APsystems

APbattery Training

For EMEA Market

Rev1.1 20250728

01

Basic Introduction

APbattery datasheet:

APbattery-
51.2V/5.12kWh

1. Supports Charging below 0°C
2. More Power **(0.6C)**
3. **Intelligent Fire Suppression Kit**
4. Easy installation **(No dip-setting)**
5. Outdoor and Indoor Application **(IP65)**
6. Parallel capacity up to **163.84 kWh**
7. Advanced BMS control
8. Fully integrated with APstorage inverter
9. IEC62619/IEC61000/UN38.3
10. **Region: EMEA, APAC (except Japan and Korea), South America**

APbattery datasheet:

APbattery-51.2V/5.12kWh

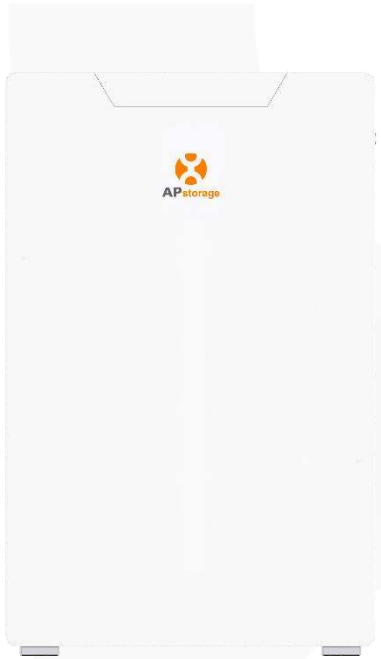
Model	APbattery-51.2V/5.12kWh
Rated Capacity	100 Ah
Rated Voltage / Working Voltage Range	51.2 V / 43.2-58.4 V
Rated Charging / Discharge Current	**0.6C, 60 A**
Rated Energy	5.12 kWh
Max. Parallel Quantity	**Max. 32 Sets In Parallel , 163.84 kWh**
Battery Max. Charge / Discharge Power	3.07 kW / 5.12 kW
Dimensions [W*D*H]	460（±5）mm x 165（±5）mm x 652（±5）mm
Weight	~50 kg
Operating Temperature	Charging Temperature：0°C~55°C or -5°C~55°C Discharge Temperature：-15°C~55°C
Communication	CAN, RS485, Dry Contact, Wi-Fi
Designed Cycle Life (25°C±2°C)	6000 Cycles
IP Rating	**IP65**
Cooling	Natural Cooling

APbattery datasheet:

APbattery-
51.2V/10.24kWh

1. Supports Charging below 0°C
2. More Power **(0.6C)**
3. Easy installation **(No dip-setting)**
4. Outdoor and Indoor Application **(IP65)**
5. Parallel capacity up to **163.84 kWh**
6. Advanced BMS control
7. Fully integrated with APstorage inverter
8. IEC62619/IEC61000/IEC62040/UN38.3
9. **Region: EMEA, APAC (except Japan and Korea), South America**

APbattery datasheet:



APbattery-51.2V/10.24kWh

Model	APbattery-51.2V/10.24kWh
Rated Capacity	200 Ah
Rated Voltage / Working Voltage Range	51.2 V / 43.2-58.4 V
Rated Charging / Discharge Current	**0.6C, 120 A**
Rated Energy	10.24 kWh
Max. Parallel Quantity	**Max. 16 Sets In Parallel , 163.84 kWh**
Battery Max. Charge / Discharge Power	6.14 kW / 6.14 kW
Dimensions [W*D*H]	550（±5）mm x 165（±5）mm x 867（±5）mm
Weight	~94 kg
Operating Temperature	Charging Temperature：0°C~55°C or -5°C~55°C Discharge Temperature：-15°C~55°C
Communication	CAN, RS485, Dry Contact, Wi-Fi
Designed Cycle Life (25°C±2°C)	6000 Cycles
IP Rating	**IP65**
Cooling	Natural Cooling

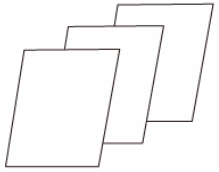
02

Packing Details

Standard Packing List-Apbattery_51.2V/5.12kWh:

Pack	Black plate support	Mounting positioning board	Communication cable (1.5m)
Ground cable (1m)	**Positive DC cable**	**Negative DC cable**	**Wifi Stick**
	Positive: orange plug, 25 mm² / 4 AWG, L:1.5 m to SC25-10 ring terminal. Negative: black plug, 25 mm² / 4 AWG, L:1.5 m to SC25-10 ring terminal.		 (This will be packaged and delivered in a separate box)

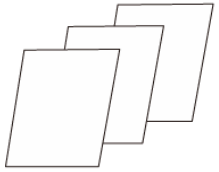
Standard Packing List-Apbattery_51.2V/5.12kWh:

4 × Expansion Screw M8*80	2 × RJ45 Water-proof Wiring Terminal *2	2 × Screw M5*16
Quick installation manual	Packing list	Outgoing inspection report
	Spare parts packing bag 4	

Standard Packing List-Apbattery_51.2V/10.24kWh:

Pack	Black plate support	Mounting positioning board	Communication cable (1.5m)
Ground cable (1m)	**Positive DC cable**	**Negative DC cable**	**Wifi Stick**
	Positive: red plug, 2 AWG, L:1.5 m to SC50-10 ring terminal. Negative: black plug, 2 AWG, L:1.5 m to SC50-10 ring terminal.		 (This will be packaged and delivered in a separate box)

Standard Packing List-Apbattery_51.2V/10.24kWh:

4 × Expansion Screw M8*80	3 × RJ45 Water-proof Wiring Terminal *2	2 × Screw M5*16
Quick installation manual	**Packing list**	**Outgoing inspection report**
 Spare parts packing bag 4		

AP DC Combiner introduction:

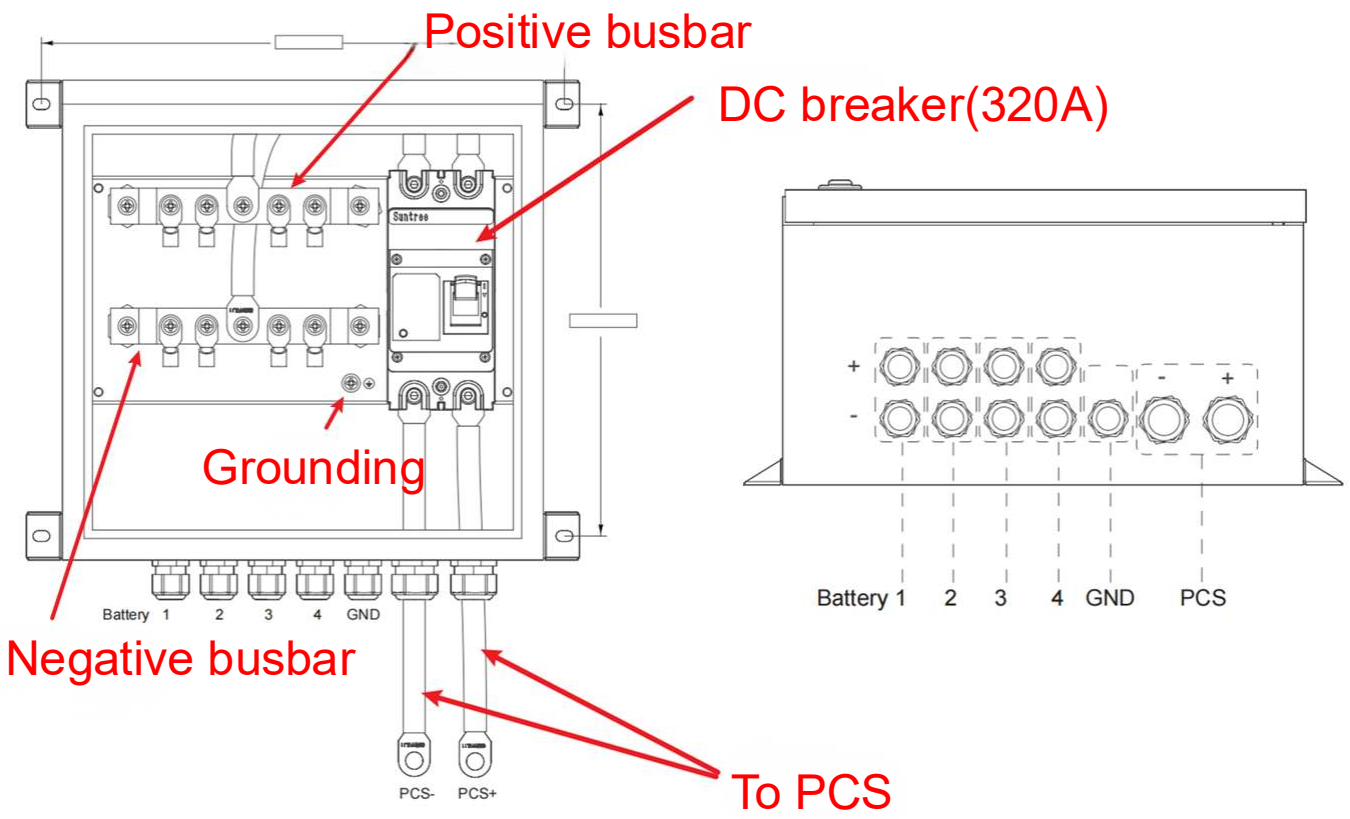
The AP DC Combiner is mainly used for the integration on the battery side of ESS.

It integrates

- **320A DC breaker**
- **Copper busbar components**
- **A pair of 120m^2 cables**

facilitating the expansion and wiring of battery packs.

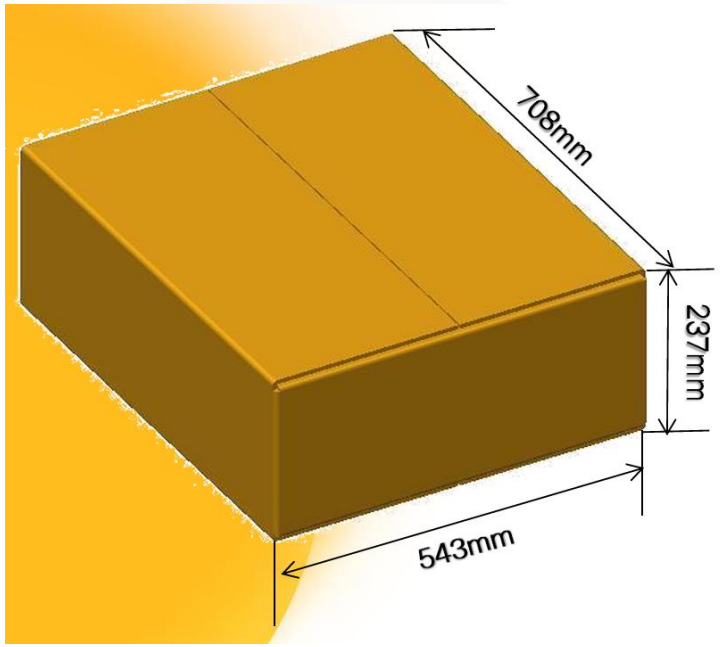
- Protection level: **IP65**;
- Rated Current of Integrated Breaker: **320A**;
- Connect **max. 4 batteries** and support all battery brands;
- Connecting batteries in parallel can expand the system capacity and prolong the working time of APstorage. ;
- Simple installation and effective power distribution among various circuits. ;
- **5 years** warranty。

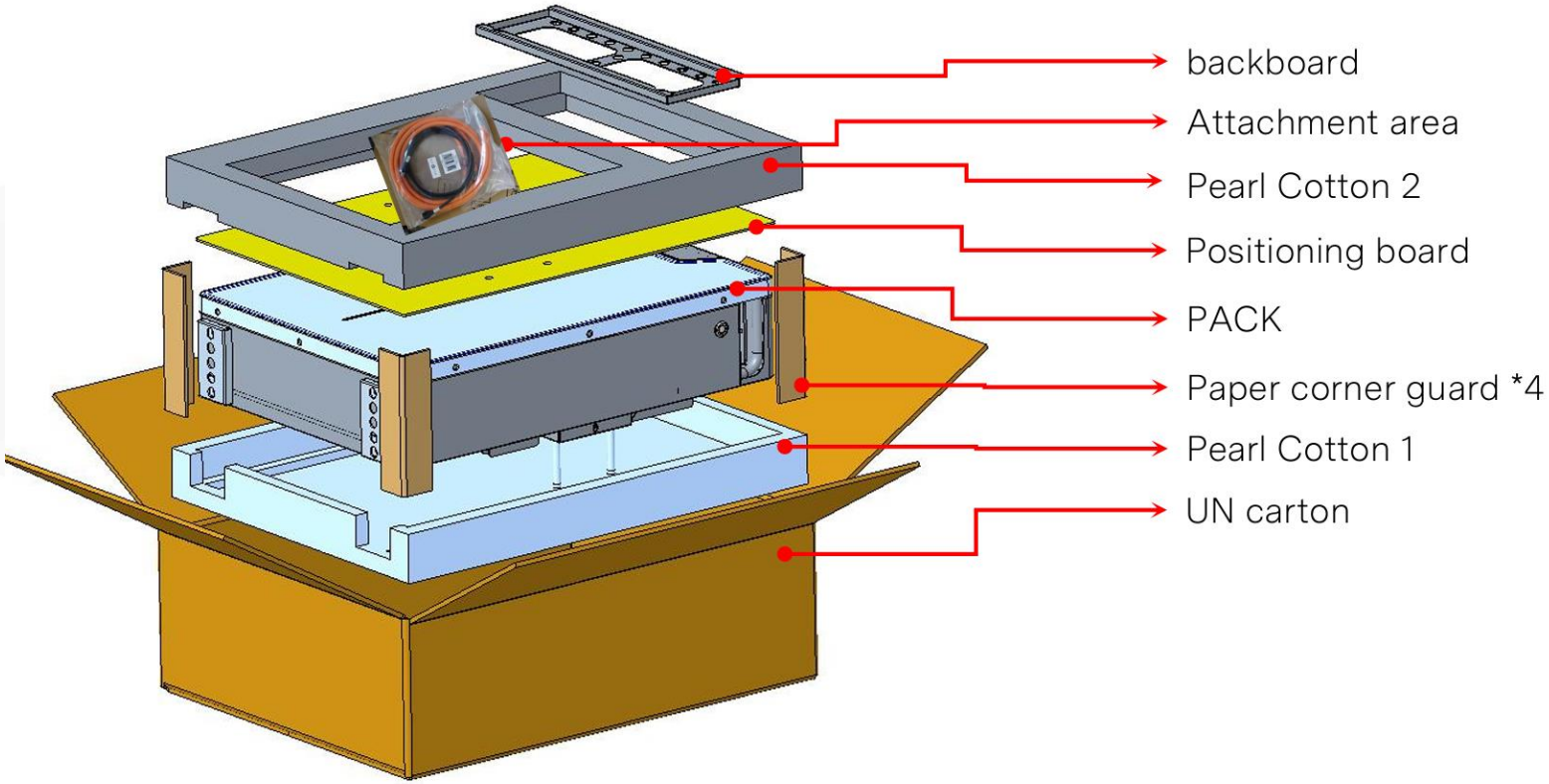


Battery and Optional Accessories:

Name	Figure	Article/Part No.	Description/Explanation	Remark
APbattery-51.2V/5.12kWh	/	637087	/	/
APbattery-51.2V/10.24kWh	/	620087	/	/
Parallel Cables	/	2510308001	For 10kWh	The positive and negative poles are each 0.85 m long; 35mm^2
Parallel Cables	/	Coming soon	For 5kWh	25mm^2
AP DC Combiner box		~~913088~~ / 913093	444mm（L）×225mm（W）×433mm（H），250A	Wire Diameter 70mm^2 / 120m^2
EZ-Bat Cable	/	2313500131	**Only For EZHI Between APbattery-51.2V/5.12kWh and EZHI**	2m long

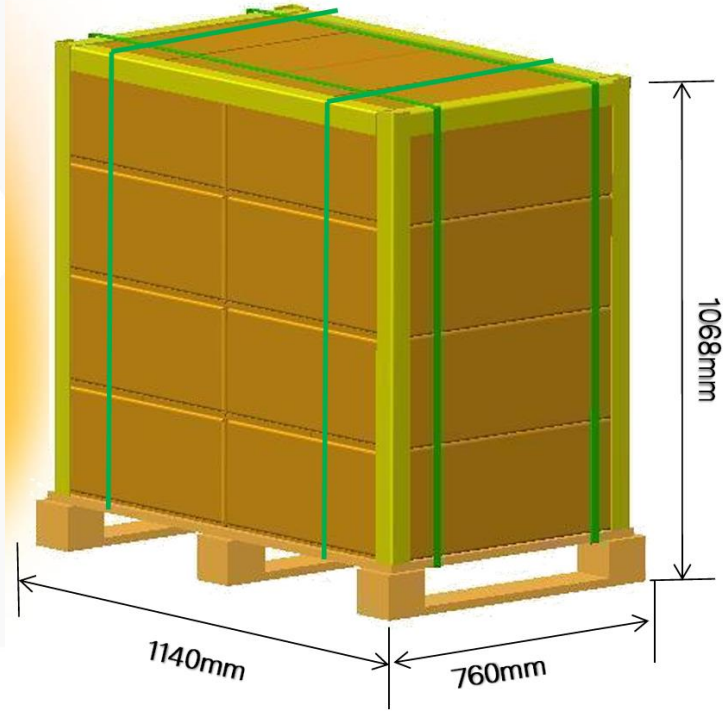
5kWh Packing Solution:





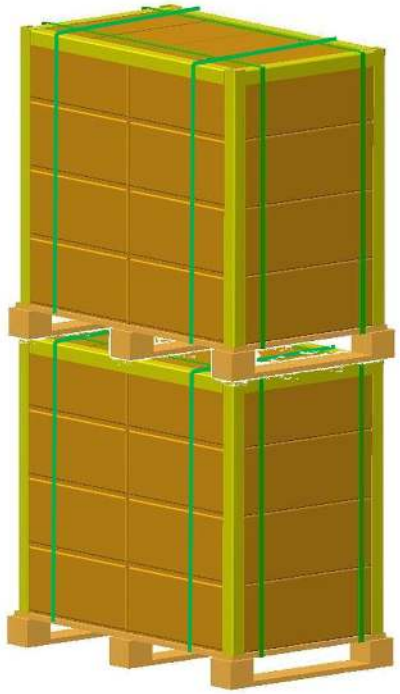
5kWh Packing Solution:

External Dimension(LDH)：1140*760*1068mm
Weight: 440kg



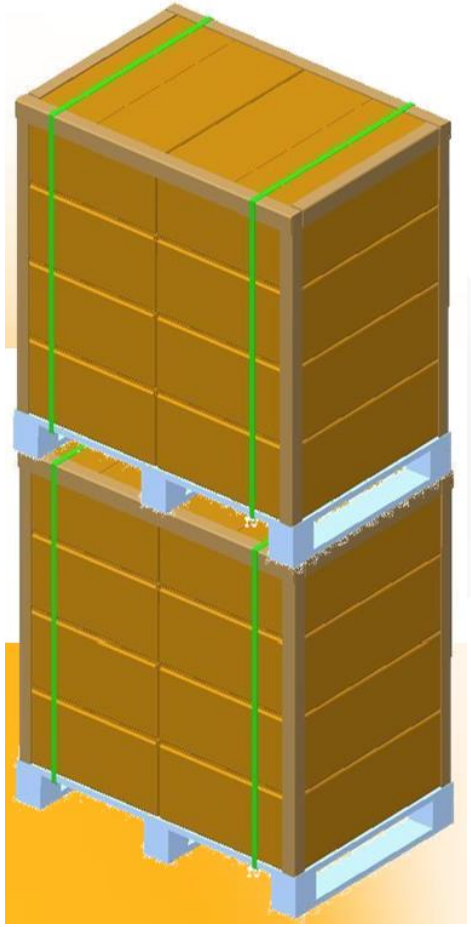
8 pcs Power lite Inside.

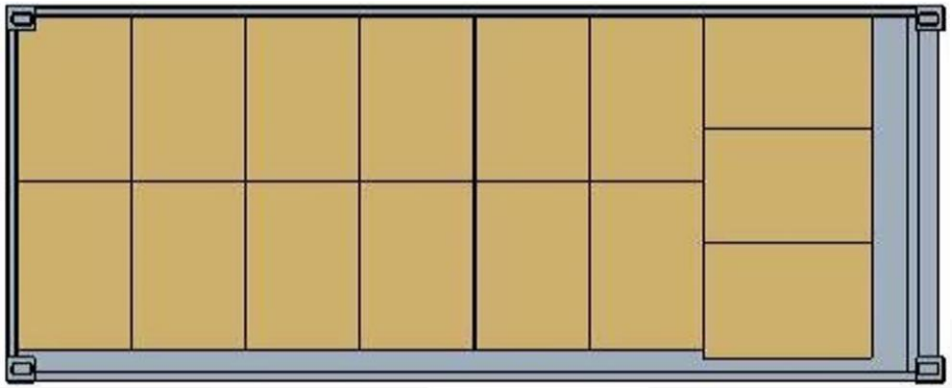
Stack up Dimension(LDH)：1140*760*2116mm
Weight: 900kg



Stack up

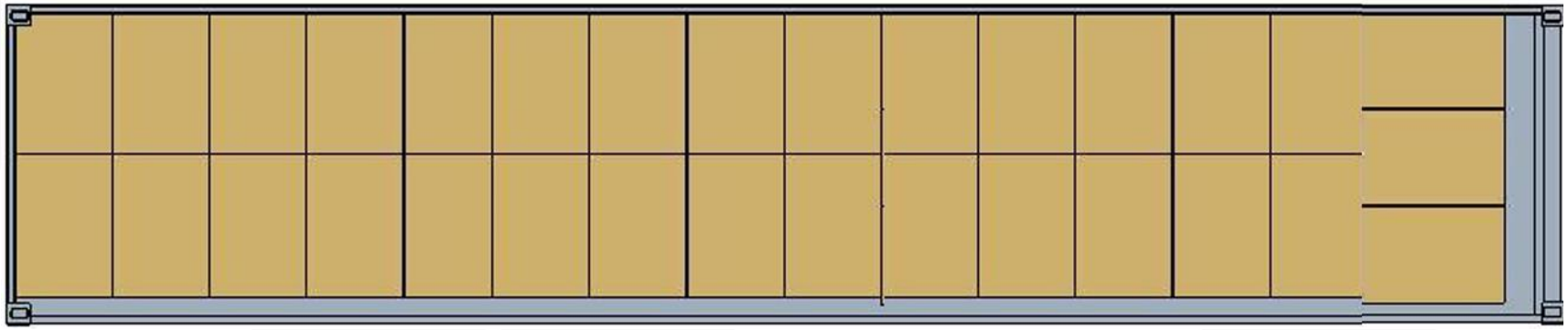
5kWh 20/40 feet Container Packing：





20 Feet Container：
Total：16×2×6+16×3=240sets

Weight：13.5T

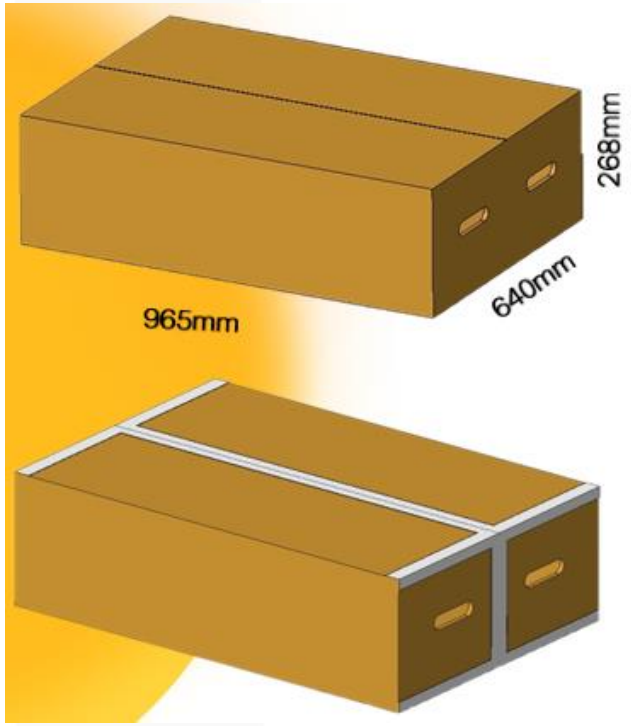


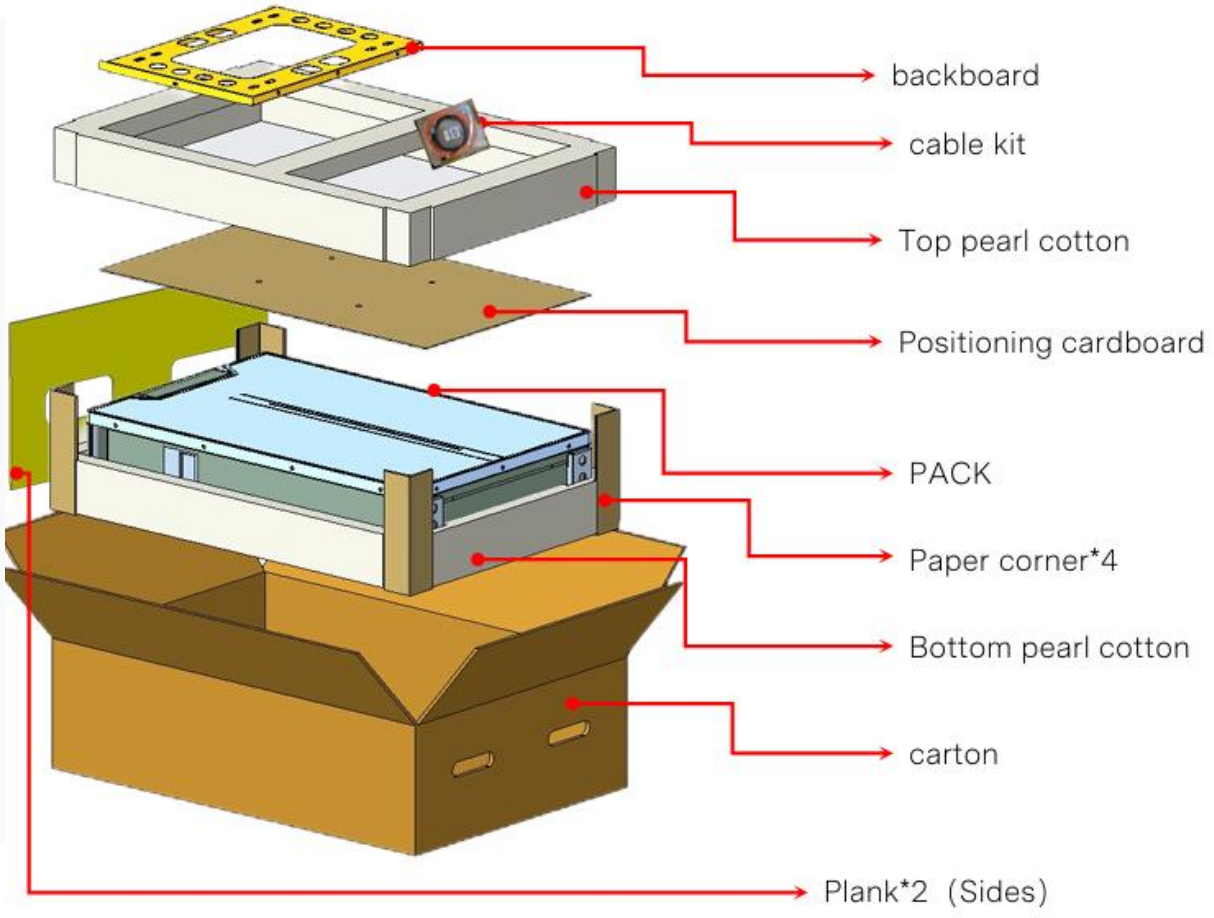
40 Feet Container：
Total：16×2×13+16×3=464sets

Weight：26.3T

10kWh Packing Solution:

Weight: ~106kg

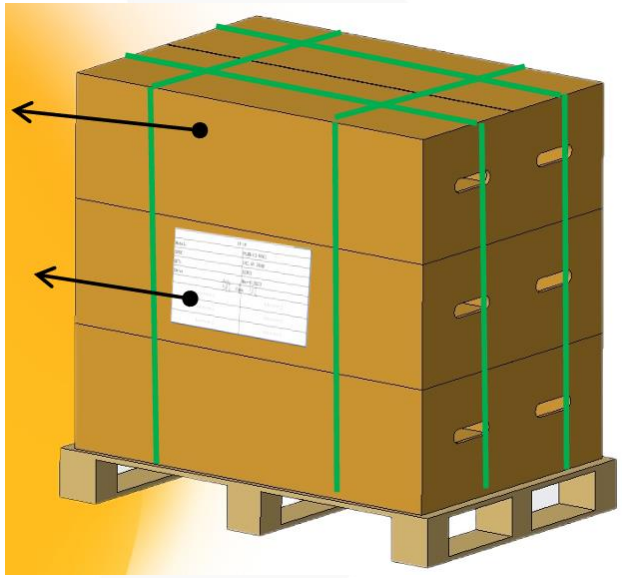




The cartons should be sealed in a certain shaped manner as shown in the picture, and the width of the adhesive tape should be guaranteed to be ≥ 60mm.

10kWh Packing Solution:

3PCs External Dimension(LDH):
1000*670*914mm



3 pcs Power lite
Weight: 338kg

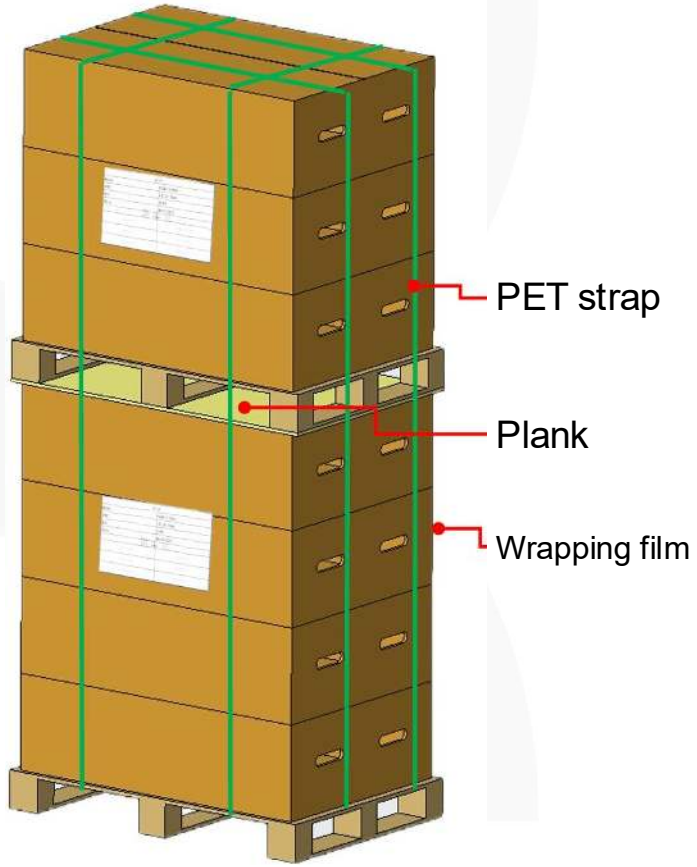
+

4PCs External Dimension(LDH):
1000*670*1192mm

4 pcs Power lite
Weight: 444kg

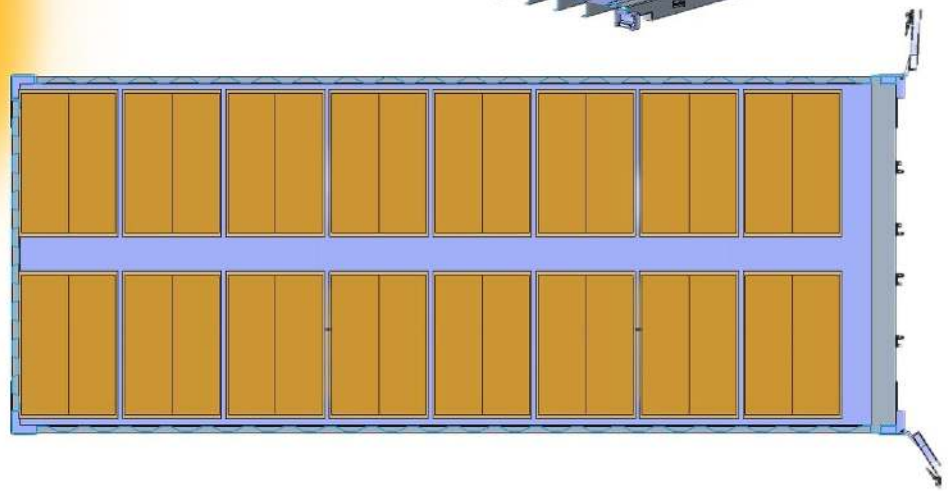
=

4PCs External Dimension(LDH):
1000*670*2106mm



Stack up 7 pcs Power lite
Weight: 792kg

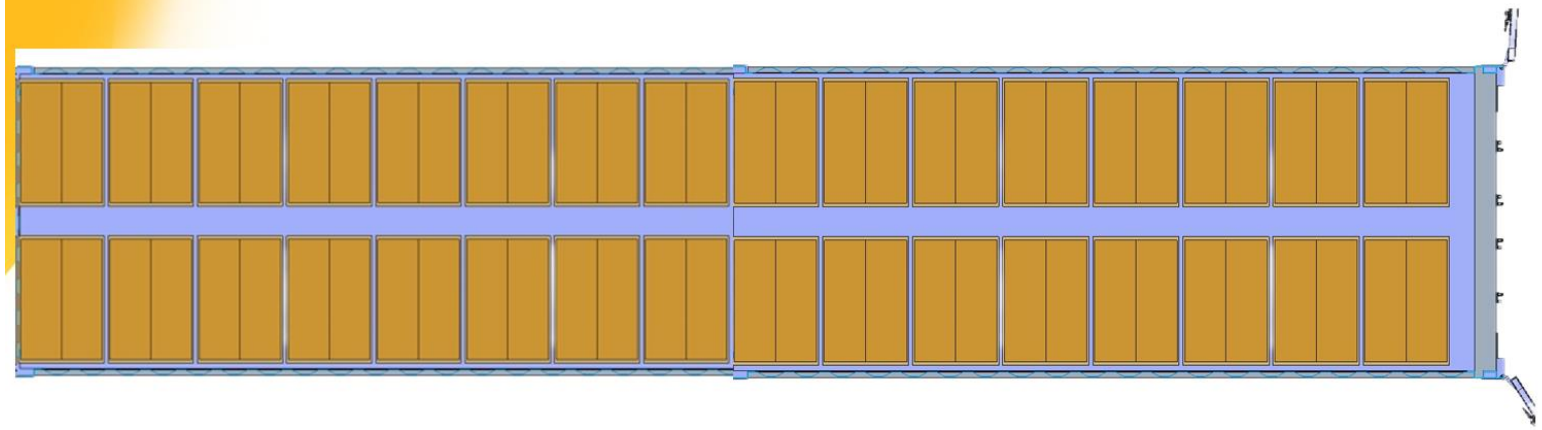
10kWh 20 feet Container Packing：



20 Feet Container：
Total：8×2×7=112 sets

Weight：12.7T

10kWh 20 feet Container Packing：



40 Feet Container：

Total：16×2×7=224 sets

Weight：25.4T

03

Solutions

Connection Mode Tips:

Battery Model	APbattery-51.2V/5.12kWh		APbattery-51.2V/10.24kWh		
No. of Battery	2	3	1	2	3
PCS	ELS-5K				
Installation Method	(Parallel cable + Breaker) **Or** AP DC Combiner		Direct Connect	(Parallel cable + Breaker) **Or** AP DC Combiner	
Optional Accessories	**1** pair parallel cable Self-purchase breaker **Or** **1** AP DC combiner	**2** pair parallel cable Self-purchase breaker **Or** **1** AP DC combiner		**1** pair parallel cable Self-purchase breaker **Or** **1** AP DC combiner	**2** pair parallel cable Self-purchase breaker **Or** **1** AP DC combiner
PCS	ELT-12				
Installation Method		AP DC Combiner	Direct Connect	AP DC Combiner **(Daisy Chain Parallel is not applicable, because the Imax of ELT exceeds the limitation of the cable capacity)**	
Optional Accessories		**1** AP DC combiner		**1** AP DC combiner	**1** AP DC combiner

Connection Mode Tips:

Battery Model	APbattery-51.2V/5.12kWh	
No. of Battery	1	2
PCS	EZHI	
Installation Method	Direct Connect	(Parallel cable + Breaker) **Or** AP DC Combiner
Necessary Extra Accessory (EZ-Bat Cable)	1 pair	1 pair
Optional Accessories		**1** pair parallel cable Self-purchase breaker **Or** **1** AP DC combiner

★ Importance：Not yet in compatibility, under process.

ELS-5K Connection Details:

ELS-5K	+5kWh Battery	Option1	APbattery-51.2V/5.12kWh *1	125A DC Breaker（Own purchase） *1	
	+10kWh Battery	Option1	APbattery-51.2V/5.12kWh *2	Parallel cable for APbattery-51.2V/5.12kWh *1	125A DC Breaker（Own purchase） *1
		Option2	APbattery-51.2V/5.12kWh *2	AP DC Combiner *1	
		Option3	APbattery-51.2V//10.24kWh *1	125A DC Breaker（Own purchase） *1	
	+15kWh Battery	Option1	APbattery-51.2V/5.12kWh *3	AP DC Combiner *1	
		Option2	APbattery-51.2V/5.12kWh *3	Parallel cable for APbattery-51.2V/5.12kWh *2	125A DC Breaker（Own purchase） *1
	+20kWh Battery	Option1	APbattery-51.2V/5.12kWh *4	AP DC Combiner *1	
		Option2	APbattery-51.2V/5.12kWh *4	Parallel cable for APbattery-51.2V/5.12kWh *3	125A DC Breaker（Own purchase） *1
		Option3	APbattery-51.2V//10.24kWh *2	AP DC Combiner *1	
		Option4	APbattery-51.2V//10.24kWh *2	Parallel cable for APbattery-51.2V/10.24kWh *1	125A DC Breaker（Own purchase） *1
	+25kWh Battery	Option1	APbattery-51.2V/5.12kWh *5	Parallel cable for APbattery-51.2V/5.12kWh *4	125A DC Breaker（Own purchase） *1
	+30kWh Battery	Option1	APbattery-51.2V/5.12kWh *6	Parallel cable for APbattery-51.2V/5.12kWh *5	125A DC Breaker（Own purchase） *1
		Option2	APbattery-51.2V//10.24kWh *3	AP DC Combiner *1	
		Option3	APbattery-51.2V//10.24kWh *3	Parallel cable for APbattery-51.2V/10.24kWh *2	125A DC Breaker（Own purchase） *1

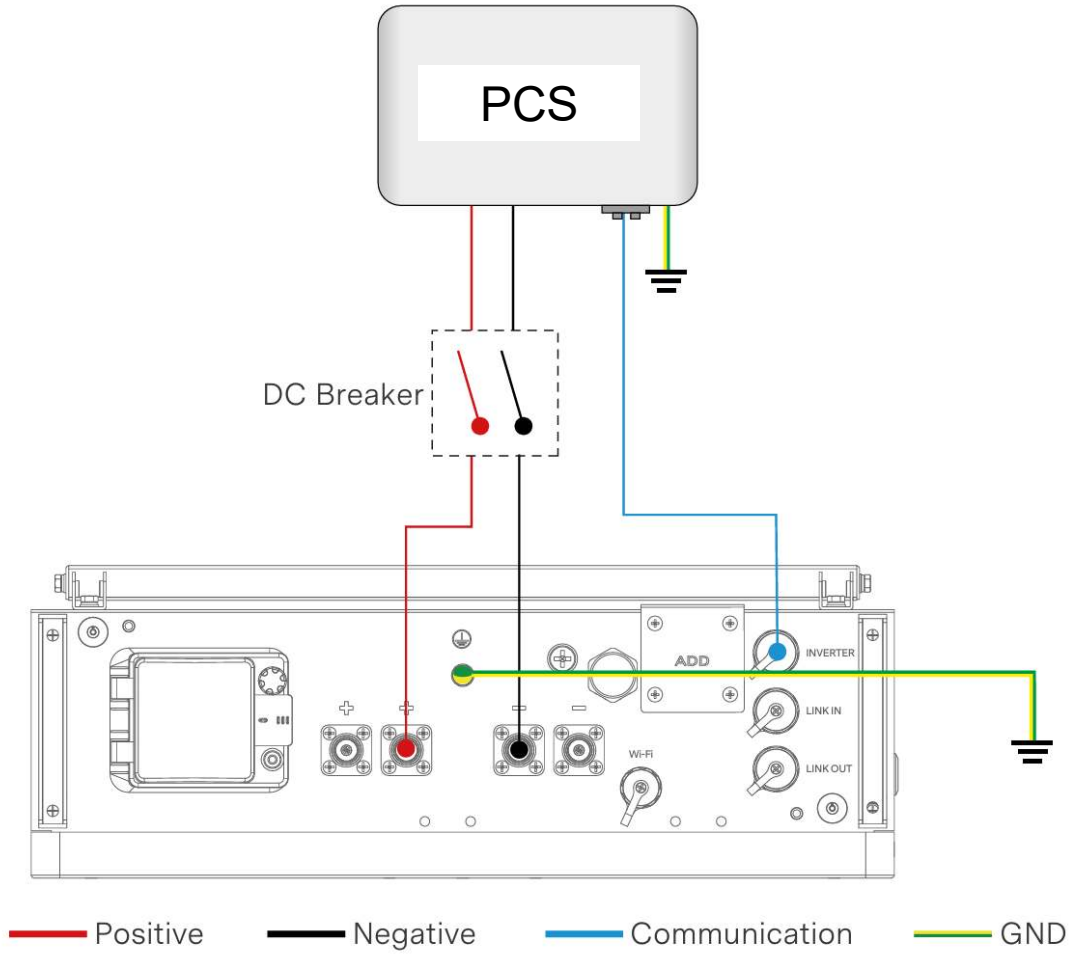
Note: For all customers who purchase the 125A DC Breaker on their own, they also need to purchase a pair of 70-square DC cables to connect the DC Breaker to the ELS-5K.

ELT-12 Connection Details:

ELT-12	+10kWh Battery	Option1	APbattery-51.2V/5.12kWh *2	AP DC Combiner *1
		Option2	APbattery-51.2V//10.24kWh *1	320A DC Breaker（Own purchase） *1
	+15kWh Battery	Option1	APbattery-51.2V/5.12kWh *3	AP DC Combiner *1
	+20kWh Battery	Option1	APbattery-51.2V/5.12kWh *4	AP DC Combiner *1
		Option2	APbattery-51.2V//10.24kWh *2	AP DC Combiner *1
	+30kWh Battery	Option1	APbattery-51.2V//10.24kWh *3	AP DC Combiner *1
	+40kWh Battery	Option1	APbattery-51.2V//10.24kWh *4	AP DC Combiner *1

Note: For all customers who purchase the 320A DC Breaker on their own, they also need to purchase a pair of 70-square DC cables to connect the DC Breaker to the ELT-12.

Single Unit Solution:



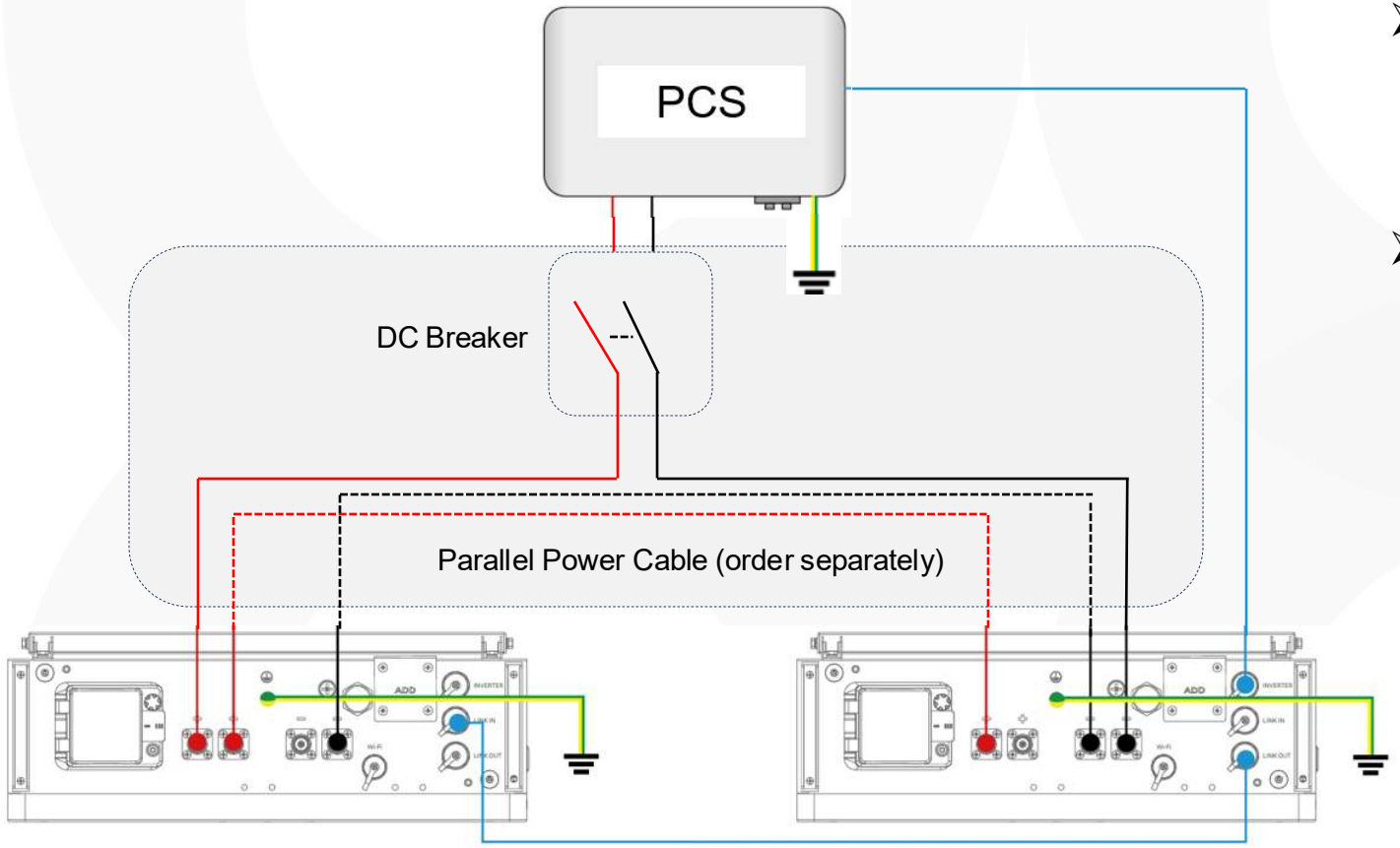
Note:

1. The rated output power of the cable connection is 3kW, the maximum output power is 5kW.
2. Install circuit breakers based on local regulations.

Only for the situation

1 ELS-5K + 1 APbattery-51.2V/10.24kWh

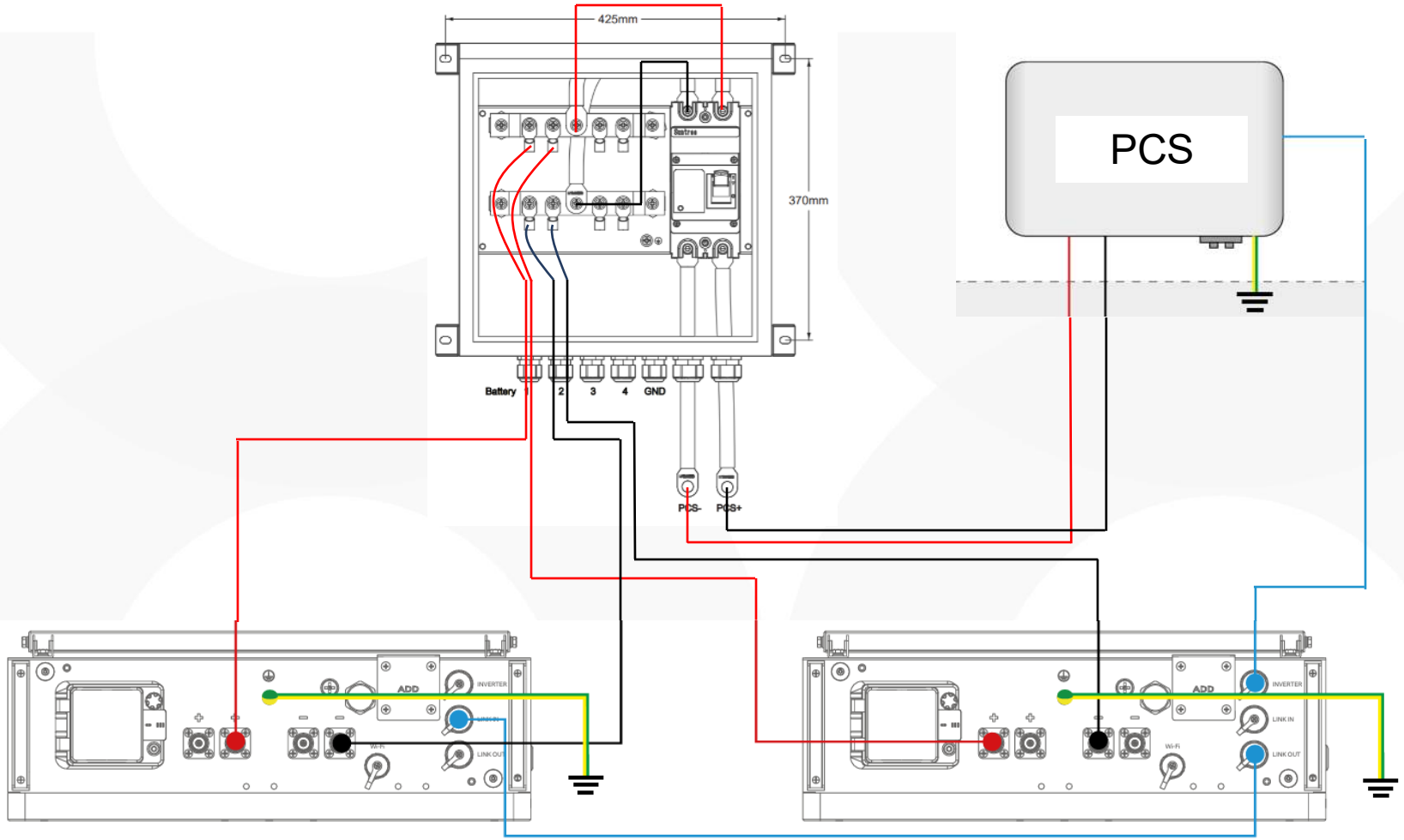
Parallel – 2 Pcs Daisy Chain Solution:



- Multiple products in parallel, with equally distributed output power.
- The parallel power cable is an optional accessory and needs to be purchased separately

Note： Not applicable for the system 1 ELT-12 + 2 or more APbattery-10.24kWh

Parallel – 2 PCs DC Combiner Box Solution :



04

After-Sales and Warranty

Warranty Terms:

Battery:

APBATTERY LIMITED WARRANTY

The basic Limited Product Warranty period is **10** years.
The Limited Performance Warranty period is **10** years.

Limited Product Warranty

APbattery warrants that the hardware of electronics and enclosure (including battery cover, enclosed micro circuit breaker if applicable, BMS PCBA) will be free of defects caused by improper artistry or defective materials.

Limited Performance Warranty

APbattery warrants that the battery system retains either **Seventy Percent (70%)** of Designed Energyfor **Ten (10)** years, or for a Minimum Through Output Energy, which is calculated from the earlier of the installation date or **6** months after the battery system production date, whichever comes first.

1: 90% DoD.
2: In 10 years, the total yield energy is calculated based on Usable Energy, and the number is calculated based on condition @ T=25 °C, 0.5C/0.5C charging and discharging, roughly 1 cycle per day.

Model No.	Designed Energy (kWh)	Usable Energy (kWh)	Minimum Through Output Energy (MWh)
APbattery-51.2V/5.12kWh	5.12	4.60	14.36
APbattery-51.2V/10.24kWh	10.24	9.21	28.73

AP DC Combiner: 3 years / **ELS & ELT:** 10 years

05

FAQ

Q&A:

Q: For daisy-chain parallel way, what's the maximum output power if there're two APbattery-51.2V/10.24kWh connected in parallel?

A: There are 2 batteries connect in parallel so the total maximum output current capacity is 120 x 2=240A. but based on cable capacity limitation is 200A, so the total maximum output power is 200A X 51.2V=10.24KW.

Q: Is their any optional accessory items? And for what purpose?

A: Yes. USB to 485 Cable(local battery status check and firmware upgrading, trouble shoot), Parallel cable/AP DC Combiner(for connect more than one battery in a station)

Q: Is the wifi stick to be ordered separately?

A: The WiFi Stick is equipped for each battery but will be shipped separately based on AP customs clearance requirement. So the WiFi Stick is not in the packaging list of battery.

Q&A:

Q: What If the DC cable is not long enough for the installation?

A: Installers can do it himself according to the installation environment.

Q: When ELS-5K connects to 1 UZ APbattery (5kwh/10kwh), what optional accessary does the customer need to order?

A: No optional accessary needs to be ordered.

Q: When ELS-5K connects to 2 UZ APbatteries (5kwh/10kwh), what optional accessary does the customer need to order?

A: Customers can choose to use AP DC combiner box or parallel cables. If he uses AP DC combiner box, no additional optional accessary is needed. If he uses the parallel cable, then he still need to prepare himself the DC breaker (required in many regions for the installation). With the DC box, maximum 4 batteries can be connected.

Q&A:

Q: When ELT-12 connects to 1 UZ APbatteries (5kwh/10kwh), what optional accessary does the customer need to order?

A: No optional accessary needs to be ordered.

Q: When ELT-12 connects to 2 or more UZ APbatteries (5kwh/10kwh), what optional accessary does the customer need to order?

A: It needs to use the AP DC combiner box. Parallel cable is not applicable here because the maximum current exceed the limitation of the cable capacity.

Q: When ELT-12 connects to 2 or more UZ APbatteries (5kwh/10kwh), and I don't have the AP DC combiner box available, can I use other type of DC combiner box in the market?

A: It is possible. You need to check the maximum supported current. And not all the DC combiner box has DC breaker inside, you may need a separate DC breaker.

Q&A:

Q: When EZHI connects to 1 UZ APbattery, what optional accessary does the customer need to order?

A: He needs to order the connection cable between the battery and the EZHI.

Q: When EZHI connects to 2 or more UZ APbatteries, what optional accessary does the customer need to order?

A: He needs to order the connection cable between the battery and the EZHI. He can choose to use AP DC combiner box or parallel cables.

Q: Is it possible to use a third-party DC combiner box with AP batteries? Can the AP DC combiner box be used to connect batteries from other manufacturers?

A: Yes, you can. And AP DC combiner box can also be used to connect to other brand of batteries, e.g.Dyness battery.

Q&A:

Q: What is an AP DC combiner box? Why do we use an AP DC combiner box?

A: The AP DC combiner box is designed to connect up to four batteries in parallel. It includes a built-in 320A DC breaker. We introduced this DC combiner box not only to enable connection of multiple batteries, but also to address the high market cost of large-current DC breakers. By integrating a 320A DC breaker into the box, it eliminates the need to purchase a separate breaker, helping to reduce overall system cost.

Q: In what situations is the parallel cable used?

A: The parallel cable is used to connect multiple batteries in parallel. However, not all batteries support the use of a parallel cable. For example, the previous Ampace APbattery 6.5 kWh does not support it, while the APbattery 5 kWh and 10 kWh models do.

If you use a DC combiner box, then you don't need to use a parallel cable. The DC combiner box already includes an integrated DC breaker. However, if you choose to use a parallel cable instead, you will still need to install a main DC breaker separately, as required by many local regulations.

Q&A:

Q: How many parallel cables do I need?

A: You need one parallel cable to connect two batteries. For three batteries, you need two parallel cables, and so on.

Q: Are all parallel cables standardized, or do they vary by battery model?

A: No. e.g. an parallel cable for UZ 5kwh battery and the one for UZ 10kwh battery can't be interchanged.

Q: I have an ELS-5K and want to connect multiple AP batteries. Do I need to use the AP DC combiner box?

A: You can use the AP DC combiner box, but it’s not necessary. The AP DC combiner box includes a large 320A DC breaker. For the ELS-5K, you can use a smaller current breaker, which is generally much cheaper on the market. Therefore, using parallel cables along with a separately purchased DC breaker is usually a more cost-effective solution than using the AP DC combiner box.

Q&A:

Q: I have an ELT-12 and want to connect multiple AP batteries. Do I need to use a DC combiner box?

A: Yes, you have to use a DC combiner box with the ELT-12. Also, note that with the ELT-12, you cannot use parallel cables because the current is too high for the battery terminals. This limitation applies not only to AP batteries but also when connecting the ELT-12 to Dyness batteries (5, 10, or 14 kWh models).

END

European offices

APsystems

Karspeldreef 8, 1101 CJ, Amsterdam, The Netherlands
Email: diy_support.emea@apsystems.com
Web: emea.APsystems.com

APsystems

22 Avenue Lionel Terray 69330 Jonage, France
Email: diy_support.emea@apsystems.com
Web: emea.APsystems.com

EMA Login Interface

WeChat Official Account

THANK YOU