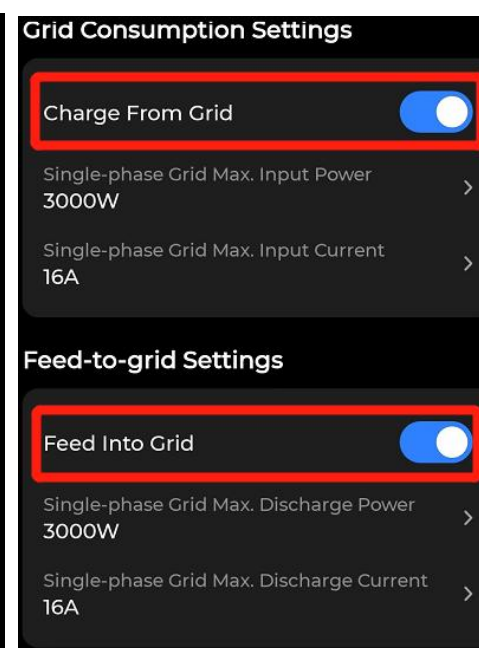
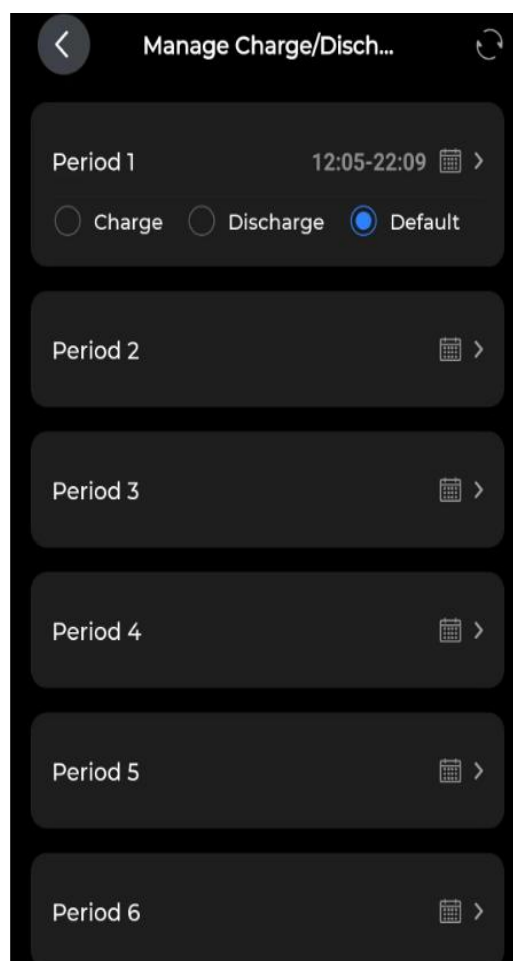
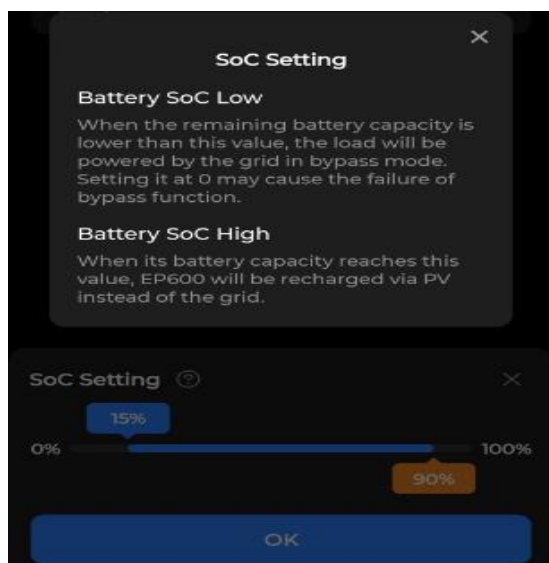
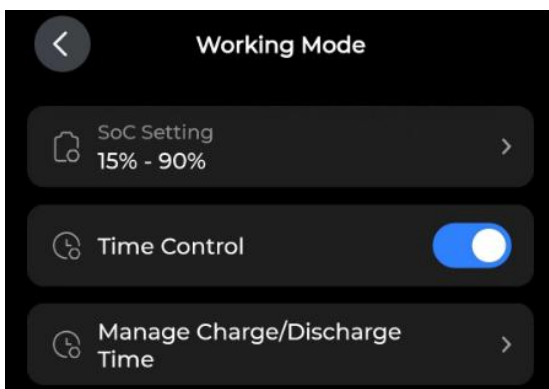


- ① PV generated energy is used first and foremost to optimise your own consumption. Any surplus energy is used to charge the B500 batteries.
- ② When the B500 batteries are fully charged, the system provides energy for your own consumption and any surplus is fed into the public grid.
- ③ The system switches to battery energy supply after sundown. EP600 allows you to produce 70% or more of your own consumption.
- ④ If the battery capacity be insufficient, electricity is obtained from the public grid.



2.6 EP600 work mode

EP600 can chose **time control mode**. In this mode, you can manually set the charge and discharge periods to meet your needs. This makes it suitable for areas where the electricity price varies based on use time. When the electricity charge is at the peak, the discharge time can be set; When the electricity rate is at the off peak, the grid can be set to charge the battery.



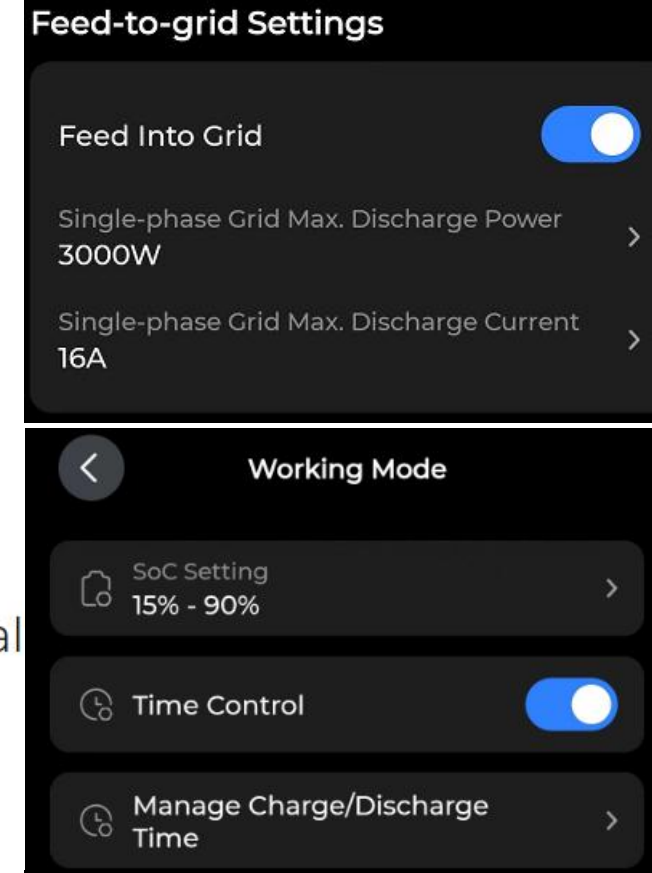
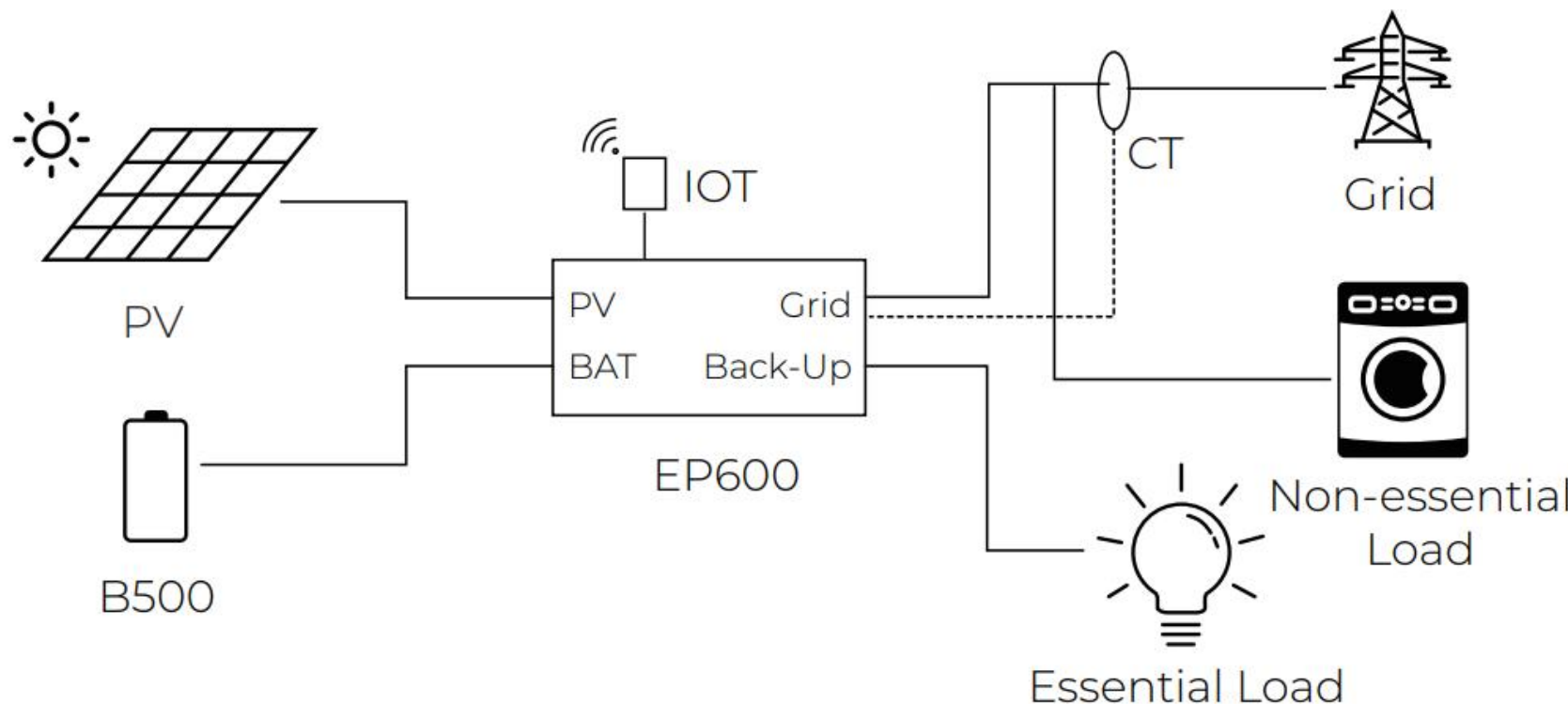
Note:

1. Load priority : PV > grid ,in charge time
Load priority : PV > battery, in discharge time
2. You can set 6 time.
3. Enable grid charge function before use time control.
4. If you want feed into grid, please enable feed into grid function in advanced setting.

2.7 System solution 1



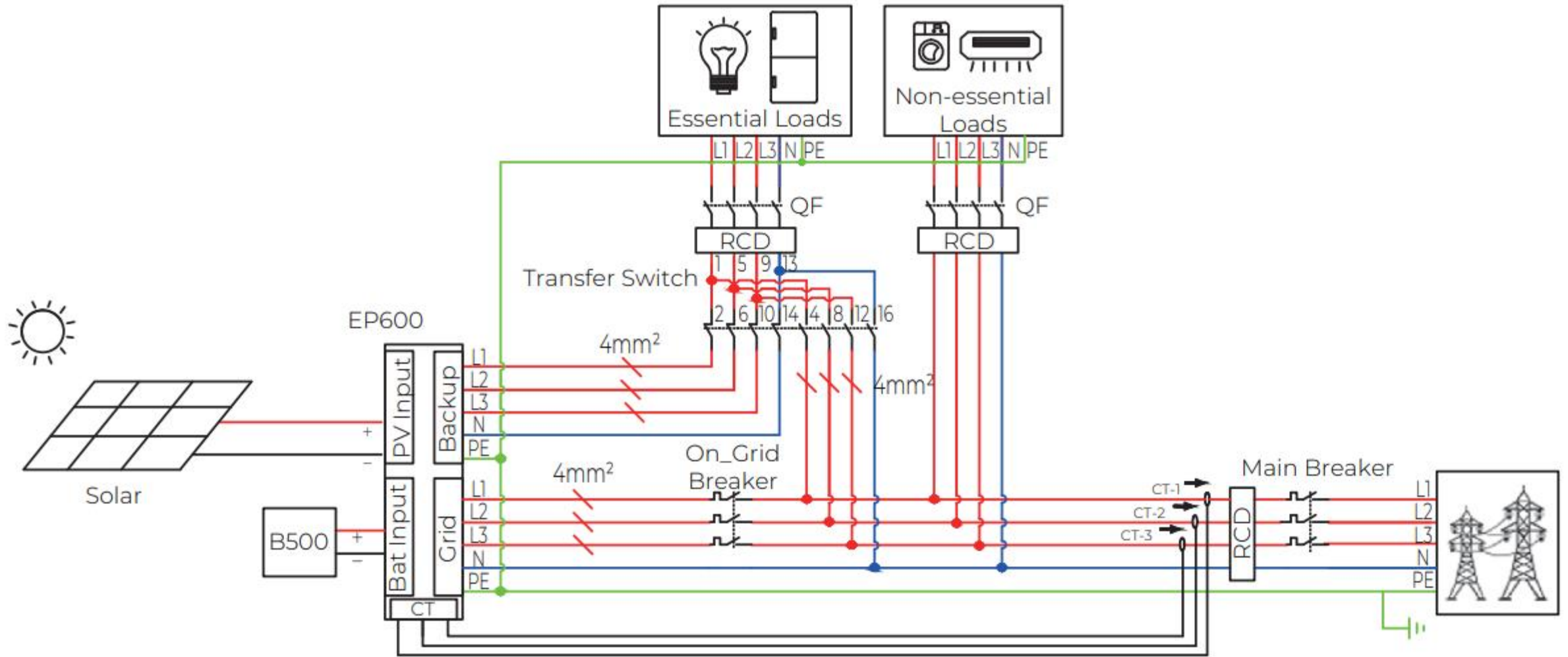
DC coupling for new solar panel installation



Note:

1. For single-phase household appliances with a power larger than 2000W or three-phase loads with a total power larger than 6000W, such as the Embedded induction cooker and air conditioner, they need to be connected to the grid side. Excess 6kW of power is provided by the power grid to achieve the purpose of reducing electricity costs.
2. On the backup side, the household appliances with a total power larger than 6kW shall not be connected to the BACKUP terminal.
3. Load priority: PV > Battery > grid.
PV energy supply priority: load > Battery > grid. PV can't feed into grid if disable feed into grid function.
4. Self-consumption by default, time control is optional.

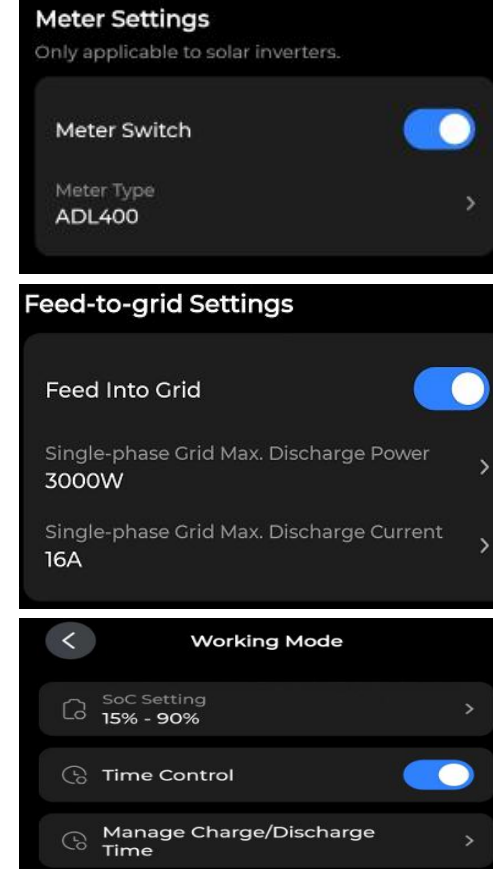
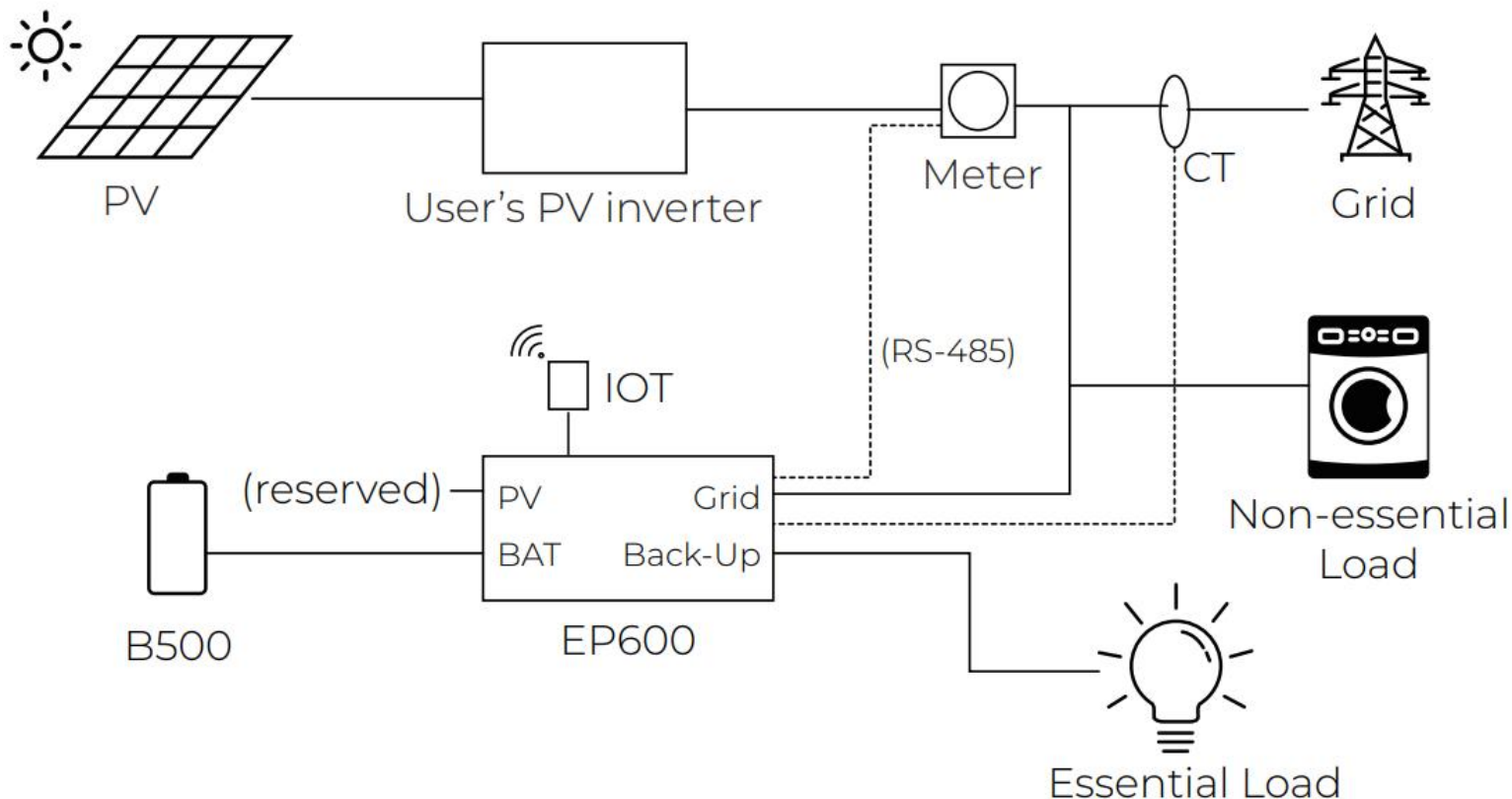
2.7 System solution 1



2.7 System solution 2

AC coupling for Existing Solar System

Option A

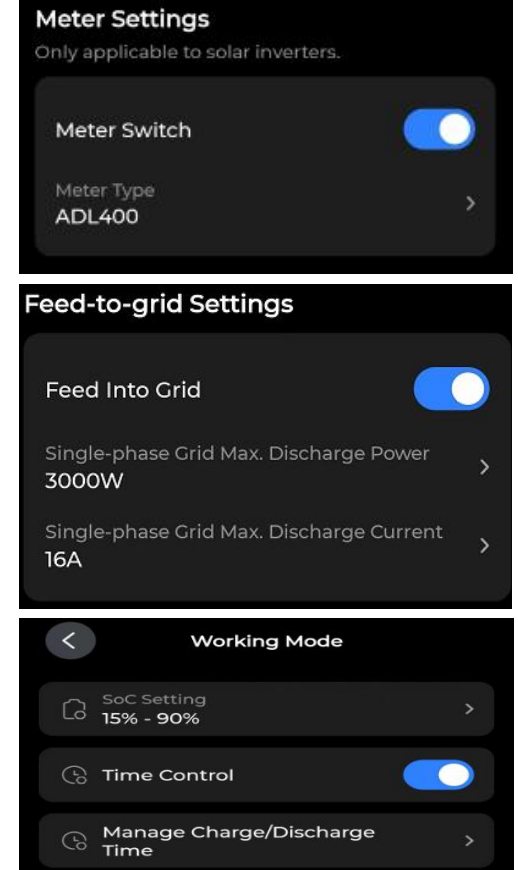
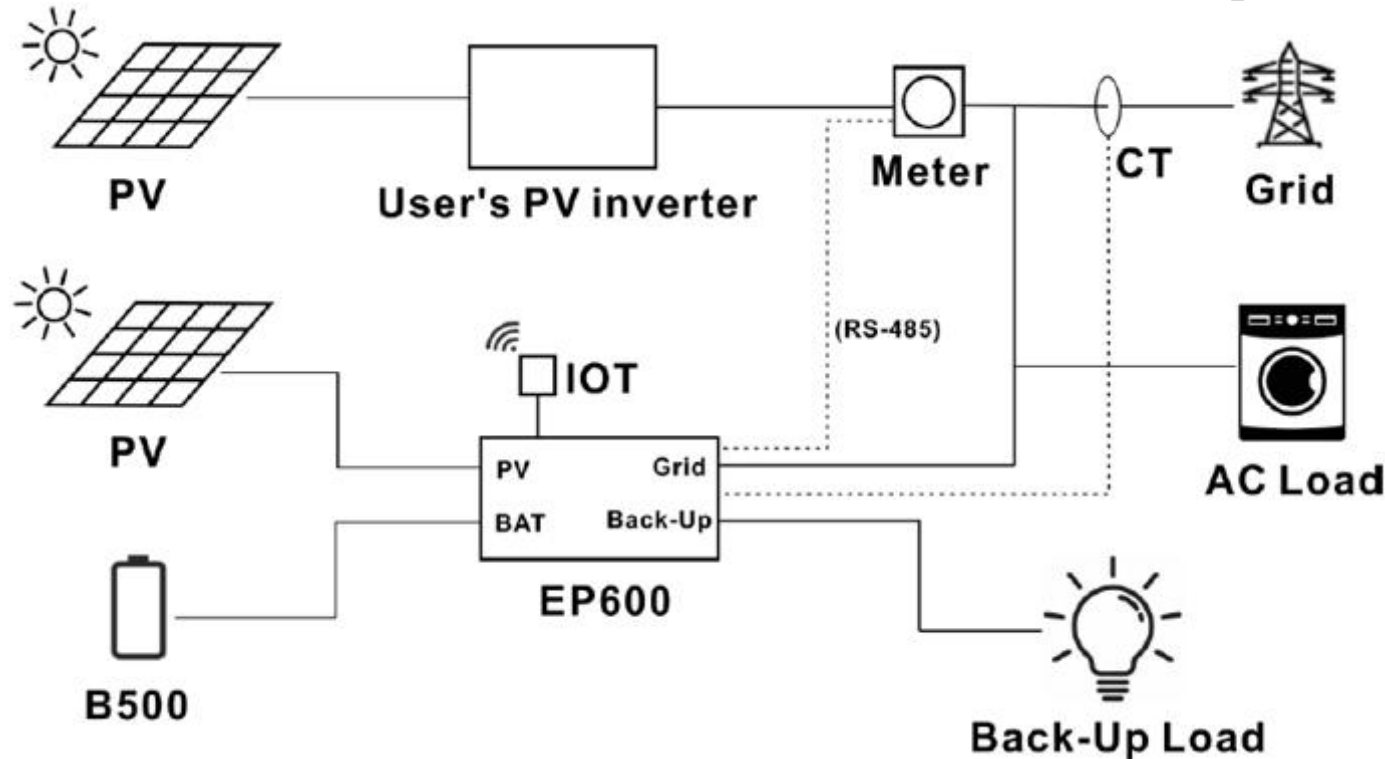


Note:

1. For single-phase household appliances with a power larger than 2000W or three-phase loads with a total power larger than 6000W, such as the Embedded induction cooker and air conditioner, they need to be connected to the grid side. Excess 6kW of power is provided by the power grid to achieve the purpose of reducing electricity costs.
2. On the backup side, the household appliances with a total power larger than 6kW shall not be connected to the BACKUP terminal.
3. Load priority: PV > Battery > grid.
4. PV energy supply priority: load > Battery > grid, PV can't feed into grid if disable feed into grid function.
5. Self-consumption by default, time control is optional. You need enable meter switch in advanced setting if AC coupling.

2.7 System solution 2

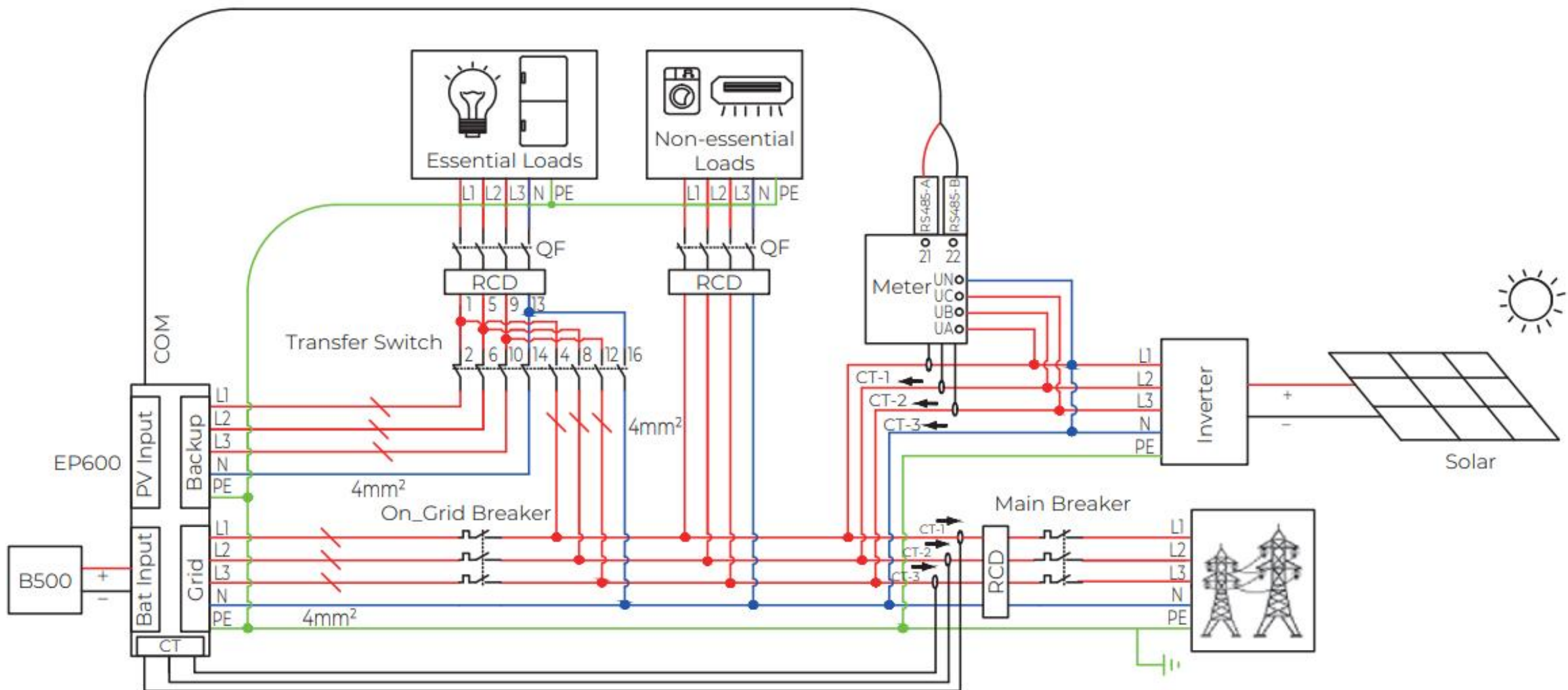
AC couple for Existing Solar System with string inverters Option B



Note:

1. For single-phase household appliances with a power larger than 2000W or three-phase loads with a total power larger than 6000W, such as the Embedded induction cooker and air conditioner ,they need to be connected to the grid side.Excess 6kw of power is provided by the power grid to achieve the purpose of reducing electricity costs.
2. On the backup side ,the household appliances with a total power larger than 6kW shall not be connected to the BACKUP terminal.
- 3.Load priority :PV> Battery > grid.
PV energy supply priority: load>Battery >grid,PV can't feed into grid if disable feed into grid function.
- 4.Self use by default,time control is optional.You need enable meter switch in advanced setting if ac couple.

2.7 System solution 2



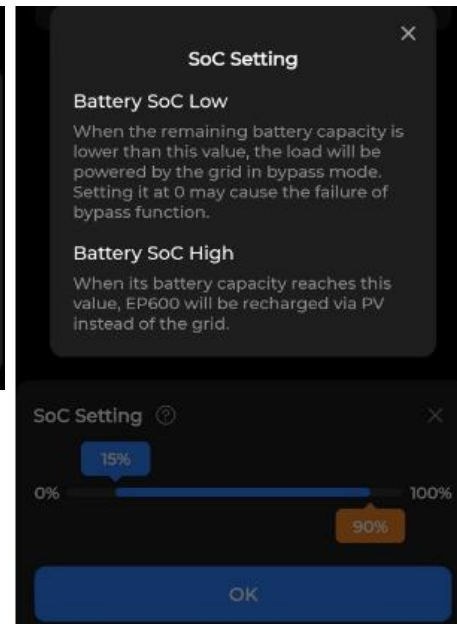
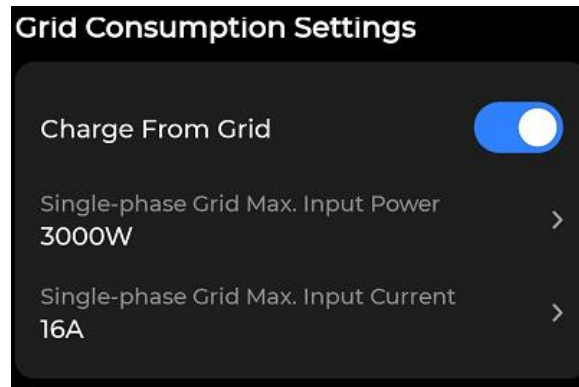
2.7 System solution 3

EP600 BACKUP Solutions

Note: This mode is suitable for areas where the grid is very unstable when the battery is used as a backup power source. If the minimum soc holding is set to 95%, then the battery has been maintained at least the minimum amount of SOC; If the minimum SOC is set to 100%, the battery is always in a full state.

Enable grid charge function before use backup.

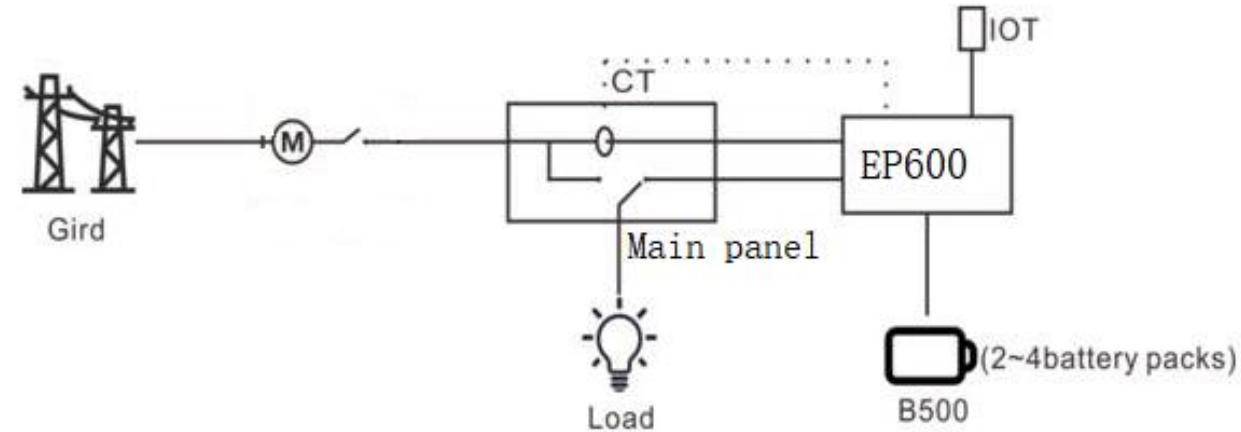
1. Time control is optional.



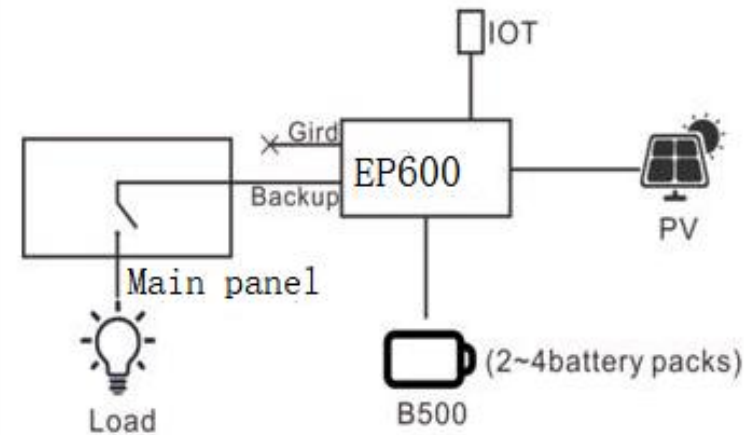
Note:

1. Time control no available if there is no grid.
2. PV energy supply priority: load > Battery, PV can't feed into grid.

Backup power:



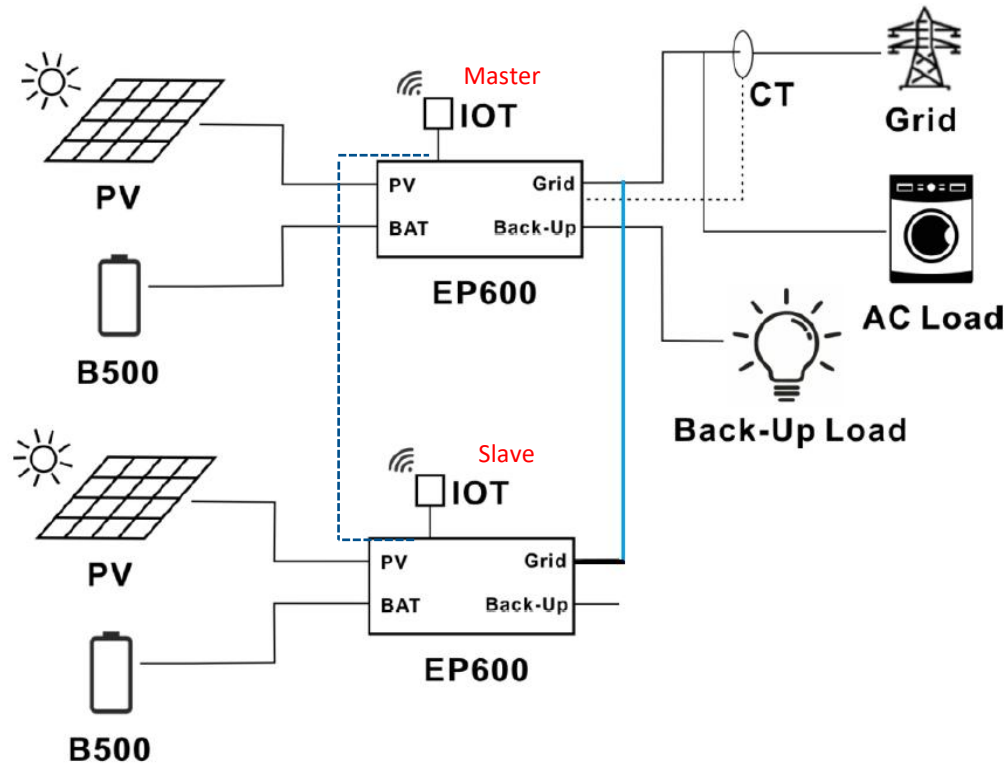
Off-grid use:



3. Electrical connection diagram

Modes 1: DC coupling and Three phase parallel connection to the grid

DC coupling



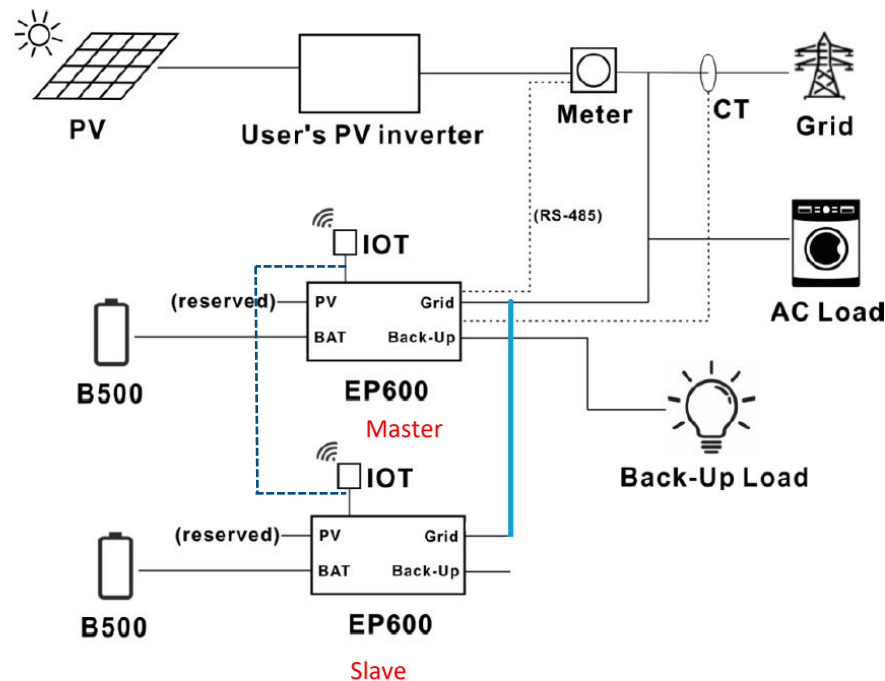
1. CT is just connected to the Master set , it is not necessary to connected to the Slave set.
2. Just connect the grid in parallel , **it is forbidden to connect the Backup in parallel** ,it must be connected separately.
3. It is necessary to connect the two EP600 with the communication wires.
4. The system is controlled by the EP600 Master when connected in parallel.
5. The energy storage system after parallel connection to the grid will output **single-phase 4kW or three-phase 12kW power** to the home application, and the rest will be provided by the grid side.

Note: The energy storage system after parallel connection to the grid will output single-phase 4kW or three-phase 12kW power to the home application, and the rest will be provided by the grid side.

3. Electrical connection diagram

Modes 2: AC coupling and Three phase parallel connection to the grid

AC coupling

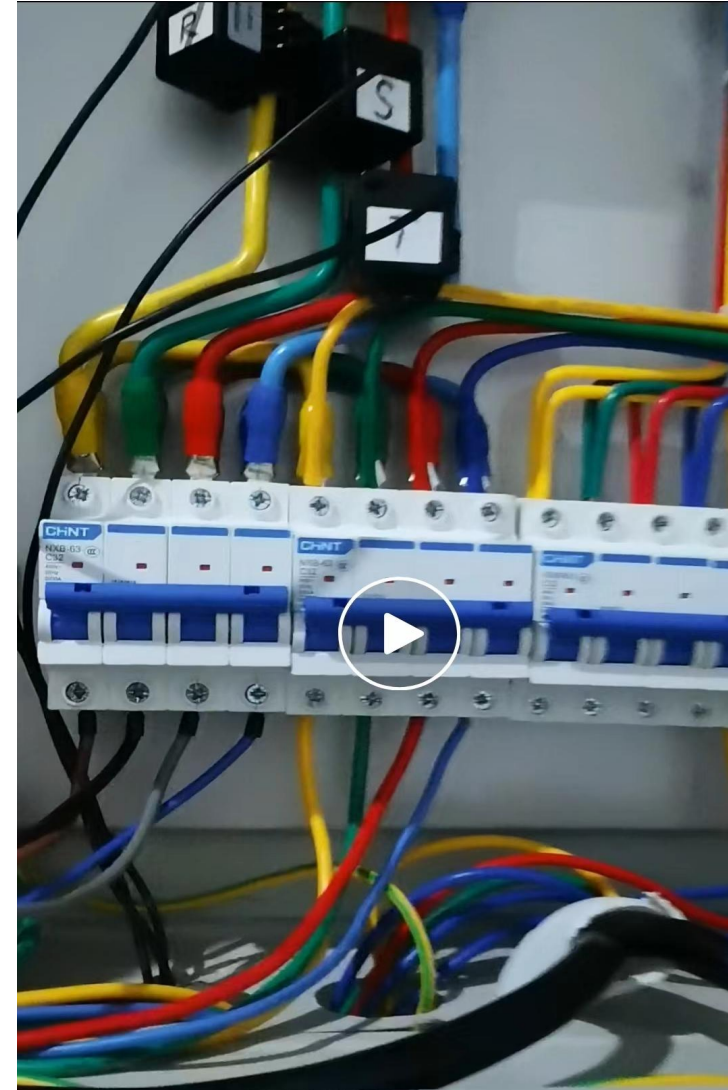
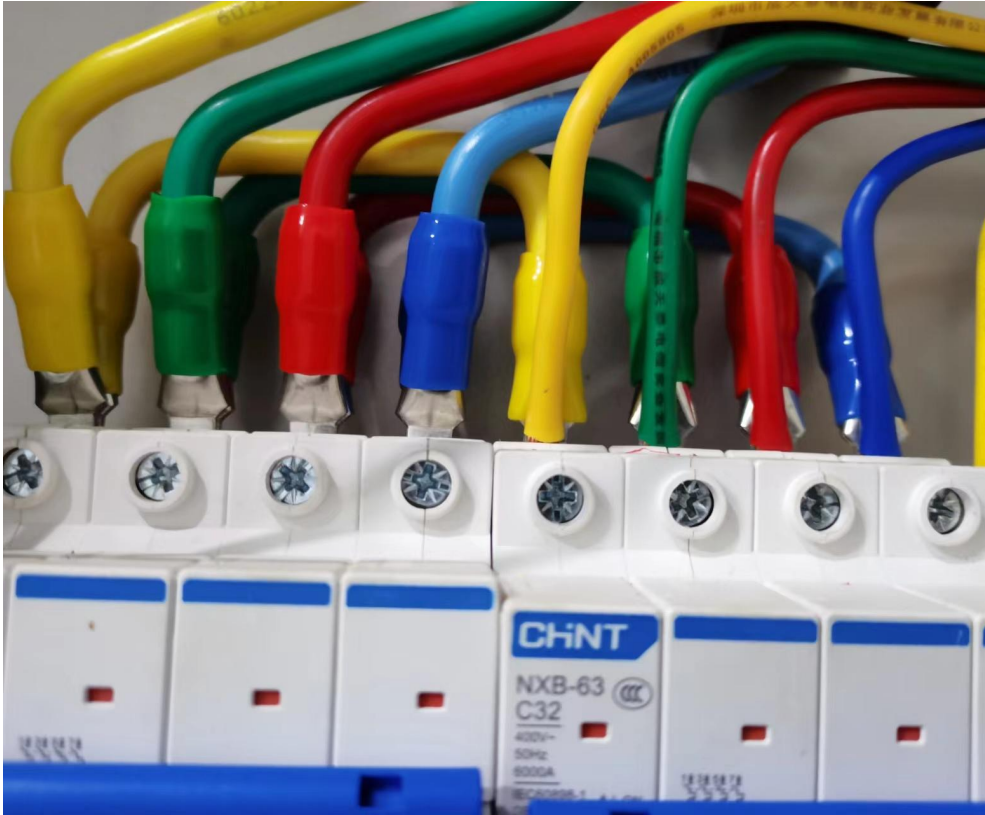


1. CT and Meter are just connected to the Master set, it is not necessary to connect to the Slave set.
2. Just connect the grid in parallel, it is forbidden to connect the Backup in parallel, it must be connected separately.
3. It is necessary to connect the two EP600 with the communication wires.
4. The system is controlled by the EP600 Master when connected in parallel.
5. The energy storage system after parallel connection to the grid will output **single-phase 4kW or three-phase 12kW power** to the home application, and the rest will be provided by the grid side.

Note: The energy storage system after parallel connection to the grid will output single-phase 4kW or three-phase 12kW power to the home application, and the rest will be provided by the grid side.

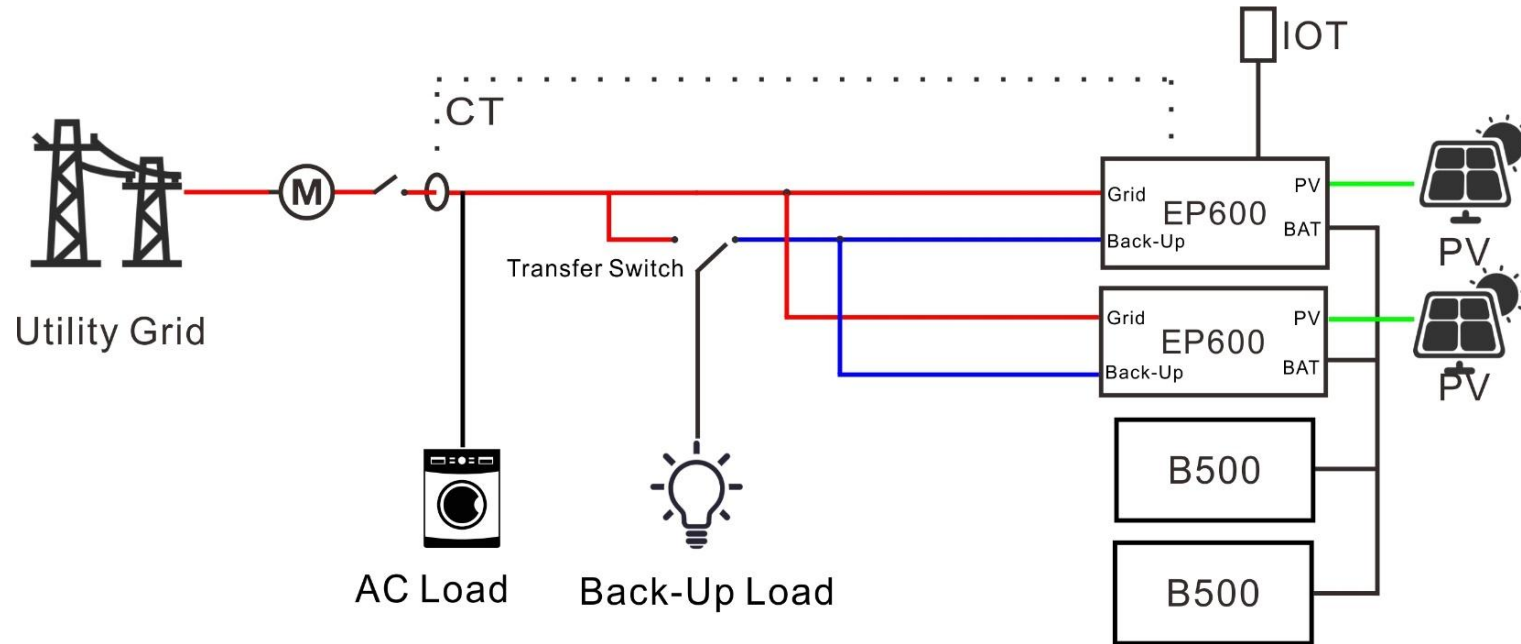
3. Electrical connection diagram

Three phase parallel connection to the grid



3. Electrical connection diagram

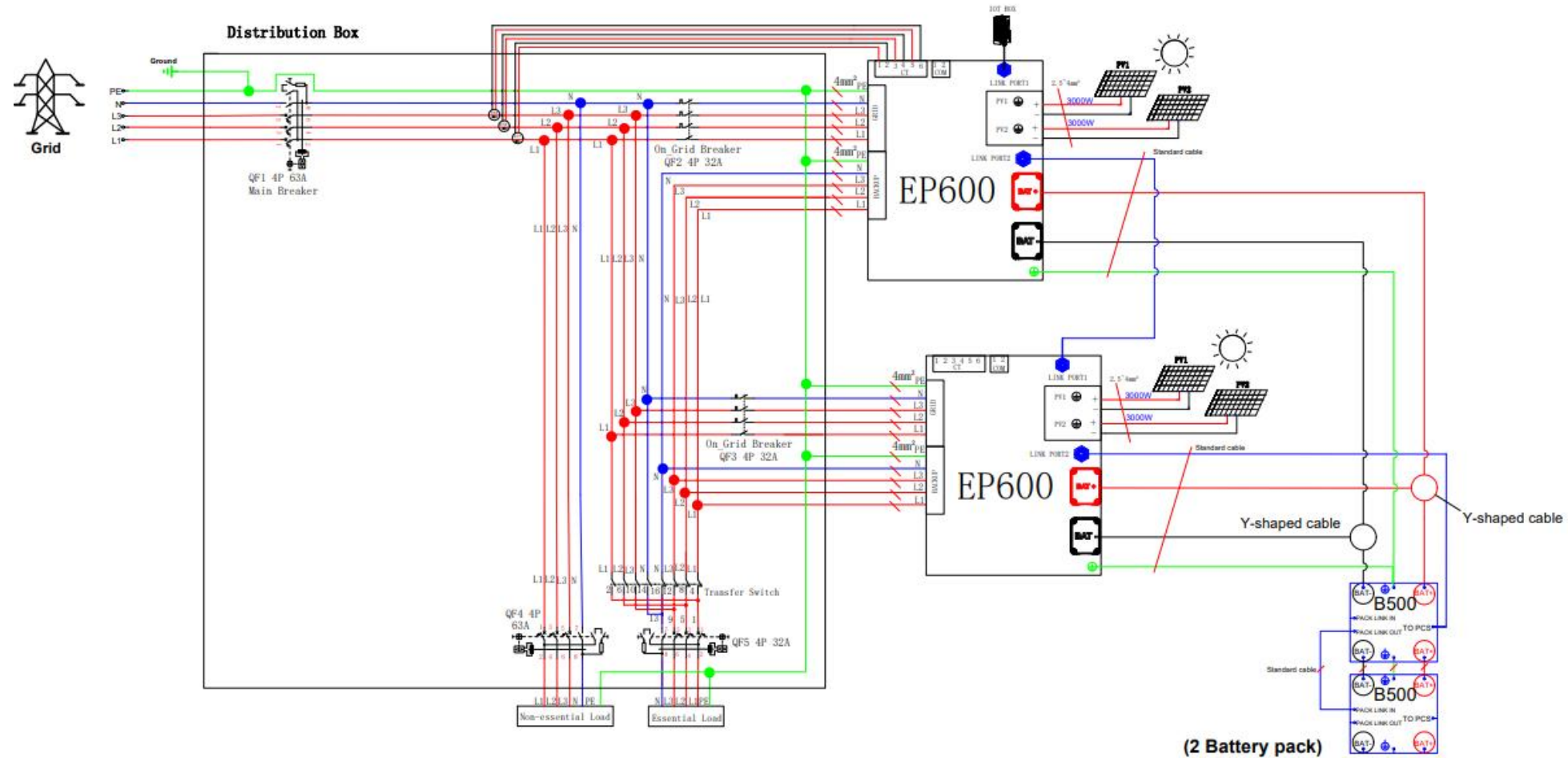
Modes 3: DC coupling and Three phase parallel connection to the grid and backup



1. CT is just connected to the Master set , it is not necessary to connected to the Slave set.
2. Just connect the grid & Backup in parallel.
3. It is necessary to connect the two EP600 with the communication wires.
4. The energy storage system after parallel connection to the **grid & Backup** will output **single-phase 4kW or Max. three-phase 12kW** power to the home application, and the rest will be provided by the grid side. The single phase load greater than 4000W shall not be connected to the BACKUP terminal.

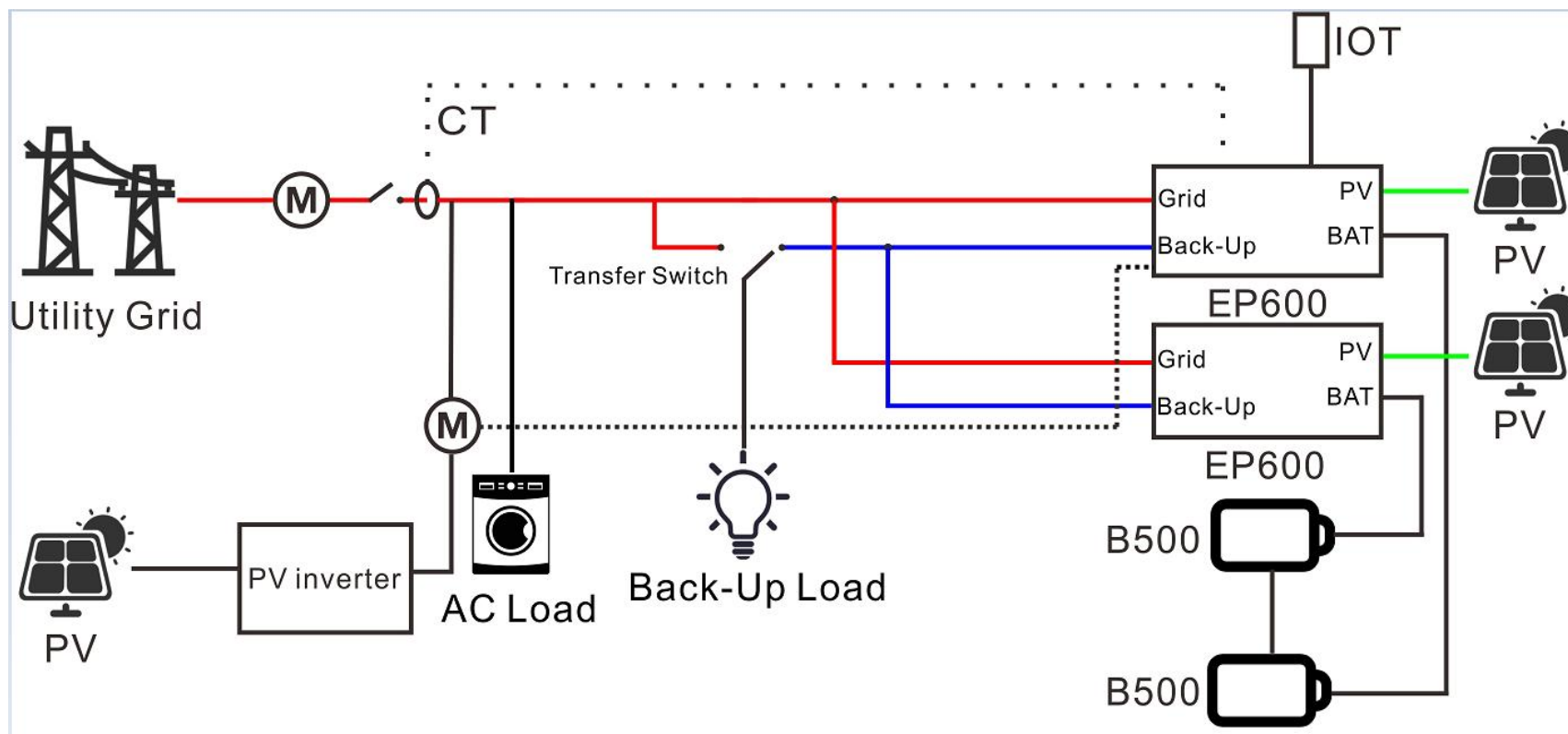
6. Electrical connection diagram

Two sets in parallel , DC coupling



2.7 System solution 5

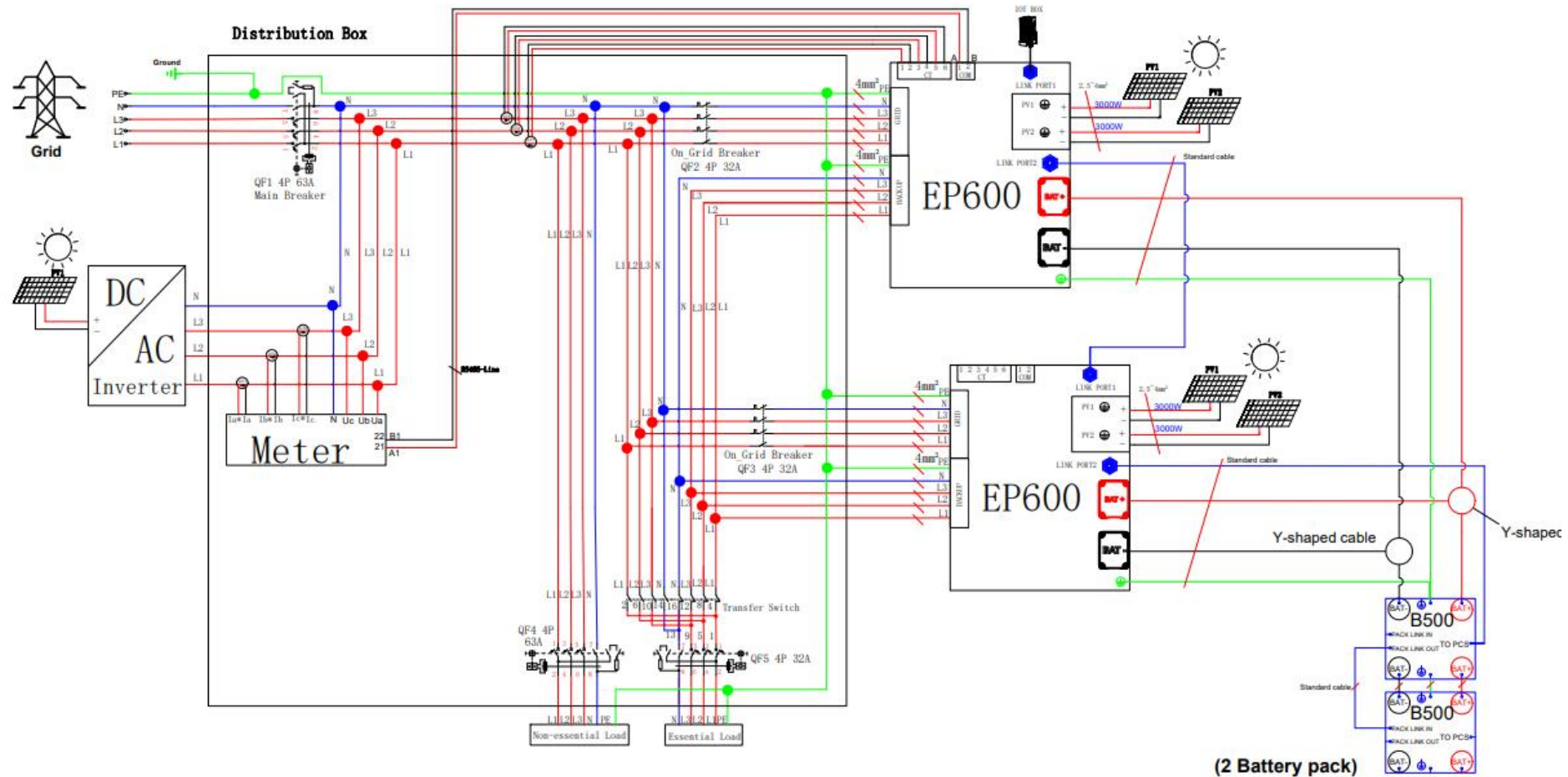
AC Coupled for EP600 Backup Parallel Solutions



1. CT is just connected to the Master set , it is not necessary to connected to the Slave set.
2. Just connect the grid & Backup in parallel.
3. It is necessary to connect the two EP600 with the communication wires.
4. The energy storage system after parallel connection to the **grid & Backup** will output **single-phase 4kW or Max. three-phase 12kW** power to the home application, and the rest will be provided by the grid side. The single phase load greater than 4000W shall not be connected to the BACKUP terminal.

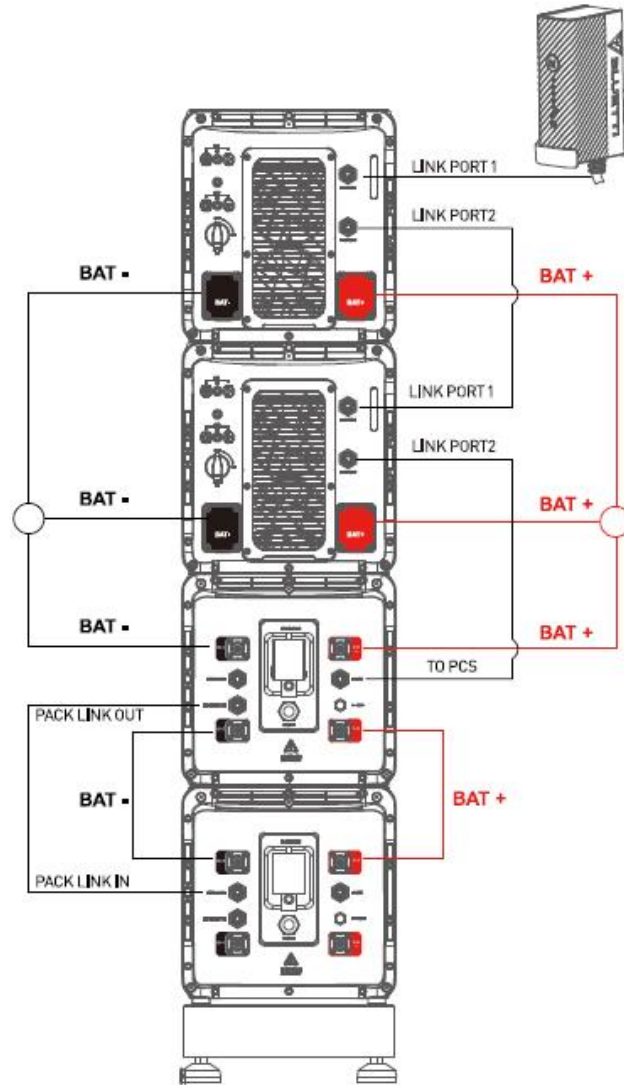
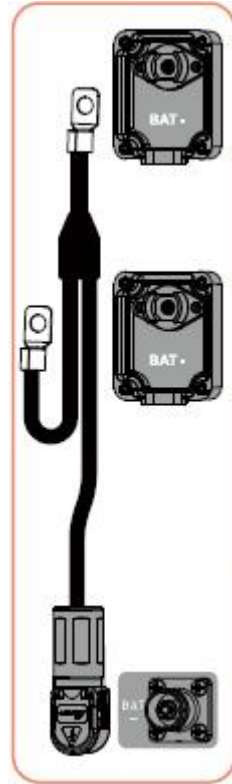
6. Electrical connection diagram

Two sets in parallel , AC coupling



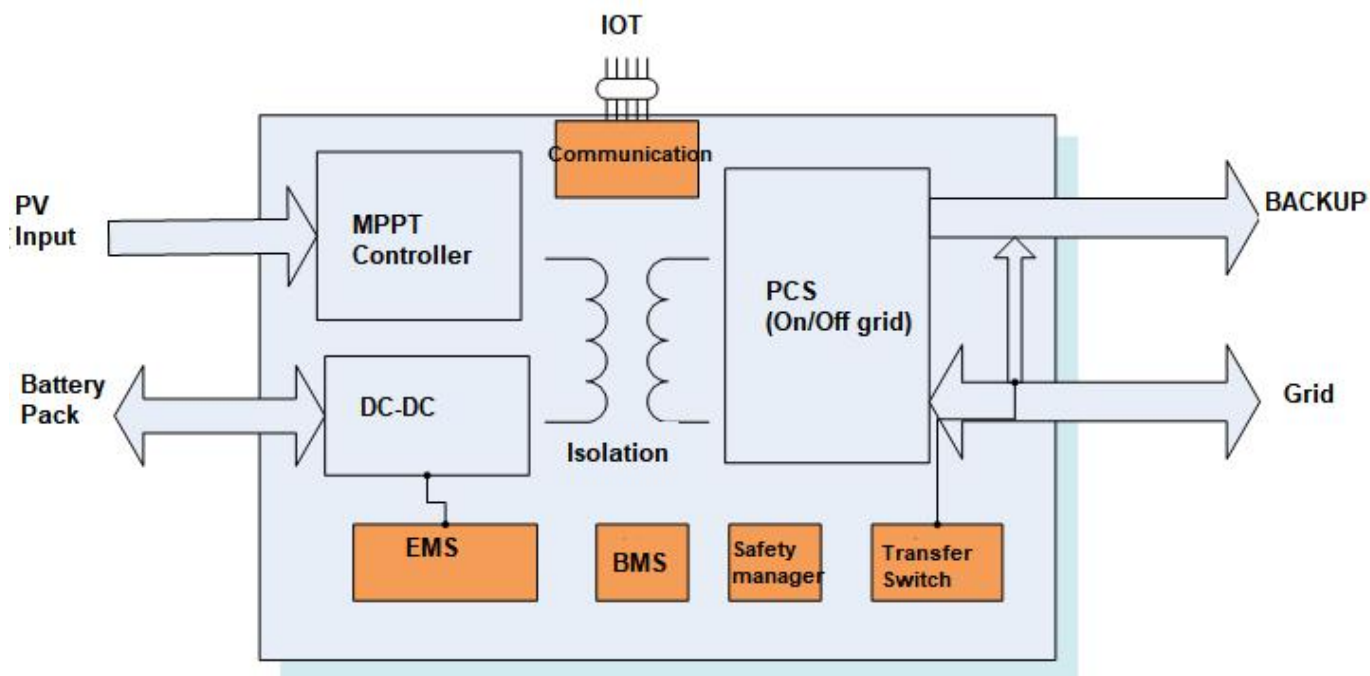
2.7 System solution 5

EP600 Backup Parallel connection



5、 Operation principle

PV energy storage inverter: integrated parallel and off-grid inverter, high-frequency isolation transformer, MPPT controller, battery bidirectional DC-DC, EMS management system, data monitoring interface and other functions are the core components of the whole system and the technical threshold of the whole system is the highest.



Common nouns of the system:

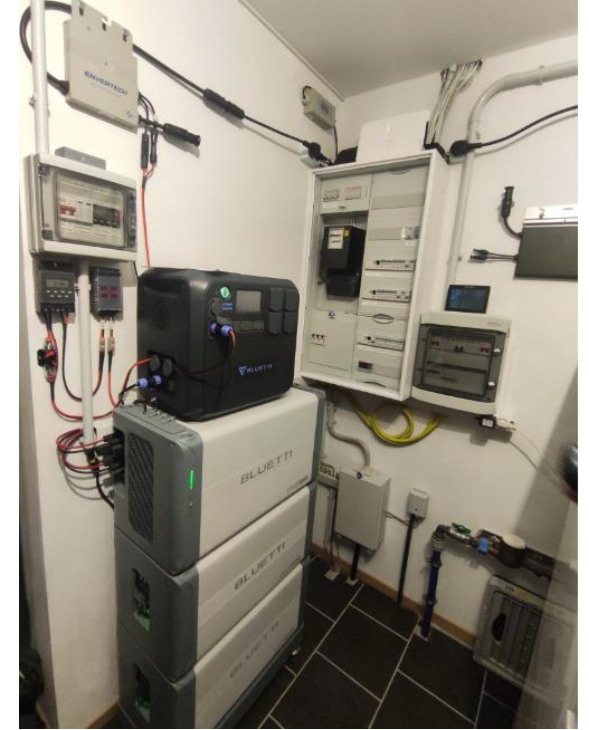
- 1 •PV energy storage inverter
- 2 •PCS: power conversion system (inverter)
- 3 •BMS: battery management system
- 4 •EMS: energy management system
- 5 •MPPT controller
- 6 •Bidirectional DC-DC
- 7 •Power frequency isolation , high frequency isolation

Safe and reliable: High frequency isolation guarantees the safety of the system.

6、 Certification

No.	items	Certification
1	EP600 safety	IEC62109-1,IEC62109-2,EN62109-1,EN62109-2,Rohs 2.0,CE,IP65
2	EP760 on grid certification	VDE-AR-N4105,VDE V 0124-100
3	EMC/EMI	EN/IEC 61000-6-1,EN/IEC 61000-6-3
4	B500 Batteries Security Certification	UL9540, IEC62619, UL1973, UL9540A, UN38.3, FCC Part 15 Class B,IP65

7、 Application examples



7、 Application examples



Global Warehousing and Distribution

Rapid delivery-overseas warehouse in
US , Australia , HongKong , Germany UK
complete certificates-exported to more than 70 countries and regions





BLUETTI



◆ More details as below:

Online store: <https://www.bluettipower.com/>

BLUETTI Official: <https://www.youtube.com/c/BLUETTIOfficial>

BLUETTI Support: https://www.youtube.com/channel/UCe2BwE61Gi-JERc-q1POp_w

Thanks for watching

202307013