



BLUETTI

Whole Home Energy Storage System EP2000

Presenter: Sandy

20240725



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System introduction

02

High lights

03

Flexible ESS Solutions.

04

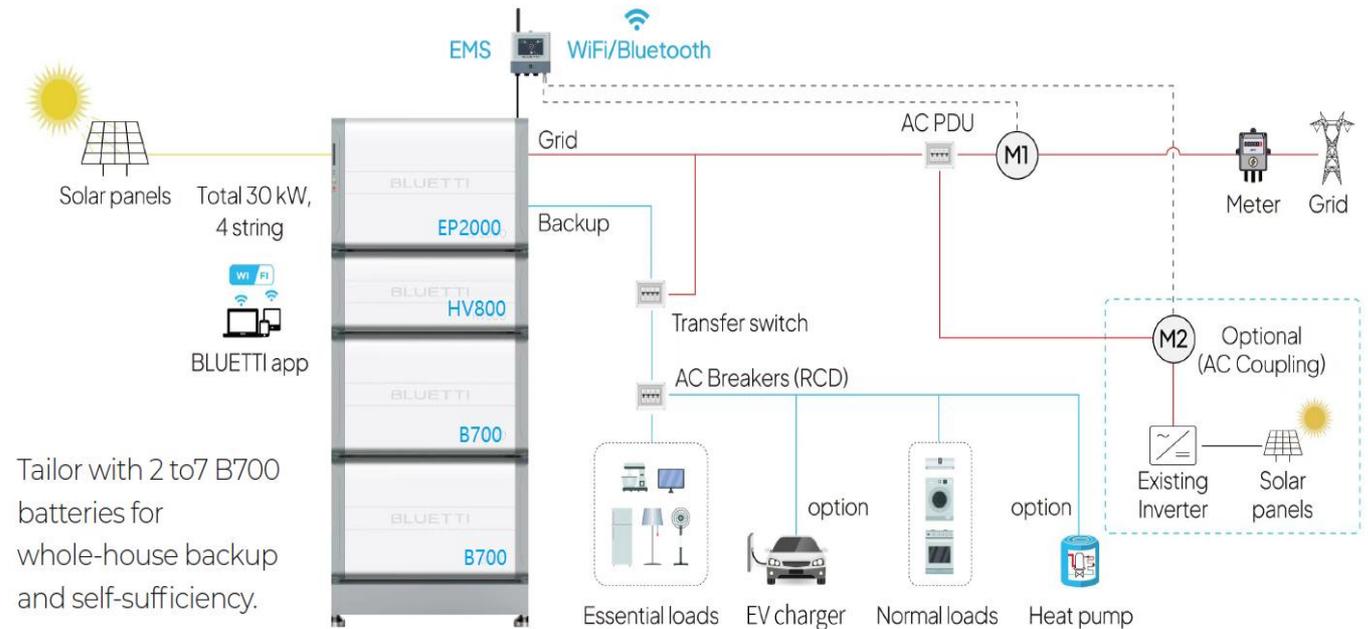
Intelligent app Remote Control

1. System introduction

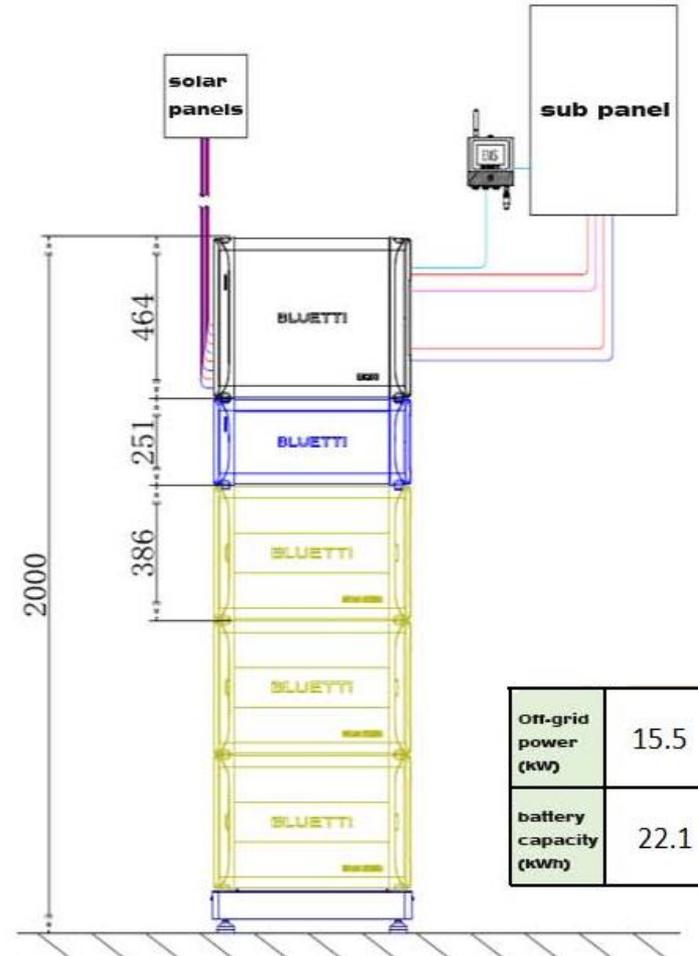
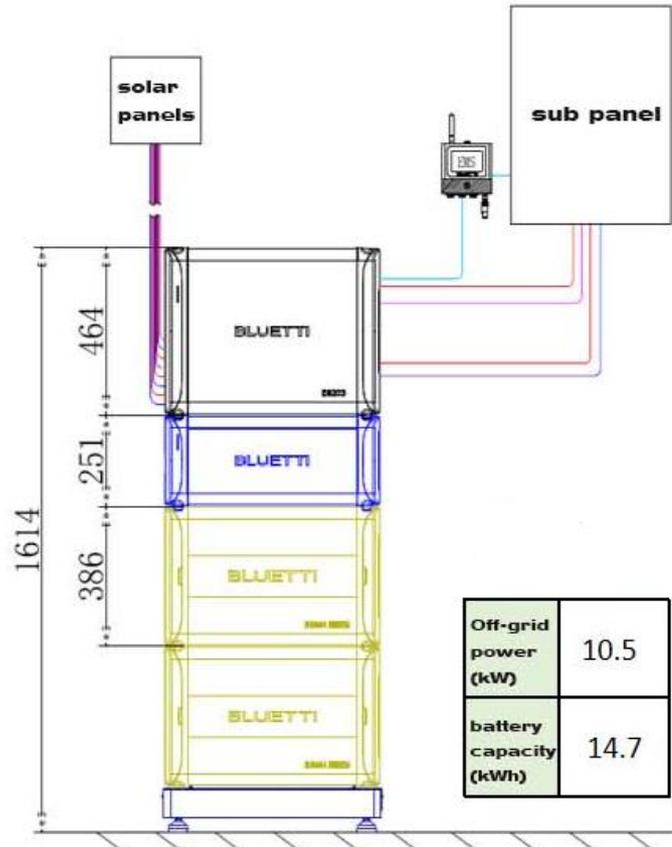
- ◆ Combining solar, storage and EMS, EP2000 ESS offers an all-in-one Solar Energy System for Home and small business that helps you lower utility bills and reliance on the grid.
- ◆ Great power make it is easy to charge the EV and to energize the heat pump.
- ◆ it can backup for whole home , no longer need to worry about household energy shortages or unstable electricity.
- ◆ The system is very easy to install, and it can be monitored via an app, offering simple operation and high cost-effectiveness.

EP2000 residential energy storage system includes:

- Hybrid inverter : EP2000
(30kW Solar PV MPPT Controller +20kW PCS)
- Energy storage batteries system: B5000
(including High voltage box HV800+ Batteries B700)
- EMS
- Smart APP

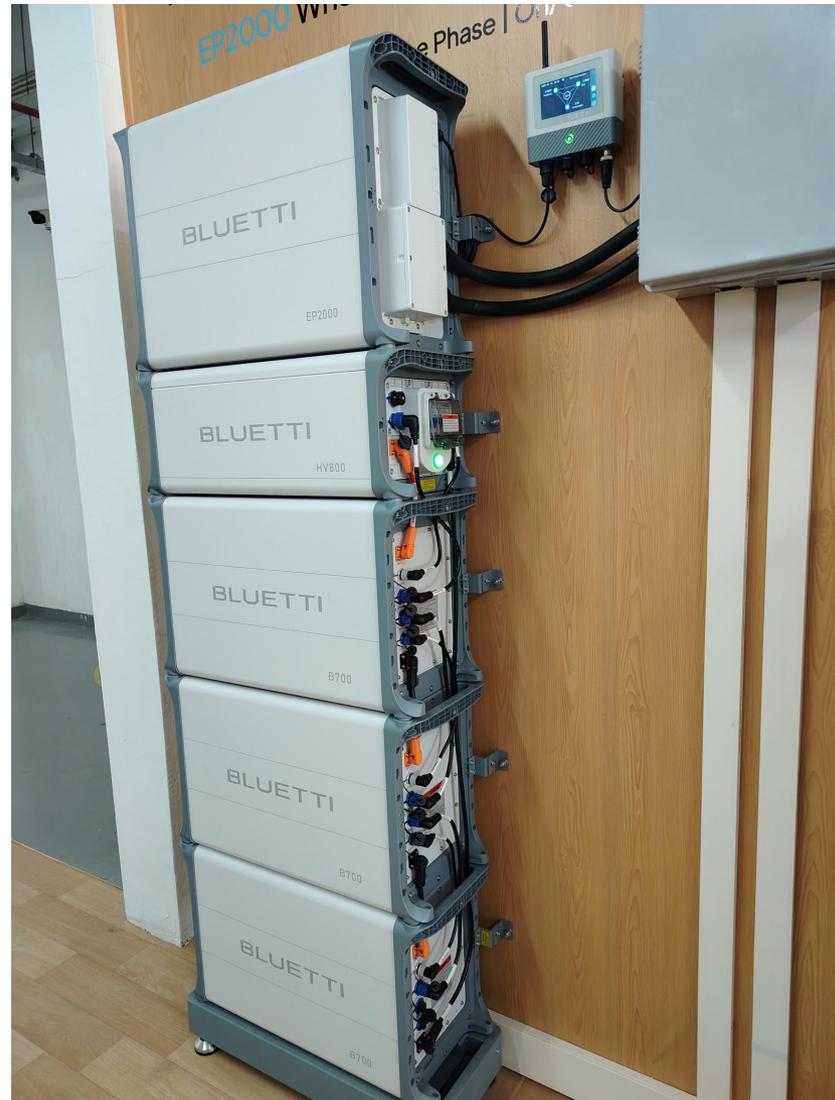


1. System introduction

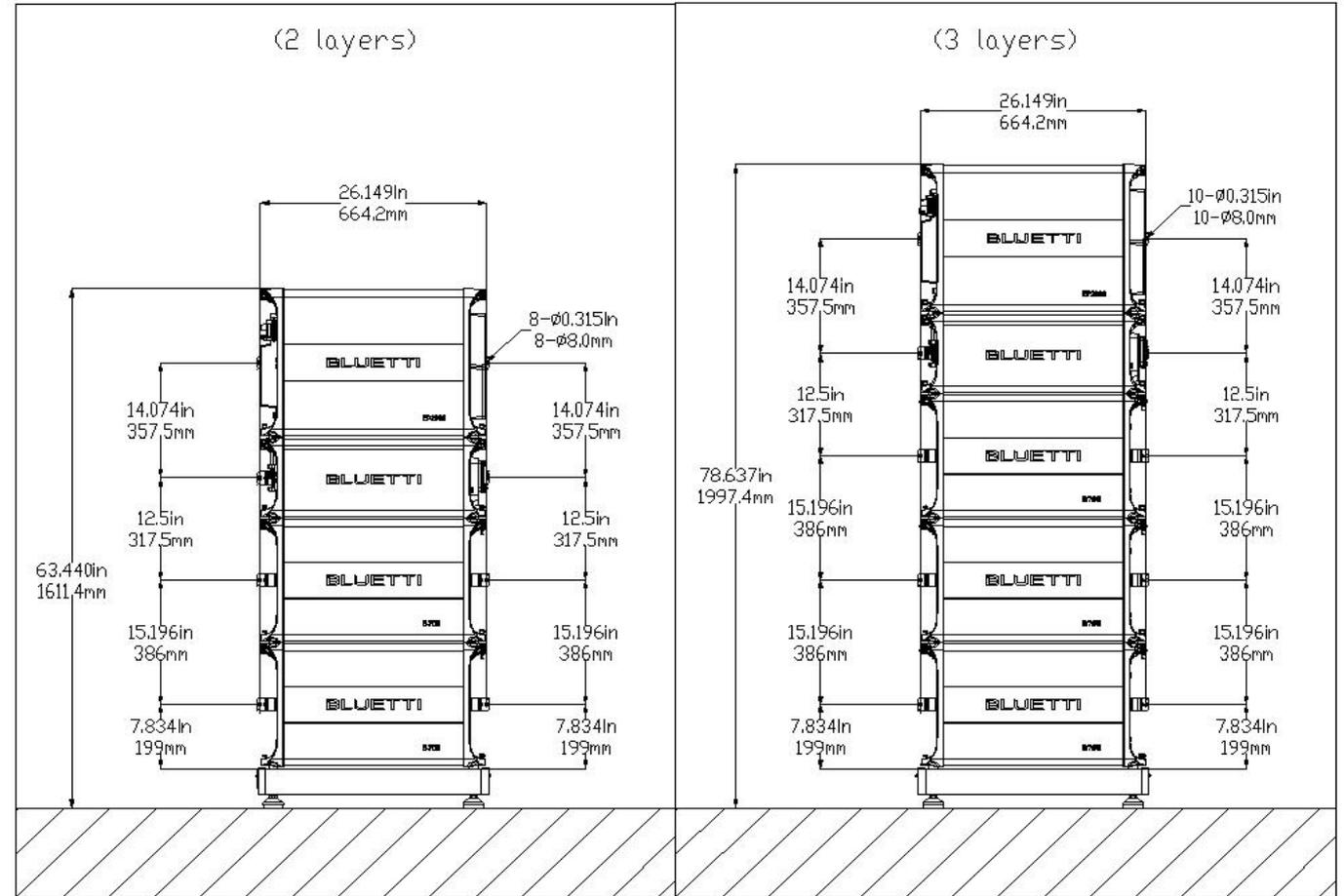
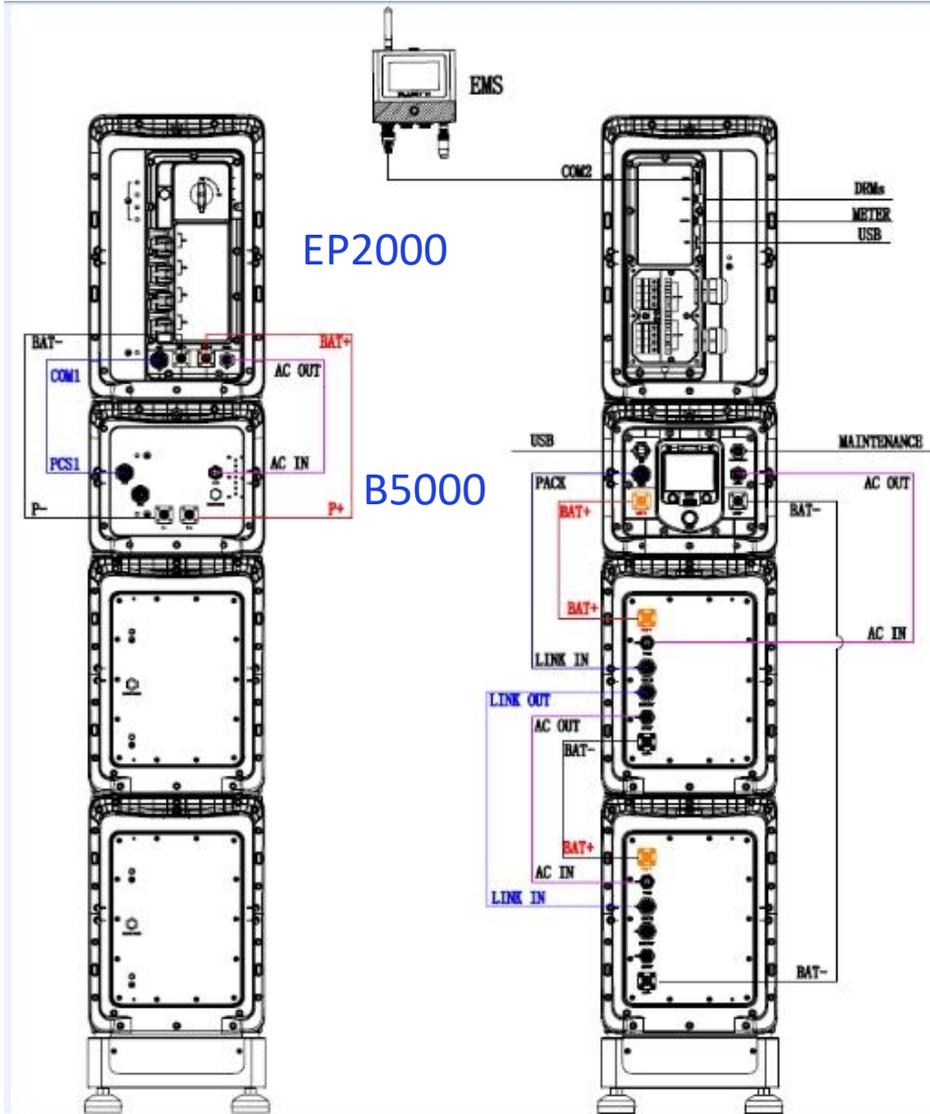


PCS	Inverter power: 20kW PV power: 30kW Battery current: 60A Weight: 58kg
PACK	Battery capacity: 7.37kWh Weight: 71kg

◆ 1. System introduction



1. System introduction



1. System introduction

System Components	Description	Pictures
EP2000 Energy Storage Inverter	The grid-tied inverter integrates photovoltaic input and grid-connected charging/discharging functions	
B700 Battery Pack	providing drive power for the energy storage system.	
HV800 High Voltage Box	Continuous Discharge Current: 50A Continuous Charge Current: 36A	
EMS Control Box	View the operational information of the energy storage system	
BLUETTI App	Enable close-range communication (Bluetooth) or remote communication (WIFI) with the energy storage system	
Meter	Achieve load matching and other EMS functionalities	
Manual Transfer Switch	transferring for backup or maintaining when some issues happened on the EP2000	

1. System introduction

Product Model	Specifications		
EP2000 PCS	Backup Interface	Off-grid Rated Output Power	20kW
		Off-grid Output Voltage	230/400Vac
		Inverter Efficiency	98.0% Peak
	Grid Interface	Rated Output Power	20kW
		Rated Voltage	230/400Vac
		Grid-tied and Off-grid Switching Time	< 10ms
	PV Input	Number of MPPT Channels	2
		Number of PV Input Channels	4
		Maximum PV Input Current	15A*4
		Maximum Input Power	30kW
		MPPT Voltage Range/ Rated	160V~850V/ 700V
		Recommend Voc each solar array	240V-1000V
		Full Load Voltage Range	500V~800V
Maximum Input Voltage		1000V	

◆ 1. System introduction

Product Model	Specifications		
EP2000 PCS	Others	Battery Terminal Voltage Range	180V~800V
		Maximum Charge/Discharge Current at Battery Terminal	60A
		Grid Feed-in Function	Yes
		Noise Level	<50dB
		Self-consumption (At Night)	<15 W
		Weight	60 kg/132.3 lb
		Dimensions (LWH)	670 mm × 280 mm × 460 mm /26.38 in × 11.02 in × 18.11 in
		Operating Ambient Temperature	-20° C to 60° C/-4° F to 140° F
		Warranty (Whole system)	10 years

◆ 1. System introduction

Product Model	Specifications	
B700 Module Specifications	Material System	LFP
	Rated Capacity of Cell	72Ah
	Battery Voltage	102.4V (3.2V×32)
	Recommended Discharge Current	36A
	Rated Capacity	7372.8Wh
HV800 Specifications	High Voltage Box Voltage	130Vdc-800Vdc
	Cooling Method	Natural Cooling
	Maximum Series/Parallel Quantity	7 series, not supported for parallel
	Protection Level	IP65

1. System introduction



EP2000 system

	EP2000+B5000-2S	EP2000+B5000-3S	EP2000+B5000-4S	EP2000+B5000-5S	EP2000+B5000-6S	EP2000+B5000-7S
No. of EP2000 Inverter	1	1	1	1	1	1
No. of EMS Controller (SEC-G1)	1	1	1	1	1	1
No. of HV800 Battery Controller	1	1	1	1	1	1
No. of Accesory sets	1 (standard)	1 (standard)	1*	1*	1*	1*
No. of B700 Battery Pack	2	3	4	5	6	7
Total Capacity	14,7kWh	22,1kWh	29,49kWh	36,86kWh	44,2kWh	51,6kWh
Max. Output Power (no PV)	10,5kW	15,5kW	20kW	20kW	20kW	20kW
Max solar input power:	30kW	30kW	30kW	30kW	30kW	30kW
Minimum Installation Dimention(L×W×H):	1865mm× 1000 mm× 1620mm	1865mm× 1000 mm× 1620mm	3330mm× 1000 mm× 1620mm	3330mm× 1000 mm× 1620mm	3330mm× 1000 mm× 2010mm	3330mm× 1000 mm× 2010mm

* Those Accessories need contact BLUETTI

1. System introduction

EP2000 system :2 sets

	EP2000 system :2 sets					
No. of EP2000 Inverter	2					
No. of EMS Controller (SEC-G1)	1					
No. of HV800 Battery Controller	2					
No. of B700 Battery Pack	4	6	8	10	12	14
Total Capacity	29,49kWh	44,24kWh	58,98kWh	73,73kWh	88,47kWh	103,22kWh
Max. Output Power (no PV)	21kW	31kW	40kW			
Max solar input power:	60kW					

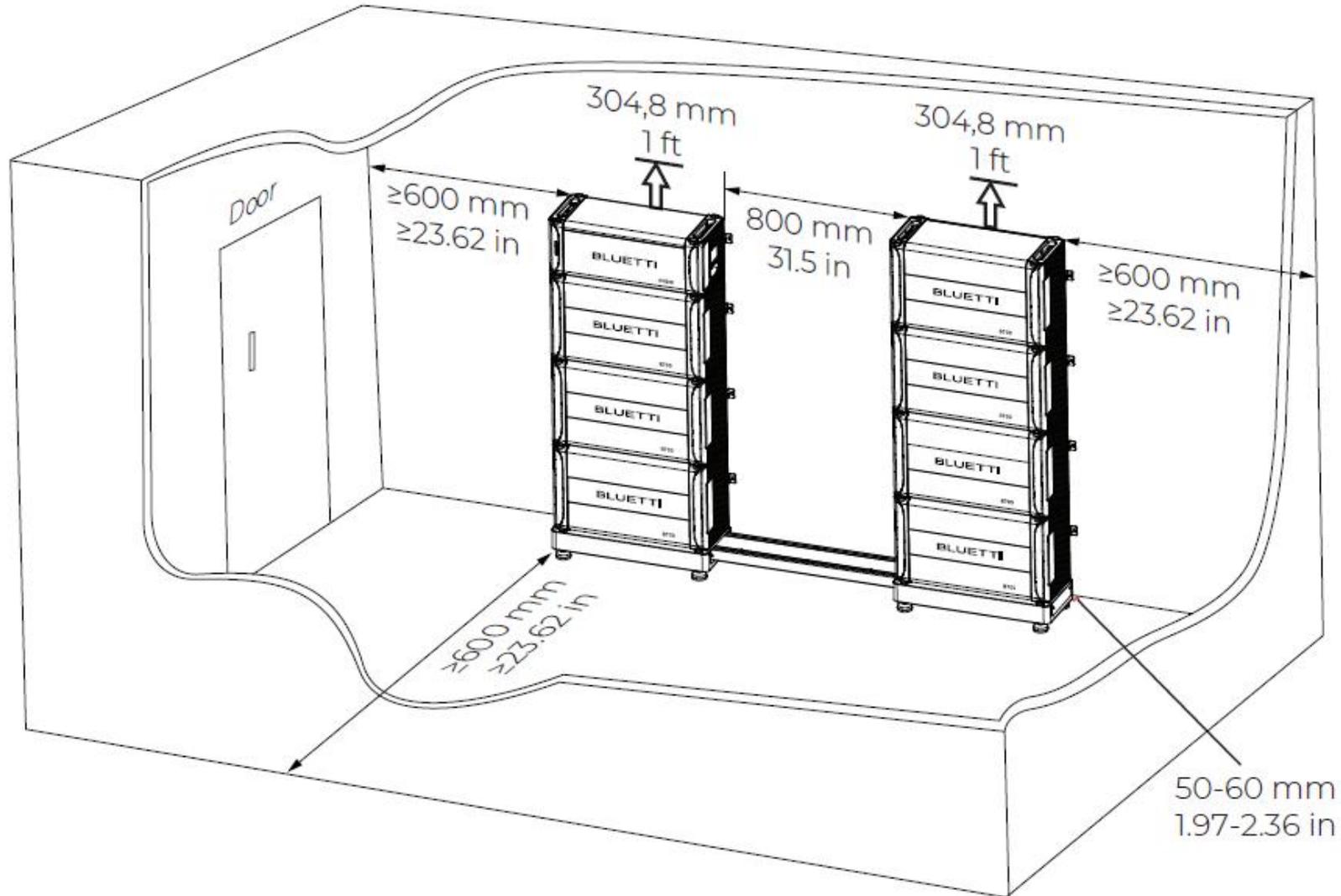
1. System introduction

EP2000 system :3 sets

	EP2000 system :3 sets					
No. of EP2000 Inverter	3					
No. of EMS Controller (SEC-G1)	1					
No. of HV800 Battery Controller	3					
No. of B700 Battery Pack	6	9	12	15	18	21
Total Capacity	44,24kWh	66,36kWh	88,47kWh	110,59kWh	88,47kWh	154,83kWh
Max. Output Power (no PV)	31,5kW	46,5kW	60kW			
Max solar input power:	90kW					

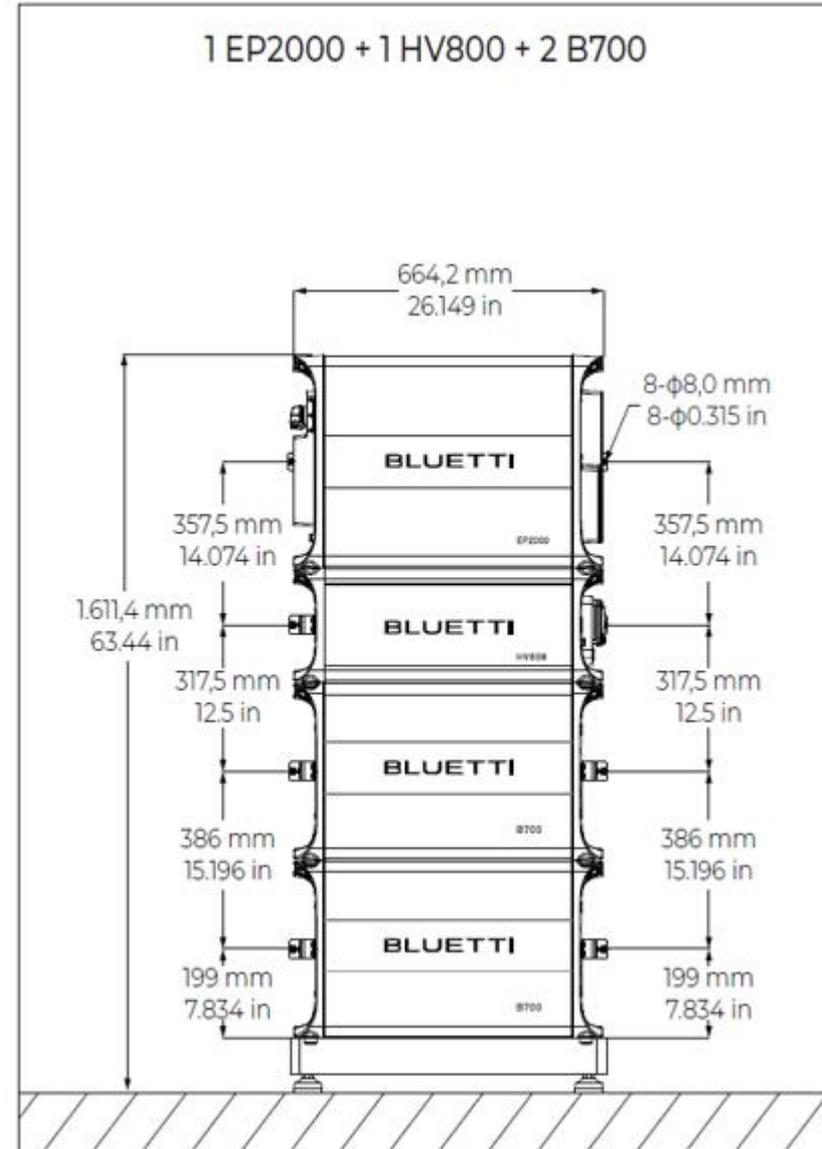
◆ 1. System introduction

EP2000 system installation space



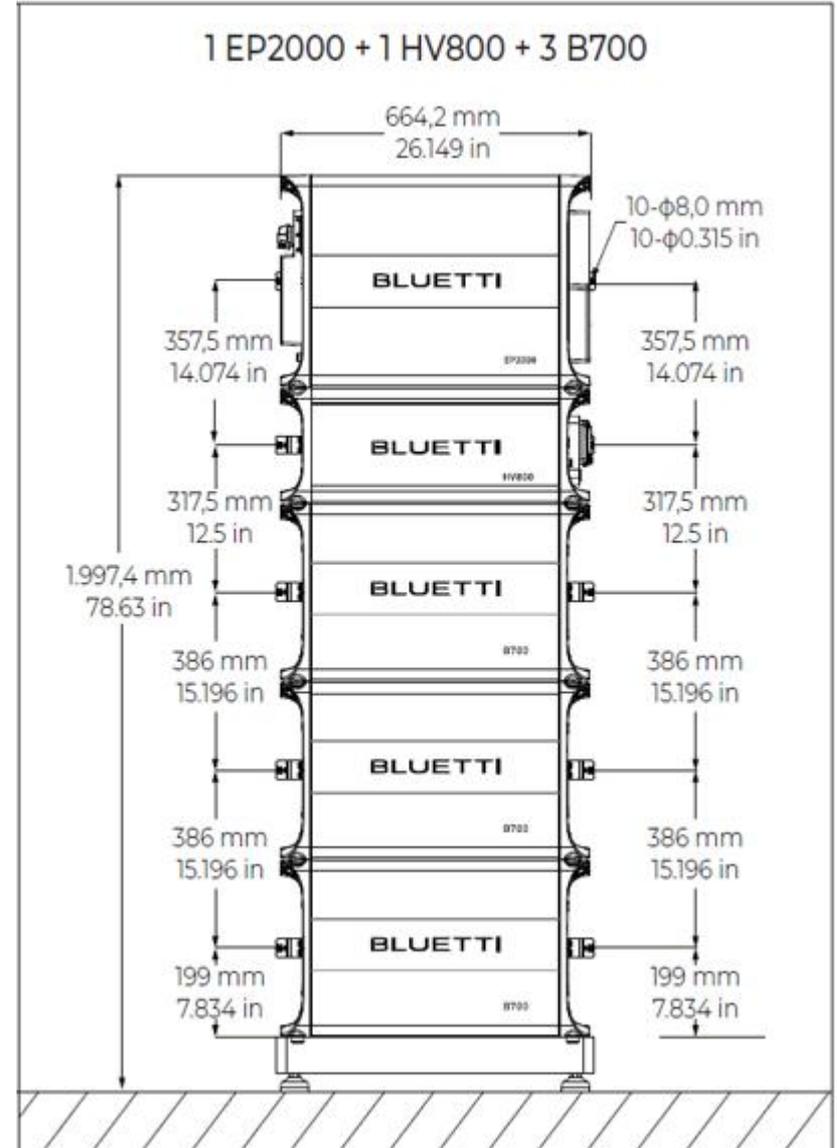
◆ 1. System introduction

EP2000+B5000-2S



1. System introduction

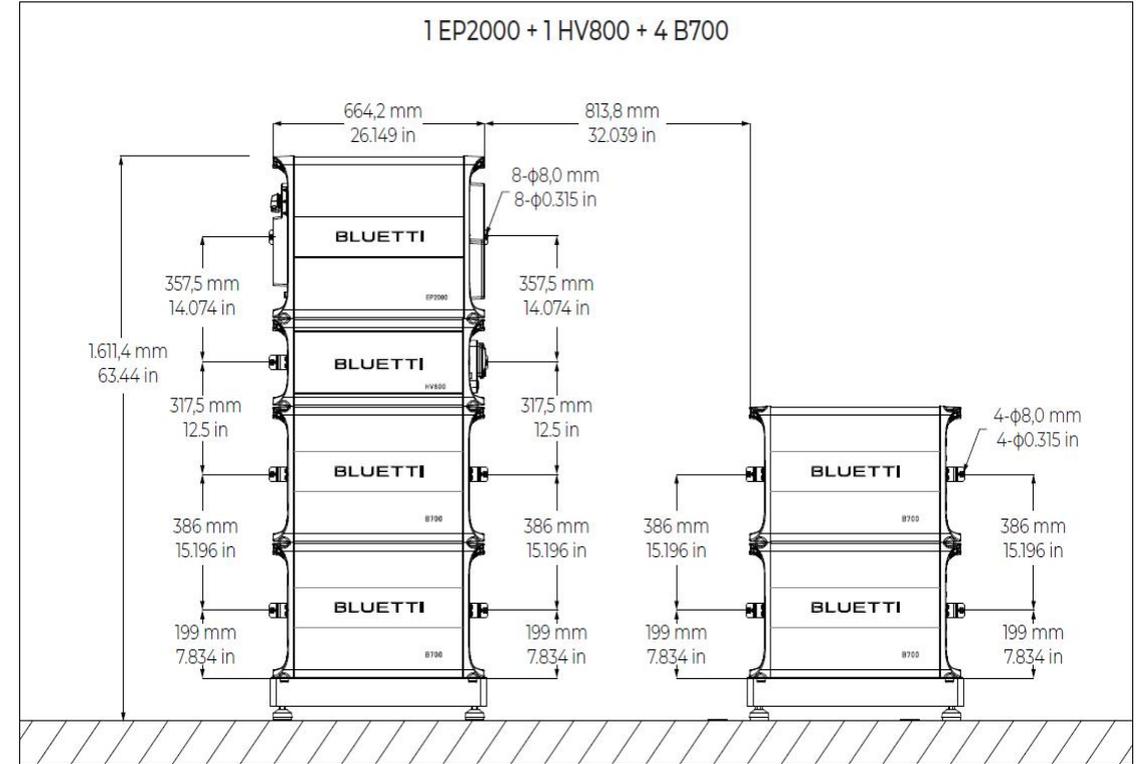
EP2000+B5000-3S



1. System introduction

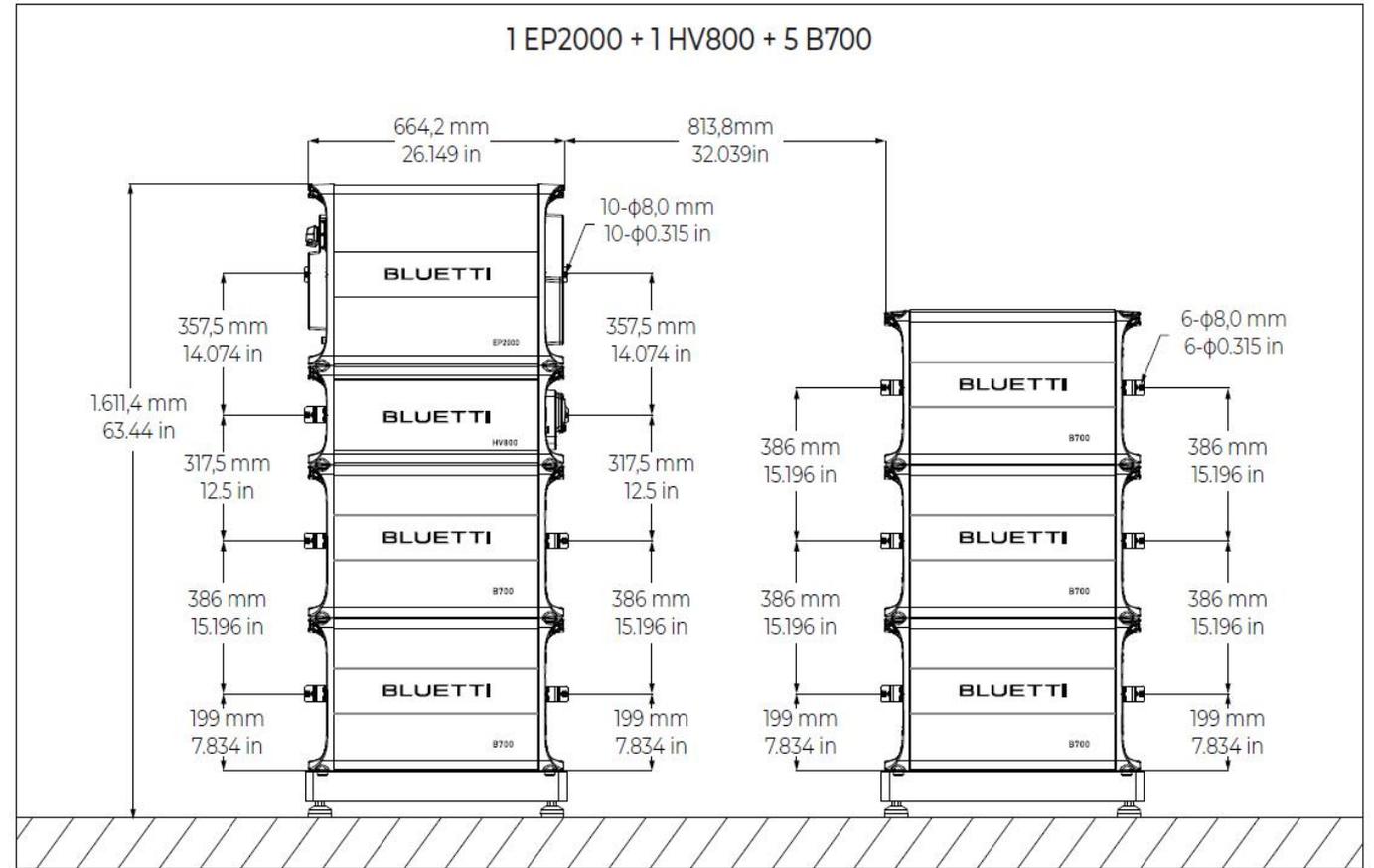


EP2000+B5000-4S



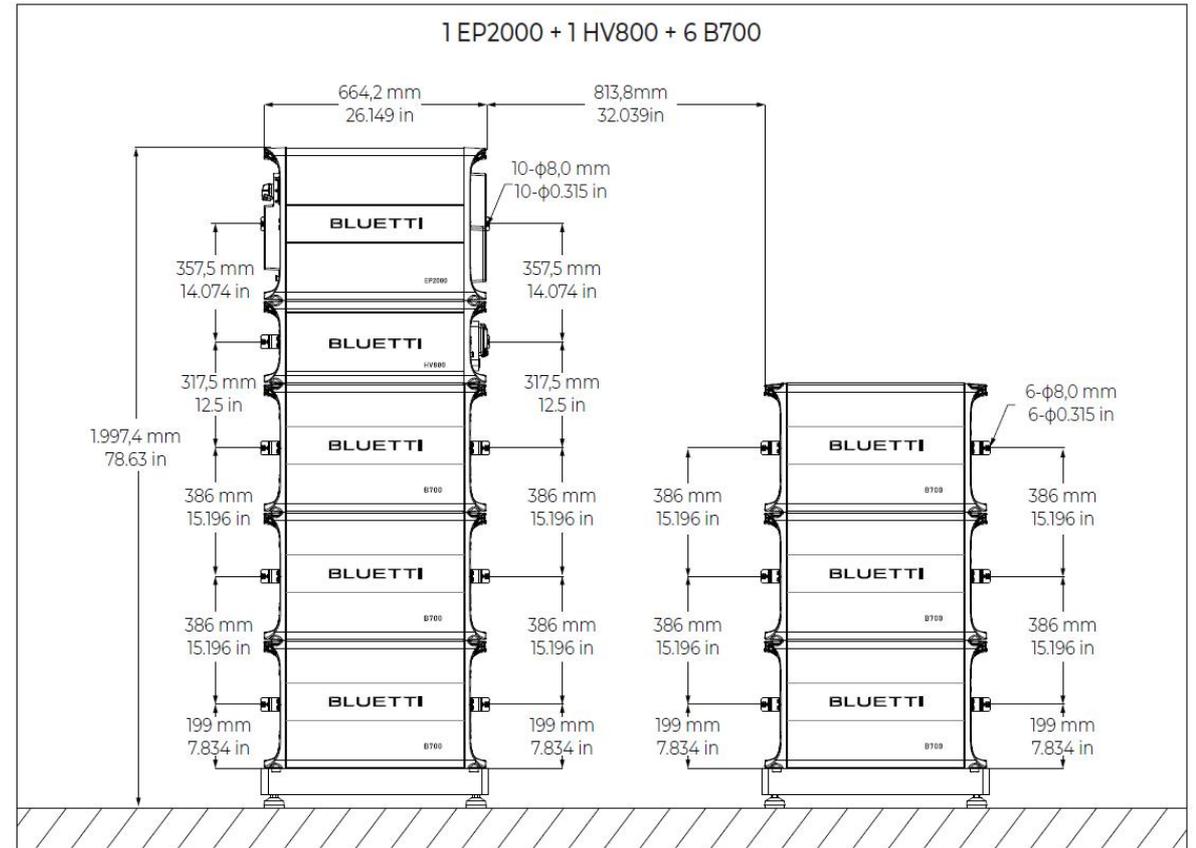
1. System introduction

EP2000+B5000-5S



1. System introduction

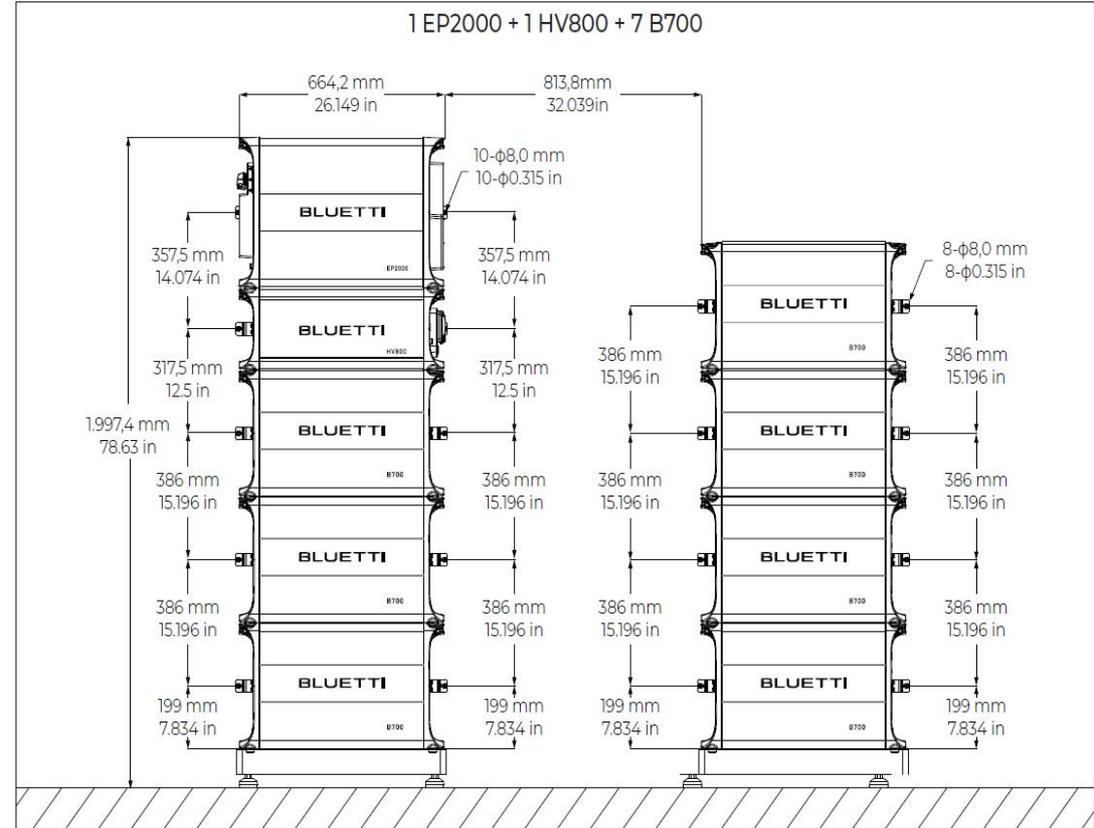
EP2000+B5000-6S



1. System introduction



EP2000+B5000-7S



◆ 2. High lights

2.1 Energized your whole home appliances and whole home backup ----- 20kW output



EV charger



Heat pump



2. High lights

2.2 High reliability and high safety performance

Obtained ISO13849 PL d functional safety certification

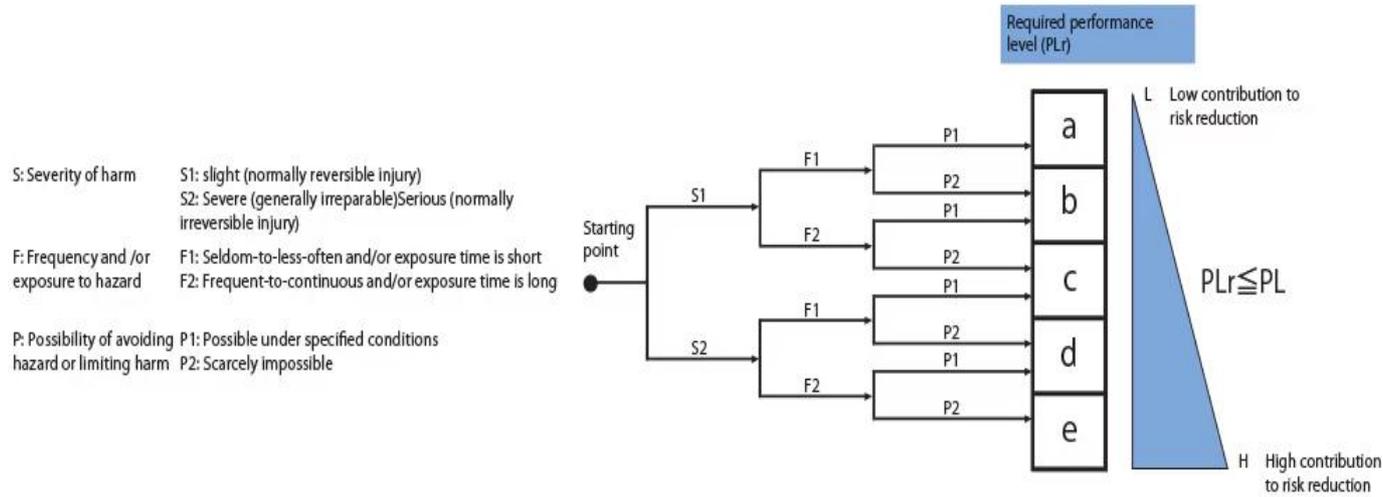


Figure 8. Determination of PLr

1. What is the performance level (PL)?

Performance level (PL)	Average probability of dangerous failure per unit time, PFHD (1/h)
a	$\geq 10^{-5}$ and $< 10^{-4}$
b	$\geq 3 \times 10^{-6}$ and $< 10^{-5}$
c	$\geq 10^{-6}$ and $< 3 \times 10^{-6}$
d	$\geq 10^{-7}$ and $< 10^{-6}$
e	$\geq 10^{-8}$ and $< 10^{-7}$

VDE2510-50 certification (is currently underway)

◆ 2. High lights

2.3 Modular expansion and easy installation

- I. Modular design make it is easy to transfer to anywhere.
- II. Modular in steps of 7372Wh, Expandable up to 51.6kWh , customer can purchase battery packs of different units according to their needs to improve the economy of the system.
- III. 3 sets EP2000 can be connected in parallel.



◆ 2. High lights

2.4 Beautiful appearance and low noise .

- I. Confident in our design .
- II. There is no gap between the duct and electronic components. Even if there is water entering the exhaust fan inlet, it will not affect performance, making it more reliable.
- III. With intelligent fan speed management ,it is low noise (below 50dB) with peaceful experience .

2.5 Extreme environmental adaptability

- IP65 protection, more choices for installation, the EP2000 ESS is suitable for indoor and outdoor use.
- Support charging at - 20 °C by intelligent battery heating management system.

Note: If you place the system outside the house, please use a cabinet to protect it from direct sunlight.



2. High lights

2.5 All-round Safe and Reliable

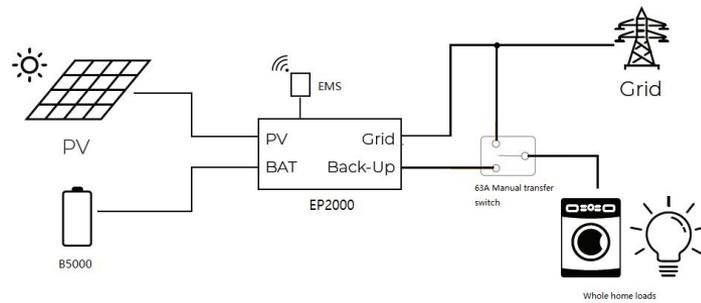
- I. Lithium iron phosphate batteries are used, which is safe, reliable ,durable and long-lasting.
- II. Advanced DSP control technology are designed in the inverter to make the electrical system safer.
- III. Automobile grade dual CPU are used on HV800 to keep durable and safe.
- IV. Product warranty for 10 years

Product Model	Compliances	
EP2000	Grid Connections	Germany:VDE-AR-N 4105:2018, DIN VDE VO124-100:2020 Austria:TOR Erzeuger Type A version 1.2, 18 April 2022 Australia:AS/NZS 4777.2:2020 Amd 1:2021
	Safety	IEC 62109-1,IEC 62109-2,EN 62109-1,EN 62109-2
	Emmissions	EN IEC 61000-6-3,EN IEC 61000-6-1
	RoHs	2011/65/EU and (EU)2015/863
B700/HV800	Safety	IEC 62619,EN 62619, VDE-AR-E 2510-50,UN38.3
	Emmissions	EN IEC 61000-6-3,EN IEC 61000-6-1
	RoHS	2011/65/EU and (EU)2015/863

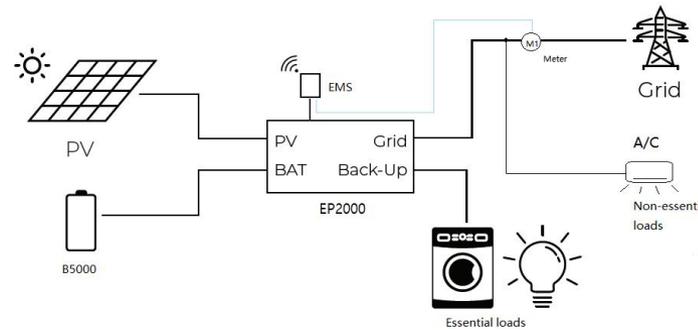
3. Flexible ESS Solutions

Flexible Household Energy Storage Solutions.

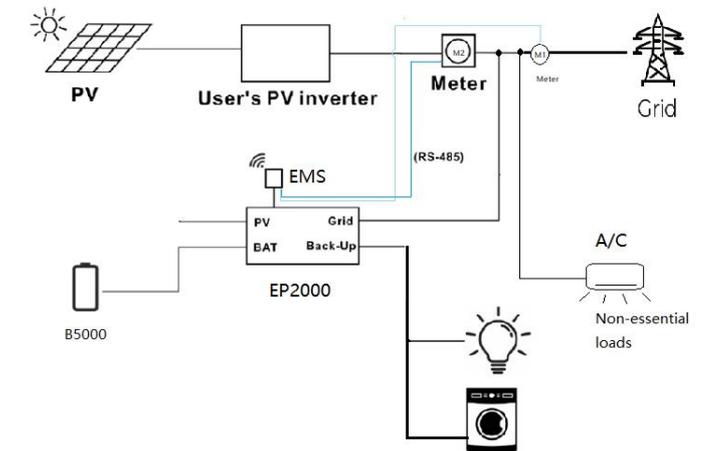
- With the All-in-one EP2000 energy storage solutions, we support you to realize a flexible, smart and perfect energy system for fitting the different needs of a customer-whether on-grid or off-grid; whether existing PV system or new solar panel installs.
- For household who have already installed solar roof, there is no need for disassembly and easy compatibility.



a. DC couple for new solar panel installation
(for loads power are less than 20kW, Whole home backup, turn manual transfer switch to the EP2000 Backup side)



b. DC couple for new solar panel installation
(for loads power are more than 20kW, turn manual transfer switch to the grid side)

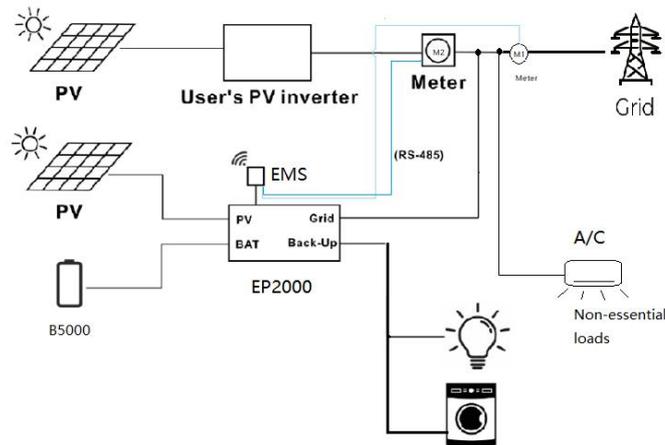


c. AC couple for Existing Solar System
(for loads power are more than 20kW, turn manual transfer switch to the grid side)

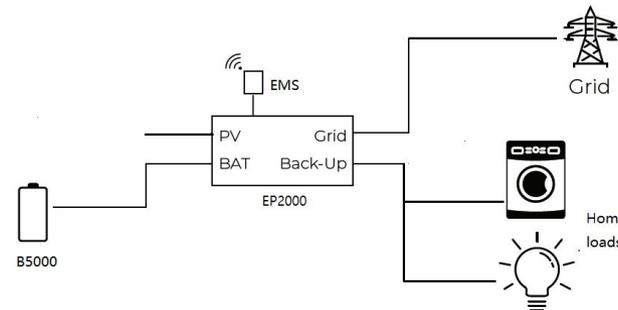
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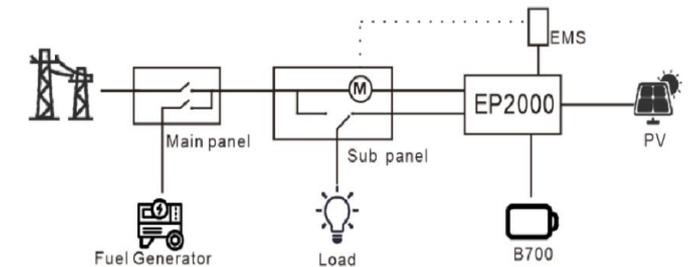
- With the All-in-one EP2000 energy storage solutions, we support you to realize a flexible, smart and perfect energy system for fitting the different needs of a customer-whether on-grid or off-grid; whether existing PV system or new solar panel installs.



d. AC couple +DC coupling for Existing Solar System for backup



e. Backup without solar system

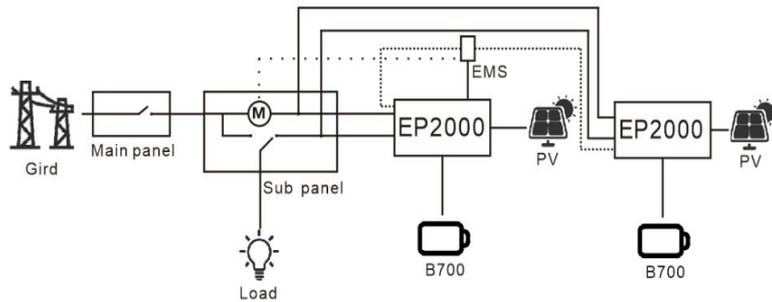


f. Charge by generator

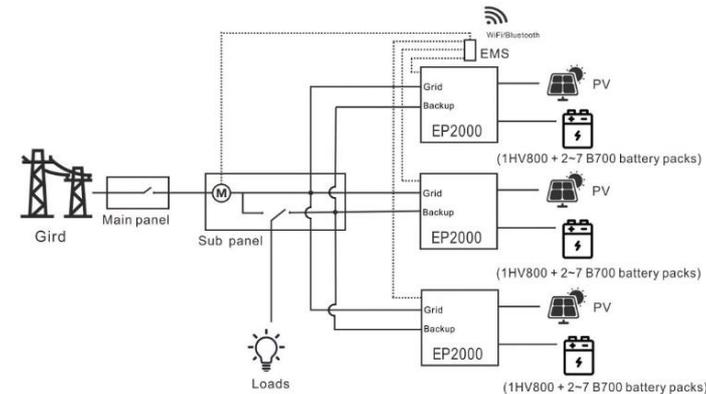
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g. 2 sets of EP2000 connected in **parallel**

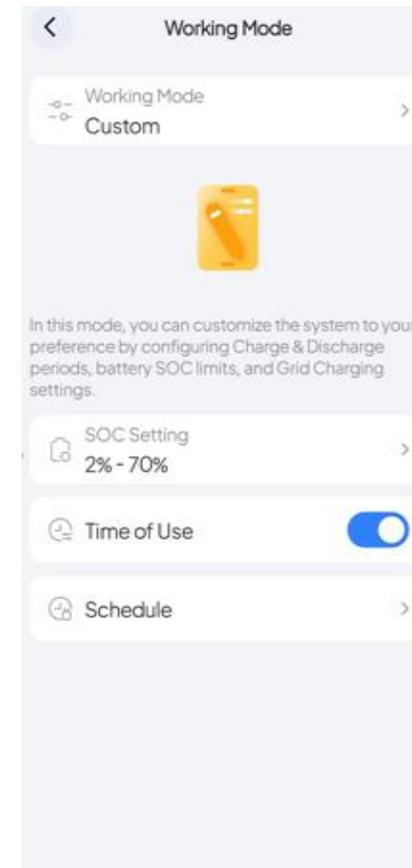
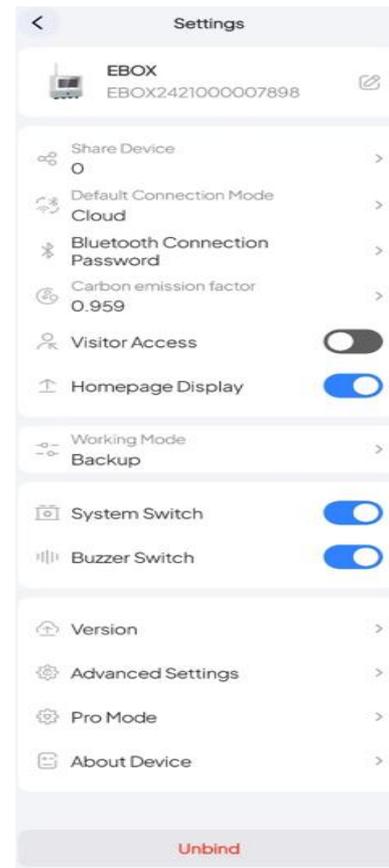
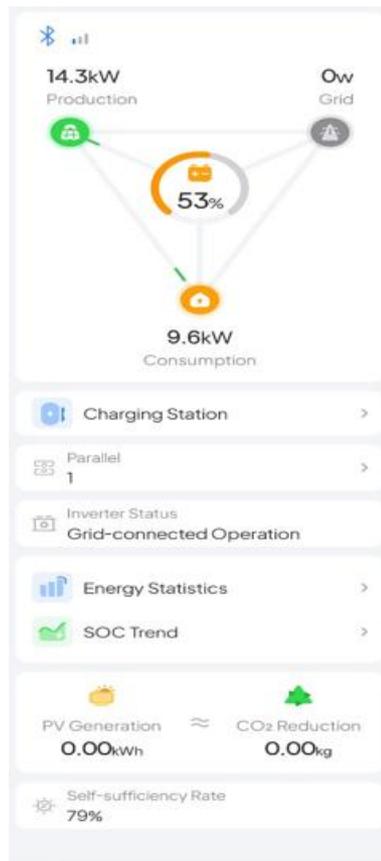


h. 3 sets of EP2000 connected in **parallel**

4. Intelligent app Remote Control

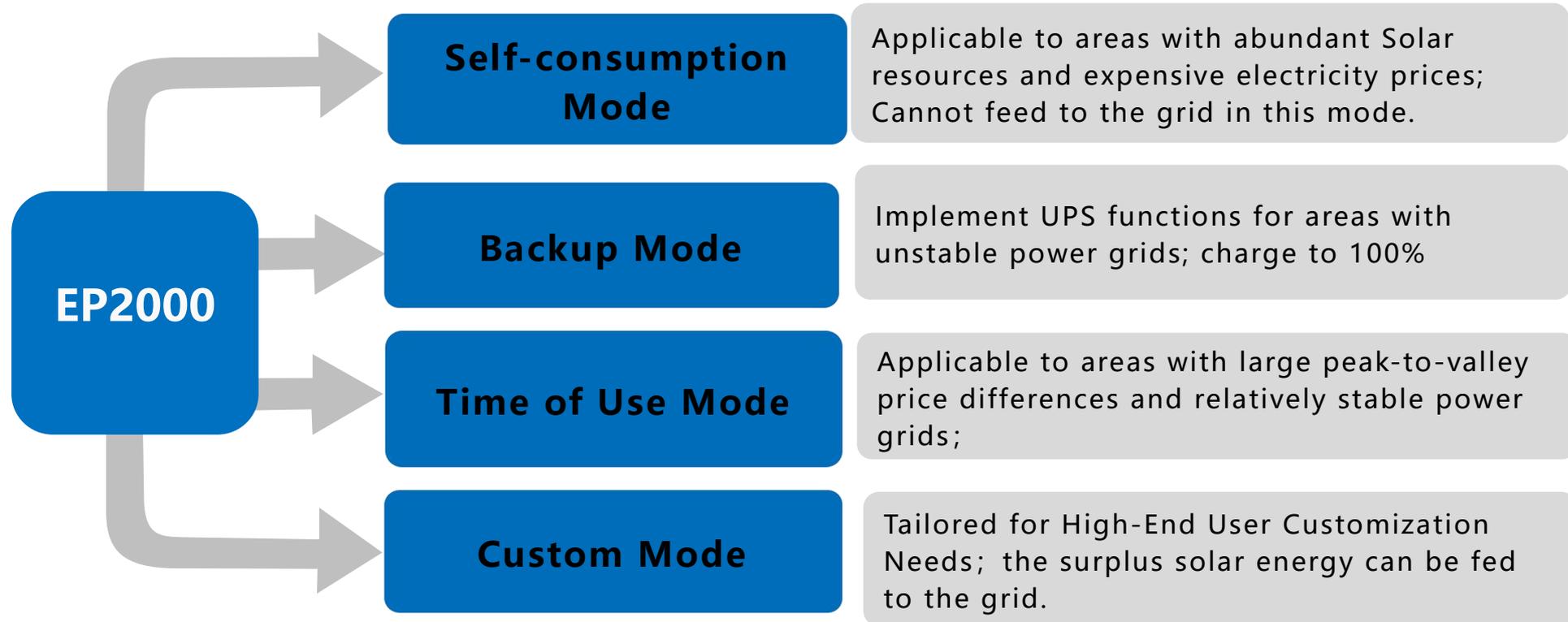
7*24h Intelligent energy management and monitoring system

- The energy manage system will automatically and intelligently work to ensure the maximum self-generated and self-consumption to save your electricity bill.
- It is easy to monitor and access the real-time generation and consumption data by BLUETTI app.



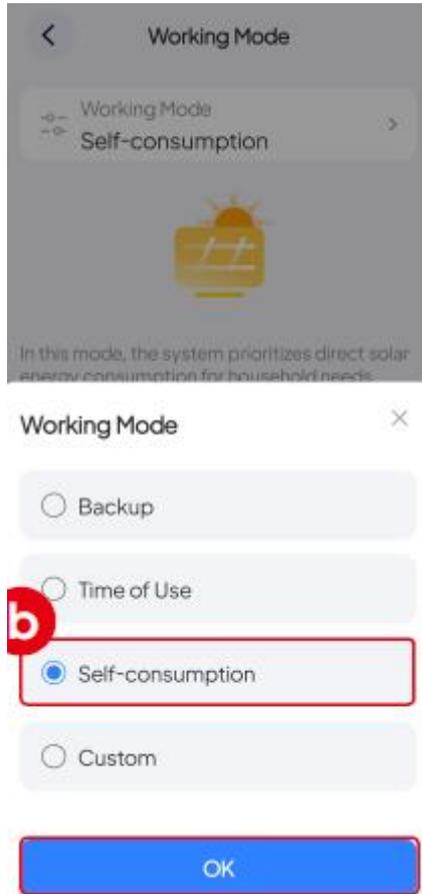
◆ 4. Intelligent app Remote Control

○ EP2000 Energy Storage System Functions



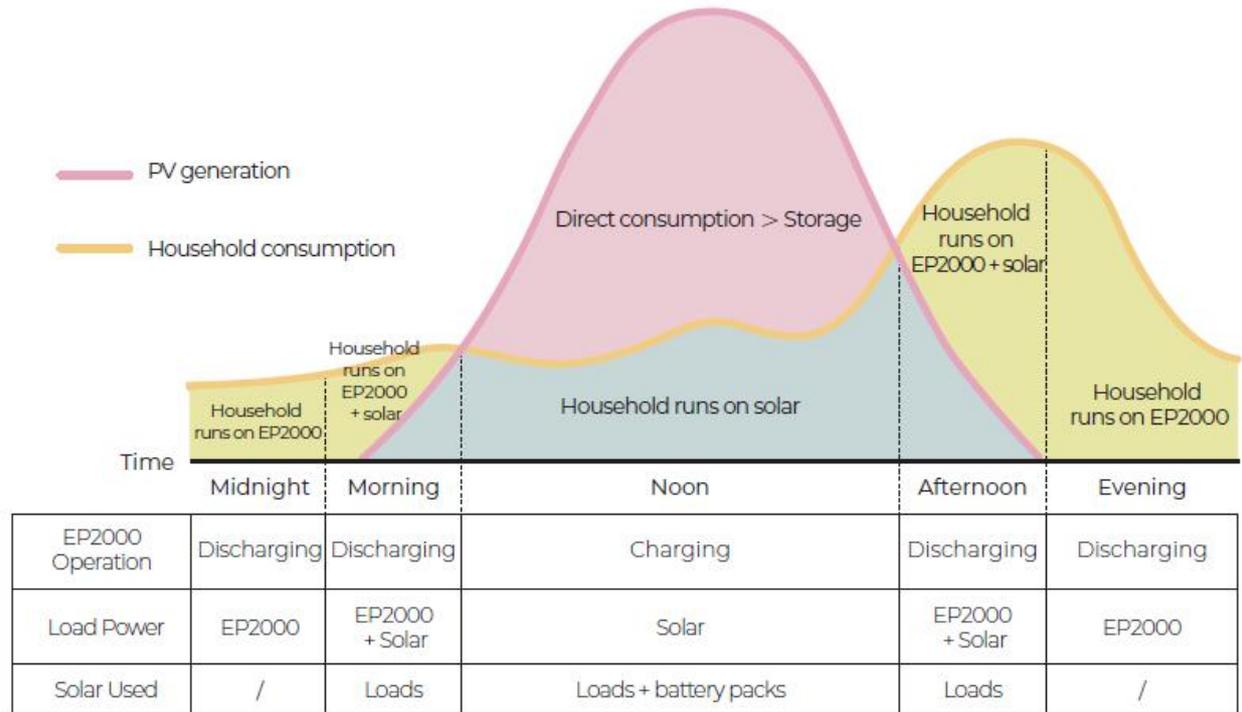
4. Intelligent app Remote Control

1) Self-consumption



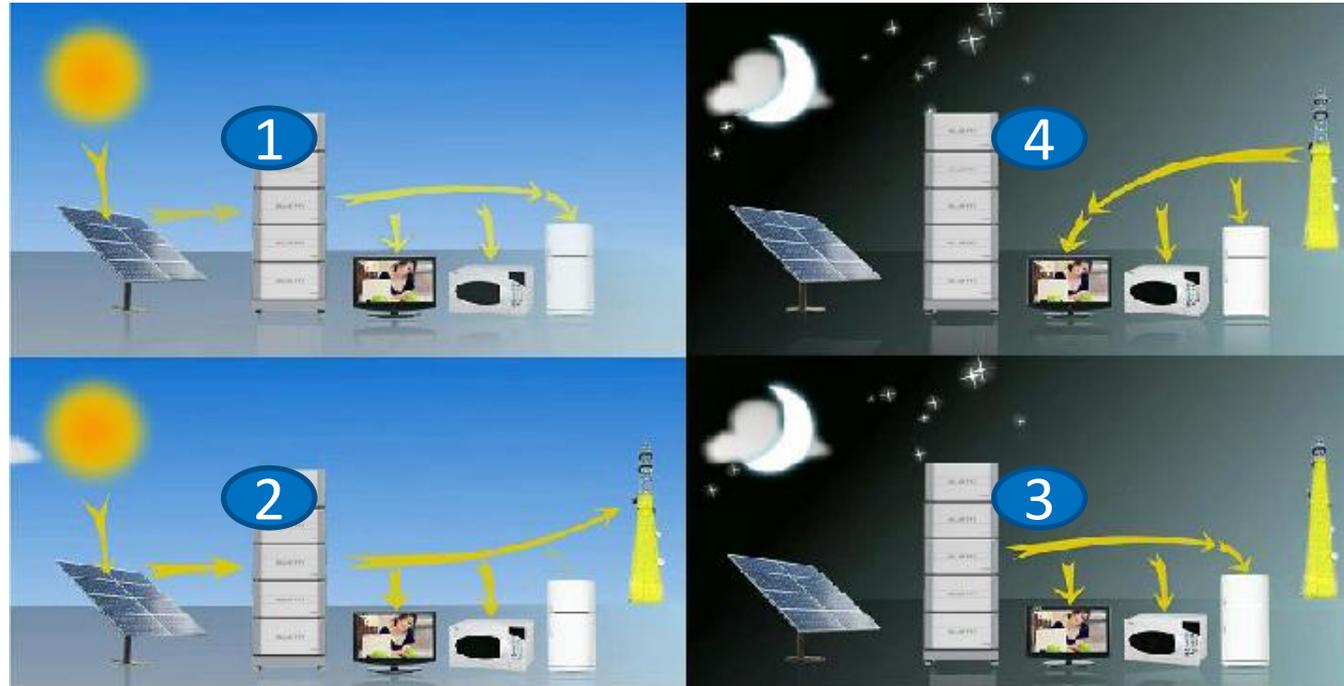
Note:
No setting parameters.

The EP2000 operates by default in a mode that prioritizes using solar energy directly to meet immediate household needs. Any surplus solar energy generated is intelligently stored in battery packs for use during peak hours or in case of a power outage. This approach ensures a reliable and efficient power supply, reducing dependence on the grid and promoting energy independence.



4. Intelligent app Remote Control

EP2000 is a hybrid inverter In self-consumption 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.

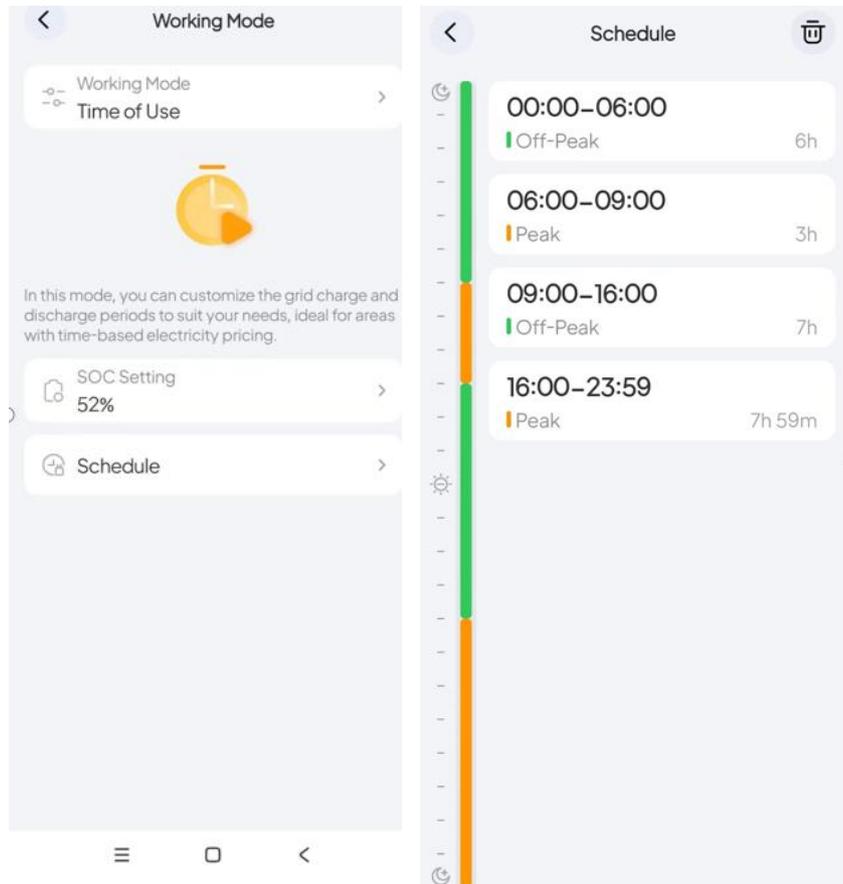


- ① PV generated energy is used first and foremost to optimise your own consumption. Any surplus energy is used to charge the B700 batteries.
- ② When the B700 batteries are fully charged, the system provides energy for your own consumption and any surplus is fed into the public grid.
- ③ The system switches to battery energy supply after sundown. EP2000 allows you to make self-consumption up to 95%.
- ④ If the battery capacity be insufficient, electricity is obtained from the public grid.

4. Intelligent app Remote Control

2) Time of Use Mode

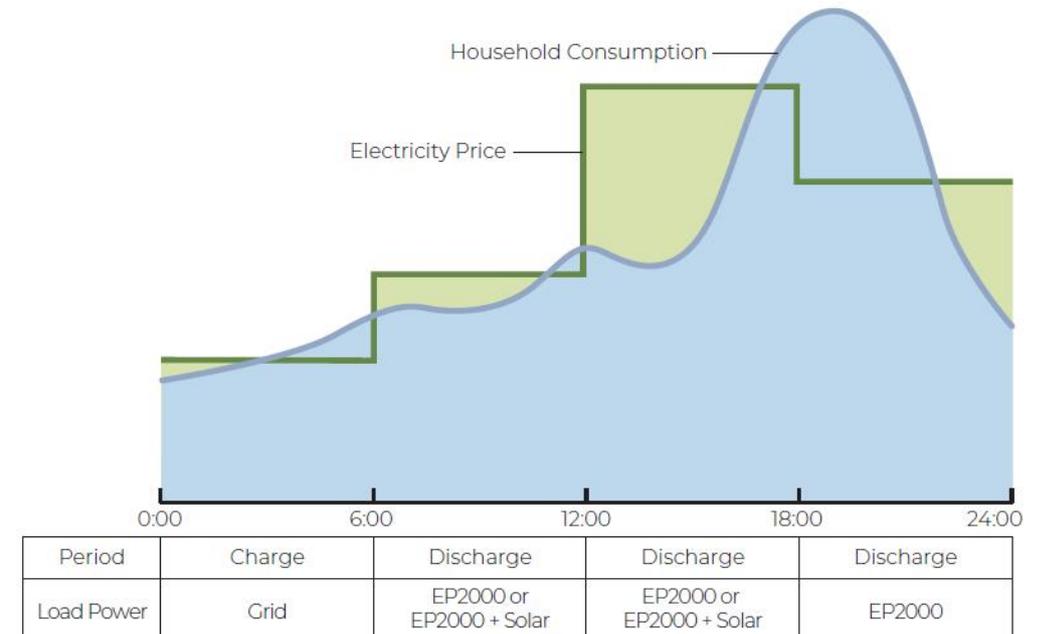
Applicable to: Areas with significant fluctuations in electricity prices. Configure charging and discharging based on local real-time electricity prices. Set discharge times when electricity prices are high to take advantage of stored energy. Set charging times from the grid when electricity prices are low to efficiently store energy in the battery.



Note:

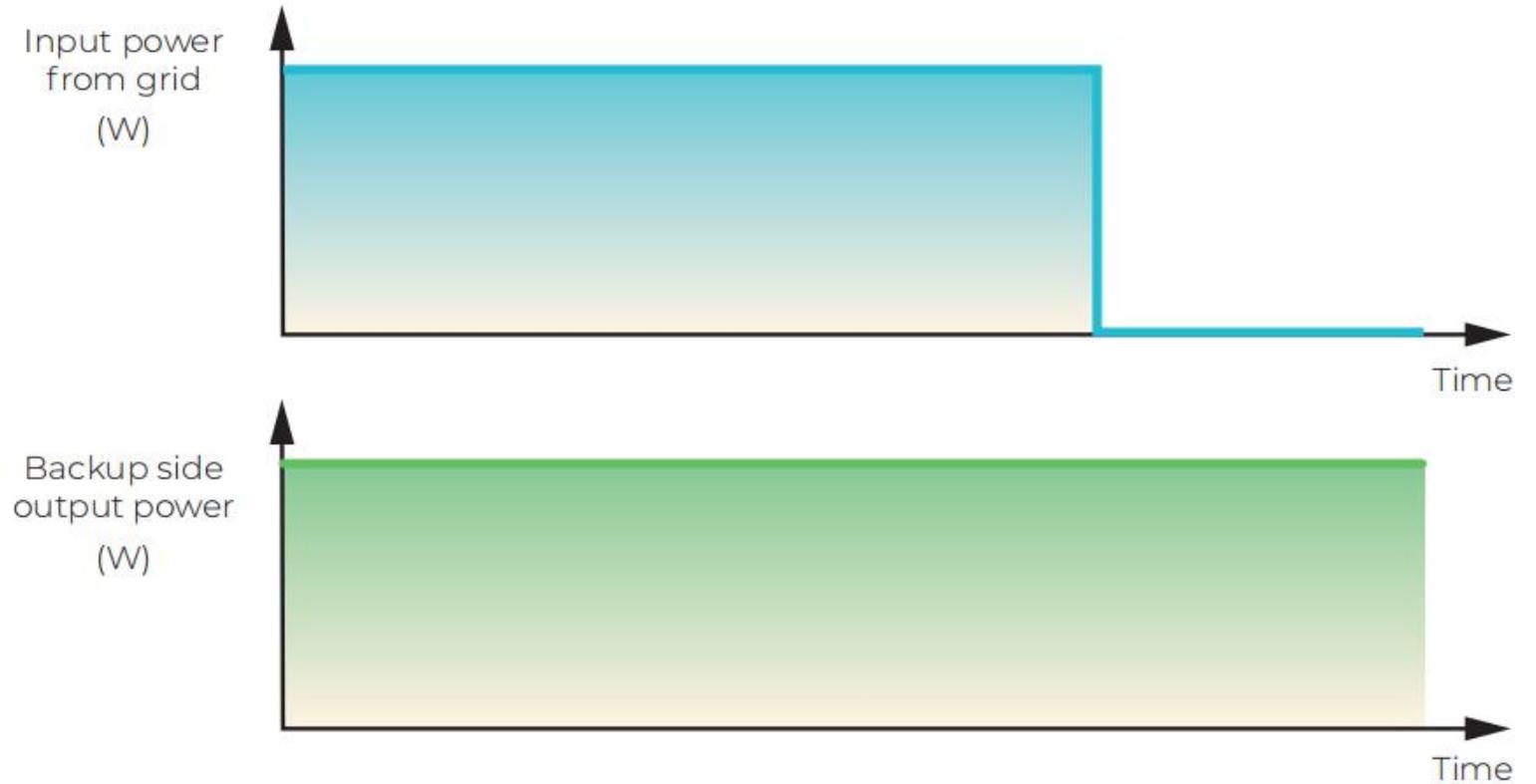
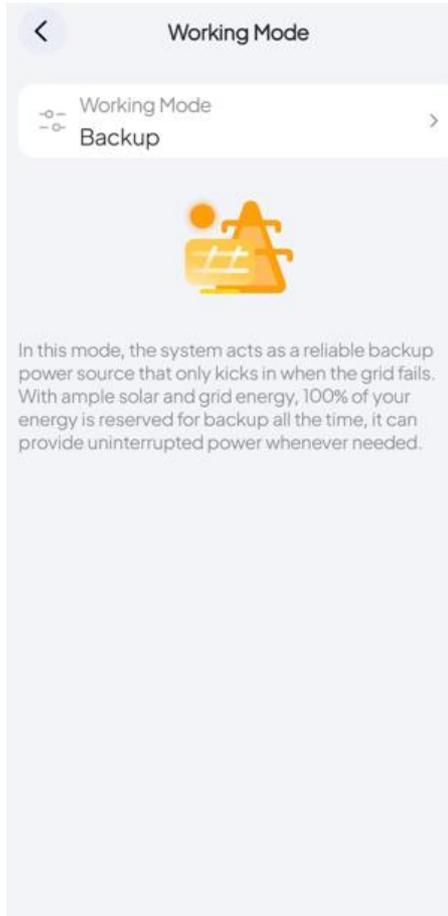
You can set the maximum allowable State of Charge (SOC) for grid charging within the charging time periods.

Configuration options are available for up to six time periods.



4. Intelligent app Remote Control

3) Backup Mode



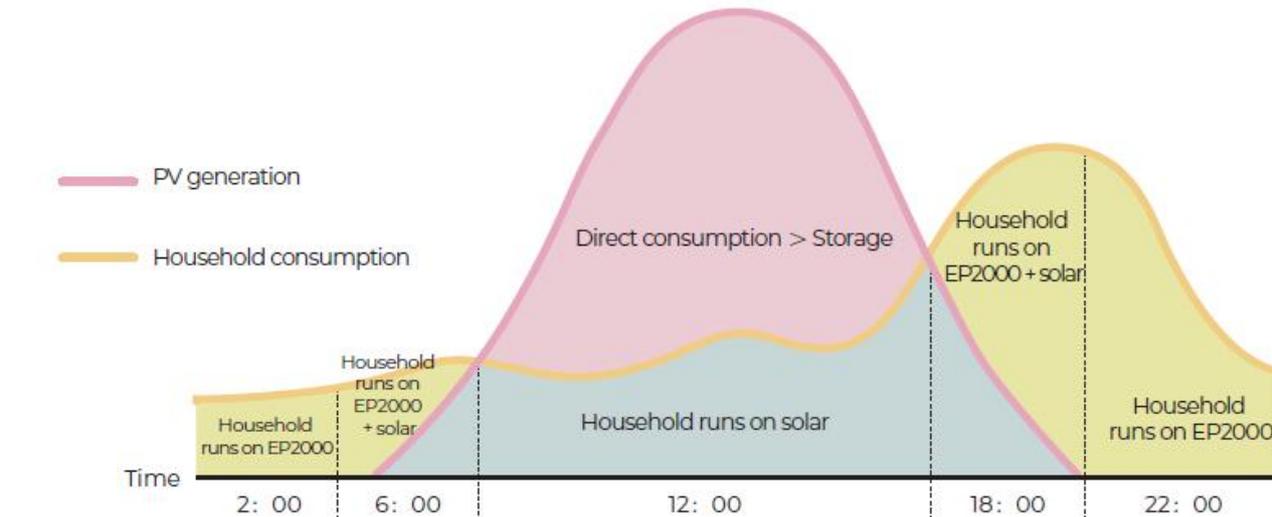
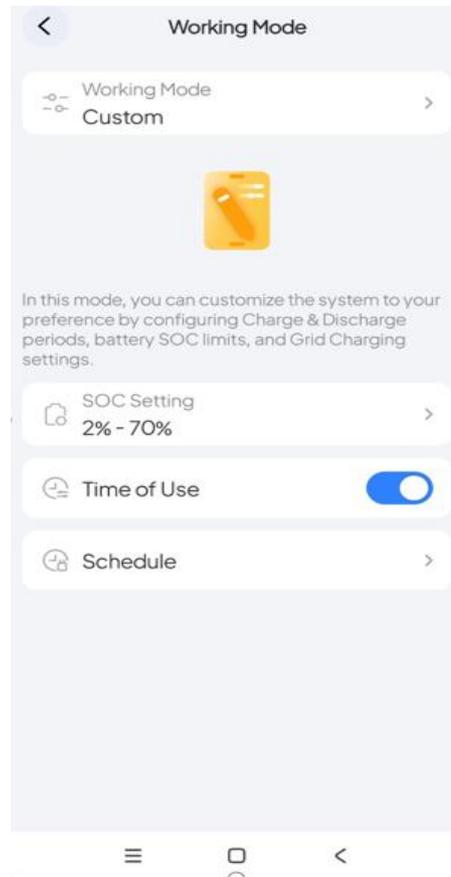
Note:

No additional setup required.

4. Intelligent app Remote Control

4) Custom Mode

This mode is designed for "advanced" users. Users can set the following parameters: Time Periods, Grid Charging Enable, MAXSOC (Maximum State of Charge), MINSOC (Minimum State of Charge), Grid Feeding Enable. The EP2000 system allows for these settings to be adjusted according to user preferences and operational requirements.



Period	Charge	Discharge	Standby	Discharge	Standby
EP2000 Operation	Charging	Discharging	Discharging	Discharging	Discharging
Solar Used	/	Battery packs	Loads + battery packs	Battery packs	/
Load Power	Grid	EP2000 + Solar	EP2000 + Solar	EP2000 + Solar	EP2000

1. How many sets of EP2000 can be connected in parallel ?

Max. 3 sets

2. Can I add another new battery ,after EP2000 ESS operating 1 years?

No, please add new battery within 6 months from the date of EP2000 ESS installed.

3. What the purpose of ABB manual transfer switch?

It is used for maintenance when some issues happened on EP200 ESS , you can turn the switch to the grid side to energize the backup loads.

1. Valuable: 30kW solar PV input and up to 20 kW Power output allows you to generate and use electricity for your home, reduce their energy bills through higher self-utilisation ratios.
2. It is modularized, it is very easy to install.
3. 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(no sunshine directly).
6. Three phase emergency backup , switchover time to back-up power within approx. **10 ms.**
7. Intelligent : Self-consumption mode, Time of use mode , Backup mode and Custom mode.

Site installation



Thank You !



TECHNOLOGY
PIONEER
IN CLEAN ENERGY